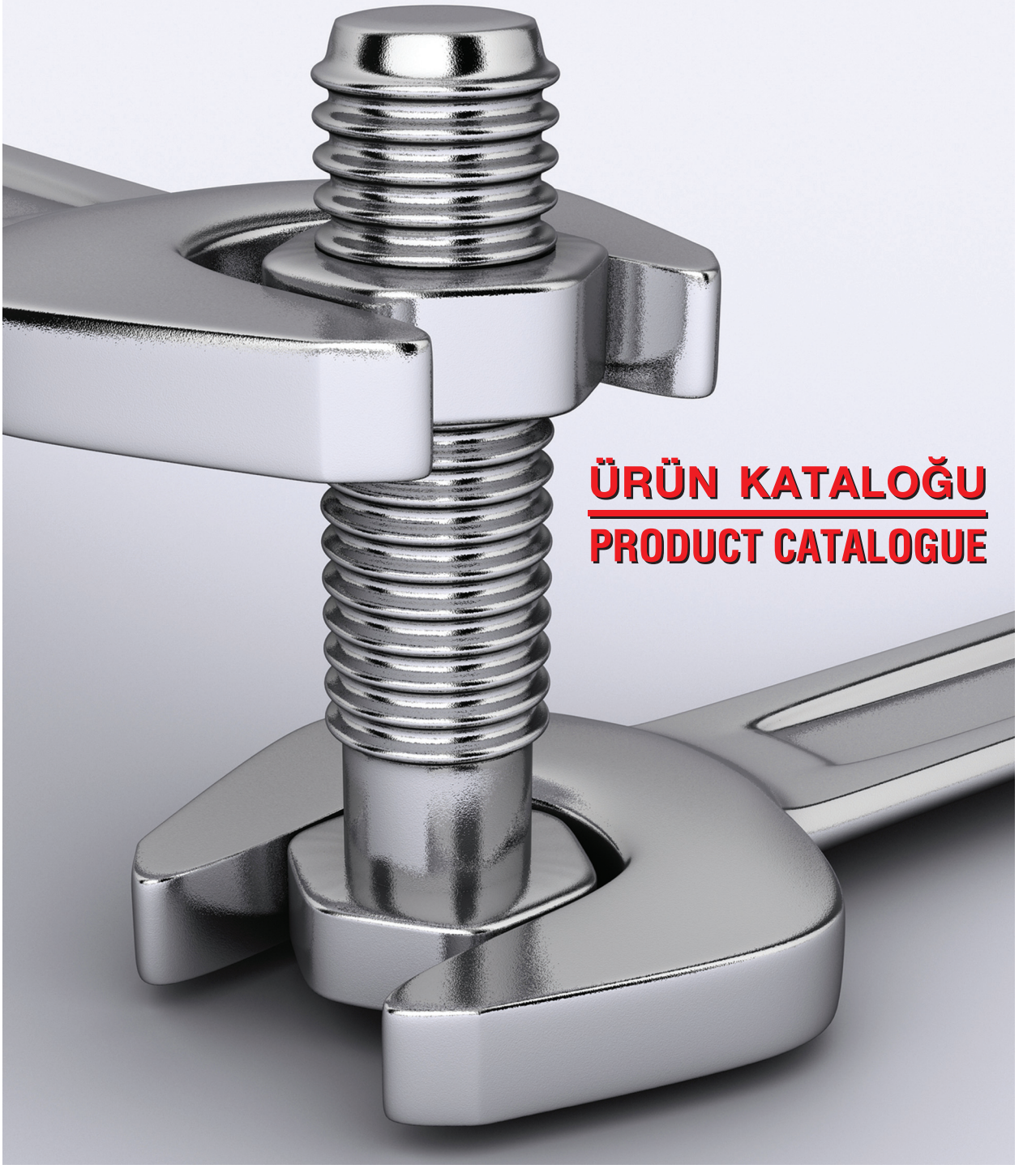
Çetin Civata

EXCELLENT FASTENER SUPPLIER

~ Since 1976 ~



ÜRÜN KATALOĞU

PRODUCT CATALOGUE

Çetin Civata



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TEL ÇEKME

Çetin Civata yurtiçi ve yurtdışından tedarik ettiği hammaddeyi kendi tesislerinde tek ve çok kafalı tel çekme makinalarıyla (2-24 mm) üretime hazır hale getirip, gerek duyulan durumlarda ara tav işlemine de tabi tutulmaktadır.



KAPLAMA

Gelişen müşteri istekleri doğrultusunda ürünlerimize değişik yüzey kaplama çeşitleri uygulamaktayız.:

- Elektro Çinko Kaplama (Beyaz, Sarı ve Mavi)
- Sıcak Daldırma Galvaniz
- Dacromet
- Delta Seal
- Torque'n Tension
- Delta Tone
- Delta Protect
- Geomet vbg.

Tam otomatik elektro galveniz kaplama tesisimiz saatte 2 ton kapasite ile (Krom VISIZ) 2005'te devreye girmiştir.



KALIPHANE

Üretim için gerekli olan kalıp ve yedek parçalar firmamızın bünyesinde bulunan kalıphanede imal edilmektedir.



ISIL İŞLEM

İki adet 1.200 kg/Saat Kapasiteli, Atmosfer ve PLC Kontrollü, Kontinu Isıl İşlem hattımızda 8.8, 10.9, 12.9 Kalitede ıslah veya korbonitrasyon yapılmaktadır.

KALİTE KONTROL

Çetin Civata yaptığı ürünlerin her türlü projesini kontrol edebilen, donanımlı ve deneyimli bir kalite kontrol labaratuarına sahiptir.



İMALAT

Çetin Civata'da 100'ün üzerindeki 2,3,4,5 ve 6 istasyonlu soğuk dövme tezgahlarında M3 x 6'dan M20 x 200'e kadar uluslararıs standartlarda (DIN, ISO, ASTM, ANSI. vb.) ve özel müşteri isteklerine göre günlük yaklaşık altı milyon adet civata, vida, ve özel parça üretilmektedir.



PAKETLEME

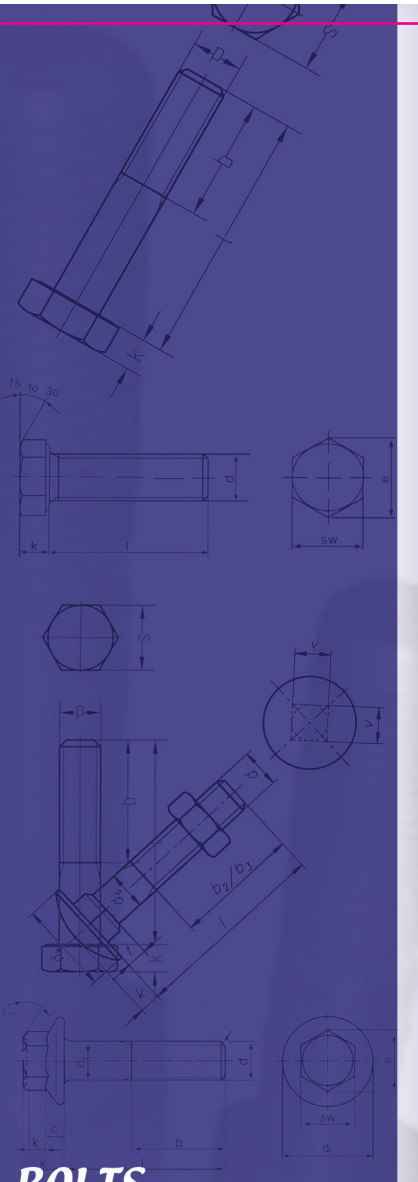
Değişen taleplere göre alternatif ambalaj şekilleri gelitirebilen Çetin Civata, tam otomatik paketleme makinasıyla en verimli şekilde malı sevkiyata hazır hale getirebilmektedir.



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BOLTS
CİVATALAR
SCHRAUBEN

Çetin Civata

MECHANICAL PROPERTIES OF CARBON AND LOW ALLOY STEEL BOLTS (COARSE THREAD)
SADE KARBONLU VE DÜŞÜK ALAŞIMLI ÇELİKTEN İMAL EDİLEN NORMAL DİŞLİ CİVATALARIN MEKANİK ÖZELLİKLERİ

MECHANICAL AND PHISICAL PROPERTY			PROPERTY CLASS										
				4.6	4.8	5.6	5.8	6.8	8.8		9.8	10.9	12.9
									d ≤ 16a	d > 16a			
Nominal tensile strength. $R_{mo,nom}$		N/mm²	300	400		500		600	800		900	1.000	1.200
Nominal tensile strength. $R_{mo,nom}$ [de]		N/mm²	330	400	420	500	520	600	800	830	900	1.040	1.220
Vickers hardness. HV $F \geq 98$ N		min.	95	120	130	155	160	190	250	255	290	320	385
		max.	220					250	320	335	360	380	435
Brinell hardness. HB		min.	90	114	124	147	152	181	238	242	276	304	366
$F = 30\ D^2$		max.	209					238	304	318	342	361	414
Rockwell hardness. HR	min.	HRB	52	67	71	79	82	89	-	-	-	-	-
		HRC	-	-	-	-	-	-	22	23	28	32	39
	max.	HRB	95.0					99.5	-	-	-	-	-
		HRC	-					-	32	34	37	39	44
Surface hardness. HV 0.3		max.	-						g				
Lower yield stress.		nom.	180	240	320	300	400	480	-	-	-	-	-
$R_{m,l}$[h] N/mm²		min.	190	240	340	300	420	480	-	-	-	-	-
Stress at 0.2 % non-proportional elongation. $R_{po,2}$[i] N/mm²		nom.	-					-	640		720	900	1.080
		min.	-					-	640	660	720	940	1.100
Stress under proof load. S_p	S_p/R_{eL} or $S_p/R_{po,2}$		0.94		0.91	0.93	0.90	0.92	0.91		0.90	0.88	
		N/mm²	180	225	310	280	380	440	580	600	650	830	970
Breaking torque. M_g		Nm min.	See ISO 898-7										
Percent elogation after fracture. *A*		min.	25	22	-	20	-	-	12		10	9	8
Reduction area after fracture. *Z*		% min.	52								48		44
Impact strength. *KU*		J min.	-			25	-		30		25	20	15
Head soundness.			Non fracture.										
Minimum height of non-decarburized thread zone. *E*			-						1/2 H_1			2/3 H_1	3/4 H_1
Maximum depth of complete decarbuization. *G*		min.	-						0.015				
Hardness after retempering.			-						Reduction of hardness 20HV maximum.				
Surface intergity.			in accordance with ISO 6157-1 or ISO 6157-3 as appropriate.										

CLERANCE HOLES FOR BOLTS
CİVATALAR İÇİN DELİK ÖLÇÜLERİ

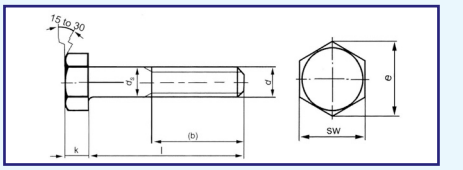
ISO 273-1979		*CLERANCE HOLE* / DELİK ÇAPI d_h										
		M2.5	**M3**	**M3.5**	**M4**	**M4.5**	**M5**	**M6**	**M7**	**M8**	**M10**	**M12**
	Fine	2.7	3.2	3.7	4.3	4.8	5.3	6.4	7.4	8.4	10.5	13
	Medium	2.9	3.4	3.9	4.5	5	5.5	6.6	7.6	9	11	13.5
	Coarse	3.1	3,6	4.2	4.8	5.2	5.8	7	8	10	12	14.5
		M14	**M16**	**M18**	**M20**	**M22**	**M24**	**M27**	**M30**	**M33**	**M36**	**M39**
	Fine	15	17	19	21	23	25	20	31	34	37	40
	Medium	15.5	17.5	20	22	24	26	30	33	36	39	42
	Coarse	16.5	18.6	21	24	28	28	32	36	38	42	46

OPTIMAL NUT FOR THE BOLT
CİVATALAR İÇİN UYGUN SOMUN EŞLEŞTİRMESİ

PROPERTY CLASS / DAYANIM SINIFI		3.6	4.6	4.8	5.6	5.8	6.8	8.8	9.8	10.9	12.9
NUT / SOMUN		5					6	8	9	10	12

PROPERTIES OF STELL AT ELEVATEO TEMPERATURE
YÜKSEK SICAKLIKLARDA ÇELİKLERİN ÖZELLİKLERİ

TEMPERATURE / SICAKLIK		*PROPERTY CLASS* / DAYANIM SINIFI			
		5.6	8.8	10.9	12.9
Lower yield stress R_{4L} proff stress R_{p03} N/mm²	+20	300	640	640	1.100
	+100	270	590	875	1.020
	+200	230	540	790	925
	+250	215	510	745	875
	+300	195	480	705	825



HEXAGON HEAD BOLTS
ALTIKÖŞE BAŞLI CİVATALAR
SECHSKANTSCHRAUBEN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M39
Pitch / Diş adımı	P	0.50	0.70	0.80	1.00	1.00	1.25	1.50	1.75	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.50	3.50	4.00	4.00
Wire dia / Tel çapı	min.	2.86	3.82	4.82	5.82	6.78	7.78	9.78	11.73	13.73	15.73	17.73	19.67	21.67	23.67	26.48	29.48	32.38	35.38	38.38
Head heigh / Kafa yüksekliği	k	2.0	2.8	3.5	4.8	4.8	5.3	6.4	7.5	8.8	10.0	11.5	12.5	14.0	15.0	17.0	18.7	21.0	22.5	25.0
	+/-	1.12	0.12	0.15	0.15	0.15	0.15	0.18	0.18	0.18	0.18	0.22	0.22	0.22	0.22	0.35	0.42	0.42	0.42	0.42
Head with/Anahtar a	sw	5.5	7	8	10	11	13	17	19	22	24	27	30	32	36	41	46	50	55	60
Diagonal / Köşegen	e	6.01	7.66	8.79	11.05	12.12	14.38	18.90	21.10	24.49	26.75	30.14	33.53	35.72	39.98	45.20	50.85	55.37	60.79	66.44
Thread length / Diş uzunluğu	b^1	12	14	16	18	20	22	26	30	34	38	42	46	50	54	60	66	72	78	84
	b^2	-	-	22	24	26	28	32	36	40	44	48	52	56	60	66	72	78	84	90
	b^3	-	-	-	-	-	-	45	49	53	57	61	65	69	73	79	85	91	97	103

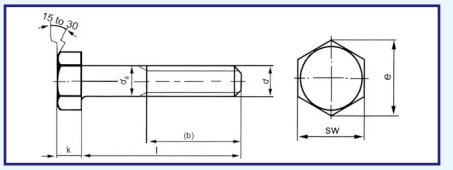
b^1 : *Thread length for bolts up to 125mm.* / 125mm. Boya kadar olan civatalar için diş boyu.

b^2 : *Thread length for bolts between 125mm. & 200mm.* / 125mm & 200mm. Boylar arasındaki civatalar için diş boyu.

b^3 : *Thread length for bolts more than 200mm.* / 200mm. 'Den uzun boylu civatalar için diş boyu.

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M39
Length / Boy			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.																		
20	+/-	0.42	1.29																		
22	+/-	0.42	1.43																		
25	+/-	0.42	1.57	3.12	4.86																
28	+/-	0.42	1.71	3.32	5.25																
30	+/-	0.42	1.85	3.61	5.64	8.06	12.7														
35	+/-	0.50		4.04	6.42	9.13	13.6	18.2													
40	+/-	0.50		4.53	7.20	10.2	15.1	20.3	35.0												
45	+/-	0.50			7.98	11.3	16.6	22.2	38.0	53.6											
50	+/-	0.60			8.76	12.3	18.1	24.2	41.1	58.1	82.0										
55	+/-	0.60				13.4	19.5	25.8	43.8	62.6	88.1	115									
60	+/-	0.60				14.4	21.0	27.8	46.9	67.0	94.1	123									
65	+/-	0.60				15.5	22.5	29.8	50.0	70.3	98.8	131	171	219							
70	+/-	0.60				16.6	24.0	31.8	53.1	74.7	105	139	181	231	281						
75	+/-	0.60				17.6		33.7	56.2	79.1	111	147	191	243	296						
80	+/-	0.70				18.7		35.7	59.3	83.6	117	155	200	255	311	392					
85	+/-	0.70				19.8		37.6	62.4	88.1	123	163	210	267	326	410					
90	+/-	0.70				20.9		39.5	65.5	92.4	127	171	220	279	341	428	557	712			
95	+/-	0.70				21.9		41.4	68.6	96.8	133	179	230	291	356	446	580	739			
100	+/-	0.70				23.0		43.3	71.7	101	139	186	240	303	370	464	603	767	951		
110	+/-	0.70				25.2		47.2	76.6	109	151	202	260	327	400	500	650	823	1.020	1.240	
120	+/-	0.70				27.3		51.1	82.2	118	164	218	280	351	430	535	695	880	1.090	1.320	1.510
130	+/-	0.80				29.7		54.1	87.6	126	174	230	296	374	450	560	720	920	1.150	1.390	1.580
140	+/-	0.80				31.8		57.9	93.6	134	185	246	316	398	480	595	765	975	1.220	1.470	1.660
150	+/-	0.80				34.0		61.7	99.6	143	195	262	336	422	510	630	810	1.030	1.290	1.550	1.740
160	+/-	0.80										278	356	446	540	665	855	1.085	1.350	1.630	1.830
170	+/-	0.80											376	470	570	700	900	1.140	1.410	1.710	1.920
180	+/-	0.80											396	494	600	735	945	1.200	1.480	1.790	2.010
190	+/-	0.92												519	630	770	990	1.250	1.540	1.870	2.100
200	+/-	0.92												544	660	805	1.030	1.310	1.610	1.950	2.200
220	+/-	2.30													720	870	1.130	1.420	1.750	2.110	2.410
240	+/-	2.30														935	1.220	1.530	1.880	2.270	2.600
260	+/-	2.60															1.310	1.640	2.020	2.430	2.800
280	+/-	2.60																1.750	2.150	2.590	3.010
300	+/-	2.60																1.860	2.290	2.750	3.210



HEXAGON HEAD BOLTS
ALTIKÖŞE BAŞLI CİVATALAR
SECHSKANTSCHRAUBEN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M3	M4	M5	M6	M8	M10	M12	M14	M16	M20	M24	M30	M36
Pitch / Diş adımı	P	0.50	0.70	0.80	1.00	1.25	1.50	1.75	2.00	2.00	2.50	3.00	3.00	4.00
Wire dia / Tel çapı	min.	2.86	3.82	4.82	5.82	7.78	9.78	11.73	13.73	15.73	19.67	23.67	29.67	35.61
Head heigh / Kafa yüksekliği	k	2.0	2.8	3.5	4.0	5.3	6.4	7.5	8.8	10.0	12.5	15.0	18.7	22.5
	+/-	1.12	0.12	0.15	0.15	0.15	0.18	0.18	0.18	0.18	0.22	0.22	0.42	0.42
Head with/Anahtar a	sw	5.5	7	8	13	13	16	18	21	24	30	36	46	55
Diagonal / Köşegen	e	6.07	7.66	8.79	14.38	14.38	17.77	20.03	23.35	26.75	33.53	39.98	50.85	60.79
Thread length / Diş uzunluğu	b^1	12	14	16	22	22	26	30	34	38	46	54	66	78
	b^2	-	-	-	28	28	32	36	40	44	52	60	72	84
	b^3	-	-	-	-	-	-	-	-	57	65	73	85	97

b^1 : *Thread length for bolts up to 125mm.* / 125mm. Boya kadar olan civatalar için diş boyu.

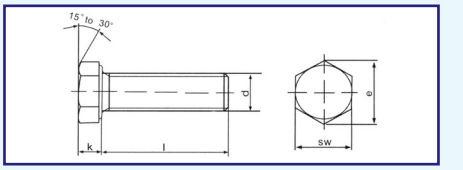
b^2 : *Thread length for bolts between 125mm. & 200mm.* / 125mm & 200mm. Boylar arasındaki civatalar için diş boyu.

b^3 : *Thread length for bolts more than 200mm.* / 200mm. 'Den uzun boylu civatalar için diş boyu.

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M3	M4	M5	M6	M8	M10	M12	M14	M16	M20	M24	M30	M36
Length / Boy			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.												
20	+/-	0.42	1.29												
22	+/-	0.42	1.43												
25	+/-	0.42	1.57	3.12	4.86										
28	+/-	0.42	1.71	3.32	5.25										
30	+/-	0.42	1.85	3.61	5.64	8.06	16.10								
35	+/-	0.50		4.04	6.42	9.13	18.20	29.46	42.13						
40	+/-	0.50		4.53	7.20	10.20	20.30	32.48	46.66						
45	+/-	0.50			7.98	11.30	22.20	35.49	51.00	72.66	99.0				
50	+/-	0.50			8.76	12.30	24.20	38.51	55.53	78.59	107				
55	+/-	0.60			9.54	13.40	25.80	41.52	59.67	84.50	115				
60	+/-	0.60				14.40	27.80	44.53	64.01	90.40	123	207			
65	+/-	0.60				15.50	29.80	47.55	68.35	96.40	131	219			
70	+/-	0.60				16.60	31.80	50.56	72.68	102.3	139	231			
75	+/-	0.60				17.60	33.70	53.57	77.02	108.2	147	243			
80	+/-	0.60				18.70	35.70	56.59	81.36	114.1	155	255	392		
85	+/-	0.60				19.80	37.60	59.60	85.70	120.0	163	267	410		
90	+/-	0.70				20.90	39.50	62.62	90.03	126.0	171	279	428	712	
95	+/-	0.70				21.90	41.40	65.63	94.37	132.0	179	291	446	739	
100	+/-	0.70				23.00	43.30	68.64	98.71	138.0	186	303	464	767	
110	+/-	0.70				25.20	47.20	74.67	107.4	150.0	202	327	500	823	1.240
120	+/-	0.70				27.30	51.10	80.70	116.1	162.0	218	351	535	880	1.320
130	+/-	0.80				29.70	54.10	86.05	123.8	172.0	230	374	560	920	1.390
140	+/-	0.80				31.80	57.90	92.08	132.5	184.0	246	398	595	975	1.40
150	+/-	0.80				34.00	61.70	98.11	141.2	196.0	262	422	630	1.030	1.550
160	+/-	0.80				36.00	65.50	104.1	149.9	208.0	278	446	665	1.085	1.630
170	+/-	0.80									294	470	700	1.140	1.710
180	+/-	0.80									300	494	735	1.200	1.790
190	+/-	0.92									316	519	770	1.250	1.870
200	+/-	0.92									332	544	805	1.310	1.950
220	+/-	0.92											870	1.420	2.110
240	+/-	0.92											935	1.530	2.270
260	+/-	1.05												1.640	2.430
280	+/-	1.05												1.750	2.590
300	+/-	1.05												1.860	2.750

"DIN933"



HEXAGON HEAD BOLTS THREADED UP TO HEAD
ALTIKÖŞE BAŞLI TAM DİŞLİ CİVATALAR
SECHSKANTSCHRAUBEN MIT GEWINDE BIS KOPF

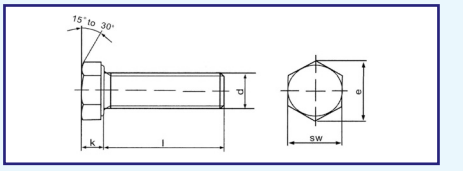
Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M39
Pitch / Diş adımı	P	0.50	0.70	0.80	1.00	1.00	1.25	1.50	1.75	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.50	3.50	4.00	4.00
Head heigh / Kafa yüksekliği	k	2.0	2.8	3.5	4.0	4.8	5.3	6.4	7.5	8.8	10.0	11.5	12.50	14.0	15.0	17.0	18.7	21.0	22.5	25.0
	+/-	0.12	0.12	0.15	0.15	0.15	0.15	0.16	0.18	0.18	0.18	0.22	0.22	0.22	0.22	0.35	0.42	0.42	0.42	0.42
Head with/Anahtar a	sw	5.5	7	8	10	11	13	17	19	22	24	27	30	32	36	41	46	50	55	60
Diagonal / Köşegen	e	6.01	7.66	8.79	11.05	12.12	14.38	18.90	21.10	24.49	26.75	30.14	33.53	35.72	39.98	45.20	50.85	55.37	60.79	66.44

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M39
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.																		
10	+/-	0.29	0.75	1.64	2.63	4.08	6.35	9.10	16.2	23.3	38.0										
12	+/-	0.35	0.84	1.80	2.87	4.42	6.85	9.80	17.2	25.0	40.0	52.9									
14	+/-	0.35	0.92	1.95	3.12	4.76	7.35	10.5	18.2	26.4	42.0	55.6									
16	+/-	0.35	1.00	2.10	3.37	5.11	7.85	11.1	19.2	27.7	44.0	58.3	82.0	105	133	173					
18	+/-	0.35	1.09	2.25	3.62	5.45	8.35	11.7	20.2	29.1	46.0	60.9	84.9	110	137	178					
20	+/-	0.42	1.18	2.41	3.87	5.80	8.85	12.3	21.2	31.0	48.0	63.5	87.2	114	143	184					
22	+/-	0.42	1.27	2.56	4.12	6.15	9.35	12.9	22.2	33.0	50.0	66.2	92.2	119	148	190	269				
25	+/-	0.42	1.40	2.80	4.49	6.65	10.0	13.9	23.7	34.1	53.0	70.2	95.8	124	155	199	280				
28	+/-	0.42	1.52	3.04	4.86	7.15	10.7	14.9	25.2	36.2	55.9	74.2	100	129	161	205	292				
30	+/-	0.42	1.61	3.19	5.11	7.51	11.3	15.5	26.2	37.7	57.9	76.9	104	134	168	214	310				
35	+/-	0.50		3.57	5.73	8.37	12.5	17.1	28.7	41.3	62.9	83.5	112	145	181	229	319	424	543	670	869
40	+/-	0.50		3.96	6.35	9.23	13.8	18.7	31.2	44.9	67.9	90.2	120	155	193	244	338	448	572	714	910
45	+/-	0.50		4.34	6.99	10.1	15.0	20.3	33.7	48.5	72.9	97.1	128	165	206	259	358	472	601	748	951
50	+/-	0.50		4.73	7.59	11.0	16.3	21.8	36.2	52.0	77.9	103	136	176	219	274	377	496	630	783	992
60	+/-	0.60		5.50	8.83	12.7	18.7	25.0	41.3	58.2	87.8	117	153	196	244	304	416	543	688	851	1.070

"EN ISO 4017"



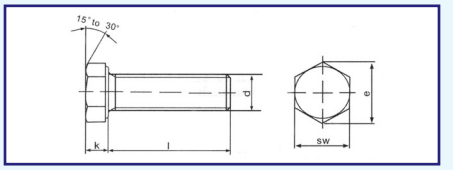
HEXAGON HEAD BOLTS THREADED UP TO HEAD
ALTIKÖŞE BAŞLI TAM DİŞLİ CİVATALAR
SECHSKANTSCHRAUBEN MIT GEWINDE BIS KOPF

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M39
Pitch / Diş adımı	P	0.50	0.70	0.80	1.00	1.00	1.25	1.50	1.75	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.50	3.50	4.00	4.00
Head heigh / Kafa yüksekliği	k	2.0	2.8	3.5	4.0	4.8	5.3	6.4	7.5	8.8	10.0	11.5	12.50	14.0	15.0	17.0	18.7	21.0	22.5	25.0
	+/-	0.12	0.12	0.15	0.15	0.15	0.15	0.18	0.18	0.18	0.18	0.22	0.22	0.22	0.22	0.35	0.42	0.42	0.42	0.42
Head with/Anahtar a	sw	5.5	7	8	10	11	13	17	19	22	24	27	30	32	36	41	46	50	55	60
Diagonal / Köşegen	e	6.01	7.66	8.79	11.05	12.12	14.38	18.90	21.10	24.49	26.75	30.14	33.53	35.72	39.98	45.20	50.85	55.37	60.79	66.44

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M39
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.																		
10	+/-	0.29	0.75	1.64	2.63	4.08		9.10													
12	+/-	0.35	0.84	1.80	2.87	4.42		9.80	17.34	25.45		52.9									
14	+/-	0.35	0.92	1.95	3.12	4.76		10.5	18.32	26.87		55.6									
16	+/-	0.35	1.00	2.10	3.37	5.11		11.1	19.30	28.30		58.3		105		173					
18	+/-	0.35	1.09	2.25	3.62	5.45		11.7	20.28	29.72		60.9		110		178					
20	+/-	0.42	1.18	2.41	3.87	5.80		12.3	21.26	31.14	46.40	63.5		114		184					
22	+/-	0.42	1.27	2.56	4.12	6.15		12.9	22.24	32.56	48.35	66.2		119		190					
25	+/-	0.42	1.40	2.80	4.49	6.65		13.9	23.72	34.70	51.28	70.2		124		199					
28	+/-	0.42	1.52	3.04	4.86	7.15		14.9	25.19	36.83	54.20	74.2		129		205					
30	+/-	0.42	1.61	3.19	5.11	7.51		15.5	26.17	38.26	56.15	76.9		134		214					
35	+/-	0.50		3.57	5.73	8.37		17.1	28.63	41.18	61.03	83.5		145		229		424		670	
40	+/-	0.50		3.96	6.35	9.23		18.7	31.08	45.37	65.90	90.2		155		244		448		714	
45	+/-	0.50		4.34	6.99	10.1		20.3	33.53	48.93	70.78	97.1		165		259		472		748	
50	+/-	0.50		4.73	7.59	11.0		21.8	35.99	52.49	75.66	103		176		274		496		783	
60	+/-	0.60		5.50	8.83	12.7		25.0	40.90	59.60	85.41	117		196		304		543		851	



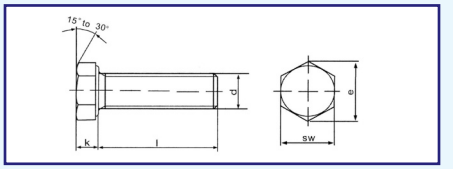
HEXAGON HEAD BOLTS FINE THREADED UP TO HEAD
ALTIKÖŞE BAŞLI İNCE TAM DİŞLİ CİVATALAR
SECHSKANTSCHRAUBEN MIT FEIN GEWINDE BIS KOPF

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M8	M10	M12	M14	M16	M18	M20	M22	M24
Pitch / Diş adımı	P	1.00	1.00	1.25	1.50	1.50	1.50	1.50	2.00	1.50
Head heigh / Kafa yüksekliği	k	5.3	6.4	7.5	8.8	10	11.5	12.5	14.0	15.0
	+/-	0.15	0.18	0.18	0.18	0.18	0.22	0.22	0.22	0.22
Head with/Anahtar a	sw	13	17	19	21	24	27	30	32	36
Diagonal / Köşegen	e	14.38	18.90	21.10	24.49	26.75	30.14	33.53	35.72	39.98

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M8	M10	M12	M14	M16	M18	M20	M22	M24
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.								
20	+/-	0.42	12.4	23.5	32.9	48.7	64.5	90.0	118	146	189
25	+/-	0.42	14.1	26.2	36.6	54.0	71.5	98.5	128	158	205
30	+/-	0.42	15.7	28.9	40.3	59.1	78.5	107	139	172	221
35	+/-	0.50	17.4	31.6	44.0	64.4	85.3	116	151	185	238
40	+/-	0.50	19.1	34.3	47.7	69.6	92.3	124	162	198	254
45	+/-	0.50	20.7	36.9	51.4	74.9	99.0	133	172	212	270
50	+/-	0.50	22.3	39.6	55.0	80.2	106	142	184	226	287
55	+/-	0.60	24.0	42.3	58.7	85.4	113	151	195	240	303
60	+/-	0.60	25.7	45.1	62.4	90.6	120	160	207	253	319
70	+/-	0.60	29.0	50.5	70.0	101	134	177	228	280	352
80	+/-	0.60	32.3	55.8	77.4	111	148	195	251	307	384
90	+/-	0.70	35.7	61.2	84.8	122	162	212	272	335	415
100	+/-	0.70	38.9	66.7	92.2	133	176	229	295	361	448
110	+/-	0.70	42.4	72.2	99.2	144	190	247	317	388	481
120	+/-	0.70	45.9	77.5	107	154	204	265	339	415	513



"EN ISO 8766"

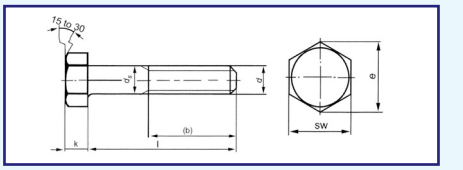
HEXAGON HEAD BOLTS FINE THREADED UP TO HEAD
ALTIKÖŞE BAŞLI İNCE TAM DİŞLİ CİVATALAR
SECHSKANTSCHRAUBEN MIT FEIN GEWINDE BIS KOPF

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M8	M10	M12	M14	M16	M18	M20	M22	M24
Pitch / Diş adımı	P	1.00	1.00	1.25	1.50	1.50	1.50	1.50	2.00	1.50
Head heigh / Kafa yüksekliği	k	5.3	6.4	7.5	8.8	10.0	11.5	12.5	14.0	15.0
	+/-	0.15	0.18	0.18	0.18	0.18	0.22	0.22	0.22	0.22
Head with/Anahtar a	sw	13	16	18	21	24	27	30	32	36
Diagonal / Köşegen	e	14.38	17.77	20.03	23.36	26.75	30.14	33.53	35.72	39.98

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M8	M10	M12	M14	M16	M18	M20	M22	M24
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.								
20	+/-	0.42	12.4	22.0	31.6		64.5	90.0	118	146	189
25	+/-	0.42	14.1	24.7	35.3	52.6	71.5	98.5	128	158	205
30	+/-	0.42	15.7	27.3	39.0	57.8	78.5	107	139	172	221
35	+/-	0.50	17.4	30.0	42.6	62.9	85.3	116	151	185	238
40	+/-	0.50	19.1	32.6	46.3	68.1	92.3	124	162	198	254
45	+/-	0.50	20.7	35.3	50.0	73.1	99.0	133	172	212	270
50	+/-	0.50	22.3	37.9	53.7	78.3	106	142	184	226	287
55	+/-	0.60	24.0	40.5	57.3	83.5	113	151	195	240	303
60	+/-	0.60	25.7	43.1	61.0	88.6	120	160	207	253	319
70	+/-	0.60	29.0	48.5	68.4	98.9	134	177	228	280	352
80	+/-	0.60	32.3	53.8	75.7	109	148	195	251	307	384
90	+/-	0.70	35.7	59.1	83.1	120	162	212	272	335	415
100	+/-	0.70	38.9	64.3	90.4	130	176	229	295	361	448
110	+/-	0.70	42.4		97.7	140	190	247	317	388	481
120	+/-	0.70	45.9			150	204	265	339	415	513



HEXAGON HEAD BOLTS FINE THREADED
ALTIKÖŞE BAŞLI İNCE DİŞLİ CİVATALAR
SECHSKANTSCHRAUBEN MIT FEINGEWINDE

Technical informations. / Teknik bilgiler.

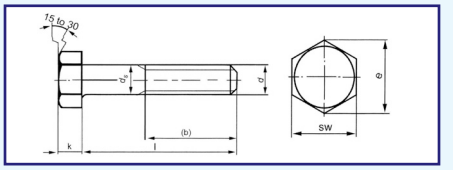
Thread size / Anma çapı		M8	M10	M12	M14	M16	M18	M20	M22	M24
Pitch / Diş adımı	P	1.00	1.25 / 1.00	1.50 / 1.25	1.50	1.50	2.00 / 1.50	2.00 / 1.50	2.00 / 1.50	2.00 / 1.50
Wire dia / Tel çapı	min.	7.78	9.78	11.73	13.73	15.73	17.73	19.67	21.67	23.67
Head heigh / Kafa yüksekliği	k	5.3	6.4	7.5	8.8	10	11.5	12.5	14	15
	+/-	0.15	0.18	0.18	0.18	0.18	0.22	0.22	0.22	0.22
Head with/Anahtar a	sw	13	16 / 17	18 / 19	21 / 22	24	27	30	32 / 34	36
Diagonal / Köşegen	e	14.38	17.77 / 18.90	20.03 / 21.10	23.35 / 24.49	26.75	30.14	33.53	35.72 / 37.72	39.98
Thread length / Diş uzunluğu	b^1	22	26	30	34	38	42	46	50	54
	b^2	28	32	36	40	44	48	52	56	60

b^1 : *Thread length for bolts up to 125mm.* / 125mm. Boya kadar olan civatalar için diş boyu.

b^2 : *Thread length for bolts between 125mm. & 200mm.* / 125mm & 200mm. Boylar arasındaki civatalar için diş boyu.

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M8	M10	M12	M14	M16	M18	M20	M22	M24
Length / Boy			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.								
35	+/-	0.50	19.1								
40	+/-	0.50	21.1	36.3							
45	+/-	0.50	23.0	39.4	55.2						
50	+/-	0.50	25.0	42.5	59.6	84.5					
55	+/-	0.60	27.0	45.5	64.0	90.1	119				
60	+/-	0.60	28.9	48.6	68.4	95.7	127	169			
65	+/-	0.60	30.9	51.7	72.8	101	135	179	228		
70	+/-	0.60	32.9	54.7	77.2	107	143	189	240	293	
75	+/-	0.60	34.8	57.8	81.6	112	151	199	253	308	382
80	+/-	0.60	36.8	60.9	86.0	118	159	209	265	323	410
85	+/-	0.70	38.8	63.9	90.4	123	167	219	277	338	428
90	+/-	0.70	40.7	68.0	94.8	129	175	229	290	353	445
95	+/-	0.70	42.7	71.1	99.2	134	183	239	302	368	463
100	+/-	0.70	44.7	74.2	104	140	191	249	314	383	481
110	+/-	0.70		80.3	113	152	217	269	339	413	517
120	+/-	0.70		86.4	122	164	233	289	363	443	552
130	+/-	0.80		92.5	131	176	249	308	387	473	588
140	+/-	0.80		98.6	140	188	265	328	412	502	623
150	+/-	0.80		105	149	200	281	348	437	532	659
160	+/-	0.80			158	212	296	368	461	562	694
170	+/-	0.80			167	224	312	388	486	592	730
180	+/-	0.80			176	236	328	408	510	621	765
190	+/-	0.90				248	344	428	535	651	800
200	+/-	0.90				260	360	448	560	681	836



HEXAGON HEAD BOLTS FINE THREADED

ALTIKÖŞE BAŞLI İNCE DİŞLİ CİVATALAR

SECHSKANTSCHRAUBEN MIT FEINGEWINDE

Technical informations. / Teknik bilgiler.

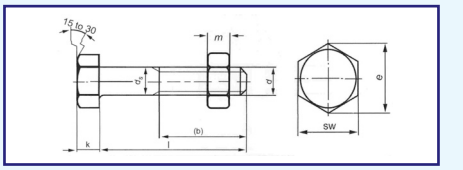
Thread size / Anma çapı		M8	M10	M12	M14	M16	M18	M20	M22	M24
Pitch / Diş adımı	P	1.00	1.25 | 1.00	1.50 | 1.25	1.50	1.50	2.00 | 1.50	2.00 | 1.50	2.00 | 1.50	2.00 | 1.50
Wire dia / Tel çapı	min.	7.78	9.78	11.73	13.73	15.73	17.73	19.67	21.67	23.67
Head heigh / Kafa yüksekliği	k	5.3	6.4	7.5	8.8	10	11.5	12.5	14	15
	+/-	0.15	0.18	0.18	0.18	0.18	0.22	0.22	0.22	0.22
Head with/Anahtar a	sw	13	16	18	21	24	27	30	34	36
Diagonal / Köşegen	e	14.38	17.77	20.03	23.36	26.75	30.14	33.53	35.72	39.98
Thread length / Diş uzunluğu	b^1	22	26	30	34	38	42	46	50	54
	b^2	28	32	36	40	44	48	52	56	60

b^1 : *Thread length for bolts up to 125mm.* / 125mm. Boya kadar olan civatalar için diş boyu.

b^2 : *Thread length for bolts between 125mm. & 200mm.* / 125mm & 200mm. Boylar arasındaki civatalar için diş boyu.

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M8	M10	M12	M14	M16	M18	M20	M22	M24
Length / Boy			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.								
35	+/-	0.50	19.1	30.6	43.1						
40	+/-	0.50	21.1	33.6	47.4						
45	+/-	0.50	23.0	36.6	51.8	74.7	103				
50	+/-	0.50	25.0	69.6	56.1	80.6	111				
55	+/-	0.60	27.0	42.7	60.5	86.5	119				
60	+/-	0.60	28.9	45.6	64.8	92.4	127	169			
65	+/-	0.60	30.9	48.6	69.1	98.4	135	179	228		
70	+/-	0.60	32.9	51.7	73.5	104	143	189	240	293	
75	+/-	0.60	34.8	54.7	77.8	110	151	199	253	308	382
80	+/-	0.60	36.8	57.7	82.1	116	159	209	265	323	410
85	+/-	0.70	38.8	60.7	86.5	122	167	219	277	338	428
90	+/-	0.70	40.7	63.7	90.8	128	175	229	290	353	445
95	+/-	0.70	42.7	66.7	95.2	134	183	239	302	368	463
100	+/-	0.70	44.7	69.7	99.5	140	191	249	314	383	481
110	+/-	0.70		75.8	108	152	217	269	339	413	517
120	+/-	0.70		81.8	117	164	233	289	363	443	552
130	+/-	0.80		87.4	125	174	249	308	387	473	588
140	+/-	0.80		93.4	133	186	265	328	412	502	623
150	+/-	0.80		99.4	142	198	281	348	437	532	659
160	+/-	0.80					296	368	461	562	694
170	+/-	0.80					312	388	486	592	730
180	+/-	0.80					328	408	510	621	765
190	+/-	0.90					344	428	535	651	800
200	+/-	0.90					360	448	560	681	836



HEXAGON HEAD BOLTS FOR STEEL STRUCTURES

ALTIKÖŞE BAŞLI ÇELİK KONSTÜRÜKSYON CİVATALARI

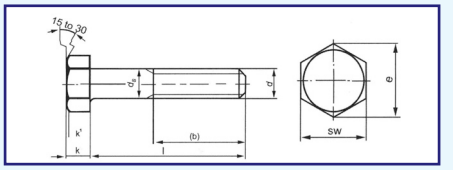
SECHSKANTSCHRAUBEN FUR STAHLKONSTRUKTIONEN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M12	M16	M20	M24	M27	M30
Pitch / Diş adımı	P	1.75	2.00	2.50	3.00	3.00	3.50
Wire dia / Tel çapı	min.	11.30	15.30	19.16	23.16	26.16	29.16
Head heigh / Kafa yüksekliği	k	8	10	13	15	17	19
	+/-	0.45	0.75	0.90	0.90	0.90	1.05
Head with/Anahtar a	sw	18	24	30	36	41	46
Diagonal / Köşegen	e	19.85	26.17	32.95	39.55	45.20	50.85
Thread length / Diş uzunluğu	b	20.5	24.5	28.5	33.0	35.5	38.5

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M12	M16	M20	M24	M27	M30
Length / Boy			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.					
30	+/-	0.42	56.2					
35	+/-	0.50	60.6	125				
40	+/-	0.50	65.0	133	249			
45	+/-	0.50	69.4	141	261	393		
50	+/-	0.50	73.8	149	273	411		
55	+/-	0.60	78.2	157	285	429		
60	+/-	0.60	82.6	165	297	447	611	
65	+/-	0.60	87.0	173	309	465	633	
70	+/-	0.60	91.4	181	321	483	655	
75	+/-	0.60	95.8	189	333	501	677	
80	+/-	0.60	100	197	345	519	699	920
85	+/-	0.70	104	205	357	537	721	948
90	+/-	0.70	108	213	369	555	743	976
95	+/-	0.70	112	221	381	573	765	1,004
100	+/-	0.70	116	229	393	591	787	1,032
105	+/-	0.70	120	240	405	609	809	1,060
110	+/-	0.70	124	245	417	627	831	1,088
115	+/-	0.70	128	253	429	645	853	1,116
120	+/-	0.70	132	261	441	663	875	1,144
125	+/-	0.80		269	453	681	897	1,172
130	+/-	0.80		277	465	699	919	1,200
135	+/-	0.80		285	477	717	941	1,228
140	+/-	0.80		293	489	735	963	1,256
145	+/-	0.80		301	501	753	985	1,284
150	+/-	0.80		309	513	771	1,007	1,312
155	+/-	0.80			525	789	1,029	1,340
160	+/-	0.80			537	807	1,051	1,368
165	+/-	0.80			549	825	1,073	1,396
170	+/-	0.80			561	843	1,095	1,424
175	+/-	0.80			573	861	1,117	1,452
180	+/-	0.80			585	879	1,139	1,480
185	+/-	0.92				897	1,161	1,508
190	+/-	0.92				915	1,183	1,536
195	+/-	0.92				933	1,205	1,564
200	+/-	0.92				951	1,227	1,592
Weight of 1.000 pcs.nuts./ 1.000 adet somunun ağırlığı.			**M12**	**M16**	**M20**	**M24**	**M27**	**M30**
			15.3	36.5	69.3	119	170	234



HEXAGON HEAD BOLTS HIGH-STRENGTH

ATIKÖŞE BAŞLI AĞIR YÜK CİVATALARI

SECHSKANTSCHRAUBEN MIT GROSSEN SCHLUSSELWEITEN

Technical informations. / Teknik bilgiler.

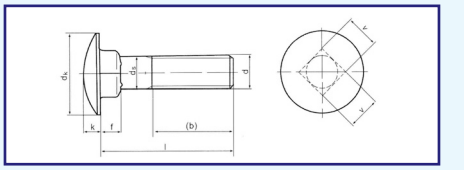
Thread size / Anma çapı		M12	M16	M20	M22	M24	M27	M30	M36
Pitch / Diş adımı	P	1.75	2.00	2.50	2.50	3.00	3.00	3.50	4.00
Wire dia / Tel çapı	min.	11.30	15.30	19.16	19.16	23.16	26.16	29.16	35.00
Head heigh / Kafa yüksekliği	k	8	10	13	14	15	17	19	23
	+/-	0.45	0.75	0.90	0.90	0.90	0.90	1.05	1.05
	k'	5.28	6.47	8.47	8.47	9.87	11.27	12.56	15.36
Head with/Anahtar a	sw	22	27	32	36	41	46	50	60
Diagonal / Köşegen	e	23.91	29.56	35.03	39.55	45.20	50.85	55.37	66.44
Thread length / Diş uzunluğu	b^1	21	26	31	32	34	37	40	48
	b^2	23	28	33	34	37	39	42	50

b^1 : *For lengths above the continuous tepped line.* / Çizginin üzerindeki boylu civatalar için diş boyu.

b^2 : *For lengths below the continuous stepped line.* / Çizginin altındaki boylu civatalar için diş boyu.

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M12	M16	M20	M22	M24	M27	M30	M36
Length / Boy (l)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.							
30	+/-	1.05	48.0							
35	+/-	1.25	52.0							
40	+/-	1.25	56.0	105						
45	+/-	1.25	59.0	113	180					
50	+/-	1.25	64.0	121	194	249				
55	+/-	1.50	68.0	129	207	264				
60	+/-	1.50	72.0	137	219	279	353			
65	+/-	1.50	77.0	145	232	294	371			
70	+/-	1.50	81.0	153	244	309	389	519		
75	+/-	1.50	86.0	157	257	324	407	542	695	
80	+/-	1.50	90.0	165	269	339	425	564	723	
85	+/-	1.75	95.0	173	282	354	443	587	751	1186
90	+/-	1.75	99.0	181	288	363	449	609	779	1226
95	+/-	1.75	104	189	301	378	467	632	807	1266
100	+/-	1.75		197	313	393	485	645	832	1303
105	+/-	1.75		205	326	408	503	666	860	1343
110	+/-	1.75		213	338	423	521	687	888	1383
115	+/-	1.75		221	351	438	539	708	916	1423
120	+/-	1.75		229	363	453	557	729	944	1463
125	+/-	2.00		237	376	468	575	750	972	1503
130	+/-	2.00		245	388	483	593	771	1000	1543
135	+/-	2.00			400	498	611	792	1028	1583
140	+/-	2.00			413	513	629	813	1055	1623
145	+/-	2.00			425	528	647	834	1083	1663
150	+/-	2.00			438	543	665	855	1110	1703
155	+/-	4.00			450	558	683	876	1138	1743
160	+/-	4.00				573	700	897	1168	1783
165	+/-	4.00				588	718	918	1194	1823
170	+/-	4.00					736	939	1222	1863
175	+/-	4.00					754	960	1256	1903
180	+/-	4.60					772	981	1284	1943
185	+/-	4.60					790	1000	1312	1983
190	+/-	4.60					808	1020	1340	2023
195	+/-	4.60					826	1040	1368	2063
200	+/-	4.60						1060	1396	2103



ROUND (MUSHROOM) HEAD SQUARE NECK BOLTS
YUVARLAK BAŞLI DİBİ DÖRTKÖŞE CİVATALAR
FLACHRUNDSCHRAUBEN MIT VIERKANTANSATZ

Technical informations. / Teknik bilgiler.

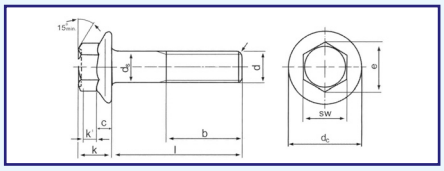
Thread size / Anma çapı		M5	M6	M8	M10	M12	M16	M20
Pitch / Diş adımı	P	0.80	1.00	1.25	1.50	1.75	2.00	2.50
Wire dia / Tel çapı	min.	4.52	5.52	7.42	9.42	11.30	15.30	19.16
Head heigh / Kafa yüksekliği	k	3.0	3.5	4.5	5.0	6.5	8.5	10.5
	+/-	0.30	0.38	0.38	0.38	0.45	0.45	0.55
Head Dia/Kafa çapı	d_k	13	16	20	24	30	38	46
	+/-	0.55	0.55	0.65	0.65	0.65	0.80	0.80
Neck height / Boyun yüksekliği	f	3.5	4.0	5.0	6.0	8.0	12.0	15.0
	+/-	0.60	0.60	0.60	0.60	0.75	0.90	0.90
Neck width / Boyun genişliği	v	5	6	8	10	12	16	20
	+/-	0.48	0.48	0.58	0.58	0.70	0.70	0.84
Thread length / Diş uzunluğu	b^1	16	18	22	26	30	38	46
	b^2	22	24	28	32	36	44	52

b^1 : *Thread length for bolts up to 125mm.* / 125mm. Boya kadar olan civatalar için diş boyu.

b^2 : *Thread length for bolts between 125mm. & 200mm.* / 125mm & 200mm. Boylar arasındaki civatalar için diş boyu.

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M5	M6	M8	M10	M12	M16	M20
Length / Boy (l)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.						
16	+/-	0.90	4.00	6.90					
20	+/-	1.05	4.50	7.60	13.8	22.7			
25	+/-	1.05	5.10	8.50	15.4	25.2			
30	+/-	1.05	5.90	9.60	17.0	27.7	45.7		
35	+/-	11.25	6.70	10.7	19.0	30.2	49.4		
40	+/-	1.25	7.50	11.8	21.0	32.7	53.1		
45	+/-	1.25	8.30	12.9	23.0	35.8	56.8		
50	+/-	1.25	9.10	14.0	25.0	38.9	61.2	119	
55	+/-	1.50	9.90	15.1	26.9	42.0	65.6	126	
60	+/-	1.50	10.7	16.2	28.9	45.1	70.0	133	
65	+/-	1.50	11.5	17.3	30.9	48.2	74.4	141	
70	+/-	1.50	12.3	18.4	32.9	51.3	78.8	149	247
80	+/-	1.50	13.9	20.6	36.8	57.5	87.0	165	272
90	+/-	1.75		22.8	40.8	63.7	96.0	181	297
100	+/-	1.75		25.0	44.8	69.9	105	197	322
110	+/-	1.75		27.2	48.8	76.1	114	213	347
120	+/-	1.75		29.4	52.8	82.3	123	229	372
130	+/-	2.00		31.6	56.8	88.5	132	245	397
140	+/-	2.00		32.8	60.8	95.0	141	261	422
150	+/-	2.00		35.0	64.8	101	150	277	447
160	+/-	4.00				107	159	293	497
180	+/-	4.00				119	177	325	547
200	+/-	4.60				131	195	357	597



HEXAGON FLANGE HEAD BOLTS

ALTIKÖŞE FLANŞLI CİVATALAR

SECHSKANTSCHRAUBEN MIT FLASCH

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M5	M6	M8	M10	M12	M14	M16
Pitch / Diş adımı	P	0.80	1.00	1.25	1.50	1.75	2.00	2.00
Flange dia / Flanş çapı	d_c	11.80	14.20	18.00	22.30	26.60	30.50	35.00
Flange heigth / Flanş y.	c	1.0	1.1	1.2	1.5	1.8	2.1	2.4
Wire dia / Tel çapı	min	4.82	5.82	7.78	9.78	11.73	13.73	15.73
Head heigh / Kafa yüksekliği	k	5.4	6.6	8.1	9.2	11.5	12.8	14.4
	kl	2.0	2.5	3.2	3.6	4.6	5.1	5.8
Head with/Anahtar a.	sw	8	10	13	15	16	18	21
Diagonal/Köşegen	e	8.71	10.95	14.26	16.50	17.62	19.86	23.15
Thread length / Diş uzunluğu	b^1	16	18	22	36	30	34	38
	b^2	-	-	28	32	36	40	44

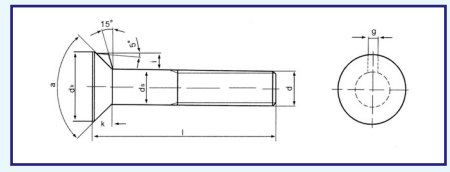
b^1 : *Thread length for bolts up to 125mm.* / 125mm. Boya kadar olan civatalar için diş boyu.

b^2 : *Thread length for bolts between 125mm. & 200mm.* / 125mm & 200mm. Boylar arasındaki civatalar için diş boyu.

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M5	M6	M8	M10	M12	M14	M16
Length / Boy (l)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.						
10	+/-	0.29	3.22						
12	+/-	0.35	3.46	6.94	13.76	24.04			
16	+/-	0.35	3.94	7.62	15.01	26.01			
20	+/-	0.42	4.42	8.30	16.25	27.97	44.35		
25	+/-	0.42	5.25	9.16	17.80	30.42	47.90	66.13	83.82
30	+/-	0.42	6.00	10.50	19.36	32.88	51.46	71.01	90.37
35	+/-	0.50	6.74	11.58	21.77	35.33	55.02	75.89	96.92
40	+/-	0.50	7.48	12.65	23.68	39.18	58.57	80.76	103.5
45	+/-	0.50	8.23	13.73	25.60	42.20	64.20	85.64	110.0
50	+/-	0.50	8.97	14.80	27.52	45.21	68.54	93.45	116.6
55	+/-	0.60	9.71	15.88	29.44	48.23	72.87	99.37	126.7
60	+/-	0.60	10.46	16.96	31.36	51.24	77.21	105.3	134.5
65	+/-	0.60	11.20	18.03	33.27	54.25	81.55	111.2	142.3
70	+/-	0.60	11.94	19.11	35.19	57.27	85.89	117.1	150.0
80	+/-	0.60	13.43	21.26	39.03	63.29	94.56	129.0	166.0
90	+/-	0.70		23.41	42.87	69.32	103.2	140.8	181.1
100	+/-	0.70		25.57	46.70	75.35	111.9	152.7	197.0
110	+/-	0.70				81.38	120.6	164.5	212.0
120	+/-	0.70				87.40	129.3	176.4	228.0
130	+/-	0.80				92.76	137.0	187.0	242.0
140	+/-	0.80					145.7	198.8	257.0
150	+/-	0.80						210.7	273.0
160	+/-	2.00							
180	+/-	2.00							
200	+/-	2.00							

"DIN 604"



FLAT COUNTERSUNK NIB BOLTS
PULLUK CİVATASI
SENKSCHRAUBEN MIT NASE

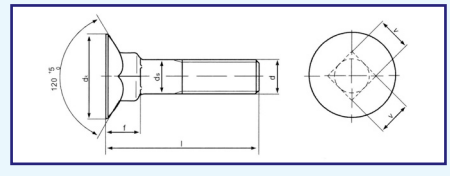
Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M6	M8	M10	M12	M16	M20	M24
Pitch / Diş adımı	P	1.00	1.25	1.50	1.75	2.00	2.50	3.00
Head height/Kafa y.	K	4.00	5.00	5.50	7.00	9.00	11.50	13.00
Head dia/Kafa çapı	d_K	12.0	16.0	19.0	24.0	32.0	32.0	38.0
	+/-	0.55	0.55	0.65	0.65	0.80	0.80	0.80
G	max.	2.50	3.00	3.20	3.60	4.20	5.40	6.60
	min.	2.10	2.60	2.72	3.12	3.72	4.92	6.02

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M6	M8	M10	M12	M16	M20	M24
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.						
20	+/-	1.05	4.90	9.50	14.9				
25	+/-	1.05	5.90	11.1	17.4	27.7			
30	+/-	1.05	7.00	12.7	19.9	31.4	61.8		
35	+/-	1.25	8.10	14.7	22.4	35.1	69.2		
40	+/-	1.25	9.20	16.7	25.5	38.8	76.2		
45	+/-	1.25	10.3	18.7	28.6	43.2	83.2		
50	+/-	1.25	11.4	20.7	31.7	47.6	90.2	128	
55	+/-	1.50	12.5	22.7	34.8	52.0	97.2	139	
60	+/-	1.50	13.6	24.7	37.9	56.4	105	150	225
65	+/-	1.50	14.7	26.7	41.0	60.8	113	161	241
70	+/-	1.50	15.8	28.7	44.1	65.2	121	173	257
80	+/-	1.50	17.9	32.7	50.3	73.8	137	197	291
90	+/-	1.75	20.1	36.7	56.5	84.1	153	221	327
100	+/-	1.75	22.3	40.7	62.7	93.1	169	245	363
120	+/-	1.75		48.7	75.1	111	201	293	435
150	+/-	2.00		60.7	94.0	138	249	364	543

"DIN 605"



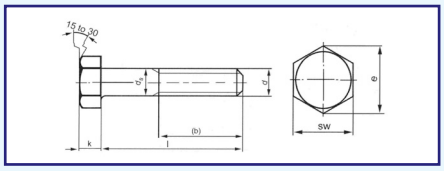
FLAT COUNTERSUNK SQUARE NECK BOLTS
BIÇAK CİVATASI
SENKSCHRAUBEN MIT HOHEM VIERKANTANSATZ

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M5	M6	M8	M10	M12	M16	M20
Pitch / Diş adımı	P	0.80	1.00	1.25	1.50	1.75	2.00	2.50
Head height/Kafa y.	f	6	7	9	11	14	17	22
	+/-	0.40	0.45	0.45	0.45	0.55	0.55	0.65
Head dia/Kafa çapı	d_K	13	16	20	24	28	38	44
	+/-	0.45	0.45	0.55	0.55	0.65	0.65	0.75
Square width/Kafa gen.	v	5	6	8	10	12	16	20
	+/-	0.48	0.48	0.58	0.58	0.68	0.68	0.78

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M5	M6	M8	M10	M12	M16	M20
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.						
30	+/-	1.05	5.4	8.8	15.4				
35	+/-	1.05	6.2	9.8	17.4				
40	+/-	1.05	6.9	10.8	19.3	30.6			
45	+/-	1.25		11.9	21.3	33.6			
50	+/-	1.25		12.9	23.2	36.5	72.8		
55	+/-	1.25		13.9	25.2	38.4	77.3		
60	+/-	1.25		14.9	27.1	42.4	81.3		
65	+/-	1.50			29.1	45.3	85.7	145	270
70	+/-	1.50			31	48.2	89.8	153	282
80	+/-	1.50			34.9	54.1	98.8	169	307
90	+/-	1.50				59.9	107	185	332
100	+/-	1.50				65.7	116	200	357



HEXAGON HEAD UNC & UNF THREADED BOLTS
ALTIKÖŞE BAŞLI UNC & UNF CİVATALAR
SECHSKANTSCHRAUBEN MIT UNC & UNF GEWINDE

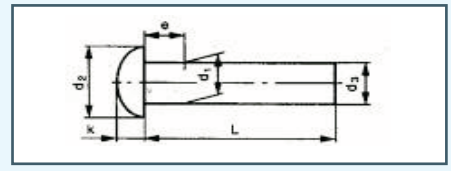
Technical informations. / Teknik bilgiler.

Thread size /Anma çapı inç.		1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
	mm.	6.35	7.94	9.52	11/11	12.70	14.29	15.88	19.05
Pitch / Diş adımı	UNC	20	18	16	14	13	12	11	10
	UNF	28	24	24	20	20	18	18	16
Wire dia / Tel çapı	min	6.22	7.79	9.37	19.93	12.52	14.08	15.67	18.82
Head heigh / Kafa yüksekliği	max.	4.14	5.36	6.17	7.39	8.20	9.42	10.24	12.27
	min	3.81	4.95	5.74	6.91	7.67	8.84	9.60	11.56
Head width / Anahtar a.	max.	12.83	14.66	16.51	18.34	22.00	23.83	27.51	32.99
	min	12.40	14.15	15.95	17.73	21.34	23.11	26.70	31.85
Diagonal / Köşegen	e	7/16	1/2	9/16	5/8	3/4	13/16	15/16	1 1/8
Thread length / Diş uzunluğu	b^1	19.05	22.23	25.40	28.58	31.75	34.93	38.10	44.45
	b^2	25.40	28.58	31.75	34.93	38.10	41.28	44.45	50.80
b^1 : *Thread length for bolts up to 6".* / 6" Boya kadar olan civatalar için diş boyu.									
b^2 : *Thread length for bolts more than 6"* / 6" Den uzun boylu civatalar için diş boyu.									

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4
Length / Boy (l)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.							
5/8	15.88	d: 1/4-3/4 +0.50/-0.76	5.94	9.98	14.70					
3/4	19.05		6.53	10.93	16.10	23.04	36.74			
7/8	22.23		7.12	11.88	17.51	24.95	39.28			
1	25.40		7.89	12.84	18.91	26.85	41.82	51.17	68.76	
1 1/8	28.58	d:1/4-3/8 +0.50/-1.01 d:7/16-1/2 +1.01/-1.52 d:9/16-3/4 +1.52/2.03	8.66	14.06	20.48	28.76	44.36	54.41	72.78	
1 1/4	31.75		9.43	15.29	22.04	30.66	46.90	57.65	76.79	122.74
1 3/8	34.93		10.23	16.51	23.81	33.07	49.74	60.89	80.81	128.64
1 1/2	38.10		11.02	17.74	25.58	35.47	52.57	64.14	84.82	134.54
1 5/8	41.28		11.79	18.96	27.35	37.87	55.70	68.11	89.27	140.43
1 3/4	44.45		12.56	20.18	29.12	40.28	58.83	72.08	93.71	146.33
1 7/8	47.63		13.36	21.41	30.87	42.68	61.96	76.04	98.61	152.82
2	50.80		14.15	22.63	32.61	45.09	65.09	80.01	103.51	159.30
2 1/8	53.98		14.92	23.84	34.38	47.49	68.22	83.98	108.39	166.36
2 1/4	57.15		15.69	25.04	36.15	49.90	71.35	87.95	113.26	173.41
2 3/8	60.33		16.49	26.26	37.90	52.30	74.48	91.92	118.16	180.46
2 1/2	63.50		17.28	27.49	39.64	54.70	77.61	95.89	123.06	187.2
2 5/8	66.68	d:1/4-3/8 +1.01/-1.52 d:7/16-1/2 -1.52/-2.03 d:9/16-3/4 +2.03/-2.54	18.05	28.71	41.41	57.11	80.74	99.88	127.94	194.57
2 3/4	69.85		18.82	29.94	43.18	59.51	83.87	103.87	132.81	201.62
2 7/8	73.03		19.92	31.16	44.95	61.92	87.00	107.84	137.71	208.68
3	76.20		20.41	32.39	46.72	64.32	90.13	111.81	142.61	215.73
3 1/4	82.55		21.95		50.21	69.13	96.39	119.75	152.36	229.84
3 1/2	88.90		23.54		53.75	73.94	102.65	127.69	162.16	243.94
3 1/4	95.25		25.08		57.24	78.74	108.91	135.62	171.91	258.05
4	101.6		26.67		60.78	83.51	115.17	143.56	181.71	272.16
4 1/4	108.0	d:1/4-3/8 +1.52/-2.54 d:7/16-1/2 +2.03/-2.54 d:9/16-3/4 +2.54/-2.54	28.24		64.30	88.31	121.43	151.50	191.48	286.26
4 1/2	114.3		29.80		67.81	93.12	127.69	159.44	201.26	300.37
4 3/4	120.7		31.37		71.33	97.93	133.95	167.38	211.03	314.48
5	127.0		32.93		74.84	102.74	140.21	175.31	220.81	328.58
5 1/4	133.4				78.38	107.55	146.6	183.27	230.58	342.69
5 1/2	139.7				81.92	112.35	152.72	191.23	240.36	356.80
5 3/4	146.1				85.43	117.16	158.98	199.17	250.13	370.90
6	152.4				88.95	121.97	165.24	207.11	259.91	385.01
Length above thick stepped line are fully threaded. / Kalın çizginin üzerindeki boylar tam dişlidir.										

ROUND HEAD RIVETS
BOMBE BAŞLI PERÇİN
HALBRUNDNLETE



Technical informations. / Teknik bilgiler.

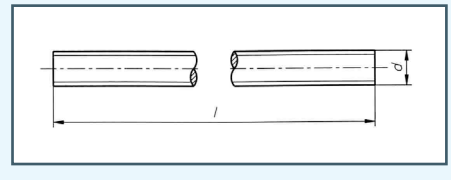
Thread size / Anma çapı		1	1.2	1.6	2	2.5	3	4	5	6	8
Wire dia/Tel çapı	d_1	1.0	1.2	1.6	2.0	2.5	3.0	4.0	5.0	6.0	8.0
	+/-	0.05			0.1				0.15		
Head dia/Kafa çapı	d_2	1.8	2.1	2.8	3.5	4.4	5.2	7.0	8.8	10.5	14.0
	+/-	h14							h15		
Head dia/Kafa yük.	k	0.6	0.7	1.0	1.2	1.5	1.8	2.4	3.0	3.6	4.8
	d_3	0.93	1.13	1.52	1.87	2.37	2.87	3.87	4.82	5.82	7.76
	e	0.5	0.6	0.8	1.0	1.25	1.5	2.0	2.5	3.0	4.0
	r	0.2						0.3	0.4		
	r1	1.0	1.2	1.6	1.9	2.4	2.8	3.8	4.6	5.7	7.5

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			1	1.2	1.6	2	2.5	3	4	5	6	8
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.									
2	+/-	0.25	0.020	0.033	0.060	0.111						
3	+/-	0.25	0.026	0.041	0.076	0.136	0185	0.350				
4	+/-	0.30	0.032	0.050	0.092	0.161	0.223	0.408	0.85			
5	+/-	0.30	0.038	0.059	0.108	0.186	0.261	0.466	0.95	1.65		
6	+/-	0.30	0.044	0.068	0.124	0.209	0.300	0.524	1.05	1.81	2.86	
8	+/-	0.35		0.086	0.156	0.260	0.376	0.640	1.25	2.13	3.31	6.69
10	+/-	0.35			0.188	0.309	0.452	0.753	1.45	2.45	3.76	7.51
12	+/-	0.43			0.220	0.358	0.528	0.866	1.66	2.77	4.21	8.32
14	+/-	0.43				0.407	0.604	0.980	1.86	3.09	4.66	9.15
16	+/-	0.43				0.456	0.680	1.110	2.06	3.41	5.11	10.0
18	+/-	0.43				0.505	0.756	1.220	2.26	3.73	5.56	10.8
20	+/-	0.52				0.554	0.832	1.330	2.46	4.05	6.01	11.6
22	+/-	0.52					0.908	1.440	2.67	4.36	6.46	12.4
25	+/-	0.52					1.022	1.610	2.99	4.82	7.16	13.7
26	+/-	0.52						1.780	3.29	5.30	7.86	14.9
30	+/-	0.52						1.900	3.49	5.62	8.31	15.7
32	+/-	0.62							3.69	5.93	8.77	16.5
35	+/-	0.62							4.00	6.42	9.45	17.7
38	+/-	0.62							4.29	6.88	10.1	19.0
40	+/-	0.62							4.50	7.20	10.6	19.8

"DIN 975"

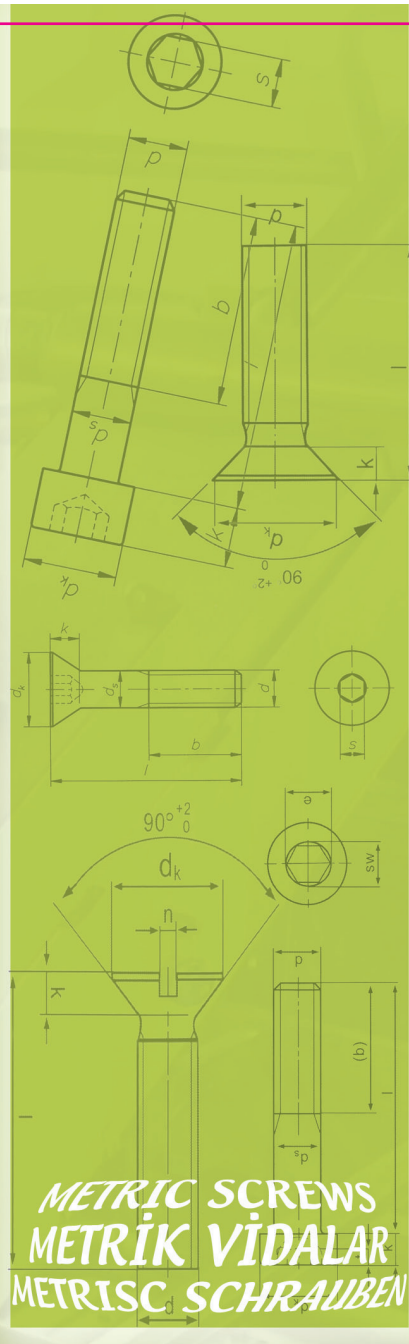
THREADED ROD
GİJON (SAPLAMA)
GEWINDE BOLZEN



Technical informations. / Teknik bilgiler.

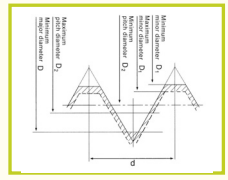
Thread size / Anma çapı		M3	M4	M5	M6	M7	M8	M10	M12	M14	M16
Pitch/Diş adımı	P	0.50	0.70	0.80	1.00	1.00	1.25	1.50	1.75	2.00	2.00
Weight/Ağırlık	gr/p	44	78	124	177	250	319	500	725	970	1.330

Thread size / Anma çapı		M18	M20	M22	M24	M27	M30	M33	M36	M39	
Pitch/Diş adımı	P	2.50	2.50	2.50	3.00	3.00	3.50	3.50	4.00	4.00	
Weight/Ağırlık	gr/p	1.650	2.080	2.540	3.000	3.850	4.750	5.900	6.900	8.200	



METRIC SCREWS
METRİK VİDALAR
METRISC SCHRAUBEN

Çetin Civata



EXTERNAL THREAD TOLERANCES
HARİCİ DİŞ TOLERANSLARI

6h	Norminal length		Major ø	Pitch ø		Minor ø	
	from	to	min.	min.	max.	min.	max.
	1.5	4.5	3.000	2.675	2.775	2.459	2.599
	2	6	4.000	3.545	3.663	3.242	3.422
	2.5	7.5	5.000	4.480	4.605	4.134	4.334
	3	9	6.000	5.350	5.500	4.917	5.153
	3	9	7.000	6.350	6.500	5.917	6.153
	4	12	8.000	7.188	7.348	6.647	6.912
	5	15	10.000	9.026	9.206	8.376	8.676
	6	18	12.000	10.863	11.063	10.106	10.441
	8	24	14.000	12.701	12.913	11.835	12.210
	8	24	16.000	14.701	14.913	13.835	14.210
	10	30	18.000	16.376	16.600	15.294	15.744
	10	30	20.000	18.376	18.600	17.294	17.744
	10	30	22.000	20.376	20.600	19.294	19.744
	12	36	24.000	22.051	22.316	20.752	21.252
	12	36	27.000	25.051	25.316	23.752	24.252
	15	45	30.000	27.727	28.007	26.211	26.771
	15	45	33.000	30.727	31.007	29.211	29.771
	18	53	36.000	33.402	33.702	31.670	32.270
	18	53	39.000	36.402	36.702	34.670	35.270

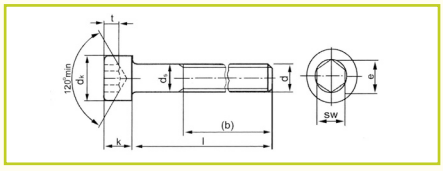
6g	Norminal length		Major ø	Pitch ø		Minor ø	
	from	to	min.	min.	max.	min.	max.
	1.5	4.5	2.980	2.874	2.655	2.580	2.273
	2	6	3.978	3.838	3.523	3.433	3.002
	2.5	7.5	4.976	4.826	4.456	4.361	3.869
	3	9	5.974	5.794	5.324	5.212	4.596
	3	9	6.974	6.794	6.324	6.212	5.596
	4	12	7.972	7.760	7.160	7.042	6.272
	5	15	9.968	9.732	8.994	8.862	7.938
	6	18	11.966	11.701	10.829	10.679	9.602
	8	24	13.962	13.682	12.663	12.503	11.271
	8	24	15.962	15.682	14.663	14.503	13.271
	10	30	17.958	17.623	16.334	16.164	14.625
	10	30	19.958	19.623	18.334	18.164	16.625
	10	30	21.958	21.623	20.334	20.164	18.625
	12	36	23.592	23.577	22.003	21.803	19.955
	12	36	26.952	26.577	25.003	24.803	22.955
	15	45	29.947	29.522	27.674	27.462	25.306
	15	45	32.947	32.522	30.674	30.462	28.306
	18	53	35.940	35.465	33.342	33.118	30.655
	18	53	38.940	38.465	36.342	36.118	33.655

7h	Norminal length		Major ø	Pitch ø		Minor ø	
	from	to	min.	min.	max.	min.	max.
	2.5	7.5	5.000	4.480	4.640	4.134	4.384
	3	9	6.000	5.350	5.540	4.917	5.217
	3	9	7.000	6.350	6.540	5.917	6.217
	4	12	8.000	7.188	7.388	6.647	6.982
	5	15	10.000	9.026	9.250	8.376	8.751
	6	18	12.000	10.863	11.113	10.106	10.531
	8	24	14.000	12.701	12.966	11.835	12.310
	8	24	16.000	14.701	14.966	13.835	14.310
	10	30	18.000	16.376	16.656	15.294	15.854
	10	30	20.000	18.376	18.656	17.294	17.854
	10	30	22.000	20.376	20.656	19.294	15.744
	12	36	24.000	22.051	22.386	20.752	19.854
	12	36	27.000	25.051	25.386	23.752	21.383
	15	45	30.000	27.727	28.082	26.211	24.382
	15	45	33.000	30.727	31.082	29.211	29.921
	18	53	36.000	33.402	33.777	31.670	32.420
	18	53	39.000	36.402	36.777	34.670	35.420

8g	Norminal length		Major ø		Pitch ø		Minor ø	
	from	to	min.	max.	min.	max.	min.	max.
	2.5	7.5	4.976	4.740	4.456	4.306	3.995	3.814
	3	9	5.974	5.694	5.324	5.144	4.747	4.528
	3	9	6.974	6.694	6.324	6.144	5.747	5.528
	4	12	7.972	7.637	7.160	6.670	6.438	6.200
	5	15	9.968	9.593	8.994	8.782	8.128	7.858
	6	18	11.966	11.541	10.829	10.593	9.819	9.516
	8	24	13.962	13.512	12.663	12.413	11.508	11.181
	8	24	15.962	15.512	14.663	14.413	13.508	13.181
	10	30	17.958	17.428	16.334	16.069	14.891	14.530
	10	30	19.958	19.428	18.334	18.069	16.891	16.530
	10	30	21.958	21.428	20.334	20.069	18.891	18.530
	12	36	23.952	23.352	22.003	21.688	20.271	19.840
	12	36	26.952	26.352	25.003	24.688	23.271	22.840
	15	45	29.947	29.277	27.674	27.339	25.653	25.183
	15	45	32.947	32.277	30.674	30.339	28.653	28.183
	18	53	35.940	35.190	33.342	32.987	31.033	30.524
	18	53	38.940	38.190	36.342	35.987	34.033	33.524

ISO METRIC THREAD ANGLE 60°
ISO METRİK DİŞ ÖLÇÜLERİ

SERIE 1	M3	M4	M5	M6	M8	M10	M12		M16		M20		M24		M30		M36
SERIE 2								M14		M18		M22		M27		M33	
COARSE	0.50	0.70	0.80	1.00	1.25	1.50	1.75	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.50	3.50	4.00
FINE					1.00	1.25	1.25	1.50	1.50	1.50	1.50	1.50	2.00	2.00	2.00	2.00	3.00
EX FINE						0.75	1.00	1.00	1.00	1.00	1.00	1.00	1.50	1.50	1.50	1.50	1.50



HEXAGON SOCKET HEAD CAP SCREWS

ALTIKÖŞE SOKET BAŞLI VİDALAR (SB İNBUS)

ZYLINDERSCHRAUBEN MIT INNENSECHSKANT

Technical informations. / Teknik bilgiler.

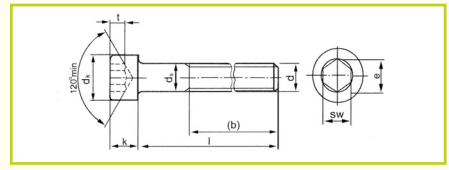
Thread size / Anma çapı		M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33
Pitch / Diş adımı	P	0.50	0.70	0.80	1.00	1.25	1.50	1.75	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.50	3.50
Wire dia / Tel çapı	min.	2.86	3.82	4.82	5.82	7.78	9.78	11.73	13.73	15.73	17.73	19.67	21.67	23.67	26.67	29.67	32.61
Head heigh / Kafa yüksekliği	k	3	4	5	6	8	10	12	14	16	18	20	22	24	27	30	33
	min	2.86	3.82	4.82	5.70	7.64	9.64	11.57	13.57	15.57	17.57	19.48	21.48	23.48	26.48	29.48	32.38
Head dia/Kafa çapı	d_k	5.5	7	8.5	10	13	16	18	21	24	27	30	33	36	40	45	50
	min	5.32	6.78	8.28	9.78	12.73	15.73	17.73	20.67	23.67	26.67	29.67	32.61	35.61	39.61	44.61	49.61
Socket with/Soket g,	sw	2.5	3	4	5	6	8	10	12	14	14	17	17	19	19	22	24
Socket dia/Soket ç,	e	2.87	3.44	4.58	5.72	6.86	9.15	11.43	13.72	16.00	16.00	19.44	19.44	21.73	21.73	25.15	27.43
Socket dipth/Soket d,	t	1.30	2.00	2.50	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.50	15.50	18.00
Thread length / Diş uzunluğu	b^1	18	20	22	24	28	32	36	40	44	48	52	56	60	66	72	78
	b^2	*Fully threaded.* / Tam dişli.															

b^1 : *For lengths below the continuous stepped line.* / Çizginin altındaki boylu civatalar için diş boyu.

b^2 : *Length above thick tepped line are fully threaded.* / Çizginin üzerindeki boylar tam dişlidir.

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33
Length / Boy (l)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.															
5	+/-	0.24	0.67															
6	+/-	0.24	0.71	1.50														
9	+/-	0.29	0.80	1.65	2.45													
10	+/-	0.29	0.88	1.80	2.70	4.70												
12	+/-	0.35	0.96	1.95	2.95	5.07	10.9											
16	+/-	0.35	1.16	2.25	3.45	5.75	12.1	20.9										
20	+/-	0.42	1.36	2.65	4.01	6.53	13.4	22.9	32.1									
25	+/-	0.42	1.61	3.15	4.78	7.59	15.0	25.4	35.7	48.0	71.3							
30	+/-	0.42	1.86	3.65	5.55	8.30	16.9	27.9	39.3	53.0	77.8	111	128					
35	+/-	0.50			6.32	9.91	18.9	30.4	42.9	58.0	84.4	120	139	211				
40	+/-	0.50			7.09	11.0	20.9	32.9	46.5	63.0	91.0	129	150	224	270			
45	+/-	0.50			7.86	12.1	22.9	36.1	50.1	68.0	97.6	138	161	237	285	330	500	
50	+/-	0.50			8.63	13.2	24.9	39.3	54.5	73.0	106	147	172	250	300	352	527	630
55	+/-	0.60				14.3	26.9	42.5	58.9	78.0	114	156	183	263	316	374	554	665
60	+/-	0.60				15.4	28.9	45.7	63.4	84.0	122	165	194	276	330	396	581	700
65	+/-	0.60					31.0	48.9	67.8	90.0	130	174	205	291	345	418	608	735
70	+/-	0.60					33.0	52.1	71.3	96.0	138	183	216	306	363	440	635	770
80	+/-	0.60					37.0	58.5	80.2	108	154	203	241	336	399	484	690	830
90	+/-	0.70						64.9	89.1	120	170	223	266	366	435	529	745	900
100	+/-	0.70						71.2	98.0	132	186	243	291	396	471	574	800	970
110	+/-	0.70							107	144	202	263	316	426	507	619	855	1.040
120	+/-	0.70							116	156	218	283	341	456	543	664	910	1.110
130	+/-	0.80								168	234	303	366	486	579	709	965	1.180
140	+/-	0.80								180	250	323	391	516	615	754	1.020	1.250
150	+/-	0.80									266	343	416	546	651	799	1.080	1.320
160	+/-	0.80									282	363	441	576	687	844	1.130	1.390
180	+/-	0.80										403	491	636	759	934	1.240	1.530
200	+/-	0.90											541	696	831	1.020	1.350	1.670
220	+/-	0.90												756	903	1.110	1.460	1.810
240	+/-	0.90													975	1.230	1.570	1.950
260	+/-	1.05														1.340	1.680	2.040
280	+/-	1.05															1.790	2.180
300	+/-	1.05															1.900	2.320



HEXAGON SOCKET HEAD CAP SCREWS
ALTIKÖŞE SOKET BAŞLI VİDALAR (SB İNBUS)
ZYLINDERSCHRAUBEN MIT INNENSECHSKANT

Technical informations. / Teknik bilgiler.

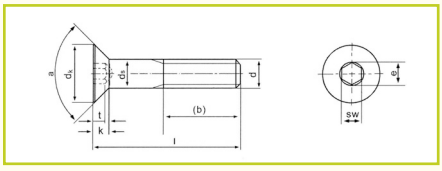
Thread size / Anma çapı		M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33
Pitch / Diş adımı	P	0.50	0.70	0.80	1.00	1.25	1.50	1.75	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.50	3.50
Wire dia / Tel çapı	min.	2.86	3.82	4.82	5.82	7.78	9.78	11.73	13.73	15.73	17.73	19.67	21.67	23.67	26.67	29.67	32.61
Head heigh / Kafa yüksekliği	k	3	4	5	6	8	10	12	14	16	18	20	22	24	27	30	33
	min	2.86	3.82	4.82	5.70	7.64	9.64	11.57	13.57	15.57	17.57	19.48	21.48	23.48	26.48	29.48	32.38
Head dia/Kafa çapı	d_k	5.5	7	8.5	10	13	16	18	21	24	27	30	33	36	40	45	50
	min	5.32	6.78	8.28	9.78	12.73	15.73	17.73	20.67	23.67	26.67	29.67	32.61	35.61	39.61	44.61	49.61
Socket with/Soket g,	sw	2.5	3	4	5	6	8	10	12	14	14	17	17	19	19	22	24
Socket dia/Soket ç,	e	2.87	3.44	4.58	5.72	6.86	9.15	11.43	13.72	16.00	16.00	19.44	19.44	21.73	21.73	25.15	27.43
Socket dipth/Soket d,	t	1.30	2.00	2.50	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	11.00	12.00	13.50	15.50	18.00
Thread length / Diş uzunluğu	b^1	18	20	22	24	28	32	36	40	44	48	52	56	60	66	72	78
	b^2	*Fully threaded.* / Tam dişli.															

b^1 : *For lengths below the continuous stepped line.* / Çizginin altındaki boylu civatalar için diş boyu.

b^2 : *Length above thick tepped line are fully threaded.* / Çizginin üzerindeki boylar tam dişlidir.

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33
Length / Boy (l)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.															
5	+/-	0.24	0.67															
6	+/-	0.24	0.71	1.50														
9	+/-	0.29	0.80	1.65	2.45													
10	+/-	0.29	0.88	1.80	2.70	4.73												
12	+/-	0.35	0.96	1.95	2.95	5.07	10.9											
16	+/-	0.35	1.16	2.25	3.45	5.75	12.1	20.9										
20	+/-	0.42	1.36	3.15	4.01	6.53	13.4	22.9	32.1									
25	+/-	0.42	1.61	3.65	4.78	7.59	15.0	25.4	35.7	48.0	71.3							
30	+/-	0.42	1.86	4.15	5.55	8.30	16.9	27.9	39.3	53.0	77.8	111	128					
35	+/-	0.50		4.65	6.32	9.91	18.9	30.4	42.9	58.0	84.4	120	139	211				
40	+/-	0.50			7.09	11.0	20.9	32.9	46.5	63.0	91.0	129	150	224	270			
45	+/-	0.50			7.86	12.1	22.9	36.1	50.1	68.0	97.6	138	161	237	285	330	500	
50	+/-	0.50			8.63	13.2	24.9	39.3	54.5	73.0	106	147	172	250	300	352	527	630
55	+/-	0.60				14.3	26.9	42.5	58.9	78.0	114	156	183	263	316	374	554	665
60	+/-	0.60				15.4	28.9	45.7	63.4	84.0	122	165	194	276	330	396	581	700
65	+/-	0.60					31.0	48.9	67.8	90.0	130	174	205	291	345	418	608	735
70	+/-	0.60					33.0	52.1	71.3	96.0	138	183	216	306	363	440	635	770
80	+/-	0.60					37.0	58.5	80.2	108	154	203	241	336	399	484	690	830
90	+/-	0.70						64.9	89.1	120	170	223	266	366	435	529	745	900
100	+/-	0.70						71.2	98.0	132	186	243	291	396	471	574	800	970
110	+/-	0.70							107	144	202	263	316	426	507	619	855	1.040
120	+/-	0.70							116	156	218	283	341	456	543	664	910	1.110
130	+/-	0.80								168	234	303	366	586	579	709	965	1.180
140	+/-	0.80								180	250	323	391	516	615	754	1.020	1.250
150	+/-	0.80									266	343	416	546	651	799	1.080	1.320
160	+/-	0.80									282	363	441	576	687	844	1.130	1.390
180	+/-	0.80										403	491	636	759	934	1.240	1.530
200	+/-	0.90											541	696	831	1.020	1.350	1.670
220	+/-	0.90												756	903	1.110	1.460	1.810
240	+/-	0.90													975	1.230	1.570	1.950
260	+/-	1.05														1.340	1.680	2.040
280	+/-	1.05															1.790	2.180
300	+/-	1.05															1.900	2.320



HEXAGON SOCKET COUNTERSUNK HEAD CAP SCREWS

ALTIKÖŞE SOKET HAVŞA BAŞLI VİDALAR (HB İNBUS)

SENKSCHRAUBEN MIT INNENSECHSKANT

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
Pitch / Diş adımı	P	0.50	0.70	0.80	1.00	1.25	1.50	1.75	2.00	2.00	2.50	2.50	2.50	3.00
Wire dia / Tel çapı	min.	2.86	3.82	4.82	5.82	7.78	9.78	11.73	13.73	15.73	17.73	19.67	21.67	23.67
Head height/Kafa Y.	k	1.70	2.30	2.80	3.30	4.40	5.50	6.50	7.00	7.50	8.00	8.50	13.10	14.00
Head dia/Kafa çapı	d_k	6	8	10	12	16	20	24	27	30	33	36	36	39
	min	5.70	7.64	9.64	11.57	15.57	19.48	23.48	26.48	29.48	32.38	35.38	35.38	38.38
Socket with/Soket g,	sw	2	2.5	3	4	5	6	8	10	10	12	12	14	14
Socket dia/Soket ç,	e	2.30	2.87	3.44	4.58	5.72	6.86	9.15	11.43	11.43	13.72	13.72	16.00	16.00
Socket dipth/Soket d,	t	1.20	1.80	2.30	2.50	3.50	4.40	4.60	4.80	5.30	5.50	5.90	8.80	10.30
Thread length / Diş uzunluğu	b^1	12	14	16	18	22	26	30	34	38	42	46	50	54
	b^2	-	-	-	24	28	32	36	40	44	48	52	56	60
	b^3	-	-	-	-	-	45	49	53	57	61	65	69	73

b^1 : *Thread length for bolts up to 125mm.* / 125mm. Boya kadar olan civatalar için diş boyu.

b^2 : *Thread length for bolts between 125mm. & 200mm.* / 125mm & 200mm. Boylar arasındaki civatalar için diş boyu.

b^3 : *Thread length for bolts more than 200mm.* / 200mm. 'Den uzun boylu civatalar için diş boyu.

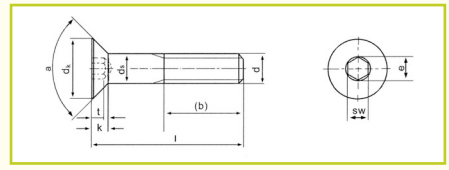
Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
Length / Boy (l)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.												
8	+/-	0.29	0.47	0.92	1.60	2.35									
10	+/-	0.29	0.56	1.07	1.85	2.70	5.47								
12	+/-	0.35	0.65	1.23	2.10	3.05	6.10	10.1							
16	+/-	0.35	0.83	1.53	2.59	3.76	7.35	12.1							
20	+/-	0.42	1.00	1.84	3.09	4.46	8.60	14.1	21.2						
25	+/-	0.42	1.35	2.23	3.71	5.34	10.2	16.6	24.8						
30	+/-	0.42	1.63	2.90	4.33	6.22	11.7	19.1	28.5		51.8				
35	+/-	0.50		3.40	5.43	7.10	13.3	21.6	32.1		58.4		91.4		
40	+/-	0.50		3.90	6.20	8.83	14.8	24.1	35.7		65.1		102		
50	+/-	0.50			7.74	11.0	19.9	30.1	43.0		78.4		123		179
60	+/-	0.60					24.8	35.7	54.0		91.7		143		209
70	+/-	0.60						41.2	62.9		111		164		239
80	+/-	0.60									127		200		269
90	+/-	0.70									143		226		299
100	+/-	0.70											253		340

HEXAGON SOCKET THIN HEAD CAP SCREWS

ALTIKÖŞE SOKET İNCE HAVŞA BAŞLI İNBUS (HB İNBUS)

SENKSCHRAUBEN MIT INNENSECHSKANT



Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M3	M4	M5	M6	M8	M10	M12	M14	M16	M20	M18	M22	M24
Pitch / Diş adımı	P	0.50	0.70	0.80	1.00	1.25	1.50	1.75	2.00	2.00	2.50	2.50	2.50	3.00
Wire dia / Tel çapı	min.	2.86	3.82	4.82	5.82	7.78	9.78	11.73	13.73	15.73	17.73	19.67	21.67	23.67
Head height/Kafa Y.	k	1.70	2.30	2.80	3.30	4.40	5.50	6.50	7.00	7.50	8.00	8.50	13.10	14.00
Head dia/Kafa çapı	d_k	6	8	10	12	16	20	24	27	30	33	36	36	39
	min	5.70	7.64	9.64	11.57	15.57	19.48	23.48	26.48	29.48	32.38	35.38	35.38	38.38
Socket with/Soket g,	sw	2	2.5	3	4	5	6	8	10	10	12	12	14	14
Socket dia/Soket ç,	e	2.30	2.87	3.44	4.58	5.72	6.86	9.15	11.43	11.43	13.72	13.72	16.00	16.00
Socket dipth/Soket d,	t	1.20	1.80	2.30	2.50	3.50	4.40	4.60	4.80	5.30	5.50	5.90	8.80	10.30
Thread length / Diş uzunluğu	b^1	12	14	16	18	22	26	30	34	38	42	46	50	54
	b^2	-	-	-	24	28	32	36	40	44	48	52	56	60
	b^3	-	-	-	-	-	45	49	53	57	61	65	69	73

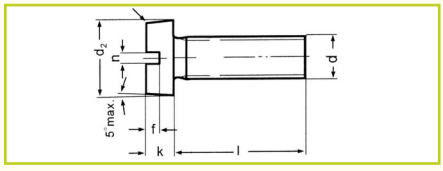
b^1 : *Thread length for bolts up to 125mm.* / 125mm. Boya kadar olan civatalar için diş boyu.

b^2 : *Thread length for bolts between 125mm. & 200mm.* / 125mm & 200mm. Boylar arasındaki civatalar için diş boyu.

b^3 : *Thread length for bolts more than 200mm.* / 200mm. 'Den uzun boylu civatalar için diş boyu.

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M3	M4	M5	M6	M8	M10	M12	M14	M16	M20	M18	M22	M24
Length / Boy (l)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.												
8	+/-	0.29	0.47	0.92	1.60	2.35									
10	+/-	0.29	0.56	1.07	1.85	2.70	5.47								
12	+/-	0.35	0.65	1.23	2.10	3.05	6.10	10.1							
16	+/-	0.35	0.83	1.53	2.59	3.76	7.35	12.1							
20	+/-	0.42	1.00	1.84	3.09	4.46	8.60	14.1	21.2						
25	+/-	0.42	1.35	2.23	3.71	5.34	10.2	16.6	24.8						
30	+/-	0.42	1.63	2.90	4.33	6.22	11.7	19.1	28.5		51.8				
35	+/-	0.50		3.40	5.43	7.10	13.3	21.6	32.1		58.4		91.4		
40	+/-	0.50		3.90	6.20	8.83	14.8	24.1	35.7		65.1		102		
50	+/-	0.50			7.74	11.0	19.9	30.1	43.0		78.4		123		179
60	+/-	0.60					24.8	35.7	54.0		91.7		143		209
70	+/-	0.60						41.2	62.9		111		164		239
80	+/-	0.60									127		200		269
90	+/-	0.70									143		226		299
100	+/-	0.70											253		340



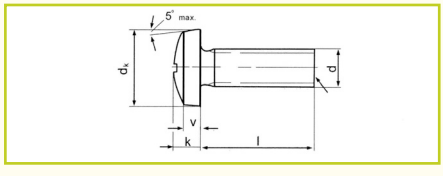
SLOTTED CHEESE HEAD SCREWS
DÜZ YARIKLI SİLİNDİR BAŞLI VİDALAR (SB)
ZYLINDERSCHRAUBEN MIT SCHLITZ

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M2	M2.5	M3	M4	M5	M6	M8	M10
Head height/Kafa y.	k	1.3	1.6	2.0	2.6	3.3	3.9	5.0	6.0
Head dia/Kafa çapı	d_2	3.8	4.5	5.5	7.0	8.5	10.0	13.0	16.0
Socket with/Yarık g,	n	0.5	0.6	0.8	1.0	1.2	1.6	2.0	2.5
Socket depth/Yarık d.	t	0.8	0.9	1.15	1.5	1.8	2.2	2.6	3.0
	min.	0.6	0.7	0.9	1.2	1.5	1.8	2.1	2.4

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M2	M2.5	M3	M4	M5	M6	M8	M10
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.							
5	+/-	0.25	0.198	0.332	0.560	1.09				
6	+/-	0.25	0.217	0.362	0.604	1.17	2.06			
8	+/-	0.30	0.254	0.422	0.692	1.33	2.20	3.56		
10	+/-	0.30	0.291	0.482	0.780	1.47	2.55	3.92	7.85	
12	+/-	0.35	0.329	0.542	0.868	1.63	2.80	4.27	8.49	14.6
16	+/-	0.35	0.402	0.662	1.04	1.95	3.30	4.98	9.77	16.6
20	+/-	0.40	0.478	0.782	1.22	2.25	3.78	5.69	11.0	18.6
25	+/-	0.40			1.44	2.64	4.40	6.56	12.6	21.1
30	+/-	0.40			1.66	3.02	5.02	7.45	14.2	23.6
35	+/-	0.50			1.88	3.41	5.62	8.25	15.8	26.1
40	+/-	0.50			2.10	3.80	6.25	9.20	17.4	28.6
45	+/-	0.50					6.88	10.0	18.9	31.1
50	+/-	0.50					7.50	10.9	20.6	33.6
55	+/-	1.000							22.1	36.1
60	+/-	1.000								38.6



"DIN 7985"

CROSK RECESSED RAISED CHEESE HEAD SCREWS
YILDIZ SİLİNDİR BAŞLI METRİK VİDALAR (YSB)
LINSENSCHRAUBEN MIT KREUZSCHLITZ

Technical informations. / Teknik bilgiler.

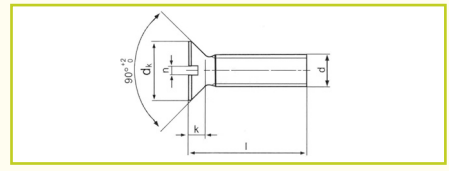
Thread size / Anma çapı		M2	M2.5	M3	M4	M5	M6	M8	M10
Head height/Kafa y.	k	1.6	2.0	2.4	3.1	3.8	4.6	6.0	7.5
Head height/Kafa y.	v	1.1	1.3	1.6	2.0	2.5	3.0	3.7	4.8
Head dia/Kafa çapı	d_k	4.0	5.0	6.0	8.0	10.0	12.0	16.0	20.0
PH	m	2.5	2.7	3.1	4.6	5.3	6.8	9.0	10.2
PZ	m	2.4	2.6	3.0	4.3	5.0	6.7	8.8	9.9

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M2	M2.5	M3	M4	M5	M6	M8	M10
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.							
5	+/-	0.25		0.40	0.67	1.40				
6	+/-	0.25		0.43	0.71	1.48	2.66			
8	+/-	0.30		0.49	0.80	1.63	2.91			
10	+/-	0.30		0.55	0.88	1.79	3.16	5.14	10.9	
12	+/-	0.35		0.61	0.95	1.94	3.41	5.49	11.5	21.2
16	+/-	0.35		0.73	1.11	2.25	3.91	6.29	12.8	23.2
20	+/-	0.40		0.85	1.27	2.56	4.41	7.00	14.2	25.2
25	+/-	0.40		1.00	1.47	2.94	5.03	7.87	15.8	27.7
30	+/-	0.40		1.18	1.71	3.44	5.70	8.75	17.5	30.2
35	+/-	0.50				3.94	6.50	9.60	19.1	32.7
40	+/-	0.50				4.44	7.30	10.5	20.7	35.7
45	+/-	0.50					8.00	11.4	22.3	37.7
50	+/-	0.50					8.70	12.3	23.9	41.2
55	+/-	1.000							25.4	43.7
60	+/-	1.000							27.0	46.2

"DIN 963"

SLOTTED RAISED COUNTERSUK HEAD SCREWS
DÜZ YARIKLI HAVŞA BAŞLI VİDALAR (HB)
SENKSCHRAUBEN MIT SCHLITZ



Technical informations. / Teknik bilgiler.

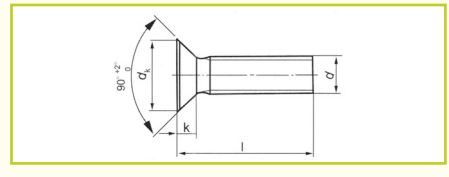
Thread size / Anma çapı		M2	M2.5	M3	M4	M5	M6	M8	M10
Head height/Kafa y.	k	1.2	1.5	1.7	2.2	2.5	3.0	4.0	5.0
Head dia/Kafa çapı	d_2	3.8	4.7	5.6	7.5	9.2	11.0	14.5	18.0
Socket with/Yarık g,	n	0.5	0.6	0.8	1.0	1.2	1.6	2.0	2.5
Slot depth/Yarık d.	max	0.6	0.7	0.85	1.1	1.3	1.6	2.1	2.6
	min.	0.4	0.5	0.6	0.8	1.0	1.2	1.6	2.0

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M2	M2.5	M3	M4	M5	M6	M8	M10
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.							
5	+/-	0.25	0.137	0.236	0.335	0.676				
6	+/-	0.25	0.152	0.266	0.379	0.754	1.21			
8	+/-	0.30	0.193	0.326	0.467	0.91	1.45	2.19		
10	+/-	0.30	0.231	0.386	0.555	1.06	1.70	2.54	5.03	
12	+/-	0.35	0.268	0.446	0.643	1.22	1.95	2.89	5.67	9.59
16	+/-	0.35	0.343	0.567	0.820	1.53	2.44	3.60	6.94	11.6
20	+/-	0.40		0.687	0.996	1.84	2.94	4.31	8.21	13.6
25	+/-	0.40		0.838	1.220	2.22	3.55	5.19	9.79	16.1
30	+/-	0.40			1.440	2.61	4.16	6.08	11.4	18.6
35	+/-	0.50				3.00	4.65	6.96	13.0	21.1
40	+/-	0.50				3.38	5.40	7.84	14.6	23.6
45	+/-	0.50					6.02	8.73	16.2	26.1
50	+/-	0.50					6.65	9.61	17.8	28.6
55	+/-	1.000							19.4	31.1
60	+/-	1.000								33.7

"DIN 965"

CROSS RECESSED COUNTERSUNK HEAD SCREWS
YILDIZ HAVŞA BAŞLI VİDALAR (YHB)
SENKSCHRAUBEN MIT KREUZSCHLITZ

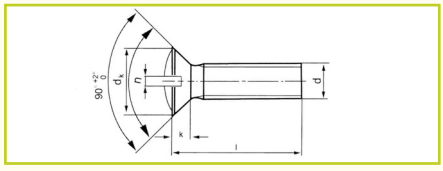


Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M2	M2.5	M3	M4	M5	M6	M8	M10
Head height/Kafa y.	k	1.2	1.5	1.65	2.2	2.5	3.0	4.0	5.0
Head dia/Kafa çapı	d_2	3.8	4.7	5.6	7.5	9.2	11.0	14.5	18.0
	a	0.8	0.9	1.0	1.4	1.6	2.0	2.5	3.0
PH	m	2.35	2.7	2.9	4.4	4.6	6.6	8.7	9.6
PZ	m	2.2	2.5	2.8	4.0	4.4	6.1	8.5	9.4

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M2	M2.5	M3	M4	M5	M6	M8	M10
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.							
5	+/-	0.25		0.24	0.34	0.68				
6	+/-	0.25		0.27	0.38	0.75	1.21			
8	+/-	0.30		0.33	0.47	0.91	1.45	2.19		
10	+/-	0.30		0.39	0.56	1.06	1.70	2.54	5.03	
12	+/-	0.35		0.45	0.64	1.22	1.95	2.89	5.67	9.59
16	+/-	0.35		0.57	0.82	1.53	2.44	3.60	6.94	11.6
20	+/-	0.40		0.69	1.00	1.84	2.94	4.31	8.21	13.6
25	+/-	0.40		0.84	1.22	2.22	3.55	5.19	9.79	16.1
30	+/-	0.40			1.44	2.61	4.16	6.08	11.7	18.6
35	+/-	0.50				3.00	4.65	6.96	13.0	21.1
40	+/-	0.50				3.38	5.40	7.84	14.6	23.6
45	+/-	0.50					6.02	8.73	16.2	26.1
50	+/-	0.50					6.65	9.61	17.8	28.6
55	+/-	1.000							19.4	31.1
60	+/-	1.000								33.7



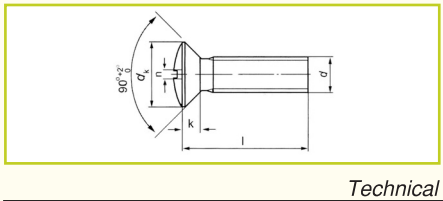
SLOTTED RAISED COUNTERSUK HEAD SCREWS
DÜZ YARIKLI MERCİMEK BAŞLI VİDALAR (MB)
LINSENSENKSCHRAUBEN MIT SCHLITZ

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M2	M2.5	M3	M4	M5	M6	M8	M10
Head height/Kafa y.	k	0.5	0.6	0.8	1.0	2.5	3.0	4.0	5.0
Head dia/Kafa çapı	d_k	3.8	4.7	5.6	7.5	9.2	11.0	14.5	18.0
Socket with/Yarık g,	n	0.5	0.6	0.8	1.0	1.2	1.6	2.0	2.5
Socket depth/Yarık d.	t	1.0	1.2	1.45	1.9	2.3	2.8	3.7	4.6
	min.	0.8	1.0	1.2	1.6	2.0	2.4	3.7	4.6

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M2	M2.5	M3	M4	M5	M6	M8	M10
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.							
5	+/-	0.25	0.156	0.272	0.395	0.82				
6	+/-	0.25	0.175	0.302	0.439	0.90	1.49			
8	+/-	0.30	0.212	0.362	0.527	1.06	1.73	2.66		
10	+/-	0.30	0.250	0.422	0.615	1.21	1.98	3.01	6.14	
12	+/-	0.35	0.287	0.482	0.703	1.37	2.23	3.36	6.78	11.7
16	+/-	0.35	0.362	0.603	0.880	1.68	2.72	4.07	8.05	13.7
20	+/-	0.40		0.723	1.060	1.99	3.22	4.78	9.32	15.7
25	+/-	0.40		0.874	1.280	2.37	3.83	5.66	10.9	18.2
30	+/-	0.40			1.500	2.76	4.44	6.55	12.5	20.7
35	+/-	0.50				3.15	4.93	7.43	14.1	23.7
40	+/-	0.50				3.53	5.68	8.31	15.7	25.7
45	+/-	0.50					6.30	9.20	17.3	28.2
50	+/-	0.50					6.93	10.1	18.9	30.7
55	+/-	1.000							20.5	33.2
60	+/-	1.000								35.8



"DIN 966"

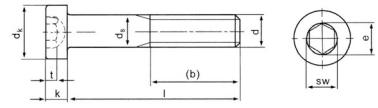
CROSS RECESSED RAISED COUNTERSUNK HEAD SCREWS
YILDIZ MERCİMEK BAŞLI VİDALAR (YMB)
LINSENSENKSCHRAUBEN MIT KREUZSCHLITZ

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M2	M2.5	M3	M4	M5	M6	M8	M10
Head height/Kafa y.	k	1.2	1.5	1.7	2.2	2.5	3.0	4.0	5.0
Head height/Kafa y.	v	3.8	4.7	5.6	7.5	9.2	11.0	14.5	18.0
Head dia/Kafa çapı	d_k	3.8	4.7	5.6	7.5	9.2	11	14.5	18
PH	m	2.5	2.7	3.1	4.5	5.3	6.8	9.0	10.0
PZ	m	2.4	2.8	3.1	4.6	5.3	7.0	8.8	9.9

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M2	M2.5	M3	M4	M5	M6	M8	M10
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.							
5	+/-	0.25		0.27	0.40	0.82				
6	+/-	0.25		0.30	0.44	0.90	1.49			
8	+/-	0.30		0.36	0.53	1.06	1.73			
10	+/-	0.30		0.42	0.62	1.21	1.98	2.66	6.14	
12	+/-	0.35		0.48	0.70	1.37	2.23	3.01	6.78	11.7
16	+/-	0.35		0.60	0.88	1.68	2.72	3.36	8.05	13.7
20	+/-	0.40		0.72	1.06	1.99	3.22	4.07	9.32	15.7
25	+/-	0.40		0.87	1.28	2.37	3.83	4.78	10.9	18.2
30	+/-	0.40			1.50	2.76	4.44	5.66	12.5	20.7
35	+/-	0.50				3.15	4.93	6.55	14.1	23.7
40	+/-	0.50				3.53	5.68	7.43	15.7	25.7
45	+/-	0.50					6.30	8.31	17.3	28.2
50	+/-	0.50					6.93	9.20	18.9	30.7
55	+/-	1.000						10.1	20.5	33.2
60	+/-	1.000								35.8



HEXAGON SOCKET THIN HEAD CAP SCREWS
ALTIKÖŞE SOKET İNCE BAŞLI VİDALAR (SB İNBUS)
ZYLINDERSCHRAUBEN MIT INNENSECHSKANT NIEDRIGEM

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
Pitch / Diş adımı	P	0.50	0.70	0.80	1.00	1.25	1.50	1.75	2.00	2.00	2.50	2.50	2.50	3.00
Wire dia / Tel çapı	min.	2.86	3.82	4.82	5.82	7.78	9.78	11.73	13.73	15.73	17.73	19.67	21.67	23.67
Head height/Kafa Y.	k	2.0	2.8	3.5	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
Head dia/Kafa çapı	d_k	5.5	7.0	8.5	10.0	13.0	16.0	18.0	21.0	24.0	27.0	30.0	33.0	36.0
	min	5.32	6.78	8.28	9.78	12.73	15.73	17.73	20.67	23.67	26.67	29.67	32.61	35.61
Socket with/Soket g,	sw	2	2.5	3	4	5	7	8	10	12	12	14	14	17
Socket dia/Soket ç,	e	2.30	2.87	3.44	4.58	5.72	8.01	9.15	11.43	13.72	13.72	16.00	16.00	19.44
Socket dipth/Soket d,	t	1.5	2.3	2.7	3.0	3.8	4.5	5.0	5.3	5.5	6.5	7.5	8.0	8.0
Thread length / Diş uzunluğu	b^1	12	14	16	18	22	26	30	34	38	42	46	50	54
	b^2	-	-	-	-	28	32	36	40	44	48	52	56	60
	b^3	-	-	-	-	-	-	-	-	57	61	65	69	73

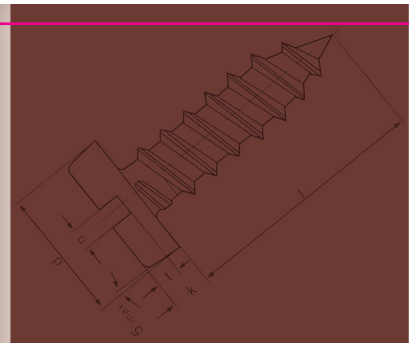
b^1 : *Thread length for bolts up to 125mm.* / 125mm. Boya kadar olan civatalar için diş boyu.

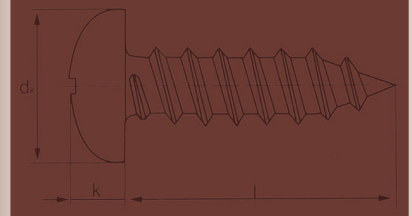
b^2 : *Thread length for bolts between 125mm. & 200mm.* / 125mm & 200mm. Boylar arasındaki civatalar için diş boyu.

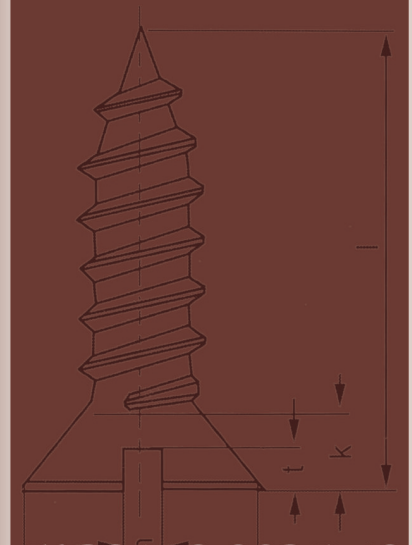
b^3 : *Thread length for bolts more than 200mm.* / 200mm. 'Den uzun boylu civatalar için diş boyu.

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
Length / Boy (l)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.												
5	+/-	0.29	0.48												
6	+/-	0.29	0.52	0.96											
8	+/-	0.35	0.60	1.12	2.26										
10	+/-	0.35	0.69	1.28	2.50	3.59									
12	+/-	0.42	0.78	1.44	2.74	3.94	8.05								
14	+/-	0.42	0.86	1.60	2.98	4.29	8.65								
16	+/-	0.42	0.97	1.76	3.22	4.64	9.25	14.4							
18	+/-	0.50	1.10	1.95	3.46	4.99	9.85	15.4							
20	+/-	0.50	1.20	2.15	3.77	5.34	10.5	16.4	24.1						
25	+/-	0.50		2.64	4.54	6.45	12.0	19.0	27.7						
30	+/-	0.60			5.31	7.56	14.0	21.6	31.3	46.5	62.1				
35	+/-	0.60				8.67	16.0	24.7	34.9	51.4	68.8				
40	+/-	0.60				9.78	18.0	27.8	39.3	56.3	75.5	99.0	130		
45	+/-	0.70					20.0	30.9	43.7	62.3	82.2	107	140		
50	+/-	0.70					22.0	34.0	48.1	68.3	89.6	115	150	188	223
55	+/-						24.0	37.1	52.5	74.3	97.0	125	160	201	238
60	+/-						26.0	40.2	56.9	80.3	104	135	172	214	253
70	+/-							46.4	65.8	92.4	119	155	197	244	288
80	+/-								74.7	105	134	175	222	274	324
90	+/-											195	247	304	359
100	+/-											215	272	334	395

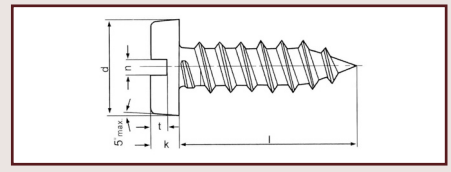






TAPPING SCREWS
SAC VİDALARI
BLECHSCHRAUBEN

Çetin Civata



PAN HEAD TAPPING SCREWS
SİLİNDİR BAŞLI SAC VİDASI (SB)
ZYLINDER-BLECHSCHRAUBEN MIT SCHLITZ

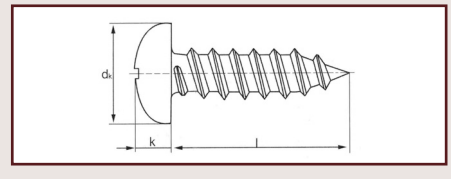
Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Head dia/Kafa çapı	d	4.20	5.60	6.90	7.50	8.20	9.50	10.80	12.50
Head height/Kafa y.	k	1.35	1.75	2.10	2.25	2.45	2.80	3.20	3.65
	min.	1.15	1.50	1.85	2.00	2.15	2.50	2.85	3.30
Socket with/Yarık g,	n	0.60	0.80	1.00	1.00	1.20	1.20	1.60	1.60
Socket depth/Yarık d.	t	0.80	1.00	1.25	1.40	1.50	1.70	1.95	2.20
	min.	0.55	0.75	0.94	1.05	1.15	1.35	1.55	1.80

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Length / Boy (1)	*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.							
4.5	0.174							
6.5	0.214	0.424						
9.5	0.274	0.532	0.84	1.07	1.26	1.85		
13	0.344	0.658	1.02	1.29	1.50	2.20	2.95	4.32
16	0.404	0.766	1.17	1.48	1.71	2.50	3.34	4.86
19		0.874	1.32	1.67	1.92	2.80	3.73	5.40
22			1.47	1.86	2.13	3.10	4.12	5.94
25			1.62	2.05	2.34	3.40	4.51	6.48
32					2.83	4.10	5.42	7.74
38						4.70	6.20	8.82
45							7.11	10.1
50							7.76	11.0

"DIN 7981"



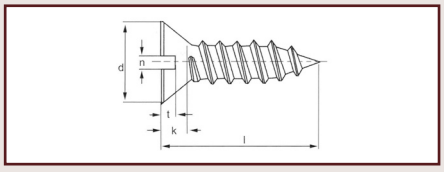
CROSS RECESSED PAN HEAD TAPPING SCREWS
YILDIZ SİLİNDİR BAŞLI SAC VİDASI (YSB)
LINSEN-BLECHSCHRAUBEN MIT KREUZSCHLITZ

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Head dia/Kafa çapı	d	4.20	5.60	6.90	7.50	8.20	9.50	10.80	12.50
	min.	3.90	5.30	6.54	7.14	7.84	9.14	10.37	12.07
Head height/Kafa y.	k	1.80	2.20	2.60	2.80	3.05	3.55	3.95	4.55
	min.	1.55	1.95	2.35	2.55	2.75	3.25	3.65	4.25
PH	m	2.60	3.00	4.20	4.40	4.60	5.00	6.50	7.10
PZ	m	2.40	2.90	3.90	4.10	4.30	4.70	6.20	6.70
NO	#	1		2				3	

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Length / Boy (1)	*Mass for 1.0000 units in kg.* / 1.000 Tanesinin ağırlığı.							
4.5	0.16							
6.5	0.20	0.40						
9.5	0.26	0.51	0.79	1.05	1.22	1.85		
13	0.33	0.63	0.97	1.27	1.46	2.20	3.20	3.90
16	0.39	0.74	1.12	1.46	1.67	2.50	3.60	4.44
19		0.85	1.27	1.65	1.88	2.80	4.00	4.98
22			1.42	1.84	2.10	3.10	4.38	5.52
25			1.57	2.03	2.30	3.40	4.76	6.06
32			1.57		2.80	4.10	5.67	7.32
38						4.70	6.45	8.40
45							7.25	9.50
50							8.08	10.6



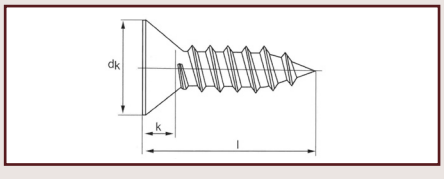
COUNTERSUNK HEAD TAPPING SCREWS
HAVŞA BAŞLI SAC VİDASI (HB)
SENK-BLECHSCHRAUBEN MIT SCHLITZ

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Head dia/Kafa çapı	d	4.30	5.50	6.80	7.50	8.10	9.50	10.80	12.40
	min.	4.06	5.20	6.44	7.14	7.74	9.14	10.37	11.97
Head height/Kafa y.	k	1.30	1.70	2.10	2.30	2.50	3.00	3.40	3.80
Socket with/Yarık g,	n	0.60	0.80	1.00	1.00	1.20	1.20	1.60	1.60
Socket depth/Yarık d.	t	0.60	0.75	0.95	1.05	1.15	1.35	1.50	1.75
	min.	0.40	0.50	0.60	0.70	0.75	0.85	1.00	1.20

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Length / Boy (1)	*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.							
4.5	0.100							
6.5	0.140	0.242						
9.5	0.200	0.350	0.540	0.66	0.78	1.10		
13	0.270	0.476	0.718	0.88	1.02	1.45	2.11	2.53
16	0.340	0.584	0.871	1.07	1.23	1.75	2.49	3.07
19		0.692	1.020	1.26	1.44	2.05	2.87	3.61
22			1.170	1.45	1.65	2.35	3.26	4.15
25			1.320	1.64	1.86	2.65	3.65	4.69
32					2.35	3.35	4.56	5.95
38						3.95	5.35	7.03
45							6.25	8.31
50							6.90	9.21



"DIN 7982"

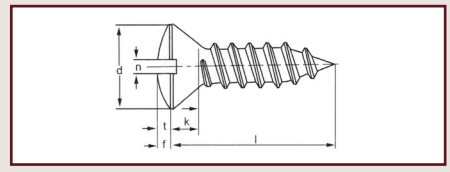
CROSS COUNTERSUNK HEAD TAPPING SCREWS
YILDIZ HAVŞA BAŞLI SAC VİDASI (YHB)
SENK-BLECHSCHRAUBEN MIT KREUZSCHLITZ

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Head dia/Kafa çapı	d	4.30	5.50	6.80	7.50	8.10	9.50	10.80	12.40
	min.	4.00	5.20	6.44	7.14	7.74	9.14	10.37	11.97
Head height/Kafa y.	k	1.30	1.70	2.10	2.30	2.50	3.00	3.40	3.80
	min.	0.80	1.10	1.40	1.50	1.60	1.90	2.10	2.40
PH	m	2.50	3.00	4.20	4.60	4.70	5.10	6.80	7.10
PZ	m	2.40	2.80	4.00	4.20	4.40	5.00	6.30	7.00
NO	#	1		2				3	

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Length / Boy (1)	*Mass for 1.0000 units in kg.* / 1.000 Tanesinin ağırlığı.							
4.5	0.10							
6.5	0.14	0.28						
9.5	0.20	0.35	0.54	0.66	0.77	1.10		
13	0.27	0.48	0.72	0.88	1.02	1.45	2.11	2.53
16	0.33	0.58	0.87	1.07	1.23	1.75	2.49	3.07
19		0.69	1.02	1.26	1.44	2.05	2.87	3.61
22			1.17	1.45	1.65	2.35	3.26	4.15
25			1.32	1.64	1.86	2.65	3.65	4.69
32					2.35	3.35	4.56	5.95
38							5.43	7.03
45							6.30	8.40
50							6.90	9.77



RAISED COUNTERSUNK HEAD TAPPING SCREWS
MERCİMEK BAŞLI SAC VİDASI (MB)
LINSENSENK-BLECHSCHRAUBEN MIT SCHLITZ

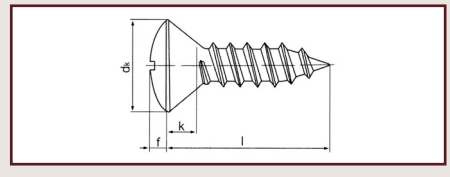
Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Head dia/Kafa çapı	d	4.30	5.50	6.80	7.50	8.10	9.50	10.80	12.40
Head height/Kafa y.	k	1.30	1.70	2.10	2.30	2.50	3.00	3.40	3.80
	min.	0.70	0.90	1.20	1.30	1.40	1.50	1.70	2.00
Socket with/Yarık g,	n	0.60	0.80	1.00	1.00	1.20	1.20	1.60	1.60
Socket depth/Yarık d.	t	1.15	1.50	1.90	2.05	2.25	2.60	2.95	3.45
	min.	0.95	1.25	1.55	1.70	1.85	2.15	2.45	2.85

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Length / Boy (1)	*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.							
4.5	0.140							
6.5	0.180	0.332						
9.5	0.240	0.440	0.72	0.89	1.07	1.88		
13	0.310	0.566	0.90	1.11	1.32	2.18	3.12	4.00
16	0.370	0.674	1.05	1.30	1.53	2.48	3.50	4.54
19		0.782	1.20	1.49	1.74	2.78	3.89	5.08
22			1.35	1.68	1.95	3.08	4.28	5.62
25			1.50	1.87	2.16	3.78	5.19	6.88
32					2.65	4.38	5.97	7.96
38						5.08	6.88	9.24
45							7.00	9.50
50							7.53	10.1

"DIN 7983"



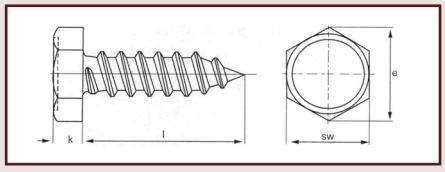
CR. RAISED COUNTERSUNK HEAD TAPPING SCREWS
YILDIZ MERCİMEK BAŞLI SAC VİDASI (YMB)
LINSENSENK-BLECHSCHRAUBEN MIT KREUZSCHLITZ

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Head dia/Kafa çapı	d	4.30	5.50	6.80	7.50	8.10	9.50	10.80	12.40
	min.	4.00	5.20	6.44	7.14	7.74	9.14	10.37	11.97
Head height/Kafa y.	k	1.30	1.70	2.10	2.30	2.50	3.00	3.40	3.80
	min.	0.70	0.90	1.20	1.30	1.40	1.50	1.70	2.00
PH	m	2.80	3.40	4.60	4.70	4.90	5.40	7.00	7.40
PZ	m	2.40	3.10	4.30	4.40	4.60	5.10	6.60	7.10
NO	#	1		2				3	

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Length / Boy (1)	*Mass for 1.0000 units in kg.* / 1.000 Tanesinin ağırlığı.							
4.5	0.14							
6.5	0.18	0.33						
9.5	0.24	0.44	0.72	0.89	1.07	1.53		
13	0.31	0.57	0.90	1.11	1.32	1.88	2.64	3.49
16	0.37	0.67	1.05	1.30	1.53	2.18	3.12	4.00
19		0.78	1.20	1.49	1.74	2.48	3.50	4.54
22			1.35	1.68	1.95	2.78	3.89	5.08
25			1.50	1.87	2.16	3.08	4.28	5.62
32					2.65	3.78	5.19	6.88
38							5.97	7.96
45							6.80	9.30
50							7.70	10.6



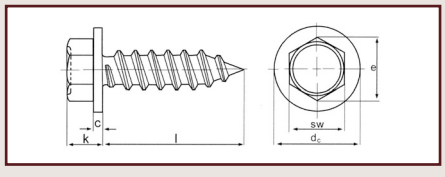
HEXAGON HEAD TAPPING SCREWS
ALTIKÖŞE BAŞLI SAC VİDASI
SECHSKANT-BLECHSCHRAUBEN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Head width/Anahtar a.	sw	3.20	5.00	5.50	7.00	7.00	8.00	8.00	10.00
Diagonal/Köşegen	e	3.41	5.45	6.00	7.66	7.66	8.79	8.79	11.05
Head heigth/Kafa yük.	k	1.30	1.50	2.30	2.30	2.80	3.00	4.00	4.80

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Length / Boy (1)	*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.							
4.5	0.13							
6.5	0.17	0.32						
9.5	0.23	0.43	0.74	1.08	1.29	1.70		
13	0.31	0.55	0.92	1.29	1.54	2.02	2.72	4.25
16		0.66	1.08	1.48	1.76	2.32	3.09	4.77
19		0.76	1.23	1.67	1.97	2.61	3.48	5.30
22			1.38	1.87	2.19	2.90	3.86	5.82
25			1.54	2.06	2.40	3.19	4.25	6.35
32					2.91	3.88	5.14	7.57
38						4.46	5.90	8.63
45						5.16	6.81	9.89
50						5.66	7.46	10.8



"DIN 6928"

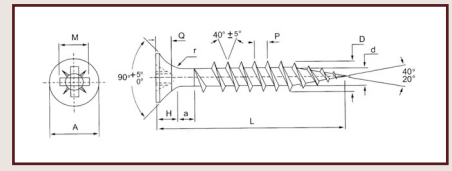
HEXAGON WASHER HEAD TAPPING SCREWS
ALTIKÖŞE PUL BAŞLI SAC VİDASI
SECHSKANT-BLECHSCHRAUBEN MIT BUND

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		2.2	3.5	3.9	4.2	4.8	5.5	6.3	8
Head width/Anahtar aı	sw	4.00	5.50	5.50	7.00	8.00	8.00	10.00	13.00
Diagonal/Köşegen	e	4.28	5.96	5.96	7.59	8.71	8.71	10.95	14.26
Head height/Kafa y.	k	2.80	3.40	3.40	4.10	4.30	5.40	5.90	7.00
	min.	2.50	3.00	3.00	3.60	3.80	4.80	5.30	6.40
Washer height/Pul y.	c	0.40	0.60	0.60	0.80	0.90	1.00	1.00	1.20
Washer dia/Pul çapı	d_c	6.30	8.30	8.30	8.80	10.50	11.00	13.50	18.00
	min.	5.80	7.60	7.60	8.10	9.80	10.00	2.20	16.70

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı	2.2	2.9	3.5	3.9	4.2	4.8	5.5	6.3
Length / Boy (1)	*Mass for 1.0000 units in kg.* / 1.000 Tanesinin ağırlığı.							
4.5								
6.5	0.43	0.93						
9.5	0.54	1.10	1.14	1.84	2.48			
13	0.66	1.28	1.35	2.09	2.80	3.64	5.44	
16	0.77	1.44	1.54	2.31	3.10	4.01	5.96	10.9
19	0.87	1.59	1.73	2.52	3.39	4.40	6.49	11.8
22		1.74	1.93	2.74	3.68	4.78	7.01	12.7
25			2.12	2.95	3.97	5.17	7.54	13.6
32					4.66	6.06	8.76	15.7
38						6.82	9.82	17.5
45							11.1	19.6
50							12.0	21.1



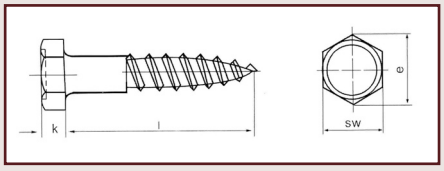
CHIPBOARD SCREW
SUNTA VİDASI
SPANPLATTENSCRAUBEN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		3	3.5	4	4.5	5	5
Major Dia/Diş üstü ç.	D	3.05	3.55	4.05	4.55	5.05	6.05
	min.	2.75	3.20	3.70	4.20	4.70	5.70
Minor Dia/Diş dibi ç.	d	1.90	2.20	2.55	2.75	3.10	3.70
	min.	1.50	1.60	2.15	2.35	2.70	3.30
Head heigt/Kafa çapı	A	6.05	7.50	8.05	9.05	10.05	12.05
	min.	5.70	6.64	7.64	8.64	9.64	11.57
Head heigt/Kafa yükü	H	1.80	2.00	2.35	2.55	2.85	3.35
Recess width/Yıldız g.	M	3.0	4.0	4.4	4.8	5.3	6.6
Drive Size/ Tornavida	PH	1	2	2	2	2	3
Torque/ Tork	min.	15	20	30	44	61	110
Recess depth / Yıldız Derinliği	Q	2.11	2.16	2.51	3.02	3.55	3.55
	min.	1.60	1.76	2.05	2.46	2.99	2.99
Pitch/ Diş adımı	P	1.35	1.60	1.80	2.00	2.20	2.60
	r	1.50	1.80	2.00	2.20	2.50	2.50
	a	2.35	2.60	2.80	3.00	3.20	3.60
Material / Malzeme		C1018-C1022					
Core hardness / Çekirdek sertliği		240-450HV					
Surface hardness / Yüzey sertliği		min. 450HV					
Surface hardness / Yüzey sertliği derinliği		0.05-0.18 mm.		0.10-0.23 mm.			0.10-0.28 mm.

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			3	3.5	4	4.5	5	5
Length / Boy (1)			*Mass for 1.0000 units in kg.* / 1.000 Tanesinin ağırlığı.					
12	+/-	0.90	0.46	0.60				
16	+/-	0.90	0.57	0.75	0.94		1.50	
20	+/-	1.05	0.68	0.89	1.12	1.48	1.78	
25	+/-	1.05	0.81	1.06	1.35	1.78	2.14	
30	+/-	1.05	0.95	1.24	1.57	2.07	2.49	
35	+/-	1.25	1.09	1.42	1.80	2.37	2.85	
40	+/-	1.25	1.22	1.60	2.02	2.66	3.20	
45	+/-	1.25		1.77	2.25	3.33	3.50	
50	+/-	1.25		1.95	2.63	3.26	3.92	
60	+/-	1.50			2.92	3.85	4.63	
70	+/-	1.50			3.37	4.44	5.34	
80/75	+/-	1.50					6.05	
90/75	+/-	1.75					6.76	
100/75	+/-	1.75					7.48	
60/40	+/-	1.50						7.06
70/45	+/-	1.50						8.15
80/55	+/-	1.50						9.24
90/70	+/-	1.75						10.32
100/70	+/-	1.75						11.41
110/70	+/-	1.75						12.50
120/70	+/-	1.75						13.58
130/70	+/-	2.00						14.67
140/70	+/-	2.00						15.76
150/70	+/-	2.00						16.84
160/70	+/-	2.50						18.25
170/70	+/-	2.50						19.50
180/70	+/-	2.50						20.59



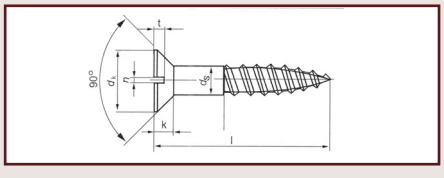
HEXAGON HEAD WOOD SCREW
ALTIKÖŞE BAŞLI AĞAÇ VİDASI (TRİFON)
SECHSKANT-HOLZSCHRAUBEN MIT SCHLITZ

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		4	5	6	7	8	10	12	16	20
Wire dia/Tel çapı	min.	3.52	4.52	5.52	6.42	7.42	9.42	11.30	15.30	19.30
Head heigth/Kafa yük.	k	2.8	3.5	4.0	5.0	5.5	7.0	8.0	10.0	13.0
	min.	2.50	3.13	3.63	4.63	5.13	6.55	7.55	9.55	12.10
Head with/Anahtar a.	sw	7	8	10	12	13	17	19	24	30
Diagonal/Köşegen	e	7.50	8.63	10.89	13.07	14.20	18.72	20.88	26.17	32.95

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			4	5	6	7	8	10	12	16	20
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.								
16	+/-	0.90	1.71	2.92							
20	+/-	1.05	2.01	3.42	5.02						
25	+/-	1.05	2.41	4.02	5.82		11.5				
30	+/-	1.05	2.81	4.62	6.62		12.9	23.6			
35	+/-	1.25	3.11	5.12	7.42		14.2	25.8	36.2		
40	+/-	1.25	3.51	5.82	8.22		15.6	28.0	39.2		
45	+/-	1.25		6.43	8.94		16.9	30.0	42.1		
50	+/-	1.25		7.03	9.64		18.2	32.1	45.4	84.1	
60	+/-	1.50			11.2		20.9	36.5	51.8	94.9	165
80	+/-	1.50					26.5	45.2	64.5	118	201
100	+/-	1.75					32.0	54.0	77.1	141	238
120	+/-	1.75					37.2		89.5	163	275
150	+/-	2.00								198	328



"DIN 97"

SLOTTED COUNTERSUNK HEAD WOOD SCREW
HAVŞA BAŞLI DÜZ YARIKLI AĞAÇ VİDASI
SENK-HOLZSCHRAUBEN MIT SCHLITZ

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		2	2.5	3	3.5	4	4.5	5	6	8
Wire dia/Tel çapı	min.	1.60	2.10	2.60	3.02	3.52	4.02	4.52	5.52	7.42
Head dia /Kafa çapı	d_k	3.80	4.70	5.60	6.50	7.50	8.30	9.20	11.00	14.50
	min.	3.43	4.33	5.23	6.05	7.05	7.85	8.75	10.45	13.95
Head heigth/Kafa yük.	k	1.20	1.50	1.65	1.93	2.20	2.35	2.50	3.00	4.00
Slot width/Yarık den.	n	0.5	0.6	0.8	0.8	1.0	1.0	1.2	1.6	2.0
Slot depth/Yarık der.	t	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.6

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			2	2.5	3	3.5	4	4.5	5	6	8
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.								
10	+/-	0.75	0.259	0.372	0.604	0.789					
12	+/-	0.90	0.302	0.432	0.696	0.914	1.18				
16	+/-	0.90	0.387	0.552	0.881	1.170	1.49	1.85	2.31		
20	+/-	1.00	0.484	0.672	1.060	1.430	1.79	2.22	2.78	4.12	
25	+/-	1.00		0.822	1.300	1.730	2.17	2.71	3.37	4.96	
30	+/-	1.00		0.972	1.540	2.040	2.55	3.19	4.00	5.80	
35	+/-	1.25			1.770	2.350	2.94	3.68	4.55	6.63	
40	+/-	1.25			2.010	2.660	3.32	4.17	5.14	7.46	13.4
45	+/-	1.25				2.980	3.66	4.65	5.73	8.29	15.0
50	+/-	1.25				3.290	4.05	5.14	6.32	9.12	16.5
60	+/-	1.50				3.910	4.81	6.11	7.54	10.8	19.6
70	+/-	1.50							8.72	12.5	22.7
80	+/-	1.50							9.90	14.3	25.7

SELF DRILLING SCREW

MATKAP UÇLU VİDA

BOHRSCHRAUBEN MIT BLECHSCHRAUBEN - GEWINDE

K

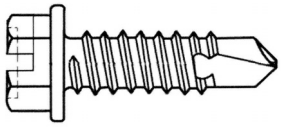


HEXAGON WASHER HEAD SELF DRILLING SCREW

ALTIKÖŞE PUL BAŞLI MATKAP UÇLU VİDA (TRAPEZ)

SECHSKANT-BLECHSCHRAUBEN MIT BUND

L



HEXAGON WASHER SLOTTED HEAD SELF DRILLING SCREW

ALTIKÖŞE PUL YARIKLI BAŞLI MATKAP UÇLU VİDA (TRAPEZ)

SECHSKANT-BLECHSCHRAUBEN MIT BUND

N



CHEESE HEAD SELF DRILLING SCREW

SİLİNDİR BAŞLI MATKAP UÇLU VİDA (YSB MUV)

LINSEN-BLECHSCHRAUBEN

P

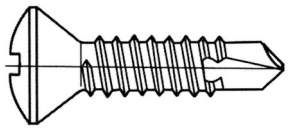


COUNTERSUNK HEAD SELF DRILLING SCREW

HAVŞA BAŞLI MATKAP UÇLU VİDA (YHB MUV)

SENK-BLECHSCHRAUBEN

Q



OVAL HEAD SELF DRILLING SCREW

MERCİMEK BAŞLI MATKAP UÇLU VİDA (YMB MUV)

LINSENSENK-BLECHSCHRAUBEN

Technical informations. / Teknik bilgiler.

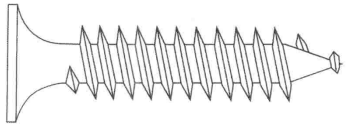
Thread size / Anma çapı		2.9	3.5	3.9	4.2	4.8	5.5	6.3
Drill range / Delme kapasitesi	from	0.70	0.70	0.70	1.75	1.75	1.75	2
	to	1.90	2.25	2.40	3.00	4.40	5.25	6
Wire dia / Tel çapı	d_p	2.30	2.80	3.10	3.60	4.10	4.80	5.8
Surface hardness / Yüzey sertliği		min. 450 HV						
Core hardness / Çekirdek sertliği		250-450 HV						

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			2.9	3.5	3.9	4.2	4.8	5.5	6.3
Length / Boy (1)			Screw length/Vida uzunluğu						
9.5	+/-	0.75	3.25	2.85					
13	+/-	0.90	6.60	6.20	5.80	4.30	4.70		
16	+/-	0.90	9.60	9.20	8.80	7.30	5.80	5.0	
19	+/-	1.00	12.5	12.1	11.7	10.3	8.70	8.0	7.0
22	+/-	1.00		15.1	14.7	13.3	11.70	11	10
25	+/-	1.00		18.1	17.7	16.3	14.7	14	13
32	+/-	1.25			24.5	23.0	21.5	21	20
38	+/-	1.25			30.5	29.0	27.5	27	26
45	+/-	1.25					34.5	34	33
50	+/-	1.25					39.5	39	38

“NON-STANDART SCREWS”

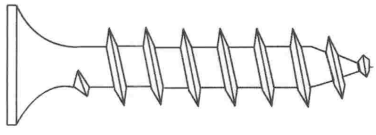
ALÇIPAN VİDASI (SIK DİŞLİ)



BUGLE HEAD DRYWALL SCREW (FINE)

3.5	4.2	4.8
12-57	65-90	90-150

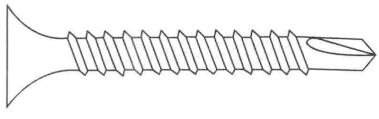
ALÇIPAN VİDASI (SEYREK DİŞLİ)



BUGLE HEAD DRYWALL SCREW (COARSE)

3.5	4.2	4.8
12-57	65-90	90-150

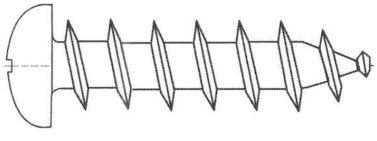
ALÇIPAN VİDASI (MATKAP UÇLU)



BUGLE HEAD DRYWALL SCREW (SELF DRILLING)

3.5	4.2
25-51	65-75

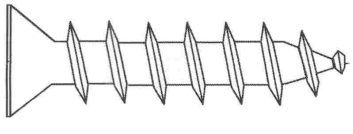
SİLİNDİR BAŞLI SAC VİDASI (SEYREK DİŞLİ)



PAN HEAD TAPPING SCREW (COARSE)

3.9	4.2	4.8	5.5	6.0	6.3
13-38	22-45	32-45	60-100	60-100	60-100

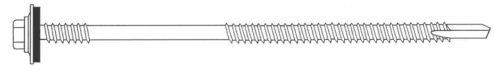
HAVA BAŞLI SAC VİDASI (SEYREK DİŞLİ)



COUNTERSUNK HEAD TAPPING SCREW (COARSE)

5.5	6.0	6.3
60-100	60-100	60-100

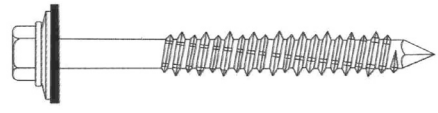
PANEL VİDASI



COMPOSIT PANEL (ROOFING) SCREW

5.5/6.3
65/100

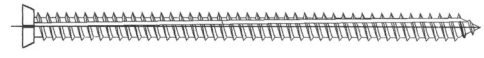
BETON TRİFONU



MASONARY SCREW

6.3
45/125

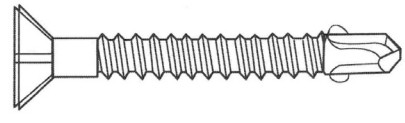
BETON MONTAJ VİDASI (BULTEKS)



CONCRETE SCREW

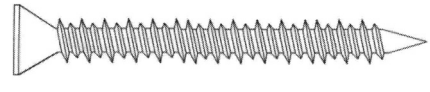
7.5
40/150

KANATLI DORSE VİDASI



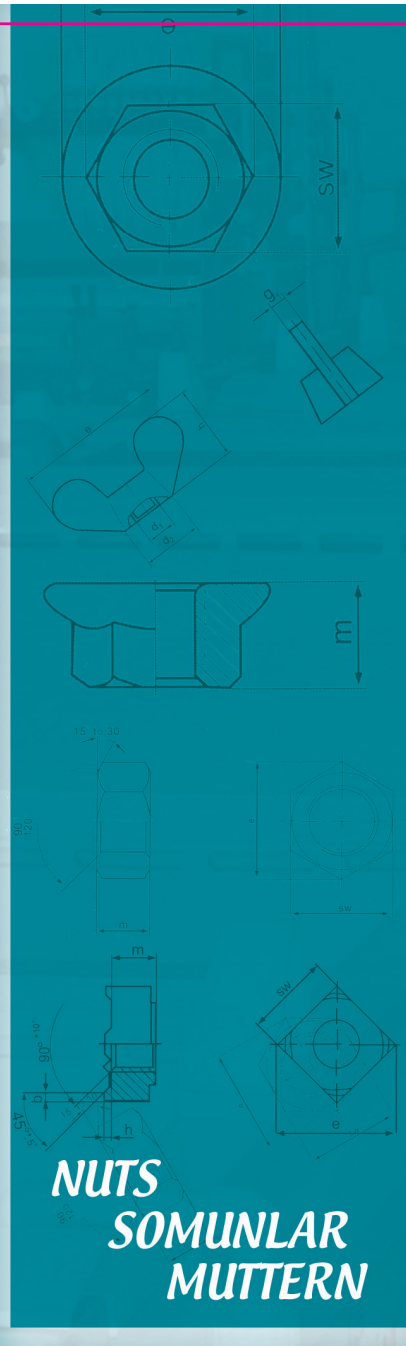
CHIPBOARD SCREW WINGS (FLY-GEL)

HI-LOW SAC VİDASI



HI-LOW (WINDOW) SCREW

4.0
22-25

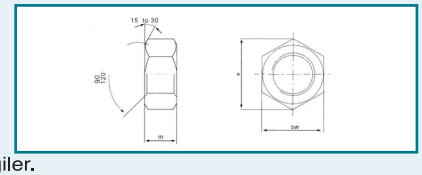


Çetin Civata

MECHANICAL PROPERTIES OF CARBON AND LOW ALLOY STEEL BOLTS (COARSE THREADE)
SADE KARBONLU VE DÜŞÜK ALAŞIMLI ÇELİKTEN İMAL EDİLEN NORMAL DİŞLİ CİVATALARIN MEKANİK ÖZELLİKLERİ

GR	greater than / less than or equal to		- / M4	M4 / M7	M7 / M10	M10 / M16	M16 / M39
04	Stress under proof load S_p	N/mm²	380				
	Vickers hardness. HV	min.	188				
		max.	302				
	Nut	state	NQT[a]				
		style	thin				
05	Stress under proof load S_p	N/mm²	500				
	Vickers hardness. HV	min.	272				
		max.	353				
	Nut	state	QT[b]				
		style	thin				
4	Stress under proof load S_p	N/mm²					510
	Vickers hardness. HV	min.					117
		max.					302
	Nut	state					NQT[a]
		style					1
5	Stress under proof load S_p	N/mm²	520	580	590	610	630
	Vickers hardness. HV	min.	130				146
		max.	302				
	Nut	state	NQT[a]				
		style	1				
6	Stress under proof load S_p	N/mm²	600	670	680	700	720
	Vickers hardness. HV	min.	150				170
		max.	302				
	Nut	state	NQT[a]				
		style	1				
8	Stress under proof load S_p	N/mm²	800	855	870	880	620
	Vickers hardness. HV	min.	180	200			233
		max.	302				353
	Nut	state	NQT[a]				QT[b]
		style	1				
	Stress under proof load S_p	N/mm²	-				990
	Vickers hardness. HV	min.	-				180
		max.	-				302
	Nut	state	-				NQT[a]
		style	-				2
9	Stress under proof load S_p	N/mm²	600	915	940	950	920
	Vickers hardness. HV	min.	170	188			
		max.	302				
	Nut	state	NQT[a]				
		style	2				
10	Stress under proof load S_p	N/mm²	1040			1050	1060
	Vickers hardness. HV	min.	272				
		max.	353				
	Nut	state	OT[b]				
		style	1				
12	Stress under proof load S_p	N/mm²	1040			1170	1060
	Vickers hardness. HV	min.	295				-
		max.	353				-
	Nut	state	OT[b]				-
		style	1				-
	Stress under proof load S_p	N/mm²	1150		1160	1190	1200
	Vickers hardness. HV	min.	272				
		max.	353				
	Nut	state	OT[b]				
		style	2				

a : NQT[a], *Not quenched or tempered.*
b : QT[b], *Quenched and tempered*



HEXAGON NUT
ALTIKÖŞE SOMUN
SECHSKANTMUTTERN

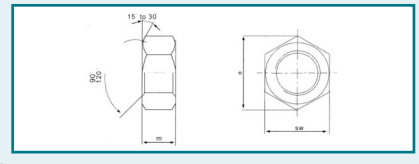
Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27
Pitch / Diş adımı	P	0.50	0.70	0.80	1.00	1.00	1.25	1.50	1.75	2.00	2.00	2.50	2.50	2.50	3.00	3.00
Head width/Anahtar a.	sw	5.5	7	8	10	11	13	17	19	22	24	27	30	32	36	41
Diagonal/Köşegen	e	6.01	7.74	8.87	11.05	12.12	14.38	18.90	21.10	24.49	26.75	30.14	33.53	35.72	39.98	45.69
Height/Yükseklik	m	2.4	3.2	4	5	5.5	6.5	8	10	11	13	15	16	18	19	22
	min.	2.10	2.90	3.70	4.70	5.20	6.14	7.64	9.64	10.30	12.30	14.30	14.90	16.90	17.90	20.50
Weight/Ağırlık	gr/p.	0.38	0.81	1.23	2.50	3.12	5.20	11.6	17.3	25.0	33.3	49.4	64.4	79.0	110	165

Thread size / Anma çapı		M30	M33	M36	M39	M42	M45	M48	M52	M56	M60	M64	M68	M72	M76	M80
Pitch / Diş adımı	P	3.50	3.50	4.00	4.00	4.50	4.50	5.00	5.00	5.50	5.50	6.00	6.00	-	-	-
Head width/Anahtar a.	sw	46	50	55	60	65	70	75	80	85	90	95	100	105	110	115
Diagonal/Köşegen	e	51.29	55.80	61.31	66.96	72.61	78.26	83.91	89.56	95.07	99.21	104.86	110.51	116.16	121.81	127.46
Height/Yükseklik	m	24	26	29	31	34	36	38	42	45	48	51	54	58	61	64
	min.	22.50	24.00	27.00	28.50	32.40	34.40	36.40	40.40	43.40	46.40	49.10	52.10	56.10	59.10	62.10
Weight/Ağırlık	gr/p.	223	288	393	502	652	800	977	1220	1420	1690	1980	2300	2670	3040	3440

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

"EN ISO 4032"



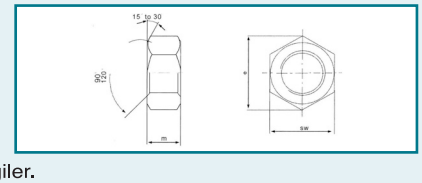
HEXAGON NUT
ALTIKÖŞE SOMUN
SECHSKANTMUTTERN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M4	M5	M6	M8	M10	M12	M14	M16	M18	M20
Pitch / Diş adımı	P	0.70	0.80	1.00	1.25	1.50	1.75	2.00	2.00	2.50	2.50
Head width/Anahtar a.	sw	7	8	10	13	16	18	21	24	27	30
Diagonal/Köşegen	e	7.66	8.79	11.05	14.38	17.77	20.03	23.36	26.75	29.56	32.95
Height/Yükseklik	m	3.2	4.7	5.2	6.8	8.4	10.8	12.8	14.8	15.8	18
	min.	2.90	4.40	4.90	6.44	8.04	10.37	12.10	14.10	15.10	16.90
Weight/Ağırlık	gr/p.	0.82	1.50	2.60	5.81	10.51	16.22	24.00	38.35	54.33	75.42

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

"DIN 934/ F"

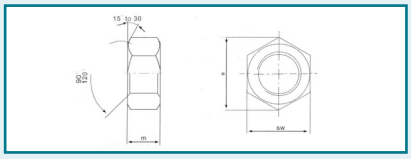


HEXAGON NUT (FINE THREADED)
ALTIKÖŞE SOMUN İNCE DİŞLİ
SECHSKANTMUTTERN (FEINGEWINDE)

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M39
Pitch / Diş adımı	P_1	1.00	1.25	1.50	1.50	1.50	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	3.00
	P_2		1.00	1.25			1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Head width/Anahtar a.	sw	13	17	19	22	24	27	30	32	36	41	46	50	60	60
Diagonal/Köşegen	e	14.38	18.90	21.10	24.49	26.75	30.14	33.53	35.72	39.98	45.63	51.28	55.80	61.31	66.46
Height/Yükseklik	m	6.5	8	10	11	13	15	16	18	19	22	24	26	29	31
Weight/Ağırlık	gr/p.	5.20	11.6	17.3	25.0	33.3	49.4	64.4	79.0	110	165	223	288	393	502

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

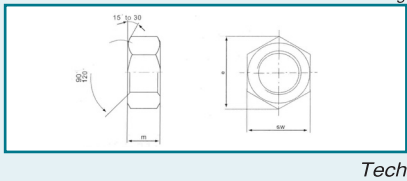


HEXAGON NUT (NC & NF THREADED)
ALTIKÖŞE SOMUN (NC & NF DİŞLİ)
SECHSKANTMUTTERN (NC & NF GEWINDE)

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		5/32	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1"	1 1/8	1 1/4	1 3/8	1 1/2	1 5/8	1 3/4	2"
Pitch / Diş adımı	P_1			20	18	16	14	13	12	11	10	9	8	7	7	6	6	5	5	5
Head width/Anahtar a.	P_2			28	24	24	20	20	18	18	16	14	12	12	12	12	12			
Diagonal/Köşegen	sw	7	9	11	14	17	19	22	25	27	32	36	41	46	50	55	60	65	70	80
Height/Yükseklik	e	8.07	10.4	12.7	16.2	19.6	21.2	25.9	28.2	31.2	36.9	41.6	47.3	53.1	57.7	63.5	69.3	75.0	80.8	92.4
	m	3.2	4	5.5	6.5	8	9.5	11	12	13	16	18	20	22	25	28	30	32	35	40
Weight/Ağırlık	gr/p	0.81	1.23	3.00	5.80	10.8	15.2	24.3	34.9	42.3	72.8	98.7	139	196	259	354	443	560	709	1.060

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.



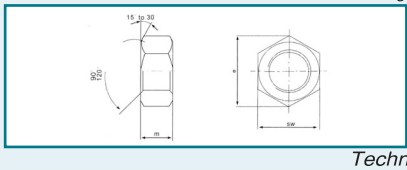
"DIN 936"

HEXAGON THIN NUT
ALTIKÖŞE KONTRA SOMUN
SECHSKANTMUTTERN (NIEDRIG)

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M8	M10	M12	M14	M16	M18	M20
Pitch / Diş adımı	P	1.25	1.50	1.75	2.00	2.00	2.50	2.50
Head width/Anahtar a.	s	13	17	19	22	24	27	30
Diagonal/Köşegen	e	14.38	18.90	21.10	24.49	26.75	29.56	32.95
Height/Yükseklik	m	5	6	7	8	8	9	9
	min.	4.70	5.70	6.64	7.42	7.42	8.42	8.10
Weight/Ağırlık	gr/p	4.00	8..60	12.10	18.20	20.10	29.60	36.30

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.



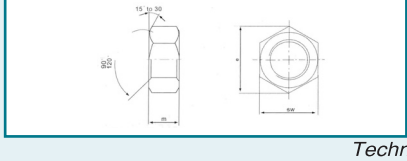
"DIN 6915"

HEXAGON HIGH/STRENGTH NUT
ALTIKÖŞE AĞIR YÜK SOMUNU
SECHSKANTMUTTERN FUR STAHLKONSTRUKTIONEN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M12	M16	M20	M22	M24	M27	M30	M36
Pitch / Diş adımı	P_1	1.75	2.00	2.50	2.50	3.00	3.00	3.50	4.00
Head width / Anahtar a.	sw	22.0	27.0	32.0	36.0	41.0	46.0	50.0	60.0
Diagonal / Köşegen	e	23.91	29.56	35.03	39.55	45.20	50.85	55.37	66.44
Height / Yükseklik	h	10	13	16	18	19	22	24	29
	min	9.64	12.3	14.9	16.9	17.7	20.7	22.7	27.7
Weight / Ağırlık	gr/p	23.3	44.8	73.9	104	155	224	300	515

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.



"DIN 555"

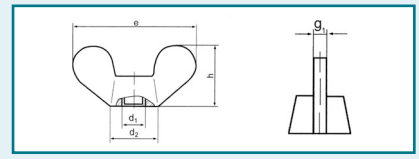
HEXAGON NUT
ALTIKÖŞE SOMUN
SECHSKANTMUTTERN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M39
Pitch / Diş adımı	P	0.80	1.00	1.25	1.50	1.75	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.50	3.50	4.00	4.00
Head width/Anahtar a.	s	8	10	13	17	19	22	24	27	30	32	36	41	46	50	55	60
Diagonal/Köşegen	e	8.63	10.89	14.20	18.72	20.88	24.97	26.17	30.05	32.95	36.10	39.95	45.20	50.85	55.37	60.79	66.44
Height/Yükseklik	m	4	5	6.5	8	10	11	13	15	16	18	19	22	24	26	29	31
	min.	3.70	4.70	6.14	7.64	9.64	10.30	12.30	14.30	14.90	16.90	17.90	20.50	22.50	24.00	27.00	28.50
Weight/Ağırlık	gr/p.	1.11	2.32	4.62	10.9	15.9	25.0	30.8	49.4	60.3	80.2	103	154	216	271	369	472

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

"DIN 315"



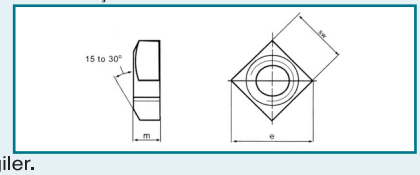
WING NUTS
KELEBEK SOMUN
FLUGELMUTTERN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M4	M5	M6	M8	M10	M12	M16	M20	M24
Pitch / Diş adımı	P	0.70	0.80	1.00	1.25	1.50	1.75	2.00	2.50	3.00
Outside dia / Dış çap	d_2	8	11	13	16	20	23	29	35	44
Length / Uzunluk	e	20	26	33	39	51	65	73	90	110
Thickness / Kalınlık	g	1.9	2.3	2.3	2.8	4.4	4.9	6.4	6.9	9.4
Height / Yükseklik	h	10.5	13.0	17.0	20.0	25.0	33.5	37.5	46.5	56.5
Weight / Ağırlık	gr/p	0.38	1.38	2.38	3.38	4.38	5.38	6.38	7.38	8.38

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

"DIN 557"



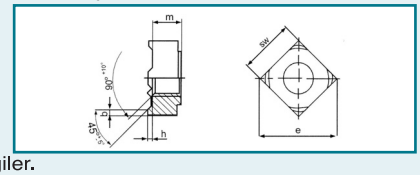
SQUARE NUTS
DÖRT KÖŞE SOMUN
VIERKANTMUTTERN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M5	M6	M8	M10	M12	M16
Pitch / Diş adımı	P	0.80	1.00	1.20	1.50	1.75	2.00
Head with / Anahtar a.	sw	8	10	13	16 | 17	18 | 19	24
Diagonal / Köşegen	e	11.3	14.1	18.4	22.6 | 24.0	25.4 | 26.9	33.9
Height / Yükseklik	m	4.0	5.0	6.5	8.0	10.0	13.0
	min.	3.52	4.52	5.92	7.42	9.42	12.30
Weight / Ağırlık	gr/p	1.31	2.77	5.50	10.70 | 13.00	16.30 | 19.10	38.20

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

"DIN 928"



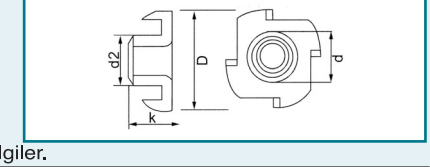
SQUARE WELD NUT
DÖRTKÖŞEKÖŞE KAYNAK SOMUNU
VIERKANT-SCHWEISSMUTTERN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M4	M5	M6	M7	M8	M10	M12	M14	M16
Pitch / Diş adımı	P_1	0.70	0.80	1.00	1.00	1.25 | 1.00	1.50 | 1.25	1.75 | 1.25	2.00 | 1.50	2.00 | 1.50
Weld nail / Kaynak tır.	h	0.6	0.8	0.8	0.8	1.0	1.2	1.4	1.4	1.6
Head width / Anahtar a.	s	7.0	9.0	10.0	11.0	14.0	17.0	19.0	22.0	24.0
Diagonal / Köşegen	e	9.0	12	13.0	14.0	18.0	22.0	25.0	28.0	32.0
Height / Yükseklik	m	3.5	4.2	5.0	5.5	6.5	8.0	9.5	11.0	13.0
Weight / Ağırlık	gr/p	35.8	1.70	2.4	3.1	6.5	11.3	16.5	16.6	26.7

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

"NMG 306"

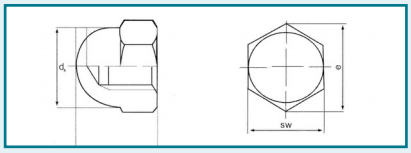


TEE NUTS
AĞAÇ SOMUNU
HOLZMUTTERN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M3	M4	M5	M6	M8	M10
Width / Genişlik	P	13.0	15.0	17.0	19.0	22.0	25.5
Outside dia / Dış çap	d_2	4.4	5.6	6.5	7.7	10.0	12.0
Height / Yükseklik	k	5.0	6.0	8.0	9.0 | 12.0 | 18.0	11.0 | 15.0 | 17.5	13.0

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

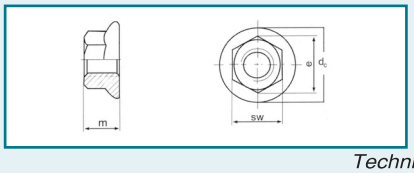


HEXAGON DOMED CAP NUT
ALTIKÖŞE KÖR SOMUN
SECHSKANT-HUTMUTTERN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
Pitch / Diş adımı	P	0.70	0.80	1.00	1.25	1.50	1.75	2.00	2.00	2.50	2.50	2.50	3.00
Head width / Anahtar a.	s	7	8	10	13	17	19	22	24	27	30	32	36
Diagonal / Köşegen	e	7.66	8.79	11.05	14.38	18.90	21.10	24.49	26.75	30.14	33.53	35.72	39.98
Height / Yükseklik	h	8	10	12	15	18	22	25	28	32	34	39	42
Diameter / Çap	d_k	6.5	7.5	9.5	12.5	16	18	21	23	26	28	31	34
Weight / Ağırlık	gr/p			4.66	11.0	20.1	28.3	57.2	54.3	95.0	104	129	216

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.



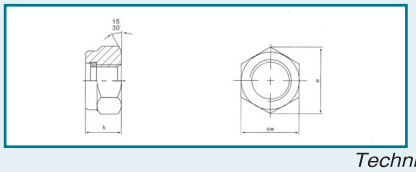
"DIN 6923"

HEXAGON NUT WITH FLANGE
ALTIKÖŞE FLANŞLI SOMUN
SECHSKANTMUTTERN MIT FLASCH

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M5	M6	M8	M10	M12	M14	M16	M20
Pitch / Diş adımı	P	0.80	1.00	1.25	1.50	1.75	2.00	2.00	2.50
Head width / Anahtar a.	s	8.0	10.0	13.0	15.0	18.0	21.0	24.0	30.0
Diagonal / Köşegen	e	8.79	11.05	14.38	16.64	20.03	23.36	26.75	32.95
Height / Yükseklik	m	5	6	8	10	12	14	16	20
Flange dia / Flanş çapı	d_c	11.08	14.2	17.9	21.8	26	29.9	34.5	42.8
Weight / Ağırlık	gr/p	11.4	13.6	17.0	20.8	24.7	28.6	32.8	43.0

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.



"DIN 985"

HEXAGON NYLON INSERT NUT
ALTIKÖŞE FİBERLİ SOMUN
SECHSKANTMUTTERN KLEMMTEIL

Technical informations. / Teknik bilgiler.

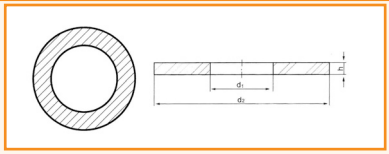
Thread size / Anma çapı		M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M39
Pitch / Diş adımı	P_1	0.50	0.70	0.80	1.00	1.00	1.25	1.50	1.75	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.50	3.50	4.00	4.00
	P_2						1.00	1.00	1.50	1.50	1.50	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00
Head width / Anahtar a.	sw	5.5	7	8	10	11	13	17	19	22	24	27	30	32	36	41	46	50	55	60
Diagonal / Köşegen	e	6.01	7.66	8.79	11.05	12.12	14.38	18.90	21.10	24.49	26.75	29.56	32.95	35.03	39.55	45.20	55.85	55.37	60.79	66.44
Height / Yükseklik	h	4	5	5	6	7.5	8	10	12	14	16	18.5	20	22	24	27	30	33	36	39
Weight / Ağırlık	gr/p	0.5	1.0	1.4	2.4	3.0	5.1	10.6	17.2	26.0	34.0	45.0	65.0	75.0	100	162	317	317	415	499

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.



WASHERS
PULAR
SCHEIBEN

Çetin Civata

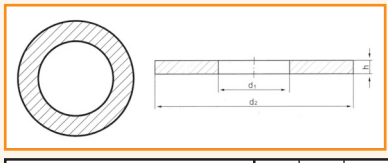


FLAT WASHER
DÜZ PUL
SCHEIBEN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M39
Hole dia / Delik çapı	d_1	3.2	4.3	5.3	6.4	7.4	8.4	10.5	13	15	17	19	21	23	25	28	31	34	37	40
	max.	3.38	4.48	5.48	6.62	7.62	8.62	10.77	13.27	15.27	17.27	19.33	21.33	23.33	25.33	28.33	31.39	34.62	37.62	40.62
Outside dia / Dış çap	d_2	7	9	10	12	14	16	20	24	28	30	34	37	39	44	50	56	60	66	72
	min.	6.64	8.64	9.64	11.57	13.57	15.57	19.48	23.48	27.48	29.48	33.38	36.38	38.38	43.38	49.38	55.26	58.8	64.8	70.8
Thickness / Et kalınlığı	h	0.5	0.8	1.0	1.6	1.6	1.6	2.0	2.5	2.5	3.0	3.0	3.0	3.0	4.0	4.0	4.0	5.0	5.0	6.0
	+/-	0.05	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6	0.6	0.6
Weight / Ağırlık	gr/p	0.119	0.308	0.443	1.02	1.39	1.83	3.57	6.27	8.62	11.3	14.7	17.2	18.3	32.3	42.3	53.6	75.3	92.1	133

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.



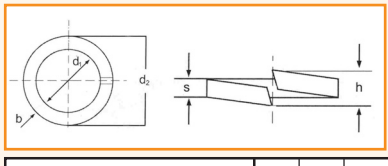
" UNC & UNF"

FLAT WASHER
DÜZ PUL
SCHEIBEN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		1.8	5/32	3/16	1/4	5/16	3/8	7/16	1/2	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1"	1 1/4	1 1/2
Hole dia / Delik çapı	d_1	3	4	5	7	9	11	12	13	9	11	12	13	15	17	21	24	27	32	**45**
	max.	3.18	4.18	5.18	7.22	9.27	11.27	12.27	13.27	9.27	11.27	12.27	13.27	15.27	17.27	21.33	24.33	27.33	32.39	45.62
Outside dia / Dış çap	d_2	9	12	16	17	22	26	28	33	22	26	28	33	36	40	45	48	56	65	84
	min.	8.64	11.57	15.57	16.57	21.48	25.48	27.48	32.38	21.48	25.48	27.48	32.38	35.38	39.38	44.38	47.38	55.26	63.80	83.00
Thickness / Et kalınlığı	h	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	3.0	3.0	3.0	3.0	3.0	3.0	6.0	6.0	3.0	3.0	3.0
	+/-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.6	0.6	0.3	0.3	0.3
Weight / Ağırlık	gr/p	0.44	0.61	1.31	1.82	3.12	3.45	4.16	5.55	7.14	9.09	11.6	16.7	18.5	26.3	34.4	41.7	45.5	76.9	90.9

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.



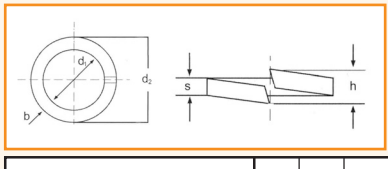
"DIN 127"

SPRING WASHER
YAYLI RONDELA
FEDERRINGE

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M39
Hole dia / Delik çapı	d_1	3.1	4.1	5.1	6.1	7.1	8.1	10.2	12.2	14.2	16.2	18.2	20.2	22.5	24.5	27.5	30.5	33.5	36.5	39.5
	+/-	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.8	0.8	1.0	1.0	1.0	1.0	1.2	1.2	1.2	1.2
Outside dia / Dış çap	d_2	6.2	7.6	9.2	11.8	12.8	14.8	21.1	21.1	24.1	27.4	29.4	33.6	35.9	40.0	43.0	48.2	55.2	58.2	61.2
Thickness / Et kalınlığı	s	0.8	0.9	1.2	1.6	1.6	2.0	2.5	2.5	3.0	3.5	3.5	4.0	4.0	5.0	5.0	6.0	6.0	6.0	6.0
Heigth / Yükseklik	h	1.9	2.1	2.8	3.8	3.8	4.7	5.9	5.9	7.1	8.3	8.3	9.4	9.4	11.8	11.8	14.2	14.2	14.2	14.2
Width / Genişlik	b	1.3	1.5	1.8	2.5	2.5	3.0	4.0	4.0	4.5	6.0	6.0	6.0	6.0	7.0	7.0	8.0	10.0	10.0	10.0
Weight / Ağırlık	gr/p	0.11	0.18	0.36	0.83	0.93	1.60	3.82	3.82	6.01	8.91	9.73	15.2	16.5	26.2	28.7	44.3	63.0	67.3	71.7

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.



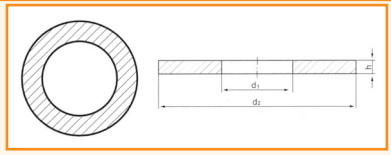
"UNC & UNF"

SPRING WASHER
YAYLI RONDELA
FEDERRINGE

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		1/8	5/32	3/16	1/4	5/16	3/8	7/16	1/2	9/16	5/8	3/4	7/8	1"	1 1/8	1 1/4	1 1/2	1 5/8	1 3/4	2"
Hole dia / Delik çapı	d_1	3.6	4.1	5.1	6.5	8.1	10.2	11.3	13.0	14.2	16.2	20.2	22.5	26.5	30.5	32.5	39.5	42.5	45.5	51.0
	+/-	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.8	1.0	1.0	1.0	1.2	1.2	1.2	1.2	1.2	1.5
Outside dia / Dış çap	d_2	6.7	7.6	9.2	12.2	14.8	18.1	19.2	21.9	24.1	27.4	33.6	35.9	42.0	48.2	50.2	61.2	68.2	71.2	77.0
Thickness / Et kalınlığı	s	0.8	0.9	1.2	1.6	2.0	2.2	2.2	2.5	3.0	3.5	4.0	4.0	5.0	6.0	6.0	6.0	7.0	7.0	7.0
Heigth / Yükseklik	h	1.8	2.1	2.8	3.8	4.7	5.2	5.2	5.9	7.1	8.3	9.4	9.4	11.8	14.2	14.2	14.2	16.5	16.5	16.5
Width / Genişlik	b	1.3	1.5	1.8	2.5	3.0	3.5	3.5	4.0	4.5	5.0	6.0	6.0	7.0	8.0	8.0	10.0	12.0	12.0	12.0
Weight / Ağırlık	gr/p	0.12	0.18	0.36	0.93	1.60	2.53	3.00	3.95	6.01	8.91	15.2	16.5	27.5	44.3	44.3	71.7	111	117	152

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.



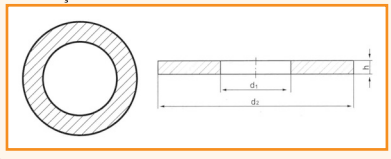
PLAIN WASHERS FOR STEEL CONSTRUCTION
KONTRÜKSİYON PULU
SCHEIBEN FUR STAHLKONSTRUKTIONEN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M12	M16	M20	M22	M24	M27	M30	M36
Hole dia / Delik çapı	d_1	13	17	21	23	25	28	31	37
	max.	13.27	17.27	21.33	23.33	25.33	28.52	31.62	37.62
Outside dia / Dış çap	d_2	24	30	37	39	44	50	56	66
	min.	23.48	29.48	36.38	38.38	43.38	49.00	54.80	64.80
Thickness / Et kalınlığı	h	3	4	4	4	4	5	5	6
	+/-	0.3	0.3	0.3	0.3	0.3	0.6	0.6	0.6
Weight / Ağırlık	gr/p	7.03	14.6	19.6	24.3	30.6	50.2	63.2	115

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

"DIN 7989"



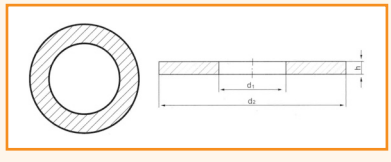
PLAIN WASHER FOR STEEL CONSTRUCTION
KONTRÜKSİYON PULU
SCHEIBEN FUR STAHLKONSTRUKTIONEN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M10	M12	M16	M20	M22	M24	M27	M30	M33	M39
Hole dia / Delik çapı	d_1	11	14	18	22	24	26	30	33	36	39
Outside dia / Dış çap	d_2	21	24	30	37	39	44	50	56	60	66
Thickness / Et kalınlığı	h	8									
Weight / Ağırlık	gr/p	15.7	18.8	28.3	43.6	46.2	61.5	79.0	101	114	140

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

"DIN 9021"



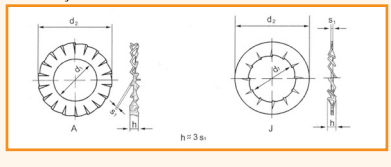
LARGE SIZE WASHER
GENİŞ PUL
SCHEIBEN AUBENDURCHMESSER

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M24	M30	M36
Hole dia / Delik çapı	d_1	3.2	4.3	5.3	6.4	7.4	8.4	10.5	13.0	15.0	17.0	20.0	22.0	26.0	33.0	39.0
	max.	3.38	4.48	5.48	6.62	7.62	8.62	10.77	13.27	15.27	17.27	20.52	22.52	26.84	34.00	40.00
Outside dia / Dış çap	d_2	9	12	15	18	22	24	30	37	44	50	56	60	72	92	110
	min.	8.64	11.57	14.57	17.57	21.48	23.48	29.48	36.38	43.38	49.38	54.10	58.10	70.10	89.90	107.8
Thickness / Et kalınlığı	h	0.8	1.0	1.2	1.6	2.0	2.0	2.5	3.0	3.0	3.0	4.0	4.0	5.0	6.0	8.0
	+/-	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.6	0.6	1.0	1.0	1.2
Weight / Ağırlık	gr/p	0.349	0.774	1.46	2.79	5.29	6.23	12.2	22.2	31.6	40.9	67.4	76.8	139	273	522

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

"DIN 6798"

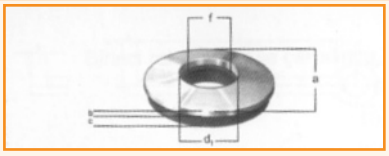


SERRATED LOCK WASHER
TIRTIKLI PUL
FACHERSCHEIBEN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30
Hole dia / Delik çapı	d_1	3.2	4.3	5.3	6.4	7.4	8.4	10.5	13.0	15.0	17.0	19.0	21.0	23.0	25.0	28.0	31.0
	max	3.38	4.48	5.48	6.62	7.62	8.62	10.77	13.27	15.27	17.27	19.33	21.33	23.33	25.33	28.33	31.39
Outside dia / Dış çap	d_2	6	8	10	11	13	15	18	21	24	26	30	33	36	38	44	48
	min	5.70	7.64	9.64	10.57	12.07	14.57	17.57	19.98	23.48	25.48	29.48	32.38	35.38	37.38	43.38	47.38
Thickness / Et kalınlığı	s	0.4	0.5	0.6	0.7	0.8	0.8	0.9	1.0	1.0	1.2	1.4	1.4	1.5	1.5	1.6	1.6
Min. teeth / Min. diş	A/J	9/7	11/8	11/8	12/9	14/10	14/10	16/12	16/12	18/14	18/14	18/14	20/16	20/16	20/16	22/18	22/18
Weight / Ağırlık	gr/p	0.06	0.14	0.28	0.36	0.50	0.80	1.25	1.6	2.3	2.9	5.0	6.0	7.5	8.0	12	14

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.



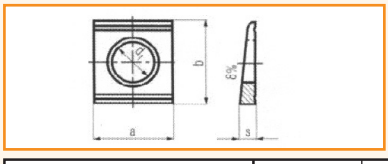
EPDM BONDED WASHERS
EPDM PUL
EPDM SCHEIBEN

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		14	16	19
Outside dia / Dış çap	a	14	16	19
	+/-	0.15	0.15	0.15
Inside dia / İç çap	d	5.50	6.80	6.80
EPDM dia / EPDM çapı	f	3.90	4.20	5.10
Metal thc./ Metal kal.	b	0.80	0.80	0.80
EPDM thc. / EPDM kal.	c	2.00	2.00	2.00
Weight / Ağırlık	gr/p	1.22	1.53	2.25

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

"DIN 434"

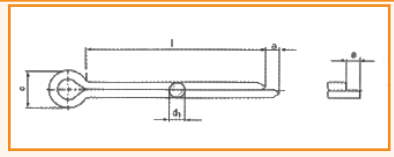


SQUARE TAPER STEEL WASHER FOR CHANNELS
KARE U PUL
SCHEIBEN VIERKANT FÜR U TRAGER

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M8	M10	M12	M16	M20	M22	M24	M27
Hole dia / Delik çapı	d1	9.0	11.0	13.5	17.5	22.0	24.0	26.0	30
Outside mea / Dış ölçü	a	22	22	26	32	40	44	56	56
	min.-max.	± 2	± 2	± 2	± 2.5	± 2.5	± 2.5	± 3	± 3
	b	22	22	30	36	44	50	56	58
	min.-max.	± 0.65	± 0.65	± 0.65	± 0.8	± 0.8	± 0.8	± 0.95	± 0.95
Thickness / Et kalınlığı	h	3.8	3.8	4.9	5.9	7.0	8.0	8.5	8.5
	min.-max.	± 0.6	± 0.6	± 1	± 1	± 1	± 1	± 1.2	± 1.2
Weight / Ağırlık	gr/p	9.570	8.850	18.200	31.40	56.90	82.30	128.00	119.00

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.



SPLIT PINS
GUPİLYA
SPLINTE

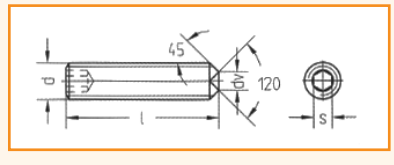
Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		0.6	0.8	1	1.2	1.6	2	2.5	3.2	4	5	6.3	8	10	13	16	20
d_1	max.	0.5	0.7	0.9	1.0	1.4	1.8	2.3	2.9	3.7	4.6	5.9	7.5	9.5	12.4	15.4	19.3
	min.	0.4	0.6	0.8	0.9	1.3	1.7	2.1	2.7	3.5	4.4	5.7	7.3	9.3	12.1	15.1	19.0
a	max.	1.6	1.6	1.6	2.5	2.5	2.5	2.5	3.2	4.0	4.0	4.0	4.0	6.3	6.3	6.3	6.3
	min.	0.8	0.8	0.8	1.25	1.25	1.25	1.25	1.6	2.0	2.0	2.0	2.0	3.2	3.2	3.2	3.2
c	min.	0.9	1.2	1.6	1.7	2.4	3.2	4.0	5.1	6.5	8.0	10.3	13.1	16.6	21.7	27.0	33.8

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			0.6	0.8	1	1.2	1.6	2	2.5	3.2	4	5	6.3	8	10	13	16	20
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.															
14	+/-	0.90			0.07		0.16	0.31	0.57									
20	+/-	1.00					0.22	0.40	0.75	1.09	2.16	3.49						
25	+/-	1.00					0.27	0.47	0.90	1.31	2.52	4.00						
32	+/-	1.25					0.34	0.56	1.10	1.64	3.07	5.00	8.90					
40	+/-	1.25						0.66	1.34	2.00	3.71	6.00	10.6	17.2				
45	+/-	1.25							1.49	2.17	4.11	6.61	11.7	18.9				
50	+/-	1.25							1.64	2.43	4.51	7.24	12.8	20.6				
56	+/-	1.50								2.70	5.00	8.00	14.0	22.6	38.0	69.5		
63	+/-	1.50								3.02	5.55	8.67	15.6	25.0	41.8	76.0		
71	+/-	1.50								3.38	6.20	9.86	17.3	27.7	46.2	83.4		
80	+/-	1.50								3.78	6.91	11.0	19.2	30.7	51.2	91.8		
90	+/-	1.75									7.71	12.2	21.3	34.1	56.7	101		
100	+/-	1.75									8.51	13.5	23.5	37.5	62.2	111	171	

"DIN 916"



HEXAGON SOCKET SET SCREWS WITH CUP POINT
SETSKUR VİDA
GEWINDESTIFTE MIT INNENSECHSKANT UND RINGSCHNEIDE

Technical informations. / Teknik bilgiler.

Thread size / Anma çapı		M1.4	M1.6	M1.8	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M18	M20	M24
Pitch / Diş adımı	P	0.30	0.35	0.35	0.40	0.45	0.50	0.70	0.80	1.00	1.25	1.50	1.75	2.00	2.50	2.5	3.00
Cup point dia / Uç çapı	d_v	0.70	0.80	0.90	1.00	1.20	1.40	2.00	2.50	3.00	5.00	6.00	8.00	10.00	12.00	14.00	16.00
	min.	0.45	0.55	0.65	0.75	0.95	1.15	1.75	2.25	2.75	4.70	5.70	7.64	9.64	11.57	13.57	15.57
Head width / Anahtar a.	sw	0.70	0.70	0.70	0.90	1.30	1.50	2.00	2.50	3.00	4.00	5.00	6.00	8.00	10.00	10.00	12.00
Diagonal / Köşegen	e	0.803	0.803	0.803	1.003	1.427	1.73	2.30	2.87	3.44	4.58	5.72	6.86	9.15	11.43	11.43	13.72
Socket depth / Anahtar	t	1.40	1.50	1.60	1.70	2.00	2.00	2.50	3.00	3.50	5.00	6.00	8.00	10.00	11.00	12.00	15.00

Values are given in milimeters. / Değerler milimetre olarak verilmiştir.

Thread size / Anma çapı			M1.4	M1.6	M1.8	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M18	M20	M24
Length / Boy (1)			*Mass for 1.000 units in kg.* / 1.000 Tanesinin ağırlığı.															
6	+/-	0.24	0.043	0.056	0.072	0.089	0.150	0.22	0.38	0.54	0.74							
8	+/-	0.29				0.119	0.199	0.31	0.53	0.78	1.09	1.88						
10	+/-	0.29				0.148	0.249	0.40	0.68	1.02	1.44	2.51						
12	+/-	0.35						0.49	0.83	1.26	1.79	3.14	4.73					
16	+/-	0.35						0.67	1.13	1.74	2.49	4.40	6.73	9.50				
20	+/-	0.42						0.85	1.43	1.22	3.19	5.66	8.71	12.3	20.9			
25	+/-	0.42								2.82	4.07	7.25	11.2	15.9	27.4		41.4	
30	+/-	0.42									4.95	8.84	13.7	19.5	34.0		51.7	70.3
35	+/-	0.50									5.83	10.40	16.2	23.1	40.5		62.0	85.3
40	+/-	0.50										12.00	18.7	26.7	47.1		72.3	100
45	+/-	0.50															82.6	115
50	+/-	0.50															92.9	130
60	+/-	0.60																160

6.8, 8.8,10.9,12.9 CİVATA DENİNCE NE ANLAŞILIR?

Birinci rakam 100 ile çarpılınca, çıkan değer malzemenin çekme mukavemetini (dayanımını) verir.

8.8 için 8 x 100 = 800 Newton / mm^2

10.9'da 10 x 100 = 1.000 Newton / mm^2

6.8'de 6 x 100 = 600 Newton / mm^2

1 Kg = 9.81 Newton'dur. Kolayca hatırlamak için 1 Kg yaklaşık 10 Newton diyebiliriz.

800 Newton / mm^2 = 80 Kg / mm^2 gibi

Aslında (800 Newton / mm^2) / (9.81 Newton / Kg) 81.5 Kg / mm^2

İkinci rakam (8.8'in ikinci 8'i gibi) 8 = 0.8'dir. Yani ikinci rakam yukarıda bulunan çekme dayanımı ile çarpılarak çeliğin veya malzemenin AKMA GERİLME SINIRI veya ORANTISIZ UZAMA GERİLMESİ bulunur.

800x0.8=640 Newton / mm^2 veya yaklaşık 640/10 = 64 Kg/mm^2

Aslında (640 Newton / mm^2) / (9.81 Newton / mm^2) = 65.2 Kg / mm^2

Yukarıdaki bilgilerin ışığında bazı örnekler verelim

6.8 CİVATA İÇİN;

Birinci rakam 6 x 100 = 600 Newton / mm^2 Yaklaşık 60 Kg. / mm^2

çekme dayanımlı çelik

İkinci rakam 600 x 0.8 = 480 Newton / mm^2 Yaklaşık 48 Kg. / mm^2

çeliğin akma gerilme sınırı

1 Kg = 9.81 Newton'dur. Kolayca hatırlamak için 1 Kg yaklaşık 10 Newton diyebiliriz.

800 Newton / mm^2 = 80 Kg / mm^2 gibi

Aslında (800 Newton / mm^2) / (9.81 Newton / Kg) 81.5 Kg / mm^2

10.9 CİVATA İÇİN;

Birinci rakam 10 x 100 = 1000 Newton / mm^2 çekme dayanımlı çelik

İkinci rakam 1000 x 0.9 = 900 Newton / mm^2 çeliğin orantısız uzama gerilimi

12.9 CİVATA İÇİN;

Birinci rakam 12 x 100 = 1200 Newton / mm^2 çekme dayanımlı çelik

İkinci rakam 1200 x 0.9 = 1080 Newton / mm^2 çeliğin orantısız uzama gerilimi

CİVATALAR İÇİN TORK DEĞERLERİ
(Torque Values for Bolts and Screws)

ANMA ÇAPI (Nominal Dia x Pitch)	6.8 N.m.
M4	2.3
M5	4.5
M6	7.7
M8	19
M10	37
M12	85
M14	105
M16	105
M18	155
M20	215

ANMA ÇAPI (Nominal Dia x Pitch)	8.8		10.9		12.9	
	Kg.m.	N.m.	Kg.m.	N.m.	Kg.m.	N.m.
M 4 x 0.7	0.3	3	0.428	42	0.50	5
M 5 x 0.8	0.61	6	0.866	8.5	1.03	10.1
M 6 x 1	1.42	13	1.63	16	1.73	17
M 7	2.34	23	2.85	28	3.16	31
M 8 x 1.25	3.36	33	4.07	40	4.48	44
M 8 x 1	3.87	38	4.68	46	5.30	52
M 10 x 1.5	6.72	66	8.25	81	9.17	90
M 10 x 1.25	7.54	74	9.17	90	10.19	100
M 10 x 1	8.56	84	10.49	103	11.62	114
M 12 x 1.75	8.66	85	12.13	119	14.57	143
M 12 x 1.25	9.23	90.6	12.94	127	15.59	153
M 14 x 2	13.76	135	19.36	194	23.24	228
M 14 x 1.5	14.57	143	20.59	202	24.66	242

ANMA ÇAPI (Nominal Dia x Pitch)	8.8		10.9		12.9	
	Kg.m.	N.m.	Kg.m.	N.m.	Kg.m.	N.m.
M 16 x 2	20.89	205	29.35	288	35.27	346
M 18 x 2.5	20.84	283	40.57	398	48.72	478
M 18 x 1.5	31.39	308	44.24	4.34	53.00	520
M 20 x 2.5	40.77	400	57.28	562	68.70	674
M 20 x 1.5	43.93	431	61.87	607	74.20	728
M 22 x 2.5	54.23	532	76.24	748	91.43	897
M 22 x 1.5	58.20	571	81.85	803	98.26	964
M 24x 3	70.43	691	98.98	971	119.26	1170
M 24 x 2	74.51	731	104.99	1030	125.38	1230
M 27 x 3	105.95	1010	144.75	1420	173.29	1700
M 27 x 2	109.00	1070	152.90	1500	183.48	1800
M 30 x 3.5	139.65	1370	196.73	1930	235.47	2310
M 30 x 2	150.86	1480	212.00	20.80	253.82	2490

CİVATA İMALATINDA KULLANILAN SADE KARBONLU ve ALIŞIMLI ÇELİKLERİN MEKANİK ÖZELLİKLERİ
(Mechanical Properties of Carbon Alloy Steels for Bolt Production)

ÖZELLİK MADDE NO. (Specification Item Nr.)	MEKANİK ÖZELLİK (MECHANICAL SPECIFICATION)		PROPERTY CLASS										
			3.6	4.6	4.8	5.6	5.8	6.8	8.8 d≤16a	8.8 d>16a	9.8	10,9	12,9
1 ve 2	ÇEKME DAYANIMI (Rm4) N/mm² (TENSILE STRENGTH)	(max) ANMA	300	400		500		600	800		900	1000	1200
		(en az) (min)	330	400	420	500	520	600	800	830	900	1040	1220
3	VICKERS SERTLİĞİ VSD,F>98N (VICKERS HARDNESS)	(en az) (min)	95	120	130	155	160	190	230	225	280	310	372
		(en çok) (min)			220			250	300	336	360	382	434
4	BRINELL SERTLİĞİ BSD,F.30D2 (BRINELL HARDNESS)	(en az)	90	114	124	147	152	181	219	242	266	295	353
		(en çok)			209			238	238	319	342	363	412
5	ROCKWELL SERTLİĞİ (ROCKWELL HARDNESS)	(en az) RSDB	52	67	71	79	82	89	-	-	-	-	-
		RSDC	-	-	-	-	-	-	22	23	28	32	39
		RSDB			95			99	-	-	-	-	-
		(en çok) RSDC						-	32	34	37	39	44
6	YÜZEY SERTLİĞİ VSD 0,3 (SURFACE HARDNESS)												
7	AKMA GERİLMESİ ALT SINIRI (FLOW RATE LOWER LIMİT)	(Normal) ANMA	180	240	320	300	400	480	-	-	-	-	-
		(en az) (min)	190	240	340	300	420	480	-	-	-	-	-
8	0.2 NOKTASINDAKİ AKMA DENEME GERİLMESİ Rp 0,2 N/mm (EXPERIMENTAL FLOW TENSIONS)	(Nominal) ANMA							640	640	720	900	1080
		(en az) (min)							640	660	720	940	1100
9	EMNİYET YÜKÜ ALTINDAKİ GERİLME Sp (TENSION WITH SAFE LOAD)	Sp rel veya Rp 0.2	0.94	0.94	0.91	0.94	0.91	0.91	0,91	0,91	0,91	0,88	0,88
		Nm/m²	180	225	300	280	380	440	580	600	650	830	970
10	KOPMA UZAMASI (ELENGATION RATE)	(en az) (min)	25	22	14	20	10	8	12	12	10	9	8
11	KAMALI YÜK DENEYİ DAYANIMI (WEDGE LOAD TEST ENDURANCE)		Civataların tam boyutu için (saplamalar dışında) gerekli değerler MADDE 1 deki çekme dayanım değerlerinden en azından küçük olmamalıdır. For full length of bolts (except studs) the tensile strength values should not be less than the minimum values as shown item										
12	VURMA (DARBE) ENERJİSİ (IMPACT ENERGY)				25				30	30	25	20	15
13	BAŞIN DAYANIKLILIĞI (ENDURANCE OF HEAD)		KOPMA OLMAMALI (No failure)										
14	KARBONU AZALTILMAMIŞ VİDA DIŞI BÖLGESİNİN EN AZ YÜKSEKLİĞİ (Min.heigtof nondecar burized herad area)								1/2 H1			2/3 H1	3/4 H1
	KARBONU AZALTILMIŞ EN ÇOK DERİNLİK 6 MM (Min.heigtof nondecar burized herad area)								0.015				

EMNİYETLİ YÜK DEĞERLERİ-NORMAL DİŞ ADIMLI VİDA DİŞİ

(Torque Values for Bolts and Screws)

Diş üstü anma çapı (Nominal Diameter)	Diş adımı (Pitch)	Anma gerilme kesiti A (Stress Area)	Mukavemet Sınıfı (Endurance Class)									
			3.6	4.6	4.8	5.6	5.8	6.8	8.8	9.8	10.9	12.9
			Emniyetli Deney Yükü (AsXSp), N (Safe Loads)									
mm	mm	mm^2										
3	0.5	5.03	910	1.130	1.560	1.410	1.910	2.210	2.290	3.270	4.180	4.830
3.5	0.6	6.78	1.220	1.530	2.100	1.900	2.580	2.980	3.940	4.410	5.630	6.580
4	0.7	8.78	1.580	1.980	2.720	2.460	3.340	3.860	5.100	5.710	7.290	8.520
5	0.8	14.2	2.560	3.200	4.400	3.980	5.400	6.250	8.230	9.230	11.800	13.800
6	1	20.1	3.620	4.520	6.230	5.630	7.640	8.840	11.600	13.100	16.700	19.500
7	1	28.9	5.200	6.500	8.960	8.090	11.000	12.700	16.800	18.800	24.000	28.000
8	1.25	36.6	6.590	8.240	11.400	10.200	13.900	16.100	21.200	23.800	30.400	35.500
10	1.5	58.0	10.400	13.000	18.000	16.200	22.000	25.500	33.700	37.700	48.100	56.300
12	1.75	84.3	15.200	19.000	26.100	23.600	32.000	37.100	48.900	54.800	70.000	81.800
14	2	115	20.700	25.900	35.600	32.200	43.700	50.600	66.700	74.800	95.500	112.000
16	2	157	28.300	35.300	48.700	44.000	59.700	69.100	91.000	102.000	130.000	152.000
18	2.5	192	31.600	43.200	59.500	53.600	73.000	84.500	115.000	-	159.000	186.000
20	2.5	245	44.100	55.100	76.000	68.600	93.100	108.000	147.000	-	203.000	238.000
22	2.5	303	54.500	58.200	93.900	84.800	115.000	133.000	182.000	-	252.000	294.000
24	3	353	63.500	79.400	109.000	98.800	134.000	155.000	212.000	-	293.000	342.000
27	3	459	82.600	103.000	142.000	123.000	174.000	202.000	275.000	-	381.000	445.000
30	3.5	561	101.000	126.000	174.000	157.000	213.000	247.000	337.000	-	466.000	544.000
33	3.5	694	125.000	156.000	215.000	194.000	264.000	305.000	416.000	-	570.000	673.000
36	4	817	147.000	164.000	253.000	229.000	310.000	359.000	490.000	-	978.000	792.000
39	4	976	176.000	220.000	303.000	273.000	371.000	429.000	586.000	-	810.000	947.000

KOPMADA EN AZ YÜKLER - NORMAL DİŞ ADIMLI VİDA DİŞİ

(Min. Load Before Failure for Normal Thread Pitch)

Diş üstü anma çapı (Nominal Diameter)	Diş adımı (Pitch)	Anma gerilme kesiti A (Stress Area)	Nitelik Sınıfı (Endurance Class)									
			3.6	4.6	4.8	5.6	5.8	6.8	8.8	9.8	10.9	12.9
			Emniyetli Deney Yükü (AsXRm), N- (Min. Load Before Failure)									
mm	mm	mm^2										
3	0.5	5.03	1.660	2.010	2.110	2.510	2.620	3.020	4.020	4.530	5.230	6.140
3.5	0.6	6.78	2.240	2.710	2.850	3.390	3.530	4.070	5.420	6.100	7.050	8.270
4	0.7	8.78	2.900	3.510	3.690	4.390	4.570	5.270	7.020	7.900	9.130	10.700
5	0.8	14.2	4.690	5.680	5.960	7.100	7.380	8.520	11.350	12.800	14.800	17.300
6	1	20.1	6.630	8.040	8.440	10.000	10.400	12.100	16.100	18.100	20.900	24.500
7	1	28.9	9.540	11.600	12.100	14.400	15.000	17.300	23.100	26.000	30.100	35.300
8	1.25	36.6	12.100	14.600	15.400	18.300	19.000	22.000	29.200	32.900	38.100	44.600
10	1.5	58.0	19.100	23.200	24.400	29.000	30.200	34.800	46.400	52.200	60.300	70.800
12	1.75	84.3	27.800	33.700	35.400	42.200	43.800	50.600	67.400	75.900	87.700	103.000
14	2	115	38.000	46.000	48.300	57.500	59.800	69.000	92.000	104.000	120.000	140.000
16	2	157	51.800	62.800	65.900	78.500	81.600	94.000	125.000	141.000	163.000	192.000
18	2.5	192	63.400	76.800	80.600	96.000	99.800	115.000	159.000	-	200.000	234.000
20	2.5	245	80.800	98.000	103.000	122.000	127.000	147.000	203.000	-	255.000	299.000
22	2.5	303	100.000	121.000	127.000	152.000	158.000	182.000	252.000	-	315.000	370.000
24	3	353	116.000	141.000	148.000	176.000	184.000	212.000	293.000	-	367.000	431.000
27	3	459	152.000	184.000	193.000	230.000	239.000	275.000	381.000	-	477.000	560.000
30	3.5	561	185.000	224.000	236.000	280.000	292.000	337.000	466.000	-	583.000	684.000
33	3.5	694	229.000	278.000	292.000	347.000	361.000	416.000	576.000	-	722.000	847.000
36	4	817	270.000	327.000	343.000	408.000	425.000	490.000	678.000	-	850.000	997.000
39	4	976	322.000	390.000	410.000	488.000	508.000	586.000	810.000	-	1.020.000	1.200.000

EMNİYETLİ YÜK DEGERLERİ-İNCE DİŞ ADIMLI VİDA DİŞİ

(Safe Load for Fasteners with Fine Thread)

Diş üstü anma çapı (Nominal Diameter)	Diş adımı (Pitch)	Anma gerilme kesiti A (Stress Area)	Mukavemet Sınıfı (Endurance Class)								
			3.6	4.6	4.8	5.6	5.8	6.8	8.8	9.8	10.9	12.9
mm	mm	mm^2	Emniyetli Deney Yükü (AsXSp), N (Safe Loads)									
8	1	39.2	7.060	8.820	12.200	11.000	14.900	17.200	22.700	25.500	32.500	38.000
10	1	64.5	11.600	14.500	20.000	18.100	24.500	28.400	37.400	41.900	53.500	62.700
10	1.25	61.2	11.800	13.800	19.000	17.100	23.300	26.900	35.500	39.800	50.800	59.400
12	1.25	92.1	16.800	20.700	28.600	25.800	35.000	40.500	53.400	59.900	76.400	89.300
12	1.5	88.1	15.900	19.800	27.300	24.700	33.500	38.800	51.100	57.300	73.100	85.500
14	1.5	125	22.500	28.100	38.800	35.000	47.500	55.000	72.500	81.200	104.000	121.000
16	1.5	167	30.100	37.600	51.800	46.800	63.500	73.500	96.900	109.000	139.000	162.000
18	1.5	216	38.900	48.600	67.000	60.500	82.100	95.000	130.000	-	179.000	210.000
20	1.5	272	49.000	61.200	84.300	76.200	103.000	120.000	163.000	-	226.000	264.000
22	1.5	333	59.900	74.900	103.000	93.200	126.000	146.000	200.000	-	276.000	323.000
24	2	384	69.100	86.400	119.000	108.000	146.000	169.000	230.000	-	319.000	372.000
27	2	496	89.300	112.000	154.000	139.000	188.000	218.000	298.000	-	412.000	481.000
30	2	621	112.000	140.000	192.000	174.000	236.000	273.000	373.000	-	515.000	602.000
33	2	761	137.000	171.000	236.000	213.000	289.000	335.000	457.000	-	632.000	738.000
36	3	865	156.000	195.000	268.000	242.000	329.000	381.000	519.000	-	718.000	838.000
39	3	1030	185.000	232.000	319.000	288.000	391.000	453.000	618.000	-	855.000	999.000

KOPMADA EN AZ YÜKLER - İNCE DİŞ ADIMLI VİDA DİŞİ

(Min. Load Before Failure for For Thread Pitch)

Diş üstü anma çapı (Nominal Diameter)	Diş adımı (Pitch)	Anma gerilme kesiti A (Stress Area)	Nitelik Sınıfı (Endurance Class)								
			3.6	4.6	4.8	5.6	5.8	6.8	8.8	9.8	10.9	12.9
mm	mm	mm^2	Emniyetli Deney Yükü (AsXSp), N (Safe Loads)									
8	1	39.2	12.900	15.700	16.500	19.600	20.400	23.500	31.360	35.300	40.800	47.800
10	1	64.5	21.300	25.800	27.100	32.300	33.500	38.700	51.600	58.100	67.100	78.700
10	1.25	61.2	20.200	24.500	25.700	30.600	31.800	36.700	49.000	55.100	63.600	74.700
12	1.25	92.1	30.400	36.800	38.700	46.000	47.900	55.300	73.700	82.900	95.800	112.000
12	1.5	88.1	29.100	35.200	37.000	44.100	45.800	52.900	70.500	79.300	91.600	107.000
14	1.5	125	41.200	50.000	52.500	62.500	65.000	75.000	100.000	112.000	130.000	152.000
16	1.5	167	55.100	66.800	70.100	83.500	86.800	100.000	134.000	150.000	174.000	204.000
18	1.5	216	71.300	86.400	90.700	108.000	112.000	130.000	179.000	-	225.000	264.000
20	1.5	272	89.800	109.000	114.000	136.000	141.000	163.000	226.000	-	283.000	332.000
22	1.5	333	110.000	133.000	140.000	166.000	173.000	200.000	276.000	-	346.000	406.000
24	2	384	127.000	154.000	161.000	192.000	200.000	230.000	319.000	-	399.000	469.000
27	2	496	164.000	194.000	208.000	248.000	258.000	298.000	412.000	-	516.000	605.000
30	2	621	205.000	248.000	261.000	310.000	323.000	373.000	515.000	-	646.000	758.000
33	2	761	251.000	304.000	320.000	380.000	396.000	457.000	632.000	-	791.000	928.000
36	3	865	285.000	346.000	363.000	432.000	450.000	519.000	718.000	-	900.000	1.055.000
39	3	1030	340.000	412.000	433.000	515.000	536.000	618.000	855.000	-	1.070.000	1.260.000

ISO NO	DIN NO	COMPARISON	NBN NO
	ISO 225	A	E27-507
	ISO 272	A	E27-021
	ISO 273	A	E27-031
	935	D	E27-646
	935		E27-646
R773	6885T1	D	E27-701 & 2
R774	6886	D	E27-705.6 & 7
	6887	D	-
885	(1)		-
887	-		E27-773
888	(1)		-
898/1	ISO 898/T1	A	E27-001
898/2	ISO 898/T2	A	E27-001 & 11
	267/T4	D	E27-015
898/5	ISO/T5	A	-
DIS898/6	267/T23	D	-
R1051	(1)		-
1207	84	D	E27-101
	PRJ 84	B	-
1234	94	D	E27-321
1478	7970	D	E27-103
1479	7976	D	-
	PRJ 7976	B	-
R 1480	-		-
1481	7971	D	E27-104
	PRJ 7971	D	-
1482	7972	D	E27-105
	PRJ 7972		-
1483	7973	D	E27-106
	PRJ 7973	D	-
1580	85	D	E27-102
	PRJ 85	B	-
1891	ISO 1891	A	-
	DIN 916		-
2009	963	D	-
2010	964	D	-
2320	264/T15	B	-
2338	7	D	E27-322
2339	1	D	E27-323
2340	1443	D	-
2341	1444	D	-
2342	427	D	E27-109 & 110
	PRJ 427	B	-
2491	6885/T3	D	-
2492	6883	D	-
2702	267/T12	A	-
3117	268	D	-
	271	D	-
DIS 3269/2	167/T5	B	-
3506	267/T1	D	E27-018
3508	76/T1	B	-
3800/1	ISO 3800/T1	A	-
3912	6888	D	E27-713
1014	931/T1	B	E27-112
4015	-		-
4016	601	B	E27-113
4017	933	B	E27-114
4018	558	B	E27-115
4026	913	B	E27-111
4027	914	B	E27-111
4028	915	B	E27-111
4029	916	B	E27-111
4032	970	B	E27-401
4033	-		E27-402
4034	972	B	E27-403
4035	439/T2	B	
4036	439/T1	B	-
DIS 4032	267/T9	D	-
4154	PRJ ISO 4154	A	-
4155	PRJ ISO 4155	A	-
4161	6923	B	-
4166	PRJ ISO 4166	A	-
4753	76	B	-
4755	76/T1	B	-
4757	7962	B	-
4759/1	ISO 4759/T1	A	-
4759/2	267/T6	D	-
4759/3	522	B	-

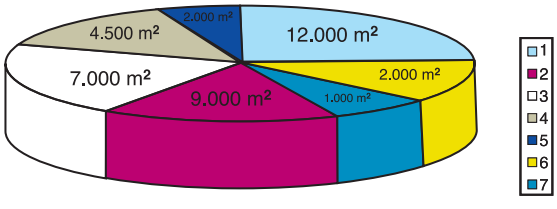
ISO NO	DIN NO	COMPARISON	NBN NO
4762	912	B	E27-643 & 644
4766	551	D	-
DIS 4775	-		-
DIS 6157/1.2	267/T19	B	-
DIS 6157/2	267/T20 & 21	B	-
DIS 6157/3	267/T19	B	-
DIS 7035	-		-
DIS 7036	-		-
DIS 7037	-		-
DIS 7038	-		-
7040	6924	D	-
7041	-		-
7042	6925	B	-
7043	6926	B	-
7044	6927	B	-
7045	PRJ ISO 7045	A	-
	7985	D	-
7046	PRJ ISO 7046	A	-
	965	D	-
7047	ISO 7047	A	-
	966	D	-
7049	ISO 7049	A	-
	7981	D	-
7050	PRJ ISO 7050	A	-
	7982	D	-
7051	PRJ ISO 7051	A	-
	7983	D	-
7089	125	D	-
7090	125A	D	-
7090	125B	D	-
7091	126	D	-
7092	422	D	-
7093	9021	D	-
7094	440	D	-
7378	PRJ 962	B	-
7379	9841	D	-
7380	-		-
DIS 7411	-		-
DIS 7412	6914	D	-
DIS 7413	-		-
DIS 7414	6915	D	-
DIS 7415	-		-
DIS 7416	6916	D	-
DIS 7417	-		-
7434	553	B	-
	PRJ 553	B	-
7435	417	B	-
	PRJ 417	B	-
7436	438	B	-
	PRJ 438	B	-
7719	-		-
7720	-		-
7721	PRJ ISO 7721	A	-
8733	7979	D	-
DIS 8734	6325	D	-
DIB 8735	7979	D	-
8736	7978	D	-
8737	258	D	-
8739	1470	D	-
8740	1473	D	-
8741	1474	D	-
8742	1475	D	-
8743	1475	D	-
8744	1471	D	-
8745	1472	D	-
8746	1476	D	-
8747	1477	D	-
DIS 8748	7344	D	-
8749	-	D	-
8750	7343	D	-
8751	7343	D	-
8752	1481	D	-
8992	267/T1	D	-

A= BOTH STANDART ARE PERFECTLT SIMILAR.
B= SOME PARTS OF DIN ARE PERFECTLY SIMILAR TO ISO AND CONTAIN ALL OF ISO STANDART.
C= DIN AND ISO ARE PERFECTLY SIMILAR, BUT DIN DOES NOT CONTAIN ALL OF ISO.
D= BOTH STANDARTS ARE PARTLY SIMILAR, SOME DTA ARE ALTERED, REDUCED OR DEVELOPED.

ISO= ISO STANDART
ISO/R= ISO RECOMMENDATION
ISO/DIS= DRAFT INTERNATIONAL STANDART
DIN ISO= ISO STANDART FULLY ADOPTED BY DIN

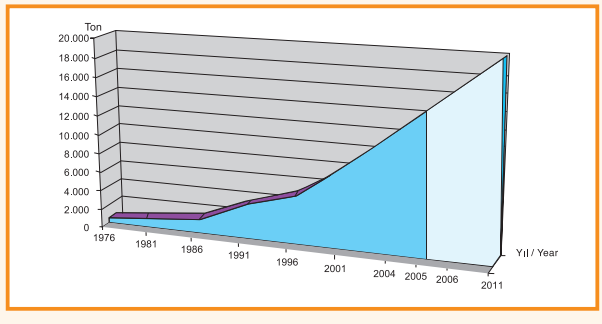
Çetin Civata San. ve Tic. A.Ş.	1976 yılında kuruldu 120 kişilik kadrosuyla hizmetinizdedir.
Çetin Civata ve San. Mam. Paz. Ltd. Şti.	1985 yılında kuruldu 95 kişilik kadrosuyla hizmetinizdedir.
Boğaziçi Bilgisayar Tic. ve San. A.Ş.	1984 yılında kuruldu 120 kişilik kadrosuyla hizmetinizdedir.
Aidata Bilgisayar Sistemleri Ltd. Şti.	1998 yılında kuruldu 42 kişilik kadrosuyla hizmetinizdedir.
Tekno Bağlantı Elemanları Paz. ve Tic. Ltd. Şti.	1988 yılında kuruldu 25 kişilik kadrosuyla hizmetinizdedir.
Tekno Metal Kaplama San. Tic. Ltd. Şti.	2004 yılında kuruldu 12 kişilik kadrosuyla hizmetinizdedir.
Tecpro Bilgisayar Teknolojileri Tic. San. Ltd. Şti.	2005 yılında kuruldu 66 kişilik kadrosuyla hizmetinizdedir.
Multitec Bilişim Tekn. A.Ş.	2006 yılında kuruldu 8 kişilik kadrosuyla hizmetinizdedir.
Dresselhaus Çetin Civata Paz. Tic. Ltd. Şti.	2008 yılında kuruldu 7 kişilik kadrosuyla hizmetinizdedir.

Kapalı Alan m² / Closed Area m²



1- Çetin Civata San. ve Tic. A.Ş.
2- Boğaziçi Bilgisayar Tic. ve San. A.Ş.
3- Çetin Civata ve San. Mam. Paz. Ltd. Şti.
4- Aidata Bilgisayar Sistemleri Ltd. Şti.
5- Tekno Bağlantı Elamanları Paz. ve Tic. Ltd. Şti.
6- Tekno Metal Kaplama San. Tic. Ltd. Şti.
7- Tecpro Bilgisayar Teknolojileri Tic. San. Ltd. Şti.

ÇETİN CİVATA YILLIK KAPASİTESİ / ANNUAL PRODUCTION CAPACITY



Çetin Civata









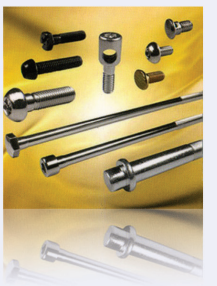


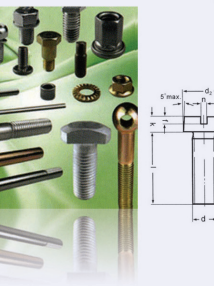














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QUALITY/*KALİTE*



CERTIFICATE TÜVNORD

Management system as per
DIN EN ISO 9001 : 2000

In accordance with TÜV NORD CERT procedures, it is hereby certified that

Çetin Civata Sanayi ve Ticaret A.Ş.
Muratbey Köy Yolu Üzeri, Taş Ocakları Mevkii, Pafta 1, Parsel 1914, Çatalca, TR-34870 Istanbul, Turkey

applies a management system in line with the above standard for the following scope

Production of fasteners (bolts, screws, rivets and others)

Certificate Registration No. 44 100 063607-E6 — Valid until 2011-05-01
Audit Report No. TR 527

Certification Body at TÜV NORD CERT GmbH — Istanbul, 2008-09-08

This certification was conducted in accordance with the TÜV NORD CERT auditing and certification procedures and is subject to regular surveillance audits.

TÜV NORD CERT GmbH Langemarckstrasse 20 45141 Essen www.tuev-nord-cert.com

IAF TGA-ZM-07-05-00

--0192



CERTIFICATE TÜV CERT

Management system as per
ISO/TS 16949:2002
(2nd edition, 2002-03-01)

Evidence of conformity with the above standard has been furnished and is certified in accordance with TÜV CERT procedures for

ÇETİN CİVATA SAN. TİC. A.Ş.
Muratbey Köy Yolu, Taş Ocakları Mevkii, Pafta 1, Parsel 1914, Çatalca
34870 Istanbul
Turkey

Scope

Production of fasteners (bolt, screws, rivets and others)
without product design responsibility (according to section 7.3)

IATF Registration No. 0056932 — Valid from 2007-08-31
Certificate Registration No. 44 111 070897 — Valid until 2010-08-30

TÜV CERT Certification body at TÜV NORD CERT GmbH — Essen, 2007-08-31

This certification was conducted in accordance with the TÜV CERT auditing and certification procedures and is subject to regular surveillance audits.

TÜV NORD CERT GmbH Langemarckstrasse 20 45141 Essen www.tuev-nord-cert.com

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TÜV NORD

CETIN CIVATA is certified with DIN EN ISO 9001:2000 and ISO/TS 16949:2002 certificates and continuously holds its production under quality control.

ÇETİN CİVATA DIN EN ISO 9001:2000 ve ISO/TS 16949:2002 sertifikalarını almış ve sürekli üretimini kalite kontrolü altında tutmaktadır.

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Karaköy TR-80000/İSTANBUL/TÜRKİYE
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TÜV NORD ISO/TS 16949 / ISO 9001

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