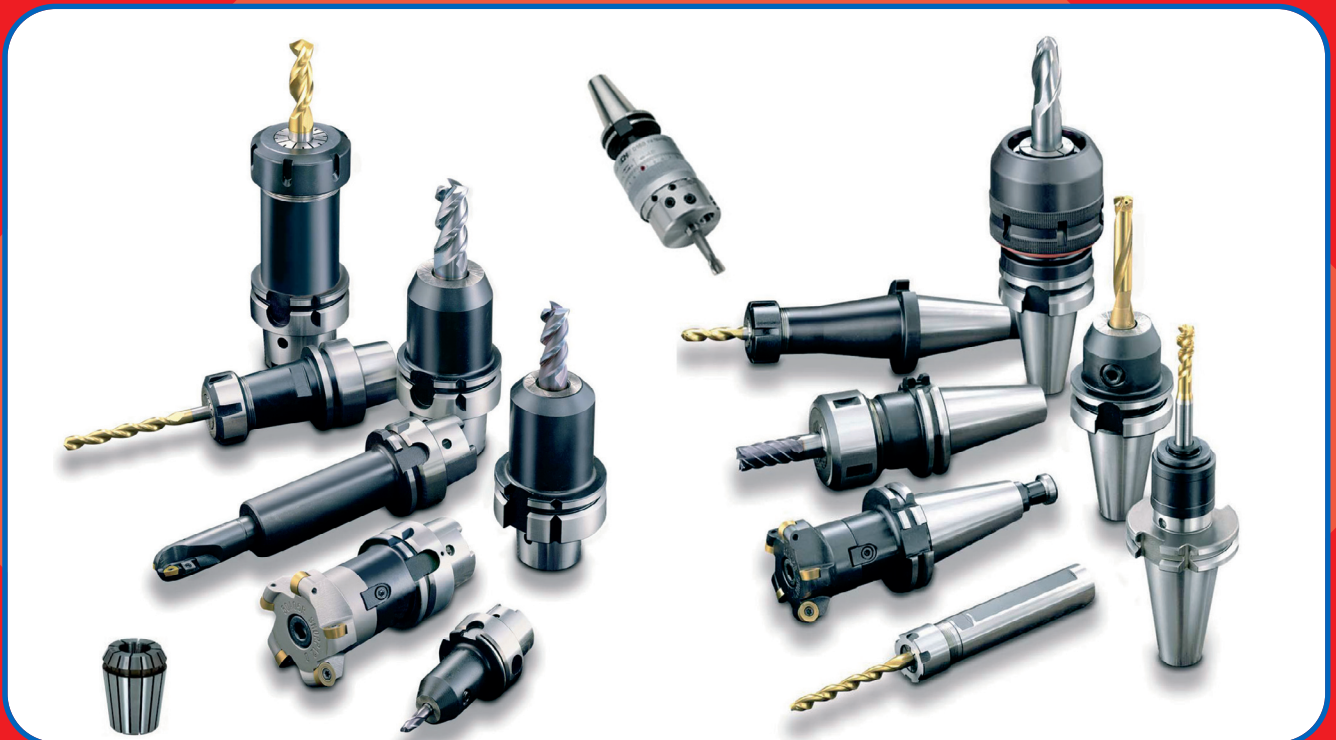


ACCESSOIRES MACHINES OUTILS

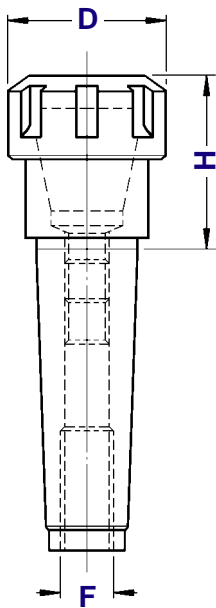
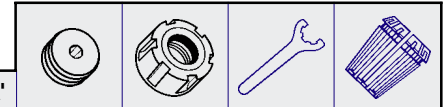


CONE MORSE

CONO MORSE

PORTAPINZE ER - GHIERA STANDARD

ER COLLET CHUCK WITH STANDARD NUT

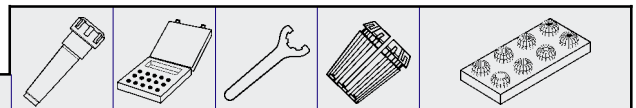
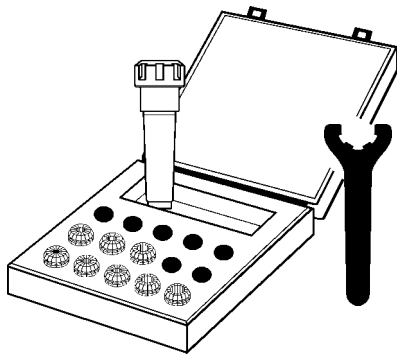


TIPO	Art.	F	D	CAPACITA'				
CM 1 - ER 16/H 40	2915	M 6	32	1 ÷ 10	0181	3766	3698	0364
CM 2 - ER 16/H 42	2916	M 10	32	1 ÷ 10	0186	3766	3698	0364
CM 2 - ER 20/H 50	2917	M 10	35	1 ÷ 13	0186	3767	3699	0787
CM 2 - ER 25/H 54	2918	M 10	42	1 ÷ 16	0186	0326	3669	0996
CM 2 - ER 32/H 59	3310	M 10	50	2 ÷ 20	0186	1962	3670	0988
CM 3 - ER 25/H 53	2919	M 12	42	1 ÷ 16	0188	0326	3669	0996
CM 3 - ER 32/H 70	2920	M 12	50	2 ÷ 20	0188	1962	3670	0988
CM 3 - ER 40/H 80	2921	M 12	63	3 ÷ 30	0188	1963	3671	0821
CM 4 - ER 32/H 60	2922	M 16	50	2 ÷ 20	0190	1962	3670	0988
CM 4 - ER 40/H 81	2923	M 16	63	3 ÷ 30	0190	1963	3671	0821
CM 4 - ER 50/H 96	2924	M 16	78	6 ÷ 34	0190	5713	3668	4055
CM 5 - ER 32/H 50	2902	M 20	50	2 ÷ 20	0191	1962	3670	0988
CM 5 - ER 40/H 81	2925	M 20	63	3 ÷ 30	0195	1963	3671	0821
CM 5 - ER 50/H 91	2926	M 20	78	6 ÷ 34	0195	5713	3668	4055

KIT

CASSETTE CON SERIE RIDOTTA DI PINZE ER MANDRINO E CHIAVE

EQUIPMENT BOXES WITH REDUCED SET OF ER COLLETS

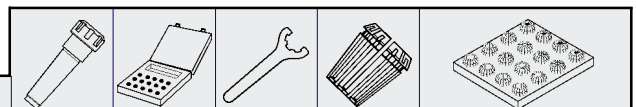
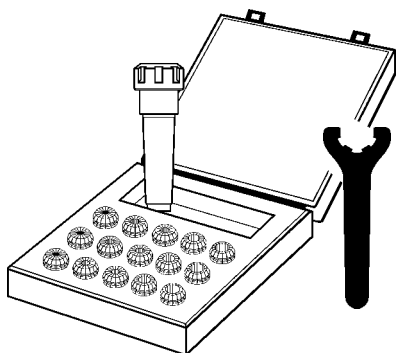


TIPO	Art.					
KIT Rid CM 2/H 54 - ER25	7524	2918	3695	3669	0996	∅ 4 - 6 - 8 - 10 - 12 - 16
KIT Rid CM 2/H 54 - ER32	7525	3310	3695	3670	0988	∅ 4 - 6 - 8 - 10 - 12 - 16 - 20
KIT Rid CM 3/H 53 - ER25	7526	2919	3695	3669	0996	∅ 4 - 6 - 8 - 10 - 12 - 16
KIT Rid CM 3/H 70 - ER32	7527	2920	3695	3670	0988	∅ 4 - 6 - 8 - 10 - 12 - 16 - 20
KIT Rid CM 3/H 80 - ER40	7528	2921	3695	3671	0821	∅ 4 - 6 - 8 - 10 - 12 - 16 - 20 - 25
KIT Rid CM 4/H 60 - ER32	7529	2922	3695	3670	0988	∅ 4 - 6 - 8 - 10 - 12 - 16 - 20
KIT Rid CM 4/H 81 - ER40	7530	2923	3695	3671	0821	∅ 4 - 6 - 8 - 10 - 12 - 16 - 20 - 25

KIT

CASSETTE CON SERIE COMPLETA DI PINZE ER MANDRINO E CHIAVE

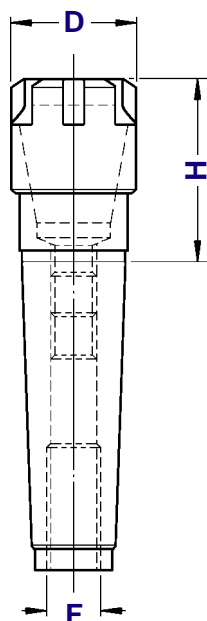
EQUIPMENT BOXES WITH COMPLETE SET OF ER COLLETS



TIPO	Art.					
KIT CM 2 / H 54 - ER 25	7508	2918	3695	3669	0996	15 Pinze: ∅ 2 ÷ 16
KIT CM 2 / H 54 - ER 32	7509	3310	3695	3670	0988	18 Pinze: ∅ 3 ÷ 20
KIT CM 3 / H 53 - ER 25	7510	2919	3695	3669	0996	15 Pinze: ∅ 2 ÷ 16
KIT CM 3 / H 70 - ER 32	7511	2920	3695	3670	0988	18 Pinze: ∅ 3 ÷ 20
KIT CM 3 / H 80 - ER 40	7512	2921	3695	3671	0821	23 Pinze: ∅ 4 ÷ 26
KIT CM 4 / H 60 - ER 32	7513	2922	3695	3670	0988	18 Pinze: ∅ 3 ÷ 20
KIT CM 4 / H 81 - ER 40	7514	2923	3695	3671	0821	23 Pinze: ∅ 4 ÷ 26

CONO MORSE




PORTAPINZA ER - GHIERA MINI ER COLLET CHUCK WITH SMALL NUT

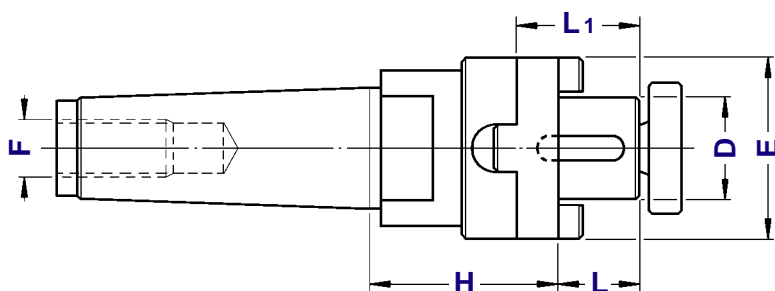


TIPO	Art.	F	D	CAPACITA'				
CM 1 - ER 11 MINI/H 25	3509	M 6	16	1 ÷ 7	0181	0432	5718	5573
CM 1 - ER 16 MINI/H 40	3510	M 6	22	1 ÷ 10	0181	0334	5719	0364
CM 2 - ER 16 MINI/H 42	3511	M10	22	1 ÷ 10	0186	0334	5719	0364
CM 2 - ER 20 MINI/H 50	3512	M10	28	1 ÷ 13	0186	2829	5720	0787
CM 2 - ER 25 MINI/H 54	3513	M10	35	1 ÷ 16	0186	2822	5721	0996
CM 3 - ER 16 MINI/H 43	3516	M12	22	1 ÷ 10	0186	0334	5719	0364
CM 3 - ER 20 MINI/H 47	3517	M12	28	1 ÷ 13	0188	2829	5720	0787
CM 3 - ER 25 MINI/H 58	3518	M12	35	1 ÷ 16	0188	2822	5721	0996

CONO MORSE

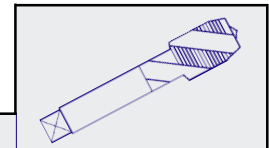
PORTAFRESE COMBINATI SHELL END MILL ADAPTERS

TIPO	Art.	D	L1	L	E	F			
CM 2 - D. 16 COMBI/H 37	4420	16	27	17	32	M10	4090	0115	4979
CM 2 - D. 22 COMBI/H 42	4421	22	31	19	40	M10	4091	0116	4980
CM 3 - D. 16 COMBI/H 37	4292	16	27	17	32	M12	4090	0115	4979
CM 3 - D. 22 COMBI/H 42	4293	22	31	19	40	M12	4091	0116	4980
CM 3 - D. 27 COMBI/H 42	4294	27	33	21	48	M12	4092	0122	4981
CM 3 - D. 32 COMBI/H 63	4295	32	38	24	58	M12	4093	0125	4982
CM 4 - D. 16 COMBI/H 55	4296	16	27	17	32	M16	4090	0115	4979
CM 4 - D. 22 COMBI/H 55	4297	22	31	19	40	M16	4091	0116	4980
CM 4 - D. 27 COMBI/H 55	4298	27	33	21	48	M16	4092	0122	4981
CM 4 - D. 32 COMBI/H 55	4299	32	38	24	58	M16	4093	0125	4982
CM 5 - D. 22 COMBI/H 75	4422	22	31	19	40	M20	4091	0116	4980
CM 5 - D. 27 COMBI/H 75	4423	27	33	21	48	M20	4092	0122	4981
CM 5 - D. 32 COMBI/H 75	4424	32	38	24	58	M20	4093	0125	4982
CM 5 - D. 40 COMBI/H 75	4425	40	41	27	70	M20	4094	0133	4983



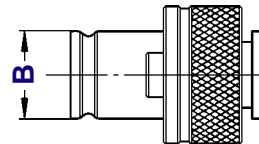
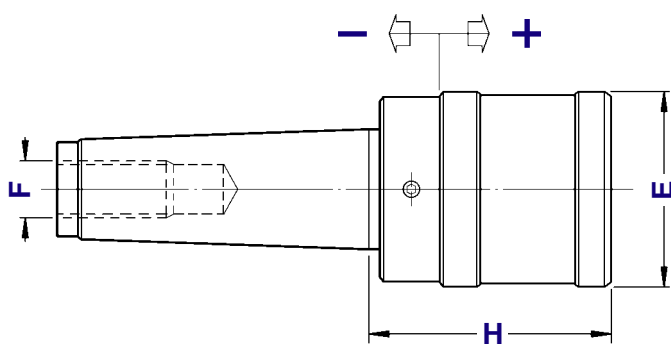
DIN 228-A

MASCHIATORI A CAMBIO RAPIDO DOPPIA COMPENSAZIONE DOUBLE COMPENSATION QUICK CHANGE TAP HOLDERS

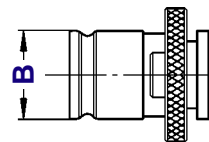


TIPO	Art.	H	E	B	F	COMPENSAZIONE	
CM 2 A - B. 0	4287	45	26	13	M10	- 6,5 + 6,5	M 1 ÷ M 10
CM 2 A - B. 1	4286	47	36	19	M10	- 7,5 + 7,5	M 3 ÷ M 12 (*M16)
CM 3 A - B. 1	4288	47	36	19	M12	- 7,5 + 7,5	M 3 ÷ M 12 (*M16)
CM 3 A - B. 2	4289	71	53	31	M12	- 12,5 + 12,5	M 6 ÷ M 20 (*M30)
CM 4 A - B. 2	4290	70	53	31	M16	- 12,5 + 12,5	M 6 ÷ M 20 (*M30)
CM 4 A - B. 3	4291	108	79	48	M16	- 24,0 + 24,0	M14 ÷ M 33 (*M48)
CM 5 A - B. 3	4426	103	79	48	M20	- 24,0 + 24,0	M14 ÷ M 33 (*M48)

* Bussole con grani
Adapters with screws

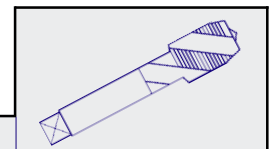


Bussole a maschiare Pag. 110 - 113



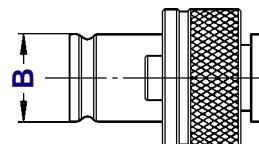
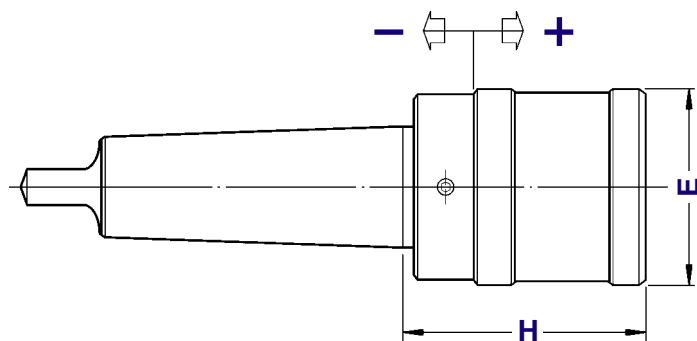
DIN 228-B

MASCHIATORI A CAMBIO RAPIDO DOPPIA COMPENSAZIONE DOUBLE COMPENSATION QUICK CHANGE TAP HOLDERS

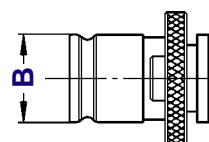


TIPO	Art.	H	E	B	COMPENSAZIONE	
CM 2 - B. 0	4278	45	26	13	- 6,5 + 6,5	M 1 ÷ M 10
CM 2 - B. 1	3846	47	36	19	- 7,5 + 7,5	M 3 ÷ M 12 (*M16)
CM 3 - B. 1	3847	47	36	19	- 7,5 + 7,5	M 3 ÷ M 12 (*M16)
CM 3 - B. 2	3848	70	53	31	- 12,5 + 12,5	M 6 ÷ M 20 (*M30)
CM 4 - B. 2	3849	70	53	31	- 15,0 + 15,0	M 6 ÷ M 20 (*M30)
CM 4 - B. 3	3850	108	79	48	- 24,0 + 24,0	M14 ÷ M 33 (*M48)
CM 5 - B. 3	4427	103	79	48	- 24,0 + 24,0	M14 ÷ M 33 (*M48)

* Bussole con grani
Adapters with screws



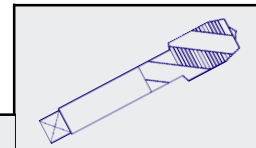
Bussole a maschiare Pag. 110 - 113



DIN 228-A

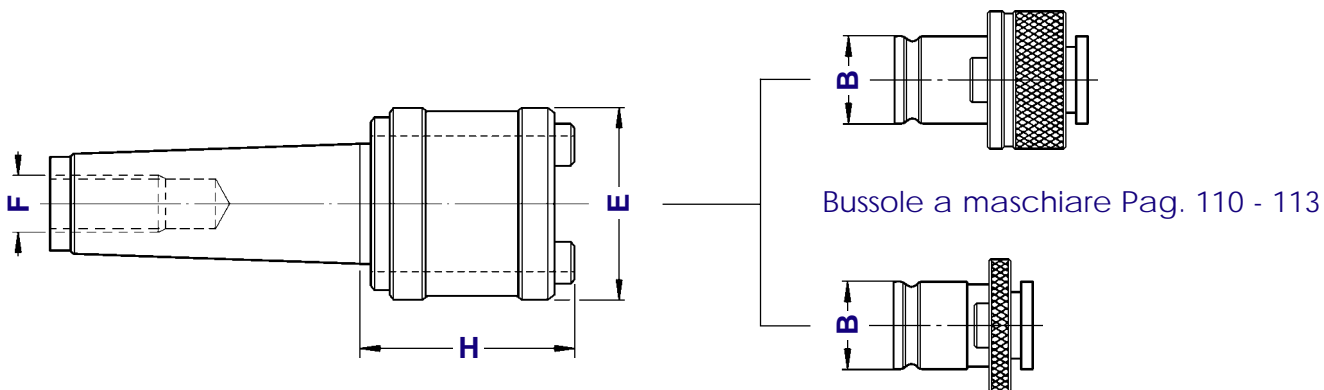
MASCHIATORI A CAMBIO RAPIDO - TIPO FISSO

QUICK CHANGE TAP HOLDERS WITHOUT COMPENSATION



TIPO	Art.	H	E	B	F	
CM 2 A FISSO - B. 1	4696	45	33	19	M10	M 3 ÷ M 12 (*M16)
CM 2 A FISSO - B. 2	4697	61	50	31	M10	M 6 ÷ M 20 (*M30)
CM 3 A FISSO - B. 1	4698	45	33	19	M12	M 3 ÷ M 12 (*M16)
CM 3 A FISSO - B. 2	4699	61	50	31	M12	M 6 ÷ M 20 (*M30)

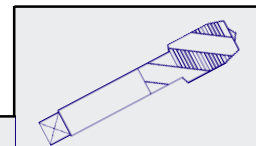
* Bussole con grani
Adapters with screws



DIN 228-B

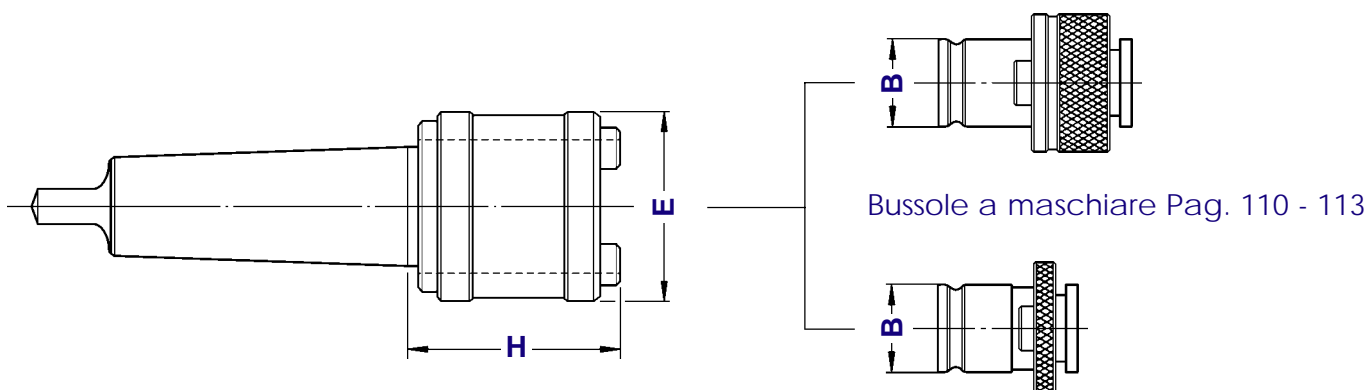
MASCHIATORI A CAMBIO RAPIDO - TIPO FISSO

QUICK CHANGE TAP HOLDERS WITHOUT COMPENSATION



TIPO	Art.	H	E	B	
CM 1 FISSO - B. 0	4279	37	23	13	M 1 ÷ M 10
CM 2 FISSO - B. 0	4282	37	23	13	M 1 ÷ M 10
CM 2 FISSO - B. 1	4283	45	33	19	M 3 ÷ M 12 (*M16)
CM 2 FISSO - B. 2	4027	61	50	31	M 6 ÷ M 20 (*M30)
CM 3 FISSO - B. 1	4284	45	33	19	M 3 ÷ M 12 (*M16)
CM 3 FISSO - B. 2	4285	61	50	31	M 6 ÷ M 20 (*M30)
CM 4 FISSO - B. 2	4340	61	50	31	M 6 ÷ M 20 (*M30)

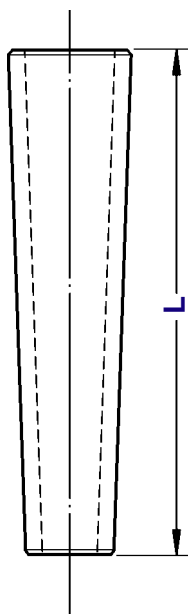
* Bussole con grani
Adapters with screws



CONO MORSE

RIDUZIONI A CM PASSANTI LOOP MK ADAPTORS

RCM.P

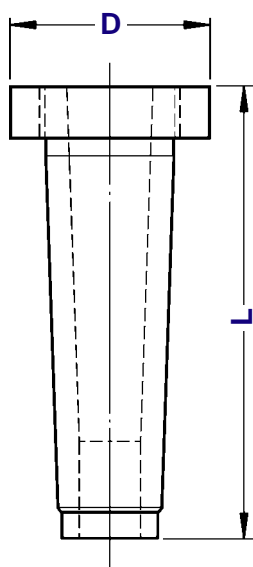


TIPO	Art.	Est.	Int.	L
RCM. P/2 - 1	4097/2-1	2	1	50
RCM. P/3 - 1	4097/3-1	3	1	55
RCM. P/3 - 2	4097/3-2	3	2	60
RCM. P/4 - 1	4097/4-1	4	1	65
RCM. P/4 - 2	4097/4-2	4	2	70
RCM. P/4 - 3	4097/4-3	4	3	75
RCM. P/5 - 2	4097/5-2	5	2	80
RCM. P/5 - 3	4097/5-3	5	3	90
RCM. P/5 - 4	4097/5-4	5	4	95
RCM. P/6 - 3	4097/6-3	6	3	110
RCM. P/6 - 4	4097/6-4	6	4	120
RCM. P/6 - 5	4097/6-5	6	5	125

CONO MORSE

RIDUZIONI A CM CON ESTRATTORE MK ADAPTORS WITH EXTRACTOR

RCM.E

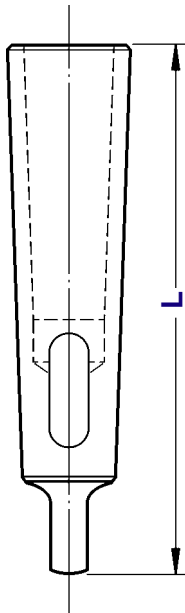


TIPO	Art.	Est.	Int.	L	D
RCM.E/2 - 1	4042/2-1	2	1	70	30
RCM.E/3 - 1	4042/3-1	3	1	85	44
RCM.E/3 - 2	4042/3-2	3	2	85	44
RCM.E/4 - 1	4042/4-1	4	1	105	51
RCM.E/4 - 2	4042/4-2	4	2	105	51
RCM.E/4 - 3	4042/4-3	4	3	105	51
RCM.E/5 - 2	4042/5-2	5	2	130	70
RCM.E/5 - 3	4042/5-3	5	3	130	70
RCM.E/5 - 4	4042/5-4	5	4	130	70

CONO MORSE

RIDUZIONI A CM - DIN 2185 MK ADAPTORS ACCORDING TO DIN 2185

RCM.C

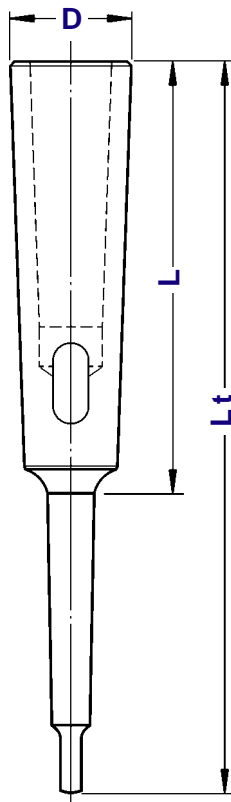


TIPO	Art.	Est.	Int.	L
RCM.C/1 - 0	4098/1-0	1	0	80
RCM.C/2 - 1	4098/2-1	2	1	92
RCM.C/3 - 1	4098/3-1	3	1	99
RCM.C/3 - 2	4098/3-2	3	2	112
RCM.C/4 - 1	4098/4-1	4	1	124
RCM.C/4 - 2	4098/4-2	4	2	124
RCM.C/4 - 3	4098/4-3	4	3	140
RCM.C/5 - 1	4098/5-1	5	1	156
RCM.C/5 - 2	4098/5-2	5	2	156
RCM.C/5 - 3	4098/5-3	5	3	156
RCM.C/5 - 4	4098/5-4	5	4	171
RCM.C/6 - 3	4098/6-3	6	3	218
RCM.C/6 - 4	4098/6-4	6	4	218
RCM.C/6 - 5	4098/6-5	6	5	218

CONO MORSE

RIDUZIONI A CM PROLUNGATE - DIN 2187 MK EXTENDED ADAPTORS ACCORDING TO DIN 2187

RCM.L



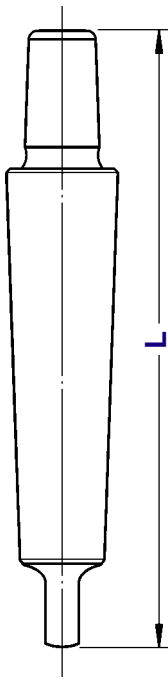
TIPO	Art.	Est.	Int.	L	Lt	D
RCM.L/1 - 1	4099/1-1	1	1	76	145	20
RCM.L/1 - 2	4099/1-2	1	2	92	160	30
RCM.L/2 - 1	4099/2-1	2	1	76	160	20
RCM.L/2 - 2	4099/2-2	2	2	91	175	30
RCM.L/2 - 3	4099/2-3	2	3	112	196	36
RCM.L/3 - 1	4099/3-1	3	1	75	175	20
RCM.L/3 - 2	4099/3-2	3	2	91	194	30
RCM.L/3 - 3	4099/3-3	3	3	112	215	36
RCM.L/3 - 4	4099/3-4	3	4	137	240	48
RCM.L/4 - 1	4099/4-1	4	1	76	200	20
RCM.L/4 - 2	4099/4-2	4	2	91	215	30
RCM.L/4 - 3	4099/4-3	4	3	112	240	36
RCM.L/4 - 4	4099/4-4	4	4	137	265	48
RCM.L/4 - 5	4099/4-5	4	5	172	300	63
RCM.L/5 - 1	4099/5-1	5	1	76	232	20
RCM.L/5 - 2	4099/5-2	5	2	91	247	30
RCM.L/5 - 3	4099/5-3	5	3	112	268	36
RCM.L/5 - 4	4099/5-4	5	4	137	300	48
RCM.L/5 - 5	4099/5-5	5	5	172	335	63
RCM.L/6 - 3	4099/6-3	6	3	112	330	36
RCM.L/6 - 4	4099/6-4	6	4	137	335	48
RCM.L/6 - 5	4099/6-5	6	5	172	390	63

GAIT 5.02

CONO MORSE

RIDUZIONI CM PER DIN 238 MK ADAPTORS TO DIN 238

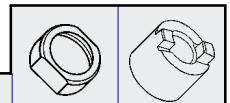
RCM.B



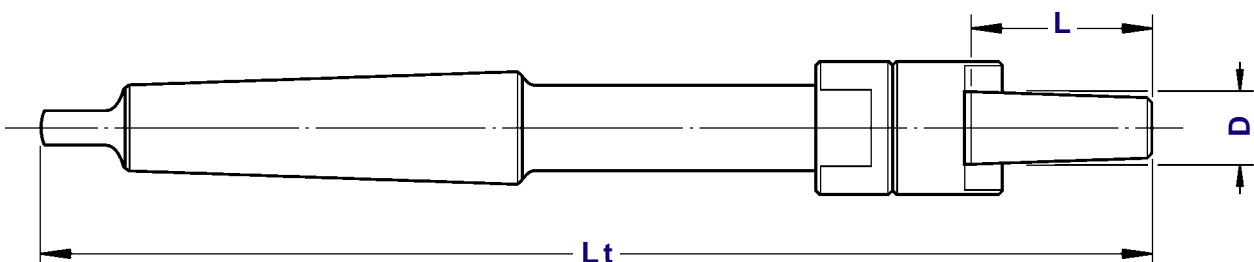
TIPO	Art.	CM	"B"	L
RCM. B/1 - B10	4096/1-B10	1	10	85
RCM. B/1 - B12	4096/1-B12	1	12	89
RCM. B/1 - B16	4096/1-B16	1	16	99
RCM. B/1 - B18	4096/1-B18	1	18	106
RCM. B/2 - B10	4096/2-B10	2	10	105
RCM. B/2 - B12	4096/2-B12	2	12	106
RCM. B/2 - B16	4096/2-B16	2	16	112
RCM. B/2 - B18	4096/2-B18	2	18	119
RCM. B/3 - B12	4096/3-B12	3	12	125
RCM. B/3 - B16	4096/3-B16	3	16	134
RCM. B/3 - B18	4096/3-B18	3	18	140
RCM. B/3 - B22	4096/3-B22	3	22	147
RCM. B/4 - B16	4096/4-B16	4	16	159
RCM. B/4 - B18	4096/4-B18	4	18	167
RCM. B/4 - B22	4096/4-B22	4	22	176

CONO MORSE

PORTA ALESATORI A MANICOTTO CON ESTRATTORE MORSE TAPER SHELL REAMER HOLDERS



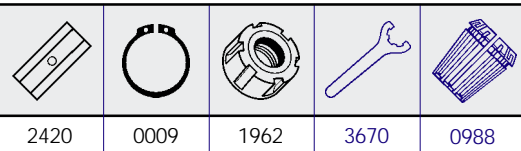
TIPO	Art.	D	L	Lt		
PA. CM 2 - D. 10	1906	10	38	220	0271	0283
PA. CM 3 - D. 13	1907	13	46	250	0272	0286
PA. CM 3 - D. 16	1913	16	48	261	0273	0289
PA. CM 3 - D. 19	1914	19	54	270	0275	0301
PA. CM 3 - D. 22	1922	22	61	278	0278	0302
PA. CM 4 - D. 19	1925	19	54	298	0275	0301
PA. CM 4 - D. 22	1939	22	61	312	0278	0302
PA. CM 4 - D. 27	1944	27	69	325	0279	0304
PA. CM 4 - D. 32	1945	32	78	345	0280	0306
PA. CM 5 - D. 27	1946	27	69	359	0279	0304
PA. CM 5 - D. 32	1964	32	77	376	0280	0306
PA. CM 5 - D. 40	1966	40	87	396	0281	0313
PA. CM 5 - D. 50	1972	50	97	416	0282	0318



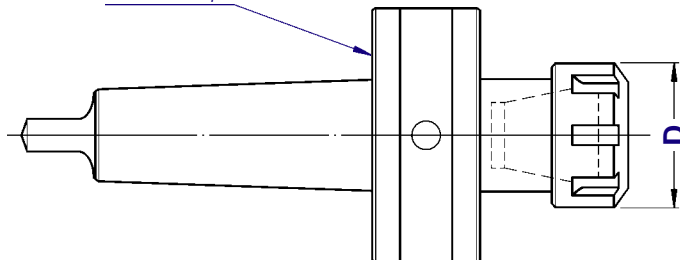
RAG

PORTAPINZE ER FAMUP RAG ER COLLET CHUCK - FAMUP RAG TYPE

TIPO	Art.	D	CAPACITA'
CM4 FAMUP RAG - ER 32	4277	50	2 ÷ 20



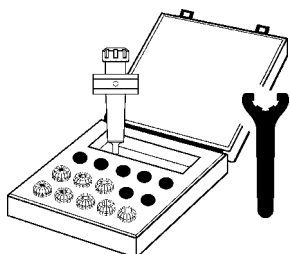
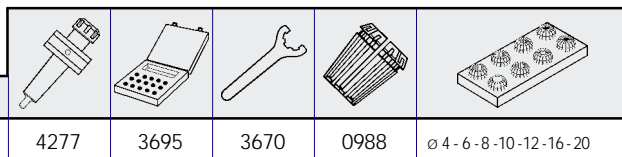
M60 x 2,5



KIT

CASSETTE CON SERIE RIDOTTA DI PINZE ER MANDRINO E CHIAVE EQUIPMENT BOXES WITH REDUCED SET OF ER COLLETS

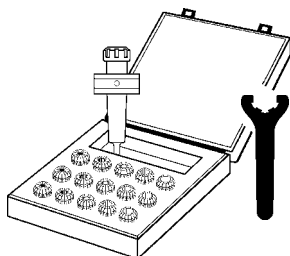
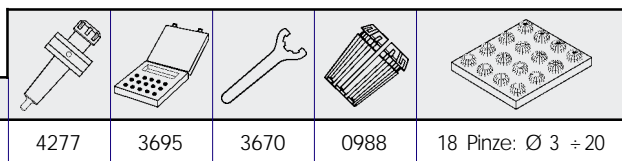
TIPO	Art.
KIT Rid CM 4 RAG - ER 32	7531



KIT

CASSETTE CON SERIE COMPLETA DI PINZE ER MANDRINO E CHIAVE EQUIPMENT BOXES WITH COMPLETE SET OF ER COLLETS

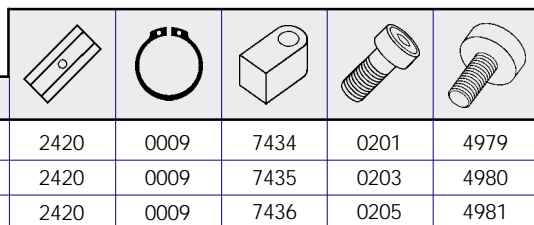
TIPO	Art.
KIT CM 4 RAG - ER 32	7515



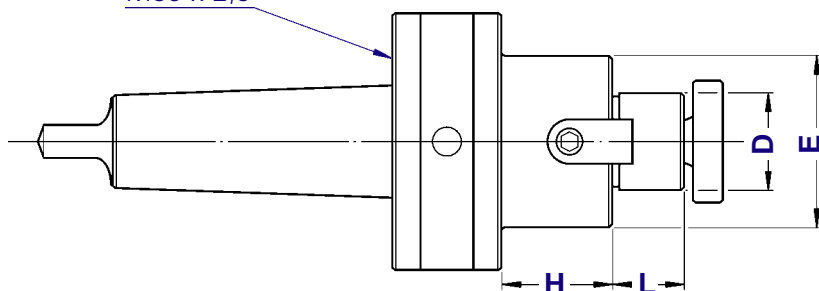
RAG

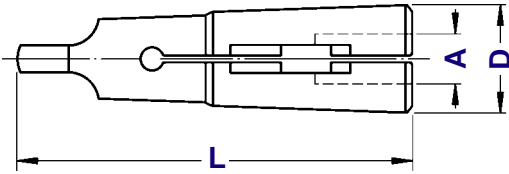
PORTAFRESE FISSI FAMUP RAG FAMUP RAG SHELL MILL HOLDERS

TIPO	Art.	D	H	L	E
CM 4 RAG - D. 16 FISSO	2414	16	20	17	32
CM 4 RAG - D. 22 FISSO	2415	22	20	19	40
CM 4 RAG - D. 27 FISSO	2416	27	20	21	48

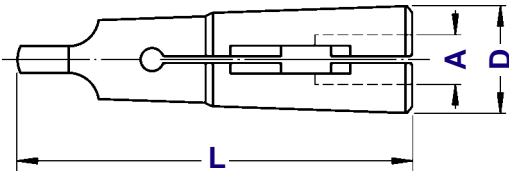


M60 x 2,5

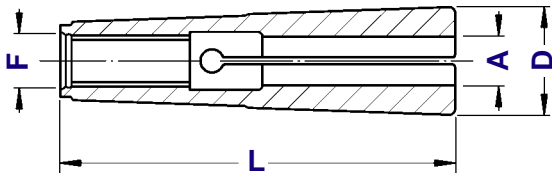


**DIN
6329****PINZE CONO MORSE PER PUNTE**
*TWIST DRILLS MK COLLETS***PINZE**

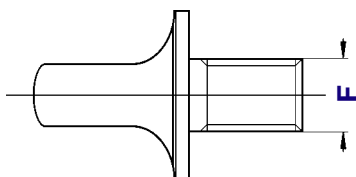
TIPO	Art.	CAPACITA'	D	L	Einheits
CM 0 - PUNTE	5570 P	1,5 ÷ 5,5	9,0	59,5	510E
CM 1 - PUNTE	0640 P	1,0 ÷ 10,0	12,2	65,5	511E
CM 2 - PUNTE	0641 P	2,0 ÷ 15,0	18,0	80,0	514E
CM 3 - PUNTE	0642 P	8,0 ÷ 18,0	24,0	99,0	545E
CM 4 - PUNTE	0643 P	12,0 ÷ 25,0	31,5	124,0	548E

**DIN
6328****PINZE CONO MORSE PER MASCHI**
*TAPERS MK COLLETS***PINZE**

TIPO	Art.	CAPACITA'	D	L	Einheits
CM 0 - MASCHI	5570 M	2,5 ÷ 4,5	9,0	59,5	500E
CM 1 - MASCHI	0640 M	2,5 ÷ 10,0	12,2	65,5	501E
CM 2 - MASCHI	0641 M	2,5 ÷ 14,0	18,0	80,0	504E
CM 3 - MASCHI	0642 M	4,5 ÷ 18,0	24,0	99,0	535E
CM 4 - MASCHI	0643 M	6,0 ÷ 25,0	31,5	124,0	538E

**UNI
4702****PINZE CONO MORSE UNI 4702**
*UNI 4702 MK COLLETS***PINZE**

TIPO	Art.	F	CAPACITA'	D	L	Einheits
CM 2	0752	M 10	1 ÷ 14	18,0	69,0	503E
CM 3	0712	M 12	3 ÷ 18	24,1	85,5	536E
CM 4	0865	M 16	4 ÷ 25	31,6	108,5	539E

**CONO
MORSE****TENONI**
*TONQUES***DIN
228-B**

TIPO	Art.	F
T. CM 1 - M 6	4079	M 6
T. CM 2 - M 10	4080	M 10
T. CM 3 - M 12	4081	M 12
T. CM 4 - M 16	4082	M 16
T. CM 5 - M 20	4083	M 20

Portabrocas universal de precisión. DIN 228-A

Universal precision drill chuck. DIN 228-A



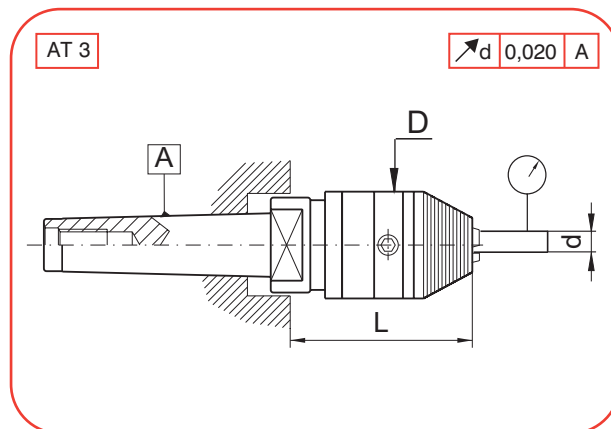
Utilización: Para la sujeción de herramientas con mango cilíndrico, para giro a la derecha o a la izquierda.

Suministro: Incluida la llave hexagonal.

Application: For clamping of tools with cylindrical shank, for right and left hand turn.

Delivery: Hexagonal key included.

40xx.PBG



A	COD	d	L	D
03	4003.PBG.13	1-13	90	50
	4003.PBG.16	3-16	90	57
04	4004.PBG.13	1-13	90	50
	4004.PBG.16	3-16	90	57

A	COD	d	L	D
05	4005.PBG.13	1-13	90	50
	4005.PBG.16	3-16	90	57

ESPECIFICACIONES TECNICAS

Ø1-13

Par de apriete: 50 Nm

Concentricidad MAXIMA = 0,03 mm

Fuerza máxima de apriete con la llave: 15 Nm.

Revoluciones máximas recomendadas: 7,000 rpm.

Ø3-16

Par de apriete: 45 Nm

Concentricidad MAXIMA = 0,03 mm

Fuerza máxima de apriete con la llave: 15 Nm.

Revoluciones máximas recomendadas: 7,000 rpm.

TECHNICAL DATA

Ø1-13

Holding force: 50 Nm

MAXIMUM Concentricity = 0,03 mm

Maximum permissible torque: 5 Nm.

Max. Recommended revolutions: 7,000 U/min

Ø3-16

Holding force: 45 Nm

MAXIMUM Concentricity = 0,03 mm

Maximum permissible torque: 5 Nm.

Max. Recommended revolutions: 7,000 U/min

Piezas de recambio - Spare parts



d	REF.
1-13	LALL06
3-16	LALL06

Juego de cabezal de mandrinar micrométrico. DIN 228-A

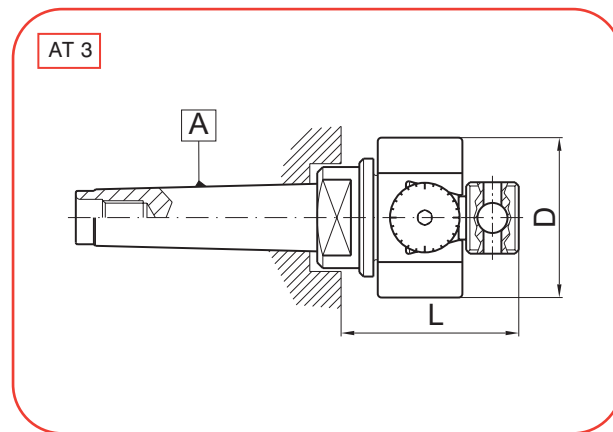
Set of micrometric boring head. DIN 228-A



Utilización: Para mandrinar con precisión $\pm 0,01$ mm. y hasta $\varnothing 250$ mm.
Suministro: Un cabezal de mandrinar en un estuche de plástico + accesorios A , B ó C
Accesorios .A - Indicados abajo.
Accesorios .C - Indicados abajo.
Accesorios .B - Accesorios .A + .C

Application: For precision boring $\pm 0,01$ mm. and up to $\varnothing 250$ mm.
Delivery: One boring head in a plastic box + A , B or C accessories.
Accessories .A - Indicated below.
Accessories .C - Indicated below.
Accessories .B - Accessories .A + .C

40xx.JCM.25.x



A	COD	d	L	D
03	4003.JCM.25.A	20-250	90	85
	4003.JCM.25.B			
	4003.JCM.25.C			
04	4004.JCM.25.A	20-250	90	85
	4004.JCM.25.B			
	4004.JCM.25.C			

A	COD	d	L	D
05	4005.JCM.25.A	20-250	90	85
	4005.JCM.25.B			
	4005.JCM.25.C			

accesorios .A - accessories .A



accesorios .C - accessories .C



La opción .A contiene:

- 1 cuchilla de acero rápido de $\varnothing 6$ (REF: MM15401)
- 1 cuchilla de acero rápido de $\varnothing 8$ (REF: MM15402)
- 1 cuchilla de perfil constante de mango $\varnothing 10$ (REF: MM15403)
- 1 portacuchillas $\varnothing 10$ (REF: MM15301)
- 1 portacuchillas $\varnothing 8 \times 25 \times 20$ (REF: MM15302)
- 1 portacuchillas $\varnothing 8 \times 25 \times 40$ (REF: MM15303)
- 1 portacuchillas $\varnothing 6 \times 16 \times 75$ (REF: MM15304)
- 1 portacuchillas $\varnothing 8 \times 25 \times 75$ (REF: MM15305)
- 1 juego de llaves allen

Option A contains:

- 1 high speed steel tool bit $\varnothing 6$ (REF: MM15401)
- 1 high speed steel tool bit $\varnothing 8$ (REF: MM15402)
- 1 constant profile tool bit $\varnothing 10$ shank (REF: MM15403)
- 1 toolholder $\varnothing 10$ (REF: MM15301)
- 1 toolholder $\varnothing 8 \times 25 \times 20$ (REF: MM15302)
- 1 toolholder $\varnothing 8 \times 25 \times 40$ (REF: MM15303)
- 1 toolholder $\varnothing 6 \times 16 \times 75$ (REF: MM15304)
- 1 toolholder $\varnothing 8 \times 25 \times 75$ (REF: MM15305)
- 1 allen keys set

La opción .C contiene:

- 1 portacuchillas $\varnothing 18 \times 16 \times 105$ con plaquita perdida CCMT060204
- 1 portacuchillas $\varnothing 28 \times 16 \times 105$ con plaquita perdida CCMT09T304

Option .C contains:

- 1 toolholder $\varnothing 18 \times 16 \times 105$ with carbide insert CCMT060204
- 1 toolholder $\varnothing 28 \times 16 \times 105$ with carbide insert CCMT09T304

Piezas de recambio - Spare parts

A	REF.	REF.	REF.
03	4003.CMM.25	4003.CCM.25	CMM25
04	4004.CMM.25	4004.CCM.25	CMM25
05	4005.CMM.25	4005.CCM.25	CMM25

Juego de cabezal de mandrinar micrométrico. DIN 228-A

Set of micrometric boring head. DIN 228-A



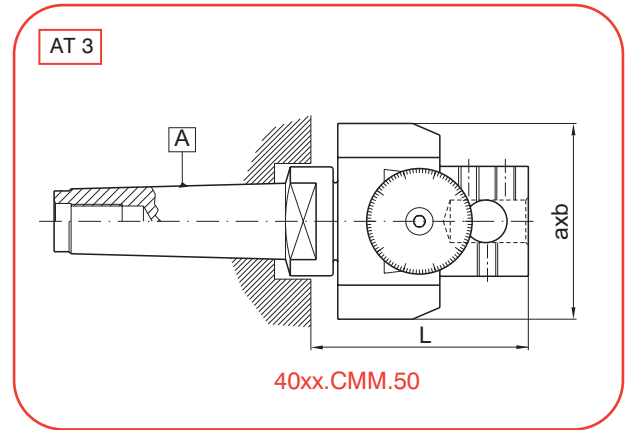
Utilización: Para mandrinar con precisión $\pm 0,01$ mm. y hasta $\varnothing 500$ mm.

Suministro: Un cabezal de mandrinar en un estuche de plástico + accesorios indicados abajo

Application: For precision boring $\pm 0,01$ mm. and up to $\varnothing 500$ mm.

Delivery: One boring head in a plastic box + A, B or C accessories indicated below.

40xx.JCM.50



A	COD	d	L	a x b
04	3540.JCM.50	30-500	115	114 x 160
05	3540.JCM.50	30-500	115	114 x 160

A	COD	d	L	a x b
06	3550.JCM.50	30-500	115	114 x 160

accesorios - accessories

<ul style="list-style-type: none"> - 2 cuchillas K29-122 (REF: MM20801) - 2 cuchillas K29-82 (REF: MM20803) - 1 portacuchillas $\varnothing 25$ x 100 cuadrado 8 (REF: MM15311) - 1 portacuchillas $\varnothing 25$ x 200 cuadrado 8 (REF: MM15312) - 1 portacuchillas $\varnothing 40$ x 100 cuadrado 12 (REF: MM15313) - 1 portacuchillas $\varnothing 40$ x 200 cuadrado 12 (REF: MM15314) - 1 portamandrilos $\varnothing 25$ (REF: MM15315) - 1 juego de llaves allen 	<ul style="list-style-type: none"> - 2 tool bit K29-122 (REF: MM20801) - 2 tool bit K29-82 (REF: MM20803) - 1 toolholder $\varnothing 25$ x 100 square 8 (REF: MM15311) - 1 toolholder $\varnothing 25$ x 200 square 8 (REF: MM15312) - 1 toolholder $\varnothing 40$ x 100 square 12 (REF: MM15313) - 1 toolholder $\varnothing 40$ x 200 square 12 (REF: MM15314) - 1 toolholder adaptor $\varnothing 25$ (REF: MM15315) - 1 allen keys set 				

Piezas de recambio - Spare parts

A	REF.	REF.	REF.
04	4004.CCM.50	4004.CCM.50	CMM50
05	4005.CCM.50	4005.CCM.50	CMM50
06	4006.CCM.50	4006.CCM.50	CMM50

Reductores alargados para Cono Morse. DIN 228-B

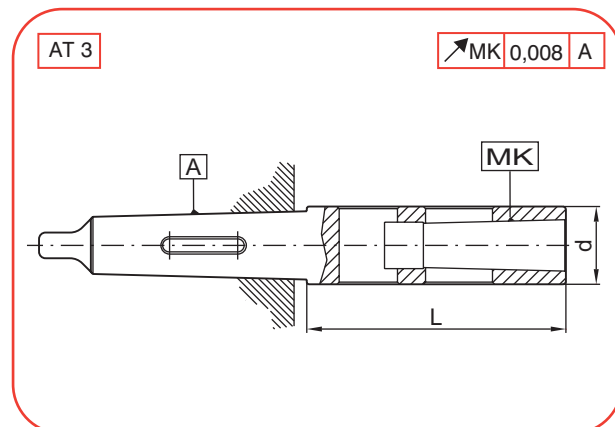
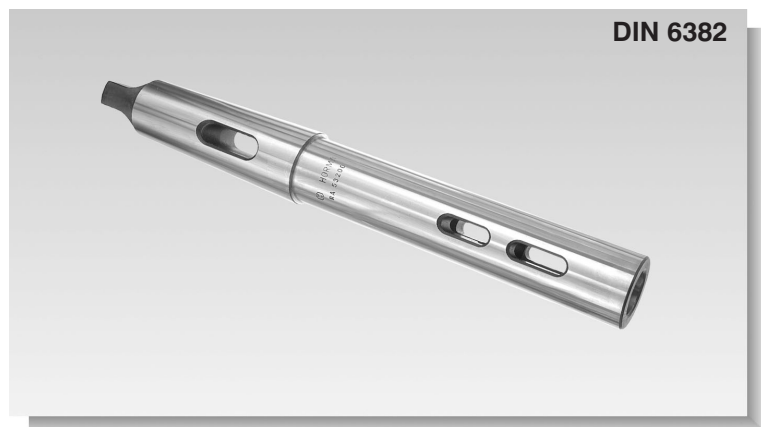
Long Adaptors for Morse Taper. DIN 228-B

Utilización: Para herramientas con cono morse y lengüeta de arrastre DIN228-B.

Application: For holding tools with morse taper and tang according to DIN228-B.



41xx.RLA



A	MK	COD	L	d
04	MORSE 3	4104.RLA.03.120	120	36
		4104.RLA.03.200	200	36
		4104.RLA.03.250	250	36
		4104.RLA.03.315	315	36
		3540.RLA.03.400	400	36
	MORSE 4	4104.RLA.04.140	140	48
		4104.RLA.04.250	250	48
		4104.RLA.04.315	315	48
		4104.RLA.04.400	400	48
05	MORSE 3	4105.RLA.03.120	120	36
		4105.RLA.03.200	200	36
		4105.RLA.03.250	250	36
		4105.RLA.03.315	315	36
		4105.RLA.03.400	400	36

A	MK	COD	L	d
05	MORSE 4	4105.RLA.04.140	140	48
		4105.RLA.04.250	250	48
		4105.RLA.04.315	315	48
		4105.RLA.04.400	400	48
	MORSE 5	4105.RLA.05.180	180	63
		4105.RLA.05.250	250	63
		4105.RLA.05.315	315	63
		4105.RLA.05.400	400	63
		4105.RLA.05.500	500	63
06	MORSE 4	4106.RLA.04.140	140	48
		4106.RLA.04.250	250	48
		4106.RLA.04.315	315	48
		4106.RLA.04.400	400	48
		4106.RLA.04.500	500	48
	MORSE 5	4106.RLA.05.500	500	63

Piezas de recambio - Spare parts

Portabrocas universal de precisión. DIN 228-B

Universal precision drill chuck. DIN 228-B



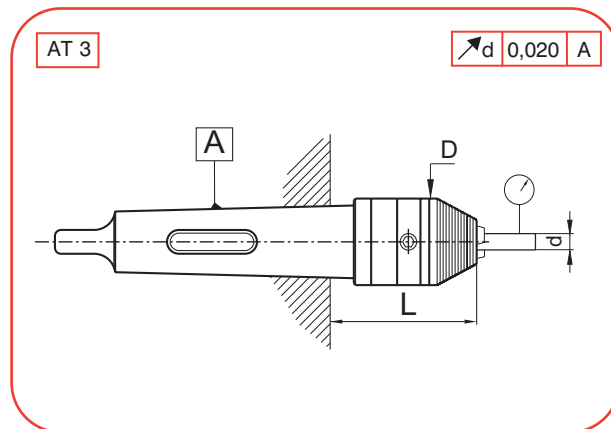
Utilización: Para la sujeción de herramientas con mango cilíndrico, para giro a la derecha o a la izquierda.

Suministro: Incluida la llave hexagonal.

Application: For clamping of tools with cylindrical shank, for right and left hand turn.

Delivery: Hexagonal key included.

41xx.PBG



A	COD	d	L	D
03	4103.PBG.13	1-13	77	50
	4103.PBG.16	3-16	77	57
04	4104.PBG.13	1-13	77	50
	4104.PBG.16	3-16	77	57

A	COD	d	L	D
05	4105.PBG.13	1-13	77	50
	4105.PBG.16	3-16	77	57

ESPECIFICACIONES TECNICAS

Ø1-13

Par de apriete: 50 Nm

Concentricidad MAXIMA = 0,03 mm

Fuerza máxima de apriete con la llave: 15 Nm.

Revoluciones máximas recomendadas: 7,000 rpm.

Ø3-16

Par de apriete: 45 Nm

Concentricidad MAXIMA = 0,03 mm

Fuerza máxima de apriete con la llave: 15 Nm.

Revoluciones máximas recomendadas: 7,000 rpm.

TECHNICAL DATA

Ø1-13

Holding force: 50 Nm

MAXIMUM Concentricity = 0,03 mm

Maximum permissible torque: 5 Nm.

Max. Recommended revolutions: 7,000 U/min

Ø3-16

Holding force: 45 Nm

MAXIMUM Concentricity = 0,03 mm

Maximum permissible torque: 5 Nm.

Max. Recommended revolutions: 7,000 U/min

Piezas de recambio - Spare parts



d	REF.
1-13	LALL06
3-16	LALL06

Estuche con aparato roscador con compensación. DIN 228-B

Tension and compression tapping head in box. DIN 228-B



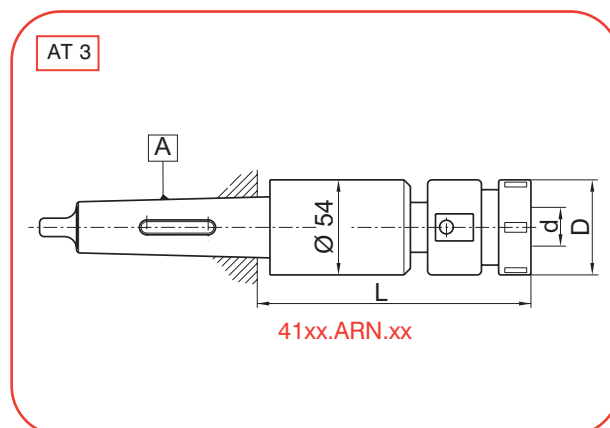
Utilización: Para roscar con compensación en tracción y compresión. Sujeción del macho mediante pinza RUBBER-FLEX 70xx.ARN.xxx (Ø 2,8-7, Ø7-13, Ø9-16, Ø16-23 mm.), y arrastre por el cuadrado del macho.

Suministro: Incluidas 2 pinzas y la llave.

Application: For tapping with compression and tension compensation. Tap clamping by RUBBER-FLEX 70xx.ARN.xxx (Ø 2,8-7, Ø7-13, Ø9-16, Ø16-23 mm.), and driving by tap's square.

Delivery: Included 2 collets and wrench.

41xx.JAR



A	COD	d	L	D
02	4102.JAR.16	M3-M16	140	42
	4102.JAR.30	M10-M30	152	59
03	4103.JAR.16	M3-M16	140	152
	4103.JAR.30	M10-M30	152	59

A	COD	d	L	D
04	4104.JAR.16	M3-M16	141	42
	4104.JAR.30	M10-M30	153	59
05	4105.JAR.16	M3-M16	141	42
	4105.JAR.30	M10-M30	153	59

Piezas de recambio - Spare parts

d	REF.	REF.	REF.	REF.	REF.	REF.	REF.
M3-M16	7016ARN100/160	74ARN16	T908038	CHD1608D	CHD1608I	LHWN16	41xx.ARN.16
M10-M30	7030ARN200/300	74ARN30	T910055	CHD2010D	CHD2010I	LHWN25	41xx.ARN.30

Barras de mandrinar. DIN 228-B

Boring bars. DIN 228-B



Utilización: Para todas las operaciones de mandrinado (agujeros pasantes o ciegos, mecanizado de desbaste o acabado)

D1: Capacidad de mandrinado con cuchilla inclinada.

D2: Capacidad de mandrinado con cuchilla recta.

Suministro: Las cuchillas de mandrinar no están incluidas.

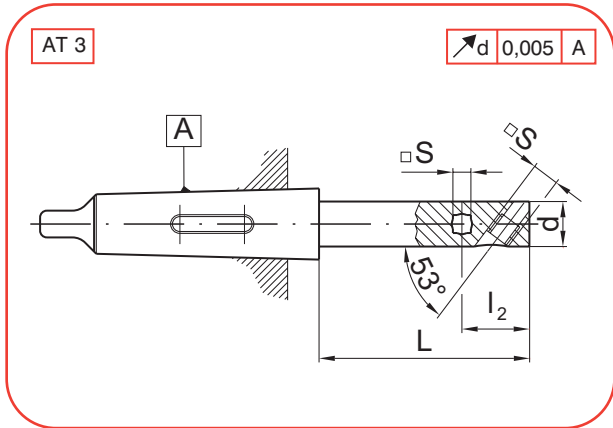
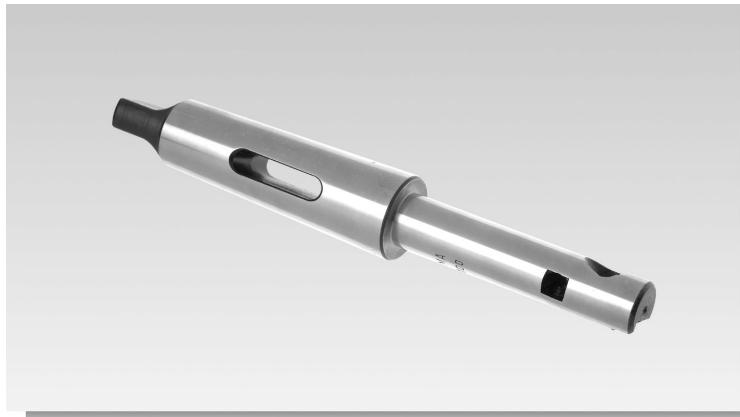
Application: For all boring operations (thru and blind holes, rough and finish machining).

D1: Boring capacity with inclined tool bits.

D2: Boring capacity with straight tool bits.

Delivery: Boring tool bits are not included

41xx.BMN



A	COD	d	L	D1	D2	s	I2
04	4104.BMN.20.100	20	100	23-27	23-33	8	30
	4104.BMN.20.160	20	160				
	4104.BMN.25.100	25	100	27-38	27-42	8	32
	4104.BMN.25.160	25	160				
	4104.BMN.25.200	25	200	34-50	34-48	10	40
	4104.BMN.32.100	32	100				
	4104.BMN.32.160	32	160	44-68	44-60	12	46
	4104.BMN.32.250	32	250				
	4104.BMN.40.100	40	100	55-85	55-75	16	58
	4104.BMN.40.160	40	160				
4104.BMN.40.250	40	250	69-105	69-95	20	60	
4104.BMN.50.160	50	160					
4104.BMN.50.250	50	250	87-130	87-120	25	78	
4104.BMN.50.315	50	315					
05	4105.BMN.20.100	20	100	23-27	23-33	8	30
	4105.BMN.20.160	20	160				
	4105.BMN.25.100	25	100	27-38	27-42	8	32
	4105.BMN.25.160	25	160				
	4105.BMN.25.200	25	200	34-50	34-48	10	40
	4105.BMN.32.100	32	100				
	4105.BMN.32.160	32	160	44-68	44-60	12	46
	4105.BMN.32.250	32	250				
4105.BMN.40.100	40	100	55-85	55-75	16	58	
4105.BMN.40.160	40	160					
4105.BMN.40.250	40	250	69-105	69-95	20	60	
4105.BMN.50.160	50	160					
4105.BMN.50.250	50	250	87-130	87-120	25	78	
4105.BMN.50.315	50	315					

A	COD	d	L	D1	D2	s	I2
05	4105.BMN.40.100	40	100	44-68	44-60	12	46
	4105.BMN.40.160	40	160				
	4105.BMN.40.250	40	250	55-85	55-75	16	58
	4105.BMN.50.160	50	160				
	4105.BMN.50.250	50	250	69-105	69-95	20	60
	4105.BMN.50.315	50	315				
	4105.BMN.63.160	63	160	87-130	87-120	25	78
	4105.BMN.63.250	63	250				
	4105.BMN.63.400	63	400	107-150	107-140	25	90
	4106.BMN.32.160	32	160				
4106.BMN.32.250	32	250	44-68	44-60	12	46	
4106.BMN.40.160	40	160					
4106.BMN.40.250	40	250	55-85	55-75	16	58	
4106.BMN.40.315	40	315					
4106.BMN.50.160	50	160	69-105	69-95	20	60	
4106.BMN.50.250	50	250					
4106.BMN.50.315	50	315	87-130	87-120	25	78	
4106.BMN.63.160	63	160					
4106.BMN.63.400	63	400	107-150	107-140	25	90	
4106.BMN.80.400	80	400					
4106.BMN.99.400	100	400					

Piezas de recambio - Spare parts

d	REF.	REF.
20	T410004 (M10x4)	T306006 (M6x6)
25	T410004 (M10x4)	T306006 (M6x6)
32	T412005 (M12x5)	T308008 (M8x8)
40	T414006 (M14x6)	T310012 (M10X12)
50	T420008 (M20x8)	T312012 (M12x12)
63	T425009 (M25x9)	T316016 (M16x16)
80	T430009 (M30x9)	T316020 (M16X20)
100	T430009 (M30x9)	T316025 (M16x25)

Cabezas de mandrinar rectos. DIN 228-B

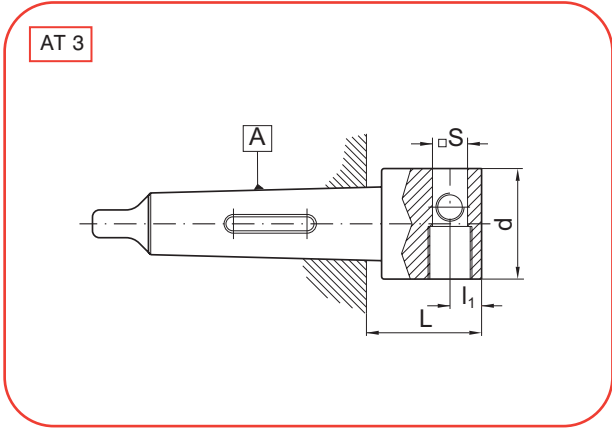
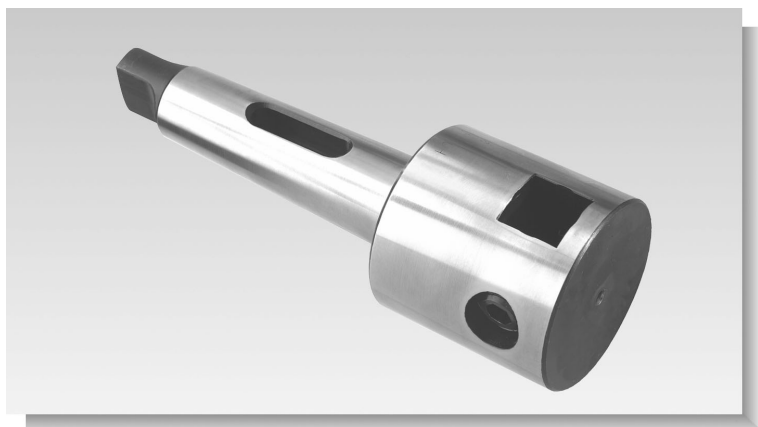
Straight boring heads. DIN 228-B



Utilización: Para operaciones de mandrinado.
Suministro: Incluidos los tornillos de fijación y regulación.

Application: For boring operations.
Delivery: Regulation and clamping screws are included.

41xx.CMR



A	COD	d	L	l1	S
04	4104.CMR.63	63	63	18	20
	4104.CMR.80	80	80	21	25
	4104.CMR.96	100	47	23	25
	4104.CMR.97	125	47	23	25
05	4105.CMR.63	63	63	18	20
	4105.CMR.80	80	80	21	25
	4105.CMR.96	100	100	23	25
	4105.CMR.97	125	100	23	25

A	COD	d	L	l1	S
05	4106.CMR.80	80	70	21	25
	4106.CMR.96	100	90	23	25
	4106.CMR.97	125	100	23	25
	4106.CMR.98	160	125	23	25

Piezas de recambio - Spare parts

d	REF.	REF.
63	T425009 (M25x9)	T316016 (M16x16)
80	T430009 (M30x9)	T316020 (M16x20)
100	T430009 (M30x9)	T316025 (M16x25)
125	T430009 (M30x9)	T316030 (M16x30)
160	T430009 (M30x9)	T316030 (M16x30)

Juego de cabezal de mandrinar micrométrico. DIN 228-B

Set of micrometric boring head. DIN 228-B



Utilización: Para mandrinar con precisión $\pm 0,01$ mm. y hasta $\varnothing 250$ mm.

Suministro: Un cabezal de mandrinar en un estuche de plástico + accesorios A , B ó C

Accesorios .A - Indicados abajo.

Accesorios .C - Indicados abajo.

Accesorios .B - Accesorios .A + .C

Application: For precision boring $\pm 0,01$ mm. and up to $\varnothing 250$ mm.

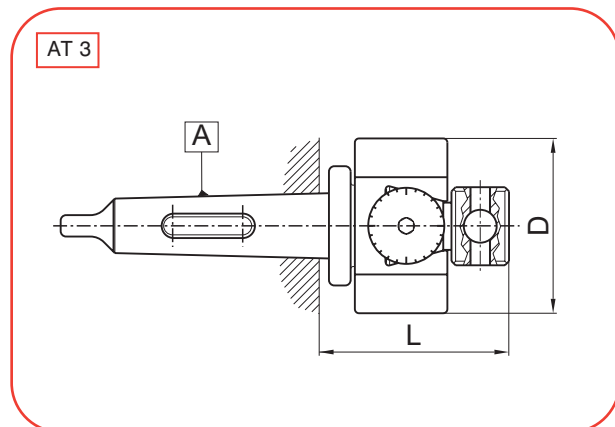
Delivery: One boring head in a plastic box + A , B or C accessories.

Accessories .A - Indicated below.

Accessories .C - Indicated below.

Accessories .B - Accessories .A + .C

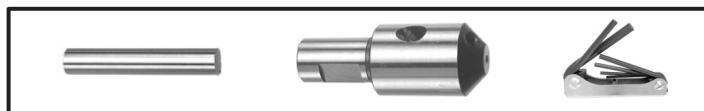
41xx.JCM.25.x



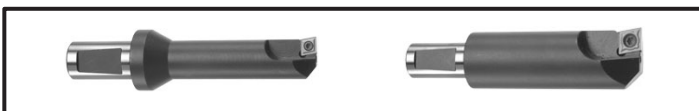
A	COD	d	L	D
03	4103.JCM.25.A	20-250	90	85
	4103.JCM.25.B			
	4103.JCM.25.C			
04	4104.JCM.25.A	20-250	90	85
	4104.JCM.25.B			
	4104.JCM.25.C			

A	COD	d	L	D
05	4105.JCM.25.A	20-250	90	85
	4105.JCM.25.B			
	4105.JCM.25.C			

accesorios .A - accessories .A



accesorios .C - accessories .C



La opción .A contiene:

- 1 cuchilla de acero rápido de $\varnothing 6$ (REF: MM15401)
- 1 cuchilla de acero rápido de $\varnothing 8$ (REF: MM15402)
- 1 cuchilla de perfil constante de mango $\varnothing 10$ (REF: MM15403)
- 1 portacuchillas $\varnothing 10$ (REF: MM15301)
- 1 portacuchillas $\varnothing 8 \times 25 \times 20$ (REF: MM15302)
- 1 portacuchillas $\varnothing 8 \times 25 \times 40$ (REF: MM15303)
- 1 portacuchillas $\varnothing 6 \times 16 \times 75$ (REF: MM15304)
- 1 portacuchillas $\varnothing 8 \times 25 \times 75$ (REF: MM15305)
- 1 juego de llaves allen

Option A contains:

- 1 high speed steel tool bit $\varnothing 6$ (REF: MM15401)
- 1 high speed steel tool bit $\varnothing 8$ (REF: MM15402)
- 1 constant profile tool bit $\varnothing 10$ shank (REF: MM15403)
- 1 toolholder $\varnothing 10$ (REF: MM15301)
- 1 toolholder $\varnothing 8 \times 25 \times 20$ (REF: MM15302)
- 1 toolholder $\varnothing 8 \times 25 \times 40$ (REF: MM15303)
- 1 toolholder $\varnothing 6 \times 16 \times 75$ (REF: MM15304)
- 1 toolholder $\varnothing 8 \times 25 \times 75$ (REF: MM15305)
- 1 allen keys set

La opción .C contiene:

- 1 portacuchillas $\varnothing 18 \times 16 \times 105$ con plaquita perdida CCMT060204
- 1 portacuchillas $\varnothing 28 \times 16 \times 105$ con plaquita perdida CCMT09T304

Option .C contains:

- 1 toolholder $\varnothing 18 \times 16 \times 105$ with carbide insert CCMT060204
- 1 toolholder $\varnothing 28 \times 16 \times 105$ with carbide insert CCMT09T304

Piezas de recambio - Spare parts



A	REF.	REF.	REF.
03	4103.CMM.25	4103.CCM.25	CMM25
04	4104.CMM.25	4104.CCM.25	CMM25
05	4105.CMM.25	4105.CCM.25	CMM25

Juego de cabezal de mandrinar micrométrico. DIN 228-B

Set of micrometric boring head. DIN 228-B

Utilización: Para mandrinar con precisión $\pm 0,01$ mm. y hasta $\varnothing 500$ mm.

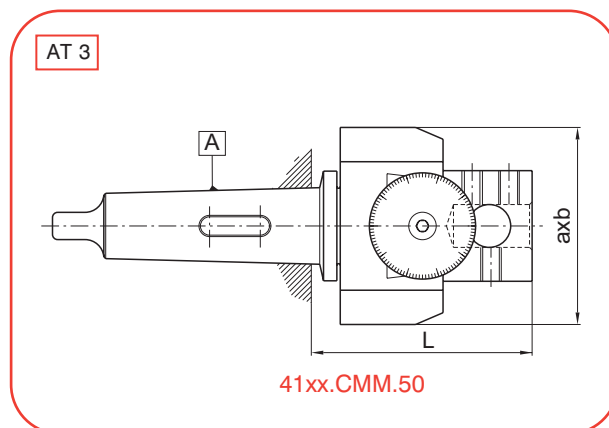
Suministro: Un cabezal de mandrinar en un estuche de plástico + accesorios indicados abajo

Application: For precision boring $\pm 0,01$ mm. and up to $\varnothing 500$ mm.

Delivery: One boring head in a plastic box + A, B or C accessories indicated below.







41xx.JCM.50






A	COD	d	L	a x b
04	4104.JCM.50	30-500	108	114 x 160

A	COD	d	L	a x b
05	4105.JCM.50	30-500	108	114 x 160

accesorios - accessories

   	<ul style="list-style-type: none"> - 2 cuchillas K29-122 (REF: MM20801) - 2 cuchillas K29-82 (REF: MM20803) - 1 portacuchillas $\varnothing 25$ x 100 cuadrado 8 (REF: MM15311) - 1 portacuchillas $\varnothing 25$ x 200 cuadrado 8 (REF: MM15312) - 1 portacuchillas $\varnothing 40$ x 100 cuadrado 12 (REF: MM15313) - 1 portacuchillas $\varnothing 40$ x 200 cuadrado 12 (REF: MM15314) - 1 portamandrilos $\varnothing 25$ (REF: MM15315) - 1 juego de llaves allen 	<ul style="list-style-type: none"> - 2 tool bit K29-122 (REF: MM20801) - 2 tool bit K29-82 (REF: MM20803) - 1 toolholder $\varnothing 25$ x 100 square 8 (REF: MM15311) - 1 toolholder $\varnothing 25$ x 200 square 8 (REF: MM15312) - 1 toolholder $\varnothing 40$ x 100 square 12 (REF: MM15313) - 1 toolholder $\varnothing 40$ x 200 square 12 (REF: MM15314) - 1 toolholder adaptor $\varnothing 25$ (REF: MM15315) - 1 allen keys set
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Piezas de recambio - Spare parts

  	<table border="1"> <thead> <tr> <th>A</th> <th>REF.</th> <th>REF.</th> <th>REF.</th> </tr> </thead> <tbody> <tr> <td>04</td> <td>4104.CMM.50</td> <td>4104.CCM.50</td> <td>CMM50</td> </tr> <tr> <td>05</td> <td>4105.CMM.50</td> <td>4105.CCM.50</td> <td>CMM50</td> </tr> </tbody> </table>	A	REF.	REF.	REF.	04	4104.CMM.50	4104.CCM.50	CMM50	05	4105.CMM.50	4105.CCM.50	CMM50
A	REF.	REF.	REF.										
04	4104.CMM.50	4104.CCM.50	CMM50										
05	4105.CMM.50	4105.CCM.50	CMM50										