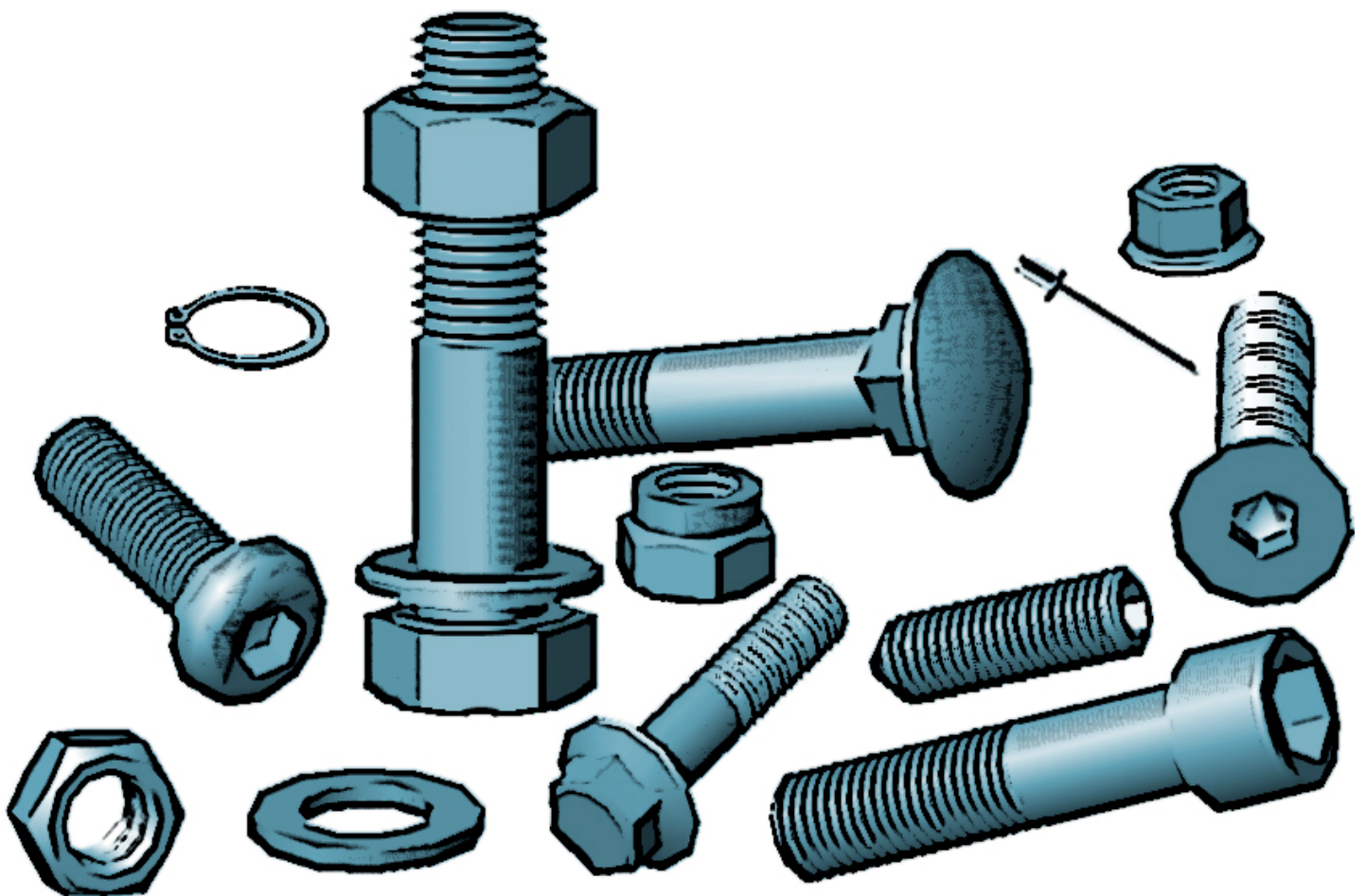




# TARIFA 2005



C/ Argenters, Talleres 1, Nave 2. – Sta. Perpetua de la Mogoda 08130 – Barcelona - España

Tel: (+34) 93 729 09 12; Fax (+34) 93 718 20 33 – [fastener@fasteners-dist.com](mailto:fastener@fasteners-dist.com) – [www.fasteners-dist.com](http://www.fasteners-dist.com) -

CERTIFICADO Nº: 04/1225



**Certificado de Aprobación**  
**Otorgado a**

**FASTENERS DISTRIBUCION, S.L.**

C/Argenters, Talleres 1 nave 2 08130 SANTA PERPETUA MOGODA BARCELONA

D. Qualitas Certificación, S.A., certifica que el Sistema de Gestión de la empresa citada, ha sido auditada y encontrada conforme con las exigencias de la norma:

**UNE-EN-ISO 9001/00**

Este Sistema de Gestión se certifica para su aplicación a:

**FABRICACIÓN Y COMERCIALIZACIÓN DE TORNILLERÍA Y AFINES**

**Fecha de la Certificación:** 28/07/2004

Este Certificado tiene un periodo de validez de 3 años, a partir de la fecha abajo indicada y siempre que se mantengan las condiciones de aplicación del Sistema de Gestión.

**Fecha de emisión:**  
28/07/2004

**Fecha inicio de validez:**  
28/07/2004

**Firma**  
Por D. Qualitas Certificación, S.A.

Javier Bañeres 

  
**ENAC**  
CERTIFICACIÓN  
Nº17/C-SC019



Tel: 93.729.09.12  
Fax: 93.718.20.33  
www.fasteners-dist.com

## CONDICIONES GENERALES DE VENTA

### VIGENCIA

Esta tarifa anula y sustituye a todas las anteriores y se aplicará a partir del **2005**.

### PORTES

Se enviarán a portes pagados todos aquellos pedidos cuyo total neto sea superior a:

- 150€**, a Barcelona y extrarradio
- 300€**, al resto de Catalunya
- 630€**, al resto de España

por medio de la agencia de transportes que tenemos concertada. Si es inferior al importe antes indicado, se enviará la mercancía a portes debidos o pagados con cargo en factura. En caso de que el cliente desee que se le envíe la mercancía por una agencia distinta a la nuestra, los portes correrán a su cargo.

Los pedidos inferiores a **100 €** sufrirán un recargo de **5 €** en concepto de gastos de manipulación.

Los transportes urgentes serán a cargo del cliente y bajo petición expresa del mismo.

En los envíos realizados con europalets, se facturarán **9 € por cada unidad**.

### RESTOS DE PEDIDO

Aquellos artículos que no sean suministrados por falta de existencias temporales, se considerarán anulados, salvo indicación expresa del cliente.

### I.V.A.

En las facturas comerciales se aplicará el I.V.A. correspondiente según ley vigente.

### PAGO

Las condiciones de pago serán:

**CONTADO**, Giro domiciliado a 15 días fecha factura

**1% de dto.**

**GIRO**, domiciliado (máximo 60 días fecha factura y día vto.)

**NETO.**

### RECLAMACIONES

No se admitirá ninguna reclamación transcurridos 15 días de la fecha de envío.

En el caso de que se produzca una devolución, Fasteners Distribución, S.L. indicará el medio de transporte por el cual se enviará la mercancía.

### RECUBRIMIENTOS




Además de los productos tarifados, podemos suministrar cualquiera de nuestros artículos con los siguientes acabados:

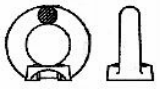
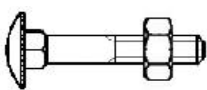
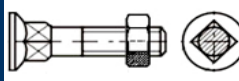
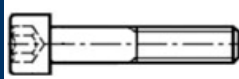


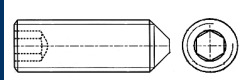
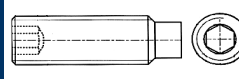
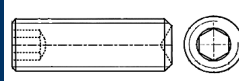



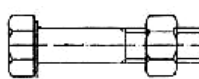


- ◆ Zincado plata, amarillo ó negro.
- ◆ Pavonado
- ◆ Cromado, latonado ó niquelado.
- ◆ Dacrometizado ó similar


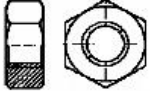
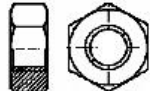

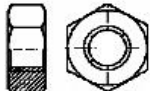




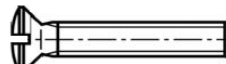





**Rogamos consultar precio y partida mínima.**


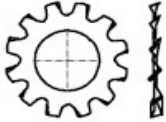
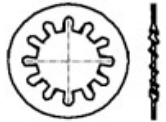
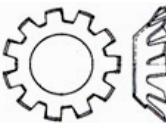
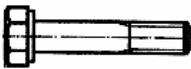



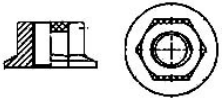










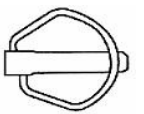


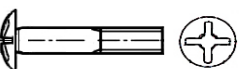
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	Artículo	DIN	ISO	Calidad	Acabado	Página	DTO
	Tornillo Cabeza Redonda con Ranura	84	1207	6.8	Varios	47	
	Pasador Elástico	94	1234		Zincado	51	
	Arandela plana	125/A	7089	F-1	Varios	32	
	Arandela grower	127/B		Acero	Negro Pavón	33	
	Arandela de muelle	137/A		Acero	Negro Pavón	34	
	Arandela de muelle	137/B		Acero	Negro Pavón	34	
	Tuerca Mariposa	315		6.8	Zincado	43	
	Tornillo Mariposa	316		6.8	Zincado	43	
	Anillo Seguridad para Ejes	471		Acero	Negro Pavón	35	
	Anillo Seguridad para Agujeros	472		Acero	Negro Pavón	36	
	Tllo. Hexag. Rosca Madera	571		4.8	Zincado	21	
	Cáncamo Macho	580			Zincado	44	



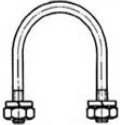
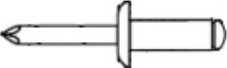
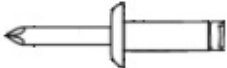
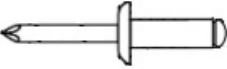

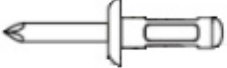
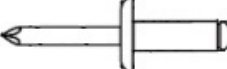




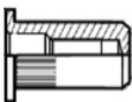
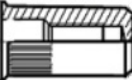
	Cáncamo Hembra	582				Zincado	44	
	Tllo. C/ Redonda con cuello cuadrado	603	8677	6.8		Zincado	10	
	Tornillo para Arado c/Avellanada cuello cuadrado	608		8.8			11	
	Tllo. Cilíndrico Allen	912	4762	8.8		Varios	22	
	Tllo. Cilíndrico Allen	912	4762	12.9		Varios	23	
	Espárrago Allen	913	4026	14.9		Negro Pavón	28	
	Espárrago Allen	914	4027	14.9		Negro Pavón	29	
	Espárrago Allen	915	4028	14.9		Negro Pavón	30	
	Espárrago Allen	916	4029	14.9		Negro Pavón	31	
	Tllo. Hexag. Rosca Parcial	931	4014	5.6 / 6.8		Varios	12	
	Tllo. Hexag. Rosca Parcial	931	4014	8.8		Varios	14	
	Tllo. Hexag. Rosca Parcial	931	4014	10.9		Varios	16	
	Tllo. Hexag. Con tuerca	931/934		5.6 / 6.8		Varios		
	Tllo. Hexag. Rosca Total	933	4017	5.6 / 6.8		Varios	13	
	Tllo. Hexag. Rosca Total	933	4017	8.8		Varios	15	





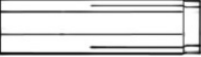




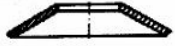


	Tllo. Hexag. Rosca Total	933	4017	10.9	Varios	17	
	Tuerca Hexagonal	934	4032	8	Varios	37	
	Tuerca Hexagonal	934	4032	10	Varios	37	
	Tuerca Hexagonal Almenada	935	7035	8	Varios	42	
	Tuerca Hexagonal	936	4035	8	Varios	38	
	Tuerca Hexagonal Almenada	937	7038	8	Varios	42	
	Tllo. Hexag. Paso Fino	960	8765	8.8	Negro Pavón	18	
	Tllo. Hexag. Paso Fino	961	8676	8.8	Negro Pavón	19	
	Tornillo Cabeza Plana, Cónica y con Ranura	963	2009	4.8	Varios	47	
	Tornilo Cabeza Abombada, Cónica y con Ranura	964	2010	4.8	Varios		
	Tornilo Cabeza Plana, Cónica y con Ranura Phillips y Pozidriv	965	7046-1	4.8	Varios	48	
	Tornilo Cabeza Abombada, Cónica y con Ranura Phillips y Pozidriv	966	7047	4.8	Varios	48	
	Varilla roscada	975		F-1 / F125 / 12.9	Varios	45	
	Tuerca Hexagonal Cónica Autoblocante	980V		8	Zincado	39	
	Tuerca Hex. Autoblocante	982	7040	8	Varios	41	

	Tuerca Hex. Autoblocante	985	10511 y 10512	8	Varios	40	
	Pasador Elástico	1481	8752	Acero	Pavonado	50	
	Tuerca Hexagonal Ciega	1587	1587	8	Zincado	41	
	Arandela dentada elástica	6797-A		Elástica	Negro Pavón	34	
	Arandela dentada elástica	6797-J		Elástica	Negro Pavón	34	
	Arandela dentada elástica	6797-V		Elástica	Negro Pavón	34	
	Arandela dentada elástica	6798-A		Elástica	Negro Pavón	33	
	Arandela dentada elástica	6798-J		Elástica	Negro Pavón	33	
	Arandela dentada elástica	6798-V		Elástica	Negro Pavón	33	
	Tllo. Hexag. P/estructura	6914	7412	10.9	Negro Pavón	20	
	Tuerca hexag. P/estruct.	6915	7414	10	Negro Pavón	20	
	Arandela p/estructura	6916	7416	HV	Negro Pavón	20	
	Tllo. Hexag. con brida	6921	4162	6.8	Varios	9	
	Tllo. Hexag. on brida	6921	4162	8.8	Varios	9	
	Tuerca Hex. con Brida	6923	4161	8	Varios	38	

	Tuerca Hex. con Brida, pieza de apriete y toda metálica	6927	7044	13	Dacromet	39	
	Tllo. ULS Allen		7380	10.9	Varios	25	
	Tllo. ULS Allen con Brida		7380-A	10.9	Varios	26	
	Tornillo Punta Broca (con y sin arandela)	7504-K	15480		Zincado	52	
	Tornillo Punta Broca	7504-N	15481		Zincado	53	
	Tornillo Punta Broca	7504-P	15482		Zincado	53	
	Tornillo C/ Cónica Ranura Pozidriv	7505-A		Acero Cementado	Bicromatado	54	
	Tornillo cabeza cilíndrica baja con hexágono interior	7984		8.8	Negro Pavón	27	
	Tornilo Cabeza Abombada con Phillips y Pozidriv	7985	7045	4.8	Varios	49	
	Tllo. Avellanado Allen	7991	10642	10.9	Varios	24	
	Arandela plana Ala ancha	9021	7093	F-1	Varios	32	
	PASADOR ANILLA	11023			Bicromatado	65	
	PASADOR EN "R"	11024			Bicromatado	65	
	Tllo. Cab. Red.(Pozi+Ranura)	Embellecedor		6.8	Varios	46	
	Tllo. Cab. Red.(Doble Ranura)	TCRD		6.8	Varios	46	



	Tuerca Enjaulada			Tuerca acero Jaula Inox	Tuerca Bic. Jaula Inox	62	
	Tuerca Enjaulada			Tuerca Acero Jaula Acero	Tuerca Bic. Jaula Bic.	63	
	Abarcón				Zincado	55	
	Remache Aluminio Estándar Cab/Alomada	7337		Cab. Alum. Vást. Acero	Cab. Alum Vást. Zincado	56	
	Remache Acero Estándar Cab/Alomada	7337		Cab. Acero Vást. Acero	Cab. Zincado Vást. Bicromatado	57	
	Remache A2 Estándar Cab/Alomada	7337		Cab. Inox 304 Vást. Inox 304	Cab. A-2 Cab. A-2	57	
	Remache Acero Estanco Cab/Alomada			Cab. Alum. Vást. Acero	Cab. Alum. Vást. Aceitado	58	
	Remache Alumino Multigrip Cab/Alomada			Cab. Alum. Vást. Acero	Cab. Alum. Vást. Bicromatado	58	
	Remache Aluminio Estándar Cab/Ancha			Cab. Alum. Vást. Acero	Cab. Alum. Vást. Zincado	59	
	Remache Aluminio FlorEstándar Cab/Alomada			Cab. Alum. Vást. Acero	Cab. Alum. Vást. Zincado	59	
	Remache Tubo Estándar Cab/Alomada			Cab. Alum. Vást. Acero	Cab. Alum. Vást. Zincado	60	
	Remache Acero Estructural Cab/Alomada			Cab. Acero Vást. Acero	Cab. Zincado Vást. Bicromatado	60	
	Remache Alumino Estructural Cab/Alomada			Cab. Alum. Vást. Alum.	Cab. Alum. Vást. Alum.	60	
	Tuerca Remachable Cab/Ancha Ranurada, Fondo Abierto			Acero	Bicromatado	61	
	Tuerca Remachable Cab/Plana Ranurada, Fondo Abierto			Acero	Bicromatado	61	

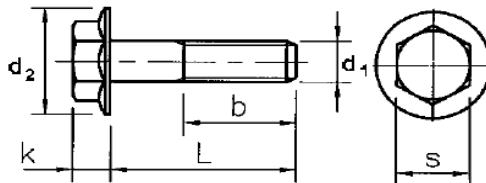
	Brida Nylon			Poliamida 6.6	Negro Natural	64	
	Taco Nylon para Brida			Poliamida 6.6	Negro	64	
	Anclaje Tornillo Hexagonal				Bicromatado	66	
	Anclaje Macho				Zincado	66	
	Anclaje Hembra con Cono Interior				Bicromatado	67	
	Taco Nylon			Nylon	Gris	67	
	Sujetacables	741	741		Zincado		
	Tuercas KM	981					
	Tensor	1480			Zincado		
	Arandela de Muelle	2093			Pavonado		
	Guardacabos Corazón	6899-A			Zincado		
	Grillete Recto Forjado	82101			Zincado		
<b>CARACTERÍSTICAS MECÁNICAS I</b>						68	
<b>CARACTERÍSTICAS MECÁNICAS II</b>						69	
<b>TORNILLERÍA ESPECIAL</b>						70	



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## TORNILLO CABEZA HEXAGONAL CON BRIDA

**DIN-6921**



**ZINCADO**

€ 100 UNDS.

$d_1$	M - 5	M - 6	M - 8	M - 10	M - 12
S	8	10	13	15	16
k	4,8	6,6	8,1	9,2	11,5
$d_2$	11,0	14,2	18	22,3	26,6

### CLASE 6.8

MÉTRICO Largo mm	M - 5	M - 6	M - 8	M - 10	M - 12
10	2,975		9,500		<b>CONSULTAR</b>
12	2,975	2,975	9,500		
14	2,975	2,975	6,314		
16	2,975	2,975	6,314		
20	3,273	3,273	6,855	15,581	
25	3,570	3,570	7,531	16,846	
30	4,066	4,066	9,786	17,775	
35			10,688	20,250	
40			11,590	23,850	
45				25,530	
50				27,281	

### CLASE 8.8

MÉTRICO Largo mm	M - 5	M - 6	M - 8	M - 10	M - 12
10	4,958	7,822	10,800		<b>CONSULTAR</b>
12	4,958	7,822	10,800		
14	4,958	6,580	8,435		
16	4,958	6,580	8,435		
20	5,454	7,080	9,135	18,690	
25	5,950	8,070	10,715	20,216	
30	6,776	9,922	13,040	21,330	
35			14,243	24,350	
40			15,445	28,620	
45				30,645	
50				33,737	

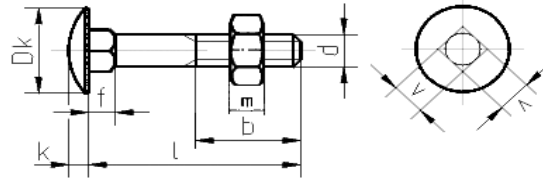
Se puede suministrar con o sin grafilado bajo cabeza.  
 Bicromatado igual precio que zincado.  
 Otras medidas y recubrimientos rogamos consultar



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## TORNILLO CABEZA REDONDA CON CUELLO CUADRADO

**DIN-603/934**



**CLASE 6.8**

**ZINCADO**

€ 100 UNDS.

<i>d</i>	<i>M - 5</i>	<i>M - 6</i>	<i>M - 7</i>	<i>M - 8</i>	<i>M - 10</i>	<i>M - 12</i>
<i>b</i> ≤ 125	16	18	20	22	26	30
<i>b</i> 125 ÷ 200		24	26	28	32	36
<i>Dk max</i>	13,55	16,55	19,55	20,65	24,65	30,65
<i>f max</i>	4,10	4,60	5,10	5,60	6,60	8,75
<i>k max</i>	3,30	3,88	4,46	4,88	5,38	6,95
<i>V max</i>	5,48	6,48	7,48	8,58	10,58	12,7

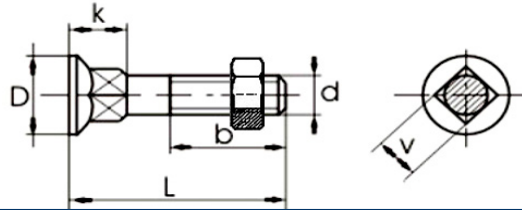
MÉTRICO Largo mm	M - 5	M - 6	M - 7	M - 8	M - 10	M - 12
16	4,241	4,600		8,208		
20	4,378	4,976		8,678	15,048	
25	4,514	5,369		9,234	15,989	
30	4,634	5,797	8,721	9,576	16,373	33,388
35	5,087	5,951	9,149	9,918	17,528	32,191
40	5,335	6,088	10,046	10,132	18,468	32,191
45	6,071	6,566	10,175	11,201	20,264	33,730
50	6,071	6,686	10,517	11,594	20,777	35,568
55	6,712	7,456	10,987	11,987	21,290	37,449
60	6,712	7,661	11,457	12,483	22,829	37,449
65	7,225	8,268	11,927	14,398	24,624	40,527
70	7,225	8,413	12,911	15,202	24,624	40,527
75		8,559	13,381	16,031	26,847	44,289
80		9,277	13,381	16,758	26,847	44,289
90		10,517	16,587	16,972	28,814	46,769
100		11,799	16,972	18,212	30,267	48,137
110		17,827		21,204	32,832	54,164
120		18,468		22,487	35,568	56,302
130		29,177		26,249	38,261	57,969
140		31,806		42,836	62,330	92,917
150				45,978	67,716	100,548
160				49,761	74,770	108,448
170				53,544	87,595	110,526
180				59,123	88,300	112,604
190				71,243	97,727	132,803
200				79,323	96,059	149,860
220				91,442	113,309	170,060
240					120,683	187,437
250					122,607	195,068



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**TORNILLO PARA ARADO C/AVELLANADA CON TUERCA**

**DIN-608**



**CLASE 8.8**

€ 100 UNDS.

<i>d</i>	<b>M-10</b>	<b>M-11</b>	<b>M-12</b>
<i>D</i>	18	21	23
<i>K</i>	8,0	9,2	10,0
<i>V</i>	10	11	12

<b>MÉTRICO</b> Largo mm.	<b>M-10</b>	<b>M-11</b>	<b>M-12</b>
25	34,230	61,635	
30	36,645	64,208	52,920
35	39,585	68,145	56,490
40	41,843	70,665	60,218
45		75,915	
50	46,883		65,940
55		81,323	72,345
60			78,015
70			82,163
80			91,035
90			100,643

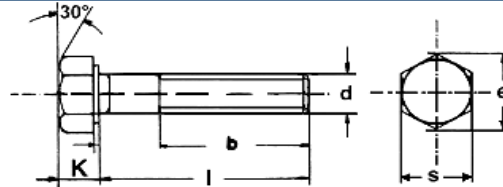
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## TORNILLO CABEZA HEXAGONAL- Rosca Parcial- Baja Resistencia

**DIN-931**



**CLASE 6.8**

€ 100 UNDS.

d	M-4	M-5	M-6	M-8	M-10	M-12	M-14	M-16	M-18	M-20	M-22	M-24
s	7	8	10	13	17	19	22	24	27	30	32	36
k	2,8	3,5	4,0	5,3	6,4	7,5	8,8	10,0	11,5	12,5	14,0	15,0
Paso rosca	0,70	0,80	1,00	1,25	1,50	1,75	2,00	2,00	2,50	2,50	2,50	3,00
b < 125	14	16	18	22	26	30	34	38	42	46	50	54
b 125÷200				28	32	36	40	44	48	52	56	60
b > 200						49	53	57	61	65	69	73

MÉTRICO	M - 4		M - 5		M - 6		M - 8		M - 10		M - 12	
	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado
Largo mm												
30			3,061	3,200	3,177	3,516						
35			3,286	3,497	3,568	3,952	5,918	6,683				
40			3,530	3,762	3,959	4,388	6,689	7,560	11,405	12,876		
45			3,841	4,099	4,362	4,837	7,152	8,085	12,330	13,928	17,447	19,700
50			4,106	4,390	4,727	5,245	7,769	8,786	13,286	15,014	18,835	21,277
55			4,555	4,866	5,130	5,693	8,262	9,347	14,119	15,960	20,223	22,854
60			5,183	5,514	5,496	6,101	8,879	10,048	15,075	17,047	21,580	24,396
65			6,942	7,272	10,190	11,030	9,496	10,749	16,031	18,133	22,598	25,553
70			6,942	7,272	10,190	11,090	10,113	11,450	16,988	19,220	23,955	27,095
75			8,561	9,018	12,040	12,990	10,699	12,116	17,944	20,306	25,312	28,637
80			8,561	9,018	12,040	13,050	11,316	12,817	19,825	22,444	26,700	30,214
90					14,780	13,850	20,700	22,850	21,737	24,617	29,414	33,298
100					15,890	17,020	22,300	24,660	34,807	37,887	31,758	35,961
110							23,890	26,460	39,153	42,500	34,534	39,116
120							25,987	28,200	41,410	46,280	37,310	42,270
130							35,040	37,960	54,150	59,360	40,085	45,424
140							39,820	42,950	57,340	62,860	42,861	48,578
150							41,410	44,760	57,340	63,180	45,637	51,732

**CONSULTAR**

MÉTRICO	M - 14		M - 16		M - 18		M - 20		M - 22		M - 24	
	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado
Largo mm												
50	26,878	30,333										
55	28,759	32,471	37,452	42,286								
60	30,610	34,574	39,919	45,090	52,707	59,475						
65	32,368	36,571	42,387	47,893	55,791	62,979	71,358	80,564				
70	34,218	38,674	44,854	50,697	58,876	66,484	75,060	84,770	136,413	148,473		
75	36,069	40,777	47,322	53,501	61,960	69,989	78,761	88,975	143,700	156,400	190,300	207,120
80	37,920	42,880	49,789	56,304	65,044	73,493	82,462	93,181	150,980	164,320	190,300	207,120
90	41,004	46,384	54,724	61,912	70,904	80,152	89,864	101,592	165,540	180,173	199,733	226,140
100	44,705	50,590	59,350	67,169	77,073	87,161	97,266	110,003	172,667	195,493	225,253	245,160
110	48,406	54,796	64,285	72,776	84,241	94,171	104,669	118,414	194,187	211,347	242,733	264,187
120	52,416	59,352	69,220	78,384	89,410	101,180	112,071	126,825	200,667	227,200	249,667	282,680
130	55,500	62,856	72,921	82,589	94,036	106,437	116,389	131,732	226,180	245,487	281,467	305,500
140	59,201	67,062	77,856	88,197	100,205	113,446	123,791	140,143	241,260	261,853	299,060	324,593
150	62,902	71,267	82,791	93,804	106,373	120,445	134,278	152,059	256,340	278,220	316,653	343,687
160	103,040	111,833	134,960	146,887	172,827	188,100	224,173	243,307	271,420	294,587	334,247	362,780
170	108,067	117,287	147,773	160,387	175,467	205,120	236,233	256,400	286,493	310,953	351,840	381,873
180	113,093	122,747	155,813	169,113	199,040	216,027	248,300	269,493	301,573	327,320	369,427	400,967
190	118,120	128,200	163,853	177,840	207,080	224,760	262,420	283,133	316,653	343,687	387,020	420,060
200	123,140	133,653	165,300	186,573	215,127	233,487	273,427	296,767	331,733	360,047	404,613	439,153

Bicromatado igual precio que zincado.

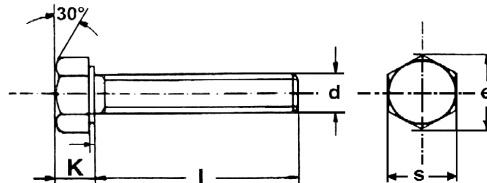
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## TORNILLO CABEZA HEXAGONAL- Rosca Total- Baja Resistencia

**DIN-933**



**CLASE 6.8**

€ 100 UNDS.

d	M-4	M-5	M-6	M-8	M-10	M-12	M-14	M-16	M-18	M-20	M-22	M-24
s	7	8	10	13	17	19	22	24	27	30	32	36
k	2,8	3,5	4	5,3	6,4	7,5	8,8	10	11,7	12,7	14,2	15,2
e(min)	7,66	8,79	11,05	14,38	18,90	21,10	24,49	26,75	30,14	35,53	35,72	39,98
Paso rosca	0,7	0,8	1,0	1,25	1,5	1,75	2,0	2,0	2,5	2,5	2,5	3,0

MÉTRICO	M - 4		M - 5		M - 6		M - 8		M - 10		M - 12		
	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado	
Largo mm													
10	2,552	2,618	2,200	2,340	2,390	2,610	5,540	6,040					
12	2,552	2,618	1,998	2,119	1,761	1,947	3,328	3,740					
16	2,552	2,618	2,303	2,440	2,000	2,215	3,729	4,195	7,140	8,040			
20	2,671	2,750	2,607	2,770	2,239	2,483	4,099	4,616	7,766	8,741	10,230	12,480	
25	2,849	2,942	2,985	3,174	2,534	2,813	4,592	5,176	8,537	9,617	11,093	13,742	
30	2,988	3,094	3,363	3,577	2,832	3,148	5,086	5,737	9,308	10,493	12,204	15,004	
35	3,180	3,299	3,740	3,981	3,130	3,482	5,579	6,298	10,079	11,369	13,314	16,265	
40	3,345	3,477	4,118	4,385	3,428	3,816	6,073	6,859	10,850	12,245	14,424	17,527	
45	3,616	3,762	4,508	4,802	3,730	4,154	6,566	7,419	11,621	13,122	15,535	18,789	
50	3,854	4,013	4,873	5,192	4,042	4,504	7,029	7,945	12,392	13,998	16,645	20,015	
55			5,251	5,595	4,354	4,854	7,522	8,506	13,163	14,874	17,724	21,277	
60			5,629	6,000	4,631	5,165	8,016	9,067	13,965	15,785	18,835	22,539	
65						8,280	9,020	8,509	9,627	14,736	16,661	19,945	23,800
70						8,280	9,060	9,003	10,188	15,507	17,537	21,055	25,062
75						8,920	9,750	9,496	10,749	16,278	18,414	22,166	26,324
80						8,920	9,800	9,990	11,310	17,049	19,290	23,276	27,585
90						12,100	13,070	17,520	19,390	17,820	20,166	24,386	30,109
100						12,420	13,490	19,110	21,150	29,760	32,387	26,607	32,632

MÉTRICO	M - 14		M - 16		M - 18		M - 20		M - 22		M - 24	
	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado	Bruto	Zincado
Largo mm												
25	17,872	20,100	23,634	26,585								
30	19,383	21,817	25,701	28,933	35,435	39,849	45,759	51,476				
35	20,925	23,569	27,736	31,246	37,903	42,653	49,152	55,331				
40	22,467	25,322	29,803	33,594	40,370	45,456	52,236	58,836	64,102	72,215	118,453	128,920
45	24,009	27,074	31,931	36,013	42,837	48,260	55,320	62,340	68,111	76,771	125,733	136,847
50	25,552	28,826	33,751	38,080	45,305	51,064	58,713	66,195	72,121	81,327	133,020	144,773
55	27,094	30,579	35,910	40,534	48,081	54,218	61,797	69,700	76,131	85,883	140,300	150,700
60	28,605	32,296	38,069	42,987	50,548	57,022	65,190	73,555	79,832	90,088	147,580	160,627
65	30,147	34,048	39,919	45,090	53,016	59,825	68,274	77,060	83,841	94,644	154,860	168,547
70	31,689	35,800	42,078	47,543	55,483	62,629	71,358	80,564	87,542	98,850	162,147	176,347
75	32,985	37,272	44,237	49,996	57,950	65,433	74,443	84,069	91,552	103,406	168,940	183,873
80	34,527	39,025	46,396	52,449	60,726	68,587	77,835	87,924	95,562	106,911	176,220	191,800
90	37,611	42,529	50,406	57,005	65,661	74,194	84,004	94,933	103,581	117,074	190,787	207,647
100	40,695	46,034	54,415	61,561	70,596	79,802	90,481	102,293	111,291	125,836	205,353	223,500

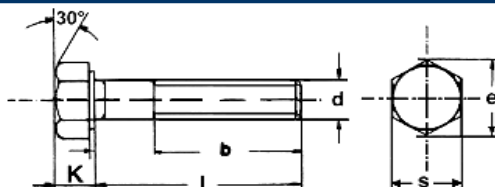
Bicromatado igual precio que zincado.  
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## TORNILLO CABEZA HEXAGONAL- Rosca Parcial

**DIN-931**



**CLASE 8.8**

€ 100 UNDS.

d	M-4	M-5	M-6	M-8	M-10	M-12	M-14	M-16	M-18	M-20	M-22	M-24
s	7	8	10	13	17	19	22	24	27	30	32	36
k	2,8	3,5	4,0	5,3	6,4	7,5	8,8	10,0	11,5	12,5	14,0	15,0
Paso rosca	0,7	0,8	1,0	1,3	1,5	1,8	2,0	2,0	2,5	2,5	2,5	3,0
b =< 125	14	16	18	22	26	30	34	38	42	46	50	54
b 125÷200				28	32	36	40	44	48	52	56	60
b > 200						49	53	57	61	65	69	73

MÉTRICO Largo mm	M - 4		M - 5		M - 6		M - 8		M - 10		M - 12	
	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado
30	3,650	4,200	4,100	5,050	4,950	5,950						
35	4,050	4,650	4,500	5,550	5,100	6,250	8,850	11,100				
40	4,500	5,250	5,100	6,250	5,600	6,900	9,350	11,800	15,400	18,900		
45	5,200	6,000	5,800	7,150	6,200	7,650	10,000	12,750	16,550	20,350	23,300	28,800
50	6,500	7,400	6,800	8,250	6,750	8,350	10,550	13,500	17,550	21,650	24,700	30,650
55					7,400	9,100	11,350	14,500	18,400	22,850	26,350	32,750
60					8,050	9,900	11,950	15,400	19,500	24,250	27,850	34,700
65					9,600	11,600	13,850	17,550	22,600	27,700	31,800	39,050
70					9,600	11,750	13,850	17,800	22,600	28,000	31,800	39,550
75					11,350	13,600	17,250	21,450	26,650	32,400	37,550	45,800
80					11,350	13,700	17,250	21,650	26,650	32,700	37,550	46,250
90					14,050	16,750	19,500	24,400	29,450	36,150	41,600	51,150
100					16,250	19,200	22,700	28,050	32,900	40,200	46,400	56,950
110					18,600	21,800	24,650	30,550	38,800	46,750	52,700	64,100
120					21,450	24,950	29,800	36,200	42,000	50,600	57,050	69,400
130					24,350	29,350	32,250	41,300	46,000	57,850	62,600	79,700
140							34,950	44,650	52,400	65,100	70,300	88,600
150							40,400	50,800	57,900	71,500	77,800	97,350

MÉTRICO Largo mm	M - 14		M - 16		M - 18		M - 20		M - 22		M - 24	
	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado
50	40,40	47,40	48,80	59,90								
55	42,550	49,950	51,150	63,100								
60	44,500	52,500	53,550	66,300	91,250	107,850	91,250	112,400				
65	49,700	55,400	56,300	69,850	95,150	112,800	95,150	117,600				
70	49,700	58,800	59,750	74,150	99,250	117,950	99,250	123,000	179,500	208,750	179,500	215,450
75	54,900	64,450	65,850	81,060	108,350	128,050	108,350	133,300	179,750	210,550	179,750	217,550
80	54,900	65,050	65,850	81,900	108,350	129,100	108,350	134,600	179,750	212,100	179,750	219,350
90	60,650	71,800	72,700	90,300	118,550	141,400	118,550	147,350	192,200	227,600	192,200	235,500
100	67,600	79,750	80,850	100,100	131,650	156,500	131,650	163,000	208,300	246,800	208,300	255,250
110	73,350	86,650	87,800	108,700	142,100	169,050	142,100	176,050	229,350	270,900	229,350	279,950
120	81,800	96,150	97,850	120,400	157,600	186,550	157,600	194,050	258,200	302,800	258,200	312,580
130	89,100	108,900	106,600	137,800	173,300	213,350	173,300	223,650	278,400	340,100	278,400	353,300
140	97,350	118,500	116,450	149,750	188,250	231,050	188,250	241,950	301,600	367,300	301,600	381,200
150	103,750	126,250	123,950	159,400	199,650	245,100	199,650	256,600	319,300	389,000	319,300	403,750
160	117,950	141,850	140,900	178,450	226,100	274,150	226,100	286,350	359,500	433,200	359,500	448,650
180	147,950	174,600	176,700	218,550	286,200	339,650	286,200	353,150	425,750	507,450	425,750	524,450
200			210,850	256,850	336,100	394,900	336,100	409,650	505,100	594,850	505,100	613,300

Bicromatado igual precio que zincado.  
 Otras medidas y recubrimientos rogamos consultar

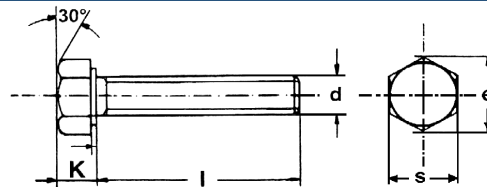




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## TORNILLO CABEZA HEXAGONAL - Rosca Total

**DIN-933**



**CLASE 8.8**

€ 100 UNDS.

d	M-4	M-5	M-6	M-8	M-10	M-12	M-14	M-16	M-18	M-20	M-22	M-24
s	7	8	10	13	17	19	22	24	27	30	32	36
k	2,8	3,5	4,0	5,3	6,4	7,5	8,8	10,0	11,7	12,7	14,2	15,2
e(min)	7,66	8,79	11,05	14,38	18,9	21,1	24,49	26,75	30,14	35,53	35,72	39,98
Paso rosca	0,7	0,8	1,0	1,3	1,5	1,8	2,0	2,0	2,5	2,5	2,5	3,0

MÉTRICO	M - 4		M - 5		M - 6		M - 8		M - 10		M - 12	
	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado
Largo mm												
10	2,550	2,800	3,700	4,050	3,950	4,450	6,900	8,050				
12	2,550	2,850	3,250	3,700	3,400	3,950	6,450	7,600				
16	2,650	2,950	3,050	3,600	3,100	3,800	6,000	7,350	11,650	13,700		
20	2,800	3,200	3,050	3,700	3,550	4,300	5,900	7,400	10,350	12,650	15,850	19,200
25	2,950	3,450	3,100	3,850	3,950	4,850	6,600	8,250	11,350	13,850	16,250	19,950
30	3,250	3,750	3,500	4,300	4,450	5,400	7,300	9,150	12,200	15,000	17,550	21,600
35	3,550	4,100	4,100	5,050	4,650	5,750	8,000	10,050	12,950	16,000	18,600	23,050
40	4,050	4,650	4,500	5,550	5,200	6,400	8,700	10,950	13,900	17,200	19,950	24,800
45					5,650	6,950	9,550	11,950	15,050	18,600	21,600	26,850
50					6,150	7,550	10,150	12,850	16,300	20,100	23,400	29,000
55					7,200	8,700	10,950	13,800	17,450	21,500	25,050	31,000
60					8,700	10,300	12,100	15,150	19,200	23,450	27,050	33,350
70					10,900	12,750	14,300	17,500	23,500	28,350	33,750	40,750
80					14,500	16,550	16,700	20,300	27,350	32,700	39,100	46,900
90							19,250	23,450	31,250	37,150	44,950	53,500
100							22,750	27,350	37,100	43,450	53,200	62,450

MÉTRICO	M - 14		M - 16		M - 18		M - 20		M - 22		M - 24	
	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado
Largo mm												
20												
25	30,950	35,400	38,000	45,350								
30	30,300	35,200	37,150	45,250								
35	32,250	37,500	39,550	48,300	68,650	80,400	68,650	83,950				
40	32,700	38,450	40,100	49,550	68,900	81,450	68,900	85,250	117,850	138,300	117,850	143,650
45	34,850	41,000	42,750	52,850	72,500	85,900	72,500	89,900	122,600	144,300	122,600	149,900
50	36,500	43,000	44,750	55,600	76,500	90,750	76,500	95,000	125,700	148,750	125,700	154,550
55	38,550	45,450	47,350	58,800	79,950	95,050	79,950	99,500	132,550	156,900	132,550	162,950
60	41,500	48,850	50,900	63,100	85,200	101,150	85,200	105,800	139,400	165,150	139,400	172,350
65	46,200	53,950	56,600	69,450	94,350	111,150	94,350	116,000	161,250	188,250	161,250	194,750
70	46,200	54,350	56,600	70,100	94,350	112,000	94,350	117,050	161,250	189,550	161,250	196,300
80	54,000	63,000	66,150	81,000	109,150	128,450	109,150	134,000	175,250	213,300	175,250	213,300
90	60,650	70,450	74,300	90,550	122,050	149,050	122,050	149,050	199,200	240,350	199,200	240,350
100	67,000	77,650	82,100	99,700	134,650	163,800	134,650	163,800	214,450	258,600	214,450	258,600

Bicromatado igual precio que zincado.

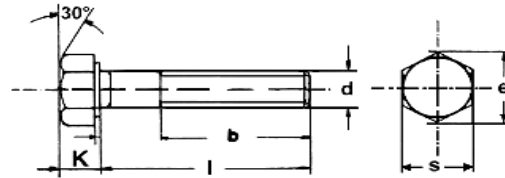
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## TORNILLO CABEZA HEXAGONAL - Rosca Parcial

**DIN-931**



**CLASE 10.9**

€ 100 UNDS.

d	M-8	M-10	M-12	M-14	M-16	M-18	M-20	M-24
s	13	17	19	22	24	27	30	36
k	5,3	6,4	7,5	8,8	10	11,5	12,5	15,0
Paso rosca	1,25	1,50	1,75	2,00	2,00	2,50	2,50	3,00
b = < 125	22	26	30	34	38	42	46	54
b 125 ÷ 200	28	32	36	40	44	48	52	60
b > 200			49	53	57	61	65	73

MÉTRICO	M - 8		M - 10		M - 12	
	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*
Largo mm						
25						
30						
35	11,100	15,100				
40	11,750	16,250	19,250	26,200		
45	12,500	17,500	20,750	28,350	29,150	40,100
50	13,200	18,550	21,950	30,200	30,950	42,800
55	14,200	20,000	23,000	31,900	32,950	45,800
60	15,000	21,300	24,400	33,900	34,800	48,450
70	17,250	24,450	28,200	39,050	39,700	55,250
80	21,600	29,650	33,400	45,450	46,950	64,300
90	24,400	33,400	36,850	50,150	52,000	71,150
100	28,350	38,200	41,200	55,800	58,000	79,050
110	30,800	41,550	48,500	64,450	65,850	88,750
120	37,250	48,900	52,450	69,650	71,300	96,000
130			57,550	78,600	78,200	108,500
140			65,450	88,000	87,850	120,250
150			72,450	96,400	97,250	131,750

MÉTRICO	M - 14		M - 16		M - 20		M - 24	
	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*
Largo mm								
50	50,550	64,400						
55	53,100	68,100	63,900	87,750				
60	55,650	71,650	66,950	92,400	114,050	156,400		
70	62,200	80,300	74,700	103,450	124,050	171,500	224,450	296,300
80	68,650	88,800	82,350	114,350	135,450	187,950	224,700	303,900
90	75,800	98,100	90,800	126,100	148,200	205,800	240,250	324,950
100	84,400	108,900	101,050	139,550	164,500	227,250	260,400	354,300
110	91,650	118,200	109,700	151,500	177,650	245,450	286,650	387,950
120	102,250	130,900	122,300	167,350	197,000	269,950	322,750	431,300
130	111,350	146,400	133,250	188,500	216,650	305,750	348,000	480,500
140	121,700	159,100	145,550	204,500	235,300	330,300	377,000	517,900
150	129,650	169,550	154,950	217,650	249,550	350,350	399,150	548,500

\*Zincado y deshidrogenado. (mín. 30 kg.)

Bicromatado igual precio que zincado.

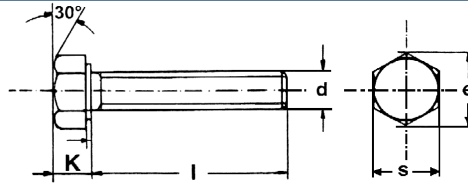
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## TORNILLO CABEZA HEXAGONAL - Rosca Total

**DIN-933**



**CLASE 10.9**

€ 100 UNDS.

d	M-8	M-10	M-12	M-14	M-16	M-18	M-20	M-24
s	13	17	19	22	24	27	30	36
k	5,3	6,4	7,5	8,8	10,0	11,5	12,5	15,0
Paso rosca	1,25	1,50	1,75	2,00	2,00	2,50	2,50	3,00
b = < 125	22	26	30	34	38	42	46	54
b 125 ÷ 200	28	32	36	40	44	48	52	60
b > 200			49	53	57	61	65	73

MÉTRICO	M - 8		M - 10		M - 12	
	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*
Largo mm						
16	7,450	10,800				
20	7,400	10,100	12,950	17,550	19,750	26,400
25	8,200	11,300	14,200	19,250	20,300	27,750
30	9,100	12,550	15,250	20,850	21,950	30,150
35	9,950	13,700	16,250	22,350	23,250	32,200
40	10,900	15,050	17,450	24,100	24,950	34,650
45	11,900	16,400	18,800	25,950	27,050	37,400
50	12,750	17,600	20,350	28,000	29,300	40,450
60	13,750	20,750	24,000	32,650	33,800	46,450
70			29,400	39,050	42,150	56,250
80			34,200	44,900	48,950	64,550
90						
100						

MÉTRICO	M - 14		M - 16		M - 20		M - 24	
	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*
Largo mm								
30	37,950	47,650						
35	40,300	50,900	49,450	66,950				
40	40,950	52,300	50,150	69,100	86,150	118,850	147,250	198,850
45	43,550	55,800	53,450	73,650	90,650	125,450	153,250	207,900
50	45,600	58,650	55,950	77,600	95,650	132,600	157,100	214,800
60	51,900	66,600	63,350	88,050	106,450	147,650	174,300	238,100
70	57,700	74,050	70,750	97,800	117,950	163,400	201,600	271,600
80	67,450	85,500	82,650	112,450	136,450	186,200	219,100	296,250
90								
100								

\*Zincado y deshidrogenado. (mín. 30 kg.)

Bicromatado igual precio que zincado.

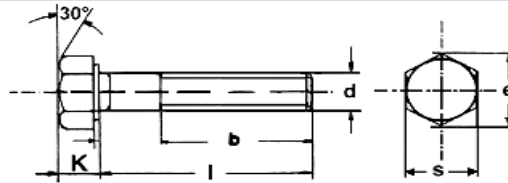
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## TORNILLO CABEZA HEXAGONAL - Paso Fino - Rosca Parcial

**DIN-960**



**CLASE 8.8**

€ 100 UNDS.

<i>d</i>	<i>M-8</i>	<i>M-10</i>	<i>M-12</i>	<i>M-14</i>	<i>M-16</i>	<i>M-18</i>	<i>M-20</i>	<i>M-22</i>	<i>M-24</i>
<i>s</i>	13	17	19	22	24	27	30	32	36
<i>k</i>	5,3	6,4	7,5	7,5	10,0	11,5	12,5	14,0	15,0
<i>b</i> = < 125	22	26	30	34	38	42	46	50	54
<i>b</i> 125 ÷ 200	28	32	36	40	44	48	52	56	60
<i>b</i> > 200					57	61	65	69	73

MÉTRICO	M-8	M-10	M-12	M-14	M-16	M-18	M-20	M-22	M-24
PASO	1,00	1,00	1,50	1,50	1,50	1,50	1,50	1,50	2,00
Largo mm.									
35	11,550								
40	12,200	20,050							
45		21,550	30,400						
50	13,750	22,850	32,200	52,650					
55		24,000	34,300	55,200	66,550				
60	15,550	25,400	36,200	57,900	69,650				
65		29,400	41,350	64,700	77,650	123,700	123,700		
70		29,400	41,350	64,700	77,650	129,050	129,050		
75		34,750	48,900	71,400	85,650	140,900	140,900	233,700	
80		34,750	48,900	71,400	85,650	140,900	140,900	233,700	233,700
90		38,300	54,100	78,900	94,550	154,150	154,150	249,900	249,900
100		42,800	60,400	87,800	105,100	171,200	171,200	270,800	270,800
110		50,500	68,550	95,400	114,150	184,800	184,800	298,100	298,100
120		54,600	74,250	106,350	127,250	204,850	204,850	335,650	333,650
130		59,850	81,400	115,800	138,600	225,300	225,300	361,950	361,950
140			91,400	126,600	151,350	244,750	244,750	392,050	392,050
150			101,200	134,850	161,150	259,500	259,500	415,100	415,100

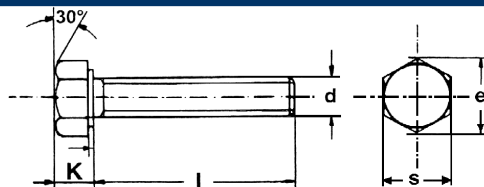
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## TORNILLO CABEZA HEXAGONAL - Paso Fino - Rosca Parcial

**DIN-961**



**8.8**

€ 100 UNDS.

<i>d</i>	<i>M-8</i>	<i>M-10</i>	<i>M-12</i>	<i>M-14</i>	<i>M-16</i>	<i>M-18</i>	<i>M-20</i>	<i>M-22</i>	<i>M-24</i>
<i>s</i>	13	17	19	22	24	27	30	32	36
<i>k</i>	5,3	6,4	7,5	7,5	10,0	11,7	12,7	14,2	15,2
<i>e min</i>	14,38	18,90	21,10	24,48	26,75	30,14	35,53	35,72	39,98

MÉTRICO	M-8	M-10	M-12	M-14	M-16	M-18	M-20	M-22	M-24
PASO	1,00	1,00	1,50	1,50	1,50	1,50	1,50	1,50	2,00
Largo mm.									
10									
14									
16	7,750	15,150							
20	7,700	13,450	20,600	39,150					
25	8,550	14,750	21,150	39,300	49,450				
30	11,350	15,900	22,850	38,550	48,350				
35		16,850	24,250	41,200	51,400				
40		20,050	27,450	41,800	52,150	89,600	89,600		
45		21,450	29,800	44,700	55,600	94,300	94,300	159,400	
50		22,850	32,200	51,100	63,450	99,500	99,500	163,400	163,400
55		24,150	34,200	53,700	66,550	104,000	104,000	172,300	172,300
60		25,400	34,500	56,200	69,650	118,650	118,650	181,300	181,300
65				62,650	77,650	129,050	129,050	209,600	209,600
70				62,700	77,650	129,050	129,050	233,400	233,400
75									
80									

Otras medidas y recubrimientos rogamos consultar

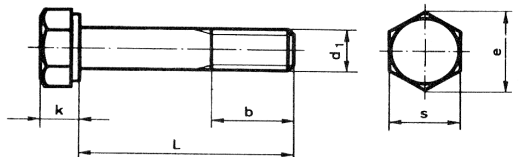


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## TORNILLOS HEXAGONALES PARA ESTRUCTURAS

### DIN-6914

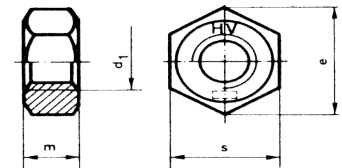
CLASE 10.9



## TUERCAS HEXAGONALES - HV - Clase 10

### DIN-6915

CLASE 10



### $d_1$ (MÉTRICO)

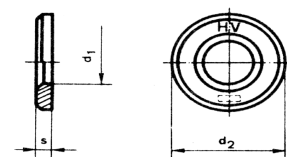
COTAS mm.	M - 12	M - 16	M - 20	M - 22	M - 24	M - 27
Paso Rosca	1,75	2	2,5	2,5	3	3
$b^*$	21	26	31	32	34	37
$b^{**}$	23	28	33	34	37	39
$e_{min}$	23,91	29,56	35,03	39,55	45,2	50,85
$k$	8	10	13	14	15	17
$s$	22	27	32	36	41	46

$d_1$	$e_{min}$	$s$	$m$	€ 100 unds.
M - 12	23,91	22	10	19,800
M - 16	29,56	27	13	28,200
M - 20	35,03	32	16	40,450
M - 22	39,55	36	18	70,000
M - 24	45,20	41	19	74,900
M - 27	50,85	46	22	108,050

Largo mm	MÉTRICO		€ 100 unds.			
	M - 12	M - 16	M - 20	M - 22	M - 24	M - 27
35	35,750					
40	37,550	56,950				
45	40,150	58,700				
50	41,800	62,700	101,900			
55	44,000	66,900	106,050			
60	47,200	71,100	110,200	191,200	191,200	
65	49,850	75,150	114,350	195,450	195,450	
70	54,050	79,350	118,500	195,450	195,450	250,700
75		83,250	128,100	207,200	207,200	267,950
80		83,250	128,100	207,200	207,200	267,950
85		91,550	138,500	219,350	219,350	285,150
90		91,550	138,500	219,350	219,350	285,150
95		101,750	144,750	232,450	232,450	310,600
100		101,750	144,750	232,450	232,450	310,600
105			162,050	244,100	244,100	336,800
110			162,050	244,100	244,100	336,800
115			179,250	257,600	257,600	364,000
120			179,250	257,600	257,600	364,000
125			198,150	275,250	275,250	389,850
130			198,150	275,250	275,250	389,850
135			210,900	301,450	301,450	416,750
140			210,900	301,450	301,450	416,750

## ARANDELAS -HV-

### DIN-6916



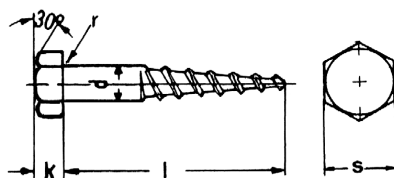
P/Tllos.	$d_1$	$d_2$	$s$	€ 100 unds.
M - 12	13	24	3	8,800
M - 16	17	30	4	13,400
M - 20	21	36	4	17,200
M - 22	23	40	4	21,100
M - 24	25	44	4	26,600
M - 27	28	50	5	43,600



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## TIRAFONDOS PARA MADERA CABEZA HEXAGONAL

**DIN-571**



**ZINCADO**

€ 100 UNDS.

<i>d</i>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>10</b>	<b>12</b>	<b>14</b>	<b>16</b>
<i>s</i>	8	10	12	13	17	19	22	24
<i>k</i>	3,5	4,0	5,0	5,5	7,0	8,0	9,0	10,0

MÉTRICO Largo mm	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>10</b>	<b>12</b>	<b>14</b>	<b>16</b>
25	2,578	2,775						
30	2,794	3,047	5,269	6,000				
35	3,066	3,413	5,363	6,488				
40	3,450	3,544	5,531	6,797	12,750	22,781		
45	3,909	4,172	5,981	7,547	13,781			
50	4,238	4,331	6,441	7,688	13,969	23,297		
60	5,475	5,138	7,641	8,859	15,188	27,094		
70		6,113	8,869	9,844	16,828	31,500		
80		7,359	9,703	10,969	20,438	33,563	63,375	81,281
90		8,128	10,734	13,219	21,281	38,813		86,438
100		8,531	11,531	13,828	22,781	40,969	73,500	91,313
110		12,047	13,594	16,031	25,875	46,641		
120		12,938	14,438	18,141	27,844	48,563	89,344	105,281
130			15,750	20,719	30,375	55,031		117,281
140			17,484	22,219	38,719	57,844	100,125	121,313
150			18,516	25,594	43,547	64,500		

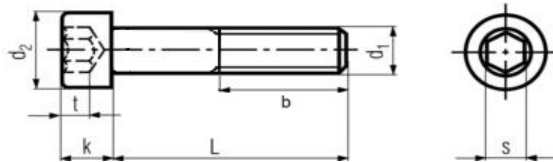
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## TORNILLO CABEZA CILÍNDRICA con hexágono interior

**DIN-912**



**CLASE 8.8**

€ 100 UNDS.

$d_1$	M-4	M-5	M-6	M-8	M-10	M-12	M-14	M-16	M-18	M-20
$d_2$	7	8,5	10	13	16	18	21	24	27	30
$K$	4	5	6	8	10	12	14	16	18	20
$S$	3	4	5	6	8	10	12	14	14	17
$t$	2,2	2,9	3,5	4,5	5,9	7,0	8,3	9,3	10,3	11,2
$b$	20	22	24	28	32	36	40	44	48	52

MÉTRICO	M - 4		M - 5		M - 6		M - 8		M - 10	
	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado
Largo mm										
10	2,900	3,200	3,450	3,850	4,600	5,100	6,500	7,500		
12	3,000	3,300	3,050	3,550	4,250	4,800	6,950	8,050		
16	2,550	2,850	2,750	3,300	3,300	3,850	5,300	6,650	10,400	12,200
20	2,900	3,300	2,750	3,350	3,350	4,000	5,400	6,750	9,300	11,300
25	3,450	3,850	3,350	4,000	3,600	4,350	5,900	7,400	9,900	12,050
30	3,700	4,150	3,600	4,350	3,850	4,650	6,500	8,200	10,500	12,900
35	4,350	4,950	3,800	4,650	4,700	5,700	7,350	9,150	11,450	14,000
40	5,000	5,600	4,250	5,300	5,150	6,200	8,050	10,150	12,300	15,100
45	5,950	6,700	5,050	6,150	5,650	6,850	8,950	11,300	13,650	16,800
50			5,900	7,100	6,200	7,550	9,900	12,400	14,850	18,250
55			8,050	9,500	7,450	8,850	10,650	13,400	16,400	20,050
60			8,050	9,500	8,050	9,600	11,450	14,350	17,600	21,500
65			10,100	11,700	9,350	11,100	15,200	18,300	20,200	24,450
70			10,100	11,700	9,350	11,200	15,200	18,500	20,200	24,700
75					11,600	13,500	18,150	21,700	22,700	27,450
80					11,600	13,600	18,150	21,850	22,700	27,700
90					15,200	17,450	19,200	23,300	28,750	34,250
100					16,700	19,200	22,200	26,750	33,500	39,600
110					20,850	23,500	25,850	30,800	35,650	42,200
120					26,400	29,350	27,900	33,250	40,400	47,550

MÉTRICO	M - 12		M - 14		M - 16		M - 18		M - 20	
	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado	Negro PV	Zincado
Largo mm										
20	13,400	16,200								
25	13,750	16,850								
30	14,700	18,100	31,100	36,150	31,100	38,200				
35	16,050	19,750	31,750	37,150	31,750	39,350				
40	17,350	21,350	33,500	39,400	33,500	41,700	58,750	69,950	58,750	73,100
45	18,900	23,200	35,950	42,250	35,950	44,750	62,400	74,300	62,400	77,650
50	20,600	25,250	39,050	45,750	39,050	48,350	64,650	77,200	64,650	80,800
55	22,600	27,850	41,950	49,050	41,950	51,850	68,800	82,050	68,800	85,850
60	24,400	30,050	45,900	53,800	45,900	56,250	72,900	86,900	72,900	90,750
65	27,650	34,000	51,850	60,800	51,850	63,950	81,150	97,200	81,150	100,850
70	27,650	34,000	51,850	60,800	51,850	63,950	81,150	97,200	81,150	100,850
75	31,100	38,300	57,850	67,900	57,850	71,400	90,500	108,350	90,500	112,950
80	31,100	38,300	57,850	67,900	57,850	71,400	90,500	108,350	90,500	112,950
90	35,650	43,550	65,200	76,250	65,200	80,150	102,050	121,550	102,050	126,650
100	41,450	50,100	71,350	83,400	71,350	87,600	111,600	132,850	111,600	138,300
110	46,150	55,600	79,050	92,100	79,050	96,600	123,550	146,550	123,550	152,450
120	52,250	62,400	89,600	103,700	89,600	108,550	146,750	171,500	146,750	177,700
130	55,250	69,450	100,750	120,550	100,750	127,200	157,500	191,850	157,500	200,450
140	61,750	76,950	113,350	134,500	113,350	141,550	183,450	220,100	183,450	229,300
150	73,200	89,500	119,700	142,150	119,700	149,650	195,250	234,100	195,250	243,700

Bicromatado igual precio que Zincado

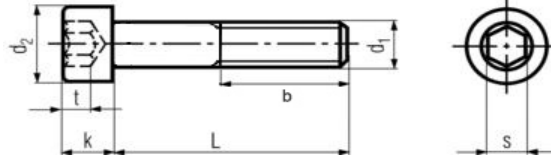




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## TORNILLO CABEZA CILÍNDRICA con hexágono interior

**DIN-912**



**CLASE 12.9**

€ 100 UNDS.

<i>d</i>	<i>M-4</i>	<i>M-5</i>	<i>M-6</i>	<i>M-8</i>	<i>M-10</i>	<i>M-12</i>	<i>M-14</i>	<i>M-16</i>	<i>M-18</i>	<i>M-20</i>
<i>D</i>	7	8,5	10	13	16	18	21	24	27	30
<i>K</i>	4	5	6	8	10	12	14	16	18	20
<i>S</i>	3	4	5	6	8	10	12	14	14	17
<i>t</i>	2,2	2,9	3,5	4,5	5,9	7,0	8,3	9,3	10,3	11,2
<i>b</i>	20	22	24	28	32	36	40	44	48	52

MÉTRICO	M - 4	M - 5	M - 6	M - 8	M - 10
Largo mm	Negro Pavón	Negro Pavón	Negro Pavón	Negro Pavón	Negro Pavón
10	3,700	4,250	5,800		
12	3,800	3,950	5,400		
16	3,300	3,450	4,100	6,700	14,350
20	3,700	3,450	4,250	6,850	12,800
25	4,250	4,200	4,500	7,500	13,650
30	4,600	4,500	4,800	8,200	14,450
35	5,550	4,800	5,900	9,300	15,800
40	6,200	5,400	6,500	10,150	16,900
45		6,350	7,100	11,350	18,750
50		7,450	7,900	12,450	20,500
55			9,350	13,500	22,550
60			10,150	14,450	24,250
65			11,850	19,300	27,800
70			11,850	19,300	27,800
75			14,700	23,000	31,200
80			14,700	23,000	31,200
90			19,200	24,300	39,500
100			21,150	28,050	46,050
110			26,350	32,650	49,050
120			33,450	35,200	55,500

MÉTRICO	M - 12	M - 14	M - 16	M - 18	M - 20
Largo mm	Negro Pavón	Negro Pavón	Negro Pavón	Negro Pavón	Negro Pavón
20	18,350				
25	18,900				
30	20,200	42,800	42,800		
35	22,100	43,650	43,650		
40	23,800	46,050	46,050		80,750
45	25,950	49,550	49,550		85,850
50	28,200	53,700	53,700		88,900
55	31,050	57,700	57,700		94,600
60	33,500	63,100	63,100		100,200
65	38,050	71,250	71,250		111,600
70	38,050	71,250	71,250		111,600
75	42,800	79,600	79,600		124,550
80	42,800	79,600	79,600		124,550
90	49,050	89,700	89,700		140,300
100	57,050	98,100	98,100		153,400
110	63,450	108,700	108,700		169,950
120	71,850	123,150	123,150		201,750
130	75,950	138,600	138,600		216,600
140	84,900	155,900	155,900		252,250
150	100,700	164,550	164,550		268,450

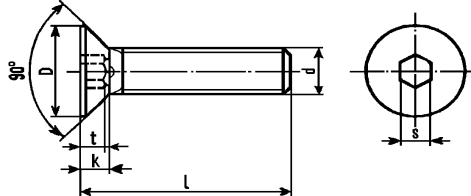
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## TORNILLO CABEZA AVELLANADA con hexágono interior

**DIN-7991**



**CLASE 10.9**

€ 100 UNDS.

<i>d</i>	<i>M-4</i>	<i>M-5</i>	<i>M-6</i>	<i>M-8</i>	<i>M-10</i>	<i>M-12</i>	<i>M-14</i>	<i>M-16</i>	<i>M-18</i>	<i>M-20</i>
<i>paso</i>	0,70	0,80	1,00	1,25	1,50	1,75	2,00	2,00	2,50	2,50
<i>k</i>	2,3	2,8	3,3	4,4	5,5	6,5	7,0	7,5	8,0	8,5
<i>s</i>	2,5	3,0	4,0	5,0	6,0	8,0	10,0	10,0	12,0	12,0
<i>D</i>	8	10	12	16	20	24	27	30	33	36

MÉTRICO	M-4		M-5		M-6		M-8		M-10	
	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*
10	2,550	2,800	2,650	3,050	3,600	4,100				
12	2,650	2,900	2,750	3,200	3,450	4,000				
16	2,750	3,050	2,800	3,400	3,200	3,900	5,750	7,150	14,450	16,500
20	2,900	3,300	3,050	3,750	3,350	4,150	5,900	7,550	10,400	12,850
25	3,200	3,650	3,300	4,050	3,600	4,550	6,200	8,200	10,850	13,650
30	3,800	4,400	4,050	4,950	4,200	5,350	6,850	9,100	11,200	14,450
35	4,350	5,150	4,800	6,000	5,000	6,250	7,600	10,150	12,300	16,000
40	5,150	6,000	5,750	7,100	5,750	7,200	8,550	11,400	13,500	17,600
45					7,000	8,600	9,500	12,650	14,750	19,300
50			9,500	11,250	8,550	10,300	10,400	13,850	16,700	21,700
55					11,100	13,050	13,300	17,400	18,950	24,550
60					13,650	15,800	16,150	20,150	23,750	29,550
70							19,620	24,450	28,400	35,500

MÉTRICO	M-12		M-14		M-16		M-18		M-20	
	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*
20	22,800	26,400								
25	22,950	27,250								
30	23,100	28,350	43,550	50,100	43,550	52,500				
35	23,500	29,050	45,800	53,150	45,800	55,850				
40	24,050	30,550	47,900	56,150	47,900	59,100			130,400	147,950
45	25,600	32,350	51,150	60,300	51,150	63,500			135,300	154,650
50	27,300	35,000	54,450	64,500	54,450	68,000			140,200	161,350
55	30,350	38,400	58,800	69,650	58,800	73,450			145,050	168,100
60	34,100	41,200	63,200	74,850	63,200	78,950			152,900	177,550
70	37,500	48,350	91,450	104,850	91,450	105,250			165,700	193,900
80	51,150	63,950	122,600	137,700	122,600	143,450			196,000	228,100

**CONSULTAR**

\*Zincado y deshidrogenado. (mín. 30 kg.)

Bicromatado igual precio que zincado

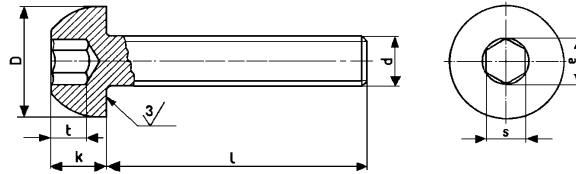
Otras medidas y recubrimientos rogamos consultar



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## TORNILLO CABEZA ABOMBADA con hexágono interior

ISO-7380



CLASE 10.9

€ 100 UNDS.

<i>d</i>	<i>M-4</i>	<i>M-5</i>	<i>M-6</i>	<i>M-8</i>	<i>M-10</i>	<i>M-12</i>
<i>D</i>	7,5	9,5	10,5	14	18	21
<i>K</i>	2,1	2,7	3,2	4,3	5,3	6,4
<i>s</i>	2,5	3,0	4,0	5,0	6,0	8,0

MÉTRICO	M - 4		M - 5		M - 6	
	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*
Largo mm						
8	3,300	4,100	4,350	5,450	7,600	9,550
10	2,650	3,350	2,650	3,350	4,200	5,250
12	2,750	3,450	2,750	3,450	3,600	4,450
16	2,900	3,650	2,900	3,650	3,300	4,100
20	3,300	4,100	3,350	4,150	3,450	4,300
25	3,800	4,700	3,950	4,950	3,600	4,450
30	4,800	5,950	4,350	5,450	4,200	5,250
35	5,750	7,200	5,150	6,450	4,800	5,950
40	6,700	8,350	6,200	7,750	5,300	6,650
45			8,550	10,650	6,700	8,350
50			10,400	13,000	8,550	10,650
60					17,050	21,350

MÉTRICO	M - 8		M - 10		M - 12	
	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*
Largo mm						
10	9,500	11,850				
12	8,550	10,650				
16	6,500	8,100	15,200	19,050		
20	6,700	8,350	11,800	14,750	20,850	26,050
25	7,000	8,750	12,100	15,150	20,850	26,050
30	7,600	9,550	12,750	15,950	21,800	27,300
35	8,400	10,500	13,300	16,900	23,750	29,650
40	9,150	11,450	14,750	18,400	25,600	32,000
45	10,400	13,000	17,050	21,350	28,400	35,450
50	12,300	15,400	18,950	23,700	31,400	29,150
55	15,200	19,050	22,800	28,500	35,950	44,950
60	15,200	19,050	22,800	28,500	35,950	44,950
70	18,950	23,700	26,500	33,150	41,700	52,200

\*Zincado y deshidrogenado.

Bicromatado igual precio que zincado

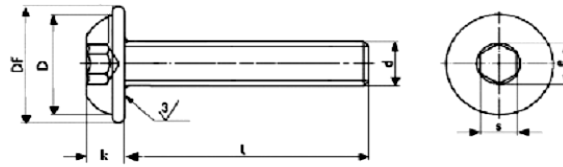
Otras medidas y recubrimientos rogamos consultar



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**TORNILLO CABEZA ABOMBADA con hexágono interior y arandela**

**ISO-7380/A**



**CLASE 10.9**

€ 100 UNDS.

<i>d</i>	<i>M-4</i>	<i>M-5</i>	<i>M-6</i>	<i>M-8</i>	<i>M-10</i>	<i>M-12</i>
<i>DF max</i>	9,4	11,8	13,9	17,9	21,9	24,6
<i>D</i>	7,5	9,5	10,5	14,0	18,0	21,0
<i>k max</i>	2,20	2,75	3,30	4,40	5,50	6,50
<i>s</i>	2,5	3,0	4,0	5,0	6,0	8,0

MÉTRICO	M - 4		M - 5		M - 6	
	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*
Largo mm						
10	5,302	5,461	5,065	5,382	5,540	6,094
12	5,302	5,461	5,065	5,461	5,540	6,094
16	5,540	5,856	5,382	5,856	5,302	6,015
20	5,856	6,173	5,619	6,173	5,540	6,331
25	6,489	6,806	6,173	6,806	6,727	7,597
30	7,281	7,677	6,964	7,835	7,914	8,864
35						
40						
45						
50						
60						

MÉTRICO	M - 8		M - 10		M - 12	
	Negro PV	Zincado*	Negro PV	Zincado*	Negro PV	Zincado*
Largo mm						
10						
12	8,151	9,259				
16	7,518	8,864	17,411	19,627		
20	8,468	9,180	15,591	19,943		
25	9,339	11,000	16,224	19,152		
30	10,209	12,108	17,411	20,656		
35	10,209	13,612	19,152	22,713		
40	12,742	15,274	22,001	26,116		
45						
50						
60						
70						

**CONSULTAR**

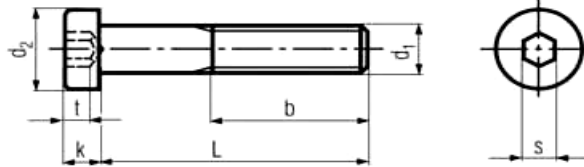
\*Zincado y deshidrogenado.  
 Bicromatado igual precio que zincado  
 Otras medidas y recubrimientos rogamos consultar



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**TORNILLO CABEZA CILÍNDRICA con hexágono interior (Cabeza baja)**

**DIN-7984**



**CLASE 8.8**

€ 100 UNDS.

	M-3	M-4	M-5	M-6	M-8	M-10	M-12	M-16
$d_1$								
$d_2$	5,5	7,0	8,5	10,0	13,0	16,0	18,0	24,0
$k$	2,0	2,8	3,5	4,0	5,0	6,0	7,0	9,0
$s$	2	2,5	3	4	5	7	8	12
$t$	1,5	2,3	2,7	3,0	3,8	4,5	5,0	5,5
$b$	12	14	16	18	22	26	30	38

MÉTRICO Largo mm	M - 3	M - 4	M - 5	M - 6
	Negro PV	Negro PV	Negro PV	Negro PV
8	3,350	3,550	3,700	6,200
10	3,300	3,050	3,050	3,700
12	3,450	3,200	3,200	3,350
16	3,600	3,300	3,300	3,350
20	4,500	3,550	3,550	3,550
25	5,500	4,500	4,050	4,100
30	6,700	5,500	4,800	4,800
35		6,500	5,500	5,500
40		7,450	6,200	6,200
45			7,200	7,450
50			10,600	9,300

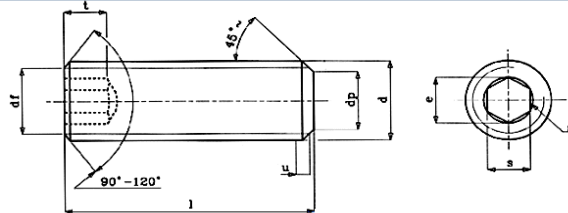
MÉTRICO Largo mm	M - 8	M - 10	M - 12	M - 14
	Negro PV	Negro PV	Negro PV	Negro PV
10	11,600			CONSULTAR
12	8,550			
16	6,500	13,500	32,250	
20	6,700	11,800	18,000	
25	7,000	12,100	17,050	
30	7,600	12,750	18,000	
35	9,150	13,500	18,950	
40	11,350	14,750	20,850	
45	13,650	16,150	24,650	
50	16,000	18,000	28,400	



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## ESPARRAGO ROSCADO con hexágono interior

**DIN-913**



**CLASE 14.9**

€ 100 UNDS.

<i>d</i>	M-4	M-5	M-6	M-8	M-10	M-12	M-14	M-16	M-18	M-20	M-22	M-24
<i>l</i> ≥ <sup>1</sup>	5	6	6	6	8	12	14	16	16	16	18	20
<i>t</i> min <sup>1</sup>	1,5	2,0	2,0	3,0	4,0	4,8	5,6	6,4	7,2	8,0	9,0	10,0
<i>l</i> ≤ <sup>2</sup>	6	8	8	8	10	14	16	18	18	18	20	25
<i>t</i> min <sup>2</sup>	2,5	3	3,5	5	6	8	9	10	11	12	13,5	15
<i>e</i> min	2,30	2,87	3,44	4,58	5,72	6,86	6,86	9,15	11,43	11,43	13,72	13,72
<i>dp</i> max	2,5	3,5	4,0	5,5	7,0	8,5	10,0	12,0	13,0	15,0	17,0	18,0
<i>s</i> nom.	2,0	2,5	3,0	4,0	5,0	6,0	6,0	8,0	10,0	10,0	12,0	12,0

MÉTRICO	M-4	M-5	M-6	M-8	M-10	M-12
L mm.						
4	5,495					
5	5,495	5,895				
6	5,657	3,602	4,532			
8	5,830	3,840	4,262	7,463		
10	6,338	4,078	4,456	5,678	9,853	
12	6,706	4,326	4,856	6,522	10,124	16,062
14	8,404	4,910	5,614	7,906	12,709	17,965
16	8,404	4,910	5,614	7,906	12,709	17,965
20	10,502	6,576	6,760	9,453	15,251	20,464
25	12,968	8,858	8,696	11,378	17,544	23,817
30	15,434	10,502	11,000	13,726	20,951	27,635
35	17,890	12,146	13,293	15,629	23,049	31,983
40	23,460	14,439	16,159	17,511	25,342	35,228
45		17,230	19,112	22,811	31,983	41,328
50			21,437	25,926	34,276	44,713
60			42,507	41,999	76,199	56,741
70			42,507	75,095	82,883	75,312

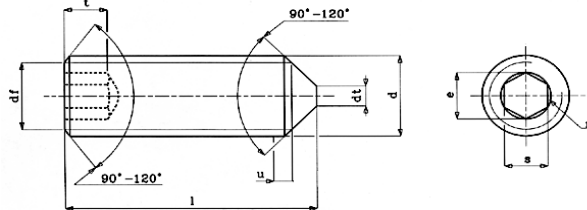
MÉTRICO	M-14	M-16	M-18	M-20	M-22	M-24
L mm.						
14	51,625					
16	51,625	51,625				
20	54,459	54,459	200,215	122,653		
25	59,812	59,812	208,316	126,093	273,969	414,523
30	65,318	65,318	215,985	136,520	286,300	427,448
35	71,656	71,656	224,075	144,707	299,495	440,676
40	77,518	77,518	232,176	157,643	313,069	453,007
45	85,446	85,446	240,466	167,918	333,674	465,337
50	94,142	94,142	248,335	178,572	373,412	479,462
60	106,484	106,484	271,233	279,788	400,787	589,191
70	125,996	125,996	286,884	294,736	431,396	614,425
80	160,423	160,423	303,897	376,829	458,112	639,702
90	209,333	186,749	319,894	395,011	507,714	664,362
100	234,763	215,368	360,616	415,378	580,679	773,009



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## ESPARRAGO ROSCADO con hexágono interior

# DIN-914



### CLASE 14.9

€ 100 UNDS.

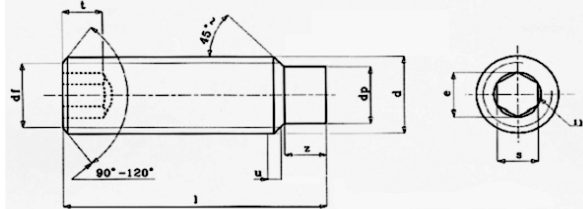
<i>d</i>	M-4	M-5	M-6	M-8	M-10	M-12	M-14	M-16	M-18	M-20	M-22	M-24
<i>l</i> ≥ <sup>1</sup>	5	6	6	6	8	12	14	16	16	16	18	20
<i>t</i> min <sup>1</sup>	1,5	2,0	2,0	3,0	4,0	4,8	5,6	6,4	7,2	8,0	9,0	10,0
<i>l</i> ≤ <sup>2</sup>	6	8	8	8	10	14	16	18	18	18	20	25
<i>t</i> min <sup>2</sup>	2,5	3,0	3,5	5,0	6,0	8,0	9,0	10,0	11,0	12,0	13,5	15,0
<i>e</i> min	2,30	2,87	3,44	4,58	5,72	6,86	6,86	9,15	11,43	11,43	13,72	13,72
<i>dt</i> max	-	-	1,5	2,0	2,5	3,0	4,0	4,0	5,0	5,0	6,0	6,0
<i>s</i> nom.	2,0	2,5	3,0	4,0	5,0	6,0	6,0	8,0	10,0	10,0	12,0	12,0

MÉTRICO	M-4	M-5	M-6	M-8	M-10	M-12
L mm.						
4	7,052					
5	6,414	7,604				
6	6,587	6,966	8,112			
8	6,792	7,214	7,387	10,719		
10	7,387	7,387	7,679	9,778	17,673	
12	7,820	7,679	8,112	10,221	16,073	27,743
14	9,853	8,112	8,620	10,859	17,814	26,142
16	9,853	8,112	8,620	10,859	17,814	26,142
20	12,168	8,977	9,702	12,309	19,198	29,041
25	15,207	10,070	10,946	13,693	21,243	33,681
30	18,041	11,378	13,542	16,224	22,887	38,094
35		13,033	15,954	18,398	25,775	42,431
40		15,380	16,949	20,496	28,533	46,639
45						
50						
60						
70						

MÉTRICO	M-14	M-16	M-18	M-20	M-22	M-24
L mm.						
16	56,914	56,914				
20	60,040	57,876		112,670		
25	65,945	65,945		124,406		414,361
30	72,013	72,013		135,557		427,535
35	79,011	79,011		146,708		440,676
40	85,446	85,446		164,165		453,007
45	94,218	94,218		168,946		465,337
50	103,769	103,769		180,238		479,430
60	117,386	117,386		254,500		589,191
70	138,888	138,888		294,693		614,425
80	203,741	203,135		415,832		639,702
90	255,117	254,500		394,968		664,362
100	290,053	289,436		397,629		774,090

## ESPARRAGO ROSCADO con hexágono interior

**DIN-915**



**CLASE 14.9**

€ 100 UNDS.

<i>d</i>	M-4	M-5	M-6	M-8	M-10	M-12	M-14	M-16	M-18	M-20	M-22	M-24
$l \geq^1$	5	6	6	6	8	12	14	16	16	16	18	20
$t \min^1$	1,5	2,0	2,0	3,0	4,0	4,8	5,6	6,4	7,2	8,0	9,0	10,0
$z^1$	1,0	1,3	1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0
$l \leq^2$	6	8	8	8	10	14	16	18	18	18	20	25
$t \min^2$	2,5	3,0	3,5	5,0	6,0	8,0	9,0	10,0	11,0	12,0	13,5	15,0
$z^2$	2,0	2,5	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0	12,0
$e \min$	2,30	2,87	3,44	4,58	5,72	6,86	6,86	9,15	11,43	11,43	13,72	13,72
$dp \max$	2,5	3,5	4,0	5,5	7,0	8,5	10,0	12,0	13,0	15,0	17,0	18,0
$s \text{ nom.}$	2,0	2,5	3,0	4,0	5,0	6,0	6,0	8,0	10,0	10,0	12,0	12,0

MÉTRICO	M-4	M-5	M-6	M-8	M-10	M-12
L mm.						
4	6,673					
5	6,673	7,604	0,000			
6	6,890	7,604	8,112			
8	7,106	7,896	8,112	10,794		
10	7,788	7,971	8,404	10,794	24,509	
12	8,296	8,480	8,912	11,227	17,673	38,267
14	10,351	8,912	9,496	11,952	19,631	28,608
16	10,351	8,912	9,496	11,952	19,631	28,608
20	12,828	9,853	10,654	13,542	21,080	32,005
25	15,932	11,011	11,952	15,207	23,460	36,926
30	18,896	12,460	13,542	17,890	25,277	41,793
35	21,935	14,342	15,716	20,280	28,316	46,714
40	27,797	16,224	18,539	22,670	31,431	51,344
45		19,188	22,011	26,294	43,232	54,383
50		22,443	24,769	29,831	45,535	59,239
60			62,354	70,445	79,065	95,224
70				76,826	86,690	104,418

MÉTRICO	M-14	M-16	M-18	M-20	M-22	M-24
L mm.						
16	56,276	59,380				
20	62,419	62,419		138,412		
25	68,649	68,649		152,798		415,096
30	75,312	75,312		165,106		427,448
35	82,548	82,548		180,519		440,676
40	89,794	89,794		194,634		453,007
45	98,480	98,480		206,953		465,337
50	108,625	108,625		221,339		479,430
60	122,415	122,415		254,500		589,191
70	147,433	147,433		338,119		614,425
80	219,284	219,576		376,927		639,702
90	258,438	258,611		394,968		730,037
100	309,705	309,987		412,760		774,090

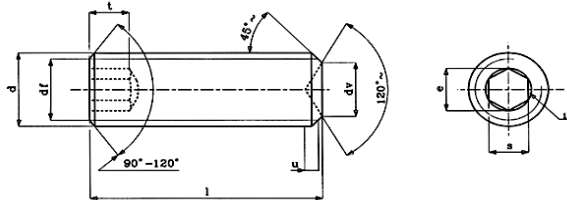




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## ESPARRAGO ROSCADO con hexágono interior

**DIN-916**



**14.9**  
 € 100 UNDS.

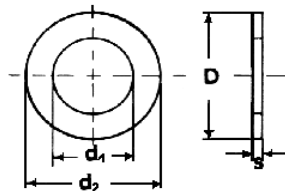
<i>d</i>	M-4	M-5	M-6	M-8	M-10	M-12	M-14	M-16	M-18	M-20	M-22	M-24
<i>l</i> ≥ 1	5	6	6	6	8	12	14	16	16	16	18	20
<i>t</i> min <sup>1</sup>	1,5	2,0	2,0	3,0	4,0	4,8	5,6	6,4	7,2	8,0	9,0	10,0
<i>l</i> ≤ 2	6	8	8	8	10	14	16	18	18	18	20	25
<i>t</i> min <sup>2</sup>	2,5	3,0	3,5	5,0	6,0	8,0	9,0	10,0	11,0	12,0	13,5	15,0
<i>e</i> min	2,30	2,87	3,44	4,58	5,72	6,86	6,86	9,15	11,43	11,43	13,72	13,72
<i>d<sub>v</sub></i> max	2,0	2,5	3,0	5,0	6,0	8,0	9,0	10,0	12,0	14,0	16,0	16,0
<i>s</i> nom.	2,0	2,5	3,0	4,0	5,0	6,0	6,0	8,0	10,0	10,0	12,0	12,0

MÉTRICO	M-4	M-5	M-6	M-8	M-10	M-12
L mm.						
4	5,765					
5	5,765	6,187				
6	5,938	3,775	4,770			
8	6,111	4,045	4,478	7,831		
10	6,652	4,283	4,683	6,306	10,275	
12	7,041	4,532	5,094	6,836	10,643	16,873
14	8,826	5,159	5,906	8,296	13,347	18,874
16	8,826	5,159	5,906	8,296	13,347	18,874
20	11,032	6,911	7,106	9,940	16,008	21,491
25	13,617	9,302	9,140	11,952	18,430	25,007
30	16,202	10,935	11,541	14,418	22,000	29,009
35	18,787	12,752	13,953	14,245	24,206	33,584
40	24,628	15,164	16,959	18,398	26,618	36,991
45		17,154	20,074	23,957	33,584	43,405
50		19,566	22,508	27,213	35,996	46,941
60			44,627	44,108	79,995	99,421
70				78,859	87,026	108,138

MÉTRICO	M-14	M-16	M-18	M-20	M-22	M-24
L mm.						
16	54,210	54,210				
20	57,173	57,173		107,306		
25	62,809	62,809		118,478		414,361
30	68,584	68,584		129,100		427,448
35	75,247	75,247		139,870		440,384
40	81,380	81,380		156,345		452,174
45	89,730	89,730		160,888		465,337
50	98,826	98,826		171,650		479,462
60	111,794	111,794		279,777		588,931
70	132,269	132,269		294,736		613,256
80	168,481	168,481		376,927		639,702
90	196,137	196,137		395,011		663,042
100	226,130	226,130		415,356		773,906

## ARANDELAS PLANAS

**DIN-125/A**



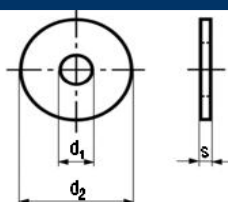
€ 100 UNDS.

MÉTRICO	d <sub>1</sub>	d <sub>2</sub>	s	ZINCADAS
M - 3	3,2	7	0,5	0,179
M - 4	4,3	9	0,8	0,218
M - 5	5,3	10	1,0	0,264
M - 6	6,4	12	1,6	0,496
M - 7	7,4	14	1,6	0,859
M - 8	8,4	16	1,6	0,932
M - 10	10,5	20	2,0	1,778
M - 12	13,0	24	2,5	2,730
M - 14	15,0	28	2,5	3,834
M - 16	17,0	30	3,0	4,892
M - 18	19,0	34	3,0	6,413
M - 20	21,0	37	3,0	7,471
M - 22	23,0	39	3,0	8,026
M - 24	25,0	44	4,0	14,082
M - 27	28,0	50	4,0	39,561
M - 30	31,0	56	4,0	48,784
M - 33	34,0	60	5,0	63,705
M - 36	37,0	66	5,0	81,912

Otras medidas y recubrimientos rogamos consultar

## ARANDELAS PLANAS - ALA ANCHA

**DIN-9021**



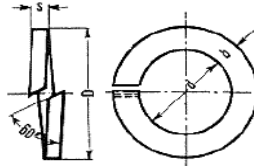
€ 100 UNDS.

MÉTRICO	d <sub>1</sub>	d <sub>2</sub>	s	ZINCADAS
M - 4	4,30	12	1,0	0,575
M - 5	5,3	15	1,2	0,846
M - 6	6,4	18	1,6	1,216
M - 7	7,4	22	2,0	2,400
M - 8	8,4	24	2,0	2,783
M - 10	10,5	30	2,5	5,322
M - 12	13,0	37	3,0	10,710
M - 14	15,0	44	3,0	14,511
M - 16	17,0	50	3,0	15,800
M - 18	19,0	56	4,0	26,733
M - 20	21,0	60	4,0	31,010

Otras medidas y recubrimientos rogamos consultar

## ARANDELA ELASTICA

### DIN-127/B

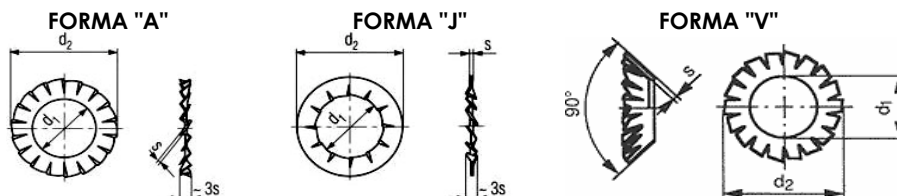


€ 100 UNDS.

MÉTRICO	d <sub>1</sub>	d <sub>2</sub>	s	NEGRO	ZINCADO
M-3	3,1	6,2	0,8	0,298	0,446
M-4	4,1	7,6	0,9	0,298	0,446
M-5	5,1	9,2	1,2	0,502	0,754
M-6	6,1	11,8	1,6	0,509	0,764
M-7	7,1	12,1	1,6	0,813	1,220
M-8	8,2	14,8	2,0	0,959	1,438
M-10	10,2	18,1	2,2	1,448	2,172
M-12	12,2	21,1	2,5	2,149	3,223
M-14	14,2	24,1	3,0	3,392	5,087
M-16	16,2	27,4	3,5	5,024	7,537
M-18	18,2	29,4	3,5	5,467	8,201
M-20	20,2	33,6	4,0	8,416	12,624
M-22	22,5	35,9	4,0	9,189	13,784
M-24	24,5	40,0	5,0	15,344	23,017
M-27	27,5	43,0	5,0	16,852	25,278

Otras medidas y recubrimientos rogamos consultar

### DIN-6798



€ 100 UNDS.

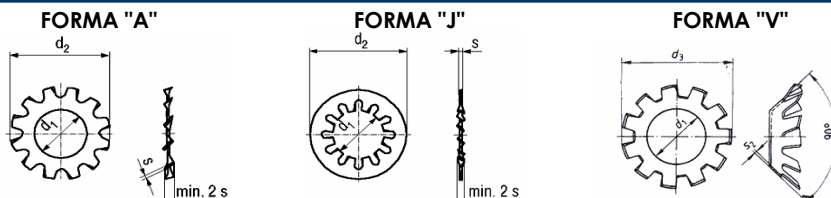
FORMA "A"				
MÉTRICO	d <sub>1</sub>	d <sub>2</sub>	s	NEGRO
M-3	3,2	6,0	0,4	
M-4	4,3	8,0	0,5	0,489
M-5	5,1	9,0	0,5	0,502
M-6	6,4	11,0	0,7	0,635
M-7	7,4	12,5	0,8	1,216
M-8	8,2	14,0	0,8	1,283
M-10	10,5	18,0	0,9	2,036
M-12	12,5	20,5	1,0	3,339
M-14	14,5	24,0	1,0	5,348
M-16	16,5	26,0	1,2	6,505
M-18	19,0	30,0	1,4	12,561
M-20	21,0	33,0	1,4	12,561
M-22	23,0	36,0	1,5	13,877
M-24	25,0	38,0	1,5	18,643
M-27	28,0	44,0	1,6	22,233

FORMA "J"				
MÉTRICO	d <sub>1</sub>	d <sub>2</sub>	s	NEGRO
M-3	3,2	6,0	0,4	
M-4	4,3	8,0	0,5	0,489
M-5	5,1	9,0	0,6	0,502
M-6	6,4	11,0	0,7	0,635
M-7	7,4	12,0	0,8	1,216
M-8	8,2	5,0	0,8	1,283
M-10	10,5	14,0	0,9	2,036
M-12	12,5	18,0	1,0	3,339
M-14	14,5	20,5	1,0	5,348
M-16	16,5	24,0	1,2	6,505
M-18	19,0	26,0	1,4	12,561
M-20	21,0	30,0	1,4	12,561
M-22	23,0	36,0	1,5	13,877
M-24	25,0	38,0	1,5	18,643
M-27	28,0	44,0	1,6	22,233

FORMA "V"				
MÉTRICO	d <sub>1</sub>	d <sub>2</sub>	s	NEGRO
M-3	3,2	6	0,4	0,943
M-4	4,3	8	0,5	1,015
M-5	5,1	9	0,5	1,044
M-6	6,4	11	0,7	1,392
M-8	8,2	14	0,8	1,958
M-10	10,5	18	0,9	2,973
M-12	12,5	20,5	1,0	5,945
M-14	14,5	24	1,0	8,773
M-16	16,5	26	1,2	12,543

## ARANDELA DENTADA ELASTICA

**DIN-6797**



€ 100 UNDS.

FORMA "A"				
MÉTRICO	d <sub>1</sub>	d <sub>2</sub>	s	NEGRO
M-3	3,2	6,0	0,40	0,493
M-4	4,3	8,0	0,50	0,551
M-5	5,1	10,0	0,50	0,798
M-6	6,4	11,0	0,70	0,957
M-7	7,4	12,5	0,80	1,755
M-8	8,2	15,0	0,80	1,755
M-10	10,5	18,0	0,90	2,668
M-12	12,5	20,5	1,00	3,959
M-14	14,5	24,0	1,00	5,771
M-16	16,5	26,0	1,20	7,555
M-18	19,0	30,0	1,40	16,240
M-20	21,0	33,0	1,40	18,053

FORMA "J"				
MÉTRICO	d <sub>1</sub>	d <sub>2</sub>	s	NEGRO
M-3	3,2	6,0	0,40	0,493
M-4	4,3	8,0	0,50	0,551
M-5	5,1	10,0	0,50	0,798
M-6	6,4	11,0	0,70	0,957
M-7	7,4	12,5	0,80	1,755
M-8	8,2	15,0	0,80	1,755
M-10	10,5	18,0	0,90	2,668
M-12	12,5	20,5	1,00	3,959
M-14	14,5	24,0	1,20	5,771
M-16	16,5	26,0	1,20	7,555
M-18	19,0	30,0	1,40	16,240
M-20	21,0	32,0	1,40	18,053

FORMA "V"				
MÉTRICO	d <sub>1</sub>	d <sub>2</sub>	s	NEGRO
M-3	3,2	6	0,4	CONSULTAR
M-4	4,3	8	0,5	
M-8	8,2	14	0,8	

**DIN-137**



€ 100 UNDS.

FORMA "A"				
MÉTRICO	d <sub>1</sub>	d <sub>2</sub>	s	NEGRO
M-3	3,2	6,0	0,40	CONSULTAR
M-4	4,3	8,0	0,50	
M-5	5,3	10,0	0,50	
M-6	6,4	11,0	0,70	
M-7	7,4	12,5	0,80	
M-8	8,4	15,0	0,80	
M-10	10,5	18,0	0,90	

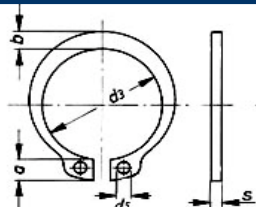
FORMA "B"				
MÉTRICO	d <sub>1</sub>	d <sub>2</sub>	s	NEGRO
M-3,5	3,7	6	0,40	CONSULTAR
M-4	4,3	8	0,50	
M-5	5,3	10	0,50	
M-6	6,4	11	0,70	
M-7	7,4	12,5	0,80	
M-8	8,4	15	0,80	
M-10	10,5	18	0,90	
M-12	13,0	20,5	1,00	
M-14	15,0	24	1,20	
M-16	17,0	26	1,20	
M-18	19,0	30	1,40	



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## ANILLO DE SEGURIDAD PARA EJES

**DIN-471**



**ACERO ACEITADO**

€ 100 UNDS.

D	d <sub>3</sub>	s	a	b	d <sub>5</sub>	PRECIO
3	2,7	0,4	1,9	0,8	1	2,915
4	3,7	0,4	2,2	0,9	1	2,915
5	4,7	0,6	2,5	1,1	1	1,740
6	5,6	0,7	2,7	1,3	1,2	1,929
7	6,5	0,8	3,1	1,4	1,2	2,755
8	7,4	0,8	3,2	1,5	1,2	2,233
9	8,4	1,0	3,3	1,7	1,2	2,262
10	9,3	1,0	3,3	1,8	1,2	2,277
11	10,2	1,0	3,3	1,8	1,5	2,523
12	11,0	1,0	3,3	1,8	1,5	2,668
13	11,9	1,0	3,4	2	1,7	2,842
14	12,9	1,0	3,5	2,1	1,7	3,495
15	13,8	1,0	3,6	2,2	1,7	3,495
16	14,7	1,0	3,7	2,2	1,7	3,625
17	15,7	1,0	3,8	2,3	1,7	4,713
18	16,5	1,2	3,9	2,4	1,7	4,858
19	17,5	1,2	3,9	2,5	2,0	6,453
20	18,5	1,2	4,0	2,6	2,0	5,771
21	19,5	1,2	4,1	2,7	2,0	7,613
22	20,5	1,2	4,2	2,8	2,0	8,265
24	22,2	1,2	4,4	3	2,0	8,918
25	23,2	1,2	4,4	3	2,0	9,280
26	24,2	1,2	4,5	3,1	2,0	10,440
28	25,9	1,5	4,7	3,2	2,0	13,050
29	26,9	1,5	4,8	3,4	2,0	15,863
30	27,9	1,5	5,0	3,5	2,0	13,340
32	29,6	1,5	5,2	3,6	2,5	18,270
34	31,5	1,5	5,4	3,8	2,5	20,880
35	32,5	1,5	5,6	3,9	2,5	21,170
36	33,2	1,75	5,6	4	2,5	23,940
38	35,2	1,75	5,8	4,2	2,5	25,970
40	36,5	1,75	6,0	4,4	2,5	26,970

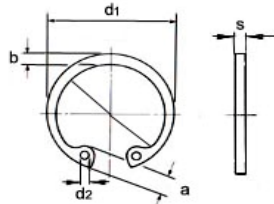
D	d <sub>3</sub>	s	a	b	d <sub>5</sub>	PRECIO
42	38,5	1,75	6,5	4,5	2,5	31,393
45	41,5	1,75	6,7	4,7	2,5	33,655
48	44,5	1,75	6,9	5,0	2,5	39,063
50	45,8	2,0	6,9	5,1	2,5	39,542
52	47,8	2,0	7,0	5,2	2,5	42,630
55	50,8	2,0	7,2	5,4	2,5	55,144
56	51,8	2,0	7,3	5,5	2,5	64,250
58	53,8	2,0	7,3	5,6	2,5	64,250
60	55,8	2,0	7,4	5,8	2,5	51,504
62	57,8	2,0	7,5	6	2,5	66,990
63	58,8	2,0	7,6	6,2	2,5	83,056
65	60,8	2,5	7,8	6,3	3,0	66,309
68	63,5	2,5	8	6,5	3,0	73,544
70	65,5	2,5	8,1	6,6	3,0	83,738
72	67,5	2,5	8,2	6,8	3,0	83,738
75	70,5	2,5	8,4	7	3,0	91,350
78	73,5	2,5	8,6	7,3	3,0	117,233
80	74,5	2,5	8,6	7,4	3,0	106,575
82	76,5	2,5	8,7	7,6	3,0	108,141
85	79,5	3,0	8,7	7,8	3,5	126,716
90	84,5	3,0	8,8	8,2	3,5	143,492
95	89,5	3,0	9,4	8,6	3,5	152,613
100	94,5	3,0	9,6	9,0	3,5	168,461
105	98,0	4,0	9,9	9,3	3,5	357,788
110	103,0	4,0	10,1	9,6	3,5	333,428
115	108,0	4,0	10,6	9,8	3,5	333,428
120	113,0	4,0	11	10,2	3,5	380,625
125	118,0	4,0	11,4	10,4	4,0	411,075
130	123,0	4,0	11,6	10,7	4,0	471,975
135	128,0	4,0	11,8	11,0	4,0	471,975
140	133,0	4,0	12,0	11,2	4,0	548,100
145	138,0	4,0	12,2	11,5	4,0	548,100
150	142,0	4,0	13,0	11,8	4,0	601,388



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## ANILLO DE SEGURIDAD PARA AGUJEROS

**DIN-472**



**ACERO ACEITADO**

€ 100 UNDS.

D	d <sub>1</sub>	s	a	b	d <sub>2</sub>	PRECIO
8	8,7	0,8	2,4	1,1	1,0	2,103
9	9,8	0,8	2,5	1,3	1,0	2,451
10	10,8	1,0	3,2	1,4	1,2	2,900
11	11,8	1,0	3,3	1,5	1,2	3,190
12	13,0	1,0	3,4	1,7	1,5	3,234
13	14,1	1,0	3,6	1,8	1,5	3,277
14	15,1	1,0	3,7	1,9	1,7	3,480
15	15,1	1,0	3,7	2,0	1,7	3,553
16	16,2	1,0	3,8	2,0	1,7	3,785
17	17,3	1,0	3,9	2,1	1,7	3,886
18	18,3	1,0	4,1	2,2	2,0	4,176
19	19,5	1,0	4,1	2,2	2,0	4,669
20	20,5	1,0	4,2	2,3	2,0	4,800
21	21,5	1,0	4,2	2,4	2,0	5,046
22	22,5	1,0	4,2	2,5	2,0	5,046
24	23,5	1,2	4,4	2,6	2,0	7,105
25	25,9	1,2	4,5	2,7	2,0	7,395
26	26,9	1,2	4,7	2,8	2,0	8,120
28	27,9	1,2	4,8	2,9	2,5	9,280
30	30,1	1,2	4,8	3,0	2,5	10,875
31	32,1	1,2	5,2	3,2	2,5	11,600
32	33,4	1,2	5,4	3,2	2,5	11,600
34	34,4	1,5	5,4	3,3	2,5	15,370
35	36,5	1,5	5,4	3,4	2,5	16,675
36	37,8	1,5	5,4	3,5	2,5	17,255
37	38,8	1,5	5,5	3,6	2,5	19,140
38	39,8	1,5	5,5	3,7	2,5	21,098
40	40,8	1,5	5,8	3,9	2,5	23,374
42	43,5	1,5	5,9	4,1	2,5	25,187
45	45,5	1,8	6,2	4,3	2,5	28,478
47	50,5	1,8	6,4	4,4	2,5	30,001

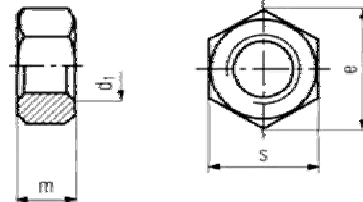
D	d <sub>1</sub>	s	a	b	d <sub>2</sub>	PRECIO
48	51,5	1,75	6,4	2,5	2,5	30,001
50	54,2	2,0	6,5	2,5	2,5	31,364
52	56,2	2,0	6,7	2,5	2,5	32,596
55	59,2	2,0	6,8	2,5	2,5	39,571
56	60,2	2,0	6,8	2,5	2,5	39,571
58	62,2	2,0	6,9	2,5	2,5	39,150
60	64,2	2,0	7,3	2,5	2,5	43,790
62	66,2	2,0	7,3	2,5	2,5	39,542
63	67,2	2,0	7,3	2,5	2,5	53,288
65	69,2	2,5	7,6	3,0	3,0	56,333
68	72,5	2,5	7,8	3,0	3,0	64,598
70	74,5	2,5	7,8	3,0	3,0	64,598
72	76,5	2,5	7,8	3,0	3,0	64,598
75	79,5	2,5	7,8	3,0	3,0	67,701
78	82,5	2,5	8,5	3,0	3,0	85,753
80	85,5	2,5	8,5	3,0	3,0	70,064
82	87,5	2,5	8,5	3,0	3,0	91,684
85	90,5	3,0	8,6	3,5	3,0	96,106
90	95,5	3,0	8,6	3,5	3,5	109,678
95	100,5	3,0	8,8	3,5	3,5	124,410
100	100,5	3,0	9,0	3,5	3,5	129,935
105	112,0	4,0	9,5	3,5	3,5	191,313
110	117,0	4,0	10,4	3,5	3,5	212,121
115	122,0	4,0	10,5	3,5	3,5	251,213
120	127,0	4,0	11,0	3,5	3,5	246,645
125	132,0	4,0	11,0	4,0	4,0	281,663
130	137,0	4,0	11,0	4,0	4,0	313,635
135	142,0	4,0	11,2	4,0	4,0	337,995
140	147,0	4,0	11,2	4,0	4,0	363,878
145	152,0	4,0	11,4	4,0	4,0	395,850
150	158,0	4,0	12	4,0	4,0	418,688



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## TUERCA HEXAGONAL

**DIN-934**



€ 100 UNDS.

<i>d</i>	M-3	M-4	M-5	M-6	M-7	M-8	M-10	M-12	M-14	M-16	M-18
<i>s</i>	5,5	7	8	10	11	13	17	19	22	24	27
<i>e</i>	6,01	7,66	8,76	11,05	12,12	14,38	18,9	21,1	24,49	26,75	29,56
<i>m</i>	2,4	3,2	4	5	5,5	6,5	8	10	11	13	15

<i>d</i>	M-20	M-22	M-24	M-27	M-30	M-33	M-36	M-39	M-42	M-45	M-48
<i>s</i>	30	32	36	41	46	50	55	60	65	70	75
<i>e</i>	32,95	35,03	39,55	45,2	50,85	55,37	60,79	66,44	71,3	76,95	82,6
<i>m</i>	16	18	19	22	24	26	29	31	34	36	38

### PASO NORMAL

MÉTRICO	PULIDAS	ZINCADAS	BICROMATADAS	PAVONADAS	GALV. EN CALIENTE	CLASE 10 PAV.
M-3 X 0,50	0,393	0,449	0,458	0,459		
M-4 X 0,70	0,393	0,449	0,458	0,479		
M-5 X 0,80	0,449	0,561	0,578	0,603		
M-6 X 1,00	0,786	0,954	0,983	1,041		1,625
M-7 X 1,00	1,571	1,852	1,908	1,978		
M-8 X 1,25	1,571	1,852	1,908	2,010	2,538	3,438
M-10 X 1,50	3,367	3,816	3,930	4,168	4,350	7,438
M-12 X 1,75	5,051	5,725	5,897	6,268	6,525	11,125
M-14 X 2,00	7,464	8,643	8,902	9,421	10,513	16,188
M-16 X 2,00	10,158	11,674	12,024	12,731	13,775	21,125
M-18 X 2,50	15,097	17,230	17,747	18,814	22,475	32,063
M-20 X 2,50	19,082	21,551	22,198	23,524	27,550	39,625
M-22 X 2,50	30,194	34,460	35,494	34,414	37,700	58,313
M-24 X 3,00	38,332	43,945	45,263	48,562	50,750	69,563
M-27 X 3,00	59,126	68,751	70,814	74,083	72,500	116,750
M-30 X 3,50	92,604	107,701	110,932	116,408	101,500	155,875
M-33 X 3,50	97,875	119,625	123,214	126,875	137,750	145,000
M-36 X 4,00	134,125	152,250	156,818	163,125	184,875	206,625
M-39 X 4,00	181,250	199,375	205,356	217,500	268,250	235,625
M-42 X 4,50	217,500	253,750	261,363	290,000	456,750	344,375
M-45 X 4,50	271,875	326,250	336,038	362,500	555,169	507,500
M-48 X 5,00	344,375	398,750	410,713	435,000		725,000
M-52 X 5,00	453,125	551,000	567,530	570,938		797,500

### PASO FINO

MEDIDA	PULIDAS	ZINCADAS	BICROMATADAS	PAVONADAS	CLASE 10 PAV.
M-8 X 1,00	2,245	2,750	2,833	2,985	4,125
M-10 X 1,25	4,714	5,949	6,127	6,497	
M-10 X 1,00	5,163	6,342	6,532		8,938
M-12 X 1,25	7,128	8,924	9,192	9,771	13,063
M-12 X 1,50	7,801	9,597	9,885		
M-14 X 1,50	10,383	13,077	13,469	14,254	19,750
M-16 X 1,50	14,199	15,567	16,034	19,157	26,250
M-18 X 1,50	31,102	25,817	26,592	28,191	38,188
M-20 X 1,50	26,715	32,944	33,932	35,959	49,000
M-22 X 1,50	42,205	49,894	51,391	54,171	72,063
M-24 X 2,00	53,710	63,981	65,900	70,703	93,125
M-27 X 2,00	81,435	97,599	100,527	105,168	142,563
M-30 X 2,00	129,645	151,028	155,559	163,238	216,000

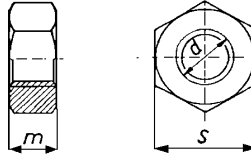
Otras medidas y recubrimientos rogamos consultar



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## TUERCA HEXAGONAL

### DIN-936



CLASE 8

€ 100 UNDS.

<i>d</i>	<b>M-6</b>	<b>M-8</b>	<b>M-10</b>	<b>M-12</b>	<b>M-14</b>	<b>M-16</b>
<i>s</i>	10	13	17	19	22	24
<i>m</i>	4	5	6	7	8	8
<i>d</i>	<b>M-18</b>	<b>M-20</b>	<b>M-22</b>	<b>M-24</b>	<b>M-27</b>	<b>M-30</b>
<i>s</i>	27	30	32	36	41	46
<i>m</i>	9	9	10	10	12	12

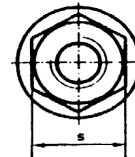
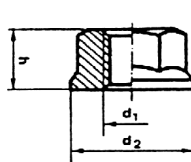
MÉTRICO	PASO NORMAL		
	PULIDAS	ZINCADAS	PAVONADAS
M-6 X 1,00	1,063	1,188	1,268
M-8 X 1,25	1,688	1,875	2,035
M-10 X 1,50	3,813	4,250	4,641
M-12 X 1,75	5,500	6,313	6,912
M-14 X 2,00	9,625	10,375	11,309
M-16 X 2,00	10,563	12,063	13,155
M-18 X 2,50	16,563	18,063	19,723
M-20 X 2,50	20,625	22,813	24,900
M-22 X 2,50	41,000	44,625	48,451
M-24 X 3,00	49,938	62,125	68,652
M-27 X 3,00	81,563	97,813	105,399
M-30 X 3,50	101,938	120,375	130,107

MÉTRICO	PASO FINO		
	PULIDAS	ZINCADAS	PAVONADAS
M-8 X 1,00	2,750	3,125	3,392
M-10 X 1,25	6,813	7,625	8,327
M-10 X 1,00	6,188	7,063	
M-12 X 1,25	8,875	10,063	11,018
M-12 X 1,50	9,688	10,813	
M-14 X 1,50	15,375	16,938	18,463
M-16 X 1,50	16,875	18,750	20,448
M-18 X 1,50	26,500	28,875	31,530
M-20 X 1,50	33,000	35,938	39,226
M-22 X 1,50	65,625	67,938	73,762
M-24 X 2,00	79,813	83,313	92,066
M-27 X 2,00	130,500	135,125	145,605
M-30 X 2,00	163,188	171,588	185,460

Otras medidas y recubrimientos rogamos consultar

## TUERCA HEXAGONAL CON BRIDA- Grafiladas \* -

### DIN-6923



CLASE 8

€ 100 UNDS.

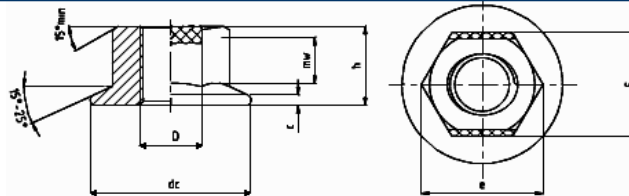
MÉTRICO	<i>s</i>	<i>h max</i>	<i>d2</i>	BICROMATADAS
M - 4	7	4,5	9,9	1,956
M - 5	8	5	12,2	1,956
M - 6	10	6	14,2	2,198
M - 8	13	8	17,9	3,712
M - 10	15	10	21,8	6,207
M - 12	18	12	26	12,095

\*Disponibles también en stock con base lisa  
 Otras medidas y recubrimientos rogamos consultar



**TUERCA HEXAGONAL CON BRIDA, PIEZA DE APRIETE Y TODA METÁLICA**

**DIN-6927**



**CLASE 8**

€ 100 UNDS.

**PASO NORMAL**

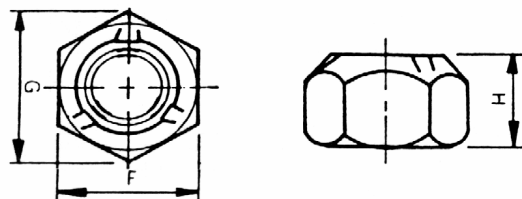
MÉTRICO	dc	s		h max	m	e min	DACROMET
		max	min				
M-6 X 1,00	14,2	10,00	9,78	7,3	5,7	11,05	<b>CONSULTAR</b>
M-8 X 1,25	17,9	13,00	12,73	9,4	7,6	14,38	
M-10 X 1,50	21,8	15,00	14,73	11,4	9,6	16,64	
M-12 X 1,75	26,0	18,00	17,73	13,8	11,6	20,03	
M-14 X 2,00	29,9	21,00	20,67	15,9		23,36	
M-16 X 2,00	34,5	24,00	23,67	18,3	15,3	26,75	
M-20 X 2,50	42,8	30,00	29,16	22,4	18,9	32,95	

**PASO FINO**

MÉTRICO	dc	s		h max	m	e min	DACROMET
		max	min				
M-10 X 1,25	21,8	15,00	14,73	11,4	9,6	16,64	<b>CONSULTAR</b>
M-12 X 1,25	26,0	18,00	17,73	13,8	11,6	20,03	
M-14 X 1,50	29,9	21,00	20,67	15,9		23,36	
M-16 X 1,50	34,5	24,00	23,67	18,3	15,3	26,75	
M-20 X 1,50	42,8	30,00	29,16	22,4	18,9	32,95	

**TUERCA HEXAGONAL CÓNICA AUTOBLOCANTE TODA METÁLICA**

**DIN-980/V**



**CLASE 8**

€ 100 UNDS.

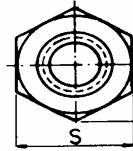
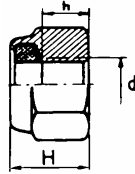
MÉTRICO	F	H	G	ZINCADAS
M-5	8	6,0	8,79	2,538
M-6	10	8,8	11,05	2,719
M-8	13	8,8	14,38	5,438
M-10	17	11,0	18,90	8,338
M-12	19	13,2	21,10	12,688
M-14	22	15,4	24,49	21,750
M-16	24	17,6	26,75	23,563
M-18	27	19,8	29,56	108,750
M-20	30	22,0	32,95	72,500



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## TUERCA HEXAGONAL AUTOBLOCANTE

**DIN-985**



**CLASE 8**

€ 100 UNDS.

PASO NORMAL				
MÉTRICO	<i>s</i>	<i>H</i>	<i>h</i>	ZINCADAS
M - 3	5,5	4	2,4	0,975
M - 4	7	5	2,9	0,975
M - 5	8	5	3,2	1,051
M - 6	10	6	3,4	1,514
M - 7	11	6,7	3,5	2,661
M - 8	13	8	5,5	2,813
M - 10	17	10	6,5	5,868
M - 12	19	12	8	8,356
M - 14	22	14	9,5	13,547
M - 16	14	16	10,5	16,484
M - 18	17	17	12	30,197
M - 20	30	20	12	34,420
M - 22	32	22	13	56,233
M - 24	36	24	14	83,133
M - 27	41	27	15	281,165
M - 30	46	30	16	322,635

PASO FINO				
MÉTRICO	<i>s</i>	<i>H</i>	<i>h</i>	ZINCADAS
M - 8 X 1,00	13	8	5,5	3,462
M - 10 X 1,00	17	10	6,5	7,223
M - 10 X 1,25	17	10	6,5	7,223
M - 12 X 1,25	19	12	8	10,036
M - 12 X 1,50	19	12	8	10,036
M - 14 X 1,50	22	14	9,5	14,666
M - 16 X 1,50	24	16	10,5	22,414
M - 18 X 1,50	27	17	12	36,217
M - 20 X 1,50	30	20	12	45,361

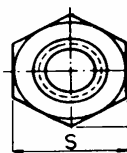
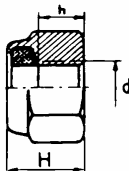
Bicromatadas igual precio que zincadas  
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## TUERCA HEXAGONAL AUTOBLOCANTE

**DIN-982**



**CLASE 8**

€ 100 UNDS.

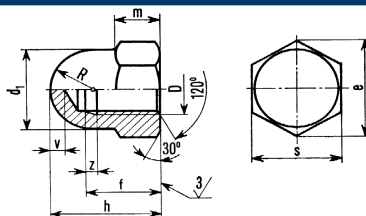
PASO NORMAL				
MÉTRICO	s	H	h	ZINCADAS
M - 5	8	6,3	3,5	3,263
M - 6	10	8	4,5	4,350
M - 7	11	8,8	5,6	7,613
M - 8	13	9,5	6,5	4,713
M - 10	17	11,5	8	11,600
M - 12	19	14	10	15,950
M - 14	22	16	11	29,000
M - 16	14	18	12,8	36,250
M - 18	17	20	14,4	CONSULTAR
M - 20	30	22	16	
M - 22	32	25	17,6	
M - 24	36	28	19	
M - 27	41	31	21,6	
M - 30	46	33	24	

PASO FINO				
MÉTRICO	s	H	h	ZINCADAS
M - 8 X 1,00	13	9,5	6,5	CONSULTAR
M - 10 X 1,00	17	11,5	8	
M - 10 X 1,25	17	11,5	8	
M - 12 X 1,25	19	14	10	
M - 12 X 1,50	19	14	10	
M - 14 X 1,50	22	16	11	
M - 16 X 1,50	14	18	12,8	
M - 18 X 1,50	17	20	14,4	
M - 20 X 1,50	30	22	16	

Otras medidas y recubrimientos rogamos consultar

## TUERCAS HEXAGONAL CIEGAS

**DIN-1587**



**CLASE 5**

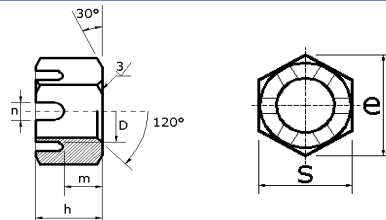
100 € UNDS.

MÉTRICO	d1	e min	f Js15	h h14	m Js14	R	s		V	PRECIO
							nom.	toler.		
M-4	6,5	7,74	5	8	3,2	3,25	7,0	h12	1	9,063
M-5	7,5	8,87	7	10	4,0	3,75	8,0		1	9,063
M-6	9,5	11,05	8	12	5,0	4,75	10,0		2	10,150
M-8	12,5	14,38	11	15	6,5	6,25	13,0	h13	2	10,875
M-10	16,0	18,90	13	18	8,0	8,00	17,0		2	27,188
M-12	18,0	21,10	16	22	10,0	9,00	19,0		3	41,688
M-14	21,0	24,49	18	25	11,0	10,5	22,0		3	90,625
M-16	23,0	26,75	21	28	13,0	11,5	24,0		3	145,000
M-20	29,0	33,53	26	34	16,0	14,5	30,0	3	271,875	

**TUERCA HEXAGONAL ALMENADA**

**DIN-935**

**DIN-937**



**CLASE 5**

100 € UNDS.

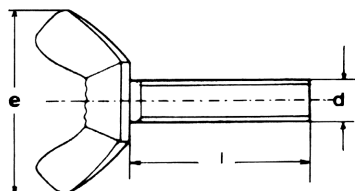
MÉTRICO	DIN 935					
	h	s	PASO NORMAL		PASO FINO	
			PULIDO	ZN	PULIDO	ZN
M-8	10	13	36,25	43,50		
M-8/1,00	10	13			43,50	52,20
M-10	12	17	39,88	47,85		
M-10/1,00	12	17			50,75	60,90
M-10/1,25	12	17			50,75	60,90
M-12	15	19	48,94	58,73		
M-12/1,25	15	19			54,38	65,25
M-12/1,50	15	19			54,38	65,25
M-14	16	22	65,25	78,30		
M-14/1,50	16	22			72,50	87,00
M-16	19	24	90,63	108,75		
M-16/1,50	19	24			97,88	117,45
M-18	21	27	108,75	130,50		
M-18/1,50	21	27			117,81	141,38
M-20	22	30	134,13	160,95		
M-20/1,50	22	30			145,00	174,00
M-22	26	32	145,00	174,00		
M-22/1,50	26	32			159,50	191,40
M-24	27	36	181,25	217,50		
M-24/150	27	36			199,38	239,25
M-24/200	27	36			199,38	239,25
M-27	30	41	253,75	304,50		
M-27/150	30	41			290,00	348,00
M-27/200	30	41			290,00	348,00
M-30	33	46	362,50	435,00		
M-30/200	33	46			416,88	500,25
M-33	35	50	435,00	522,00		
M-33/200	35	50			471,25	565,50
M-36	38	55	543,75	652,50		
M-36/300					616,25	739,50
M-39	40	60	688,75	826,50		
M-39/300	40	60			797,50	957,00
M-42	46	65	1087,50	1305,00		
M-42/300	46	65			1268,75	1522,50
M-45	48	70	1979,25	2375,10		
M-48	50	75	2283,75	2740,50		

MÉTRICO	DIN 937					
	h	s	PASO NORMAL		PASO FINO	
			PULIDO	ZN	PULIDO	ZN
M-8	8	13	36,25	43,50		
M-8/1,00					43,50	52,20
M-10	10	17	39,88	47,85		
M-10/1,00	10	17			50,75	60,90
M-10/1,25					50,75	60,90
M-12	12	19	48,94	58,73		
M-12/1,25					54,38	65,25
M-12/1,50	12	19			54,38	65,25
M-14	13	22	65,25	78,30		
M-14/1,50					72,50	87,00
M-16	14	24	90,63	108,75		
M-16/1,50					97,88	117,45
M-18	15	27	108,75	130,50		
M-18/1,50					117,81	141,38
M-20	15	30	134,13	160,95		
M-20/1,50					145,00	174,00
M-22	18	32	145,00	174,00		
M-22/1,50					159,50	191,40
M-24	18	36	181,25	217,50		
M-24/150					199,38	239,25
M-24/200					199,38	239,25
M-27	20	41	253,75	304,50		
M-27/150					290,00	348,00
M-27/200					290,00	348,00
M-30	21	46	362,50	435,00		
M-30/200					416,88	500,25
M-33	23	50	435,00	522,00		
M-33/200					471,25	565,50
M-36	23	55	543,75	652,50		
M-36/300					616,25	739,50
M-39	25	60	688,75	826,50		
M-39/300					797,50	957,00
M-42	28	65	1087,50	1305,00		
M-42/300					1268,75	1522,50
M-45	30	70	1979,25	2375,10		
M-48	30	75	2283,75	2740,50		

Otras medidas y recubrimientos rogamos consultar

## TORNILLO MARIPOSA

**DIN-316**



**CLASE 6**

**ZINCADO**

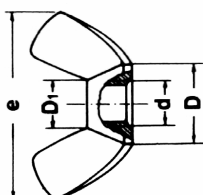
€ 100 UNDS.

<i>d</i>	<i>M-3</i>	<i>M-4</i>	<i>M-5</i>	<i>M-6</i>	<i>M-8</i>	<i>M-10</i>	<i>M-12</i>
<i>e</i>	17,6	17,6	22,5	27,8	30,3	36,2	49,4

MÉTRICO Largo mm	M-3	M-4	M-5	M-6	M-8	M-10	M-12
6	15,500						
8	15,808	16,183					
10	16,007	16,249	16,690				
12	16,183	16,382	16,867	20,130			
14	16,249	16,448	17,065	20,273	31,330		
16	16,382	16,525	17,275	20,538	31,595	64,083	
20	16,448	16,591	17,473	20,824	34,064	75,757	88,721
25		16,723	17,749	21,442	34,406	76,440	102,369
30			18,090	21,640	35,773	79,847	116,028
40				22,324	37,746	84,631	143,323
45					39,653		

## TUERCA MARIPOSA

**DIN-315**



**CLASE 6**

**ZINCADO**

€ 100 UNDS.

MÉTRICO	D	D1	e	PRECIO
<b>M-3</b>	8	5,2	17,6	<b>5,633</b>
<b>M-4</b>	8	5,2	17,6	<b>5,633</b>
<b>M-5</b>	10,3	6,2	22,5	<b>5,799</b>
<b>M-6</b>	12,7	8,8	27,2	<b>7,750</b>
<b>M-8</b>	13,8	9,2	30,3	<b>10,859</b>
<b>M-10</b>	16,5	11,4	35,8	<b>20,339</b>
<b>M-12</b>	22,5	14,4	48,0	<b>49,002</b>
<b>M-14</b>	26,6	17,5	63,5	<b>117,593</b>
<b>M-16</b>	26,6	17,5	63,5	<b>117,593</b>

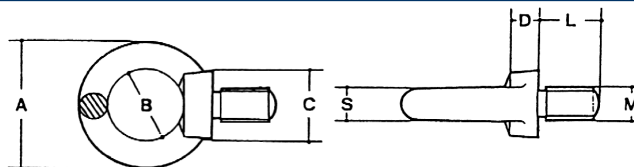
Otras medidas y recubrimientos rogamos consultar



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## CÁNCAMO MACHO

**DIN-580**



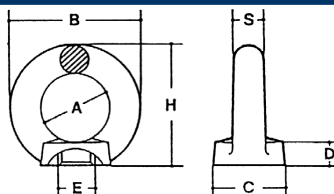
**ZINCADO**

€ UND.

MÉTRICO	A mm.	B mm.	C mm.	D mm.	L mm.	M mm.	S mm.	carga Kg	PRECIO
M-6	36	20	20	6	13	6	8	90	0,746
M-8	36	20	20	6	13	8	8	140	0,798
M-10	45	25	25	6	17	10	10	230	1,050
M-12	54	30	30	10	20,5	12	12	340	1,397
M-14	54	30	30	10	20,5	14	12	500	1,911
M-16	63	35	35	12	27	16	14	700	1,943
M-18	63	35	35	12	27	18	14	930	2,783
M-20	72	40	40	14	30	20	16	1200	2,825
M-22	72	40	40	14	30	22	16	1500	5,408
M-24	90	50	50	18	36	24	20	1800	5,586
M-27	98	54	62	20	40	27	22	2500	11,025
M-30	108	60	65	22	45	30	24	3600	12,075
M-33	108	60	65	22	45	33	24	4200	13,913
M-36	126	70	75	26	54	36	28	5100	21,630
M-42	144	80	85	30	63	42	32	7000	32,582
M-48	166	90	100	35	68	48	38	8600	61,551

## CÁNCAMO HEMBRA

**DIN-582**



**ZINCADO**

€ UND.

MÉTRICA	A mm.	B mm.	C mm.	D mm.	E mm.	H mm.	S mm.	carga Kg.	PRECIO
M-6	20	36	20	8,5	6	36	8	90	0,756
M-8	20	36	20	8,5	8	36	8	140	0,809
M-10	25	45	25	10	10	45	10	230	1,082
M-12	30	54	30	11	12	53	12	340	1,418
M-14	30	54	30	11	12	53	12	500	1,869
M-16	35	63	35	13	16	62	14	700	1,901
M-18	35	63	35	13	18	62	16	830	2,709
M-20	40	72	40	16	20	71	16	1200	2,783
M-22	40	72	19	16	22	71	16	1500	5,250
M-24	50	90	50	20	24	90	20	1800	5,418
M-27	50	90	50	20	27	90	20	2500	10,805
M-30	60	108	65	25	30	109	24	3600	11,802
M-36	70	126	75	30	36	128	28	5100	20,990
M-42	80	144	85	35	42	147	32	7000	31,616
M-48	80	166	100	40	48	168	38	8600	58,989



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## VARILLA ROSCADA

**DIN-975**



€ 100 UNDS.

UDS. por atado	F-1			F-1		
	ROSCA METRICA			ROSCA WHITWORTH		
	MEDIDA	BRUTO	ZINCADO	MEDIDA	BRUTO	ZINCADO
200	M-3	77,29	86,20	W - 1/8	89,18	98,09
200	M-4	38,64	44,59	W - 5/32	44,59	50,53
100	M-5	53,51	62,42	W - 3/16	59,45	71,34
100	M-6	56,48	65,40	W - 1/4	89,18	104,04
50	M-7	104,04	118,90	W - 5/16	130,79	151,60
50	M-8	98,09	112,96	W - 3/8	187,27	214,02
50	M-10	157,54	178,35	W - 7/16	249,69	279,42
30	M-12	225,91	258,61	W - 1/2	312,11	356,70
20	M-14	324,00	362,65	W - 9/16	401,29	460,74
20	M-16	425,07	466,68	W - 5/8	481,55	541,00
10	M-18	535,05	594,50	W - 3/4	713,40	787,71
10	M-20	665,84	725,29	W - 7/8	1040,38	1144,41
10 y 7	M-22	832,30	897,70	W - 1"	1322,76	1486,25
7 y 5	M-24	972,01	1043,35	W - 1 y 1/8	1902,40	2140,20
5	M-27	1486,25	1575,43	W - 1 y 1/4	2407,73	2823,88
5 y 3	M-30	1813,23	1961,85	W - 1 y 3/8	3329,20	3864,25
3	M-33	2259,10	2378,00	W - 1 y 1/2	3864,25	4637,10
3 y 1	M-36	2972,50	3180,58	W - 1 y 3/4	6688,13	7728,50
3 y 1	M-39	3626,45	3864,25	W - 2"	11890,00	13376,25
1	M-42	4161,50	4756,00			
1	M-45	5053,25	5945,00			
1	M-48	5945,00	7134,00			
1	M-52	7134,00	8323,00			

UDS. por atado	F-125 (equiv. Aprox 8.8)	
	MEDIDA	BRUTO
100	M-6	151,60
50	M-8	228,88
50	M-10	362,65
30	M-12	511,27
20	M-14	686,65
20	M-16	882,83
10	M-18	1144,41
10	M-20	1391,13
10 y 7	M-22	1750,80
7 y 5	M-24	2059,94
5	M-27	2713,89
5 y 3	M-30	3335,15
3	M-33	4054,49
3 y 1	M-36	4871,93
3 y 1	M-39	6277,92
1	M-42	7847,40
1	M-45	14713,88
1	M-48	17002,70
1	M-52	19618,50

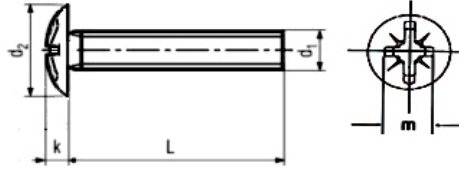
12.9	
MEDIDA	BRUTO
M-6	1079,02
M-8	1242,51
M-10	1504,09
M-12	1831,06
M-14	2190,73
M-16	2615,80
M-18	3106,26
M-20	3662,12
M-22	4414,16
M-24	5068,11
M-27	6376,01
M-30	7520,43
M-33	9155,30
M-36	10790,18
M-39	13405,98
M-42	16348,75
M-45	25177,08
M-48	25801,30
M-52	34332,38



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## TLLOS. CAB. REDONDA (Pozidriv y Ranura Larga)

**EMBELLECEDOR**



**CLASE 6.8**  
**ROSCA W 1/4**  
 € 100 UNDS.

Largo mm	BICROMAT.	PAVONADO	LATONADO	NIQUELADO
10	3,143	3,420	4,353	4,353
16	3,143	3,420	4,353	4,353
20	3,143	3,420	4,353	4,353
25	3,372	3,666	4,670	4,670
30	3,750	4,081	5,193	5,193
35	4,652	5,061	6,443	6,443
40	5,619	6,112	7,783	7,783
45	6,587	7,170	9,123	9,123
50	6,737	7,296	9,328	9,328
60	7,212	7,813	9,989	9,989
70	7,861	8,534	10,884	10,884

### CANTIDAD MÍNIMA POR MEDIDA

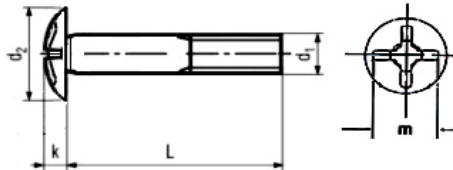
Hasta 50mm. - 10.000 uds

Hasta 55mm. - 5.000 uds

Otras medidas, rogamos consultar

## TLLOS. CABEZA REDONDA (Doble Ranura Larga)

**TCRD**



**CLASE 6.8**  
 € 100 UNDS.

MEDIDA	BRUTO	ZINC/BICROM.
M- 8 x 70	10,043	11,702

### FABRICACION POR ENCARGO

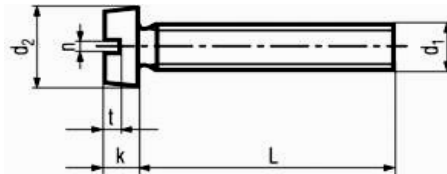
Minímo por pedido 25.000 uds.

Otras medidas, rogamos consultar.



## TORNILLO CABEZA PLANA, CILÍNDRICA CON RANURA

**DIN-84**



ZINCADO

CLASE 4.8

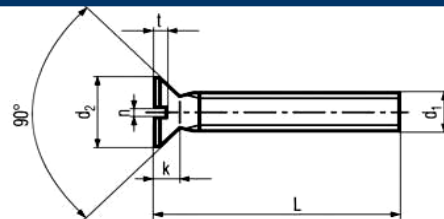
€ 100 UNDS

$d_1$	M-3	M-4	M-5	M-6
$d_2$	5,5	7	8,5	10
K	2	2,6	3,3	3,9

MÉTRICO= $d_1$	M-3	M-4	M-5	M-6
L				
6	0,932	1,382		
8	0,932	1,382	1,923	3,516
10	0,993	1,472	2,013	2,975
12	1,052	1,503	2,344	3,155
16	1,142	1,653	2,494	3,426
20	1,442	1,833	2,735	3,907
25	1,563	2,013	3,005	4,478
30	1,833	2,524	3,756	5,018
35	2,524	3,095	4,147	5,469
40	2,765	3,336	4,357	5,920
45		3,786	5,049	6,581
50		4,718	6,040	7,272
60		5,950	7,242	9,045
70			9,075	9,075

## TORNILLO CABEZA PLANA, CÓNICA CON RANURA

**DIN-963**



ZINCADO

CLASE 4.8

€ 100 UNDS

$d_1$	M-3	M-4	M-5	M-6
$d_2$	5,6	7,5	9,2	11
K	1,65	2,2	2,5	3

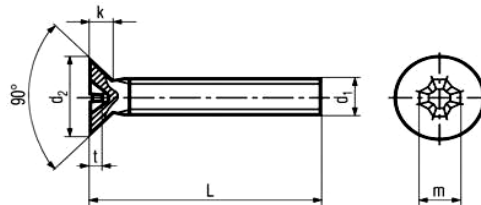
MÉTRICO= $d_1$	M-3	M-4	M-5	M-6
L				
6	0,781			
8	0,781	1,412	1,653	
10	0,811	1,232	1,563	2,584
12	0,871	1,262	1,743	2,314
16	0,932	1,382	1,923	2,765
20	1,172	1,533	2,224	3,245
25	1,382	2,314	2,765	3,726
30	1,563	2,434	2,855	4,177
35	2,164	2,524	3,426	4,838
40	2,404	2,825	3,786	5,169
45		3,576	4,778	6,100
50		4,177	5,469	6,551
60		4,688	6,461	7,302



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**TORNILLO CABEZA PLANA, CÓNICA CON RANURA PHILLIPS Y POZIDRIV**

**DIN-965**



**ZINCADO  
 CLASE 4.8**

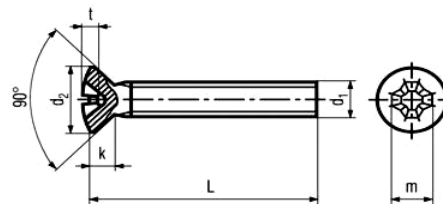
€ 100 UNDS

$d_1$	<b>M-3</b>	<b>M-4</b>	<b>M-5</b>	<b>M-6</b>
$d_2$	5,6	7,5	9,2	11
$K$	1,65	2,2	2,5	3

MÉTRICO= $d_1$	M-3	M-4	M-5	M-6
<b>L</b>				
6	0,902			
8	0,932	1,412	2,224	
10	1,022	1,412	2,224	3,336
12	1,052	1,472	2,314	3,396
15	1,142	1,623	2,554	3,666
20	1,262	1,803	2,855	4,177
25	1,412	2,013	3,215	4,598
30	1,773	2,374	3,576	5,169
35		2,915	4,057	5,740
40		3,245	4,508	6,311
45		3,666	4,868	6,611
50		4,207	5,860	7,633
60			7,362	9,075
70			7,876	10,037

**TORNILLO CABEZA PLANA, CÓNICA CON RANURA PHILLIPS Y POZIDRIV**

**DIN-966**



**ZINCADO  
 CLASE 4.8**

€ 100 UNDS

<b>MÉTRICO=<math>d_1</math></b>	<b>M-3</b>	<b>M-4</b>	<b>M-5</b>	<b>M-6</b>
$d_2$	5,6	7,5	9,2	11
$K$	1,65	2,2	2,5	3

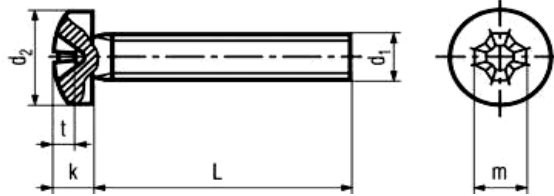
MÉTRICO= $d_1$	M-3	M-4	M-5	M-6
<b>L</b>				
6	0,902			
8	0,932	1,412	2,224	
10	1,022	1,412	2,224	3,336
12	1,052	1,472	2,314	3,396
15	1,142	1,623	2,554	3,666
20	1,262	1,803	2,855	4,177
25	1,412	2,013	3,215	4,598
30	1,773	2,374	3,576	5,169
35		2,915	4,057	5,740
40		3,245	4,508	6,311
45		3,666	4,868	6,611
50		4,207	5,860	7,633
60			7,362	9,075
70			7,876	10,037



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**TORNILLO CABEZA PLANA, CÓNICA CON RANURA PHILLIPS Y POZIDRIV**

**DIN-7985**



**ZINCADO**

**4.8**

€ 100 UNDS.

$d_1$	M-3	M-4	M-5	M-6
$d_2$	6	8	10	12
K	2,4	3,1	3,8	4,6

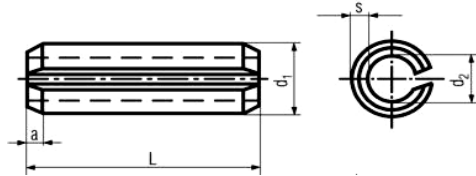
MÉTRICO= $d_1$	M-3	M-4	M-5	M-6
L				
6	0,932	1,442		
8	0,962	1,442	2,043	
10	0,962	1,533	2,224	3,516
12	1,022	1,593	2,284	3,366
15	1,082	1,713	2,524	3,816
20	1,322	1,803	2,855	4,237
25	1,412	2,073	3,245	4,688
30	1,743	2,464	3,606	5,169
35		3,005	3,967	5,529
40		3,426	4,538	6,401
45		3,816	4,958	6,731
50		4,447	5,950	7,753
60			6,942	8,805
70			7,963	10,127



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**PASADOR ELASTICO**

**DIN-1481**



**ACERO C-70**

€ 100 UNDS.

<i>d nominal</i>	1,5	2	2,5	3	3,5	4	5	6	7	8	10	12
<i>d<sub>1</sub> Nom.</i>	1,7	2,3	2,8	3,3	3,8	4,4	5,4	6,4	7,5	8,5	10,5	12,5
<i>d<sub>2</sub></i>	1,1	1,5	1,8	2,1	2,3	2,8	3,4	3,9	4,5	5,5	6,5	7,5
<i>s</i>	0,3	0,4	0,5	0,6	0,75	0,8	1	1,25	1,25	1,5	2	2,5
<i>a</i>	0,25	0,35	0,4	0,5	0,6	0,65	0,9	1,2	2	2	2	2

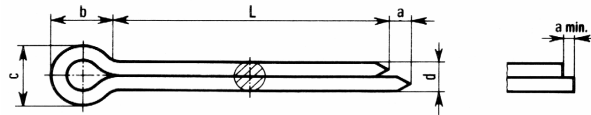
MÉTRICO	1,5	2	2,5	3	3,5	4	5	6	7	8	10	12
Largo mm	1,5	2	2,5	3	3,5	4	5	6	7	8	10	12
4	0,617	0,639										
5	0,628	0,717	0,772	0,860								
6	0,650	0,772	0,816	0,882	1,202							
8	0,717	0,838	0,882	0,915	1,202	1,224						
10	0,728	0,860	0,970	1,102	1,235	1,279	1,632	2,106				
12	0,827	0,904	1,058	1,213	1,345	1,378	1,742	2,370	3,307			
14	0,860	0,948	1,135	1,290	1,587	1,433	1,951	2,635	3,605			
16	0,893	1,014	1,191	1,389	1,598	1,587	2,128	2,877	3,914	5,920		
18	0,948	1,146	1,279	1,510	1,731	1,698	2,315	3,131	4,046	6,339		
20	1,003	1,180	1,356	1,621	1,874	1,885	2,458	3,252	4,244	6,747	9,370	11,145
22		1,224	1,444	1,731	2,028	2,050	2,613	3,473	4,608	7,199	10,010	12,920
24		1,301	1,532	1,863	2,150	2,095	2,811	3,737	4,928	7,585	10,914	13,835
26		1,356	1,632	1,984	2,282	2,293	3,032	3,980	5,192	8,048	11,498	14,728
28		1,444	1,720	2,161	2,425	2,425	3,351	4,476	5,622	8,477	12,027	15,687
30		1,510	1,808	2,293	2,646	2,569	3,539	4,718	6,118	8,874	12,777	16,613
32				2,425	2,756	2,712	3,583	4,928	6,306	9,359	13,306	17,528
36				2,635	3,043	2,999	4,079	5,424	6,901	9,723	14,331	19,942
40				2,844	3,274	3,263	4,366	5,920	7,585	10,186	15,279	21,750
45				2,954	3,616	3,561	4,862	6,548	8,334	10,914	16,558	24,275
50				3,417	3,947	3,869	5,347	7,166	9,635	12,027	17,947	26,579
55							5,865	7,794	10,087	13,306	19,446	28,850
60							6,317	8,588	10,892	13,967	20,902	31,198
65							6,747	9,161	11,785	14,904	22,368	33,954
70							7,199	9,756	12,634	15,830	23,658	36,192
75							7,838	10,329	13,824	16,889	25,168	38,617
80							8,555	10,958	14,971	17,528	26,722	40,800
90								11,641	16,922	19,512	30,062	46,345
100								14,056	19,612	22,665	33,017	53,720
120										26,910	42,872	59,618



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## PASADOR ALETA

**DIN-94**



**ZINCADO**

€ 100 UNDS.

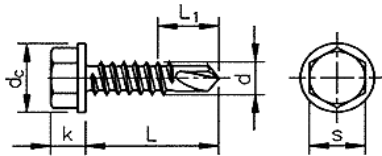
<i>d nominal</i>		1	1,6	2	2,5	3,2	3,5	4	4,5	5	6,3	7	8	10	13
<i>d</i>	<i>min</i>	0,8	1,3	1,7	2,1	2,7	3,2	3,5	4,2	4,4	5,7	6,5	7,3	9,3	12,1
	<i>max</i>	0,9	1,4	1,8	2,3	2,9	3	3,7	4	4,6	5,9	6,7	7,5	9,5	12,4
<i>c</i>	<i>min</i>	1,6	2,4	3,2	4	5,1	6,1	6,5	7,6	8	10,3	12,45	13,1	16,6	21,7
	<i>max</i>	1,8	2,8	3,6	4,6	5,8	6,8	7,4	8,2	9,2	11,8	12,5	15	19	24,8
<i>b</i>		3	3,2	4	5	6,4	7	8	8,5	10	12,6	4,7	16	20	26
<i>a</i>	<i>max</i>	1,6	2,5	2,5	2,5	3,2	3,5	4	4	4	4	12,3	4	6,3	6,3

MÉTRICO	1	1,6	2	2,5	3,2	3,5	4	4,5	5	6,3	7	8	10	13
Largo mm														
10	1,094	1,250	1,328											
12	1,131	1,288	1,369	1,503										
14	1,191	1,369	1,406	1,581										
16	1,288	1,406	1,503	1,641	1,759	2,266	2,872	3,731						
18	1,369	1,503	1,581	1,741	1,875	2,403	3,009	3,966						
20	1,406	1,581	1,641	1,797	1,994	2,559	3,341	4,219	5,041					
22	1,503	1,641	1,741	1,875	2,131	2,850	3,534	4,572						
25	2,541	1,797	1,856	1,972	2,303	3,028	3,847	5,000	5,194	7,716				
28		1,953	1,994	2,131	2,500	3,378	4,181	5,431	5,294	8,184		19,747		
32		1,994	2,150	2,363	2,850	3,713	4,572	5,822	5,919	8,828	12,638	20,647		
36		2,131	2,303	2,500	2,950	4,084	4,941	6,291	6,406	9,356	13,281	21,544		
40			2,481	2,872	3,222	4,513	5,294	6,681	6,875	10,275	14,006	22,522	44,456	
45				3,241	3,475	4,941	5,703	7,188	7,422	11,250	15,450	23,422		
50			3,222	3,534	3,731	5,450	6,194	7,831	7,909	12,678	16,663	25,238	45,863	
56					4,084	5,606	6,622	8,047	8,538	14,025	17,988	27,034	47,056	
63					4,375	6,466	7,188	9,416	8,966	15,450	19,319	28,947	50,413	
71					5,000	7,481	7,909	10,275	10,000	16,994	22,031	30,706	53,756	107,06
80						8,400	9,122		11,075	19,103	24,359	32,563	60,472	134,50
90									12,013	21,488	27,366	34,419	67,213	147,67
100									13,088	23,850	30,472	37,991	73,678	160,91
112										26,566	32,347	41,566	80,691	174,12
120										28,713	34,906			
125										30,844	37,463	48,872	87,409	187,36
140												61,413	100,85	214,10
160													114,37	227,48
180													127,74	267,72
200														294,44
224														321,67



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## TORNILLO PUNTA BROCA



ZINCADO

€ 100 UNDS.



**DIN-7504/K**

**CON ARANDELA**

<i>d</i>		3,5	3,9	4,2	4,8	5,5	6,3
Zona de taladro	desde	0,7	0,7	1,75	1,75	1,75	2
Espesor de chapa	hasta	2,25	2,4	3	4,4	5,25	6

<i>L</i>	Mín	Máx	MÍNIMO					
9,5	8,75	10,25	2,85					
13	12,10	13,90	6,20	5,80	4,30	4,70		
16	15,10	16,90	9,20	8,80	7,30	5,80	5,00	
19	18,00	20,00	12,10	11,70	10,30	8,70	8,00	7,00
22	21,00	23,00	15,10	14,70	13,30	11,70	11,00	10,00
25	24,00	26,00	18,10	17,70	16,30	14,70	14,00	13,00
32	30,75	33,25		24,50	23,00	21,50	21,00	20,00
38	36,75	39,25		30,50	29,00	27,50	27,00	26,00
45	43,75	46,25				34,50	34,00	33,00
50	48,75	51,25				39,50	39,00	38,00

### DIN 7504-K

<i>d</i>	3,5	4,2	4,8	5,5	6,3
<i>a</i> (máx)	1,3	1,4	1,6	1,8	1,8
<i>dc</i> (máx)	8,3	8,8	10,5	11	13,2
<i>k</i> (máx)	3,4	4,25	4,45	5,45	6,45
<i>s</i>	5,5	7	8	8	10

### DIN 7504-K con ARANDELA

<i>d</i>	3,5	4,2	4,8	5,5	6,3
<i>a</i> (máx)	1,3	1,4	1,6	1,8	1,8
<i>dc</i> (máx)	8,3	8,8	10,5	11	13,2
<i>k</i> (máx)	3,4	4,25	4,45	5,45	6,45
<i>s</i>	5,5	7	8	8	10

MÉTRICO	3,5	4,2	4,8	5,5	6,3
Largo mm					
9,5	0,730				
13	1,300	1,520	1,820		
16	1,460	1,720	2,470		
19	1,570	1,860	2,420	3,010	5,260
22				2,860	
25	1,890	2,330	2,480	3,350	5,720
32	2,340	2,680	3,370	3,010	6,440
38		2,940	3,340	5,020	7,090
50				5,840	8,400
63				7,240	10,360
75				8,090	12,590
80					13,570
90					13,200
100					14,930

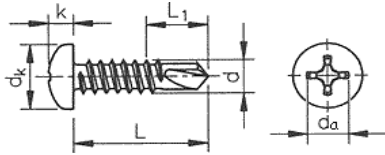
MÉTRICO	3,5	4,2	4,8	5,5	6,3
Largo mm					
9,5					
13					
16					
19					
22					
25					
32					
38					
50					

CONSULTAR



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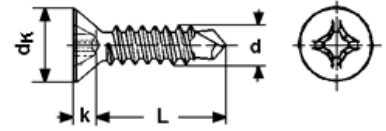
## TORNILLO PUNTA BROCA



**DIN-7504/N**

ZINCADO

€ 100 UNDS.



**DIN-7504/P**

**DIN 7504-N**

<i>d</i>	<i>ST 3,5</i>	<i>ST 3,9</i>	<i>ST 4,2</i>	<i>ST 4,8</i>	<i>ST 5,5</i>
<i>a</i>	1,3	1,3	1,4	1,6	1,8
<i>dk</i>	6,9	7,5	8,2	9,5	10,8
<i>k</i>	2,6	2,8	3,05	3,55	4
<i>da</i>	4,1	4,5	4,9	5,6	6,3

**DIN 7504-P**

<i>d</i>	<i>ST 3,5</i>	<i>ST 3,9</i>	<i>ST 4,2</i>	<i>ST 4,8</i>	<i>ST 5,5</i>
<i>a</i>	1,3	1,3	1,4	1,6	1,8
<i>dk</i>	6,44	7,14	7,74	9,15	10,37
<i>k</i>	2,1	2,3	2,5	3	3,4
<i>da</i>	4,1	4,5	4,9	5,6	6,3

MÉTRICO Largo mm	3,5	3,9	4,2	4,8	5,5
9,5	0,865				
11	0,903				
13	0,827	1,178	1,045	1,254	
16	0,931	0,960	1,150	1,501	
19	1,197	1,359	1,254	1,824	2,850
22	1,283	1,615	1,520	2,309	3,088
25	1,273	1,758	1,615	2,451	2,470
32	1,786	1,995	2,176	2,727	2,917
38		2,337	2,527	3,050	4,009
45				3,401	4,332
50			3,031	3,905	
60				4,570	5,890
73				5,510	6,954

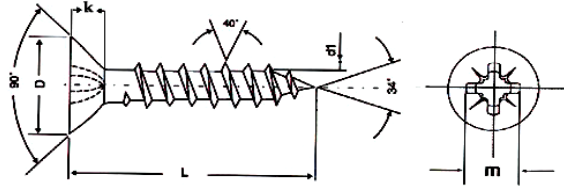
MÉTRICO Largo mm	3,5	3,9	4,2	4,8	5,5
9,5	0,542				
11	0,808				
13	0,950	1,102	0,903	1,444	
16	0,846	1,235	1,311	1,815	
19	0,912	1,292	1,169	1,976	2,584
22	1,188	1,606	1,701		
25	1,444	1,416	1,767	2,328	2,632
32		1,634	2,024	2,404	3,335
38		2,062	2,356	2,746	3,601
50				3,553	4,826



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## TORNILLO CABEZA CÓNICA CON RANURA POZIDRIV

**DIN-7505/A**



**BICROMATADO**

€ 100 UNDS.

<i>d</i>	<i>M-2,5</i>	<i>M-3</i>	<i>M-3,5</i>	<i>M-4</i>	<i>M-4,5</i>	<i>M-5</i>	<i>M-6</i>
<i>D</i>	4,7-5,0	5,7-6,0	6,7-7,0	7,7-8,0	8,6-9,0	9,6-10,0	11,5-12,0
<i>K (máx)</i>	1,40	1,90	2,10	2,50	2,70	3,00	3,60
<i>m</i>	2,70	2,05	3,96	4,42	4,98	5,30	6,60

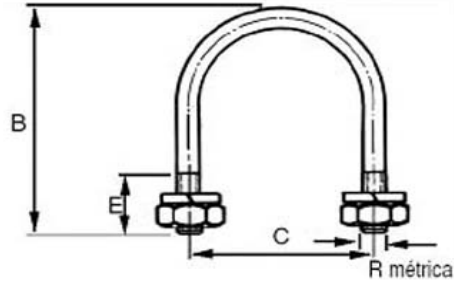
MÉTRICO Largo mm	M-2,5	M-3	M-3,5	M-4	M-4,5	M-5	M-6
10	0,714						
12	0,714	0,681	0,746	0,952			
16	0,746	0,692	0,779	0,952	1,309	1,731	
20	0,800	0,746	0,844	1,049	1,309	1,731	
25	0,909	0,844	0,909	1,157	1,449	1,882	
30	1,255	1,146	1,146	1,330	1,676	2,142	3,429
35		1,309	1,330	1,493	1,806	2,336	3,710
40		1,384	1,558	1,644	1,990	2,574	4,121
45		2,347	2,012	2,055	2,617	2,942	4,359
50			2,077	2,293	2,791	3,180	4,489
55				2,942	3,580	3,645	5,376
60				3,288	3,580	3,980	5,376
70				4,824	4,921	5,224	6,630
80					5,624	6,187	8,501
90						8,404	9,150
100						9,204	9,853
110							18,182
120							20,897
130							24,509
140							26,315
150							27,429
160							28,381
180							37,261
200							66,291
220							83,034
240							113,168





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## ABARCÓN CON TUERCA Y ARANDELA



ZINCADO

€ 100 UNDS.

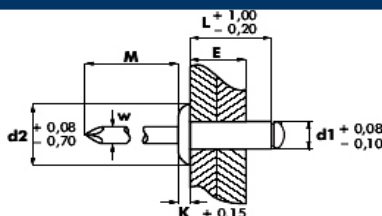
Dimens. Nominal	% ext. Tubo	B	C	E	R	Precio
1/8"	10,2	29,0	14,5	13,0	4 x 070	CONSULTAR
1/4"	13,5	32,0	20,0	14,0	6 x 100	
3/8"	17,2	37,0	23,5	15,0	6 x 100	
1/2"	21,3	42,0	28,0	17,0	6 x 100	
3/4"	29,9	50,0	34,0	19,0	6 x 100	
1"	33,7	62,0	41,0	24,0	6 x 100	
1 1/4"	42,4	71,0	49,0	24,0	6 x 100	
1 1/2"	48,3	80,0	57,0	26,0	8 x 125	
2"	60,3	91,0	70,0	26,0	8 x 125	
2 1/2"	76,1	117,5	85,0	35,0	10 x 150	
3"	88,9	130,5	100,5	35,0	10 x 150	
3 1/2"	101,6	143,0	114,0	35,0	10 x 150	
4"	114,3	155,0	127,0	35,0	10 x 150	
5"	139,7	186,0	154,0	40,0	10 x 150	
6"	168,3	213,0	181,0	40,0	10 x 150	
8"	219,1	264,0	232,0	40,0	10 x 150	
10"	273,0	318,0	286,0	40,0	10 x 150	
12"	323,9	378,0	339,0	50,0	14 x 200	
14"	355,6	410,0	372,0	50,0	14 x 200	
16"	406,4	470,0	422,0	60,0	14 x 200	
18"	457,2	532,0	476,0	70,0	16 x 200	
20"	508,0	585,0	529,0	70,0	16 x 200	



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## REMACHE ALUMINIO ESTÁNDAR CABEZA ALOMADA

**DIN-7337**



**CABEZA ALUMINIO  
 VÁSTAGO ACERO ZN**

€ 100 UNDS.

$d_1 = \emptyset$	<b>2,4</b>	<b>3</b>	<b>3,2</b>	<b>4</b>	<b>4,8</b>	<b>6</b>	<b>6,4</b>
$d_2$	5	6,5	6,5	8	9,5	12	13
Taladro	2,5	3,1	3,3	4,1	4,9	6,1	6,5
K	0,55	0,80	0,80	1,00	1,10	1,50	1,80
w	1,45	1,80	1,80	2,20	2,75	3,20	3,60

$d_1 = \emptyset$ L mm	2,4	E	3,00	E	3,20	E	4,00	E	4,8	E	6	E	6,4	E
5			2,550	0,5-2,5	2,550	0,5-2,5	2,700	0,5-2,5						
6	3,399	2,0-4,0	2,626	1,5-3,5	2,626		2,787	1,5-3,0	3,399	0,5-3,0				
7			2,749	1,5-4,5			2,937	3,0-4,5						
8	3,573	4,0-6,0	2,937	3,5-5,5	2,937	3,5-5,5	2,949	3,0-5,0	3,860	3,0-4,5	8,747	2,0-4,0		
10			3,036	5,5-7,0	3,036	5,5-7,0	3,184	5,0-6,5	4,271	4,5-6,0	9,133	4,0-6,0		
12			3,473	7,0-9,0	3,473	7,0-9,0	3,734	6,5-8,5	4,861	6,0-8,0	9,506	6,0-8,0	10,320	2,0-6,0
14							3,997	8,5-10,5	5,373	8,0-10,0				
15					4,149	9,0-12,0							11,368	6,0-9,0
16							4,360	10,5-12,5	5,622	10,0-12,0	10,035	10,0-11,0		
18					5,335	12,0-15,0	4,747	12,5-14,5	6,248	12,0-14,0	10,320	11,0-13,0	12,343	9,0-12,0
20							6,946	14,5-16,5			11,031	13,0-15,0		
21									7,520	14,0-17,0				
22													13,480	12,0-16,0
24									8,322	17,0-20,0				
25											12,144	15,0-20,0		
26													16,865	16,0-20,0
27									8,820	20,0-23,0				
30									9,819	23,0-25,0	13,242	20,0-24,0		
35									11,169	27,0-30,0				
40									12,521	30,0-35,0				
45									13,869	35,0-40,0				

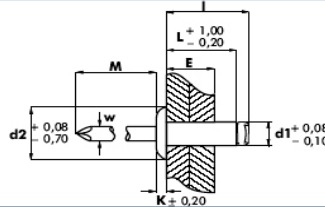
## REMACHE ALUMINIO ESTÁNDAR CABEZA ALOMADA (colores blanco y negro)

$d_1 = \emptyset$	<b>3,2</b>	<b>4</b>	<b>4,8</b>
$d_2$	6,5	8	9,5
Taladro	3,3	4,1	4,9
K	0,80	1,00	1,10
w	1,80	2,20	2,75

$d_1 = \emptyset$ L mm	3,20	E	4,00	E	4,8	E
6	3,950	1,5-3,5	4,785	1,5-3,0		
8	4,159	3,5-5,5	4,829	3,0-5,0	5,786	3,0-4,5
10	4,366	5,5-7,0	5,160	5,0-6,5	6,248	4,5-6,0
12	4,598	7,0-9,0	5,479	6,5-8,5	6,962	6,0-8,0
14			5,808	8,5-10,5	7,556	8,0-10,0
16					8,238	10,0-12,0

**REMACHE ACERO CABEZA ALOMADA**

**DIN-7337**



**CABEZA ACERO ZN  
 VÁSTAGO ACERO BC**

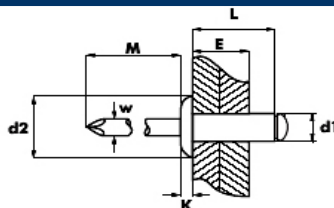
€ 100 UNDS.

$d_1 = \emptyset$	<b>3</b>	<b>3,2</b>	<b>4</b>	<b>4,8</b>	<b>6,4</b>
$d_2$	6,5	6,5	8	9,5	13
Taladro	3,1	3,3	4,1	4,9	6,5
K	0,80	0,80	1,00	1,10	1,80
w	2,00	2,00	2,40	2,93	3,90

$d_1 = \emptyset$ L mm	3,00	E	3,20	E	4,00	E	4,8	E	6,4	E
6	3,567	1,5-3,5	3,567	1,5-3,5	4,935	1,5-3,0	5,945	0,5-3,0		
8	3,804	3,5-5,5	3,804	3,5-5,5	5,208	3,0-5,0	5,945	3,0-4,5		
10	4,043	5,5-7,0	4,043	5,5-7,0	5,862	5,0-6,5	6,183	4,5-6,0		
12	4,281	7,0-9,0	4,281	7,0-9,0	6,549	6,5-8,5	6,540	6,0-8,0	13,316	4,0-6,0
14							8,324	8,0-10,0		
15									14,457	6,0-9,0
16					7,411	10,5-12,5	8,918	10,0-12,0		
18					8,679	12,5-14,5	10,106	12,0-14,0	17,063	9,0-12,0
20					9,975	14,5-16,5				
21							11,297	14,0-16,0		
22									19,963	14,0-16,0
24							14,861	16,0-19,0		
25									21,343	16,0-19,0
30							18,857	20,0-25,0	28,226	19,0-24,0

**REMACHE INOXIDABLE A2 CABEZA ALOMADA**

**DIN-7337**



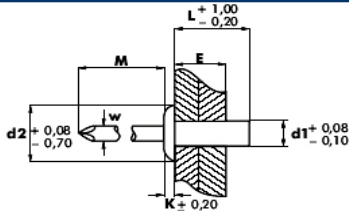
**CABEZA INOX 304  
 VÁSTAGO INOX 304**

€ 100 UNDS.

$d_1 = \emptyset$	<b>3,2</b>	<b>4</b>	<b>4,8</b>	<b>4,8</b>
$d_2$	6,2	8	8,7	9,5
Taladro	3,3	4,1	4,9	4,9
K	1,00	1,30	1,40	1,10
w	2,10	2,40	3,10	2,90

$d_1 = \emptyset$ L mm	3,20	E	4,00	E	4,8	E	4,8	E
6	12,569	1,0-3,0	16,646	1,1-3,0				
8	13,928	3,0-5,0	18,344	3,0-5,0	20,298	1,0-3,0		
10	14,720	5,0-7,0	20,382	5,0-6,5	22,081	4,0-6,0		
12	17,098	6,0-9,0	22,422	6,5-8,5	23,779	6,0-8,0		
14			24,798	8,5-10,5	28,196	8,0-10,0		
15	23,552	9,0-12,0						
16			28,196	9,5-12,0	31,593	10,0-12,0		
20								
25							52,236	14,0-16,0
30							62,779	16,0-20,0
							76,466	20,0-25,0

## REMACHE ALUMINIO/ACERO ESTANCO CABEZA ALOMADA



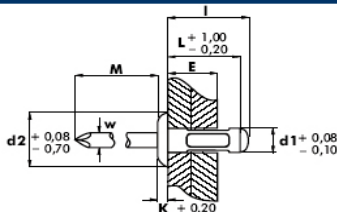
**CABEZA ALUMINIO  
 VÁSTAGO ACERO ACEIT.**

€ 100 UNDS.

$d_1 = \emptyset$	<b>3,2</b>	<b>4</b>	<b>4,8</b>	<b>6,4</b>
$d_2$	6	8	9,5	12,5
Taladro	3	4,1	4,9	6,5
K	0,90	1,40	1,40	1,80
w	1,70	2,20	2,60	3,60

$d_1 = \emptyset$ L mm	3,20	E	4,00	E	4,8	E	6,4	E
8,0	5,393	2,0-3,5						
9,5	6,352	3,5-5,0						
11,0								
12,5								
12,7								
13,0							20,298	4,0-7,0
15,5								
16,0							23,532	7,0-10,0
18,0								
21,0								
25,0								

## REMACHE ALUMINIO MULTIGRIP CABEZA ALOMADA



**CABEZA ALUMINIO  
 VÁSTAGO ACERO BC**

€ 100 UNDS.

$d_1 = \emptyset$	<b>3,2</b>	<b>4</b>	<b>4,8</b>
$d_2$	6,2	8,2	9,9
Taladro	3,3-3,5	4,1-4,3	4,9-5,1
K	1,10	1,40	1,80
w	1,80	2,20	2,75

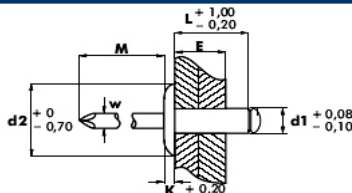
$d_1 = \emptyset$ L mm	3,20	E	4,00	E	4,8	E
6,8						
8,0	4,015	0,5-5,0				
9,5						
10,5						
11,0	4,765	4,0-8,0				
12,5						
15,0						
16,5						
24,5						



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## REMACHE ALUMINIO ESTANDAR CABEZA ANCHA

**DIN-7337**



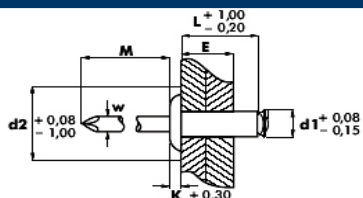
**CABEZA ALUMINIO  
 VÁSTAGO ACERO ZN**

€ 100 UNDS.

$d_1 = \emptyset$	<b>3,2</b>	<b>4</b>	<b>4,8</b>	<b>4,8</b>
$d_2$	9,5	12	14	16
Taladro	3,3	4,1	4,9	4,9
K	1,10	1,40	1,80	1,80
w	1,80	2,20	2,75	2,75

$d_1 = \emptyset$ L mm	3,20	E	4,00	E	4,8	E	4,8	E
8	5,008	3,5-5,5	4,877	3,0-5,0				
10	5,702	5,5-7,0	5,289	5,0-6,5	6,151	3,0-6,0	6,763	3,0-6,0
12	6,244	7,0-9,0	6,458	6,5-8,5	6,942	6,0-8,0	7,660	6,0-8,0
14			7,449	8,5-10,5	8,332	8,0-10,0	9,179	8,0-10,0
16			7,660	10,5-12,5	9,002	10,0-12,0	9,887	10,0-12,0
18			8,131	12,5-14,5	9,969	12,0-14,0	10,958	12,0-14,0
20			8,459	14,5-16,5				
21					11,346	14,0-17,0	12,307	14,0-17,0
24					12,597	17,0-20,0	13,550	17,0-20,0
27					13,410	20,0-23,0	14,754	20,0-23,0
30					14,812	23,0-25,0	16,285	23,0-25,0
35					19,595	27,0-30,0		

## REMACHE ALUMINIO FLOR ESTANDAR CABEZA ALOMADA



**CABEZA ALUMINIO  
 VÁSTAGO ACERO ZN**

€ 100 UNDS.

$d_1 = \emptyset$	<b>4</b>	<b>4,8</b>
$d_2$	8	9,5
Taladro	4,2	5
K	1,00	1,10
w	2,20	2,73

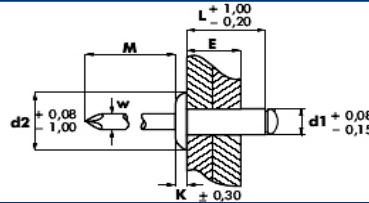
$d_1 = \emptyset$ L mm	4,00	E	4,8	E
10	4,867	6,0	6,147	5,0
12	5,844	8,0	6,976	7,0
14	6,314	10,0	8,322	9,0
16	7,189	12,0	9,006	11,0
18	8,244	14,0	9,937	13,0
20	10,027	16,0		
21			11,372	16,0
24			12,595	19,0
25	11,747	21,0		
30			14,816	25,0
35			15,254	30,0
40			18,558	32,0
45			19,874	37,0
50			24,021	42,0



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## REMACHE TUBO ESTANDAR CABEZA ALOMADA

**DIN-7337**



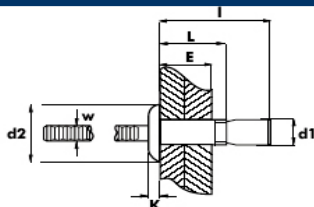
**CABEZA ALUMINIO**  
**VÁSTAGO ACERO ZN**

€ 100 UNDS.

$d_1 = \emptyset$	4	5	6,4
$d_2$	7,6	9,3	13
Taladro	7,6	5,1	6,5
K	1,20	1,50	2,00
w	2,10	2,73	3,60

$d_1 = \emptyset$ L mm	4,00	E	5,00	E	6,4	E
35	12,790	26,0-31,5				
40	14,473	31,5-36,5	20,278	30,0-35,0		
45			22,340	35,0-40,0		
50			24,607	40,0-45,0		
55			25,378	45,0-50,0		
60			28,275	50,0-55,0		
65			30,159	55,0-60,0		
70			32,480	60,0-65,0		
75			34,600	65,0-70,0		
80			36,896	70,0-75,0	86,888	42,0-73,0
90			68,717	75,0-85,0		
100			80,033	85,0-95,0	105,800	73,0-93,0
110			91,340	95,0-105		
120			102,586	105-115	126,021	93,0-113
130			113,833	115-125		
140			125,090	125-135		
150			136,396	135-145	154,980	113-143

## REMACHE ACERO ESTRUCTURAL CABEZA ALOMADA



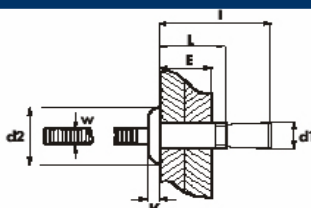
**CABEZA ACERO ZN**  
**VÁSTAGO ACERO BC**

€ 100 UNDS.

$d_1 = \emptyset$	4,8	6,5
$d_2$	9,7	13
Taladro	4,9-5,1	6,6-7,0
K	1,80	2,50
w	3,00	4,00

$d_1 = \emptyset$ L mm	4,8	E	6,5	E
10,3	27,271	1,5-6,8		
13,5	28,979	1,5-11,0		
14			34,125	1,0-9,5
20			46,199	2,0-16,0

## REMACHE ALUMINIO ESTRUCTURAL CABEZA ALOMADA



**CABEZA ALUMINIO**  
**VÁSTAGO ALUMINIO**

€ 100 UNDS.

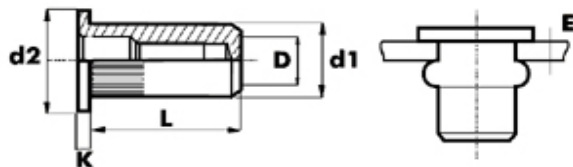
$d_1 = \emptyset$	6,5
$d_2$	13
Taladro	6,6-7,0
K	2,50
w	4,00

$d_1 = \emptyset$ L mm	6,5	E	I
14	41,610	1,0-9,5	24,00
20	47,559	2,0-16,0	33,00



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### TUERCA REMACHABLE CAB/ANCHA RANURADA, FONDO ABIERTO

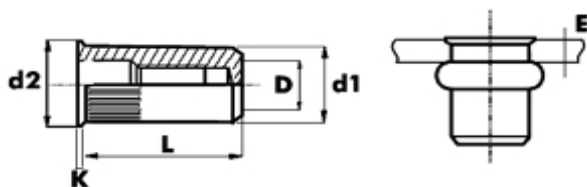


**ACERO  
 BICROMATADO**

€ 100 UNDS.

D	E		L	d1	d2	K	Taladro	PRECIO
M-3	0,25	2,00	9,75	5,00	7,50	1,00	5,10	12,367
M-4	0,25	3,00	9,50	6,00	9,00	1,00	6,10	11,777
M-4	3,00	4,50	12,25	6,00	9,00	1,00	6,10	12,483
M-5	0,25	3,00	12,00	7,00	10,00	1,00	7,10	14,132
M-5	3,00	5,50	15,00	7,00	10,00	1,00	7,10	15,898
M-6	0,50	3,00	14,50	9,00	13,00	1,50	9,10	16,486
M-6	3,00	5,50	16,50	9,00	13,00	1,50	9,10	20,019
M-8	0,50	3,00	16,50	11,00	16,00	1,50	11,10	24,142
M-8	3,00	5,50	18,50	11,00	16,00	1,50	11,10	26,497
M-10	0,50	3,50	19,50	13,00	19,00	2,00	13,10	40,040
M-10	3,50	6,00	21,50	13,00	19,00	2,00	13,10	42,395
M-12	1,00	4,00	25,00	16,00	23,00	2,00	16,10	66,436

### TUERCA REMACHABLE CABEZA BAJA RANURADA, FONDO ABIERTO



**ACERO  
 BICROMATADO**

€ 100 UNDS.

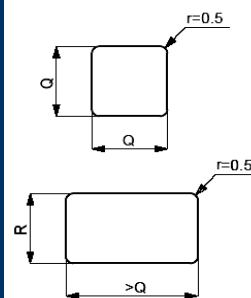
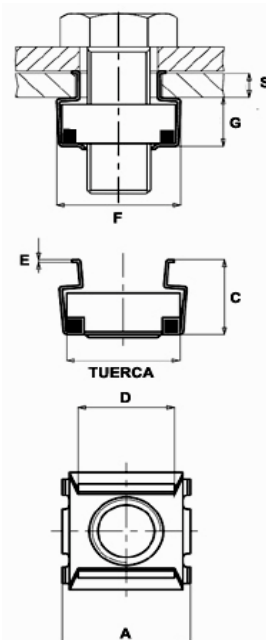
D	E		L	d1	d2	Taladro	PRECIO
M-4	0,50	2,00	10,40	6,00	7,00	6,10	13,705
M-5	0,50	3,00	11,50	7,00	8,00	7,10	14,949
M-6	0,50	3,00	14,50	9,00	10,00	9,10	16,193
M-6	3,00	5,50	16,50	9,00	10,00	9,10	20,019
M-8	0,80	4,50	16,80	11,00	12,00	11,10	23,552
M-10	0,70	3,50	20,80	13,00	14,00	13,10	39,831

**TUERCA ENJAULADA CON TUERCA CUADRADA**

**TUERCA ENJAULADA**

**TUERCA ACERO BICROM.  
 JAULA ACERO INOXIDABLE**

MÉTRICO	S	REF.	A	C	D	E	F	G	TUERCA	Q	R	€/100
M-3	0,3-0,9	J101	9,5	5,2	4,8	0,3	9,7	3,6	8x8x2,5	5,3	5	7,987
	1-1,6	J102		5,9								7,987
	1,7-2,3	J103		6,6								7,987
	2,4-3,1	J104		7,4								7,987
M-4	0,3-0,9	J105	9,5	5,2	4,8	0,3	9,7	3,6	8x8x2,5	5,3	5	7,987
	1-1,6	J106		5,9								7,987
	1,7-2,3	J107		6,6								7,987
	2,4-3,1	J108		7,4								7,987
M-4	0,7-1,6	J109	10	7,2	5,8	0,45	10,3	4,8	8x8x3,5	6,7	6,6	10,513
	1,7-2,6	J110		8,2								10,513
M-5	0,7-1,6	J111	10	7,2	5,8	0,45	10,3	4,8	8x8x3,5	6,7	6,6	10,513
	1,7-2,6	J112		8,2								10,513
M-4	0,3-1,1	J113	12	8	7,2	0,45	12,2	6	10x10x4,5	8,3	8,1	11,869
	1,2-1,6	J114		8,5								11,869
	1,7-2,5	J115		9,5								11,869
	2,6-3,5	J116		10,5								11,869
	3,6-4,5	J117		11,5								11,869
M-5	0,3-1,1	J118	12	8	7,2	0,45	12,2	6	10x10x4,5	8,3	8,1	11,869
	1,2-1,6	J119		8,5								11,869
	1,7-2,5	J120		9,5								11,869
	2,6-3,5	J121		10,5								11,869
	3,6-4,5	J122		11,5								11,869
M-6	0,3-1,1	J123	12	8	7,2	0,45	12,2	6	10x10x4,5	8,3	8,1	11,869
	1,2-1,6	J124		8,5								11,869
	1,7-2,5	J125		9,5								11,869
	2,6-3,5	J126		10,5								11,869
	3,6-4,5	J127		11,5								11,869
M-4	0,7-1,6	J128	13,2	8,7	8,2	0,5	13,5	6	11x11x4,5	9,5	9,2	17,400
	1,7-2,7	J129		9,5								17,400
	2,8-3,5	J130		10,2								17,400
M-5	0,7-1,6	J131	13,2	8,7	8,2	0,5	13,5	6	11x11x4,5	9,5	9,2	17,400
	1,7-2,7	J132		9,5								17,400
	2,8-3,5	J133		10,2								17,400
M-6	0,7-1,6	J134	13	8,7	8,2	0,5	13,5	6	11x11x4,5	9,5	9,2	17,400
	1,7-2,7	J135		9,5								17,400
	2,8-3,5	J136		10,2								17,400
M-6	1-1,7	J137	16	10,4	10,6	0,5	16,6	7,8	14x14x5,5	12,3	12,1	25,226
	1,8-3,2	J138		12								25,226
	3,3-4,7	J139		13,5								25,226
	4,8-5,5	J140		14,5								25,623
M-8	1-1,7	J141	16	10,4	10,6	0,5	16,6	7,8	14x14x5,5	12,3	12,1	25,226
	1,8-3,2	J142		12								25,226
	3,3-4,7	J143		13,5								25,226
	4,8-5,5	J144		14,5								25,623
M-10	1-1,7	J145	16	10,4	10,6	0,5	16,6	7,8	14x14x5,5	12,3	12,1	25,226
	1,8-3,2	J146		12								25,226
	3,3-4,7	J147		13,5								25,226
	4,8-5,5	J148		14,5								25,623
M-8	1-1,7	J149	20	13,5	20	0,6	20,5	10,4	17x17x7,5	14	13,7	39,803
	1,8-3,2	J150		15								39,803
	3,3-4,7	J151		16,5								39,803
	4,8-6,2	J152		18								45,675
M-10	1-1,7	J153	20	13,5	20	0,6	20,5	10,4	17x17x7,5	14	13,7	39,803
	1,8-3,2	J154		15								39,803
	3,3-4,7	J155		16,5								39,803
	4,8-6,2	J156		18								45,675
M-12	1-1,7	J157	20	13,5	20	0,6	20,5	10,4	17x17x7,5	14	13,7	39,803
	1,8-3,2	J158		15								39,803
	3,3-4,7	J159		16,5								39,803
	4,8-6,2	J160		18								45,675



Otros tipos y medidas rogamos consultar. También tenemos la jaula y tuerca toda inoxidable.

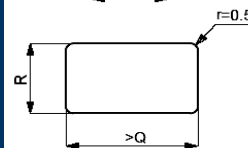
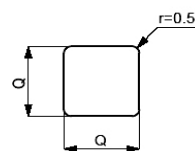
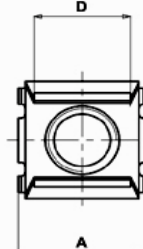
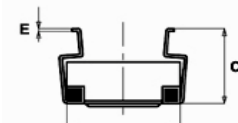
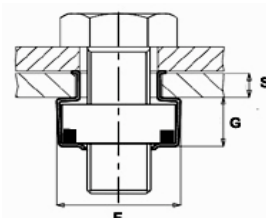


**TUERCA ENJAUADA CON TUERCA CUADRADA**

**TUERCA ENJAUADA**

**TUERCA ACERO BICROM.  
 JAULA ACERO BICROM.**

MÉTRICO	S	REF.	A	C	D	E	F	G	TUERCA	Q	R	€/100
M-3	0,3-0,9	J001	9,5	5,2	4,8	0,3	9,7	3,6	8x8x2,5	5,3	5	7,250
	1-1,6	J002		5,9								7,250
	1,7-2,3	J003		6,6								7,250
	2,4-3,1	J004		7,4								7,250
M-4	0,3-0,9	J005	9,5	5,2	4,8	0,3	9,7	3,6	8x8x2,5	5,3	5	7,250
	1-1,6	J006		5,9								7,250
	1,7-2,3	J007		6,6								7,250
	2,4-3,1	J008		7,4								7,250
M-4	0,7-1,6	J009	10	7,2	5,8	0,45	10,3	4,8	8x8x3,5	6,7	6,6	8,156
	1,7-2,6	J010		8,2								8,156
M-5	0,7-1,6	J011	10	7,2	5,8	0,45	10,3	4,8	8x8x3,5	6,7	6,6	8,156
	1,7-2,6	J012		8,2								8,156
M-4	0,3-1,1	J013	12	8	7,2	0,45	12,2	6	10x10x4,5	8,3	8,1	9,425
	1,2-1,6	J014		8,5								9,425
	1,7-2,5	J015		9,5								9,425
	2,6-3,5	J016		10,5								9,425
	3,6-4,5	J017		11,5								9,425
M-5	0,3-1,1	J018	12	8	7,2	0,45	12,2	6	10x10x4,5	8,3	8,1	9,425
	1,2-1,6	J019		8,5								9,425
	1,7-2,5	J020		9,5								9,425
	2,6-3,5	J021		10,5								9,425
	3,6-4,5	J022		11,5								9,425
M-6	0,3-1,1	J023	12	8	7,2	0,45	12,2	6	10x10x4,5	8,3	8,1	9,425
	1,2-1,6	J024		8,5								9,425
	1,7-2,5	J025		9,5								9,425
	2,6-3,5	J026		10,5								9,425
	3,6-4,5	J027		11,5								9,425
M-4	0,7-1,6	J028	13,2	8,7	8,2	0,5	13,5	6	11x11x4,5	9,5	9,2	10,875
	1,7-2,7	J029		9,5								10,875
	2,8-3,5	J030		10,2								10,875
M-5	0,7-1,6	J031	13,2	8,7	8,2	0,5	13,5	6	11x11x4,5	9,5	9,2	10,875
	1,7-2,7	J032		9,5								10,875
	2,8-3,5	J033		10,2								10,875
M-6	0,7-1,6	J034	13	8,7	8,2	0,5	13,5	6	11x11x4,5	9,5	9,2	10,875
	1,7-2,7	J035		9,5								10,875
	2,8-3,5	J036		10,2								10,875
M-6	1-1,7	J037	16	10,4	10,6	0,5	16,6	7,8	14x14x5,5	12,3	12,1	14,500
	1,8-3,2	J038		12								14,500
	3,3-4,7	J039		13,5								14,500
	4,8-5,5	J040		14,5								15,225
M-8	1-1,7	J041	16	10,4	10,6	0,5	16,6	7,8	14x14x5,5	12,3	12,1	14,500
	1,8-3,2	J042		12								14,500
	3,3-4,7	J043		13,5								14,500
	4,8-5,5	J044		14,5								15,225
M-10	1-1,7	J045	16	10,4	10,6	0,5	16,6	7,8	14x14x5,5	12,3	12,1	14,500
	1,8-3,2	J046		12								14,500
	3,3-4,7	J047		13,5								14,500
	4,8-5,5	J048		14,5								15,225
M-8	1-1,7	J049	20	13,5	20	0,6	20,5	10,4	17x17x7,5	14	13,7	27,188
	1,8-3,2	J050		15								27,188
	3,3-4,7	J051		16,5								27,188
	4,8-6,2	J052		18								33,713
M-10	1-1,7	J053	20	13,5	20	0,6	20,5	10,4	17x17x7,5	14	13,7	27,188
	1,8-3,2	J054		15								27,188
	3,3-4,7	J055		16,5								27,188
	4,8-6,2	J056		18								33,713
M-12	1-1,7	J057	20	13,5	20	0,6	20,5	10,4	17x17x7,5	14	13,7	27,188
	1,8-3,2	J058		15								27,188
	3,3-4,7	J059		16,5								27,188
	4,8-6,2	J060		18								33,713



Otros tipos y medidas rogamos consultar. También tenemos la jaula y tuerca toda inoxidable.



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## BRIDA NYLON

**POLIAMIDA 6.6**



COLOR NEGRO

COLOR NATURAL

€ 100 UNDS.

ANCHO LARGO	2,5/2,6	3,6	4,8	7,6/7,8	9	12
100	0,551					
135	1,106					
140		1,341	2,135			
160	1,178		2,280			
180				6,144		
190			2,599			
200	1,363	2,059	2,650	6,094		
225		2,316				
240				7,616		
250			3,708			22,921
280		2,835	4,009			
300		3,208	4,064	7,946		
320				10,117		
360		4,230				
370			4,800	9,653		
430			7,917	16,483	15,160	
500				22,076		41,651
530			14,718	19,426	18,455	
710					27,285	
750						53,019
780					30,555	
920					35,579	
1000						74,729
1220					60,712	

## TACO NYLON PARA BRIDA

**POLIAMIDA 6.6**



COLOR NEGRO

€ 100 UNDS.

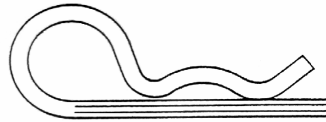
Ø	LARGO	PRECIO
8	40	4,829



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### PASADOR "R"

**DIN-11024**



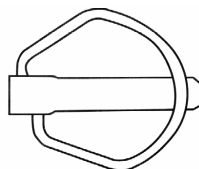
**ACERO MUELLES  
 ZINCADO**

€ 100 UNDS.

LARGO Ø	50	70,00	85	105	120	155,00	175,00
2	9,181						
2,5	10,041						
3		12,363					
3,5		17,072					
4			23,459				
4,5			29,866				
5				42,659			
6				60,806			
7					184,938		
8						215,428	
10							533,247

### PASADOR ANILLA

**DIN-11023**



**ACERO ENDURECIDO  
 ZINCADO**

€ 100 UNDS.

LARGO Ø	32	40	45
4,5	49,594		
6		49,594	
7		52,466	
8			62,291



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### ANCLAJE TORNILLO HEXAGONAL para cargas altas



**BICROMATADO**

€ 100 UNDS.

MÉTRICO LARGO	6		8		10		12	16	20
	8	9	10	11	12	14	16	20	25
45	15,637	16,758							
60	17,784	19,247	25,641	27,664					
70					39,378	43,776			
80			30,324	32,861			66,329		
20					50,018	53,856			
110							86,612	159,135	
130									470,526

### ANCLAJE MACHO para cargas altas



**ZINCADO**

€ 100 UNDS.

MÉTRICO LARGO	6	8	10	12	14	16	20	24
	45	16,055						
50		24,339						
60	17,841	25,945						
70	20,435		36,110					
75		28,310		53,666				
80	22,230				119,577			
90	24,795	32,091	40,413	58,805		126,825		
100	27,712				132,107			
110	29,146			64,999				
115		38,732						
120	30,999		40,413		151,098		227,801	
125						137,845		
130	32,338	63,726						
140	34,533			86,137				
145					171,437	151,259		
150	35,872		66,795					
155		70,775						
160	36,851			96,254				
170	39,625		73,863		191,824	184,595	293,075	
180	42,066			106,476				882,550
210			123,643					
220				119,406	221,787	224,571	350,683	
230			133,485					
250				195,852	243,219	326,164		
260								1106,750
270							500,460	
280						356,298		



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## ANCLAJE HEMBRA CON CONO INTERIOR para grandes cargas



**BICROMATADO**

€ 100 UNDS.

MÉTRICO	LARGO	Ø	PRECIO
6	25	8	10,061
8	30	10	12,502
10	40	12	19,466
12	50	15	36,015
16	60	20	85,225
20	80	25	166,554

## TACO NYLON

**NYLON**



**Gris**

€ 100 UNDS.

MEDIDA	Profundidad Taladro	Agujero mm.	Tornillo Ø	PRECIO
4 X 20	25	4	2 - 3	1,600
5 X 25	30	5	2,5 - 4	1,400
6 X 30	35	6	3,5 - 4	1,680
7 X 30	35	7	4 - 4,5	4,880
8 X 40	50	8	4,5 - 6	3,160
10 X 50	60	10	6 - 8	5,960
12 X 60	70	12	8 - 10	17,080
14 X 75	80	14	10 - 12	43,320



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## PROPIEDADES MECÁNICAS EN 20898-1:1991

Las propiedades mecánicas de la siguiente tabla sirven para los ensayos de tornillos acabados y a temperatura ambiente

	CLASE	4.8	5.6	6.8	8.8		10.9	12.9
					<= M-16	> M-16		
<b>Resistencia a la tracción</b>	Nominal	400	500	600	800	800	1000	1200
<b>Rm en N/mm2</b>	Mínimo	420	500	600	800	830	1040	1220
<b>Dureza Vickers</b>	Mínimo	130	155	190	230	255	310	372
<b>HV F =&lt; 98 N</b>	Máximo	220		250	300	336	382	434
<b>Dureza Brinell</b>	Mínimo	124	147	181	219	242	295	353
<b>HB F = 30 D2</b>	Máximo	209		238	285	319	363	412
<b>Dureza Rockwell HR</b>	Mínimo HRB	71	79	89				
	Mínimo HRC				<b>22</b>	<b>23</b>	<b>32</b>	<b>39</b>
	Máximo HRB	95		99				
	Máximo HRC				<b>32</b>	<b>34</b>	<b>39</b>	<b>44</b>
<b>Temple superficial HV 03</b>	Máximo				320	356	402	454
<b>Límite de fluencia</b>	Nominal	320	300	480				
<b>ReL en N/mm2</b>	Mínimo	340	300	480				
<b>Límite de alargamiento de 0,2%</b>	Nominal				640	640	900	1080
<b>Rp0,2 en N/mm2</b>	Mínimo				640	660	940	1100
<b>Tensión de ensayo Sp</b>	Sp/ReL ó Rp0,2	0,91	0,94	0,91	0,91	0,91	0,88	0,88
	N/mm2	310	280	440	580	600	830	970
<b>Alargamiento de rotura As %</b>	Mínimo	14	20	8	12	12	9	8
<b>Resistencia al impacto en Joule</b>	Mínimo		25		30	30	20	15

## ESFUERZO DE ROTURA MÍNIMO PARA TORNILLOS CON ROSCA NORMAL

Diámetro nominal de rosca mm	Paso para rosca normal mm	Sección de tensión nominal As mm2	Esfuerzo de rotura mínimo (As.Rm) en N					
			4.8	5.6	6.8	8.8	10.9	12.9
4	0,7	8,78	3690	4390	5270	7020	9130	10700
5	0,8	14,2	5960	7100	8520	11350	14800	17300
6	1	20,1	8440	10000	12100	16100	20900	24500
7	1	28,9	12100	14400	17300	23100	30100	35300
8	1,25	36,6	15400	18300	22000	29200	38100	44600
10	1,5	58	24400	29000	34800	46400	60300	70800
12	1,75	84,3	35400	42200	50600	67400	87700	103000
14	2	115	48300	57500	69000	92000	120000	140000
16	2	157	65900	78500	94000	125000	163000	192000
18	2,5	192	80600	96000	115000	159000	200000	234000
20	2,5	245	103000	122000	147000	203000	255000	299000
22	2,5	303	127000	152000	182000	252000	315000	370000
24	3	353	148000	176000	212000	293000	367000	431000
27	3	459	193000	230000	275000	381000	477000	560000
30	3,5	561	236000	280000	337000	466000	583000	684000
33	3,5	694	292000	347000	416000	576000	722000	847000
36	4	817	343000	408000	490000	678000	850000	997000
39	4	976	410000	488000	586000	810000	1020000	1200000



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## ESFUERZO DE PRUEBA PARA TORNILLOS CON ROSCA NORMAL

Diámetro nominal de rosca mm	Paso para rosca normal mm	Sección de tensión nominal As mm <sup>2</sup>	Esfuerzo de rotura mínimo (As.Sp) en N					
			4.8	5.6	6.8	8.8	10.9	12.9
4	0,7	8,78	2720	2460	3860	5100	7290	8520
5	0,8	14,2	4400	3980	6250	8230	11800	13800
6	1	20,1	6230	5630	8840	11600	16700	19500
7	1	28,9	8920	5090	12700	16800	24000	28000
8	1,25	36,6	11400	10200	16100	21200	30400	35500
10	1,5	58	18000	16200	25500	33700	48100	56300
12	1,75	84,3	26100	23600	37100	48900	70000	81800
14	2	115	35600	32200	50600	66700	95500	112000
16	2	157	48700	44000	69100	91000	130000	152000
18	2,5	192	59500	53800	84500	115000	159000	186000
20	2,5	245	76000	68600	108000	147000	203000	238000
22	2,5	303	93900	84800	133000	182000	252000	294000
24	3	353	109000	98800	155000	212000	293000	342000
27	3	459	142000	128000	202000	275000	381000	445000
30	3,5	561	174000	157000	247000	337000	466000	544000
33	3,5	694	215000	194000	305000	416000	570000	673000
36	4	817	253000	229000	359000	490000	678000	792000
39	4	976	303000	273000	429000	586000	810000	947000

## PAR DE APRIETE $M_a$ ( $N_m$ ) PARA TORNILLOS CON ROSCA NORMAL

Diámetro nominal de rosca mm	Paso para rosca normal mm	Sección de tensión nominal As mm <sup>2</sup>	CON COEFICIENTE DE ROZAMIENTO = 0,14					
			4.8	5.6	6.8	8.8	10.9	12.9
4	0,7	8,78	1,37	1,37	1,77	3,1	4,4	5,25
5	0,8	14,2	2,7	2,7	3,4	6,15	8,65	10,4
6	1	20,1	4,6	4,6	6	10,5	15	18
7	1	28,9	7,6	7,6	9,7	17,5	25	29
8	1,25	36,6	11	11	14,5	26	36	43
10	1,5	58	22	22	29	51	72	87
12	1,75	84,3	39	39	50	89	125	150
14	2	115	62	62	81	141	198	240
16	2	157	95	95	124	215	305	365
18	2,5	192	130	130	170	295	420	500
20	2,5	245	184	184	238	420	590	710
22	2,5	303	250	250	322	570	800	960
24	3	353	315	315	408	725	1020	1220
27	3	459	470	470	610	1070	1510	1810
30	3,5	561	635	635	818	1450	2050	2450
33	3,5	694	865	865	1110	1970	2770	3330
36	4	817	1111	1111	1435	2530	3560	4280
39	4	976	1440	1440	1880	3290	4620	5550

Al utilizar llaves dinamométricas, para mayor seguridad, se recomienda no aplicar más del 90% de los valores reflejados en esta tabla.

Los valores detallados en esta tabla, han sido extraídos de la norma DIN 267 y solo a efectos de orientación; es siempre recomendable realizar ensayos propios.

## TORNILLERÍA ESPECIAL

Además de la tornillería normalizada, somos especialistas en la fabricación de tornillos especiales bajo plano o muestra.

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