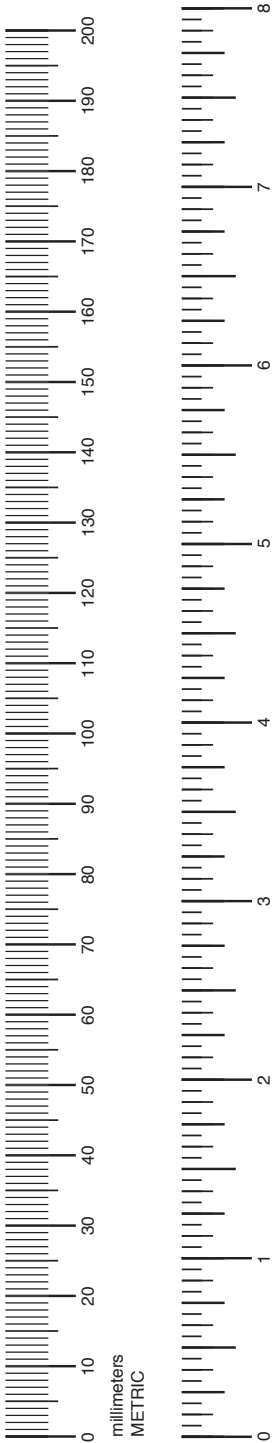


# **BRIKSEN**

\*\*\*\*\*STAINLESS STEEL FASTENERS





THREADS		
metric mm	inch approx.	Pitch mm
1	3/64"	0.25
1.2	3/64"	0.25
1.4		0.3
1.6	1/16"	0.35
2	5/64"	0.4
2.2	5/64"	0.45
2.3	3/32"	0.45
2.5	3/32"	0.45
2.6		0.45
3	1/8"	0.5
3.5	9/64"	0.6
4	5/32"	0.7
5	3/16"	0.8
6	1/4"	1
7	9/32"	1
8	5/16"	1.25
10	3/8"	1.5
12	1/2"	1.75
14	9/16"	2
16	5/8"	2
18	11/16"	2.5
20	3/4"	2.5
22	7/8"	2.5
24	1"	3
27	11/16"	3
30	13/16"	3.5
33	15/16"	3.5
36	17/16"	4
39	1 1/2"	4
42	1 5/8"	4.5
45	1 3/4"	4.5
48	1 7/8"	5

LENGTH			
metric mm	inch approx.	metric mm	inch approx.
1	3/64"	70	2 3/4"
1.5	1/16"	75	3"
2	5/64"	80	3 1/16"
2.5	3/32"	85	3 3/8"
3	1/8"	90	3 1/2"
4	5/32"	100	4"
5	3/16"	110	4 3/8"
6	1/4"	120	4 3/4"
6.5	1/4"	130	5"
8	5/16"	140	5 1/2"
9.5	3/8"	150	6"
10	3/8"	160	6 1/4"
12	1/2"	170	6 3/4"
13	1/2"	180	7"
14	9/16"	190	7 1/2"
16	5/8"	200	8"
18	1 1/16"	220	8 3/4"
19	3/4"	240	9 9/16"
20	3/4"	260	10 1/4"
22	7/8"	270	10 3/4"
25	1"	280	11"
30	1 3/16"	300	12"
32	1 1/4"	320	12 1/2"
35	1 3/8"	340	13 1/2"
36	1 7/16"	360	14 1/4"
38	1 1/2"	380	15"
40	1 9/16"	400	15 3/4"
45	1 3/4"	420	16 1/2"
50	2"	440	17 3/8"
55	1 5/8"	460	18"
60	2 3/8"	480	19"
65	2 9/16"	500	20"



.....**Stainless Steel Fasteners**

Dear Customer,

We would like to welcome you to Brikksen, a master distributor of the highest quality metric stainless steel fasteners.

Our fasteners are used in manufacturing, construction and maintenance, as well as other applications where durability, strength, and appearance are important.

Our expertise and specialization in this field, combined with a vast inventory, makes it possible for us to fulfill all of your stainless steel fastener needs.

Our sales and service associates use state-of-the-art computer and inventory management systems to provide you with first class service – time after time.

At Brikksen, we are proud to offer:

- Largest inventory
- Free freight for orders over \$100
- \$50 minimum order
- Immediate quotes
- Same day shipping available
- On-line quoting at [www.brikksen.com](http://www.brikksen.com)

Thank you for your interest in Brikksen. We look forward to the opportunity to provide you with outstanding service and quality stainless steel fasteners.

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Union, NJ 07086

(908) 313-1111

**Toll-free (800) 962-1614**

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## **Section**

## **Section**

## **Sección**

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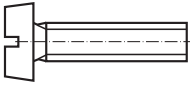
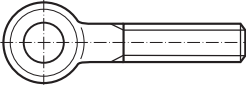
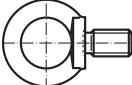

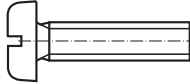
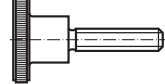
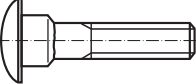
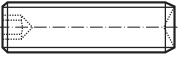
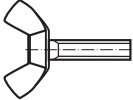
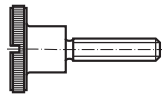
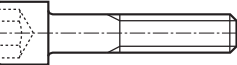
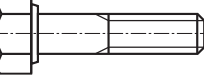
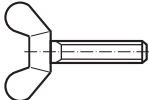

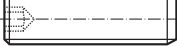


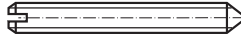
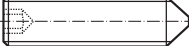
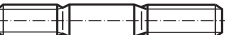
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## Bolts, Screws, and Threaded Fasteners

Tornillos y Espárragos

Boulons, Vis et Pièces Filetées

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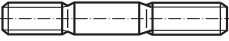

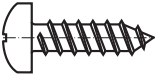

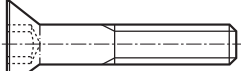
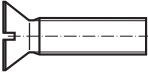
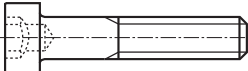
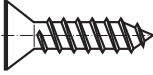


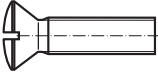






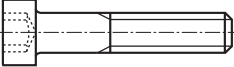
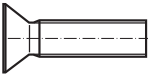


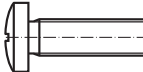

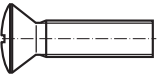

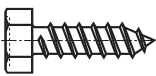
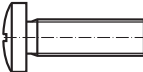



## Bolts, Screws, and Threaded Fasteners

Tornillos y Espárragos

Boulons, Vis et Pièces Filetées

# 1

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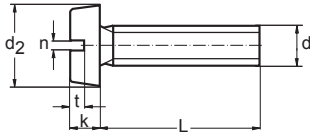
**Slotted Cheese Head Machine Screws, Fully Threaded**

Tornillos cabeza de queso cuerda corrida

Vis à tête cylindrique avec fente

A2
A4

Type A



d	M1.6	M2	M2.5	M3	M3.5	M4	M5	M6	M8	M10
d <sub>2</sub>	3	3.8	4.5	5.5	6	7	8.5	10	13	16
k	1	1.3	1.6	2	2.4	2.6	3.3	3.9	5	6
n	0.4	0.5	0.6	0.8	0.8	1	1.2	1.6	2	2.5
t min.	0.45	0.6	0.7	0.85	1	1.1	1.3	1.6	2	2.4
pitch	0.35	0.4	0.45	0.5	0.6	0.7	0.8	1	1.25	1.5

d	L	W
M1.6	3	.082
M1.6	4	.094
M1.6	5	.105
M1.6	6	.117
M1.6	8	.140
M1.6	10	.163
M1.6	12	.186
M1.6	16	.232
M2	3	.160
M2	4	.179
M2	5	.198
M2	6	.217
M2	8	.254
M2	10	.291
M2	12	.329
M2	14	.365
M2	16	.402
M2	18	.440
M2	20	.478
M2	25	.573
M2.5	3	.272
M2.5	4	.302
M2.5	5	.332
M2.5	6	.362
M2.5	8	.422
M2.5	10	.482
M2.5	12	.542

d	L	W
M2.5	14	.602
M2.5	16	.662
M2.5	18	.722
M2.5	20	.782
M2.5	25	.932
M3	3	.470
M3	4	.515
M3	5	.560
M3	6	.604
M3	8	.692
M3	10	.780
M3	12	.868
M3	14	.956
M3	16	1.04
M3	18	1.13
M3	20	1.22
M3	22	1.31
M3	25	1.44
M3	30	1.66
M3	35	1.88
M3	40	2.10
M3	45	2.32
M3	50	2.54
M3	60	2.98
M3.5	5	.786
M3.5	6	.845
M3.5	8	.966

d	L	W
M3.5	10	1.08
M3.5	12	1.20
M3.5	16	1.44
M3.5	20	1.68
M3.5	25	1.98
M3.5	30	2.28
M3.5	35	2.57
M3.5	40	2.87
M4	4	1.02
M4	5	1.09
M4	6	1.17
M4	8	1.33
M4	10	1.47
M4	12	1.63
M4	14	1.79
M4	16	1.95
M4	18	2.10
M4	20	2.25
M4	22	2.40
M4	25	2.64
M4	30	3.02
M4	35	3.41
M4	40	3.80
M4	45	4.19
M4	50	4.58
M4	55	4.97
M4	60	5.36

d	L	W
M4	70	6.14
M4	80	6.92
M4	90	7.70
M4	100	8.48
M5	6	2.06
M5	8	2.30
M5	10	2.55
M5	12	2.80
M5	14	3.05
M5	16	3.30
M5	18	3.54
M5	20	3.78
M5	25	4.40
M5	30	5.02
M5	35	5.62
M5	40	6.25
M5	45	6.88
M5	50	7.50
M5	55	8.12
M5	60	8.74
M5	70	9.98
M5	80	11.2
M5	90	12.5
M5	100	13.7
M6	8	3.56
M6	10	3.92
M6	12	4.27

d	L	W
M6	14	4.62
M6	16	4.98
M6	18	5.34
M6	20	5.69
M6	22	6.04
M6	25	6.56
M6	30	7.45
M6	35	8.25
M6	40	9.20
M6	45	10.0
M6	50	10.9
M6	55	11.8
M6	60	12.7
M6	70	14.5
M6	80	16.3
M6	90	18.1
M6	100	19.9
M8	10	7.85
M8	12	8.49
M8	16	9.77
M8	20	11.0
M8	25	12.6
M8	30	14.2
M8	35	15.8
M8	40	17.4
M8	45	18.9
M8	50	20.6

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

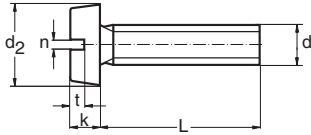
## Slotted Cheese Head Machine Screws, Fully Threaded

Tornillos cabeza de queso cuerda corrida

Vis à tête cylindrique avec fente

A2
A4

Type A



d	M1.6	M2	M2.5	M3	M3.5	M4	M5	M6	M8	M10
d <sub>2</sub>	3	3.8	4.5	5.5	6	7	8.5	10	13	16
k	1	1.3	1.6	2	2.4	2.6	3.3	3.9	5	6
n	0.4	0.5	0.6	0.8	0.8	1	1.2	1.6	2	2.5
t min.	0.45	0.6	0.7	0.85	1	1.1	1.3	1.6	2	2.4
pitch	0.35	0.4	0.45	0.5	0.6	0.7	0.8	1	1.25	1.5

d	L	W
M 8	55	22.1
M 8	60	23.7
M 8	70	26.8
M 8	80	29.8
M 8	90	32.9
M 8	100	35.9
M10	20	18.6
M10	25	21.1
M10	30	23.6
M10	35	26.1
M10	40	28.6
M10	45	31.1
M10	50	33.6
M10	55	36.1
M10	60	38.6
M10	70	43.6
M10	80	48.6
M10	90	53.6
M10	100	58.6

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

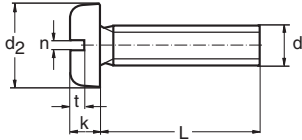
**Slotted Pan Head Machine Screws, Fully Threaded**

Tornillos cabeza de pan

Vis à tête aplatie avec fente

A2
A4

Type A



d	M2	M2.5	M3	M4	M5	M6	M8	M10
d <sub>2</sub>	4	5	6	8	10	12	16	20
k	1.2	1.5	1.8	2.4	3	3.6	4.8	6
n	0.7	0.8	0.8	1	1.2	1.6	2	2.5
t min.	-	-	0.7	1	1.2	1.4	1.9	2.4
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5

d	L	W
M2 5	.190	
M2 6	.204	
M2 8	.232	
M2 10	.260	
M2 12	.288	
M2 16	.344	
M2 20	.400	
M2.5 5	.316	
M2.5 6	.344	
M2.5 8	.400	
M2.5 10	.456	
M2.5 12	.512	
M2.5 16	.624	
M2.5 20	.758	
M3 6	.591	
M3 8	.680	
M3 10	.768	
M3 12	.856	
M3 14	.945	
M3 16	1.03	
M3 18	1.12	
M3 20	1.21	
M3 22	1.30	
M3 25	1.43	
M3 30	1.65	
M3 35	1.87	
M3 40	2.09	

d	L	W
M4 6	1.24	
M4 8	1.39	
M4 10	1.55	
M4 12	1.70	
M4 14	1.86	
M4 16	2.01	
M4 18	2.17	
M4 20	2.32	
M4 22	2.48	
M4 25	2.71	
M4 30	3.10	
M4 35	3.48	
M4 40	3.87	
M4 45	4.26	
M4 50	4.65	
M5 8	2.52	
M5 10	2.76	
M5 12	3.00	
M5 14	3.25	
M5 16	3.50	
M5 18	3.75	
M5 20	4.00	
M5 22	4.25	
M5 25	4.62	
M5 30	5.24	
M5 35	5.86	
M5 40	6.48	

d	L	W
M5 45	7.10	
M5 50	7.72	
M5 60	8.96	
M5 70	10.2	
M5 80	11.4	
M5 90	12.6	
M5 100	13.8	
M6 8	4.02	
M6 10	4.37	
M6 12	4.72	
M6 14	5.10	
M6 16	5.45	
M6 18	5.79	
M6 20	6.14	
M6 22	6.49	
M6 25	7.01	
M6 30	7.90	
M6 35	8.78	
M6 40	9.66	
M6 45	10.5	
M6 50	11.4	
M6 55	12.3	
M6 60	13.2	
M6 70	15.0	
M6 80	16.8	
M6 90	18.6	
M6 100	20.4	

d	L	W
M 8 10	9.38	
M 8 12	10.0	
M 8 16	11.2	
M 8 20	12.6	
M 8 25	14.1	
M 8 30	15.7	
M 8 35	17.3	
M 8 40	18.9	
M 8 45	20.5	
M 8 50	22.1	
M 8 60	25.3	
M 8 70	28.5	
M 8 80	31.7	
M 8 90	34.9	
M10 100	37.1	
M10 16	20.2	
M10 20	22.2	
M10 25	24.7	
M10 30	27.2	
M10 35	29.7	
M10 40	32.2	
M10 45	34.7	
M10 50	37.2	
M10 60	42.2	
M10 70	47.2	
M10 80	52.2	
M10 90	57.2	

d	L	W
M10	100	62.2

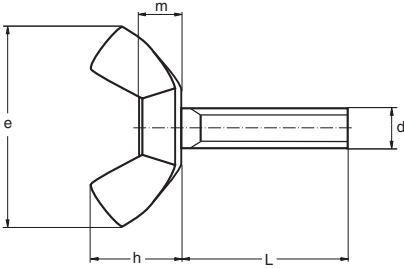
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Wing Screws, American Type

Tornillos de mariposa tipo americano

Vis à ailettes

A2
A4



d	M3	M4	M5	M6	M8	M10	M12
e max.	17.6	17.6	22.5	27.8	30.3	36.2	49.4
h	8.6	8.6	11	13.6	14.8	17.7	24.1
m	2.9	2.9	4.1	5.1	5.6	6.8	9
pitch	0.5	0.7	0.8	1	1.25	1.5	1.75

d	L
M3	10
M3	16
M3	20
M3	25
M3	30
M4	10
M4	16
M4	20
M4	25
M4	30
M5	10
M5	16
M5	20
M5	25
M5	30
M5	35
M5	40
M5	45
M5	50
M6	10
M6	16

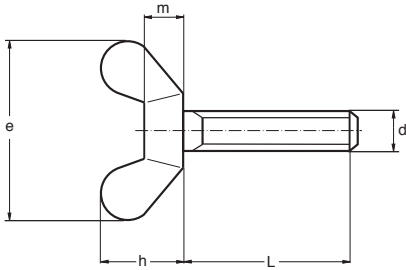
d	L
M 6	20
M 6	25
M 6	30
M 6	35
M 6	40
M 6	45
M 6	50
M 8	16
M 8	20
M 8	25
M 8	30
M 8	35
M 8	40
M 8	45
M 8	50
M 8	55
M 8	60
M10	16
M10	20
M10	25
M10	30

d	L
M10	35
M10	40
M10	45
M10	50
M10	55
M10	60
M12	20
M12	25
M12	30
M12	35
M12	40
M12	45
M12	50
M12	55
M12	60

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Wing Screws, German Type**  
**Tornillos de mariposa tipo alemán**  
**Vis à oreilles**

A2
A4



d	M4	M5	M6	M8	M10	M12
e min.	18	24	30	36	48	62
h min.	8.5	11	15	18	23	31
m min.	3.2	4	5	6.5	8	10
pitch	0.7	0.8	1	1.25	1.5	1.75

d	L
M 4	16
M 4	20
M 4	25
M 4	30
M 5	16
M 5	20
M 5	25
M 5	30
M 6	16
M 6	20
M 6	25
M 6	30
M 6	40
M 8	16
M 8	20
M 8	25
M 8	30
M 8	40
M10	16
M10	20
M10	25

d	L
M10	30
M10	40
M12	20
M12	25
M12	30
M12	40

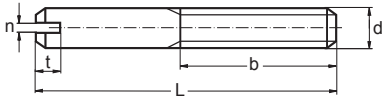
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Slotted Set Screws Partially Threaded

Tornillos sin cabeza de Seguro

Vis sans tête part. filetées avec fente et bout plat

A2
A4



d	M3	M4	M5	M6	M8	M10
b	3.6	4.8	6	7.2	9.6	12
n	0.4	0.6	0.8	1	1.2	1.6
t min.	.8	1.12	1.28	1.6	2	2.4
t max.	1.05	1.42	1.63	2	2.5	3
pitch	0.5	0.7	0.8	1	1.25	1.5

d	L	W
M 3	6	.270
M 3	8	.380
M 3	10	.490
M 3	12	.600
M 3	16	.820
M 3	20	1.04
M 4	8	.630
M 4	10	.830
M 4	12	1.03
M 4	16	1.43
M 4	20	1.83
M 5	10	1.26
M 5	12	1.57
M 5	16	2.19
M 5	20	2.81
M 5	25	3.58
M 6	12	2.18
M 6	16	3.05
M 6	20	3.95
M 6	25	5.07
M 8	16	5.00
M 8	20	6.60
M 8	25	8.60
M 8	30	10.6
M10	20	10.1
M10	25	13.1
M10	30	16.1

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

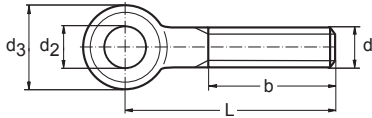
**Eye Bolts**

Tornillos de ojo

Vis à oeillet

A2
A4

Type B



d	M6	M8	M10	M12	M16	M20	M24
d <sub>2</sub>	6	8	10	12	16	18	24
d <sub>3</sub> min.	13.57	17.57	19.48	24.48	31.38	39.38	44.38
s min.	6.85	8.85	11.82	13.82	16.82	21.79	24.79
pitch	1	1.25	1.5	1.75	2	2.5	3

d	L	W
M 6	30	11.5
M 6	35	12.6
M 6	40	13.7
M 6	45	14.8
M 6	50	15.9
M 6	55	17.0
M 6	60	18.1
M 8	30	21.2
M 8	35	23.1
M 8	40	25.0
M 8	45	26.9
M 8	50	28.9
M 8	55	30.9
M 8	60	32.8
M 8	65	34.8
M 8	70	36.8
M 8	75	38.8
M 8	80	40.7
M 8	90	44.7
M 8	100	48.6
M10	40	32.1
M10	45	36.0
M10	50	39.1
M10	55	42.2
M10	60	45.3
M10	65	48.4
M10	70	51.5

d	L	W
M10	75	54.6
M10	80	57.6
M10	90	63.8
M10	100	70.0
M10	110	76.1
M10	120	82.3
M12	50	62.6
M12	55	67.0
M12	60	71.4
M12	65	75.8
M12	70	80.3
M12	75	84.8
M12	80	89.2
M12	90	98.1
M12	100	106
M12	110	115
M12	120	124
M12	130	133
M12	140	142
M12	150	151
M16	60	133
M16	65	141
M16	70	149
M16	75	157
M16	80	164
M16	90	180
M16	100	196

d	L	W
M16	110	212
M16	120	228
M16	130	244
M16	140	259
M16	150	275
M20	70	259
M20	75	271
M20	80	284
M20	90	309
M20	100	334
M20	110	359
M20	120	383
M20	130	408
M20	140	433
M20	150	457
M24	80	384
M24	90	419
M24	100	454
M24	110	489
M24	120	524
M24	130	560
M24	140	596
M24	150	631

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

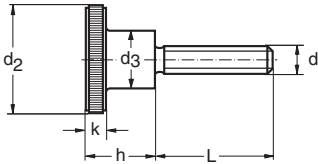


### Knurled Thumb Screws

Tornillos moleteadas

Vis à tête moletés haute

A2
A4



d	M2	M2.5	M3	M4	M5	M6	M8	M10
d <sub>2</sub>	9	11	12	16	20	24	30	36
d <sub>3</sub>	4.5	5	6	8	10	12	16	20
h	5.3	6.5	7.5	9.5	11.5	15	18	23
k	2	2.5	2.5	3.5	4	5	6	8
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5

d	L	W
M3	4	3.50
M3	5	3.54
M3	6	3.59
M3	8	3.68
M3	10	3.77
M3	12	3.86
M3	16	4.20
M3	20	4.54
M4	5	8.28
M4	6	8.36
M4	8	8.51
M4	10	8.66
M4	12	8.81
M4	16	9.1
M4	20	9.39
M5	6	15.2
M5	8	15.4
M5	10	15.7
M5	12	16.0
M5	16	16.7
M5	20	17.3
M6	10	28.4
M6	12	28.7
M6	16	29.3

d	L	W
M6	20	30.0

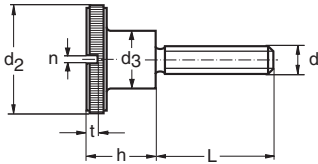
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Knurled Slotted Thumb Screws**

Tornillos moleteadas con ranura

Vis à tête moletés haute avec fente

A2
A4



d	M3	M4	M5	M6	M8	M10
d <sub>2</sub>	12	16	20	24	30	36
d <sub>3</sub>	6	8	10	12	16	20
h	7.5	9.5	11.5	15	18	23
n	0.8	1	1.2	1.6	2	2.5
t min.	1.8	2.2	2.8	3.5	4.5	6
pitch	0.5	0.7	0.8	1	1.25	1.5

d	L	W
M3	4	3.50
M3	5	3.54
M3	6	3.59
M3	8	3.68
M3	10	3.77
M3	12	3.86
M3	16	4.20
M3	20	4.54
M4	5	8.28
M4	6	8.35
M4	8	8.51
M4	10	8.66
M4	12	8.81
M4	16	9.1
M4	20	9.39
M5	6	15.2
M5	8	15.4
M5	10	15.7
M5	12	16.0
M5	16	16.7
M5	20	17.3
M6	10	28.4
M6	12	28.7
M6	16	29.3

d	L	W
M6	20	30.0

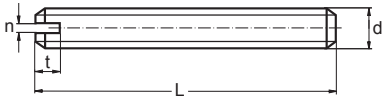
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Slotted Set Screws with Flat Point

Tornillos sin cabeza rectificando ranurado

Vis sans tête avec fente et bout plat

A2
A4



d	M1.6	M2	M2.5	M3	M4	M5	M6	M8	M10
n	0.25	0.25	0.4	0.4	0.6	0.8	1	1.2	1.6
t min.	0.56	0.64	0.72	0.8	1.12	1.28	1.6	2	3.75
t max.	0.74	0.84	0.95	1.05	1.42	1.63	2	2.5	4.25
pitch	0.35	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5

d	L	W
M2	5	.068
M2	6	.100
M2	8	.140
M2	10	.180
M2	12	.220
M2	16	.300
M2.5	5	.140
M2.5	6	.170
M2.5	8	.230
M2.5	10	.290
M2.5	12	.350
M2.5	16	.470
M3	5	.200
M3	6	.240
M3	8	.330
M3	10	.420
M3	12	.510
M3	16	.690
M3	20	.870
M4	5	.340
M4	6	.410
M4	8	.570
M4	10	.720
M4	12	.870
M4	16	1.17
M4	20	1.47
M4	25	1.84

d	L	W
M4	30	2.22
M4	35	2.59
M4	40	2.97
M4	45	3.34
M4	50	3.72
M5	5	.520
M5	6	.650
M5	8	.900
M5	10	1.15
M5	12	1.40
M5	16	1.90
M5	20	2.40
M5	25	3.02
M5	30	3.65
M5	35	4.27
M5	40	4.90
M5	45	5.52
M5	50	6.15
M6	6	.900
M6	8	1.25
M6	10	1.60
M6	12	1.95
M6	16	2.65
M6	20	3.35
M6	25	4.22
M6	30	5.10
M6	35	5.97

d	L	W
M 6	40	6.85
M 6	45	7.72
M 6	50	8.60
M 6	60	10.3
M 8	8	2.30
M 8	10	3.00
M 8	12	3.70
M 8	16	5.10
M 8	20	6.50
M 8	25	8.30
M 8	30	10.1
M 8	35	11.9
M 8	40	13.7
M 8	45	15.5
M 8	50	17.3
M 8	60	20.9
M10	10	4.20
M10	12	5.20
M10	16	7.20
M10	20	9.20
M10	25	11.7
M10	30	14.2
M10	35	16.7
M10	40	19.2
M10	45	21.7
M10	50	24.2
M10	60	29.2

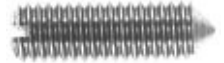
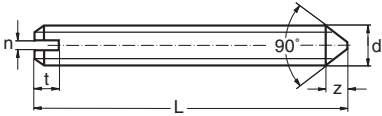
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Slotted Set Screws with Cone Point**

Tornillos sin cabeza rectificado para seguro conico

Vis sans tête avec fente et pointe

A2
A4



d	M1.6	M2	M2.5	M3	M4	M5	M6	M8	M10
n	0.25	0.25	0.4	0.4	0.6	0.8	1	1.2	1.6
t min.	0.56	0.64	0.72	0.8	1.12	1.28	1.6	2	2.4
t max.	0.74	0.84	0.95	1.05	1.42	1.63	2	2.5	3
z	0.8	1	1.25	0.5	2	2.5	2.5	3	4
pitch	0.35	0.4	0.45	1.5	0.7	0.8	1	1.25	1.5

d	L	W
M2	5	.085
M2	6	.110
M2	8	.140
M2	10	.170
M2	12	.200
M2	16	.260
M2.5	5	.130
M2.5	6	.160
M2.5	8	.220
M2.5	10	.280
M2.5	12	.340
M2.5	16	.460
M3	5	.170
M3	6	.210
M3	8	.290
M3	10	.370
M3	12	.450
M3	16	.610
M3	20	.790
M4	5	.285
M4	6	.360
M4	8	.510
M4	10	.670
M4	12	.820
M4	16	1.12
M4	20	1.42
M4	25	1.79

d	L	W
M4	30	2.17
M4	35	2.54
M4	40	2.92
M4	45	3.29
M4	50	3.66
M5	5	0.52
M5	6	.645
M5	8	.770
M5	10	1.02
M5	12	1.27
M5	16	1.76
M5	20	2.25
M5	25	2.86
M5	30	3.47
M5	35	4.09
M5	40	4.70
M5	45	5.31
M5	50	5.92
M6	6	0.64
M6	8	1.04
M6	10	1.44
M6	12	1.84
M6	16	2.64
M6	20	3.44
M6	25	4.44
M6	30	5.44
M6	35	6.44

d	L	W
M 6	40	7.44
M 6	45	8.44
M 6	50	9.44
M 6	60	11.4
M 8	8	2.05
M 8	10	2.65
M 8	12	3.25
M 8	16	4.45
M 8	20	5.65
M 8	25	7.15
M 8	30	8.65
M 8	35	10.1
M 8	40	11.6
M 8	45	13.1
M 8	50	14.6
M 8	60	17.6
M10	10	3.60
M10	12	4.60
M10	16	6.60
M10	20	8.60
M10	25	11.1
M10	30	13.6
M10	35	16.1
M10	40	18.6
M10	45	21.1
M10	50	23.6
M10	60	28.6

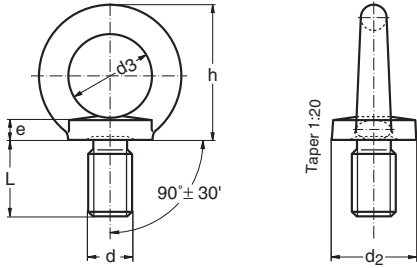
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Lifting Eye Bolts

Tornillos de ojo

Vis à anneaux

A2
A4



d	M8	M10	M12	M16	M20	M24	M27	M30
d <sub>2</sub>	20	25	30	35	40	50	50	65
d <sub>3</sub>	20	25	30	35	40	50	50	60
e	6	8	10	12	14	18	18	22
h	36	45	53	62	71	90	90	109
pitch	1.25	1.5	1.75	2	2.5	3	3	3.5

d	L	W
M 8	13	60
M10	17	110
M12	20.5	180
M16	27	280
M20	30	450
M24	36	740
M27	36	948
M30	45	1660

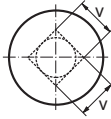
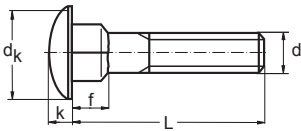
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Carriage Bolts**

Tornillos cabeza de coche

Vis à tête bombée avec carré

A2
A4



d	M5	M6	M8	M10	M12	M16	M20
dk	12.45	15.45	19.35	23.35	29.35	37.2	45.2
f	2.9	3.4	4.4	5.4	7.25	11.1	14.1
k	2.7	3.12	4.12	4.62	6.05	8.05	9.95
v	4.52	5.52	7.42	9.42	11.3	15.3	19.16
pitch	0.8	1	1.25	1.5	1.75	2	2.5

d	L	W
M5 16	4.00	
M5 20	4.50	
M5 25	5.10	
M5 30	5.90	
M5 35	6.70	
M5 40	7.50	
M5 45	8.30	
M5 50	9.10	
M5 55	9.90	
M5 60	10.7	
M5 65	11.5	
M5 70	12.3	
M5 75	13.1	
M5 80	13.9	
M6 16	6.90	
M6 20	7.60	
M6 25	8.50	
M6 30	9.60	
M6 35	10.7	
M6 40	11.8	
M6 45	12.9	
M6 50	14.0	
M6 55	15.1	
M6 60	16.2	
M6 65	17.3	
M6 70	18.4	

d	L	W
M 6 75	19.5	
M 6 80	20.6	
M 6 90	22.8	
M 6 100	25.0	
M 6 110	27.2	
M 6 120	29.4	
M 8 16	12.5	
M 8 20	13.8	
M 8 25	15.4	
M 8 30	17.0	
M 8 35	19.0	
M 8 40	21.0	
M 8 45	23.0	
M 8 50	25.0	
M 8 55	26.9	
M 8 60	28.9	
M 8 65	30.9	
M 8 70	32.9	
M 8 75	34.9	
M 8 80	36.8	
M 8 90	40.8	
M 8 100	44.8	
M 8 110	48.8	
M 8 120	52.8	
M10 20	22.7	
M10 25	25.2	

d	L	W
M10 30	27.7	
M10 35	30.2	
M10 40	32.7	
M10 45	35.8	
M10 50	38.9	
M10 55	42.0	
M10 60	45.1	
M10 65	48.2	
M10 70	51.3	
M10 75	54.9	
M10 80	57.5	
M10 90	63.7	
M10 100	69.9	
M10 110	76.1	
M10 120	82.3	
M10 130	88.5	
M10 140	95.0	
M10 150	101	
M12 25	42.0	
M12 30	45.7	
M12 35	49.4	
M12 40	53.1	
M12 45	56.8	
M12 50	61.2	
M12 55	65.6	
M12 60	70.0	

d	L	W
M12 65	74.4	
M12 70	78.8	
M12 75	82.9	
M12 80	87.0	
M12 90	96.0	
M12 100	105	
M12 110	114	
M12 120	123	
M12 130	132	
M12 140	141	
M12 150	150	
M16 40	105	
M16 45	112	
M16 50	119	
M16 55	126	
M16 60	133	
M16 65	141	
M16 70	149	
M16 75	157	
M16 80	165	
M16 90	181	
M16 100	197	
M16 110	213	
M16 120	229	
M16 130	245	
M16 140	261	

d	L	W
M16	150	277

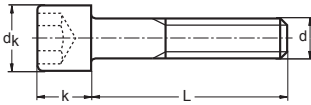
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Socket Head Cap Screws

Tornillos allen cilíndrico

Vis à tête cylindrique à six pans creux

A2
A4



d	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20
dk	3.62	4.32	5.32	6.78	8.28	9.78	12.73	15.73	17.73	23.67	29.67
e	1.73	2.3	2.87	3.44	4.58	5.72	6.86	9.15	11.43	16	19.44
k	1.86	2.36	2.86	3.82	4.82	5.7	7.64	9.64	11.57	15.57	19.48
s	1.5	2	2.5	3	4	5	6	8	10	14	17
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5

d	L	W
M2	4	.175
M2	5	.195
M2	6	.215
M2	8	.255
M2	10	.295
M2	12	.355
M2	16	.415
M2	20	.495
M2.5	4	.345
M2.5	5	.375
M2.5	6	.405
M2.5	8	.465
M2.5	10	.525
M2.5	12	.585
M2.5	16	.705
M2.5	20	.825
M3	4	.630
M3	5	.670
M3	6	.710
M3	8	.800
M3	10	.880
M3	12	.960
M3	14	1.08
M3	16	1.16
M3	20	1.36
M3	25	1.61
M3	30	1.86

d	L	W
M3	35	2.11
M3	40	2.36
M3	45	2.61
M3	50	2.86
M3	60	3.11
M4	5	1.40
M4	6	1.50
M4	8	1.65
M4	10	1.80
M4	12	1.95
M4	14	2.05
M4	16	2.25
M4	18	2.40
M4	20	2.65
M4	25	3.15
M4	30	3.65
M4	35	4.15
M4	40	4.65
M4	45	5.10
M4	50	5.50
M4	60	6.45
M5	10	2.70
M5	12	2.95
M5	14	3.20
M5	16	3.45
M5	18	3.72
M5	20	4.01

d	L	W
M5	25	4.78
M5	30	5.55
M5	35	6.32
M5	40	7.09
M5	45	7.86
M5	50	8.63
M5	55	9.40
M5	60	10.2
M5	70	11.7
M5	80	13.2
M5	90	14.7
M6	10	4.70
M6	12	5.07
M6	14	5.40
M6	16	5.75
M6	18	6.10
M6	20	6.53
M6	25	7.59
M6	30	8.30
M6	35	9.91
M6	40	11.0
M6	45	12.1
M6	50	13.2
M6	55	14.3
M6	60	15.4
M6	70	16.5
M6	80	18.0

d	L	W
M6	90	20.1
M6	100	22.1
M6	110	24.2
M6	120	26.5
M6	130	29.0
M6	140	31.5
M6	150	33.0
M8	10	10.3
M8	12	10.9
M8	14	11.5
M8	16	12.1
M8	18	12.7
M8	20	13.4
M8	25	15.0
M8	30	16.9
M8	35	18.9
M8	40	20.9
M8	45	22.9
M8	50	24.9
M8	55	26.9
M8	60	28.9
M8	70	33.0
M8	80	37.0
M8	90	40.5
M8	100	44.0
M8	110	47.4
M8	120	50.5

d	L	W
M 8	130	54.4
M 8	140	58.4
M 8	150	62.5
M10	16	20.9
M10	20	22.9
M10	25	25.4
M10	30	27.9
M10	35	30.4
M10	40	32.9
M10	45	36.1
M10	50	39.3
M10	55	42.5
M10	60	45.7
M10	70	52.1
M10	80	58.5
M10	90	64.9
M10	100	71.2
M10	110	77.0
M10	120	83.0
M10	130	88.5
M10	140	95.0
M10	150	101
M12	16	29.2
M12	20	32.1
M12	25	35.7
M12	30	39.3
M12	35	42.9

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**DIN 912**

ISO 4762

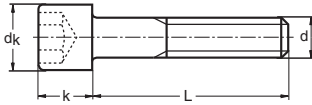
**BRIKXSEN****Socket Head Cap Screws**

Tornillos allen cilíndrico

Vis à tête cylindrique à six pans creux

A2

A4



d	M24
dk	35.61
e	21.73
k	23.48
s	19
pitch	3

d	L	W
M12	40	46.5
M12	45	50.1
M12	50	54.5
M12	55	58.9
M12	60	63.4
M12	70	71.3
M12	80	80.2
M12	90	89.1
M12	100	98.0
M12	110	107
M12	120	116
M12	130	125
M12	140	134
M12	150	143
M16	25	71.3
M16	30	77.8
M16	35	84.4
M16	40	91.0
M16	45	97.6
M16	50	106
M16	55	114
M16	60	122
M16	70	138
M16	80	154
M16	90	170
M16	100	186
M16	110	202

d	L	W
M16	120	218
M16	130	234
M16	140	250
M16	150	266
M20	40	150
M20	45	161
M20	50	172
M20	55	183
M20	60	194
M20	70	216
M20	80	241
M20	90	266
M20	100	291
M20	110	316
M20	120	341
M20	130	366
M20	140	391
M20	150	416
M24	60	330
M24	70	363
M24	80	399
M24	90	435
M24	100	471
M24	110	507
M24	120	543
M24	130	579
M24	140	615

d	L	W
M24	150	651

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

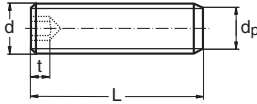


## Socket Set Screws with Flat Point

Espárragos allen con punta plana

Vis sans tête á six pans creux et bout plat

A2
A4



d	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20
dp	0.75	1.25	1.75	2.25	3.2	3.7	5.2	6.64	8.14	11.57	14.57
t	0.8	1.2	1.2	1.5	2	2	5	6	8	10	12
s	0.9	1.3	1.5	2	2.5	3	4	5	6	8	10
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5

d	L	W
M2	3	.044
M2	4	.059
M2	5	.074
M2	6	.089
M2	8	.119
M2	10	.148
M2	12	.179
M2.5	3	.075
M2.5	4	.100
M2.5	5	.125
M2.5	6	.150
M2.5	8	.199
M2.5	10	.249
M2.5	12	.299
M3	3	.100
M3	4	.140
M3	5	.180
M3	6	.220
M3	8	.310
M3	10	.400
M3	12	.490
M3	16	.670
M3	20	.850
M3	25	1.07
M4	3	.140
M4	4	.220
M4	5	.300

d	L	W
M4	6	.380
M4	8	.530
M4	10	.680
M4	12	.830
M4	16	1.13
M4	20	1.43
M4	25	1.80
M4	30	2.20
M5	4	.320
M5	5	.440
M5	6	.560
M5	8	.800
M5	10	1.04
M5	12	1.28
M5	16	1.76
M5	20	2.24
M5	25	2.84
M5	30	3.44
M5	35	4.04
M5	40	4.64
M6	5	.410
M6	6	.760
M6	8	1.11
M6	10	1.46
M6	12	1.81
M6	16	2.51
M6	20	3.21

d	L	W
M 6	25	4.09
M 6	30	4.97
M 6	35	5.85
M 6	40	6.73
M 6	45	7.61
M 6	50	8.49
M 8	8	1.89
M 8	10	2.52
M 8	12	3.15
M 8	16	4.41
M 8	20	5.67
M 8	25	7.26
M 8	30	8.85
M 8	35	10.4
M 8	40	12.0
M 8	45	13.6
M 8	50	15.2
M10	10	3.78
M10	12	4.78
M10	16	6.78
M10	20	8.76
M10	25	11.2
M10	30	13.7
M10	35	16.2
M10	40	18.7
M10	45	21.2
M10	50	23.7

d	L	W
M10	60	28.7
M12	12	6.80
M12	16	9.60
M12	20	12.4
M12	25	16.0
M12	30	19.6
M12	35	23.2
M12	40	26.8
M12	45	30.4
M12	50	34.0
M12	60	41.2
M16	12	11.1
M16	16	16.3
M16	20	21.5
M16	25	28.0
M16	30	34.6
M16	35	41.1
M16	40	47.7
M16	45	54.2
M16	50	59.7
M16	60	70.7
M20	20	32.3
M20	25	42.6
M20	30	52.9
M20	35	63.2
M20	40	73.5
M20	45	83.8

d	L	W
M20	50	94.1
M20	60	115

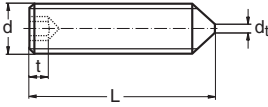
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Socket Set Screws with Cone Point**

Espárragos allen con punta conica

Vis sans tête á six pans creux et bout pointu

A2
A4



d	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20
d <sub>t</sub>	-	-	-	-	-	0.9	1.4	1.9	2.4	3.25	4.25
t	1.7	2	2	2.5	3	3.5	5	6	8	10	12
s	0.9	1.3	1.5	2	2.5	3	4	5	6	8	10
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5

d	L	W
M2 3	.044	
M2 4	.059	
M2 5	.074	
M2 6	.089	
M2 8	.119	
M2 10	.148	
M2 12	.178	
M2.5 3	.075	
M2.5 4	.100	
M2.5 5	.125	
M2.5 6	.150	
M2.5 8	.199	
M2.5 10	.249	
M2.5 12	.299	
M3 3	.090	
M3 4	.130	
M3 5	.170	
M3 6	.210	
M3 8	.300	
M3 10	.390	
M3 12	.480	
M3 16	.660	
M3 20	.840	
M3 25	1.06	
M4 3	.110	
M4 4	.180	
M4 5	.260	

d	L	W
M4 6	.340	
M4 8	.490	
M4 10	.640	
M4 12	.790	
M4 16	1.09	
M4 20	1.39	
M4 25	1.76	
M4 30	2.13	
M5 4	.250	
M5 5	.370	
M5 6	.490	
M5 8	.730	
M5 10	.970	
M5 12	1.21	
M5 16	1.69	
M5 20	2.17	
M5 25	2.77	
M5 30	3.37	
M5 35	3.97	
M5 40	4.57	
M6 5	.530	
M6 6	.700	
M6 8	1.04	
M6 10	1.39	
M6 12	1.74	
M6 16	2.44	
M6 20	3.14	

d	L	W
M 6 25	4.02	
M 6 30	4.90	
M 6 35	5.78	
M 6 40	6.60	
M 6 45	6.45	
M 6 50	7.30	
M 8 8	1.72	
M 8 10	2.35	
M 8 12	2.98	
M 8 16	4.24	
M 8 20	5.50	
M 8 25	7.09	
M 8 30	8.68	
M 8 35	10.3	
M 8 40	11.9	
M 8 45	13.5	
M 8 50	15.1	
M10 10	3.43	
M10 12	4.42	
M10 16	6.42	
M10 20	8.40	
M10 25	10.8	
M10 30	13.3	
M10 35	15.8	
M10 40	18.3	
M10 45	20.8	
M10 50	23.3	

d	L	W
M10 60	28.3	
M12 12	6.10	
M12 16	8.90	
M12 20	11.7	
M12 25	15.3	
M12 30	18.9	
M12 35	22.5	
M12 40	26.1	
M12 45	29.7	
M12 50	33.3	
M12 60	40.5	
M16 12	9.90	
M16 16	14.9	
M16 20	20.1	
M16 25	26.6	
M16 30	33.2	
M16 35	39.7	
M16 40	46.3	
M16 45	52.8	
M16 50	59.4	
M16 60	72.5	
M20 20	30.4	
M20 25	40.7	
M20 30	51.0	
M20 35	61.3	
M20 40	71.6	
M20 45	81.9	

d	L	W
M20 50	92.2	
M20 60	113	

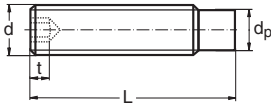
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Socket Set Screws with Dog Point

Espárragos con punta de perro

Vis sans tête á six pans creux et tétón

A2
A4



d	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20
d <sub>p</sub>	0.75	1.25	1.75	2.25	3.2	3.7	5.2	6.64	8.14	11.57	14.57
t	0.8	1.2	1.2	1.5	2	2	5	6	8	10	12
s	0.9	1.3	1.5	2	2.5	3	4	5	6	8	10
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5

d	L	W
M2	3	.044
M2	4	.059
M2	5	.074
M2	6	.089
M2	8	.119
M2	10	.148
M2	12	.177
M2.5	3	.075
M2.5	4	.100
M2.5	5	.125
M2.5	6	.150
M2.5	8	.199
M2.5	10	.249
M2.5	12	.299
M3	3	.117
M3	4	.140
M3	5	.163
M3	6	.186
M3	8	.276
M3	10	.366
M3	12	.456
M3	16	.636
M3	20	.816
M3	25	1.04
M4	3	.070
M4	4	.142
M4	5	.220

d	L	W
M4	6	.292
M4	8	.442
M4	10	.592
M4	12	.742
M4	16	1.04
M4	20	1.34
M4	25	1.71
M4	30	2.10
M5	4	.230
M5	5	.350
M5	6	.470
M5	8	.708
M5	10	.948
M5	12	1.19
M5	16	1.67
M5	20	2.15
M5	25	2.75
M5	30	3.35
M5	35	3.95
M5	40	4.55
M6	5	.760
M6	6	.890
M6	8	1.02
M6	10	1.29
M6	12	1.63
M6	16	2.34
M6	20	3.04

d	L	W
M 6	25	3.92
M 6	30	4.80
M 6	35	5.68
M 6	40	6.60
M 6	45	7.50
M 6	50	8.40
M 8	8	1.88
M 8	10	2.28
M 8	12	2.68
M 8	16	3.94
M 8	20	5.20
M 8	25	6.79
M 8	30	8.38
M 8	35	9.97
M 8	40	11.6
M 8	45	13.2
M 8	50	14.9
M10	10	3.50
M10	12	4.41
M10	16	6.05
M10	20	8.02
M10	25	10.5
M10	30	13.0
M10	35	15.5
M10	40	18.0
M10	45	20.5
M10	50	23.0

d	L	W
M10	60	28.0
M12	12	6.82
M12	16	8.91
M12	20	11.0
M12	25	14.6
M12	30	18.2
M12	35	21.8
M12	40	25.4
M12	45	29.0
M12	50	32.6
M12	60	39.8
M16	12	12.1
M16	16	16.1
M16	20	20.1
M16	25	25.1
M16	30	31.9
M16	35	38.2
M16	40	44.9
M16	45	50.9
M16	50	56.5
M16	60	67.5
M20	20	28.6
M20	25	38.9
M20	30	45.5
M20	35	55.8
M20	40	66.1
M20	45	76.4

d	L	W
M20	50	86.7
M20	60	108

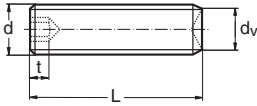
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

Socket Set Screws with Cup Point

Espárragos con punta de copa

Vis sans tête á six pans creux et cuvette

A2
A4



d	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20
dv	0.75	0.95	1.15	1.75	2.25	2.75	4.7	5.7	7.64	9.64	13.57
t	1.7	2	2	2.5	3	3.5	5	6	8	10	12
s	0.9	1.3	1.5	2	2.5	3	4	5	6	8	10
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5

d	L	W
M2	3	.044
M2	4	.059
M2	5	.074
M2	6	.089
M2	8	.119
M2	10	.148
M2	12	.177
M2.5	3	.075
M2.5	4	.100
M2.5	5	.125
M2.5	6	.150
M2.5	8	.199
M2.5	10	.249
M2.5	12	.299
M3	3	.100
M3	4	.140
M3	5	.180
M3	6	.220
M3	8	.310
M3	10	.400
M3	12	.490
M3	16	.670
M3	20	.850
M3	25	1.07
M4	3	-
M4	4	-
M4	5	.255

d	L	W
M4	6	.380
M4	8	.530
M4	10	.680
M4	12	.830
M4	16	1.13
M4	20	1.43
M4	25	-
M4	30	-
M5	4	-
M5	5	.420
M5	6	.540
M5	8	.780
M5	10	1.02
M5	12	1.26
M5	16	1.74
M5	20	2.22
M5	25	2.82
M5	30	-
M5	35	-
M5	40	-
M6	5	-
M6	6	.740
M6	8	1.09
M6	10	1.44
M6	12	1.79
M6	16	2.49
M6	20	3.19

d	L	W
M 6	25	4.07
M 6	30	4.95
M 6	35	5.83
M 6	40	-
M 6	45	-
M 6	50	-
M 8	8	1.88
M 8	10	2.51
M 8	12	3.14
M 8	16	4.40
M 8	20	5.66
M 8	25	7.25
M 8	30	8.84
M 8	35	10.4
M 8	40	12.0
M 8	45	-
M 8	50	-
M10	10	-
M10	12	4.73
M10	16	6.73
M10	20	8.71
M10	25	11.2
M10	30	13.7
M10	35	16.2
M10	40	18.7
M10	45	-
M10	50	-

d	L	W
M10	60	-
M12	12	-
M12	16	9.50
M12	20	12.3
M12	25	15.9
M12	30	19.5
M12	35	23.1
M12	40	26.7
M12	45	-
M12	50	-
M12	60	-
M16	12	-
M16	16	-
M16	20	20.9
M16	25	27.4
M16	30	34.0
M16	35	40.5
M16	40	47.1
M16	45	-
M16	50	-
M16	60	-
M20	20	-
M20	25	41.4
M20	30	51.7
M20	35	62.0
M20	40	72.3
M20	45	82.6

d	L	W
M20	50	92.9
M20	60	-

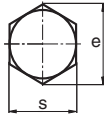
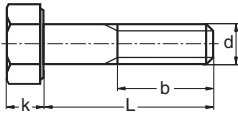
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Hex Cap Screws, Partially Threaded

Tornillos hexagonal

Vis à tête six pans

A2
A4



d	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
b (L ≤ 125)	16	18	22	26	30	34	38	42	46	50	54
b (L = 125-200)	22	24	28	32	36	40	44	48	52	56	60
s	8	10	13	17	19	22	24	27	30	32	36
k min.	3.35	3.85	5.15	6.22	7.32	8.62	9.82	11.28	12.28	13.78	14.78
pitch	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5	2.5	3

d	L	W
M5	30	5.64
M5	35	6.42
M5	40	7.20
M5	45	7.98
M5	50	8.76
M5	55	9.54
M5	60	10.3
M5	70	11.9
M6	30	8.06
M6	35	9.13
M6	40	10.2
M6	45	11.3
M6	50	12.3
M6	55	13.4
M6	60	14.4
M6	65	15.5
M6	70	16.6
M6	80	18.7
M6	90	20.9
M6	100	23.0
M6	110	25.2
M6	120	27.3
M6	130	29.5
M6	140	31.6
M6	150	33.8
M6	160	35.9
M6	170	38.1

d	L	W
M 6	180	40.2
M 8	35	18.2
M 8	40	20.3
M 8	45	22.2
M 8	50	24.2
M 8	55	25.8
M 8	60	27.8
M 8	65	29.8
M 8	70	31.8
M 8	75	33.7
M 8	80	35.7
M 8	85	37.7
M 8	90	39.6
M 8	100	43.6
M 8	110	47.5
M 8	120	51.5
M 8	130	55.4
M 8	140	59.4
M 8	150	63.3
M 8	160	67.3
M 8	170	71.2
M 8	180	75.2
M 8	190	79.1
M 8	200	83.0
M10	35	31.9
M10	40	35.0
M10	45	38.0

d	L	W
M10	50	41.1
M10	55	43.8
M10	60	46.9
M10	65	50.0
M10	70	53.1
M10	75	56.2
M10	80	59.3
M10	85	62.4
M10	90	65.5
M10	95	68.6
M10	100	71.7
M10	110	77.9
M10	120	84.1
M10	130	90.3
M10	140	96.5
M10	150	103
M10	160	109
M10	170	115
M10	180	121
M10	190	127
M10	200	134
M12	40	49.1
M12	45	53.6
M12	50	58.1
M12	55	62.6
M12	60	67.0
M12	65	70.3

d	L	W
M12	70	74.7
M12	75	79.1
M12	80	83.6
M12	85	92.4
M12	90	96.8
M12	100	101
M12	110	109
M12	120	118
M12	130	126
M12	140	135
M12	150	146
M12	160	156
M12	170	166
M12	180	175
M12	190	185
M12	200	195
M12	220	214
M14	45	76.0
M14	50	82.0
M14	55	88.1
M14	60	94.1
M14	65	98.8
M14	70	105
M14	80	117
M14	90	127
M14	100	139
M14	110	151

d	L	W
M14	120	164
M14	130	174
M14	140	185
M14	150	195
M14	160	206
M14	170	217
M14	180	227
M14	190	238
M14	200	250
M16	45	99.0
M16	50	107
M16	55	115
M16	60	123
M16	65	131
M16	70	139
M16	75	147
M16	80	155
M16	85	163
M16	90	171
M16	100	186
M16	110	202
M16	120	218
M16	130	230
M16	140	246
M16	150	262
M16	160	278
M16	170	294

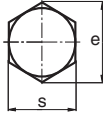
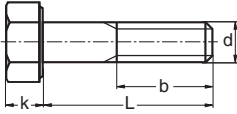
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Hex Cap Screws, Partially Threaded**

Tornillos hexagonal

Vis à tête six pans

A2
A4



d	M27	M30	M33	M36	M39
b (L ≤ 125)	60	66	72	78	84
b (L = 125-200)	66	72	78	84	90
s	41	46	50	55	60
k min.	16.65	18.28	20.58	22.08	24.58
pitch	3	3.5	3.5	4	4

d	L	W
M16 180	310	
M16 190	326	
M16 200	342	
M16 220	375	
M16 230	391	
M16 240	406	
M16 250	422	
M16 300	501	
M18 65	171	
M18 70	181	
M18 75	191	
M18 80	200	
M18 90	220	
M18 100	240	
M18 110	260	
M18 120	280	
M18 130	296	
M18 140	316	
M18 150	336	
M18 160	356	
M18 170	376	
M18 180	396	
M18 190	416	
M18 200	436	
M20 65	219	
M20 70	231	
M20 75	243	

d	L	W
M20 80	255	
M20 85	267	
M20 90	279	
M20 95	291	
M20 100	303	
M20 110	327	
M20 120	351	
M20 130	374	
M20 140	398	
M20 150	422	
M20 160	446	
M20 170	470	
M20 180	494	
M20 190	519	
M20 200	544	
M20 220	595	
M20 230	621	
M20 240	646	
M20 250	671	
M20 300	770	
M22 80	311	
M22 90	341	
M22 100	370	
M22 110	400	
M22 120	430	
M22 130	450	
M22 140	480	

d	L	W
M22 150	510	
M22 160	540	
M22 180	600	
M22 200	660	
M24 75	374	
M24 80	392	
M24 85	410	
M24 90	428	
M24 100	464	
M24 110	500	
M24 120	535	
M24 130	560	
M24 140	595	
M24 150	630	
M24 160	665	
M24 170	700	
M24 180	735	
M24 190	770	
M24 200	805	
M24 220	870	
M24 230	903	
M24 240	935	
M24 250	970	
M24 300	1140	
M27 80	510	
M27 90	557	
M27 100	603	

d	L	W
M27 110	650	
M27 120	695	
M27 130	720	
M27 140	765	
M27 150	810	
M27 160	855	
M27 170	900	
M27 180	945	
M27 190	990	
M27 200	1030	
M27 220	1130	
M27 230	1175	
M27 240	1220	
M27 250	1265	
M27 260	1310	
M27 270	1355	
M27 280	1400	
M27 290	1445	
M27 300	1490	
M30 80	601	
M30 90	712	
M30 100	767	
M30 110	823	
M30 120	880	
M30 130	920	
M30 140	975	
M30 150	1030	

d	L	W
M30 160	1085	
M30 170	1140	
M30 180	1200	
M30 190	1250	
M30 200	1310	
M30 220	1370	
M30 230	1420	
M30 240	1530	
M30 250	1585	
M30 260	1640	
M30 270	1695	
M30 280	1750	
M30 290	1805	
M30 300	1860	
M33 90	882	
M33 100	951	
M33 110	1020	
M33 120	1090	
M33 130	1150	
M33 140	1220	
M33 150	1290	
M33 160	1350	
M33 170	1410	
M33 180	1480	
M33 190	1540	
M33 200	1610	
M33 220	1750	

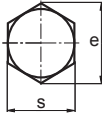
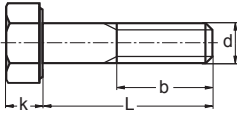
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Hex Cap Screws, Partially Threaded

Tornillos hexagonal

Vis à tête six pans

A2
A4



d	M27	M30	M33	M36
b (L ≤ 125)	60	66	72	78
b (L = 125-200)	66	72	78	84
s	41	46	50	55
k min.	16.65	18.28	20.58	22.08
pitch	3	3.5	3.5	4

d	L	W
M33 240	1880	
M33 250	1950	
M33 260	2020	
M33 270	2085	
M33 280	2150	
M33 290	2220	
M33 300	2290	
M36 100	1160	
M36 110	1240	
M36 120	1320	
M36 130	1390	
M36 140	1470	
M36 150	1550	
M36 160	1630	
M36 170	1710	
M36 180	1790	
M36 190	1870	
M36 200	1950	
M36 220	2110	
M36 230	2190	
M36 240	2270	
M36 250	2350	
M36 260	2430	
M36 270	2510	
M36 280	2590	
M36 290	2690	
M36 300	2750	

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**DIN 933**

ISO 4017

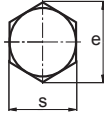
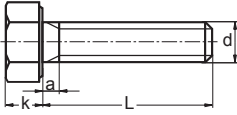
**BRIKXSEN****Hex Cap Screws, Fully Threaded**

Tornillos hexagonal cuerda corrida

Vis à tête six pans, ent. filetés

A2

A4



d	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20
a	1.5	2.1	2.4	3	3.75	4.5	5.25	6	6	7.5	7.5
e min.	6.01	7.66	8.79	11.05	14.38	18.9	21.1	24.49	26.75	30.14	33.53
k min.	1.88	2.68	3.35	3.85	5.15	6.22	7.32	8.62	9.82	11.28	12.28
s	5.5	7	8	10	13	17	19	22	24	27	30
pitch	.50	.70	.80	1.0	1.25	1.50	1.75	2.0	2.0	2.5	2.5

d	L	W
M3	6	0.57
M3	8	0.66
M3	10	0.75
M3	12	0.84
M3	16	1.00
M3	20	1.18
M3	25	1.40
M3	30	1.61
M3	40	1.83
M3	50	2.04
M4	6	1.33
M4	8	1.49
M4	10	1.64
M4	12	1.80
M4	16	2.10
M4	18	2.25
M4	20	2.41
M4	25	2.80
M4	30	3.19
M4	35	3.57
M4	40	3.96
M4	45	4.34
M4	50	4.73
M4	60	5.50
M5	6	2.18
M5	8	2.38
M5	10	2.63

d	L	W
M5	12	2.87
M5	14	3.12
M5	16	3.37
M5	18	3.62
M5	20	3.87
M5	22	4.12
M5	25	4.49
M5	30	5.11
M5	35	5.73
M5	40	6.35
M5	45	6.99
M5	50	7.59
M5	55	8.21
M5	60	8.83
M5	70	10.1
M6	8	3.74
M6	10	4.08
M6	12	4.42
M6	14	4.76
M6	16	5.11
M6	18	5.45
M6	20	5.80
M6	22	6.15
M6	25	6.65
M6	30	7.51
M6	35	8.37
M6	40	9.23

d	L	W
M6	45	10.1
M6	50	11.0
M6	55	11.9
M6	60	12.7
M6	70	14.4
M6	75	15.3
M6	80	16.2
M6	90	17.9
M6	100	19.7
M6	110	21.4
M6	120	23.2
M8	10	9.10
M8	12	9.80
M8	14	10.5
M8	16	11.1
M8	18	11.7
M8	20	12.3
M8	22	12.9
M8	25	13.9
M8	30	15.5
M8	35	17.1
M8	40	18.7
M8	45	20.3
M8	50	21.8
M8	55	23.4
M8	60	25.0
M8	65	26.6

d	L	W
M 8	70	28.2
M 8	75	29.8
M 8	80	31.4
M 8	90	34.6
M 8	100	37.7
M 8	110	40.9
M 8	120	44.0
M 8	130	47.1
M 8	140	50.3
M 8	150	53.5
M10	12	17.2
M10	16	19.2
M10	18	20.2
M10	20	21.2
M10	25	23.7
M10	30	26.2
M10	35	28.7
M10	40	31.2
M10	45	33.7
M10	50	36.2
M10	55	38.7
M10	60	41.3
M10	65	43.8
M10	70	46.3
M10	75	48.8
M10	80	51.3
M10	90	56.3

d	L	W
M10	100	61.3
M10	110	66.4
M10	120	71.4
M10	130	76.4
M10	140	81.4
M10	150	86.4
M12	16	27.7
M12	20	31.0
M12	25	34.1
M12	30	37.7
M12	35	41.3
M12	40	44.9
M12	45	48.5
M12	50	52.0
M12	55	55.6
M12	60	58.2
M12	65	62.8
M12	70	66.4
M12	80	73.6
M12	90	80.8
M12	100	88.0
M12	110	95.2
M12	120	102
M12	130	109
M12	140	116
M12	150	123
M14	20	48.0

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

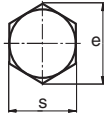
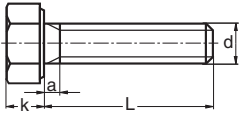


## Hex Cap Screws, Fully Threaded

Tornillos hexagonal cuerda corrida

Vis à tête six pans, ent. filetés

A2
A4



d	M22	M24	M27	M30	M33	M36	M39	M42	M45	M48	M52
a	7.5	9	9	10.5	10.5	12	12	13.5	13.5	15	15
e min.	35.72	39.98	45.20	50.85	55.37	60.79	66.44	71.3	76.95	82.60	88.25
k min.	13.78	14.78	16.65	18.28	20.58	22.08	24.58	25.58	27.58	29.58	32.5
s	34	36	41	46	50	55	60	65	70	75	80
pitch	2.5	3	3	3	3.5	4	4	4.5	4.5	5	5

d	L	W
M14 25	53.0	
M14 30	57.9	
M14 35	62.9	
M14 40	67.9	
M14 45	72.9	
M14 50	77.9	
M14 55	82.8	
M14 60	87.8	
M14 65	92.8	
M14 70	97.9	
M14 80	107	
M14 90	117	
M14 100	127	
M14 110	137	
M14 120	147	
M16 20	63.5	
M16 25	70.2	
M16 30	76.9	
M16 35	83.5	
M16 40	90.2	
M16 45	97.1	
M16 50	103	
M16 55	110	
M16 60	117	
M16 65	123	
M16 70	130	
M16 75	137	

d	L	W
M16 80	144	
M16 85	150	
M16 90	157	
M16 100	170	
M16 110	184	
M16 120	197	
M16 130	210	
M16 140	224	
M16 150	237	
M18 30	104	
M18 35	112	
M18 40	120	
M18 45	128	
M18 50	136	
M18 55	145	
M18 60	153	
M18 65	161	
M18 70	169	
M18 75	177	
M18 80	186	
M18 90	202	
M18 100	218	
M18 110	235	
M18 120	251	
M18 130	268	
M18 140	284	
M18 150	300	

d	L	W
M20 30	134	
M20 35	145	
M20 40	155	
M20 45	165	
M20 50	176	
M20 55	186	
M20 60	196	
M20 65	207	
M20 70	217	
M20 75	227	
M20 80	238	
M20 90	258	
M20 100	279	
M20 110	300	
M20 120	320	
M20 130	340	
M20 140	361	
M20 150	381	
M22 50	219	
M22 55	232	
M22 60	244	
M22 65	257	
M22 70	269	
M22 75	282	
M22 80	295	
M22 90	321	
M22 100	346	

d	L	W
M22 110	371	
M22 120	397	
M22 130	421	
M22 140	448	
M22 150	473	
M24 50	274	
M24 55	289	
M24 60	304	
M24 65	319	
M24 70	334	
M24 75	348	
M24 80	363	
M24 85	378	
M24 90	393	
M24 100	423	
M24 110	453	
M24 120	483	
M24 130	513	
M24 140	543	
M24 150	572	
M27 50	377	
M27 55	397	
M27 60	416	
M27 65	435	
M27 70	454	
M27 80	492	
M27 90	531	

d	L	W
M27 100	569	
M27 110	608	
M27 120	647	
M27 130	685	
M27 140	724	
M27 150	762	
M30 60	543	
M30 65	566	
M30 70	590	
M30 80	637	
M30 90	685	
M30 100	732	
M30 110	779	
M30 120	827	
M30 130	874	
M30 140	921	
M30 150	969	
M33 70	746	
M33 80	806	
M33 90	866	
M33 100	920	
M33 110	978	
M33 120	1040	
M33 130	1090	
M33 140	1150	
M33 150	1210	
M36 80	990	

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**DIN 933**  
ISO 4017

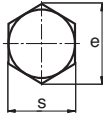
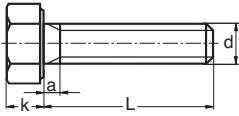
**BRIKXSEN**

**Hex Cap Screws, Fully Threaded**

Tornillos hexagonal cuerda corrida

Vis à tête six pans, ent. filetés

A2
A4



d	M22	M24	M27	M30	M33	M36
a	7.5	9	9	10.5	10.5	12
e min.	35.72	39.98	45.20	50.85	55.37	60.79
k min.	13.78	14.78	16.65	18.28	20.58	22.08
s	32	36	41	46	50	55
pitch	2.5	3	3	3.5	3.5	4

d	L	W
M36 90	1060	
M36 100	1140	
M36 110	1200	
M36 120	1260	
M36 130	1330	
M36 140	1400	
M36 150	1470	

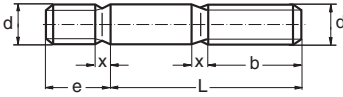
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Double End Studs ~ 1 dia.

Birlos con cuerda determinada de cada lado

Goujons, Partie filetée e ~ 1d

A2
A4



d	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
b (L ≤ 125)	16	18	22	26	30	34	38	42	46	50	54
b (L = 125-200)	22	24	28	32	36	40	44	48	52	56	60
e	5	6	8	10	12	14	16	18	20	22	24
x	2	2.5	3	3.5	4	-	5	-	6	-	7
pitch	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5	2.5	3

d	L	W
M5	15	2.32
M5	20	3.09
M5	25	3.86
M5	30	4.63
M5	35	5.30
M5	40	5.97
M5	45	6.74
M5	50	7.51
M5	55	8.28
M5	60	9.05
M5	65	9.82
M5	70	10.6
M5	75	11.4
M5	80	12.1
M5	85	12.9
M5	90	13.7
M5	95	14.4
M5	100	15.2
M5	110	16.7
M5	120	18.3
M6	15	3.3
M6	20	4.4
M6	25	5.5
M6	30	6.6
M6	35	7.7
M6	40	8.8
M6	45	9.9

d	L	W
M6	50	11.0
M6	55	12.1
M6	60	13.2
M6	65	14.3
M6	70	15.4
M6	75	16.5
M6	80	17.6
M6	85	18.7
M6	90	19.8
M6	95	20.9
M6	100	22.0
M6	110	24.2
M6	120	26.4
M8	15	6.2
M8	20	8.2
M8	25	10.2
M8	30	12.2
M8	35	14.2
M8	40	16.2
M8	45	18.2
M8	50	20.2
M8	55	22.2
M8	60	24.2
M8	65	26.2
M8	70	28.2
M8	75	30.2
M8	80	32.2

d	L	W
M 8	85	34.2
M 8	90	36.2
M 8	95	38.2
M 8	100	40.2
M 8	110	44.2
M 8	120	48.2
M10	15	10.4
M10	20	13.4
M10	25	16.5
M10	30	19.6
M10	35	22.7
M10	40	25.8
M10	45	28.9
M10	50	32.0
M10	55	35.1
M10	60	38.2
M10	65	41.3
M10	70	44.4
M10	75	47.5
M10	80	50.6
M10	85	53.7
M10	90	56.8
M10	95	59.9
M10	100	63.0
M10	110	66.1
M10	120	69.2
M12	15	16.0

d	L	W
M12	20	20.4
M12	25	24.8
M12	30	29.2
M12	35	33.6
M12	40	38.0
M12	45	42.4
M12	50	46.8
M12	55	51.2
M12	60	55.6
M12	65	60.0
M12	70	64.4
M12	75	68.8
M12	80	73.2
M12	85	77.6
M12	90	82.0
M12	95	86.4
M12	100	90.8
M12	110	99.7
M12	120	109
M14	30	41.8
M14	35	47.9
M14	40	53.9
M14	45	60.0
M14	50	66.0
M14	55	72.1
M14	60	78.1
M14	65	84.2

d	L	W
M14	70	90.2
M14	75	96.3
M14	80	102
M14	85	108
M14	90	114
M14	95	120
M14	100	126
M14	110	138
M14	120	150
M16	30	57.4
M16	35	65.3
M16	40	73.2
M16	45	81.1
M16	50	89.0
M16	55	96.9
M16	60	105
M16	65	113
M16	70	121
M16	75	129
M16	80	137
M16	85	145
M16	90	153
M16	95	161
M16	100	169
M16	110	185
M16	120	201
M18	35	83

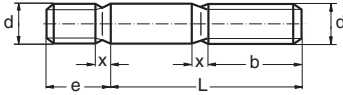
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Double End Studs ~ 1 dia.**

Birlos con cuerda determinada de cada lado

Goujons, Partie filetée e ~ 1d

A2
A4



d	M27	M30
b (L ≤ 125)	60	66
b (L = 125-200)	66	72
e	25	30
x	-	-
pitch	3	3.5

d	L	W
M18	40	93
M18	45	103
M18	50	113
M18	55	123
M18	60	133
M18	65	143
M18	70	153
M18	75	163
M18	80	173
M18	85	183
M18	90	193
M18	95	203
M18	100	213
M18	110	233
M18	120	253
M20	35	110
M20	40	122
M20	45	134
M20	50	146
M20	55	158
M20	60	170
M20	65	182
M20	70	194
M20	75	206
M20	80	218
M20	85	230
M20	90	242

d	L	W
M20	95	254
M20	100	266
M20	110	290
M20	120	315
M22	35	130
M22	40	145
M22	45	160
M22	50	175
M22	55	190
M22	60	205
M22	65	220
M22	70	235
M22	75	250
M22	80	265
M22	85	280
M22	90	295
M22	95	310
M22	100	325
M22	110	355
M22	120	385
M24	35	164
M24	40	182
M24	45	200
M24	50	218
M24	55	236
M24	60	254
M24	65	272

d	L	W
M24	70	290
M24	75	308
M24	80	326
M24	85	344
M24	90	362
M24	95	380
M24	100	398
M24	110	434
M24	120	470
M27	50	278
M27	55	300
M27	60	322
M27	65	345
M27	70	367
M27	75	390
M27	80	412
M27	85	435
M27	90	457
M27	95	480
M27	100	502
M27	110	547
M27	120	592
M30	60	423
M30	65	451
M30	70	479
M30	75	507
M30	80	535

d	L	W
M30	85	563
M30	90	591
M30	95	619
M30	100	647
M30	110	702
M30	120	757

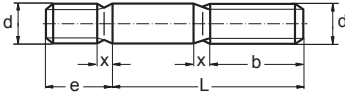
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Double End Studs ~ 1.25 dia.

Birlos con cuerda determinada de cada lado

Goujons, Partie filetée e ~ 1.25d

A2
A4



d	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
b (L ≤ 125)	16	18	22	26	30	34	38	42	46	50	54
b (L = 125-200)	22	24	28	32	36	40	44	48	52	56	60
e	6.5	7.5	10	12	15	18	20	22	25	28	30
x	2	2.5	3	3.5	4	-	5	-	6	-	7
pitch	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5	2.5	3

d	L	W
M5	15	2.52
M5	20	3.29
M5	25	4.06
M5	30	4.83
M5	35	5.50
M5	40	6.17
M5	45	6.94
M5	50	7.51
M5	55	8.21
M5	60	8.93
M5	65	9.65
M5	70	10.4
M5	75	11.1
M5	80	11.8
M5	85	12.5
M5	90	13.2
M5	95	14.0
M5	100	14.7
M5	110	16.1
M5	120	17.6
M6	15	3.55
M6	20	4.65
M6	25	5.75
M6	30	6.85
M6	35	7.95
M6	40	9.05
M6	45	10.1

d	L	W
M6	50	11.2
M6	55	12.3
M6	60	13.4
M6	65	14.5
M6	70	15.6
M6	75	16.7
M6	80	17.8
M6	85	18.9
M6	90	20.0
M6	95	21.1
M6	100	22.2
M6	110	24.4
M6	120	26.6
M8	15	7.40
M8	20	9.20
M8	25	11.0
M8	30	12.8
M8	35	14.8
M8	40	16.8
M8	45	18.8
M8	50	20.8
M8	55	22.8
M8	60	24.8
M8	65	26.8
M8	70	28.8
M8	75	30.8
M8	80	32.8

d	L	W
M 8	85	34.8
M 8	90	36.8
M 8	95	38.8
M 8	100	40.8
M 8	110	44.8
M 8	120	48.8
M10	15	11.5
M10	20	14.6
M10	25	17.7
M10	30	20.8
M10	35	23.9
M10	40	27.0
M10	45	30.1
M10	50	33.2
M10	55	36.3
M10	60	39.4
M10	65	42.5
M10	70	45.6
M10	75	48.7
M10	80	51.8
M10	85	54.9
M10	90	58.0
M10	95	61.1
M10	100	64.2
M10	110	70.4
M10	120	76.6
M12	15	18.2

d	L	W
M12	20	22.6
M12	25	27.0
M12	30	31.4
M12	35	35.8
M12	40	40.2
M12	45	44.6
M12	50	49.0
M12	55	53.4
M12	60	57.8
M12	65	62.2
M12	70	66.4
M12	75	70.6
M12	80	75.0
M12	85	79.4
M12	90	83.8
M12	95	88.2
M12	100	92.6
M12	110	102
M12	120	111
M14	30	45.5
M14	35	51.5
M14	40	57.5
M14	45	63.5
M14	50	69.5
M14	55	75.6
M14	60	81.6
M14	65	87.7

d	L	W
M14	70	93.7
M14	75	100
M14	80	106
M14	85	112
M14	90	118
M14	95	124
M14	100	130
M14	110	142
M14	120	154
M16	30	63.5
M16	35	71.2
M16	40	78.9
M16	45	86.6
M16	50	94.3
M16	55	102
M16	60	110
M16	65	118
M16	70	126
M16	75	134
M16	80	142
M16	85	150
M16	90	158
M16	95	166
M16	100	174
M16	110	190
M16	120	206
M18	35	100

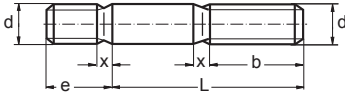
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Double End Studs ~ 1.25 dia.**

Birlos con cuerda determinada de cada lado

Goujons, Partie filetée e ~ 1.25d

A2
A4



d	M27	M30
b (L ≤ 125)	60	66
b (L = 125-200)	66	72
e	35	38
x	-	-
pitch	3	3.5

d	L	W
M18	40	110
M18	45	120
M18	50	130
M18	55	140
M18	60	150
M18	65	160
M18	70	170
M18	75	180
M18	80	190
M18	85	200
M18	90	210
M18	95	220
M18	100	230
M18	110	240
M18	120	260
M20	35	121
M20	40	133
M20	45	145
M20	50	157
M20	55	169
M20	60	181
M20	65	193
M20	70	205
M20	75	217
M20	80	229
M20	85	241
M20	90	253

d	L	W
M20	95	265
M20	100	277
M20	110	301
M20	120	326
M22	35	144
M22	40	159
M22	45	174
M22	50	189
M22	55	204
M22	60	219
M22	65	234
M22	70	249
M22	75	264
M22	80	279
M22	85	294
M22	90	309
M22	95	324
M22	100	340
M22	110	370
M22	120	400
M24	35	182
M24	40	200
M24	45	218
M24	50	236
M24	55	254
M24	60	272
M24	65	290

d	L	W
M24	70	308
M24	75	326
M24	80	344
M24	85	362
M24	90	380
M24	95	398
M24	100	416
M24	110	448
M24	120	484
M27	50	317
M27	55	340
M27	60	362
M27	65	385
M27	70	407
M27	75	430
M27	80	452
M27	85	475
M27	90	497
M27	95	520
M27	100	542
M27	110	587
M27	120	632
M30	60	460
M30	65	488
M30	70	516
M30	75	544
M30	80	572

d	L	W
M30	85	600
M30	90	628
M30	95	656
M30	100	684
M30	110	739
M30	120	795

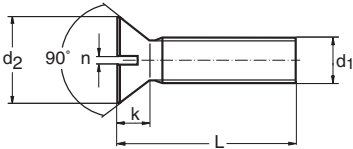
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Slotted Flat Head Machine Screws

Tornillos cabeza plana ranurado

Vis à tête fraisée avec fente

A2
A4



d <sub>1</sub>	M1.6	M2	M2.5	M3	M3.5	M4	M5	M6	M8	M10	M12
d <sub>2</sub>	3	3.8	4.7	5.6	6.5	7.5	9.2	11	14.5	18	22
k max.	0.96	1.2	1.5	1.65	1.93	2.2	2.5	3	4	5	6
n	0.4	0.5	0.6	0.8	0.8	1	1.2	1.6	2	2.5	3
pitch	0.35	0.4	0.45	0.5	0.6	0.7	0.8	1	1.25	1.5	1.75

d	L	W
M1.6	4	.069
M1.6	5	.081
M1.6	6	.093
M1.6	8	.116
M1.6	10	.139
M2	4	.119
M2	5	.137
M2	6	.152
M2	8	.193
M2	10	.231
M2	12	.268
M2	16	.343
M2	20	.418
M2	25	.512
M2.5	4	.206
M2.5	5	.236
M2.5	6	.266
M2.5	8	.326
M2.5	10	.386
M2.5	12	.446
M2.5	16	.567
M2.5	20	.687
M2.5	25	.838
M3	4	.291
M3	5	.335
M3	6	.379
M3	8	.467

d	L	W
M3	10	.555
M3	12	.643
M3	14	.731
M3	16	.820
M3	18	.908
M3	20	.996
M3	22	1.08
M3	25	1.22
M3	30	1.44
M3	35	1.66
M3	40	1.88
M3	45	2.10
M3	50	2.32
M3.5	6	.554
M3.5	8	.673
M3.5	10	.792
M3.5	12	.911
M3.5	16	1.15
M3.5	20	1.39
M4	5	.676
M4	6	.754
M4	8	.910
M4	10	1.06
M4	12	1.22
M4	14	1.37
M4	16	1.53
M4	18	1.68

d	L	W
M4	20	1.84
M4	22	1.99
M4	25	2.22
M4	30	2.61
M4	35	2.99
M4	40	3.36
M4	45	3.73
M4	50	4.10
M4	55	4.47
M4	60	4.84
M5	6	1.21
M5	8	1.45
M5	10	1.70
M5	12	1.95
M5	14	2.19
M5	16	2.44
M5	18	2.69
M5	20	2.94
M5	22	3.18
M5	25	3.55
M5	30	4.16
M5	35	4.65
M5	40	5.39
M5	45	6.02
M5	50	6.65
M5	55	7.28
M5	60	7.91

d	L	W
M5	70	9.17
M5	80	10.4
M5	90	11.7
M5	100	12.9
M6	8	2.19
M6	10	2.54
M6	12	2.89
M6	14	3.25
M6	16	3.61
M6	18	3.95
M6	20	4.31
M6	22	4.66
M6	25	5.19
M6	30	6.08
M6	35	6.96
M6	40	7.84
M6	45	8.73
M6	50	9.61
M6	55	10.5
M6	60	11.4
M6	70	13.1
M6	80	14.9
M6	90	16.7
M6	100	18.4
M8	10	5.03
M8	12	5.67
M8	14	6.30

d	L	W
M 8	16	6.94
M 8	18	7.57
M 8	20	8.21
M 8	25	9.79
M 8	30	11.4
M 8	35	13.0
M 8	40	14.6
M 8	45	16.2
M 8	50	17.8
M 8	55	19.4
M 8	60	21.0
M 8	70	24.2
M 8	80	27.4
M 8	90	30.6
M 8	100	33.8
M10	16	11.6
M10	20	13.6
M10	25	16.1
M10	30	18.6
M10	35	21.1
M10	40	23.6
M10	45	26.1
M10	50	28.6
M10	55	31.1
M10	60	33.7
M10	70	38.8
M10	80	43.9

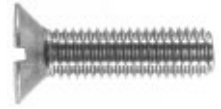
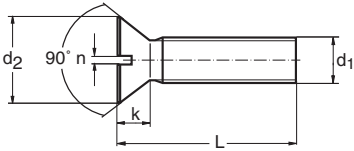
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Slotted Flat Head Machine Screws**

Tornillos cabeza plana ranurado

Vis à tête fraisée avec fente

A2
A4



d <sub>1</sub>	M1.6	M2	M2.5	M3	M3.5	M4	M5	M6	M8	M10	M12
d <sub>2</sub>	3	3.8	4.7	5.6	6.5	7.5	9.2	11	14.5	18	22
k max.	0.96	1.2	1.5	1.65	1.93	2.2	2.5	3	4	5	6
n	0.4	0.5	0.6	0.8	0.8	1	1.2	1.6	2	2.5	3
pitch	0.35	0.4	0.45	0.5	0.6	0.7	0.8	1	1.25	1.5	1.75

d	L	W
M10	90	49.0
M10	100	54.1
M12	20	20.8
M12	25	24.4
M12	30	28.1
M12	35	31.7
M12	40	35.3
M12	45	39.0
M12	50	42.6
M12	55	46.2
M12	60	49.8
M12	70	57.1
M12	80	64.4
M12	90	71.1
M12	100	78.4

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

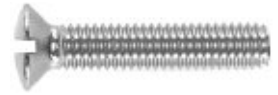
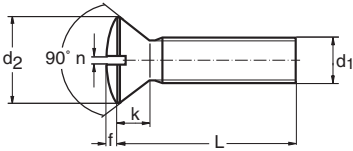


## Slotted Oval Head Machine Screws

Tornillos cabeza oval ranurado

Vis à tête fraisée bombée avec fente

A2
A4



d <sub>1</sub>	M2	M2.5	M3	M3.5	M4	M5	M6	M8	M10
d <sub>2</sub>	3.8	4.7	5.6	6.5	7.5	9.2	11	14.5	18
f	0.5	0.6	0.75	0.9	1	1.25	1.5	2	2.5
k	1.2	1.5	1.65	1.93	2.2	2.5	3	4	5
n	0.5	0.6	0.8	0.8	1	1.2	1.6	2	2.5
pitch	0.4	0.45	0.5	0.6	0.7	0.8	1	1.25	1.5

d	L	W
M2	5	.156
M2	6	.175
M2	8	.212
M2	10	.249
M2	12	.287
M2	16	.362
M2	20	.437
M2	25	.531
M2.5	5	.272
M2.5	6	.302
M2.5	8	.362
M2.5	10	.422
M2.5	12	.482
M2.5	16	.603
M2.5	20	.723
M2.5	25	.874
M3	5	.395
M3	6	.439
M3	8	.527
M3	10	.615
M3	12	.703
M3	14	.791
M3	16	.880
M3	18	.968
M3	20	1.06
M3	25	1.28

d	L	W
M3	30	1.50
M3	35	1.72
M3	40	1.94
M4	6	.902
M4	8	1.06
M4	10	1.21
M4	12	1.37
M4	14	1.52
M4	16	1.68
M4	18	1.83
M4	20	1.99
M4	25	2.37
M4	30	2.76
M4	35	3.15
M4	40	3.53
M4	45	3.92
M4	50	4.31
M4	55	4.70
M4	60	5.11
M5	6	1.49
M5	8	1.73
M5	10	1.98
M5	12	2.23
M5	14	2.47
M5	16	2.72
M5	18	2.97

d	L	W
M5	20	3.22
M5	25	3.83
M5	30	4.44
M5	35	4.93
M5	40	5.68
M5	45	6.30
M5	50	6.93
M5	55	7.58
M5	60	8.28
M5	70	9.65
M5	80	11.0
M5	90	12.4
M5	100	13.8
M6	8	2.66
M6	10	3.01
M6	12	3.36
M6	14	3.72
M6	16	4.07
M6	18	4.42
M6	20	4.78
M6	25	5.66
M6	30	6.55
M6	35	7.43
M6	40	8.31
M6	45	9.20
M6	50	10.1

d	L	W
M 6	55	11.0
M 6	60	11.9
M 6	70	13.7
M 6	80	15.5
M 6	90	17.3
M 6	100	19.1
M 8	12	6.78
M 8	16	8.05
M 8	20	9.32
M 8	25	10.9
M 8	30	12.5
M 8	35	14.1
M 8	40	15.7
M 8	45	17.3
M 8	50	18.9
M 8	55	20.5
M 8	60	22.1
M 8	70	23.7
M 8	80	25.3
M 8	90	26.9
M 8	100	28.5
M10	20	15.7
M10	25	18.2
M10	30	20.7
M10	35	23.7
M10	40	25.7

d	L	W
M10	45	28.2
M10	50	30.7
M10	60	35.8
M10	70	40.9
M10	80	46.0
M10	90	51.1
M10	100	56.2

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**DIN 965**

ISO 7046

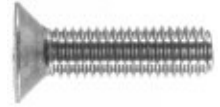
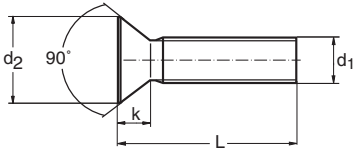
**BRIKXSEN****Phillips Cross Recessed Flat Head Machine Screws**

Tornillos cabeza plana de estrella

Vis à tête fraisée avec empreinte cruciforme

A2

A4



d <sub>1</sub>	M2	M2.5	M3	M4	M5	M6	M8	M10
d <sub>2</sub>	3.8	4.7	5.6	7.5	9.2	11	14.5	18
k	1.2	1.5	1.65	2.2	2.5	3	4	5
m	2.35	2.7	2.9	4.4	4.6	6.6	8.7	9.6
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5

d	L	W
M2	4	.119
M2	5	.137
M2	6	.152
M2	8	.193
M2	10	.231
M2	12	.268
M2	16	.343
M2	20	.417
M2.5	4	.206
M2.5	5	.236
M2.5	6	.266
M2.5	8	.326
M2.5	10	.386
M2.5	12	.446
M2.5	16	.567
M2.5	20	.687
M3	4	.291
M3	5	.335
M3	6	.379
M3	8	.467
M3	10	.555
M3	12	.643
M3	16	.820
M3	20	.996
M3	25	1.22
M3	30	1.44

d	L	W
M3	35	1.66
M3	40	1.88
M4	5	.676
M4	6	.754
M4	8	.910
M4	10	1.06
M4	12	1.22
M4	16	1.53
M4	20	1.84
M4	25	2.22
M4	30	2.61
M4	35	2.99
M4	40	3.36
M4	45	3.77
M4	50	4.18
M5	6	1.21
M5	8	1.45
M5	10	1.70
M5	12	1.95
M5	16	2.44
M5	20	2.94
M5	25	3.55
M5	30	4.16
M5	35	4.65
M5	40	5.39
M5	45	6.02

d	L	W
M5	50	6.65
M5	60	7.89
M5	70	9.13
M5	80	10.4
M6	8	2.19
M6	10	2.54
M6	12	2.89
M6	16	3.61
M6	20	4.31
M6	25	5.19
M6	30	6.08
M6	35	6.96
M6	40	7.84
M6	45	8.73
M6	50	9.61
M6	60	11.4
M6	70	13.1
M6	80	14.9
M6	90	16.7
M8	12	5.67
M8	16	6.94
M8	20	8.21
M8	25	9.79
M8	30	11.7
M8	35	13.0
M8	40	14.6

d	L	W
M 8	45	16.2
M 8	50	17.8
M 8	60	21.0
M10	20	13.6
M10	25	16.1
M10	30	18.6
M10	35	21.1
M10	40	23.6
M10	45	26.1
M10	50	28.6
M10	60	33.7

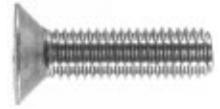
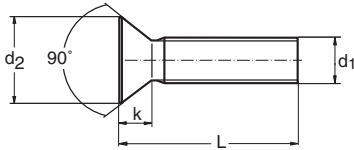
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Pozidrive® Cross Recessed Flat Head Machine Screws

Tornillos cabeza plana de pozi

Vis à tête fraisée avec empreinte cruciforme

A2
A4



d <sub>1</sub>	M2	M2.5	M3	M4	M5	M6	M8	M10
d <sub>2</sub>	3.8	4.7	5.6	7.5	9.2	11	14.5	18
k	1.2	1.5	1.65	2.2	2.5	3	4	5
m	2.2	2.5	2.8	4	4.4	6.1	8.5	9.4
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5

d	L	W
M2	4	.119
M2	5	.137
M2	6	.152
M2	8	.193
M2	10	.231
M2	12	.268
M2	16	.343
M2	20	.417
M2.5	4	.206
M2.5	5	.236
M2.5	6	.266
M2.5	8	.326
M2.5	10	.386
M2.5	12	.446
M2.5	16	.567
M2.5	20	.687
M3	4	.291
M3	5	.335
M3	6	.379
M3	8	.467
M3	10	.555
M3	12	.643
M3	16	.820
M3	20	.996
M3	25	1.22
M3	30	1.44

d	L	W
M3	35	1.66
M3	40	1.88
M4	6	.754
M4	8	.900
M4	10	1.06
M4	12	1.22
M4	16	1.53
M4	20	1.84
M4	25	2.22
M4	30	2.61
M4	35	2.99
M4	40	3.36
M4	45	3.77
M4	50	4.18
M5	8	1.45
M5	10	1.70
M5	12	1.95
M5	16	2.44
M5	20	2.94
M5	25	3.55
M5	30	4.16
M5	35	4.76
M5	40	5.39
M5	45	6.02
M6	10	2.54
M6	12	2.89

d	L	W
M6	16	3.61
M6	20	4.31
M6	25	5.19
M6	30	6.08
M6	35	6.96
M6	40	7.84
M6	45	8.73
M6	50	9.61

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**DIN 966**

ISO 7047

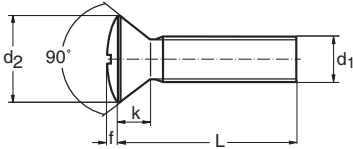
**BRIKXSEN****Phillips Cross Recessed Oval Head Machine Screws**

Tornillos cabeza oval de estrella

Vis à tête fraisée bombée avec empreinte cruciforme

A2

A4



<b>d<sub>1</sub></b>	<b>M2</b>	<b>M2.5</b>	<b>M3</b>	<b>M4</b>	<b>M5</b>	<b>M6</b>	<b>M8</b>	<b>M10</b>
d <sub>2</sub>	3.8	4.7	5.6	7.5	9.2	11	14.5	18
f	0.5	0.6	0.75	1	1.25	1.5	2	2.5
k	1.2	1.5	1.65	2.2	2.5	3	4	5
m	2.5	2.7	3.1	4.5	5.3	6.8	9	10
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5

<b>d</b>	<b>L</b>	<b>W</b>
M2	4	.138
M2	5	.156
M2	6	.175
M2	8	.212
M2	10	.249
M2	12	.287
M2	16	.362
M2.5	4	.242
M2.5	5	.272
M2.5	6	.302
M2.5	8	.362
M2.5	10	.422
M2.5	12	.482
M2.5	16	.603
M2.5	20	.723
M3	5	.395
M3	6	.439
M3	8	.527
M3	10	.615
M3	12	.703
M3	16	.879
M3	20	1.06
M3	25	1.28
M3	30	1.50
M4	6	.902
M4	8	1.06

<b>d</b>	<b>L</b>	<b>W</b>
M4	10	1.21
M4	12	1.37
M4	16	1.68
M4	20	1.99
M4	25	2.37
M4	30	2.76
M4	35	3.15
M4	40	3.53
M5	6	1.49
M5	8	1.73
M5	10	1.98
M5	12	2.23
M5	16	2.72
M5	20	3.22
M5	25	3.83
M5	30	4.44
M5	35	4.93
M5	40	5.68
M5	45	6.43
M5	50	7.18
M5	60	8.68
M6	10	3.01
M6	12	3.36
M6	16	4.07
M6	20	4.78
M6	25	5.66

<b>d</b>	<b>L</b>	<b>W</b>
M6	30	6.55
M6	35	7.43
M6	40	8.31
M6	45	9.20
M6	50	10.1
M6	60	11.9
M8	16	8.05
M8	20	9.32
M8	25	10.9
M8	30	12.5
M8	35	14.1
M8	40	15.7
M8	45	17.3
M8	50	18.9
M8	60	22.1

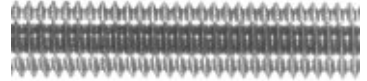
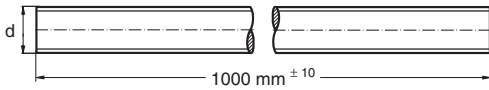
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Threaded Rods

Varillas roscada

Tiges filetées

A2
A4



d	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5
W	18.7	30.0	44.0	78.0	124	177	319	500	725	970	1330	1650

d	M20	M22	M24	M27	M30	M33	M36	M42
pitch	2.5	2.5	3	3	3.5	3.5	4	4.5
W	2080	2540	3000	3850	4750	5900	6900	9400

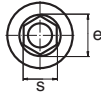
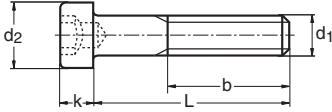
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Socket Head Cap Screws with Pilot Recess, (Low Type)**

Tornillos allen cabeza baja

Vis à tête cylindrique à six pans creux avec tête basse et trou de guidage

A2
A4



d1	M4	M5	M6	M8	M10	M12	M16	M20	M24
d2	7	8.5	10	13	16	18	24	30	36
b	14	16	18	22	26	30	38	46	
k	2.8	3.5	4	5	6.5	7.5	10	12	14
e	3.6	4.7	5.9	7	9.4	11.7	16.3	19.8	22.1
s	3	4	5	6	8	10	14	17	19
pitch	0.7	0.8	1	1.25	1.5	1.75	2	2.5	3

d	L	W
M4	10	1.30
M4	12	1.50
M4	16	1.90
M4	20	2.30
M4	25	2.70
M4	30	3.20
M4	35	3.40
M4	40	4.20
M5	10	2.20
M5	12	2.50
M5	16	3.10
M5	20	3.70
M5	25	4.40
M5	30	5.10
M5	35	5.80
M5	40	6.60
M5	45	7.40
M6	10	3.60
M6	12	3.90
M6	16	4.50
M6	20	5.20
M6	25	6.20
M6	30	7.30
M6	35	8.30
M6	40	9.50
M6	45	10.5

d	L	W
M 6	50	11.5
M 6	55	12.6
M 6	60	13.6
M 6	70	15.7
M 8	10	7.15
M 8	12	7.70
M 8	16	8.80
M 8	20	10.2
M 8	25	12.5
M 8	30	14.0
M 8	35	15.7
M 8	40	17.5
M 8	45	19.5
M 8	50	21.5
M 8	55	23.4
M 8	60	25.3
M 8	70	29.1
M 8	80	32.8
M 8	90	36.5
M 8	100	40.2
M10	16	15.5
M10	20	17.9
M10	25	20.2
M10	30	22.0
M10	35	25.5
M10	40	28.5

d	L	W
M10	45	31.6
M10	50	34.8
M10	55	37.6
M10	60	40.3
M10	70	46.0
M10	80	52.5
M10	90	57.8
M10	100	63.1
M12	16	22.3
M12	20	25.5
M12	25	29.5
M12	30	32.5
M12	35	36.5
M12	40	40.0
M12	45	44.0
M12	50	48.0
M12	55	52.5
M12	60	57.0
M12	70	65.0
M12	80	72.0
M12	90	80.0
M12	100	88.0
M16	25	56.5
M16	30	63.0
M16	35	69.7
M16	40	78.7

d	L	W
M16	45	85.1
M16	50	91.5
M16	55	99.2
M16	60	107
M16	70	122
M16	80	140
M16	90	154
M16	100	169
M16	110	183
M16	120	198
M16	130	212
M16	140	226
M16	150	240
M20	40	128
M20	45	139
M20	50	150
M20	55	161
M20	60	172
M20	70	196
M20	80	222
M20	90	245
M20	100	269
M20	110	292
M20	120	316
M20	130	342
M20	140	368

d	L	W
M20	150	394
M24	55	247
M24	60	263
M24	70	298
M24	80	333
M24	90	369
M24	100	407
M24	110	439
M24	120	474
M24	130	510
M24	140	545
M24	150	580

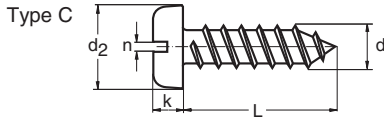
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Slotted Pan Head Tapping Screws

Pijas cabeza fijadora ranurada

Vis à tôle à tête cylindrique avec fente

A2
A4



d	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
d (U.S. equiv)	#2	#4	#6	#7	#8	#10	#12	1/4
d <sub>2</sub>	4.2	5.6	6.9	7.5	8.2	9.5	10.8	12.5
k max.	1.35	1.75	2.1	2.25	2.45	2.8	3.2	3.65
k min.	1.15	1.5	1.85	2	2.15	2.5	2.85	3.3
n	0.6	0.8	1	1	1.2	1.2	1.6	1.6

d	L	W
2.2	6.5	.210
2.2	9.5	.274
2.2	13	.344
2.2	16	.404
2.2	19	.464
2.2	22	.524
2.2	25	.584
2.9	6.5	.424
2.9	9.5	.532
2.9	13	.658
2.9	16	.766
2.9	19	.874
2.9	22	.982
2.9	25	1.09
3.5	6.5	.690
3.5	9.5	.840
3.5	13	1.02
3.5	16	1.17
3.5	19	1.32
3.5	22	1.47
3.5	25	1.62
3.5	32	1.77
3.5	38	2.07
3.9	9.5	1.07
3.9	13	1.29
3.9	16	1.48

d	L	W
3.9	19	1.67
3.9	22	1.86
3.9	25	2.05
3.9	32	2.49
3.9	38	2.87
3.9	45	3.31
3.9	50	3.62
3.9	60	4.25
4.2	9.5	1.26
4.2	13	1.50
4.2	16	1.71
4.2	19	1.92
4.2	22	2.13
4.2	25	2.34
4.2	32	2.83
4.2	38	3.25
4.2	45	3.74
4.2	50	4.09
4.2	60	4.79
4.2	70	5.49
4.2	80	6.19
4.8	9.5	1.85
4.8	13	2.20
4.8	16	2.50
4.8	19	2.80
4.8	22	3.10

d	L	W
4.8	25	3.40
4.8	32	4.10
4.8	38	4.70
4.8	45	5.40
4.8	50	5.90
4.8	60	6.90
4.8	70	7.90
4.8	80	8.90
4.8	90	9.90
4.8	100	10.9
5.5	13	2.95
5.5	16	3.34
5.5	19	3.73
5.5	22	4.12
5.5	25	4.51
5.5	32	5.42
5.5	38	6.20
5.5	45	7.11
5.5	50	7.76
5.5	60	9.06
5.5	70	10.4
5.5	80	11.7
5.5	90	13.0
5.5	100	14.3
6.3	13	4.32
6.3	16	4.86

d	L	W
6.3	19	5.40
6.3	22	5.94
6.3	25	6.48
6.3	32	7.74
6.3	38	8.82
6.3	45	10.1
6.3	50	11.0
6.3	60	12.8
6.3	70	14.6
6.3	80	16.4
6.3	90	18.2
6.3	100	20.0

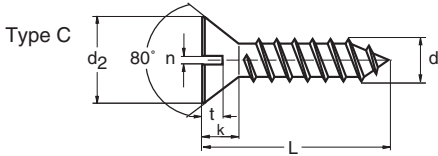
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

Slotted Flat Head Tapping Screws

Pijas cabeza plana ranurada

Vis à tôle à tête fraisée avec fente

A2
A4



d	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
d (U.S. equiv)	#2	#4	#6	#7	#8	#10	#12	1/4
d2	4.3	5.5	6.8	7.5	8.1	9.5	10.8	12.4
k	1.3	1.7	2.1	2.3	2.5	3	3.4	3.8
n	0.6	0.8	1	1	1.2	1.2	1.6	1.6
t	0.4	0.5	0.6	0.7	0.75	0.85	1	1.2

d	L	W
2.2	6.5	.130
2.2	9.5	.200
2.2	13	.260
2.2	16	.340
2.2	19	.410
2.2	22	.480
2.2	25	.560
2.9	6.5	.242
2.9	9.5	.350
2.9	13	.465
2.9	16	.579
2.9	19	.694
2.9	22	.810
2.9	25	.922
3.5	6.5	.387
3.5	9.5	.541
3.5	13	.701
3.5	16	.871
3.5	19	1.02
3.5	22	1.17
3.5	25	1.32
3.5	32	1.67
3.5	38	1.97
3.9	9.5	.660
3.9	13	.880
3.9	16	1.07

d	L	W
3.9	19	1.26
3.9	22	1.45
3.9	25	1.64
3.9	32	2.08
3.9	38	2.46
3.9	45	2.90
3.9	50	3.20
3.9	60	3.80
4.2	9.5	.780
4.2	13	1.02
4.2	16	1.23
4.2	19	1.44
4.2	22	1.65
4.2	25	1.86
4.2	32	2.35
4.2	38	2.77
4.2	45	3.26
4.2	50	3.61
4.2	60	4.31
4.2	70	5.01
4.2	80	5.71
4.8	9.5	1.10
4.8	13	1.45
4.8	16	1.75
4.8	19	2.05
4.8	22	2.35

d	L	W
4.8	25	2.65
4.8	32	3.35
4.8	38	3.95
4.8	45	4.65
4.8	50	5.15
4.8	60	6.15
4.8	70	7.15
4.8	80	8.15
4.8	90	9.15
4.8	100	10.1
5.5	13	2.11
5.5	16	2.49
5.5	19	2.87
5.5	22	3.26
5.5	25	3.65
5.5	32	4.56
5.5	38	5.34
5.5	45	6.25
5.5	50	6.90
5.5	60	8.20
5.5	70	9.50
5.5	80	10.8
5.5	90	12.1
5.5	100	13.4
6.3	13	2.53
6.3	16	3.07

d	L	W
6.3	19	3.61
6.3	22	4.15
6.3	25	4.69
6.3	32	5.95
6.3	38	7.03
6.3	45	8.29
6.3	50	9.19
6.3	60	11.0
6.3	70	12.8
6.3	80	14.6
6.3	90	16.4
6.3	100	18.2

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

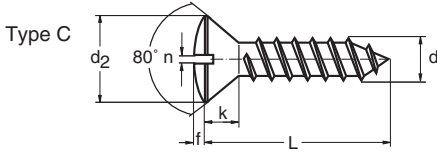


## Slotted Oval Head Tapping Screws

Pijas cabeza oval

Vis à tôle à tête fraisée bombée avec fente

A2
A4



d	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
d (U.S. equiv)	#2	#4	#6	#7	#8	#10	#12	1/4
d <sub>2</sub>	4.3	5.5	6.8	7.5	8.1	9.5	10.8	12.4
f	0.7	0.9	1.2	1.3	1.4	1.5	1.7	2
k	1.3	1.7	2.1	2.3	2.5	3	3.4	3.8
n	0.6	0.8	1	1	1.2	1.2	1.6	1.6

d	L	W
2.2	6.5	.180
2.2	9.5	.240
2.2	13	.310
2.2	16	.370
2.2	19	.430
2.2	22	.490
2.2	25	.550
2.9	6.5	.332
2.9	9.5	.440
2.9	13	.566
2.9	16	.674
2.9	19	.782
2.9	22	.890
2.9	25	1.00
3.5	9.5	.720
3.5	13	.900
3.5	16	1.05
3.5	19	1.20
3.5	22	1.35
3.5	25	1.50
3.5	32	1.85
3.5	38	2.15
3.9	9.5	.890
3.9	13	1.11
3.9	16	1.30
3.9	19	1.49

d	L	W
3.9	22	1.68
3.9	25	1.87
3.9	32	2.31
3.9	38	2.75
3.9	45	3.19
3.9	50	3.50
3.9	60	4.13
4.2	9.5	1.07
4.2	13	1.32
4.2	16	1.53
4.2	19	1.74
4.2	22	1.95
4.2	25	2.16
4.2	32	2.65
4.2	38	3.08
4.2	45	3.57
4.2	50	3.92
4.2	60	4.62
4.2	70	5.32
4.2	80	6.02
4.8	9.5	1.88
4.8	13	2.18
4.8	16	2.48
4.8	19	2.78
4.8	22	3.08
4.8	25	3.78

d	L	W
4.8	32	4.38
4.8	38	5.08
4.8	45	5.90
4.8	50	6.48
4.8	60	7.65
4.8	70	8.81
4.8	80	9.98
4.8	90	11.1
4.8	100	12.3
5.5	13	3.12
5.5	16	3.50
5.5	19	3.89
5.5	22	4.28
5.5	25	5.19
5.5	32	5.97
5.5	38	6.88
5.5	45	7.94
5.5	50	8.70
5.5	60	10.2
5.5	70	11.7
5.5	80	13.2
5.5	90	14.8
5.5	100	16.3
6.3	13	4.00
6.3	16	4.54
6.3	19	5.08

d	L	W
6.3	22	5.62
6.3	25	6.88
6.3	32	7.96
6.3	38	9.24
6.3	45	10.3
6.3	50	11.1
6.3	60	12.6
6.3	70	14.2
6.3	80	15.7
6.3	90	17.3
6.3	100	18.8

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

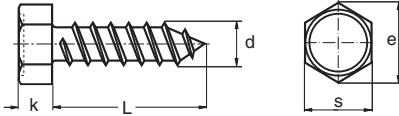
**Hexagon Head Tapping Screws**

Pijas cabeça hexagonal

Vis à tôle á tête six pans

A2
A4

Type C



d	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3	8
d (U.S. equiv)	#2	#4	#6	#7	#8	#10	#12	1/4	5/16
e min.	3.41	5.45	6	7.66	7.66	8.79	8.79	11.05	14.38
k	1.3	1.5	2.3	2.3	2.8	3	4	4.8	5.8
s	3.2	5	5.5	7	7	8	8	10	13

d	L	W
2.2	9.5	.230
2.2	13	.310
2.2	16	.370
2.2	19	.430
2.2	22	.490
2.2	25	.550
2.9	9.5	.430
2.9	13	.550
2.9	16	.660
2.9	19	.760
2.9	22	.850
2.9	25	.970
2.9	32	1.21
2.9	38	1.42
2.9	45	1.67
3.5	9.5	.740
3.5	13	.920
3.5	16	1.08
3.5	19	1.23
3.5	22	1.38
3.5	25	1.54
3.5	32	1.91
3.5	38	2.23
3.5	45	2.61
3.5	50	2.87
3.9	9.5	1.08

d	L	W
3.9	13	1.29
3.9	16	1.48
3.9	19	1.67
3.9	22	1.87
3.9	25	2.06
3.9	32	2.50
3.9	38	2.88
3.9	45	3.33
3.9	50	3.64
3.9	60	4.27
4.2	9.5	1.29
4.2	13	1.54
4.2	16	1.76
4.2	19	1.97
4.2	22	2.19
4.2	25	2.40
4.2	32	2.91
4.2	38	3.35
4.2	45	3.86
4.2	50	4.22
4.2	60	4.95
4.2	70	5.68
4.8	9.5	1.70
4.8	13	2.02
4.8	16	2.32
4.8	19	2.61

d	L	W
4.8	22	2.90
4.8	25	3.19
4.8	32	3.88
4.8	38	4.46
4.8	45	5.16
4.8	50	5.66
4.8	60	6.66
4.8	70	7.66
4.8	80	8.66
4.8	90	9.66
4.8	100	10.7
4.8	110	11.7
4.8	120	12.7
5.5	13	2.72
5.5	16	3.09
5.5	19	3.48
5.5	22	3.86
5.5	25	4.25
5.5	32	5.14
5.5	38	5.90
5.5	45	6.81
5.5	50	7.46
5.5	60	8.76
5.5	70	10.1
5.5	80	11.4
5.5	90	12.7

d	L	W
5.5	100	14.0
5.5	110	15.3
5.5	120	16.6
6.3	13	4.25
6.3	16	4.77
6.3	19	5.30
6.3	22	5.82
6.3	25	6.35
6.3	32	7.57
6.3	38	8.63
6.3	45	9.89
6.3	50	10.8
6.3	60	12.6
6.3	70	14.4
6.3	80	16.3
6.3	90	18.1
6.3	100	19.9
6.3	110	21.7
6.3	120	23.5
8	16	8.5
8	19	9.4
8	22	10.3
8	25	11.2
8	32	13.3
8	38	15.1
8	45	17.2

d	L	W
8	50	18.7
8	60	20.2
8	70	21.7

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

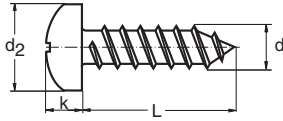
## Phillips Cross Recessed Pan Head Tapping Screws

Pijas cabeza pan de estrella

Vis à tôle à tête cylindrique avec empreinte cruciforme

A2
A4

Type C



d	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
d (U.S. equiv)	#2	#4	#6	#7	#8	#10	#12	1/4
d <sub>2</sub>	4.2	5.6	6.9	7.5	8.2	9.5	10.8	12.5
k max.	1.8	2.2	2.6	2.8	3.05	3.55	3.95	4.55
k min.	1.55	1.95	2.35	2.55	2.75	3.25	3.65	4.25
m	2.6	3	4.2	4.4	4.6	5	6.5	7.1

d	L	W
2.2	6.5	.200
2.2	9.5	.260
2.2	13	.330
2.2	16	.390
2.2	19	.450
2.2	22	.510
2.2	25	.570
2.9	6.5	.400
2.9	9.5	.510
2.9	13	.630
2.9	16	.740
2.9	19	.850
2.9	22	.960
2.9	25	1.07
3.5	6.5	.640
3.5	9.5	.790
3.5	13	.970
3.5	16	1.12
3.5	19	1.27
3.5	22	1.42
3.5	25	1.57
3.5	32	1.92
3.5	38	2.22
3.5	45	2.57
3.5	50	2.82
3.9	9.5	1.05

d	L	W
3.9	13	1.27
3.9	16	1.46
3.9	19	1.65
3.9	22	1.84
3.9	25	2.03
3.9	32	2.47
3.9	38	2.85
3.9	45	3.30
3.9	50	3.61
3.9	60	4.25
4.2	9.5	1.22
4.2	13	1.46
4.2	16	1.67
4.2	19	1.88
4.2	22	2.10
4.2	25	2.30
4.2	32	2.80
4.2	38	3.23
4.2	45	3.73
4.2	50	4.10
4.2	60	4.80
4.2	70	5.51
4.2	80	6.23
4.2	90	6.94
4.2	100	7.66
4.8	9.5	1.85

d	L	W
4.8	13	2.20
4.8	16	2.50
4.8	19	2.80
4.8	22	3.10
4.8	25	3.40
4.8	32	4.10
4.8	38	4.70
4.8	45	5.40
4.8	50	5.90
4.8	60	6.90
4.8	70	7.90
4.8	80	8.90
4.8	90	9.90
4.8	100	10.9
5.5	13	3.20
5.5	16	3.60
5.5	19	4.00
5.5	22	4.38
5.5	25	4.76
5.5	32	5.67
5.5	38	6.45
5.5	45	7.36
5.5	50	8.01
5.5	60	9.31
5.5	70	10.6
5.5	80	11.9

d	L	W
5.5	90	13.2
5.5	100	14.5
6.3	13	3.90
6.3	16	4.44
6.3	19	4.98
6.3	22	5.52
6.3	25	6.06
6.3	32	7.32
6.3	38	8.40
6.3	45	9.66
6.3	50	10.6
6.3	60	12.4
6.3	70	14.2
6.3	80	16.0
6.3	90	17.8
6.3	100	19.6

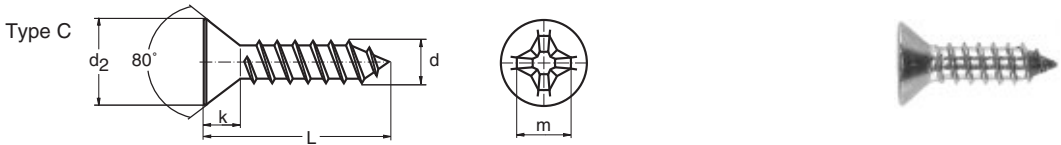
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Phillips Cross Recessed Flat Head Tapping Screws**

Pija cabeza plana de estrella

Vis à tôle à tête fraisée avec empreinte cruciforme

A2
A4



d	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
d (U.S. equiv)	#2	#4	#6	#7	#8	#10	#12	1/4
d <sub>2</sub>	4.3	5.5	6.8	7.5	8.1	9.5	10.8	12.4
k	1.3	1.7	2.1	2.3	2.5	3	3.4	3.8
m	2.5	3	4.2	4.6	4.7	5.1	6.8	7.1

d	L	W
2.2	6.5	0.14
2.2	9.5	0.20
2.2	13	0.27
2.2	16	0.33
2.2	19	0.39
2.2	22	0.45
2.2	25	0.51
2.9	6.5	0.28
2.9	9.5	0.35
2.9	13	0.48
2.9	16	0.58
2.9	19	0.69
2.9	22	0.80
2.9	25	0.91
2.9	32	1.12
3.5	9.5	0.54
3.5	13	0.72
3.5	16	0.87
3.5	19	1.02
3.5	22	1.17
3.5	25	1.32
3.5	32	1.67
3.5	38	1.97
3.5	45	2.32
3.5	50	2.57
3.9	9.5	0.66

d	L	W
3.9	13	0.88
3.9	16	1.07
3.9	19	1.26
3.9	22	1.45
3.9	25	1.64
3.9	32	2.08
3.9	38	2.46
3.9	45	2.91
3.9	50	3.22
3.9	60	3.86
4.2	9.5	0.77
4.2	13	1.02
4.2	16	1.23
4.2	19	1.44
4.2	22	1.65
4.2	25	1.86
4.2	32	2.35
4.2	38	2.77
4.2	45	3.26
4.2	50	3.61
4.2	60	4.31
4.2	70	5.01
4.2	80	5.71
4.2	90	6.41
4.2	100	7.11
4.8	9.5	1.10

d	L	W
4.8	13	1.45
4.8	16	1.75
4.8	19	2.05
4.8	22	2.35
4.8	25	2.65
4.8	32	3.35
4.8	38	3.95
4.8	45	4.65
4.8	50	5.15
4.8	60	6.15
4.8	70	7.15
4.8	80	8.15
4.8	90	9.15
4.8	100	10.1
5.5	13	2.11
5.5	16	2.49
5.5	19	2.87
5.5	22	3.26
5.5	25	3.65
5.5	32	4.56
5.5	38	5.43
5.5	45	6.44
5.5	50	7.89
5.5	60	9.34
5.5	70	10.8
5.5	80	12.2

d	L	W
5.5	90	13.7
5.5	100	15.1
6.3	13	2.53
6.3	16	3.07
6.3	19	3.61
6.3	22	4.15
6.3	25	4.69
6.3	32	5.95
6.3	38	7.03
6.3	45	8.29
6.3	50	9.19
6.3	60	11.0
6.3	70	12.8
6.3	80	14.6
6.3	90	16.4
6.3	100	18.2

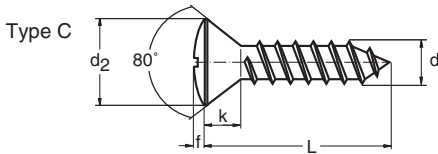
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Phillips Cross Recessed Oval Head Tapping Screws

Pija cabeza oval de estrella

Vis à tôle à tête fraisée bombée avec empreinte cruciforme

A2
A4



d	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
d (U.S. equiv)	#2	#4	#6	#7	#8	#10	#12	1/4
d <sub>2</sub>	4.3	5.5	6.8	7.5	8.1	9.5	10.8	12.4
f	0.7	0.9	1.2	1.3	1.4	1.5	1.7	2
k	1.3	1.7	2.1	2.3	2.5	3	3.4	3.8
m	2.8	3.4	4.6	4.7	4.9	5.4	7	7.4

d	L	W
2.2	6.5	.180
2.2	9.5	.240
2.2	13	.310
2.2	16	.370
2.2	19	.430
2.2	22	.490
2.2	25	.550
2.9	6.5	.330
2.9	9.5	.440
2.9	13	.570
2.9	16	.670
2.9	19	.780
2.9	22	.890
2.9	25	1.00
3.5	9.5	.720
3.5	13	.900
3.5	16	1.05
3.5	19	1.20
3.5	22	1.35
3.5	25	1.50
3.5	32	1.85
3.5	38	2.15
3.5	45	2.50
3.5	50	2.75
3.9	9.5	.890
3.9	13	1.11

d	L	W
3.9	16	1.30
3.9	19	1.49
3.9	22	1.68
3.9	25	1.87
3.9	32	2.31
3.9	38	2.69
3.9	45	3.14
3.9	50	3.45
3.9	60	4.09
4.2	9.5	1.07
4.2	13	1.32
4.2	16	1.53
4.2	19	1.74
4.2	22	1.95
4.2	25	2.16
4.2	32	2.65
4.2	38	3.07
4.2	45	3.56
4.2	50	3.91
4.2	60	4.61
4.2	70	5.31
4.2	80	6.01
4.2	90	6.71
4.2	100	7.41
4.8	9.5	1.53
4.8	13	1.88

d	L	W
4.8	16	2.18
4.8	19	2.48
4.8	22	2.78
4.8	25	3.08
4.8	32	3.78
4.8	38	4.38
4.8	45	5.08
4.8	50	5.58
4.8	60	6.58
4.8	70	7.58
4.8	80	8.58
4.8	90	9.58
4.8	100	10.6
5.5	13	2.64
5.5	16	3.12
5.5	19	3.50
5.5	22	3.89
5.5	25	4.28
5.5	32	5.19
5.5	38	5.97
5.5	45	6.88
5.5	50	7.53
5.5	60	8.83
5.5	70	10.1
5.5	80	11.4
5.5	90	12.7

d	L	W
5.5	100	14.0
6.3	13	3.46
6.3	16	4.00
6.3	19	4.54
6.3	22	5.08
6.3	25	5.62
6.3	32	6.88
6.3	38	7.96
6.3	45	9.22
6.3	50	10.1
6.3	60	11.9
6.3	70	13.7
6.3	80	15.5
6.3	90	17.3
6.3	100	19.1

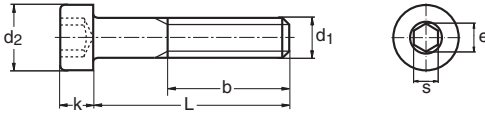
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Socket Head Cap Screws, (Low Type)**

Tornillos allen cabeza baja

Vis à tête cylindrique à six pans creux avec tête basse

A2
A4



d <sub>1</sub>	M3	M4	M5	M6	M8	M10
d <sub>2</sub>	5.5	7	8.5	10	13	16
b	12	14	16	18	22	26
k	2	2.8	3.5	4	5	6
e	2.3	2.9	3.4	4.6	5.7	8.0
s	2	2.5	3	4	5	7
pitch	0.5	0.7	0.8	1	1.25	1.5

d	L	W
M3	10	0.69
M3	12	0.78
M3	16	0.97
M3	20	1.20
M4	10	1.28
M4	12	1.44
M4	16	1.76
M4	20	2.15
M4	25	2.64
M4	30	3.13
M4	35	3.62
M4	40	4.11
M5	10	2.50
M5	12	2.74
M5	16	3.22
M5	20	3.77
M5	25	4.54
M5	30	5.31
M5	35	6.08
M5	40	6.85
M5	45	7.62
M5	50	8.39
M5	55	9.16
M5	60	9.93
M6	10	3.59
M6	12	3.94

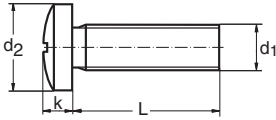
d	L	W
M 6	16	4.64
M 6	20	5.34
M 6	25	6.45
M 6	30	7.56
M 6	35	8.67
M 6	40	9.78
M 6	45	10.9
M 6	50	12.0
M 6	55	13.1
M 6	60	14.2
M 8	10	7.45
M 8	12	8.05
M 8	16	9.25
M 8	20	10.5
M 8	25	12.0
M 8	30	14.0
M 8	35	16.0
M 8	40	18.0
M 8	45	20.0
M 8	50	22.0
M 8	55	24.0
M 8	60	26.0
M10	16	14.4
M10	20	16.4
M10	25	19.0
M10	30	21.6

d	L	W
M10	35	24.7
M10	40	27.8
M10	45	30.9
M10	50	34.0
M10	55	37.1
M10	60	40.2

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Phillips Cross Recessed Pan Head Machine Screws**  
**Tornillos cabeza pan de estrella**  
**Vis à tête aplatie avec empreinte cruciforme**

A2
A4



d <sub>1</sub>	M2	M2.5	M3	M4	M5	M6	M8
d <sub>2</sub>	4	5	6	8	10	12	16
k	1.6	2	2.4	3.1	3.8	4.6	6
m	2.5	2.7	3.1	4.6	5.3	6.8	9
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25

d	L	W
M2	5	.212
M2	6	.231
M2	8	.268
M2	10	.306
M2	12	.343
M2	16	.418
M2	20	.492
M2.5	5	.399
M2.5	6	.428
M2.5	8	.486
M2.5	10	.544
M2.5	12	.602
M2.5	16	.718
M2.5	20	.834
M3	4	.620
M3	5	.675
M3	6	.714
M3	8	.793
M3	10	.872
M3	12	.951
M3	16	1.11
M3	20	1.27
M3	25	1.47
M3	30	1.71
M3	35	1.95
M3	40	2.19

d	L	W
M4	5	1.41
M4	6	1.48
M4	8	1.63
M4	10	1.79
M4	12	1.94
M4	16	2.25
M4	20	2.56
M4	25	2.94
M4	30	3.44
M4	35	3.94
M4	40	4.44
M4	45	4.94
M5	6	2.66
M5	8	2.91
M5	10	3.16
M5	12	3.41
M5	16	3.91
M5	20	4.41
M5	25	5.03
M5	30	5.68
M5	35	6.43
M5	40	7.30
M5	45	7.93
M5	50	8.68
M5	60	10.2
M5	70	11.7

d	L	W
M5	80	13.2
M6	8	4.79
M6	10	5.14
M6	12	5.49
M6	16	6.29
M6	20	7.00
M6	25	7.87
M6	30	8.75
M6	35	9.60
M6	40	10.5
M6	45	11.4
M6	50	12.3
M6	60	14.1
M6	70	15.9
M6	80	17.8
M8	12	11.5
M8	16	12.8
M8	20	14.2
M8	25	15.8
M8	30	17.5
M8	35	19.1
M8	40	20.7
M8	45	22.3
M8	50	23.9
M8	60	27.0

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**DIN 7985**

ISO 7045

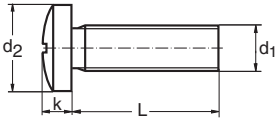
**BRIKXSEN****Pozidrive® Cross Recessed Pan Head Machine Screws**

Tornillos cabeza pan de pozi

Vis à tête aplatie avec empreinte cruciforme

A2

A4



d <sub>1</sub>	M2	M2.5	M3	M4	M5	M6	M8
d <sub>2</sub>	4	5	6	8	10	12	16
k	1.6	2	2.4	3.1	3.8	4.6	6
m	2.5	2.7	3.1	4.6	5.3	6.2	9
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25

d	L	W
M2	4	.194
M2	5	.212
M2	6	.231
M2	8	.268
M2	10	.306
M2	12	.343
M2	16	.418
M2	20	.492
M2.5	4	.370
M2.5	5	.399
M2.5	6	.428
M2.5	8	.486
M2.5	10	.544
M2.5	12	.602
M2.5	16	.718
M2.5	20	.834
M3	5	.675
M3	6	.714
M3	8	.793
M3	10	.872
M3	12	.951
M3	16	1.11
M3	20	1.27
M3	25	1.47
M3	30	1.71
M3	35	1.95

d	L	W
M3	40	2.19
M4	6	1.48
M4	8	1.63
M4	10	1.79
M4	12	1.94
M4	16	2.25
M4	20	2.56
M4	25	2.94
M4	30	3.44
M4	35	3.94
M4	40	4.44
M4	45	4.94
M4	50	5.44
M5	8	2.91
M5	10	3.16
M5	12	3.41
M5	16	3.91
M5	20	4.41
M5	25	5.03
M5	30	5.68
M5	35	6.43
M5	40	7.30
M5	45	7.93
M5	50	8.68
M6	10	5.14
M6	12	5.49

d	L	W
M6	16	6.29
M6	20	7.00
M6	25	7.87
M6	30	8.75
M6	35	9.60
M6	40	10.5
M6	45	11.4
M6	50	12.3

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

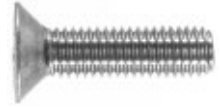
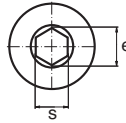
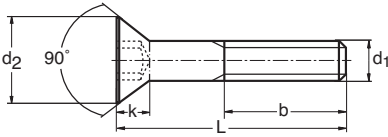


### Flat Socket Head Screws

Tornillos cabeza plana allen

Vis à tête fraisée á six pans creux

A2
A4



d <sub>1</sub>	M3	M4	M5	M6	M8	M10	M12	M16	M20
d <sub>2</sub>	6	8	10	12	16	20	24	30	36
b	12	14	16	18	22	26	30	38	46
k	1.7	2.3	2.8	3.3	4.4	5.5	6.5	7.5	8.5
e	2.3	2.9	3.5	4.7	5.8	7	9.4	11.7	13.9
s	2	2.5	3	4	5	6	8	10	12
pitch	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5

d	L	W
M3	6	.380
M3	8	.470
M3	10	.560
M3	12	.650
M3	16	.830
M3	20	1.00
M3	25	1.35
M3	30	1.63
M4	6	.730
M4	8	.920
M4	10	1.07
M4	12	1.23
M4	16	1.53
M4	20	1.84
M4	25	2.23
M4	30	2.90
M4	35	3.40
M4	40	3.90
M4	45	4.40
M4	50	4.90
M5	8	1.60
M5	10	1.85
M5	12	2.10
M5	16	2.59
M5	20	3.09
M5	25	3.71

d	L	W
M5	30	4.33
M5	35	5.43
M5	40	6.20
M5	45	7.00
M5	50	7.74
M5	60	9.28
M6	8	2.33
M6	10	2.70
M6	12	3.05
M6	16	3.76
M6	20	4.46
M6	25	5.34
M6	30	6.22
M6	35	7.10
M6	40	8.00
M6	45	9.50
M6	50	11.0
M6	60	14.0
M6	70	17.0
M6	80	20.2
M8	12	6.10
M8	16	7.35
M8	20	8.60
M8	25	10.2
M8	30	11.7
M8	35	13.3

d	L	W
M8	40	14.8
M8	45	17.3
M8	50	19.9
M8	60	24.8
M8	70	29.7
M8	80	34.6
M8	90	39.5
M8	100	44.4
M10	16	12.1
M10	20	14.1
M10	25	16.6
M10	30	19.1
M10	35	21.6
M10	40	24.1
M10	45	27.1
M10	50	30.1
M10	60	25.7
M10	70	41.2
M10	80	46.7
M10	90	52.2
M10	100	57.7
M12	20	21.2
M12	25	24.8
M12	30	28.5
M12	35	32.1
M12	40	35.7

d	L	W
M12	45	39.3
M12	50	43.0
M12	60	54.0
M12	70	62.9
M12	80	72.0
M12	90	81.0
M12	100	90.0
M16	25	45.2
M16	30	51.8
M16	35	58.4
M16	40	65.1
M16	45	71.7
M16	50	78.4
M16	60	91.7
M16	70	111
M16	80	127
M16	90	143
M16	100	159
M20	40	102
M20	45	112
M20	50	123
M20	60	143
M20	70	164
M20	80	200
M20	90	226
M20	100	253

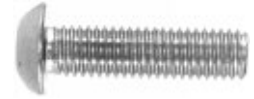
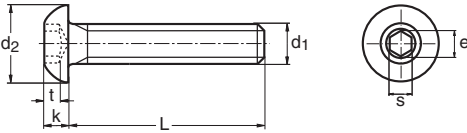
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Button Socket Head Cap Screws**

A2

Tornillos cabeza allen de botón

Vis à tête bombée á six pans creux



	M3	M4	M5	M6	M8	M10	M12
d1							
d2	5.7	7.6	9.5	10.5	14	17.5	21
k	1.65	2.2	2.75	3.3	4.4	5.5	6.6
s	2	2.5	3	4	5	6	8
e	2.3	2.87	3.44	4.58	5.72	8.01	9.15
t	1.04	1.3	1.56	2.08	2.60	3.12	4.16
pitch	0.5	0.7	0.8	1	1.25	1.5	1.5

d	L	W
M3	6	.520
M3	8	.600
M3	10	.690
M3	12	.780
M3	16	.970
M3	20	1.20
M3	25	1.49
M3	30	1.77
M4	8	1.12
M4	10	1.28
M4	12	1.44
M4	16	1.76
M4	20	2.15
M4	25	2.64
M4	30	3.13
M4	35	3.62
M4	40	4.11
M5	8	2.26
M5	10	2.50
M5	12	2.74
M5	16	3.22
M5	20	3.77
M5	25	4.54
M5	30	5.31
M5	35	6.08
M5	40	6.85

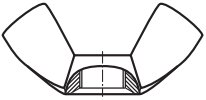








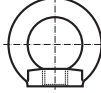










d	L	W
M5	45	7.62
M5	50	8.39
M5	55	9.16
M5	60	9.93
M6	8	3.24
M6	10	3.59
M6	12	3.94
M6	16	4.64
M6	20	5.34
M6	25	6.45
M6	30	7.56
M6	35	8.67
M6	40	9.78
M6	45	10.9
M6	50	12.0
M6	55	13.1
M6	60	14.2
M8	10	7.45
M8	12	8.05
M8	16	9.25
M8	20	10.5
M8	25	12.0
M8	30	14.0
M8	35	16.0
M8	40	18.0
M8	45	20.0

d	L	W
M 8	50	22.0
M 8	55	24.0
M 8	60	26.0
M10	16	14.4
M10	20	16.4
M10	25	19.0
M10	30	21.6
M10	35	24.7
M10	40	27.8
M10	45	30.9
M10	50	34.0
M10	55	37.1
M10	60	40.2
M12	20	24.1
M12	25	27.7
M12	30	31.3
M12	35	34.9
M12	40	39.3
M12	45	43.7
M12	50	48.1
M12	55	52.5
M12	60	56.9

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Nuts**  
**Tuercas**  
**Ecrous**

# 2

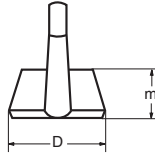
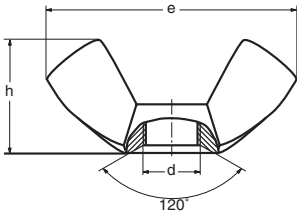
 <p><b>DIN 315</b> pg. 58</p>	 <p><b>DIN 557</b> pg. 64</p>	 <p><b>DIN 935</b> pg. 72</p>	 <p><b>DIN 6923</b> pg. 78</p>
 <p><b>DIN 315</b> pg. 58</p>	 <p><b>DIN 562</b> pg. 65</p>	 <p><b>DIN 980</b> pg. 73</p>	 <p><b>DIN 7967</b> pg. 79</p>
 <p><b>DIN 439</b> pgs. 59-60</p>	 <p><b>DIN 582</b> pg. 66</p>	 <p><b>DIN 985</b> pg. 74</p>	
 <p><b>DIN 466</b> pg. 61</p>	 <p><b>DIN 917</b> pg. 67</p>	 <p><b>DIN 1587</b> pg. 75</p>	
 <p><b>DIN 467</b> pg. 62</p>	 <p><b>DIN 929</b> pg. 68</p>	 <p><b>DIN 6330</b> pg. 76</p>	
 <p><b>DIN 546</b> pg. 63</p>	 <p><b>DIN 934</b> pgs. 69-71</p>	 <p><b>DIN 6331</b> pg. 77</p>	

**Wing Nuts, American Type**

Tuercas de mariposa tipo americano

Ecrous à ailettes

A2
A4

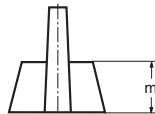
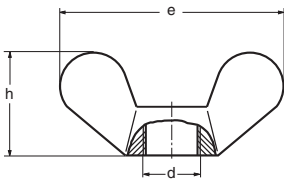


d	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20
D	8	8	10.3	12.7	13.8	16.5	22.5	26.6	26.6	29.5	29.5
e	17.6	17.6	22.5	27.8	30.3	36.2	49.4	58.3	58.3	68.5	68.5
h	8.6	8.6	11	13.6	14.8	17.7	24.1	28.5	28.5	33.8	33.8
m	2.9	2.9	4.1	5.1	5.6	6.8	9	10.7	10.7	13.5	13.5
pitch	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5
W	2.2	2	4	8	17	35	80	-	90	-	-

**Wing Nuts, German Type**

Tuercas de mariposa tipo alemán

Ecrous à oreilles



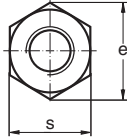
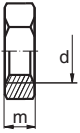
d	M4	M5	M6	M8	M10	M12	M14	M16
e min.	18	24	30	36	48	62	-	70
h min.	8.5	11	15	18	23	31	-	35
m min.	3.2	4	5	6.5	8	10	-	13
pitch	0.7	0.8	1	1.25	1.5	1.75	-	2
W	-	-	-	-	-	-	-	-

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Hex Jam Nuts**  
**Tuercas bajas**  
**Ecrous six pans**

A2
A4

Type B



d	M2	BM2.5	M3	M4	M5	M6	M8	M10	M12	M14
e	4.32	5.45	6.01	7.66	8.79	11.05	14.38	18.9	21.1	24.49
m min.	0.95	1.35	1.55	1.95	2.45	2.9	3.7	4.7	5.7	6.42
s	4	5	5.5	7	8	10	13	17	19	22
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2
W	.11	0.22	0.29	0.57	0.83	1.6	3.2	7.2	10.4	15.9

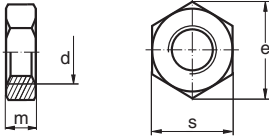
d	M16	M18	M20	M22	M24	M27	M30	M33	M36
e	26.75	29.56	32.95	35.03	39.55	45.2	50.85	55.37	60.79
m min.	7.42	8.42	9.1	9.9	10.9	12.4	13.9	15.4	16.9
s	24	27	30	32	36	41	46	50	55
pitch	2	2.5	2.5	2.5	3	3	3.5	3.5	4
W	20.5	29.6	40.2	48.3	69.5	101	139	183	244

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Hex Jam Nuts, Fine Thread**  
**Tuercas bajas con rosca fina**  
**Ecrous six pans filet fin metrique**

A2
A4

Type B



<b>d</b>	<b>M8</b>	<b>M10</b>	<b>M12</b>	<b>M14</b>	<b>M16</b>	<b>M18</b>	<b>M20</b>	<b>M22</b>	<b>M24</b>	<b>M27</b>
e	14.38	18.9	21.1	24.49	26.75	29.56	32.95	35.03	39.55	45.2
m min.	3.7	4.7	5.7	6.42	7.42	8.42	9.1	9.9	10.9	12.4
s	13	17	19	22	24	27	30	32	36	41
pitch	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
W	3.2	7.2	10.4	15.9	20.5	29.6	40.2	48.3	69.5	101

<b>d</b>	<b>M30</b>
e	50.85
m min.	13.9
s	46
pitch	1.5
W	139

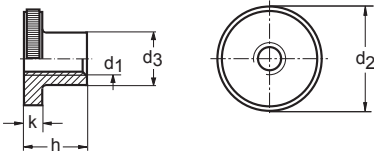
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Knurled Nuts (High)

Tuercas de hombro moleteadas

Ecrous moletés hauts

A2
A4



<b>d1</b>	<b>M2</b>	<b>M2.5</b>	<b>M3</b>	<b>M4</b>	<b>M5</b>	<b>M6</b>	<b>M8</b>	<b>M10</b>
d2	9	11	12	16	20	24	30	36
d3	4.5	5	6	8	10	12	16	20
h	5.3	6.5	7.5	9.5	11.5	15	18	23
k	2	2.5	2.5	3.5	4	5	6	8
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5
W	1.30	2.20	3.00	7.19	13.0	24.0	46.0	88.0

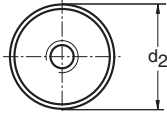
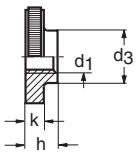
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Knurled Nuts (Low)**

Tuercas de hombro moleteadas, forma baja

Ecrous moletés bas

A2
A4



<b>d1</b>	<b>M2</b>	<b>M2.5</b>	<b>M3</b>	<b>M4</b>	<b>M5</b>	<b>M6</b>	<b>M8</b>	<b>M10</b>
$d_2$	9	11	12	16	20	24	30	36
$d_3$	4.5	5	6	8	10	12	16	20
$h$	2.5	3	3	4	5	6	8	10
$k$	2	2.5	2.5	3.5	4	5	6	8
pitch	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5
W	1.02	1.90	2.20	5.41	9.86	17.6	33.9	63.8

(W ~ Weights of standard sizes in kilograms per 1000 pieces)



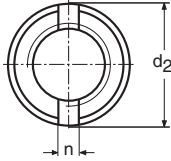
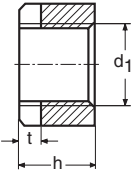
### Slotted Round Nuts

Tuercas redonda ranurado

Ecrous cylindriques à fente

A2

A4



d <sub>1</sub>	M1.6	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16
d <sub>2</sub>	3.5	4.5	5.5	6	8	9	11	14	18	21	26
h	1.6	2	2.2	2.5	3.5	4.2	5	6.5	8	10	12
n	0.5	1	1.2	1.2	1.4	2	2.5	3	3.5	4	4
t min.	0.6	0.8	0.9	1	1.2	1.5	2	2.5	3.2	3.8	3.8
pitch	0.35	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2
W	0.10	0.21	0.34	0.43	1.07	1.80	2.73	5.57	11.5	21.5	36.8

d <sub>1</sub>	M20
d <sub>2</sub>	32
h	14
n	5
t min.	4.8
pitch	2.5
W	57.2

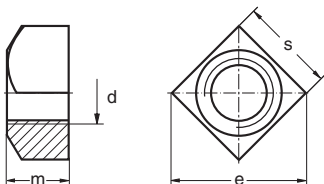
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Square Nuts**

Tuercas cuadrada

Ecrous carrés

A2
A4



<b>d</b>	<b>M5</b>	<b>M6</b>	<b>M8</b>	<b>M10</b>	<b>M12</b>	<b>M16</b>	<b>M20</b>
e ~	11.3	14.1	18.4	24	26.9	33.9	42.4
m	4	5	6.5	8	10	13	16
s	8	10	13	17	19	24	30
pitch	0.8	1	1.25	1.5	1.75	2	2.5
W	1.31	2.77	5.50	13.0	19.1	38.2	73.5

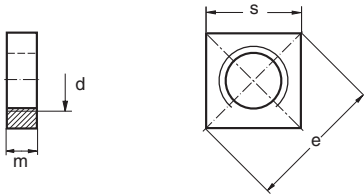
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Square Thin Nuts

Tuercas cuadrada, forma baja

Ecrous carrés

A2
A4



d	M3	M4	M5	M6	M8	M10
e min.	7	8.9	10.2	12.7	16.5	21.5
m	1.8	2.2	2.7	3.2	4	5
s	5.5	7	8	10	13	17
pitch	0.5	0.7	0.8	1	1.25	1.5
W	0.35	0.64	1.06	1.93	4.01	8.8

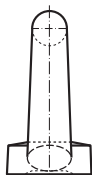
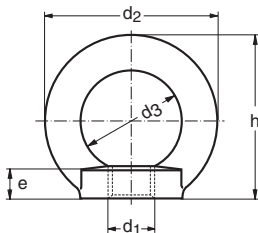
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Lifting Eye Nuts**

Tuercas de ojo

Ecrous à anneaux

A2
A4



<b>d<sub>1</sub></b>	<b>M8</b>	<b>M10</b>	<b>M12</b>	<b>M16</b>	<b>M20</b>	<b>M24</b>	<b>M27</b>	<b>M30</b>
d <sub>2</sub>	36	45	54	63	72	90	90	108
d <sub>3</sub>	20	25	30	35	40	50	50	60
e	8.5	10	11	13	16	20	20	25
h	36	45	53	62	71	90	90	109
pitch	1.25	1.5	1.75	2	2.5	3	3	3.5
W	50.0	90.0	160	240	360	720	-	1320

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

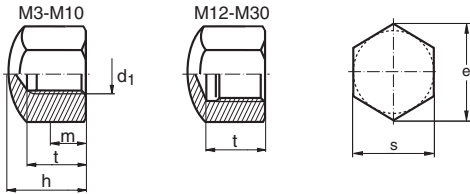
### Hex Cap Nuts, Low Type

Tuercas bellota

Ecrous borgnes form basse

A2

A4



d	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20
h	5	5.5	7	9	12	14	16	18	20	22	25
e min.	6.08	7.66	8.79	11.05	14.38	17.77	20.03	23.35	26.75	29.56	32.95
m min.	-	2.75	3.5	4.5	6	7	8	9	10	11	12.5
t	3.2	4.4	5.2	7	9.5	11	13.5	15	17	19	21
s	5.5	7	8	10	13	17	19	22	24	27	30
pitch	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5
W	-	1.31	2.20	4.29	9.50	19.3	25.5	37.0	48.1	70	94.1

d	M22	M24	M27	M30
h	28	30	32	34
e min.	35.03	39.55	45.20	50.85
m min.	14	15	16	17
t	22	24	26	28
s	32	36	41	46
pitch	2.5	3	3	3.5
W	119	165	229	310

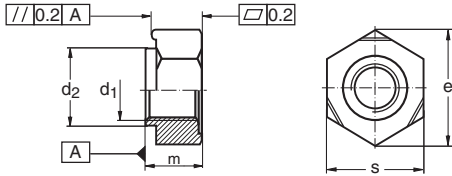
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Hex Weld Nuts**

Tuercas hexagonal auto soldable

Ecrous six pans à souder

A2
A4



<b>d<sub>1</sub></b>	<b>M3</b>	<b>M4</b>	<b>M5</b>	<b>M6</b>	<b>M8</b>	<b>M10</b>	<b>M12</b>	<b>M16</b>
d <sub>2</sub>	4.5	6	7	8	10.5	12.5	14.8	18.8
e min.	8.15	9.83	10.95	12.02	15.38	18.74	20.91	26.51
m h14	3	3.5	4	5	6.5	8	10	13
s h13	7.5	9	10	11	14	17	19	24
pitch	0.5	0.7	0.8	1	1.25	1.5	1.75	2
W	0.78	1.13	1.73	2.50	5.27	9.58	13.7	28.5

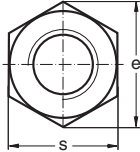
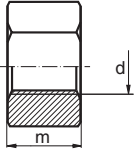
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Hex Nuts, Coarse Thread

Tuercas hexagonal

Ecrous six pans

A2
A4



d	M1.6	M2	M2.5	M3	M3.5	M4	M5	M6	M7	M8	M10
e min.	3.41	4.32	5.45	6.01	6.58	7.66	8.79	11.05	12.12	14.38	18.90
m min.	1.05	1.35	1.75	2.15	2.55	2.9	3.7	4.7	5.2	6.14	7.64
s	3.2	4	5	5.5	6	7	8	10	11	13	17
pitch	0.35	0.4	0.45	0.5	0.6	0.7	0.8	1	1	1.25	1.5
W	.076	.142	0.28	.384	.514	0.81	1.23	2.50	3.12	5.20	11.6

d	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36
e min.	21.1	24.49	26.75	29.56	32.95	35.03	39.55	45.20	50.85	55.37	60.79
m min.	9.64	10.3	12.3	14.3	14.9	16.9	17.7	20.7	22.7	24.7	27.4
s	19	22	24	27	30	32	36	41	46	50	55
pitch	1.75	2	2	2.5	2.5	2.5	3	3	3.5	3.5	4
W	17.3	25.0	33.3	49.4	64.4	79.0	110	165	223	288	393

d	M39	M42	M45	M48	M52
e min.	66.44	71.3	76.95	82.60	88.25
m min.	29.4	32.4	34.4	36.4	40.4
s	60	65	70	75	80
pitch	4	4.5	4.5	5	5
W	502	652	800	977	1220

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**DIN 934**

ISO 4032

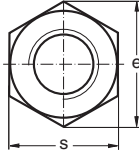
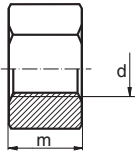
**BRIKXSEN****Hex Nuts, Fine Thread**

Tuercas hexagonal

Ecrous six pans - filet fin metrique

A2

A4



<b>d</b>	<b>M8</b>	<b>M10</b>	<b>M12</b>	<b>M14</b>	<b>M16</b>	<b>M18</b>	<b>M20</b>	<b>M22</b>	<b>M24</b>	<b>M27</b>
e	14.38	18.9	21.1	24.49	26.75	29.56	32.95	35.03	39.55	45.20
m min.	6.14	7.64	9.64	10.3	12.3	14.3	14.9	16.9	17.7	20.7
s	13	17	19	22	24	27	30	32	36	41
pitch	1	1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
W	5.2	11.6	17.3	25	33.3	49.4	64.4	79	110	115

<b>d</b>	<b>M30</b>
e	50.85
m min.	22.7
s	46
pitch	1.5
W	223

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

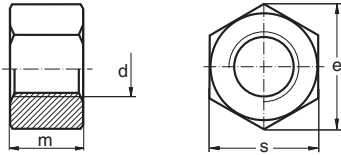


## Hex Nuts, Left-hand Thread

Tuercas con rosca izquierda

Ecrous six pans filet à gauche

A2
A4



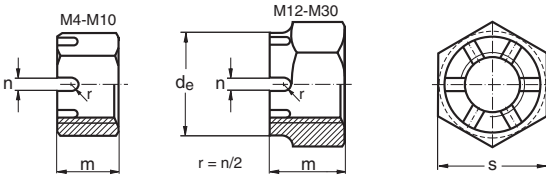
d	M5L	M6L	M8L	M10L	M12L	M14L	M16L	M18L	M20L	M22L
e	8.79	11.05	14.38	18.90	21.1	24.49	26.75	29.56	32.95	35.03
m min.	3.7	4.7	6.14	7.64	9.64	10.3	12.3	14.3	14.9	16.9
s	8	10	13	17	19	22	24	27	30	32
pitch	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5	2.5
W	1.23	2.5	5.2	11.6	17.3	25	33.3	49.4	64.4	79

d	M24L	M27L	M30L
e	39.55	45.20	50.85
m min.	17.7	20.7	22.7
s	36	41	46
pitch	3	3	3.5
W	110	165	223

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Hex Slotted and Castle Nuts**  
**Tuercas castillo**  
**Ecrous crénelés**

A2
A4



<b>d</b>	<b>M4</b>	<b>M5</b>	<b>M6</b>	<b>M8</b>	<b>M10</b>	<b>M12</b>	<b>M14</b>	<b>M16</b>	<b>M18</b>	<b>M20</b>
de	-	-	-	-	-	15.57	17.57	21.48	24.3	27.3
n min.	1.2	1.4	2	2.5	2.8	3.5	3.5	4.5	4.5	4.5
m min.	4.7	5.7	7.14	9.14	11.57	14.57	15.57	18.48	20.16	21.16
s	7	8	10	13	17	19	22	24	27	30
pitch	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5
W	1.12	2.30	3.16	7.35	15.8	20.0	27.0	38.9	57.5	75.2

<b>d</b>	<b>M24</b>	<b>M27</b>	<b>M30</b>
de	33	37	41
n min.	5.5	5.5	7
m min.	26.16	29.16	32
s	36	41	46
pitch	3	3	3.5
W	131	192	264

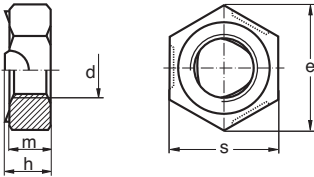
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Prevailing Torque Hex Lock Nuts (All Metal)

Tuercas gripco

Ecrous de sécurité enfièrement en metal

A2
A4



d	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20	M24
e min.	-	6.01	7.66	8.79	11.05	14.38	18.90	21.10	26.75	32.95	39.55
h max.	-	3.7	4.2	5.1	6	8	10	12	16	20	24
m	-	1.65	2.2	2.75	3.3	4.4	5.5	6.6	8.8	11	13.2
s	-	5.5	7	8	10	13	17	19	24	30	36
pitch	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5	3
W	-	-	-	1.4	3.1	6.0	11.7	16.6	37.8	68	127

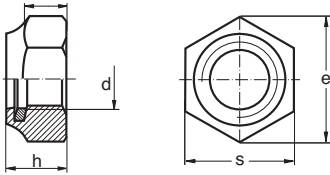
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Prevailing Torque Hex Lock Nuts with polyamid insert**

**Tuercas gripco de seguridad**

**Ecrous de sécurité form basse avec rondelle en polyamide**

A2
A4



<b>d</b>	<b>M3</b>	<b>M4</b>	<b>M5</b>	<b>M6</b>	<b>M8</b>	<b>M10</b>	<b>M12</b>	<b>M14</b>	<b>M16</b>	<b>M18</b>	<b>M20</b>
e min.	6.01	7.66	8.79	11.05	14.38	18.90	21.10	24.49	26.75	29.56	32.95
h max.	4	5	5	6	8	10	12	14	16	18.5	20
m	2.4	2.9	3.2	4	5.5	6.5	8	9.5	10.5	13	14
s	5.5	7	8	10	13	17	19	22	24	27	30
pitch	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5
W	0.50	1.00	1.40	2.40	5.10	10.6	17.2	26.0	34.0	45.0	65.0

<b>d</b>	<b>M22</b>	<b>M24</b>	<b>M27</b>	<b>M30</b>
e min.	35.03	39.55	45.2	50.85
h max.	22	24	27	30
m	15	15	17	19
s	32	36	41	46
pitch	2.5	3	3	3.5
W	75.0	100	162	212

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Hex Domed Nuts (Acorn Nuts)

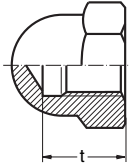
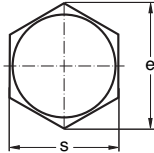
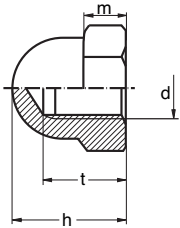
Tuercas bellota

Ecrous borgnes forme haute

A2
A4

3mm - 10mm

12mm - 24mm



d	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20
m	3.2	3.2	4	5	6.5	8	10	11	13	15	16
h	6	8	10	12	15	18	22	25	28	32	34
t	5.5	5.5	7.5	8	11	13	16	18	21	25	26
s	7	7	8	10	13	17	19	22	24	27	30
e	5.5	7.66	8.79	11.05	14.38	18.9	21.1	23.35	26.75	30.14	33.53
pitch	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5
W	-	-	-	4.66	11	20.1	28.3	57.2	54.3	95	104

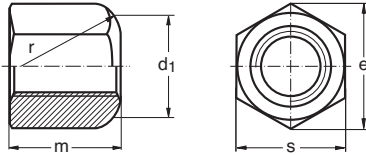
d	M22	M24
m	18	19
h	39	42
t	29	31
s	32	36
e	35.72	39.98
pitch	2.5	3
W	129	216

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Hex Full Nuts**  
**Tuercas alta**  
**Ecrous six pans**

A2
A4

Type B



<b>d H14</b>	<b>M8</b>	<b>M10</b>	<b>M12</b>	<b>M16</b>	<b>M20</b>	<b>M24</b>	<b>M30</b>	<b>M36</b>	<b>M42</b>	<b>M48</b>
d <sub>1</sub>	9	11.5	14	18	22	26	32	38	44	52
e ~	15	19.6	21.9	27.7	34.6	41.6	53.1	63.5	75	86.5
m	12	15	18	24	30	36	45	54	63	72
s	13	17	19	24	30	36	46	55	65	75
pitch	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5
r	11	15	17	22	27	32	41	50	58	67
W	9.6	21	31.5	61	120	206	419	715	1170	1800

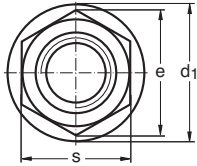
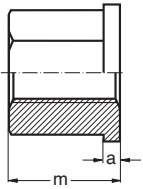
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Hex Full Nuts with Collar

Tuercas alta con cuello

Ecrous six pans avec embase

A2
A4



d	M8	M10	M12	M16	M20	M24	M30	M36	M42	M48
d <sub>1</sub>	18	22	25	31	37	45	58	68	80	92
e ~	15	19.6	21.9	27.7	34.6	41.6	53.1	63.5	75	86.5
m	12	15	18	24	30	36	45	54	63	72
s	13	17	19	24	30	36	46	55	65	75
a	3.5	4	4	5	6	6	8	10	12	14
pitch	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5
W	12.4	25.5	36.5	71	135	230	470	810	1340	2040

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

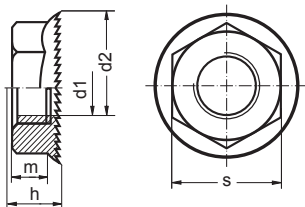
**Hex Serrated Flange Nuts**

Tornillos cabeza de queso cuerda corrida

Vis à tête cylindrique avec fente

A2

A4



	<b>d1</b>	<b>d2~</b>	<b>s</b>	<b>h~</b>	<b>m~</b>
<b>M</b>	5	11.2	8	4.3	2.55
	6	14.25	10	5.5	3.3
	8	18.25	13	7	4.4
	10	21	15	7.9	5.1

(W ~ Weights of standard sizes in kilograms per 1000 pieces)



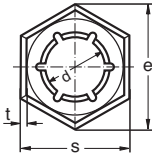
### Lock Nuts

Tuercas de seguridad

Ecrous de sécurité Pal

A2

A4



Bolt Size	M4	M5	M6	M8	M10	M12	M16	M20	M24
d	3.5	4.5	5.3	6.9	8.6	10.4	14.1	17.6	21
m	2.5	2.5	3	3.5	4	4.5	5	6	7
t	0.3	0.4	0.4	0.5	0.5	0.6	0.7	0.8	0.9
s	7	8	10	13	17	19	24	30	36
e	8.1	9.2	11.5	15	19.6	21.9	27.7	34.6	41.6
pitch	0.7	0.8	1	1.25	1.5	1.75	2	2.5	3
W	0.17	0.28	0.4	0.9	1.4	1.9	3.4	5.8	9.5

(W ~ Weights of standard sizes in kilograms per 1000 pieces)



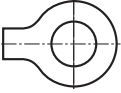

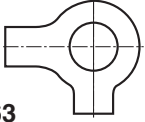

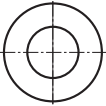
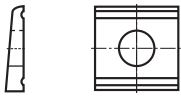
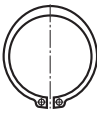
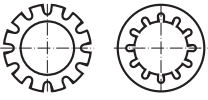

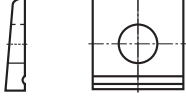

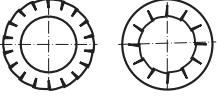



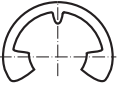


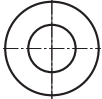
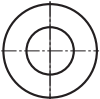


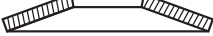
Brikksen Incorporated 1-800-962-1614  
FAX 1-214-348-6990

## Washers, Clips, and Retaining Rings

Arandelas, Pinzas y Seguros

Rondelles, rondelles ressorts, bagnes d'arrêt

# 3

 <p><b>DIN 93</b> pg. 83</p>	 <p><b>DIN 433</b> pg. 88</p>	 <p><b>DIN 463</b> pg. 94</p>	 <p><b>DIN 6796</b> pg. 100</p>
 <p><b>DIN 125</b> pg. 84</p>	 <p><b>DIN 434</b> pg. 89</p>	 <p><b>DIN 471</b> pgs. 95</p>	 <p><b>DIN 6797</b> pg. 101</p>
 <p><b>DIN 127</b> pg. 85</p>	 <p><b>DIN 435</b> pg. 90</p>	 <p><b>DIN 472</b> pgs. 96</p>	 <p><b>DIN 6798</b> pg. 102</p>
 <p><b>DIN 137</b> pg. 86</p>	 <p><b>DIN 436</b> pg. 91</p>	 <p><b>DIN 705</b> pg. 97</p>	 <p><b>DIN 6799</b> pg. 103</p>
 <p><b>DIN 137</b> pg. 86</p>	 <p><b>DIN 440</b> pg. 92</p>	 <p><b>DIN 1440</b> pg. 98</p>	 <p><b>DIN 7349</b> pg. 104</p>
 <p><b>DIN 432</b> pg. 87</p>	 <p><b>DIN 462</b> pg. 93</p>	 <p><b>DIN 2093</b> pg. 99</p>	

## Washers, Clips, and Retaining Rings

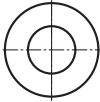
Arandelas, Pinzas y Seguros

Rondelles, rondelles ressorts, bagnes d'arrêt



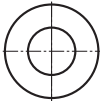
**DIN 7980**

pg. 105



**DIN 7989**

pg. 106



**DIN 9021**

pg. 107



**Schnorr Washers**

pg. 108

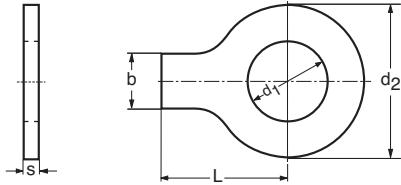
### Tab Washers

Rondanas Plana Con Lengüeta

Plaques d'arrêt à talon

A2

A4



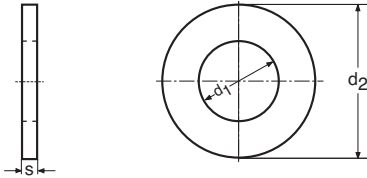
Bolt Size	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20
d <sub>1</sub>	4.3	5.3	6.4	7.4	8.4	10.5	13	15	17	19	21
b	5	6	7	7	8	10	12	12	15	18	18
d <sub>2</sub>	14	17	19	19	22	26	30	33	36	40	42
L	14	16	18	18	20	22	28	28	32	36	36
s	0.38	0.5	0.5	0.5	0.75	0.75	1	1	1	1	1
W	.487	1.05	1.21	1.17	2.32	3.13	6	7	8.5	11	11

Bolt Size	M22	M24	M27	M30	M33	M36	M39
d <sub>1</sub>	23	25	28	31	34	37	40
b	20	20	23	26	28	30	32
d <sub>2</sub>	50	50	58	63	68	75	82
L	42	42	48	52	56	60	64
s	1	1	1.6	1.6	1.6	1.6	1.6
W	14.8	14.2	31	36.3	42	51.3	59.7

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Flat Washers**  
**Rondanas Planas**  
**Rondelles**

A2
A4



Bolt Size	M1.6	M2	M2.5	M3	M3.5	M4	M5	M6	M7	M8	M10
d <sub>1</sub>	1.7	2.2	2.7	3.2	3.7	4.3	5.3	6.4	7.4	8.4	10.5
d <sub>2</sub>	4	5	6.0	7	8	9	10	12	14	16	20
s	0.3	0.3	0.5	0.5	0.5	0.8	1	1.6	1.6	1.6	2
W	.024	.037	.88	.119	.155	.308	.443	1.02	1.39	1.83	3.57

Bolt Size	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36
d <sub>1</sub>	13	15	17	19	21	23	25	28	31	34	37
d <sub>2</sub>	24	28	30	34	37	39	44	50	56	60	66
s	2.5	2.5	3	3	3	3	4	4	4	5	5
W	6.27	8.62	11.3	14.7	17.2	18.3	32.3	42.3	53.6	75.3	92.1

Bolt Size	M39	M42
d <sub>1</sub>	40	43
d <sub>2</sub>	72	78
s	6	7
W	133	183

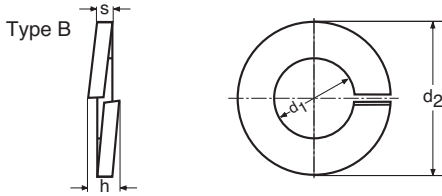
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Split Lock Washers

Rondanas de Presion

Rondelles ressort

A2
A4



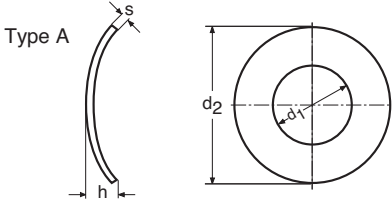
Bolt Size	M2	M2.5	M3	M3.5	M4	M5	M6	M7	M8	M10	M12
d <sub>1</sub>	2.1	2.6	3.1	3.6	4.1	5.1	6.1	7.1	8.1	10.2	12.2
d <sub>2</sub>	4.4	5.1	6.2	6.7	7.6	9.2	11.8	12.8	14.8	18.1	21.1
h min.	1	1.2	1.6	1.6	1.8	2.4	3.2	3.2	4	4.4	5
s	0.5	0.6	0.8	0.8	0.9	1.2	1.6	1.6	2	2.2	2.5
W	.033	.053	.11	.12	.18	.36	.83	.93	1.60	2.53	3.82

Bolt Size	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36
d <sub>1</sub>	14.2	16.2	18.2	20.2	22.5	24.5	27.5	30.5	33.5	36.5
d <sub>2</sub>	24.1	27.4	29.4	33.6	35.9	40	43	48.2	55.2	58.2
h min.	6	7	7	8	8	10	10	12	12	12
s	3	3.5	3.5	4	4	5	5	6	6	6
W	6.01	8.91	9.73	15.2	16.5	26.2	28.7	44.3	-	67.3

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

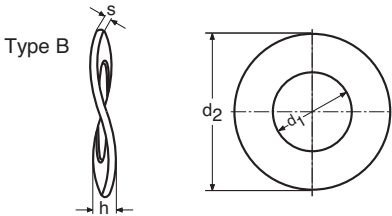
**Spring Washers, Curved**  
**Rondanas muelle semiconica**  
**Disques à ressort**

A2
A4



Bolt Size	M2	M2.3	M2.6	M3	M3.5	M4	M5	M6	M7	M8	M10
d <sub>1</sub>	2.2	2.5	2.8	3.2	3.7	4.3	5.3	6.4	7.4	8.4	10.5
d <sub>2</sub>	4.5	5	5.5	6	7	8	10	11	12	15	18
h min.	0.5	0.5	0.55	0.65	0.7	0.8	0.9	1.1	1.2	1.7	2
s	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.8
W	.028	.035	.041	.063	.088	.14	.222	.247	.265	.476	1.05

**Spring Washers, Curved**  
**Rondana espiral**  
**Disques à ressort**



Bolt Size	M3	M3.5	M4	M5	M6	M7	M8	M10	M12	M14	M16
d <sub>1</sub>	3.2	3.7	4.3	5.3	6.4	7.4	8.4	10.5	13	15	17
d <sub>2</sub>	8	8	9	11	12	14	15	21	24	28	30
h min.	0.8	0.9	1	1.1	1.3	1.5	1.5	2.1	2.5	3	3.2
s	0.5	0.5	0.5	0.5	0.5	0.8	0.8	1	1.2	1.6	1.6
W	.166	.154	.193	.266	.318	.8	.760	2.04	3.10	5.5	6

Bolt Size	M18	M20	M22	M24
d <sub>1</sub>	19	21	23	25
d <sub>2</sub>	34	36	40	44
h min.	3.3	3.7	3.9	4.1
s	1.6	1.6	1.8	1.8
W	7.8	8.43	11.9	14.5

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

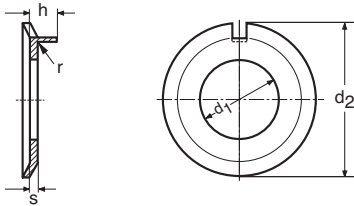


### External Tab Washers

Rondanas con una Salida Exterior

Plaques d'arrêt avec ergot

A2
A4



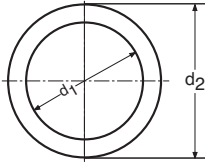
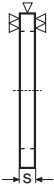
Bolt Size	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20
d <sub>1</sub>	4.3	5.3	6.4	7.4	8.4	10.5	13	15	17	19	21
d <sub>2</sub>	14	17	19	19	22	26	30	33	36	40	42
h	2	2.5	3	3	4	4	4.5	4.5	4.5	4.5	4.5
s	0.4	0.75	0.75	0.75	1	1	1.2	1.2	1.2	1.2	1.6
r	.4	.6	.6	.6	1	1	1	1	1	1	1
W	.44	1.20	1.48	1.42	2.54	3.49	5.48	6.38	7.45	9.15	13.1

Bolt Size	M22	M24	M27	M30	M33	M36	M39
d <sub>1</sub>	23	25	28	31	34	37	40
d <sub>2</sub>	50	50	58	63	68	75	82
h	6.5	6.5	9.5	9.5	9.5	9.5	11
s	1.6	1.6	1.6	1.6	1.6	2	2
r	1	1	1	1	1	1	1
W	19.4	18.5	24.8	29.8	34.2	5.24	63.3

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Flat Washers for Cheese Head Screws**  
Rondanas Plana para Tornillo Cabeza de Queso  
Rondelles pour vis à tête cylindrique

A2
A4



Bolt Size	M2	M2.5	M3	M3.5	M4	M5	M6	M8	M10	M12	M14
d <sub>1</sub>	2.2	2.7	3.2	3.7	4.3	5.3	6.4	8.4	10.5	13	15
d <sub>2</sub>	4.5	5	6	7	8	9.0	11	15	18	20	24
s	0.3	0.5	0.5	0.5	0.5	1	1.6	1.6	1.6	2	2.5
W	.029	.055	.079	.109	.14	.326	.79	1.52	2.11	2.85	5.41

Bolt Size	M16	M18	M20
d <sub>1</sub>	17	19	21
d <sub>2</sub>	28	30	34
s	2.5	2.5	2.5
W	7.63	8.31	13.2

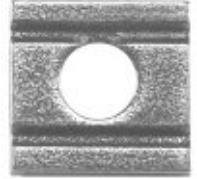
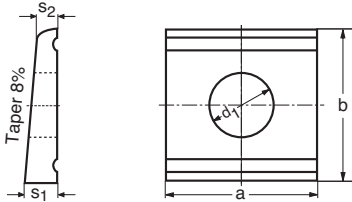
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Square Beveled Washers for Channels

Tuercas con Canales

Plaques obliques pour profils U

A2
A4



Bolt Size	M8	M10	M12	M16	M20	M22	M24
d <sub>1</sub>	9	11	14	18	22	24	26
a	22	22	26	32	40	44	56
b	22	22	30	36	44	50	56
s <sub>1</sub>	3.8	3.8	4.9	5.9	7	8	8.5
s <sub>2</sub>	2	2	2.5	3	3.5	4	4
W	9.5	8.8	18.3	31.4	57	82.5	128

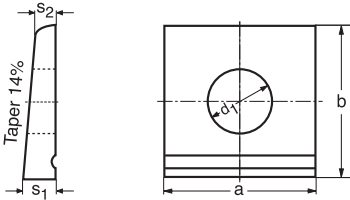
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Square Beveled Washers for I-sections**

Tuercas con un Canal

Plaques obliques pour profils T

A2
A4



Bolt Size	M8	M10	M12	M16	M20	M22	M24	M27
d <sub>1</sub>	9	11	14	18	22	24	26	30
a	22	22	26	32	40	44	56	56
b	22	22	30	36	44	50	56	56
s <sub>1</sub>	4.6	4.6	6.2	7.5	9.2	10	10.8	10.8
s <sub>2</sub>	1.5	1.5	2	2.5	3	3	3	3
W	10.1	9.4	20.1	35.6	67	90	143	133

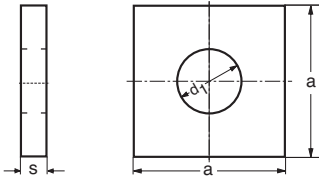
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Square Washers for Wood Construction

Rondanas para Estructura de Madera

Rondelles carré pour boulons de charpente

A2
A4



Bolt Size	M10	M12	M16	M20	M22	M24
d	11	14	18	22	24	26
a	30	40	50	60	70	80
s	3	4	5	5	6	6
W	18.8	45.4	88.2	126	195	275

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

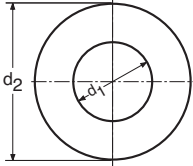
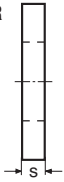
**Round Washers for Wood Construction**

Rondanas Plana para Madera

Rondelles pour boulons de charpante

A2
A4

Type R



Bolt Size	M5	M6	M8	M10	M12	M16	M20	M22	M24
d <sub>1</sub>	5.5	6.6	9	11	14	18	22	24	26
d <sub>2</sub>	18	22	28	34	45	58	68	80	92
s	2	2	3	3	4	5	5	6	6
W	3.58	5.36	12.8	18.9	45.1	93.8	126	214	286

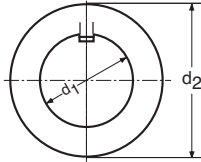
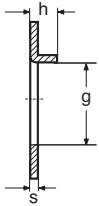
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Internal Tab Washers** for slotted round nuts DIN 1804

**Rondanas de Seguridad Interna**

**Plaques d'arrêt à ergot int. pour écrous à rainures DIN 1804**

A2
A4



<b>d<sub>1</sub></b>	<b>6</b>	<b>8</b>	<b>10</b>	<b>12</b>	<b>14</b>	<b>16</b>	<b>18</b>	<b>20</b>	<b>22</b>	<b>24</b>	<b>26</b>
d <sub>2</sub>	16	20	25	28	30	32	34	36	40	42	45
s	0.8	0.8	0.8	0.8	0.8	1	1	1	1	1	1
g	3.9	5.9	7.4	9.3	11.4	13.5	15.4	17.5	19.5	21.6	23.5
h	2.5	2.5	3	3	3	3	4	4	4	4	5

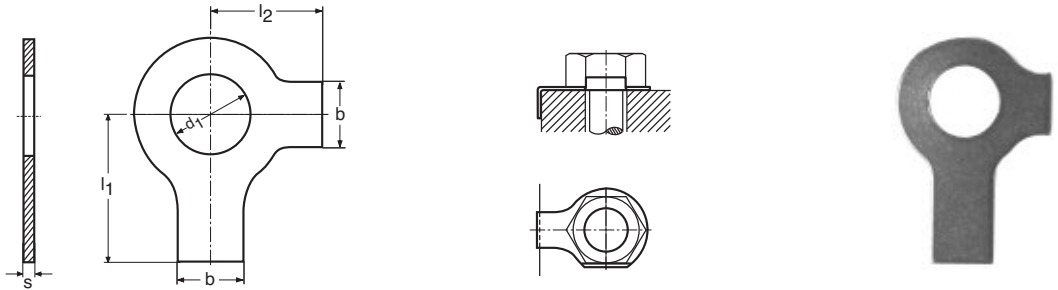
<b>d<sub>1</sub></b>	<b>28</b>	<b>30</b>	<b>32</b>	<b>35</b>	<b>38</b>	<b>40</b>
d <sub>2</sub>	50	50	52	55	58	62
s	1	1.2	1.2	1.2	1.2	1.2
g	25.5	27.5	29.6	32.6	35.3	37.3
h	5	5	5	5	5	5

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Tab Washers with Long and Short Tabs**

Rondanas con dos Salidas

Plaques d'arrêt à deux talons



Bolt Size	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20
d <sub>1</sub>	4.3	5.3	6.4	7.4	8.4	10.5	13	15	17	19	21
b	5	6	7	7	8	10	12	12	15	18	18
l <sub>1</sub>	14	16	18	18	20	22	28	28	32	36	36
l <sub>2</sub>	6.5	8	9	10	11	13	15	16	18	20	21
s	0.38	0.5	0.5	0.5	0.75	0.75	1	1	1	1	1
W	.327	.55	.8	.9	1.71	2.51	4.41	5.09	6.3	8.24	9

Bolt Size	M22	M24	M27	M30	M33	M36	M39
d <sub>1</sub>	23	25	28	31	34	37	40
b	20	20	23	26	28	30	32
l <sub>1</sub>	42	42	48	52	56	60	64
l <sub>2</sub>	23	25	29	32	34	38	41
s	1	1	1.6	1.6	1.6	1.6	1.6
W	10	12	25.3	31.4	35.6	42.5	49.7

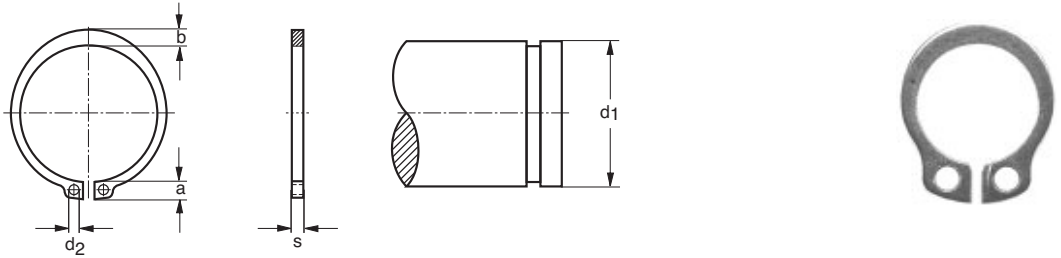
(W ~ Weights of standard sizes in kilograms per 1000 pieces)



### Retaining Rings for Shafts, Normal Type (external)

Seguros con exterior

Bagues d'arrêt pour arbres exécution normale



<b>d<sub>1</sub></b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>
a	2.5	2.7	3.1	3.2	3.3	3.3	3.3	3.3	3.4	3.5	3.6
b	1.1	1.3	1.4	1.5	1.7	1.8	1.8	1.8	2.0	2.1	2.2
d <sub>2</sub>	1.0	1.2	1.2	1.2	1.2	1.5	1.5	1.7	1.7	1.7	1.7
s	0.6	0.7	0.8	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0
W	.066	.084	.121	.158	.300	.340	.410	.500	.530	.640	.670

<b>d<sub>1</sub></b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>
a	3.7	3.8	3.9	3.9	4.0	4.2	4.3	4.4	4.4	4.5	4.6
b	2.2	2.3	2.4	2.5	2.6	2.8	2.9	3.0	3.0	3.1	3.1
d <sub>2</sub>	1.7	1.7	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
s	1.0	1.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
W	.700	.820	1.11	1.22	1.30	1.50	1.63	1.77	1.90	1.96	2.20

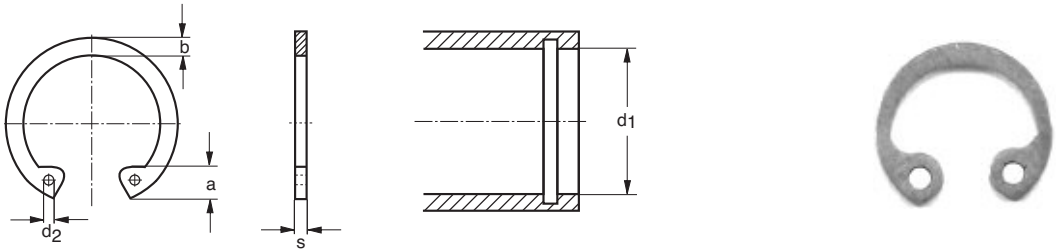
<b>d<sub>1</sub></b>	<b>28</b>	<b>30</b>	<b>32</b>	<b>34</b>	<b>35</b>	<b>36</b>	<b>38</b>	<b>39</b>	<b>40</b>
a	4.7	5.0	5.2	5.4	5.6	5.6	5.8	5.9	6.0
b	3.2	3.5	3.6	3.8	3.9	4.0	4.2	4.3	4.4
d <sub>2</sub>	2.0	2.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5
s	1.5	1.5	1.5	1.5	1.5	1.75	1.75	1.75	1.75
W	2.92	3.31	3.24	3.8	4	5	5.62	5.8	6.03

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Retaining Rings for Bores, Normal Type (internal)**

Seguros de interior

Bagues d'arrêt pour alésages exécution normales



d1	8	9	10	11	12	13	14	15	16	17	18
a	2.5	2.5	3.2	3.3	3.4	3.6	3.7	3.7	3.8	3.9	4.1
b	1.1	1.3	1.4	1.5	1.7	1.8	1.8	2.0	2.0	2.1	2.2
d2	1.0	1.0	1.2	1.2	1.5	1.5	1.7	1.7	1.7	1.7	2.0
s	0.8	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
W	.140	.150	.180	.310	.370	.420	.520	.560	.600	.650	.740

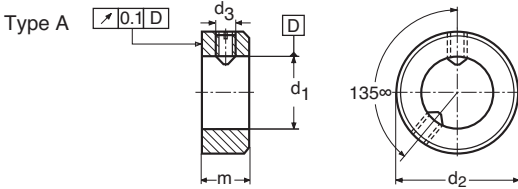
d1	19	20	21	22	23	24	25	26	27	28	29
a	4.1	4.1	4.2	4.2	4.2	4.3	4.5	4.7	4.7	4.8	4.8
b	2.2	2.3	2.4	2.5	2.5	2.6	2.7	2.8	2.9	2.9	3.0
d2	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
s	1.0	1.0	1.0	1.0	1.2	1.2	1.2	1.2	1.2	1.2	1.2
W	.830	.900	1	1.1	1.33	1.42	1.5	1.6	1.7	1.8	-

d1	30	31	32	34	35	36	37	38	40
a	4.8	5.2	5.4	5.4	5.4	5.4	5.5	5.5	5.8
b	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.9
d2	2.0	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
s	1.2	1.2	1.2	1.5	1.5	1.5	1.5	1.5	1.75
W	2.06	2.1	2.21	3.2	3.54	3.7	3.74	3.9	4.7

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Adjusting Rings Rondanas de Ajuste Baagues d'arrêt

A2
A4



<b>d1</b>	<b>5</b>	<b>6</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>
b	6	8	8	10	10	10	12	12	12	12	12
d2	10	12	16	18	20	20	22	22	25	25	28
d3	M3	M4	M4	M5	M5	M5	M6	M6	M6	M6	M6
W	.280	.548	.940	1.44	1.85	1.74	2.52	2.32	3.17	2.98	3.84

<b>d1</b>	<b>18</b>	<b>20</b>	<b>22</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>28</b>	<b>30</b>	<b>32</b>	<b>34</b>	<b>35</b>
b	14	14	14	16	16	16	16	16	16	16	16
d2	32	32	36	40	40	40	45	45	50	50	56
d3	M6	M6	M6	M8	M8	M8	M8	M8	M8	M8	M8
W	6.0	5.3	6.9	10.0	9.56	9.05	12.2	11.1	14.5	13.4	18.7

<b>d1</b>	<b>36</b>	<b>40</b>	<b>45</b>	<b>50</b>
b	16	18	18	18
d2	56	63	70	80
d3	M8	M10	M10	M10
W	18	26.1	31.7	42.9

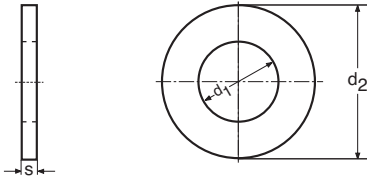
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Flat Washers for Clevis Pins**

Rondanas automotriz

Rondelles pour goujons

A2
A4



Bolt Size	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22
d <sub>1</sub>	4	5	6	8	10	12	14	16	18	20	22
d <sub>2</sub>	8	10	12	16	20	25	28	28	30	32	34
s	0.8	0.8	1.6	2	2.5	3	3	3	4	4	4
W	.23	.36	1.05	2.22	4.56	8.99	10.8	9.68	13.8	15	16.2

Bolt Size	M24	M25	M26	M27	M28	M30	M32	M33	M35	M36	M40
d <sub>1</sub>	24	25	26	27	28	30	32	33	35	36	40
d <sub>2</sub>	38	40	40	40	42	45	50	50	52	52	58
s	4	4	5	5	5	5	5	5	6	6	6
W	21.4	23.6	28.5	26.5	29.7	34.2	44.8	43.3	52.8	49.5	63.7

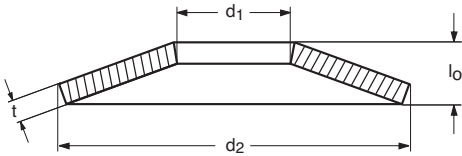
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Disc Springs

Cuñas

Rondelles à plateau

A2
A4



<b>d<sub>1</sub></b>	<b>3.2</b>	<b>4.2</b>	<b>4.2</b>	<b>4.2</b>	<b>5.2</b>	<b>5.2</b>	<b>5.2</b>	<b>6.2</b>	<b>6.2</b>	<b>6.2</b>	<b>7.2</b>
d <sub>2</sub>	6	8	8	8	10	10	10	12.5	12.5	12.5	14
l <sub>o</sub>	0.45	0.45	0.55	0.6	0.55	0.7	0.75	0.8	0.85	1	1.1
t	0.3	0.2	0.3	0.4	0.25	0.4	0.5	0.35	0.5	0.7	0.8
W	.100	.117	.176	.239	.230	.375	.470	.525	.752	1.06	1.49

<b>d<sub>1</sub></b>	<b>8.2</b>	<b>8.2</b>	<b>8.2</b>	<b>9.2</b>	<b>9.2</b>	<b>9.2</b>	<b>10.2</b>	<b>10.2</b>	<b>10.2</b>	<b>12.2</b>	<b>12.2</b>
d <sub>2</sub>	16	16	16	18	18	18	20	20	20	25	25
l <sub>o</sub>	0.9	1.05	1.25	1.05	1.2	1.4	1.15	1.35	1.55	1.6	1.6
t	0.4	0.6	0.9	0.45	0.7	1	0.5	0.8	1.1	0.7	0.9
W	.955	1.45	2.20	1.36	2.14	3.10	1.87	3.03	4.21	4.24	5.45

<b>d<sub>1</sub></b>	<b>12.2</b>	<b>14.2</b>	<b>14.2</b>	<b>14.2</b>	<b>16.3</b>	<b>16.3</b>	<b>16.3</b>	<b>18.3</b>	<b>18.3</b>
d <sub>2</sub>	25	28	28	28	31.5	31.5	31.5	35.5	35.5
l <sub>o</sub>	2.05	1.8	1.8	2.15	1.85	2.15	2.45	2.05	2.25
t	1.5	0.8	1	1.5	0.8	1.25	1.75	0.9	1.25
W	9.25	5.94	7.42	11.3	7.37	11.6	16.5	10.6	14.7

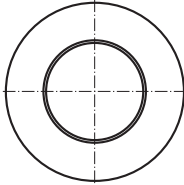
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Conical Spring Washers**

Rondanas conica

Rondelles élastiques bombées

A2
A4



Bolt Size	M2	M2.5	M3	M3.5	M4	M5	M6	M7	M8	M10	M12
d <sub>1</sub>	2.2	2.7	3.2	3.7	4.3	5.3	6.4	7.4	8.4	10.5	13.0
d <sub>2</sub>	5	6	7	8	9	11	14	17	18	23	29
h max.	0.6	0.72	0.85	1.06	1.3	1.55	2	2.3	2.6	3.2	3.95
h min.	0.5	0.61	0.72	0.92	1.12	1.35	1.7	2	2.24	2.8	3.43
s	0.4	0.5	0.6	0.8	1	1.2	1.5	1.75	2	2.5	3
W	0.05	0.09	0.14	0.25	0.38	0.69	1.43	2.53	3.13	6.45	12.4

Bolt Size	M14	M16	M18	M20	M22	M24	M27	M30
d <sub>1</sub>	15.0	17.0	19.0	21.0	23.0	25.0	28.0	31.0
d <sub>2</sub>	35	39	42	45	49	56	60	70
h max.	4.65	5.25	5.8	6.4	7.05	7.75	8.35	9.2
h min.	4.04	4.58	5.08	5.6	6.15	6.77	7.3	8
s	3.5	4	4.5	5	5.5	6	6.5	7
W	21.6	30.4	38.9	48.8	63.5	92.9	113	170

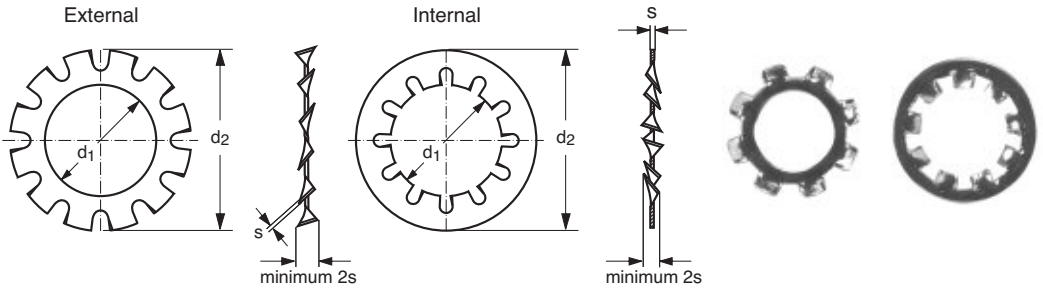
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Toothed Lock Washers

Rondanas de dientes

Rondelles dentées

A2
A4



Bolt Size	M2	M2.3	M2.5	M3	M4	M5*	M5	M6	M7	M8*	M8
d <sub>1</sub>	2.2	2.5	2.7	3.2	4.3	5.1	5.3	6.4	7.4	8.2	8.4
d <sub>2</sub>	4.5	5	5.5	6	8	9	10	11	12.5	14	15
s	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.7	0.8	0.8	0.8
W internal	.04	.025	.045	.045	.100	.15	.2	.25	.35	.45	.55
W external	.025	.03	.04	.045	.095	.14	.18	.22	.3	.4	.45

Bolt Size	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30
d <sub>1</sub>	10.5	12.5	14.5	16.5	19	21	23	25	28	31
d <sub>2</sub>	18	20.5	24	26	30	33	36	38	44	48
s	0.9	1	1	1.2	1.4	1.4	1.5	1.5	1.6	1.6
W internal	.90	1.3	2.0	2.5	3.7	4.1	6.0	6.5	8.5	9.5
W external	.80	1.1	1.7	2.1	3.5	3.8	5.0	6.0	8.0	9.0

\* For Hex Head Cap Screws only

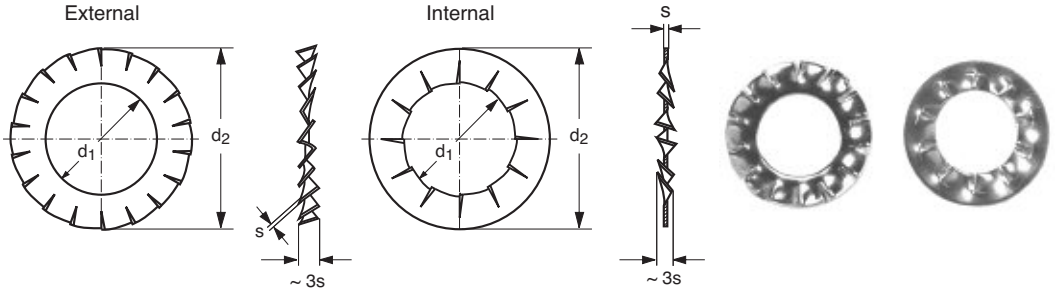
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Serrated Lock Washers**

Rondanas astriada tipo z

Rondelles éventails

A2
A4



Bolt Size	M2	M2.3	M2.5	M3	M3.5	M4	M5*	M5	M6	M7	M8*
d <sub>1</sub>	2.2	2.5	2.7	3.2	3.7	4.3	5.1	5.3	6.4	7.4	8.2
d <sub>2</sub>	4.5	5	5.5	6	7	8	9	10	11	12.5	14
s	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.6	0.7	0.8	0.8
W	.03	.04	.045	.06	.11	.14	.22	.28	.36	.5	.75

Bolt Size	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30
d <sub>1</sub>	8.4	10.5	12.5	14.5	16.5	19	21	23	25	28	31
d <sub>2</sub>	15	18	20.5	24	26	30	33	36	38	44	48
s	0.8	0.9	1	1	1.2	1.4	1.4	1.5	1.5	1.6	1.6
W	.8	1.25	1.7	2.4	3	5	6	7.5	8	12	14

\* for Hex Head Cap Screws only

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

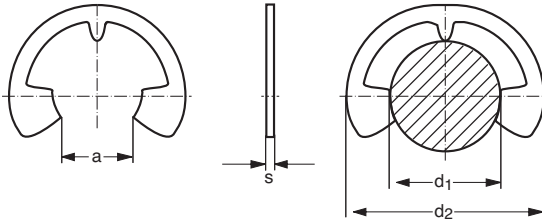


### Circlips for Shafts

Seguros tipo e

Colliers d'épaulement pour arbres

A2
A4



d <sub>1</sub>	1.5	1.9	2.3	3.2	4	5	6	7	8	9	10
a	1.28	1.61	1.94	2.70	3.34	4.11	5.26	5.84	6.52	7.63	8.32
d <sub>2</sub>	4.25	4.8	6.3	7.3	9.3	11.3	12.3	14.3	16.3	18.8	20.4
s	0.4	0.5	0.6	0.6	0.7	0.7	0.7	0.9	1	1.1	1.2
W	.021	.040	.069	.088	.158	.236	.255	.474	.660	1.09	1.25

d <sub>1</sub>	12	15
a	10.45	12.61
d <sub>2</sub>	23.4	29.4
s	1.3	1.5
W	1.63	3.37

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

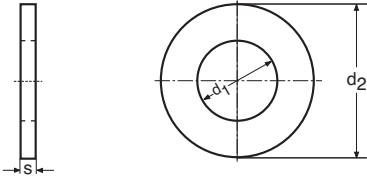
**Flat Washers for bolts with heavy type spring pins (DIN 1481)**

Rondanas plana

Rondelle pour vis avec goupilles élastiques lourdes

A2
A4

Type A



Bolt Size	M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20
d <sub>1</sub>	3.2	4.3	5.3	6.4	8.4	10.5	13	15	17	19	21
d <sub>2</sub>	9	12	15	17	21	25	30	36	40	44	44
s	1	1.6	2	3	4	4	6	6	6	8	8
W	.436	1.24	2.43	4.59	9.15	12.7	27.1	39.6	48.5	77.4	73.4

Bolt Size	M22	M24	M27	M30
d <sub>1</sub>	23	25	28	31
d <sub>2</sub>	50	50	60	68
s	8	10	10	10
W	97.1	116	174	226

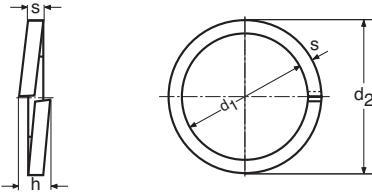
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### High Collar Lock Washers

Rondanas presion reforzada

Rondelles ressorts pour vis à tête cylindrique

A2
A4



Bolt Size	M3	M3.5	M4	M5	M6	M8	M10	M12	M14	M16	M18
d <sub>1</sub>	3.1	3.6	4.1	5.1	6.1	8.1	10.2	12.2	14.2	16.2	18.2
d <sub>2</sub> max.	5.6	6.1	7	8.8	9.9	12.7	16	18	21.1	24.4	26.4
h min.	2	2	2.4	3.2	3.2	4	5	5	6	7	7
h max.	2.36	2.36	2.83	3.78	3.78	4.72	5.9	5.9	7.1	8.25	8.25
s	1	1	1.2	1.6	1.6	2	2.5	2.5	3	3.5	3.5
W	.105	.114	.195	.37	.425	1.05	1.96	2.28	3.8	5.94	6.6

Bolt Size	M20	M22	M24	M27	M30	M36
d <sub>1</sub>	20.2	22.5	24.5	27.5	30.5	36.5
d <sub>2</sub> max.	30.6	32.9	35.9	38.9	44.1	52.2
h min.	9	9	10	10	12	14
h max.	10.6	10.6	11.8	11.8	14.2	16.5
s	4.5	4.5	5	5	6	7
W	12.3	13.6	18.1	20.6	32	52.5

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

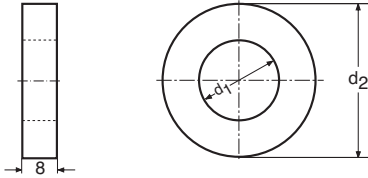
**Washers for Steel Construction**

Rondanas pesada

Rondelles pour constructions métalliques

A2
A4

Type A

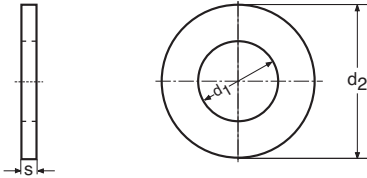


Bolt Size	M10	M12	M16	M20	M22	M24	M27	M30	M33	M36
d <sub>1</sub>	11	14	18	22	24	26	30	33	36	39
d <sub>2</sub>	21	24	30	37	39	44	50	56	60	66
W	15.8	18.7	28.4	43.6	46.2	62.1	78.9	101	114	140

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Fender Washers** with outside diameter ~ 3 x bolt diameter  
**Rondanas plana liviana estandar y pesada**  
**Rondelles  $d_2 = 3 \times d_1$**

A2
A4



Bolt Size	M2.5	M3	M3.5	M4	M5	M6	M7	M8	M10	M12	M14
d <sub>1</sub>	2.7	3.2	3.7	4.3	5.3	6.4	7.4	8.4	10.5	13	15
d <sub>2</sub>	8	9	11	12	15	18	22	24	30	37	44
s	0.8	0.8	0.8	1	1.2	1.6	2	2	2.5	3	3
W	.28	.349	.529	.774	1.46	2.79	5.29	6.23	12.2	22.2	31.6

Bolt Size	M16	M18	M20
d <sub>1</sub>	17	20	22
d <sub>2</sub>	50	56	60
s	3	4	4
W	40.9	67.4	76.8

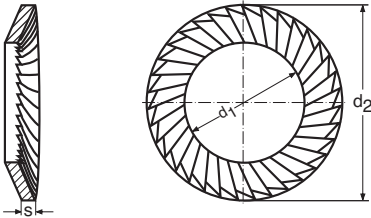
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Schnorr® Lock Washers

Rondanas astriada tipo

Rondelles élastique nervurée

A2
A4



Bolt Size	M2	M2.5	M3	M3.5	M4	M5	M6	M8	M10	M12
d <sub>1</sub>	2.2	2.7	3.2	3.7	4.3	5.3	6.4	8.4	10.5	13.0
d <sub>2</sub>	4.0	4.8	5.5	6.0	7.0	9.0	10.9	13.0	16.0	18.0
s	0.35	0.45	0.45	0.45	0.5	0.6	0.7	0.8	1.0	1.1
W	.011	.022	.028	.031	.048	.100	.171	.247	.458	.536

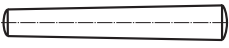

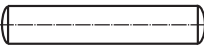

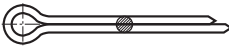



(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Pins

Pernos

Goupilles coniques, et cylindriques

# 4

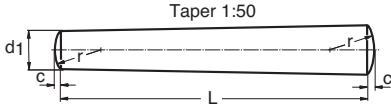
 <p><b>DIN 1</b> pg. 110</p>	 <p><b>DIN 1481</b> pgs. 117-118</p>
 <p><b>DIN 7</b> pg. 111-112</p>	 <p><b>DIN 7343</b> pg. 119</p>
 <p><b>DIN 94</b> pgs. 113</p>	
 <p><b>DIN 1471</b> pg. 114</p>	
 <p><b>DIN 1472</b> pg. 115</p>	
 <p><b>DIN 1473</b> pg. 116</p>	

**Taper Pins**

**Pernos Solido Rectificado**

**Goupilles coniques**

A2
A4



<b>d<sub>1</sub> h10</b>	<b>1</b>	<b>1.5</b>	<b>2</b>	<b>2.5</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>8</b>	<b>10</b>
r~	1	1.5	2	2.5	3	4	5	6	8	10
c~	0.15	0.23	0.3	0.4	0.45	0.6	0.75	0.9	1.2	1.5

<b>d<sub>1</sub></b>	<b>L</b>	<b>W</b>
1	8	.058
1	10	.075
1	12	.095
1	14	.114
1	16	.135
1	18	.157
1.5	10	.160
1.5	12	.206
1.5	14	.240
1.5	16	.295
1.5	18	.339
1.5	20	.384
1.5	22	.429
1.5	24	.485
1.5	26	.541
2	10	.278
2	12	.341
2	14	.404
2	16	.468
2	18	.534
2	20	.605
2	22	.676
2	24	.752
2	26	.823
2.5	14	.620
2.5	16	.712
2.5	18	.811

<b>d<sub>1</sub></b>	<b>L</b>	<b>W</b>
2.5	20	.914
2.5	22	1.02
2.5	24	1.13
2.5	26	1.23
2.5	28	1.35
2.5	30	1.45
2.5	32	1.59
2.5	36	1.84
3	14	0.88
3	16	1.02
3	18	1.15
3	20	1.29
3	22	1.43
3	24	1.58
3	26	1.72
3	28	1.88
3	30	2.02
3	32	2.20
3	36	2.55
3	40	2.88
3	45	3.35
3	50	3.83
4	18	2.00
4	20	2.23
4	22	2.46
4	24	2.72
4	26	2.95

<b>d<sub>1</sub></b>	<b>L</b>	<b>W</b>
4	28	3.22
4	30	3.45
4	32	3.73
4	36	4.28
4	40	4.84
4	45	5.56
4	50	6.31
4	55	7.12
4	60	7.94
5	20	3.47
5	22	3.82
5	24	4.18
5	26	4.53
5	28	4.93
5	30	5.28
5	32	5.70
5	36	6.51
5	40	7.30
5	45	8.35
5	50	9.45
5	55	10.6
5	60	11.8
5	70	14.2
6	24	6.02
6	26	6.61
6	28	7.17
6	30	7.76

<b>d<sub>1</sub></b>	<b>L</b>	<b>W</b>
6	32	8.35
6	36	9.50
6	40	10.3
6	45	11.7
6	50	13.4
6	55	14.7
6	60	16.3
6	70	19.7
6	80	24.3
8	28	12.3
8	30	13.1
8	32	14.0
8	36	16.0
8	40	17.8
8	45	20.2
8	50	22.7
8	55	25.3
8	60	27.8
8	70	33.2
8	80	38.8
8	90	44.5
8	100	50.5
10	32	21.9
10	36	24.8
10	40	27.6
10	45	31.2
10	50	34.9

<b>d<sub>1</sub></b>	<b>L</b>	<b>W</b>
10	55	38.8
10	60	42.5
10	70	50.4
10	80	58.5
10	90	67.0
10	100	75.7

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

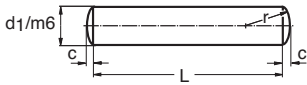


## Dowel Pins (m6 Tolerance)

Pernos cilíndrico

Goupilles cylindriques

A2
A4



d <sub>1</sub> m6	0.8	1	1.5	2	2.5	3	4	5	6	8	10	12
r~	0.8	1	1.5	2	2.5	3	4	5	6	8	10	12
c max.	0.12	0.15	0.23	0.3	0.4	0.45	0.6	0.75	0.9	1.2	1.5	1.8

d <sub>1</sub>	L	W
0.8	3	.012
0.8	4	.016
0.8	5	.020
0.8	6	.024
0.8	8	.032
0.8	10	.040
0.8	12	.048
1	3	.018
1	4	.025
1	5	.032
1	6	.038
1	8	.050
1	10	.062
1	12	.074
1.5	3	.044
1.5	4	.058
1.5	5	.072
1.5	6	.085
1.5	8	.113
1.5	10	.141
1.5	12	.168
1.5	14	.195
1.5	16	.224
2	4	.105
2	5	.130
2	6	.155
2	8	.203

d <sub>1</sub>	L	W
2	10	.253
2	12	.302
2	14	.351
2	16	.401
2	18	.451
2	20	.500
2	24	.598
2.5	4	.165
2.5	5	.204
2.5	6	.243
2.5	8	.320
2.5	10	.397
2.5	12	.474
2.5	14	.550
2.5	16	.627
2.5	18	.705
2.5	20	.782
2.5	24	.937
3	4	.245
3	5	.300
3	6	.355
3	8	.466
3	10	.577
3	12	.688
3	14	.799
3	16	.910
3	18	1.02

d <sub>1</sub>	L	W
3	20	1.13
3	24	1.35
4	5	0.44
4	6	0.64
4	8	0.84
4	10	1.04
4	12	1.23
4	14	1.44
4	16	1.63
4	18	1.83
4	20	2.03
4	24	2.43
4	28	2.82
4	32	3.21
4	36	3.60
4	40	4.00
5	6	1.02
5	8	1.33
5	10	1.64
5	12	1.95
5	14	2.26
5	16	2.57
5	18	2.88
5	20	3.91
5	24	3.80
5	28	4.42
5	32	5.03

d <sub>1</sub>	L	W
5	36	5.65
5	40	6.27
5	45	7.03
5	50	7.80
6	8	1.97
6	10	2.41
6	12	2.85
6	14	3.29
6	16	3.73
6	18	4.17
6	20	4.61
6	24	5.50
6	28	6.40
6	32	7.30
6	36	8.19
6	40	9.08
6	45	10.2
6	50	11.3
6	60	13.5
8	10	4.37
8	12	5.16
8	14	5.95
8	16	6.74
8	18	7.53
8	20	8.31
8	24	9.89
8	28	11.5

d <sub>1</sub>	L	W
8	32	13.0
8	36	14.6
8	40	16.2
8	50	20.1
8	60	24.0
8	70	28.0
8	80	32.0
10	12	8.24
10	14	9.47
10	16	10.7
10	18	11.9
10	20	13.2
10	24	15.6
10	28	18.0
10	32	20.6
10	36	23.1
10	40	25.5
10	45	28.6
10	50	31.7
10	60	37.9
10	70	44.1
10	80	50.3
10	90	56.5
10	100	62.7
12	14	13.8
12	16	15.6
12	18	17.4

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**DIN 7**  
ISO 2338

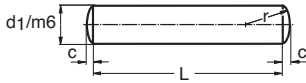
**BRIKXSEN**

**Dowel Pins (m6 Tolerance)**

**Pernos cilindrico**

**Goupilles cylindriques**

A2
A4



d <sub>1</sub> m6	0.8	1	1.5	2	2.5	3	4	5	6	8	10	12
r~	0.8	1	1.5	2	2.5	3	4	5	6	8	10	12
c max.	0.12	0.15	0.23	0.3	0.4	0.45	0.6	0.75	0.9	1.2	1.5	1.8

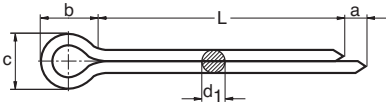
d <sub>1</sub>	L	W
12	20	19.2
12	24	22.8
12	28	26.4
12	32	30.0
12	36	33.6
12	40	37.2
12	45	41.7
12	50	46.2
12	60	55.2
12	70	64.1
12	80	73.0
12	90	82.1
12	100	91.0

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Cotter Pins**  
**Chavetas**  
**Goupilles Fendues**

A2
A4

Manufacturers preference  
in the style of tip



d	1.0	1.2	1.6	2.0	2.5	3.2	4.0	5.0	6.3	8.0	10.0	13.0
d <sub>1</sub> min.	0.8	0.9	1.3	1.7	2.1	2.7	3.5	4.4	5.7	7.3	9.3	12.1
a min.	0.8	1.25	1.25	1.25	1.25	1.6	2	2	2	2	3.2	3.2
b ~	3	3	3.2	4	5	6.4	8	10	12.6	16	20	26
c min.	1.6	1.7	2.4	3.2	4	5.1	6.5	8	10.3	13.1	16.6	21.7

d	L	W
1.0	6	.030
1.0	8	.040
1.0	10	.050
1.0	12	.060
1.0	16	.080
1.0	18	.100
1.0	20	.110
1.0	22	.120
1.0	25	.135
1.0	28	.150
1.0	32	.175
1.2	6	.025
1.2	8	.035
1.2	10	.045
1.2	12	.076
1.2	16	.137
1.2	18	.167
1.2	20	.197
1.2	22	.228
1.2	25	.273
1.2	28	.319
1.2	32	.380
1.6	6	.080
1.6	8	.100
1.6	10	.120
1.6	12	.140
1.6	16	.180

d	L	W
1.6	18	.200
1.6	20	.220
1.6	22	.240
1.6	25	.270
1.6	28	.300
1.6	32	.340
1.6	36	.380
1.6	40	.420
2.0	6	.190
2.0	8	.220
2.0	10	.250
2.0	12	.280
2.0	16	.340
2.0	18	.370
2.0	20	.400
2.0	22	.430
2.0	25	.470
2.0	28	.510
2.0	32	.560
2.0	36	.610
2.0	40	.660
2.0	45	.722
2.5	10	.450
2.5	12	.510
2.5	16	.630
2.5	18	.690
2.5	20	.750

d	L	W
2.5	22	.810
2.5	25	.900
2.5	28	.980
2.5	32	1.10
2.5	36	1.22
2.5	40	1.34
2.5	45	1.49
2.5	50	1.64
3.2	16	.991
3.2	18	1.00
3.2	20	1.09
3.2	22	1.18
3.2	25	1.31
3.2	28	1.45
3.2	32	1.64
3.2	36	1.80
3.2	40	2.00
3.2	45	2.17
3.2	50	2.43
3.2	56	2.70
3.2	63	3.02
4.0	16	1.92
4.0	18	2.04
4.0	20	2.16
4.0	22	2.28
4.0	25	2.52
4.0	28	2.76

d	L	W
4.0	32	3.07
4.0	36	3.39
4.0	40	3.71
4.0	45	4.11
4.0	50	4.51
4.0	56	5.00
4.0	63	5.55
4.0	71	6.20
4.0	80	6.91
4.0	90	7.71
4.0	100	8.51
5.0	16	2.99
5.0	18	3.24
5.0	20	3.49
5.0	22	3.74
5.0	25	4.00
5.0	28	4.49
5.0	32	5.00
5.0	36	5.49
5.0	40	6.00
5.0	45	6.61
5.0	50	7.24
5.0	56	8.00
5.0	63	8.67
5.0	71	9.86
5.0	80	11.0
5.0	90	12.2

d	L	W
5.0	100	13.5
6.3	20	6.32
6.3	22	6.75
6.3	25	7.39
6.3	28	8.04
6.3	32	8.90
6.3	36	9.76
6.3	40	10.6
6.3	45	11.7
6.3	50	12.8
6.3	56	14.0
6.3	63	15.6
6.3	71	17.3
6.3	80	19.2
6.3	90	21.3
6.3	100	23.5
6.3	112	26.1
6.3	125	28.9
8.0	32	14.6
8.0	36	15.9
8.0	40	17.2
8.0	45	18.9
8.0	50	20.6
8.0	56	22.6
8.0	63	25.0
8.0	71	27.7
8.0	80	30.7

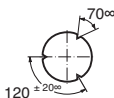
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Grooved Pins, Full Length Taper**

Pernos conico de seguro

Goupilles cannelées coniques

A2
A4



d	2	3	4	5	6	8
c~	0.25	0.4	0.5	0.63	0.8	1

d	L	W
2	8	.203
2	10	.253
2	12	.302
2	16	.401
2	18	.451
2	20	.500
3	8	.466
3	10	.577
3	12	.688
3	16	.910
3	18	1.01
3	20	1.13
4	8	.840
4	10	1.04
4	12	1.23
4	16	1.63
4	18	1.83
4	20	2.03
5	10	1.64
5	12	1.95
5	16	2.57
5	18	2.88
5	20	3.19
5	25	4.00
5	30	4.72
5	35	5.44
5	40	6.27

d	L	W
6	10	2.41
6	12	2.85
6	16	3.73
6	18	4.17
6	20	4.61
6	25	5.72
6	30	6.83
6	35	7.94
6	40	9.08
8	10	4.37
8	12	5.16
8	16	6.74
8	18	7.52
8	20	8.31
8	25	10.2
8	30	12.2
8	35	14.2
8	40	16.2
8	45	18.1
8	50	20.1
8	60	24.0

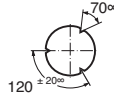
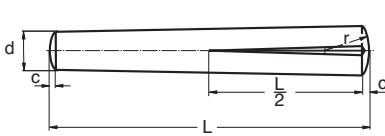
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

### Grooved Pins, Half Length Taper

Pernos conico de seguro

Goupilles cannelées usinées

A2
A4



d	2	3	4	5	6	8
c~	0.25	0.4	0.5	0.63	0.8	1

d	L	W
2	8	.203
2	10	.253
2	12	.302
2	16	.401
2	18	.451
2	20	.500
3	8	.466
3	10	.577
3	12	.688
3	16	.910
3	18	1.02
3	20	1.13
4	8	.850
4	10	1.04
4	12	1.23
4	16	1.63
4	18	1.83
4	20	2.03
5	10	1.64
5	12	1.95
5	16	2.57
5	18	2.88
5	20	3.19
5	25	3.95
5	30	4.72
5	35	5.48
5	40	6.27

d	L	W
6	10	2.41
6	12	2.85
6	16	3.73
6	18	4.17
6	20	4.61
6	25	5.72
6	30	6.83
6	35	7.94
6	40	9.08
8	10	4.38
8	12	5.17
8	16	6.74
8	18	7.52
8	20	8.31
8	25	10.2
8	30	12.2
8	35	14.2
8	40	16.2
8	45	18.1
8	50	20.1
8	60	24.0

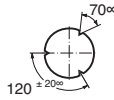
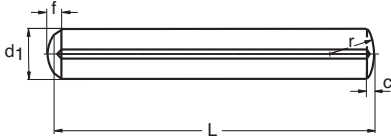
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Grooved Pins, Full Length Parallel**

Pernos conico de seguro

Goupilles cannelées cylindriques

A2
A4



d	2	3	4	5	6	8
c	0.25	0.4	0.5	0.63	0.8	1
f	0.8	1.2	1.4	1.7	2.1	2.6

d	L	W
2	8	.198
2	10	.247
2	12	.296
2	16	.395
2	18	.444
2	20	.494
3	8	.444
3	10	.555
3	12	.666
3	16	.888
3	18	.999
3	20	1.11
3	25	1.39
4	8	.789
4	10	.986
4	12	1.18
4	16	1.58
4	18	1.77
4	20	1.97
4	25	2.46
4	30	2.96
4	35	3.45
4	40	3.94
5	10	1.54
5	12	1.85
5	16	2.46
5	18	2.77

d	L	W
5	20	3.08
5	25	3.85
5	30	4.62
5	35	5.39
5	40	6.16
6	10	2.22
6	12	2.66
6	16	3.55
6	18	3.99
6	20	4.44
6	25	5.55
6	30	6.66
6	35	7.77
6	40	8.88
8	10	3.95
8	12	4.74
8	16	6.32
8	18	7.11
8	20	7.90
8	25	9.80
8	30	11.8
8	35	13.7
8	40	15.7
8	45	17.7
8	50	19.6
8	60	23.6

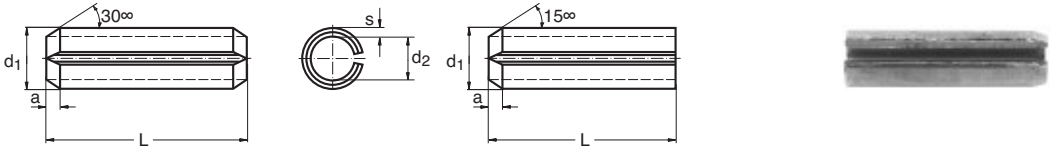
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

## Spring Pins (Rolled Pins)

Pernos ranurado

Goupilles élastiques exécution lourdes

A2
A4



d	1	1.5	2	2.5	3	3.5	4	4.5	5	6	8	10
a	0.15	0.25	0.35	0.4	0.5	0.6	0.65	0.8	0.9	1.2	2	2
d <sub>1</sub> min.	1.2	1.7	2.3	2.8	3.3	3.8	4.4	4.9	5.4	6.4	8.5	10.5
d <sub>2</sub>	0.8	1.1	1.5	1.8	2.1	2.3	2.8	2.9	3.4	3.9	5.5	6.5
s	0.2	0.3	0.4	0.5	0.6	0.75	0.8	1	1	1.25	1.5	2

d	L	W
1	4	.015
1	5	.019
1	6	.023
1	8	.031
1	10	.038
1	12	.045
1	14	.052
1	16	.059
1	18	.067
1	20	.076
1.5	4	.034
1.5	5	.043
1.5	6	.051
1.5	8	.068
1.5	10	.085
1.5	12	.103
1.5	14	.120
1.5	16	.137
1.5	18	.154
1.5	20	.171
2	4	.061
2	5	.077
2	6	.092
2	8	.122
2	10	.153

d	L	W
2	12	.184
2	14	.214
2	16	.244
2	18	.275
2	20	.305
2	22	.336
2	24	.367
2	26	.397
2	28	.427
2	30	.458
2.5	4	.095
2.5	5	.118
2.5	6	.142
2.5	8	.189
2.5	10	.236
2.5	12	.283
2.5	14	.330
2.5	16	.377
2.5	18	.424
2.5	20	.471
2.5	22	.519
2.5	24	.565
2.5	26	.613
2.5	28	.660
2.5	30	.707

d	L	W
3	4	.136
3	5	.170
3	6	.204
3	8	.272
3	10	.340
3	12	.407
3	14	.475
3	16	.543
3	18	.611
3	20	.679
3	22	.746
3	24	.814
3	26	.882
3	28	.950
3	30	1.02
3	32	1.09
3	36	1.22
3	40	1.36
3.5	4	.197
3.5	5	.246
3.5	6	.296
3.5	8	.394
3.5	10	.493
3.5	12	.591
3.5	14	.689

d	L	W
3.5	16	.788
3.5	18	.886
3.5	20	.985
3.5	22	1.08
3.5	24	1.18
3.5	26	1.28
3.5	28	1.38
3.5	30	1.48
3.5	32	1.58
3.5	36	1.77
3.5	40	1.97
4	4	.239
4	5	.299
4	6	.358
4	8	.478
4	10	.597
4	12	.716
4	14	.836
4	16	.955
4	18	1.07
4	20	1.19
4	22	1.31
4	24	1.43
4	26	1.55
4	28	1.67

d	L	W
4	30	1.79
4	32	1.91
4	36	2.18
4	40	2.39
4	45	2.68
4	50	2.98
4.5	6	.476
4.5	8	.635
4.5	10	.793
4.5	12	.952
4.5	14	1.11
4.5	16	1.27
4.5	18	1.43
4.5	20	1.59
4.5	22	1.75
4.5	24	1.90
4.5	26	2.06
4.5	28	2.22
4.5	30	2.38
4.5	32	2.54
4.5	36	2.86
4.5	40	3.17
4.5	45	3.57
4.5	50	3.96
5	6	.566

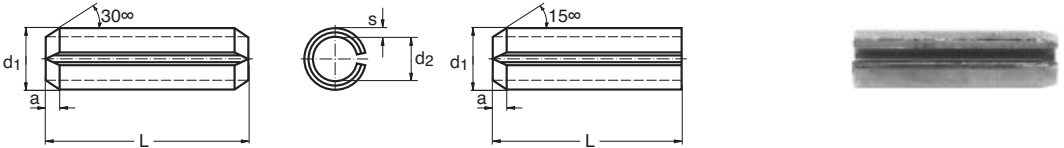
(W ~ Weights of standard sizes in kilograms per 1000 pieces)

**Spring Pins (Rolled Pins)**

A2

Pernos ranurado

Goupilles élastiques exécution lourdes



<b>d</b>	<b>1</b>	<b>1.5</b>	<b>2</b>	<b>2.5</b>	<b>3</b>	<b>3.5</b>	<b>4</b>	<b>4.5</b>	<b>5</b>	<b>6</b>	<b>8</b>	<b>10</b>
a	0.15	0.25	0.35	0.4	0.5	0.6	0.65	0.8	0.9	1.2	2	2
d1 min.	1.2	1.7	2.3	2.8	3.3	3.8	4.4	4.9	5.4	6.4	8.5	10.5
d2	0.8	1.1	1.5	1.8	2.1	2.3	2.8	2.9	3.4	3.9	5.5	6.5
s	0.2	0.3	0.4	0.5	0.6	0.75	0.8	1	1	1.25	1.5	2

<b>d</b>	<b>L</b>	<b>W</b>
5	8	.754
5	10	.942
5	12	1.13
5	14	1.32
5	16	1.51
5	18	1.70
5	20	1.88
5	22	2.07
5	24	2.26
5	26	2.45
5	28	2.64
5	30	2.83
5	32	3.02
5	36	3.39
5	40	3.77
5	45	4.24
5	50	4.71
5	55	5.18
5	60	5.65
5	65	6.12
5	70	6.59
6	10	1.38
6	12	1.66
6	14	1.94
6	16	2.21

<b>d</b>	<b>L</b>	<b>W</b>
6	18	2.49
6	20	2.77
6	22	3.04
6	24	3.32
6	26	3.60
6	28	3.87
6	30	4.15
6	32	4.43
6	36	4.98
6	40	5.54
6	45	6.23
6	50	6.92
6	55	7.61
6	60	8.30
6	65	8.99
6	70	9.69
6	75	10.4
6	80	11.1
8	10	2.24
8	12	2.66
8	14	3.13
8	16	3.58
8	18	4.03
8	20	4.48
8	22	4.92

<b>d</b>	<b>L</b>	<b>W</b>
8	24	5.37
8	26	5.82
8	28	6.26
8	30	6.71
8	32	7.16
8	36	8.06
8	40	8.95
8	45	10.1
8	50	11.2
8	55	12.3
8	60	13.4
8	65	14.5
8	70	15.7
8	75	16.8
8	80	18.0
8	85	19.0
8	90	20.1
8	95	21.3
8	100	22.4
10	10	3.69
10	12	4.43
10	14	5.17
10	16	5.90
10	18	6.64
10	20	7.38

<b>d</b>	<b>L</b>	<b>W</b>
10	22	8.12
10	24	8.86
10	26	9.59
10	28	10.3
10	30	11.1
10	32	11.8
10	36	13.3
10	40	14.8
10	45	16.6
10	50	18.4
10	55	20.3
10	60	22.1
10	65	24.0
10	70	25.8
10	75	27.7
10	80	29.5
10	85	31.4
10	90	33.2
10	95	35.0
10	100	36.9

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

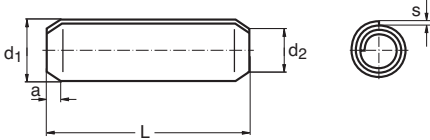


## Spiral Pins

Pernos espiral con media vuelta

Goupilles élastiques en spirale prym

A2
A4



d	1	1.5	2	2.5	3	4	5	6	8
a	0.3	0.5	0.7	0.8	1	1.3	1.7	2	3
$d_1$	1.1	1.62	2.15	2.65	3.15	4.2	5.25	6.25	8.35
$d_2$	0.95	1.4	1.9	2.35	2.85	3.8	4.8	5.8	7.75
s	0.08	0.13	0.17	0.21	0.25	0.33	0.42	0.5	0.67

d	L	W
1	4	.015
1	5	.019
1	6	.023
1	8	.030
1	10	.038
1	12	.045
1	14	.053
1.5	4	.033
1.5	5	.041
1.5	6	.049
1.5	8	.065
1.5	10	.082
1.5	12	.098
1.5	14	.114
1.5	16	.131
2	4	.060
2	5	.075
2	6	.090
2	8	.120
2	10	.150
2	12	.180
2	14	.220
2	16	.250
2	18	.280
2	20	.310

d	L	W
2.5	5	.125
2.5	6	.150
2.5	8	.190
2.5	10	.240
2.5	12	.290
2.5	14	.340
2.5	16	.390
2.5	18	.440
2.5	20	.480
2.5	22	.530
2.5	24	.580
3	8	.270
3	10	.330
3	12	.400
3	14	.470
3	16	.530
3	18	.600
3	20	.670
3	22	.730
3	24	.800
3	26	.870
3	28	.930
3	30	1.00
3	32	1.07
4	8	.500

d	L	W
4	10	.600
4	12	.710
4	14	.830
4	16	.950
4	18	1.07
4	20	1.19
4	22	1.31
4	24	1.43
4	26	1.55
4	28	1.67
4	30	1.79
4	32	1.91
4	36	2.14
4	40	2.38
4	45	2.64
4	50	2.97
5	10	.930
5	12	1.11
5	14	1.29
5	16	1.47
5	18	1.66
5	20	1.84
5	22	2.03
5	24	2.21
5	26	2.40

d	L	W
5	28	2.58
5	30	2.77
5	32	2.95
5	36	3.32
5	40	3.69
5	45	4.15
5	50	4.61
6	12	1.61
6	14	1.87
6	16	2.14
6	18	2.40
6	20	2.67
6	22	2.93
6	24	3.20
6	26	3.47
6	28	3.74
6	30	4.00
6	32	4.27
6	36	4.80
6	40	5.33
6	45	6.00
6	50	6.60
8	16	3.79
8	18	4.27
8	20	4.73

d	L	W
8	22	5.21
8	24	5.68
8	26	6.15
8	28	6.63
8	30	7.09
8	32	7.58
8	36	8.53
8	40	9.46
8	45	10.6
8	50	11.8

(W ~ Weights of standard sizes in kilograms per 1000 pieces)

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## General Information

### Información General

### Information Generale

#### **Rust is Dangerous.**

It attacks technical instruments, buildings, manufacturing plants, and especially fasteners. Fasteners must last for years, decades, and sometimes even longer. Fasteners made from stainless steel are safe because rust cannot destroy them.

#### **Rust is Uncontrollable.**

It can reach everything, especially those places that are unseen. The danger of rust is that it can spread and cause irreparable damage even in hidden and unexposed areas. Stainless steel fasteners are reliable in all such places.

#### **Rust Looks Ugly.**

Rust is dark and dirty. It detracts from the appearance of anything that it affects. It requires cleaning and maintenance, including a great deal of work. Stainless steel fasteners always look good. They require no maintenance or the costs that accompany it.

#### **Rust Destroys the Threads.**

Rust attacks threads, making surfaces crusty and uneven. Eventually, fasteners become impossible to loosen. Stainless steel fasteners can always be loosened.

#### **Rust is Expensive.**

Rust corrodes unalloyed steel year by year, deeper and deeper, millimeter by millimeter. The rate of corrosion is impossible to predict. For this reason larger than needed fasteners are often used to compensate for the weakness caused by corrosion. This creates enormous extra expenses. Stainless steel fasteners never have such problems. They always remain as they are for today, tomorrow, and forever.

#### **Rust Appears Where Oxygen is Found.**

Oxygen promotes corrosion on steel surfaces. Rust can be delayed by coating or painting these surfaces, but inevitably the coatings will peel and rust will begin. Stainless steel fasteners thrive on oxygen. It creates an invisible protective barrier that protects the fastener even if it is damaged.

#### **Rust is Not Standardized.**

Rust appears everywhere and affects everything that it touches differently. Its effects on any given material under various conditions is impossible to predict. Stainless steel fasteners, however, have standardized dimensions, strength, quality, and composition to ensure their performance under all harsh conditions. Rust,  $\text{Fe}_2\text{O}_3$ , is a constant. The surfaces it affects, though, are diverse. It is for this reason that Stainless steel fasteners are available in two main grades:

A2 for high demands

A4 for highest demands.

Stainless steel fasteners only require investment once.



## Stainless Steel is Rust-Proof

Fasteners made of the following materials are available from stock:

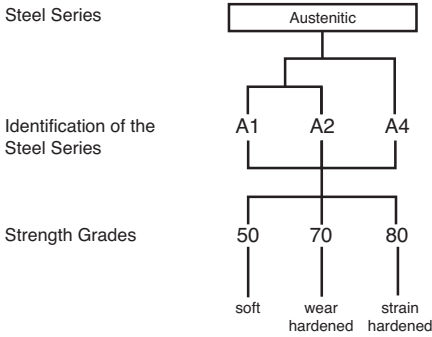
Steel Grade	Material No.	Definition of Alloy	Comparable Material No.
A1	1.4305	X 10 CrNiS 18.9	AISI 303
A2	1.4301 1.4303	X 5 CrNi 18.10 X 5 CrNi 18.12	AISI 304 AISI 305
A4	1.4401 1.4404	X 5 CrNiMo 17.12.2 X 2 CrNiMo 17.13.2	AISI 316 AISI 316L

Chemical composition by weight percent: (maximum limit in case of single values)

Material No.	C	Si	Mn	P	S	Cr	Mo	Ni	Steel Grade
1.4305	0.12	1.0	2.0	0.045	0.15 to 0.35	17.0 to 19.0	0.6	8.0 to 10.0	A1
1.4301	0.07	1.0	2.0	0.045	0.030	17.0 to 19.0	-	8.0 to 11.0	A2
1.4303	0.10	1.0	2.0	0.045	0.030	17.0 to 19.0	-	11.0 to 13.0	A2
1.4401	0.07	1.0	2.0	0.045	0.030	16.0 to 18.5	2.0 to 2.5	10.5 to 14.0	A4
1.4404	0.03	1.0	2.0	0.045	0.030	16.0 to 18.5	2.0 to 2.5	11.0 to 14.0	A4

## ISO-Steel Series

### Definition of ISO-Steel Series for fasteners made of rust and acid-proof steels (DIN 267 - ISO 3506)



### Chemical Composition

Group of Materials	Steel Series	Chemical Composition by %.								Remarks
		C	Si	Mn	P	S	Cr	Mo <sup>8)</sup>	Ni	
Austenitic	A1	0.12	1.0	2.0	0.20	0.15 to 0.35	17.0 to 19.0	0.6	8.0 to 10.0	2), 3)
	A2	0.08	1.0	2.0	0.05	0.03	17.0 to 20.0	-	8.0 to 13.0	3), 4), 5), 7)
Austenitic	A4	0.08	1.0	2.0	0.05	0.03	16.0 to 18.5	2.0 to 3.0	10.0 to 14.0	3), 4), 5)

- 1) Maximum values if not otherwise indicated.
- 2) Sulphur may be substituted by selenium.
- 3) May contain titanium  $\geq 5 \times C$  up to 0.8%.
- 4) May contain niobium (columbium) and/or tantalum  $\geq 10 \times C$  up to max. 1%.
- 5) May contain copper up to max. 4%.
- 6) It is left to the discretion of the producer to increase the carbon content if it is necessary in order to achieve the mechanical strength values, particularly in case of larger diameters.
- 7) Molybdenum allowed, if required by the producer.
- 8) If for certain applications a maximum content of molybdenum is required, this must be specified when ordering.



## Mechanical Characteristics of joining elements (DIN 267 - ISO 3506)

### Austenitic steel series

Group of Materials	Steel Series	Strength Class	Range of diameters	Screws			Nuts
				Tensile Strength $R_m$ N/mm <sup>2</sup> min. <sup>1</sup>	0.2 % Proof Limit $R_p 0.2$ N/mm <sup>2</sup> min. <sup>1</sup>	Elongation at break AL mm min. <sup>2</sup>	Test Voltage $S_p$ N/mm <sup>2</sup>
Austenitic	A1, A2	50	≤ M39	500	210	0.6 d	500
		70	≤ M20	700	450	0.4 d	700
			> M20 ≤ M30 <sup>3)</sup>	500	250	0.4 d	500
		80	≤ M20 <sup>3)</sup>	800	600	0.3 d	800
Austenitic	A4	50	≤ M39	500	210	0.6 d	500
		70	≤ M20	700	450	0.4 d	700
			> M20 ≤ M30 <sup>3)</sup>	500	250	0.4 d	500
		80	≤ M20 <sup>3)</sup>	800	600	0.3 d	800

<sup>1)</sup> All values are calculated on basis of and related to the stressed section of the thread.

<sup>2)</sup> The elongation at break is determined at the respective length of the screw and not at samples twisted off.

<sup>3)</sup> For diameters exceeding M30 resp. M20 the strength values are subject to a special agreement between customer and manufacturer.

## Breakage Torques

### Minimum breakage torques ( $T_m$ ) for screws up to M5 in steel series A1, A2, and A4

Nominal size of thread	Minimum torques at breakage		
	Strength class 50 N m	Strength class 70 N m	Strength class 80 N m
M1.6	0.15	0.2	0.27
M2	0.3	0.4	0.56
M2.5	0.6	0.9	1.2
M3	1.1	1.6	2.1
M4	2.7	3.8	4.9
M5	5.5	7.8	10.0

The minimum torques at breakage for other steels series and strength classes have to be agreed upon between customer and manufacturer.

### Application in higher and lower temperature ranges

#### 0.2% proof limit ( $R_{p0.2}$ ) and yield point ( $R_{eL}$ ) at higher temperatures in % of the values at ambient temperature (based on: Mechanical characteristics)

Steel Series	+100 °C	+200 °C	+300 °C	+400 °C
A2	85 <sup>1)</sup>	80 <sup>1)</sup>	75 <sup>1)</sup>	70 <sup>1)</sup>
A4	85 <sup>1)</sup>	80 <sup>1)</sup>	75 <sup>1)</sup>	70 <sup>1)</sup>

<sup>1)</sup> These values are only applicable to joining elements of strength class 70, while for strength class 50 the values according to DIN 17 440 are applicable.

Joining elements of steel series A1, F1 and C4 are not used at higher temperatures.

Joining elements of steel series A2 and A4 can be used at low temperatures down to -196 °C and at higher temperatures up to +450 °C.



## Steel qualities for the production of fasteners

Rust and acid resistant steels used in according with DIN 267 and ISO 3506 for the production of fasteners:

### Chemical Composition

#### Austenitic Steels

Type of Steel	C %	Si %	Mn %	P %	S %	Cr %	Mo %	Ni %	Other Elements %	Steel Series	Comparable steel qualities according to DIN 17 440
11	0.07	1.0	2.0	0.045	0.030	17.0 to 19.0	-	8.0 to 11.0	-	A2	1.4301
17	0.12	1.0	2.0	0.045	0.15 to 0.35	17.0 to 19.0	0.60 max	8.0 to 10.0	-	A1	1.4305
13	0.10	1.0	2.0	0.045	0.030	17.0 to 19.0	-	11.0 to 13.0	-	A2	1.4303
19	0.030	1.0	2.0	0.045	0.030	16.0 to 18.5	2.0 to 2.5	11.0 to 14.0	-	A4	1.4404
20	0.07	1.0	2.0	0.045	0.030	16.0 to 18.5	2.0 to 2.5	10.5 to 14.0	-	A4	1.4401

#### Note:

The list of rust and acid resistant steel qualities depends on the intended new version of ISO 683/XIII. The values given in the table are maximum values if not otherwise stated.





\*\*\*\*\***Stainless Steel Fasteners**

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**Freight**

We offer same day shipping on most orders. Freight is prepaid for orders over \$750 shipping via ground carrier within the continental United States.

**Payment Terms**

We offer C.O.D. or Net 30 with approved credit, and accept most major credit cards.

**Return Policy**

Return of merchandise will be accepted within 30 days from the date of sale and only with prior return authorization. A restocking fee may be applied. Special orders cannot be returned.

**Warranty**

Brikksen Incorporated warrants all products to be free from defects. If a product is found to be defective, Brikksen Incorporated reserves the right, at our discretion, to replace any portion of the defective material or to refund the original purchase price.

\*\*\*\*\***Brikksen**

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