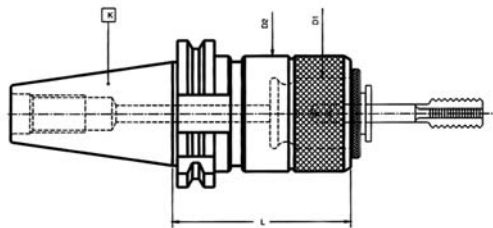




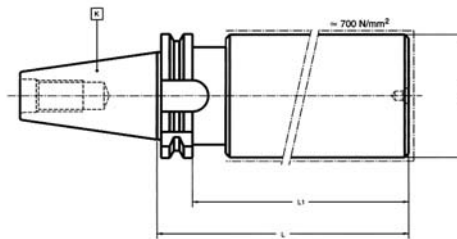
PORTAMACHOS RÍGIDO DE CAMBIO RÁPIDO

Exclusivo para máquinas con control de roscado rígido



Ref.	Código Forma AD	Código Forma AD+B	K DIN 69871	CAP.	D1	L	D2
2105200	01933530202	01933530202	40	M3-M12(M16)	19	60	32
2105201	01933530203	01933530203	40	M8-M20(M30)	31	80	50
2105202	01933530402	01933530402	50	M3-M12(M16)	19	60	32
2105203	01933530403	01933530403	50	M8-M20(M30)	31	80	50
2105204	01933530404	01933530404	50	M14-M33(M48)	48	110	72

PORTAHERRAMIENTAS SEMIACABADOS



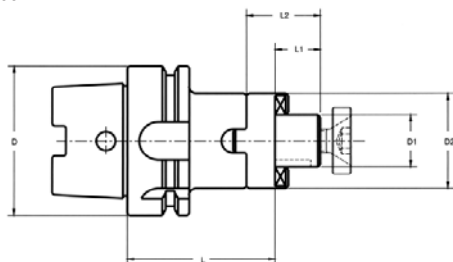
Ref.	Código	K DIN 69871	D	L	L1
2105300	02013020151	30	45	100	81
2105301	02013020273	40	62	160	141
2105302	02013020275	40	62	250	231
2105303	02013020493	50	90	160	141
2105304	02013020495	50	90	250	231

MANDRINOS PORTAFRESAS DIN 69893

PORTAFRESAS COMBINADO

Para fresas con chavetero longitudinal DIN 138

DIN 69882-2

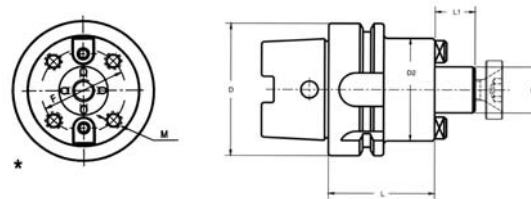


Desviación circular entre el cono exterior y D1 ≤ 0,006

Ref.	Código	D HSK-A	D1h6	L	L1	L2	D2
2105400	00114020130	32	16	55	17	27	32
2105401	00114020140	32	22	55	19	31	40
2105402	00114020150	32	27	65	21	33	48
2105403	00114020230	40	16	50	17	27	32
2105404	00114020240	40	22	55	19	31	40
2105405	00114020250	40	27	65	21	33	48
2105406	00114020330	50	16	50	17	27	32
2105407	00114020340	50	22	50	19	31	40
2105408	00114020350	50	27	65	21	33	48
2105409	00114020360	50	32	65	24	38	58
2105410	00114020430	63	16	60	17	27	32
2105411	00114020440	63	22	60	19	31	40
2105412	00114020450	63	27	60	21	33	48
2105413	00114020460	63	32	60	24	38	58
2105414	00114020470	63	40	70	27	41	70
2105415	00114020530	80	16	60	17	27	32
2105416	00114020540	80	22	60	19	31	40
2105417	00114020550	80	27	60	21	33	48
2105418	00114020560	80	32	60	24	38	58
2105419	00114020570	80	40	70	27	41	70
2105420	00114020630	100	16	60	17	37	32
2105421	00114020640	100	22	60	19	31	40
2105422	00114020650	100	27	60	21	33	48
2105423	00114020660	100	32	60	24	38	58
2105424	00114020670	100	40	70	27	41	70
2105425	00114020680	100	50	80	30	46	90

PORTAFRESAS CON CHAVETAS FRONTALES Y REFRIGERACIÓN INTERNA

Para fresas con chavetero transversal DIN 138



Desviación circular entre el cono exterior y D1 ≤ 0,006

Ref.	Código	D HSK-A	D1h6	L	L1	M	D2	F
2105500	00114350330	50	16	50	17	-	40	-
2105501	00114350340	50	22	60	19	-	50	-
2105502	00114350350	50	27	60	21	-	60	-
2105503	00114350430	63	16	50	17	-	40	-
2105504	00114350440	63	22	50	19	-	50	-
2105505	00114350450	63	27	60	21	-	60	-
2105506	00114350460	63	32	60	24	-	70	-
2105507	00114330470	*63	40	60	27	M-12	89	66,7
2105508	00114350540	80	22	50	19	-	50	-
2105509	00114350550	80	27	50	21	-	60	-
2105510	00114350560	80	32	60	24	-	70	-
2105511	00114330570	*80	40	60	27	M-12	89	66,7
2105512	00114350640	100	22	50	19	M-12	50	-
2105513	00114350650	100	27	50	21	-	60	-
2105514	00114350660	100	32	50	24	-	70	-
2105515	00114330670	*100	40	60	27	M-12	89	66,7
2105516	00114330690	*1000	60	70	40	M-16	129	101,6

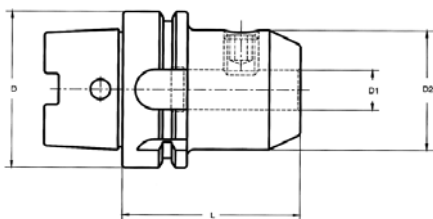
*Con cuatro orificios roscados adicionales para el amarre según DIN 2079.





PORTAFRESAS WELDON

Para fresas de mango cilíndrico con encaste DIN 1835 Forma B y DIN 65355 Forma HB
DIN 69882-5

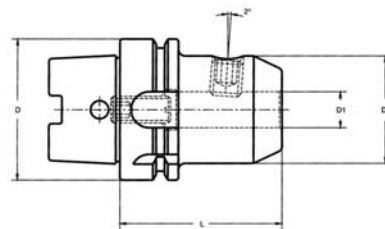


Desviación circular entre el cono exterior y D1 ≤0,003

Ref.	Código	D HSK-A	D1	tol.	L	D2
2105600	01214011106	32	6		60	25
2105601	01214011108	32	8		60	28
2105602	01214011110	32	10		65	35
2105603	01214011206	40	6		60	25
2105604	01214011208	40	8		60	28
2105605	01214011210	40	10		60	35
2105606	01214011212	40	12		70	42
2105607	01214011214	40	14		75	44
2105608	01214011216	40	16	+0.005	75	48
2105609	01214011306	50	6		65	25
2105610	01214011308	50	8		65	28
2105611	01214011310	50	10		80	35
2105612	01214011312	50	12		80	42
2105613	01214011314	50	14		80	44
2105614	01214011316	50	16		80	48
2105615	01214011318	50	18		80	50
2105616	01214011320	50	20	+0.007	65	52
2105617	01214011406	63	6		65	25
2105618	01214011408	63	8		65	28
2105619	01214011410	63	10		65	35
2105620	01214011412	63	12	+0.005	80	42
2105621	01214011414	63	14		80	44
2105622	01214011416	63	16		80	48
2105623	01214011418	63	18		80	50
2105624	01214011420	63	20		80	52
2105625	01214011425	63	25	+0.007	110	65
2105626	01214011432	63	32		110	72
2105627	01214011506	80	6		80	25
2105628	01214011508	80	8		80	28
2105629	01214011510	80	10		80	35
2105630	01214011512	80	12	+0.005	80	42
2105631	01214011514	80	14		80	44
2105632	01214011516	80	16		100	48
2105633	01214011518	80	18		100	50
2105634	01214011520	80	20		100	52
2105635	01214011525	80	25	+0.007	100	65
2105636	01214011532	80	32		110	72
2105637	01214011606	100	6		80	25
2105638	01214011608	100	8		80	28
2105639	01214011610	100	10		80	35
2105640	01214011612	100	12	+0.005	80	42
2105641	01214011614	100	14		80	44
2105642	01214011616	100	16		100	48
2105643	01214011618	100	18		100	50
2105644	01214011620	100	20		100	52
2105645	01214011625	100	25	+0.007	100	65
2105646	01214011632	100	32		100	72
2105647	01214011640	100	40	+0.009	110	80
2105648	01214011650	100	50		130	98

PORTAFRESAS WHISTLE-NOTCH

Para fresas con mango cilíndrico con encaste DIN 1835 Forma B y/o plano inclinado DIN 1835-Forma E.
DIN 69882-5

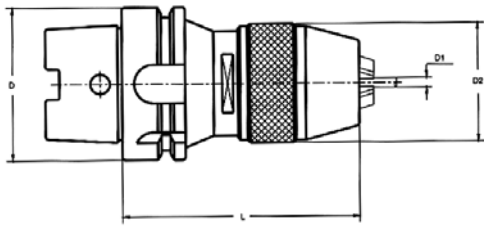


Desviación circular entre el cono exterior y D1 ≤0,003

Ref.	Código	D HSK-A	D1	tol.	L	D2	G
2105700	01214021106	32	6		80	25	M-5
2105701	01214021108	32	8		80	28	M-6
2105702	01214021110	32	10		80	35	M-8
2105703	01214021206	40	6		80	25	M-5
2105704	01214021208	40	8		80	28	M-6
2105705	01214021210	40	10		80	35	M-8
2105706	01214021212	40	12		90	42	M-10
2105707	01214021214	40	14		90	44	M-10
2105708	01214021216	40	16	+0.005	90	48	M-12
2105709	01214021306	50	6		80	25	M-5
2105710	01214021308	50	8		80	28	M-6
2105711	01214021310	50	10		80	35	M-8
2105712	01214021312	50	12		90	42	M-10
2105713	01214021314	50	14		90	44	M-10
2105714	01214021316	50	16		90	48	M-12
2105715	01214021318	50	18		90	50	M-12
2105716	01214021320	50	20	+0.007	100	52	M-16
2105717	01214021406	63	6		80	25	M-5
2105718	01214021408	63	8		80	28	M-6
2105719	01214021410	63	10		80	35	M-8
2105720	01214021412	63	12	+0.005	90	42	M-10
2105721	01214021414	63	14		90	44	M-10
2105722	01214021416	63	16		100	48	M-12
2105723	01214021418	63	18		100	50	M-12
2105724	01214021420	63	20		100	52	M-16
2105725	01214021425	63	25	+0.007	110	65	M-20
2105726	01214021432	63	32		110	72	M-20
2105727	01214021506	80	6		90	25	M-5
2105728	01214021508	80	8		90	28	M-6
2105729	01214021510	80	10		90	35	M-8
2105730	01214021512	80	12	+0.005	100	42	M-10
2105731	01214021514	80	14		100	44	M-10
2105732	01214021516	80	16		100	48	M-12
2105733	01214021518	80	18		100	50	M-12
2105734	01214021520	80	20		110	52	M-16
2105735	01214021525	80	25	+0.007	110	65	M-20
2105736	01214021532	80	32		120	72	M-20
2105737	01214021606	100	6		90	25	M-5
2105738	01214021608	100	8		90	28	M-6
2105739	01214021610	100	10		90	35	M-8
2105740	01214021612	100	12	+0.005	100	42	M-10
2105741	01214021614	100	14		100	44	M-10
2105742	01214021616	100	16		100	48	M-12
2105743	01214021618	100	18		100	50	M-12
2105744	01214021620	100	20		110	52	M-16
2105745	01214021625	100	25	+0.007	120	65	M-20
2105746	01214021632	100	32		120	72	M-20



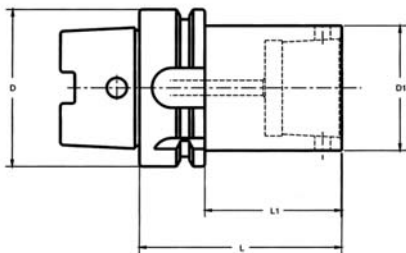
PORTABROCAS INTEGRAL



Ref.	Código	D HSK-A	D1	L	D2
2105800	01214091313	50	1-13	120	48
2105801	01214091413	63	1-13	120	48
2105802	01214091416	63	3-16	131	54
2105803	01214091513	80	1-13	124	48
2105804	01214091516	80	3-16	134	54
2105805	01214091616	100	3-16	134	54

REDUCTORES Y PROLONGADORES HSK A HSK

Preparados para el sistema de apriete MAPAL

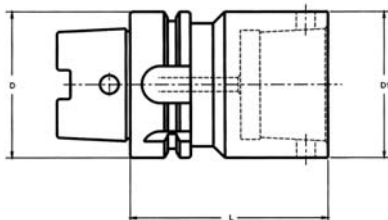


Desviación circular entre el cono exterior y cono interior $D1 \leq 0,002$

Ref.	Código	D HSK-A	D1 HSK-A	$L_{\pm 0,05}$	L1
2105900	00314140403	63	50	80	54
2105901	00314140604	100	63	90	61
2105902	00314140605	100	80	100	71

REDUCTORES Y PROLONGADORES HSK A HSK

Preparados para el sistema de apriete MAPAL

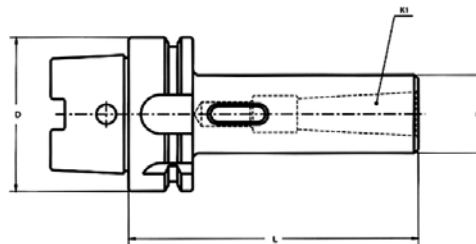


Desviación circular entre el cono exterior y cono interior $D1 \leq 0,002$

Ref.	Código	D HSK-A	D1 HSK-A	$L_{\pm 0,05}$	L1
2106000	00314140303	50	50	80	54
2106001	00314140404	63	63	85	54
2106002	00314140505	80	80	100	74
2106003	00314140606	100	100	140	111

REDUCTORES A MORSE

Para herramientas con lengüeta DIN 228-B

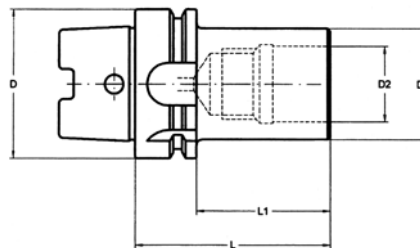


Desviación circular entre el cono exterior y $K1 \leq 0,008$

Ref.	Código	D HSK-A	K1	L	D1
2106100	00314110321	50	1	100	25
2106101	00314110331	50	2	120	32
2106102	00314110341	50	3	140	40
2106103	00314110421	63	1	100	35
2106104	00314110431	63	2	120	32
2106105	00314110441	63	3	140	40
2106106	00314110451	63	4	160	48
2106107	00314110521	80	1	110	35
2106108	00314110531	80	2	120	32
2106109	00314110541	80	3	140	40
2106110	00314110551	80	4	170	48
2106111	00314110561	80	5	200	63
2106112	00314110631	100	2	120	32
2106113	00314110641	100	3	150	40
2106114	00314110651	100	4	170	48
2106115	00314110661	100	5	200	63

ADAPTADORES PARA UTILLAJE MODULAR

Intercambiable con el sistema C.O.



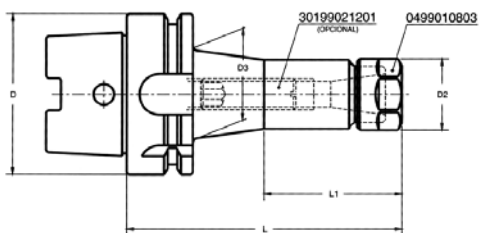
Desviación circular entre el cono exterior y $D2 \leq 0,003$

Ref.	Código	D HSK-A	D1	D2H5	L	L1
2106200	00314540306	50	46	30	75	49
2106201	00314540406	63	46	30	80	54
2106202	00314540407	63	63	46	130	-
2106203	00314540506	80	46	40	90	64
2106204	00314540507	80	63	46	105	79
2106205	00314540606	100	46	30	90	61
2106206	00314540607	100	63	46	110	81
2106207	00314540608	100	90	46	110	81



PORTAPINZAS DIN 6499 (TIPO ER)

Para herramientas con mango cilíndrico liso DIN-1835A
DIN 69882-6

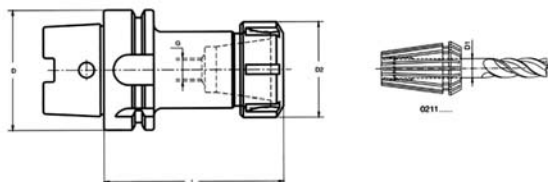


Desviación circular entre el cono exterior y el alojamiento de la pinza $\leq 0,003$

Ref.	Código	D HSK-A	Tamaño	D1	L	D2	D3	L1	G
2106300	00414060103	32	(ER16)	0,5-10	80	28	-	-	M-8
2106301	00414060203	40	(ER16)	0,5-10	80	28	-	-	M-10
2106302	00414060313	50	(ER16)	0,5-10	100	28	-	-	M-10
2106303	00414060403	63	(ER16)	0,5-10	80	28	-	-	M-10
2106304	00414060413	63	(ER16)	0,5-10	100	28	-	-	M-10
2106305	00414060433	63	(ER16)	0,5-10	160	28	45	85	M-10
2106306	00414060513	80	(ER16)	0,5-10	100	28	-	-	M-10
2106307	00414060533	80	(ER16)	0,5-10	160	28	45	85	M-12
2106308	00414060613	100	(ER16)	0,5-10	100	28	-	-	M-12
2106309	00414060633	100	(ER16)	0,5-10	160	28	60	85	M-12

PORTAPINZAS DIN 6499 (TIPO ER)

Para herramientas con mango cilíndrico liso DIN-1835A
DIN 69882-6

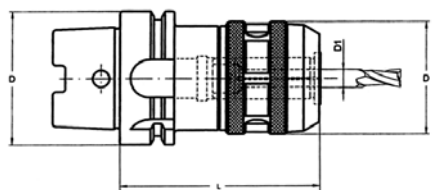


Desviación circular entre el cono exterior y el alojamiento de la pinza $\leq 0,003$

Ref.	Código	D HSK-A	Tamaño	D1	L	D2	G
2106400	00414060205	40	(ER25)	1-16	80	42	M-10
2106401	00414060206	40	(ER25)	2-20	100	50	M-16
2106402	00414060305	50	(ER25)	1-16	80	42	M-10
2106403	00414060306	50	(ER25)	2-20	100	50	M-16
2106404	00414060405	63	(ER25)	1-16	80	42	M-10
2106405	00414060406	63	(ER25)	2-20	100	50	M-16
2106406	00414060407	63	(ER25)	3-26	120	63	M-16
2106407	00414060506	80	(ER25)	2-20	100	50	M-16
2106408	00414060507	80	(ER25)	3-26	120	63	M-16
2106409	00414060606	100	(ER25)	2-20	100	50	M-16
2106410	00414060607	100	(ER25)	3-26	120	63	M-16

PORTAPINZAS DE GRAN APRIETE

Para herramientas con mango cilíndrico

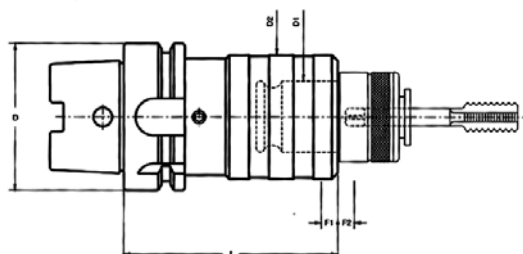


Desviación circular entre el cono exterior y el alojamiento de la pinza $\leq 0,003$

Ref.	Código	D HSK-A	D1máx.	L	D
2106500	00414050404	63	20	110	54
2106501	00414050406	63	32	130	72
2106502	00414050506	80	32	135	72
2106503	00414050606	100	32	140	72

PORTAMACHOS DE CAMBIO RÁPIDO

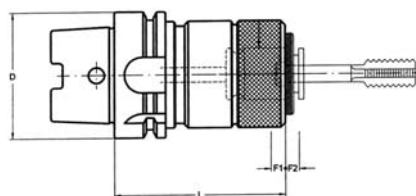
Doble compensación axial



Ref.	Código	D HSK-A	CAP.	D1	L	D2	F1	F2
2106600	01914520302	50	M3-M12(M16)	19	116	36	7,5	7,5
2106601	01914520402	63	M3-M12(M16)	19	112	36	7,5	7,5
2106602	01914520403	63	M8-M20(M30)	31	145	53	12,5	12,5
2106603	01914520502	80	M3-M12(M16)	19	115	36	7,5	7,5
2106604	01914520503	80	M8-M20(M30)	31	145	53	12,5	12,5
2106605	01914520602	100	M3-M12(M16)	19	130	36	7,5	7,5
2106606	01914520603	100	M8-M20(M30)	31	153	53	12,5	12,5
2106607	01914520604	100	M14-M33(M48)	48	215	78	20	20

PORTAMACHO RÍGIDO DE CAMBIO RÁPIDO

Exclusivo para máquina de control de roscado rígido

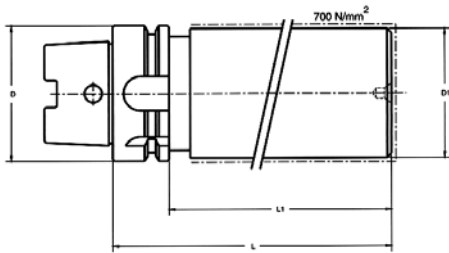


Ref.	Código	D HSK-A	CAP.	D1	L	D2
2106700	01914530402	19	M3-M12(M16)	19	67	32
2106701	01914530403	31	M8-M20(M30)	31	87	50
2106702	01914530502	19	M3-M12(M16)	19	67	32
2106703	01914530503	31	M8-M20(M30)	31	87	50
2106704	01914530602	19	M3-M12(M16)	19	70	32
2106705	01914530603	31	M8-M20(M30)	31	90	50
2106706	01914530604	48	M14-M33(M48)	48	116	72





PORTAHERRAMIENTAS SEMIACABADOS



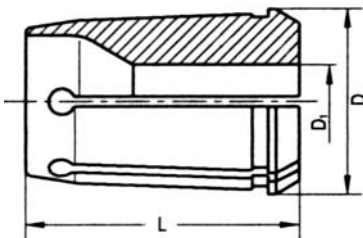
Ref.	Código	D HSK-A	D1	L	L1
2106800	01914530402	40	40	100	80
2106801	01914530403	50	50	100	74
2106802	01914530502	50	63	160	134
2106803	01914530503	63	63	100	74
2106804	01914530602	63	80	160	134
2106805	01914530603	80	80	160	134
2106806	01914530604	100	100	160	131

PINZAS

PINZAS PARA PORTAPINZAS DIN 6388

Sujeción de mangos cilíndricos lisos

Forma A

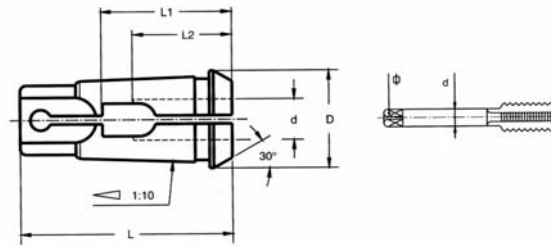


Ref.	Código	D	L	D1	Campo
2106900	0020101	11,5	21	1 2/3-4-5-6	-0,5
2106901	0020102	17,2	30	2 3-4-5-6-7-8-9-10	-0,5
2106902	0020103	25,5	40	2 3-4-5-6-7-8-9-10-11-12-13-14-15-16	-0,5
2106903	0020104	29,8	45	2 3-4-5-6-7-8-9-10-11-12-13-14-15-16	-0,5
2106904	0020105	35,05	52	2 3-4-5-6-7-8-9-10	-0,5
2106905	0020106	43,7	60	4 5-6-7-8-9-10	-0,5
2106906	0020107	52,5	68	4 5-6-7-8-9-10-11-12-13-14-15	-0,5

PINZAS PARA PORTAPINZAS DIN 6388

Sujeción de mangos cilíndricos lisos

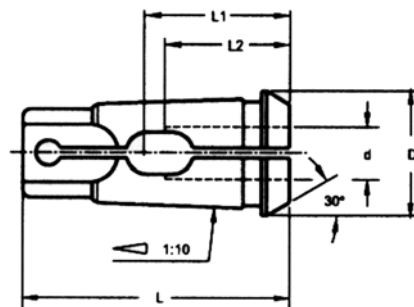
Forma B



Ref.	Código	D	L	D1	Campo
2107000	0020403	25,5	40	5-55 6-65-7-75-8-85	-0,5
2107001	0020404	29,8	45	6-65-7-75-8-85 9-95-10-105-11-115	-0,5
2107002	0020405	35,05	52	6-65-7-75-8-85-9-95 10-105-11-115	-0,5
2107003	0020406	43,7	60	6-65-7-75-8-85-9-95 10-105-11-115	-0,5

PINZAS PARA PORTAMACHOS

Sujeción de mangos cilíndricos DIN 10



Ref.	Código	CAP.	D	L
2107100	0021903	M3-M16	25,4	52
2107101	0021904	M8-M28	29,8	63

Material: Acero de muelles Templado
Dureza: Rc 57 + 60 HRC

