



# Unbrako®

THE WORLD LEADER



**INR PRICE LIST**

**No. DFL / 09**

Effective from 20 March, 2014

## Limited Warranty And Exclusive Remedy

Deepak Fasteners Ltd., through its Unbrako Division and associated companies, warrants that these products conform to industry standards specified herein and will be free from defects in materials and workmanship. This warranty is expressly given in lieu of any and all other express or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose, and in lieu of any other obligation on the part of

.Deepak Fasteners.

Deepak Fasteners will at its option, repair or replace free of charge (excluding all shipping and handling costs) any products which have not been subject to misuse, abuse, or modification and which in its sole determination

.were not manufactured in compliance with the warranty given above.

Deepak Fasteners makes no representations or warranties, express or implied, that anything imported, made, used, sold, or otherwise provided under any sale agreement is or will be free from infringement of patents or other proprietary rights of any third persons. Nothing in this application, or any agreement, shall be construed as giving rise to any obligation on Deepak Fasteners part to indemnify or hold harmless any Buyer from any liability relating to Buyer's purchase, use, or re-sale of Deepak Fasteners product, or the incorporation of

.Deepak Fasteners product into another manufactured product.

The remedy provided herein shall be the exclusive remedy for any breach of warranty or any claim arising in any way out of the manufacture, sale or use of these products. In no event shall Deepak Fasteners be liable for consequential, incidental or any other damages of any nature whatsoever except those specifically provided herein for any breach of warranty or any claim arising in any way of the manufacture, sale or use of these products. No other person is authorized by Deepak Fasteners to give any other warranty, written or oral,

.pertaining to the products.

## Note

**Plating** : All the products, unless otherwise order, are supplied in black thermal finish with a coat of rust preventive oil. No guarantee can be give for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.

**Packing** : All products are supplied in standard packing as described in respective price tables. For sizes M6 (1/4") and above - 3% extra packing charges will be applicable if the order quantity is less than one carton.

**Pricing** : The prices mentioned in this pricelist are in INR - Indian Rupee (₹)  
The price, specification and other particulars contained in this pricelist are subject to change with notice. **PRICES ARE EXCLUSIVE OF ALL TAXES AND DUTIES.**

## Certifications



ISO 9001:2008



CE CERTIFIED: 14399 & 15048



ISO / TS 16949:2009



ISO 14001:2004



BS OHSAS 18001:2007

## About Unbrako

Founded in 1911, Unbrako is the world leader in advancing the technology of bolted joints and meeting the needs of industry for stronger and better performing fasteners. Products such as the famous Unbrako® socket head cap screw and Durlok® fasteners are the solutions of choice for engineering applications across the world & is used by industries such as the automotive, power generation, petrochemical, heavy machinery, construction and military sectors..

With an extensive international network in 35 countries, Unbrako provides a complete range of industrial fastening hardware including bolts, screws, SEM's, nuts, studbolts, self-locking fasteners, thread forming fasteners, among others.

Unbrako products are primarily used in performance critical applications and incorporate unique design and workmanship features that meet or exceed recognized international standards, resulting in higher tensile strength, improved fatigue resistance, ease of installation, reduced total cost of maintenance and extended life cycle..

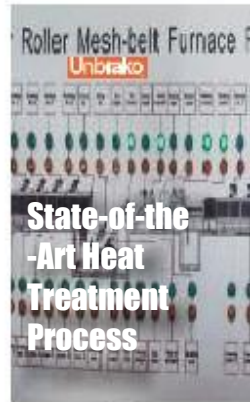
With advanced manufacturing, engineering and logistics facilities, ISO/TS and CE certification, Unbrako is equipped to provide technical support and full-service package. Unbrako's focus is on building long - term relationships with its customers. Full-service includes engineering and design support, procurement and purchasing services, localized warehousing and transport, a variety of packaging options and choice of delivery frequencies – to provide the right answer to any customer need..



**Largest  
Cold  
Forgers in  
the World**



**Longest  
Heat  
Treatment  
Capacity**



**State-of-the-  
-Art Heat  
Treatment  
Process**

## Quick Product Selection Guide

PRODUCT	TENSILE STRENGTH		SIZE RANGE				EQUIVALENT STANDARDS						
	Property Class		Diameter		Length								
	Psi. Min.	N/mm <sup>2</sup>	Metric	Inch*	Metric	Inch*	IS	ISO	DIN	BS	ANSI	JIS	
<b>Socket Head Cap Screws</b> 	190000	1,300 (12.9)	M2 to M42	1/8 to 1"	6 to 300 mm	3/16" to 10"	2269	4762	912	4168 2470	B18.3.1M	B1176	
<b>Socket Countersunk Head Screws</b> 	160000	1,050 (12.9)	M3 to M24	3/16" to 5/16"	6 to 60 mm	3/8" to 1.14"	6761	--	7991	4168 2470	B18.3.5M	--	
<b>Socket Button Head Cap Screws</b> 	--	1,050 (12.9)	M3 to M12	--	6 to 50 mm	--	--	7380	9427	4168	B18.3.4M	--	
<b>Socket Head Shoulder Screw</b> 	--	(12.9)	M6 to M24	--	10 to 120 mm	--	--	7379	9841	4168	--	--	
<b>Socket Set Screws Knurled Cup</b> 	Hardness HRc 45 Min.		M3 to M20	1/8" to 3/4"	3 to 85 mm	3/16" to 3"	6094	4026 4027 4028 4029	913 914 915 916	4168 2470	B18.3.6M	B1177	
<b>Durlok Bolt</b> 	--	12.9	M6 to M20	--	12 to 100 mm	--	As Per Unbrako Specification						
<b>Hex Wrenches</b> 	Hardness HRc 47 Min.		1.5 to 32 mm	1/16" to 3/4"	--	--	3082	2936	911	4168 2470	B18.3.2M	B4648	
<b>Hex Head Bolts</b> 	800/830 (8.8) 1,040 (10.9)	Grade R,S V	M4 to M42	1/4" to 2"	10 to 300 mm	1/2" to 12"	1364	4014 4017	931 933	1083 1768	B18.2.1	B1180	
<b>Hex Nuts</b> 	Nut Grade 8/10	Nut Grade 8/5	M6 to M72	1/4" to 1-1/2"	--	--	1364	4032	934	1083 1768	B18.2.4.1M B18.2.2	B1181	
<b>High Strength Structural Bolts, Nuts, Washers</b> 	Bolts 8.8/10.9 Nuts 8/10	--	M16 to M30	--	40 to 300 mm	--	3757 6623 6649	7412 4775 7415	6914 6915 6916	4395	B18.2.3.7M B18.2.4.6M	B1186	
<b>Stud With 2 Heavy nuts</b> 	Stud B7 Nut 2H	--	M12-M56	1/2" to 2-1/4"	60 to 500 mm	2.1/4" to 27"							A193 A194
<b>Special Products</b> 	--	800/830 (8.8) 1,040 (10.9)	M3 to M42	1/8" to 1"	6 to 410 mm	3/8" to 12"	As per customer specifications						

\*Thread type in any of the following inch series : BSW, BA, UNC & UNF.

\*\* Thread type in NPTF

Note : UNBRAKO standards meet, or in many instances, exceed the requirements of the standards listed.

**Plating** : No guarantee can be given for UNBRAKO products which have been plated by the users and / or outside plates, who may not have considered hydrogen embrittlement problem.

## Thread Size Comparison

METRIC PRODUCTS							UNIFIED INCH PRODUCTS				B.S. INCH PRODUCTS					
SIZE	THREAD PITCH & T.P.I.				Major Dia		SIZE	T.P.I.		Major Dia	SIZE	T.P.I.		Major Dia	T.P.I.	Major Dia
	COARSE		FINE					UNC	UNF			inch	BSW			
	PITCH (mm)	T.P.I.	PITCH (mm)	T.P.I.	mm	Inch				inch				inch	inch	inch
M3	0.50	51	–	–	3.00	0.118	#5	40	44	0.125	1/8	40	-	0.125		
							#6	32	40	0.138	5 BA			43.1	0.126	
											4 BA			38.5	0.142	
M4	0.70	36	–	–	4.00	0.157	#8	32	36	0.164	3 BA	24	32	0.187	34.8	0.161
M5	0.80	32	–	–	5.00	0.197	#10	24	32	0.190	3/16					
											2 BA			31.3	0.185	
											1 BA			28.2	0.209	
M6	1.0	25	–	–	6.00	0.236	1/4	20	28	0.250	1/4	20	26	0.250	25.4	0.236
											0 BA					
M8	1.25	20	1.00	25	8.00	0.315	5/16	18	24	0.313	5/16	18	22	0.313		
M10	1.50	17	1.25	20	10.00	0.394	3/8	16	24	0.375	3/8	16	20	0.375		
											7/16	14	18	0.438		
M12	1.75	14.5	1.25	20	12.00	0.472	1/2	13	20	0.500	1/2	12	16	0.500		
(M14)	2.00	12.5	1.50	17	14.00	0.551										
M16	2.00	12.5	1.50	17	16.00	0.630	5/8	11	18	0.625	5/8	11	14	0.625		
(M18)	2.50	10	1.50	17	18.00	0.709										
M20	2.50	10	1.50	17	20.00	0.787	3/4	10	16	0.750	3/4	10	12	0.750		
(M22)	2.50	10	1.50	17	22.00	0.866	7/8	9	14	0.875	7/8	9	11	0.875		
M24	3.00	8.5	2.00	13	24.00	0.945	1	8	12	1.000	1	8	10	1.000		
							1-1/8	7	12	1.125	1-1/8	7	9	1.125		
(M27)	3.00	8.50	2.00	13	27.00	1.063										
M30	3.50	7.25	2.00	13	30.00	1.181	1-1/4	7	12	1.250	1-1/4	7	9	1.250		
(M33)	3.50	7.25	2.00	13	33.00	1.299	1-1/2	6	12	1.500	1-1/2	6	8	1.500		
M36	4.00	6.40	3.00	8.5	36.00	1.417										
(M39)	4.00	6.40	3.00	8.5	39.00	1.535										
M42	4.50	5.60	3.00	8.5	42.00	1.653										

Note : Sizes in brackets are non-preferred standards

Plating : No guarantee can be given for UNBRAKO products which have been plated by the users and / outside plates, who may not have considered hydrogen embrittlement problem.

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# Unbrako Socket Range

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# Unbrako Socket Range

Unbrako is the world's leading socket screw brand with more than 100 years experience of supplying to high-end industries, such as the automotive, infrastructure, petrochemical, heavy machinery and military sectors. Unbrako socket screws are high-strength fasteners certified by Unbrako to meet or exceed industry standards.

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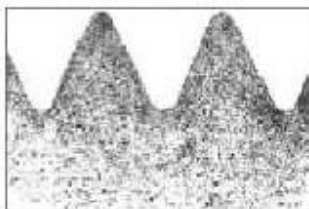
Unbrako is made exclusively available through Deepak Fasteners, providing top-grade solution for those industrial end-users who demand maximum precision, product lifespan, reliability and premium technical services.

Superior performance ultimately translates into cost savings: reduced number of parts, reduced weight and size of equipment, less equipment failure and downtime, longer product life and lower total cost.

## Advantages



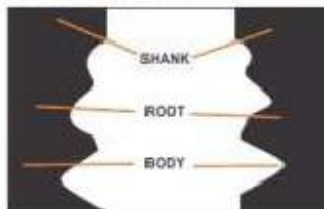
Contour flow & root radius



Contour-following flow lines provide extra shear strength in threads, resist stripping and provide high fatigue resistance.

Extra large root radius doubles fatigue life compared to flat root thread forms.

Controlled runout root radius



"Unbrako's controlled runout root radius provides a smooth form that distributes stress and increases fatigue life of thread runout up to 300% for certain sizes."

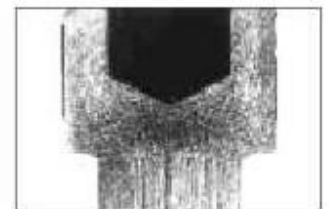
"The sharp angle at the root of conventional threads results in high stress concentration and crack initiation points."

Forged heads



"Controlled head forging, uniform grain flow and unbroken flow lines, make heads stronger, minimize failure in vital fillet area, and improve fatigue strength."

Accurate socket depth



Accurate socket depth allows more wrench engagement than other screw, permitting tightening without cracking or reaming the socket while providing ample metal in the crucial fillet area for maximum head strength.





## Socket Head Cap Screw

Metric

DIA		M2 Wrench Key Size 1.5mm			M2.5 Wrench Key Size 2mm			M3 Wrench Key Size 2.5mm		
Length	Part No.	Price/ 100 Pcs	Box Qty	Part No.	Price/ 100 Pcs	Box Qty	Part No.	Price/ 100 Pcs	Box Qty	
3	104151	1,275	500							
4	104152	571	500							
5	104154	581	500	104161	551	500	106218	899	500	
6	104155	592	500	104162	571	500	103002	774	500	
8	104157	602	500	104163	587	500	122097	566	500	
10	104159	612	500	104164	602	500	113583	473	500	
12	106216	632	500	104166	663	500	120870	473	500	
16							103003	471	500	
20							113623	471	500	
25							103010	518	200	
30							103013	606	200	
35							106219	757	200	
40							406027	867	200	
45							700034	959	200	

DIA		M4 Wrench Key Size 3mm			M5 Wrench Key Size 4mm			M6 Wrench Key Size 5mm		
Length	Part No.	Price/ 100 Pcs	Box Qty	Part No.	Price/ 100 Pcs	Box Qty	Part No.	Price/ 100 Pcs	Box Qty	
6	106223	731	500							
8	113810	517	500	122122	534	500	103042	725	200	
10	113839	411	500	122243	295	500	122111	480	200	
12	121077	370	500	121094	295	500	120872	455	200	
16	103014	387	500	103024	323	500	103044	432	200	
20	105753	414	500	113970	347	200	119790	480	200	
25	125381	454	500	121096	370	200	119937	539	200	
30	103018	539	500	103029	450	200	122121	609	200	
35	103019	590	200	115292	493	200	121090	667	200	
40	103021	652	200	103030	539	200	121075	725	200	
45	103022	745	200	103031	585	200	122087	785	200	
50	103023	854	200	103035	590	200	112624	855	200	
55	400835	1,372	200	103038	1,010	200	113128	931	200	
60	180011	2,751	200	103040	1,295	200	122088	1722	200	
65				106225	1,404	200	103047	1786	200	
70				106228	1,511	200	103048	1863	200	
75				700072	1,840	200	103049	2037	200	
80				404774	1,944	200	103051	2208	200	
90				181525	2,146	200	103052	2371	200	
100							103053	2676	200	
110							103054	3613	100	
120							103055	3952	100	
130							183896	4264	100	
140							700097	4576	100	
150							551172	4867	100	

Grey highlighted items are full threaded



## Socket Head Cap Screw

Metric

DIA	M8 Wrench Key Size 6mm			M10 Wrench Key Size 8mm			M12 Wrench Key Size 10mm			M14 Wrench Key Size 12mm		
	Length	Part No.	Price/ Box Qty 100 Pcs	Part No.	Price/ Box Qty 100 Pcs	Part No.	Price/ Box Qty 100 Pcs	Part No.	Price/ Box Qty 100 Pcs	Part No.	Price/ Box Qty 100 Pcs	
10	103056	932	200									
12	114972	703	200	106237	1,150	200						
16	103058	585	200	103080	1,070	200						
20	122086	629	200	113163	1,115	200	112607	2,637	100			
25	119351	645	200	115060	1,065	100	122250	2,310	100	400528	6,171	50
30	119383	772	200	122114	1,142	100	122251	2,194	100	400529	6,003	50
35	122113	773	200	113257	1,233	100	125530	2,233	100	400530	5,047	50
40	113143	885	200	100845	1,506	100	114996	2,254	100	400531	5,166	50
45	121076	1033	200	121088	1,627	100	115075	2,528	50	400532	5,260	50
50	121068	1088	200	125660	1,780	100	112360	2,345	50	120863	5,378	50
55	103063	1201	100	103087	1,922	100	122255	2,810	50	400533	5,445	50
60	121070	1292	100	122217	2,079	100	122260	2,894	50	112000	5,769	50
65	103064	1406	100	103088	2,246	100	122261	3,038	50	400534	5,856	50
70	103066	1544	100	125786	2,421	50	103098	3,199	50	400535	6,314	50
75	103069	1593	100	103090	2,579	50	103099	3,439	50	400536	6,686	50
80	103070	2299	100	103091	3,567	50	103100	4,015	50	400537	6,999	20
90	103073	2668	100	103094	4,078	50	103103	4,540	50	400538	7,158	20
100	103075	3165	100	103095	4,647	50	122142	5,016	50	400539	8,885	25
110	103076	3955	100	103096	5,504	50	125791	6,177	25	400540	9,924	25
120	103077	4619	50	103097	5,567	50	103104	7,102	25	400508	10,431	25
130	106230	5605	50	106240	7,579	50	103107	8,403	25	180223	11,786	25
140	106231	6020	50	106241	8,457	50	103108	9,370	25	180103	12,934	25
150	106232	6502	50	106242	9,406	50	103110	10,358	25	180225	13,823	25
160	106233	7129	100	106243	11,758	50	107456	17,078	25	180226	14,342	10
170	700125	7696	100	210001	12,964	25	181063	19,300	20	210002	15,664	10
180	106234	8112	100	106244	13,227	25	107458	18,776	20	180227	16,586	10
200	106235	8965	100	106245	14,138	25	107459	20,327	20	551663	18,720	10
220							400570	22,490	20	791320	20,592	10
230							183555	28,167	20	791321	21,424	10
240							400571	33,765	20	791322	22,360	10
260							400572	38,585	20	791323	24,024	10
280							400573	40,425	20	791324	25,896	10

Grey highlighted items are full threaded

- Specifications :** Generally conforming to IS : 2269, DIN : 912, ISO : 4762.
- Threads :** ISO Metric (Coarse Series) 4g6g as per IS : 4218, ISO : 261, ISO : 965.
- Material :** Unbrako High Grade Alloy Steel.
- Mechanical Properties :** Property Class 12.9 as per IS : 1367, ISO : 898 Part I.
- Note :** Upto 80MM Dia can be manufactured against request.
- For sizes beyond those listed, prices on application.
- Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



## Socket Head Cap Screw

Metric

DIA	M16 Wrench Key Size 14mm			M18 Wrench Key Size 14mm			M20 Wrench Key Size 17mm			M22 Wrench Key Size 17mm		
	Length	Part No.	Price/ Box Qty 100 Pcs	Part No.	Price/ Box Qty 100 Pcs	Part No.	Price/ Box Qty 100 Pcs	Part No.	Price/ Box Qty 100 Pcs	Part No.	Price/ Box Qty 100 Pcs	
20	210003	5,906	50									
25	106248	5,746	50			210006	14,059	25				
30	103112	5,746	50	183894	16,124	20	107465	13,677	10			
35	103113	4,829	50	400541	16,326	20	107466	13,857	10			
40	125751	4,699	50	400542	14,296	20	103130	12,131	10			
45	103115	5,036	50	400606	14,400	25	103131	12,557	10			
50	112474	5,020	25	100844	14,512	10	103132	11,697	10	180181	17,334	10
55	103117	5,472	25	400543	14,602	10	103136	12,390	10	180182	18,970	10
60	112594	5,247	25	400544	14,719	10	103137	11,856	10	180183	20,044	10
65	103118	5,875	20	400545	14,839	25	103138	12,597	10	180184	21,717	10
70	103119	6,340	20	400546	15,847	10	103141	13,453	10	180185	22,739	10
75	103120	6,891	20	400547	16,882	10	103142	14,330	10	210007	24,105	10
80	125658	7,018	20	400549	17,210	10	103143	13,878	10	180186	25,335	10
90	103122	7,822	10	400550	17,559	10	103144	14,900	10	180187	25,857	10
100	103123	8,912	10	400551	18,420	10	103145	16,060	10	180188	28,024	10
110	103124	9,949	20	400548	20,382	25	103146	17,777	10	180189	29,655	10
120	103126	10,466	20	400552	22,323	15	103148	19,493	10	180190	32,049	5
130	103127	11,929	20	180311	24,856	10	103150	21,187	10	180191	43,326	5
140	103128	12,776	20	180229	27,595	10	103151	22,889	10	180192	49,245	5
150	103129	13,614	20	180407	28,841	10	103152	25,065	10	180193	65,654	5
160	103364	27,109	10	180230	30,765	10	107462	32,125	10	180194	77,384	5
170	180418	30,191	10	210005	36,432	10	180495	36,688	10	791330	80,341	5
180	107460	31,034	10	100231	43,276	10	107463	36,688	10	180196	85,115	5
200	107448	33,362	10	551668	46,072	10	107464	38,268	10	180198	91,100	5
220	400574	38,509	10	791325	50,440	10	400553	39,860	10	210008	97,377	5
230	182815	43,659	10	791326	53,040	10	181001	51,166	5	791331	101,570	5
240	400575	45,245	10	791327	55,120	10	400554	62,470	5	210009	108,047	5
260	400576	57,120	10	551667	59,280	10	400555	76,632	5	210010	115,991	5
280	400577	68,988	10	791329	63,440	10	400556	90,782	5	210011	120,569	5
300	400578	73,915	10		67,600	10	400557	97,266	5	210012	129,182	5

Grey highlighted items are full threaded

- Specifications :** Generally conforming to IS : 2269, DIN : 912, ISO : 4762.
- Threads :** ISO Metric (Coarse Series) 4g6g as per IS : 4218, ISO : 261, ISO : 965.
- Material :** Unbrako High Grade Alloy Steel.
- Mechanical Properties :** Property Class 12.9 as per IS : 1367, ISO : 898 Part I.
- Note :** Upto 80MM Dia can be manufactured against request.
- For sizes beyond those listed, prices on application.
- Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



## Socket Head Cap Screw

Metric

DIA	M24 Wrench Key Size 19mm			M27 Wrench Key Size 19mm			M30 Wrench Key Size 22mm			
	Length	Part No.	Price/ 100 Pcs	Box Qty	Part No.	Price/ 100 Pcs	Box Qty	Part No.	Price/ 100 Pcs	Box Qty
45	103153	16,157	10							
50	103155	15,477	10							
55	103157	17,418	10							
60	103158	17,904	10	180233	31,824	5	180207	31,689	5	
65	103159	19,035	10	581201	33,800	5	210014	31,470	5	
70	103160	20,308	10	180326	34,519	5	116464	34,836	5	
75	103161	21,516	10	210013	36,272	5	182283	36,314	5	
80	103162	22,630	10	406161	38,699	5	140610	37,685	5	
90	103163	23,739	10	406162	41,425	5	140611	39,589	5	
100	103165	25,035	10	406163	44,187	5	140612	44,237	5	
110	103166	26,477	10	406164	46,951	5	140613	46,998	5	
120	103167	29,425	10	400607	49,711	5	140614	49,761	5	
130	103168	30,769	5	406165	53,162	5	140615	53,215	5	
140	103170	32,903	5	406166	55,234	5	140616	56,835	5	
150	103171	35,053	5	400608	58,691	5	140617	58,755	5	
160	104143	58,329	5	400609	92,521	5	140618	88,416	4	
180	104146	60,890	5	406168	102,190	5	140620	97,648	4	
200	104147	65,182	5	400579	111,171	5	140621	106,225	5	
220	400560	69,760	5	180003	138,580	4	140622	131,909	3	
240	400561	74,343	5	406171	153,557	4	140623	141,856	3	
260	400562	76,668	5	406172	167,261	3	140624	151,756	2	
280	400563	80,548	5	406173	178,517	3	140625	161,702	2	
300	400564	86,303	5	406174	188,339	3	400626	171,650	2	

DIA	M33 Wrench Key Size 24mm			M36 Wrench Key Size 27mm			M42 Wrench Key Size 32mm			
	Length	Part No.	Price/ 100 Pcs	Box Qty	Part No.	Price/ 100 Pcs	Box Qty	Part No.	Price/ 100 Pcs	Box Qty
75	210015	56,068	5							
80	180254	56,619	5	140629	68,010	5				
90	400649	63,169	5	140630	74,253	5	182336	104,896	5	
100	400628	66,008	5	140631	74,274	5	400645	114,913	12	
110	180255	67,673	5	400632	78,308	4	700380	118,036	12	
120	180256	73,871	5	140633	81,690	4	183113	128,362	10	
130	405492	79,494	5	400634	84,396	4	182331	131,122	10	
140	180257	82,171	4	140635	93,176	3	700383	141,877	9	
150	180258	86,316	4	140636	96,535	3	180960	144,854	9	
160	180259	114,280	4	140637	129,911	3	181289	202,587	9	
180	180261	127,046	3	140639	145,153	3	182059	215,010	8	
200	180263	138,093	3	140640	157,307	2	181290	232,937	7	
220	210016	171,136	3	180294	194,496	2	400647	292,228	7	
240	210017	184,360	3	140641	199,846	2	182510	304,609	6	
260	210018	192,861	2	140642	214,029	9	700390	324,902	6	
280	210019	203,477	2	180411	228,256	8	181291	345,214	6	
300	210020	219,366	2	140643	249,259	8	180863	365,521	6	

Grey highlighted items are full threaded



## Socket Head Cap Screw

Inch (BSW)

DIA	3/16 Wrench Key Size 5/32"			1/4 Wrench Key Size 3/16"			5/16 Wrench Key Size 7/32"			3/8 Wrench Key Size 5/16"		
	Length	Part No.	Price/ Box Qty 100 Pcs	Part No.	Price/ Box Qty 100 Pcs	Qty	Part No.	Price/ Box Qty 100 Pcs	Qty	Part No.	Price/ Box Qty 100 Pcs	Qty
3/8	400056	413	200	400068	494	200						
1/2	400057	413	200	400069	480	200	400085	682	200	400101	1,033	200
5/8	400058	365	200	400070	470	200	400086	581	200	400102	1,004	200
3/4	400059	413	200	400071	494	200	400087	624	200	400103	861	200
7/8	551219	439	200	400072	510	200	400088	633	200	400104	982	200
1	400061	463	200	400073	553	200	400089	677	200	400105	955	200
1-1/4	400062	511	200	400074	609	200	400090	776	200	400106	1,047	100
1-1/2	400063	584	200	400075	698	200	400091	868	200	400107	1,166	100
1-3/4	400064	665	200	400076	855	200	400092	1,026	200	400108	1,392	50
2	400065	665	200	400077	832	200	400093	1,026	200	400109	1,447	100
2-1/4	210021	787	200	400078	1,686	200	400094	1,232	200	400110	1,670	100
2-1/2	400066	875	200	400079	1,734	200	400095	1,232	100	400111	1,794	100
2-3/4				400080	2,029	200	404433	1,504	100	400112	2,008	100
3				400081	2,029	200	400096	1,504	100	400113	2,008	100
3-1/4				400082	2,432	200	701026	2,510	100	400114	2,940	50
3-1/2				400083	2,365	200	400098	2,510	100	400115	3,011	50
4				400084	2,679	100	400099	2,979	100	400116	3,534	50
4-1/2							400100	4,804	100	400117	5,356	50
5							701030	5,413	100	400118	6,356	50
5-1/2										400181	7,639	50
6										400119	8,087	50

Grey highlighted items are full threaded

- Specifications :** Generally conforming to BS : 2470.
- Threads :** BS Whitworth Fine, Medium as per BS : 84.
- Material :** Unbrako High Grade Alloy Steel.
- Mechanical Properties :** As per BS 2470
- Note :** Upto 4 Inch Dia can be manufactured against request.
- Plating :** No guarantee can given for unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



## Socket Head Cap Screw

Inch (BSW)

DIA	7/16" Wrench Key Size 5/16"			1/2" Wrench Key Size 3/8"			5/8" Wrench Key Size 1/2"			
	Length	Part No.	Price/ 100 Pcs	Box Qty	Part No.	Price/ 100 Pcs	Box Qty	Part No.	Price/ 100 Pcs	Box Qty
3/4	551220	2,392	100	400130	2,710	100				
7/8	791967	2,392	100	402942	2,710	100	210033	5,116	50	
1	400121	2,314	100	400131	2,303	100	400150	4,977	50	
1-1/4	400122	2,314	100	400132	2,413	100	400151	4,326	50	
1-1/2	400123	2,360	100	400133	2,456	50	400152	4,477	50	
1-3/4	400124	2,523	100	400134	2,624	50	400153	4,763	50	
2	400125	2,523	100	400135	2,743	50	400154	4,988	20	
2-1/4	210025	2,900	50	400136	3,162	50	400155	5,420	20	
2-1/2	701059	3,038	50	400137	3,298	50	400156	5,571	20	
2-3/4	210026	3,271	50	400138	3,582	50	400157	5,950	20	
3	400127	3,333	20	400139	3,894	50	400158	6,116	20	
3-1/4	210027	4,434	50	400140	4,656	50	701096	6,835	10	
3-1/2	400128	4,313	50	400141	4,656	20	400159	7,132	10	
4	400129	4,995	20	400142	5,536	25	400160	8,473	10	
4-1/2	210028	7,373	50	400143	6,615	25	400161	8,746	15	
5	210029	7,173	25	400144	8,144	25	400162	9,646	15	
5-1/2	210030	8,405	50	400145	8,967	20	400163	12,313	20	
6	210031	8,413	25	400146	9,282	20	400164	13,417	20	
6-1/2				400147	18,413	20	400165	27,725	10	
7				400148	18,783	15	400166	28,499	10	
7-1/2				210032	19,519	15	210035	29,591	10	
8				400149	20,908	25	400167	30,577	10	
8-1/2							210036	41,129	10	
9							210037	40,095	10	
10							210038	52,464	10	

Grey highlighted items are full threaded

- Specifications :** Generally conforming to BS : 2470.
- Threads :** BS Whitworth Fine, Medium as per BS : 84.
- Material :** Unbrako High Grade Alloy Steel.
- Mechanical Properties :** As per BS 2470
- Note :** Upto 4 Inch Dia can be manufactured against request.
- Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



## Socket Head Cap Screw

Inch (BSW)

DIA	3/4" Wrench Key Size 9/16"			7/8" Wrench Key Size 9/16"			1" Wrench Key Size 5/8"			
	Length	Part No.	Price/ 100 Pcs	Box Qty	Part No.	Price/ 100 Pcs	Box Qty	Part No.	Price/ 100 Pcs	Box Qty
1	210039	12,768	50							
1-1/4	400168	12,421	10							
1-1/2	400169	10,955	10	400187	17,643	10	210054	16,538	15	
1-3/4	400170	11,205	10	210043	18,852	10	210055	17,188	15	
2	400171	11,518	10	400188	18,340	10	400194	17,517	10	
2-1/4	400172	11,767	10	404637	20,308	10	404571	19,410	10	
2-1/2	400173	11,767	10	400189	19,757	10	400195	19,410	10	
2-3/4	400174	13,027	10	210044	22,837	10	210056	21,862	10	
3	400175	13,391	10	400190	22,261	10	400196	21,268	10	
3-1/4	400176	13,912	10	701133	25,237	10	210057	23,452	10	
3-1/2	400177	13,534	10	400191	24,551	10	400197	23,452	10	
4	400178	14,588	10	400192	25,903	10	400198	25,905	5	
4-1/2	400179	17,252	10	701136	30,458	10	400199	29,018	5	
5	400180	18,745	10	701137	33,635	10	400200	32,144	5	
5-1/2	700121	21,321	10	210047	35,021	10	183785	33,458	5	
6	400182	23,402	10	400193	38,342	10	400201	37,340	5	
6-1/2	400183	29,914	10	210048	66,566	5	210059	61,431	5	
7	400184	30,608	10	701139	66,566	5	400202	63,641	5	
7-1/2	210040	32,178	10	210050	68,972	5	210060	65,916	5	
8	400185	31,937	10	210051	68,553	5	400203	68,126	5	
8-1/2	210041	38,093	10	210052	74,367	5	210061	74,497	5	
9	400186	38,093	10	210053	74,367	5	210062	76,643	5	
10	701127	42,326	5				210063	85,159	5	

Grey highlighted items are full threaded

- Specifications :** Generally conforming to BS : 2470.
- Threads :** BS Whitworth Fine, Medium as per BS : 84.
- Material :** Unbrako High Grade Alloy Steel.
- Mechanical Properties :** As per BS 2470
- Note :** Upto 4 Inch Dia can be manufactured against request.
- Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



## Socket Countersunk Head Cap Screws (CSK)

Metric

DIA	M3M4M5M6M8		Wrench Key Size 2.5mm		Wrench Key Size 3mm		Wrench Key Size 4mm		Wrench Key Size 5mm	
	Part No.	Price/100 Pcs	Part No.	Price/100 Pcs	Part No.	Price/100 Pcs	Part No.	Price/100 Pcs	Part No.	Price/100 Pcs
6	106283	794								
8	103303	937								
10	103304	1,007	103309	509	103318	753	103325	582		
12	103305	1,080	103311	509	103319	495	103328	587		
14			103312	513	103320	540	103329	571	103337	765
16					401476	561	401678	624		
18					103321	580	103330	642		
20	103306	1,224	103313	580	401677	587	401679	665	103338	744
25			401675	590	103322	593	103331	686	401681	753
30			103315	598	103323	697	103332	782	103340	798
35	103308	1,368	103316	733	103324	886	103333	900	103341	915
40	106284	1,513	103317	886	106289	1,180	103334	1,022	103342	1,047
45			220001	1,839	220005	1,839	103335	1,203	103343	1,190
50			220002	1,968	220006	2,070	220008	2,142	103344	1,395
55			220003	2,213	220007	2,298	220009	2,679	106297	1,567
60			220004	2,459			220010	2,946	220011	2,455
									220012	2,931
									220013	3,197
Qty. Per Box	<b>200</b>									

DIA	M12M16M10M20M24		Wrench Key Size 8mm		Wrench Key Size 10mm		Wrench Key Size 12mm		Wrench Key Size 14mm	
	Part No.	Price/100 Pcs	Part No.	Price/100 Pcs	Part No.	Price/100 Pcs	Part No.	Price/100 Pcs	Part No.	Price/100 Pcs
16	103347	1,244								
20	103348	1,069								
25	103349	1,241								
30	103350	1,422	<b>103354</b>	2,266						
35	103351	1,635	<b>103355</b>	2,595	<b>103359</b>	4,877				
40	106302	2,109	<b>103356</b>	2,790	<b>103360</b>	5,256				
45	106303	2,380	<b>103357</b>	3,009	<b>103361</b>	5,477	<b>106332</b>	11,102		
50	106304	2,931	<b>106311</b>	3,406	<b>103362</b>	6,181	<b>106334</b>	11,910		
55	220014	3,197	<b>106312</b>	3,715	<b>106318</b>	6,210	<del>106335</del>	<del>12,697</del>	<b>220032</b>	20,524
60	220015	3,464	<b>106313</b>	4,238	<b>103362</b>	7,117	<del>106336</del>	<del>13,476</del>	<b>220033</b>	22,245
65	220016	3,730	<b>106312</b>	4,568	<b>106320</b>	7,510	<del>106337</del>	<del>14,251</del>	<b>401689</b>	23,964
70	220017	4,796	<b>106313</b>	5,195	<b>103363</b>	8,297	<del>183912</del>	<del>15,059</del>	<b>220034</b>	25,684
75	220018	5,115	<b>220020</b>	5,694	<b>183908</b>	10,224	<del>106338</del>	<del>15,867</del>	<b>220035</b>	27,404
80	220019	5,755	<b>220021</b>	6,939	<b>106321</b>	10,686	<del>183913</del>	<del>17,248</del>	<b>401690</b>	29,124
90			<b>220022</b>		<b>106325</b>	11,680	<del>106339</del>	<del>19,760</del>	<b>401691</b>	30,843
100			<b>220023</b>			13,808	<del>183913</del>	<del>20,539</del>	<b>401692</b>	38,984
110							<del>220025</del>	<del>25,495</del>	<b>401693</b>	43,685
120							<b>106339</b>	28,189	<b>401692</b>	48,387
130							<b>106341</b>	30,880	<b>401693</b>	53,088
							<del>106342</del>	<del>33,259</del>	<b>701356</b>	
							<b>220029</b>		<b>183179</b>	
							<b>220030</b>			
							<b>220031</b>		<b>701358</b>	
Qty. Per Box	<b>100</b>		<b>50</b>		<b>25</b>		<b>10</b>		<b>5</b>	

Quantity per box 25

Quantity per box 200

- Note** : All sizes are fully threaded.
- Specifications** : Generally conforming to IS : 6761, ISO : 10642
- Threads** : ISO Metric, 4g6g as per IS : 4218.
- Material** : UNBRAKO High Grade Alloy Steel.
- Mechanical Properties** : Property Class 12.9 as per IS : 1367, ISO : 898 Part - 1
- Bold black lines** are used to indicate quantity per box.





## Socket Set Screws (Grub Screws)



Knurled Cup Point

Metric

DIA	M3 Wrench Key Size 1.5mm		M4 Wrench Key Size 2mm		M5 Wrench Key Size 2.5mm		M6 Wrench Key Size 3mm		M8 Wrench Key Size 4mm	
	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs
Length										
3	104076	316								
4	103172	320	103182	262						
5	103175	324	103185	262	103194	182				
6	103176	312	103186	265	103195	185	103207	193	180002	381
8	103177	317	103187	284	103196	185	103208	210	103224	233
10	103178	334	103188	289	103197	201	103209	236	103227	243
12	103179	355	103189	320	103198	243	103211	271	103228	294
16	103180	467	103191	436	103199	282	103212	347	103229	358
20	551093	491	103193	530	103202	346	103214	375	103230	464
25			701961	574	103203	379	103217	484	103231	574
30			406498	1,046	103204	529	103218	639	103235	671
35			551679	1,392	181179	822	103219	980	103236	898
40			551680	1,790	551094	1,028	103220	1,108	103237	1,063
45							103221	1,179	701998	1,162
50							103222	1,387	103240	1,330
55									551095	2,298
60									551096	2,508
65									551097	2,903
Qty. Per Box	200									

- 1. Specification :** Generally conforming to the following standards
- 2. Threads :** ISO Metric, 4g6g as per IS:4218. ISO 261, ISO 965.
- 3. Material :** Unbrako High Grade Alloy Steel.
- 4. Mechanical Properties :** Property Class 45H as per IS : 1367, ISO:898 Part V.
- 5. NOTE :** PRICE FOR SPECIAL POINT SHOWN BELOW WILL BE 25% EXTRA.
- 6. Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.

Orders for sizes with special points will be accepted subject to our confirmation.

				
	FLAT	CONE	DOG	PLAIN CUP
IS	6094	6094	6094	6094
DIN	913	914	915	916
ISO	ISO-4026	ISO-4027	ISO-4028	ISO-4029



## Socket Set Screws (Grub Screws)





Knurled Cup Point

DIA	M10 Wrench Key Size 5mm		M12 Wrench Key Size 6mm		M16 Wrench Key Size 8mm		M20 Wrench Key Size 10mm	
	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs
8	180099	425						
10	103241	330	551687	650				
12	103244	384	103256	545				
16	103245	513	103258	652	106352	1,486		
20	103246	632	103259	827	103274	1,496	104149	4,892
25	103247	765	103260	1,135	103276	2,027	103286	5,459
30	103249	1,102	103261	1,311	103277	2,400	103287	6,311
35	103251	1,273	103262	1,780	103278	3,001	103288	7,195
40	103252	1,412	103263	1,975	103279	3,480	103289	8,045
45	103253	1,617	103269	2,193	103281	3,854	103290	8,932
50	103254	1,875	103270	2,394	103282	4,625	103292	9,771
55	551098	3,101	103271	4,134	103283	5,870	103293	11,554
60	183091	3,458	103272	4,643	103284	6,281	103294	12,277
65	551099	3,609	551100	5,791	551102	7,440	551105	13,836
70			551101	6,238	182790	9,470	551106	14,605
75					551103	10,617	551107	15,879
80					551104	11,326		
Qty. Per Box	100				50			

Quantity per box 200

- Specifications** : Generally conforming to the following standards
- Threads** : ISO Metric, 4g6g as per IS:4218. ISO 261, ISO 965.
- Material** : Unbrako High Grade Alloy Steel.
- Mechanical Properties** : Property Class 45H as per IS : 1367, ISO:898 Part V.
- NOTE** : PRICE FOR SPECIAL POINT SHOWN BELOW WILL BE 25% EXTRA.
- Bold black lines** are used to indicate quantity per box.
- Plating** : No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.

Orders for sizes with special points will be accepted subject to our confirmation.

				
	FLAT	CONE	DOG	PLAIN CUP
IS	6094	6094	6094	6094
DIN	913	914	915	916
ISO	ISO-4026	ISO-4027	ISO-4028	ISO-4029



## Socket Set Screws (Grub Screws)

Knurled Cup Point

Inch

DIA	3/16" Wrench Key Size 3/32"		1/4" Wrench Key Size 1/8"		5/16" Wrench Key Size 5/32"		3/8" Wrench Key Size 3/16"	
Length	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs
3/16	400949	191						
1/4	400951	185	400961	220				
5/16	400952	195	400963	233	400986	233		
3/8	400953	201	400965	243	400977	243	400988	285
1/2	400954	232	400967	248	400978	253	400989	384
5/8	551209	261	400969	322	400979	313	400990	454
3/4	400956	320	400970	490	400980	410	400991	560
1	400957	453	400972	477	400982	574	400993	684
1 1/4			400973	555	400984	678	400994	984
1 1/2			400974	939	400983	1,376	400995	1,745
1 3/4			551108	1,189	551109	1,470	400996	2,107
2			180730	1,257	400985	1,740	400997	2,488
Qty. Per Box	<b>200</b>						<b>100</b>	

DIA	1/2" Wrench Key Size 1/4"		5/8" Wrench Key Size 5/16"		3/4" Wrench Key Size 3/8"	
Length	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs
1/2	401003	649				
5/8	401005	728	401015	1,719		
3/4	401006	919	401016	1,771	401024	3,925
1	401008	1,135	401017	2,045	401025	4,726
1 1/4	401009	1,584	401018	2,656	551110	5,822
1 1/2	401010	3,677	401019	4,982	401026	8,097
1 3/4	401012	4,789	401020	6,719	401027	9,533
2	401013	5,238	401021	6,109	401028	11,215
2 1/2	401014	6,596	401022	8,902	401029	13,729
3	702408	8,087	401023	10,806	401030	16,539
Qty. Per Box	<b>100</b>		<b>50</b>			

- Specifications :** As per standard ASME/ANSI:B18.3.
- Threads :** BS Whitworth, Medium as per BS : 84
- Material :** Unbrako High Grade Alloy Steel.
- Mechanical Properties :** As per BS : 2470.
- NOTE :** PRICES FOR SPECIAL POINTS 25% EXTRA.
- Socket set screws with BSF/UNC/UNF threads can also be manufactured subject to MOQ. Price on request.
- Bold black lines are used to indicate quantity per box.
- Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



## Hexagon Wrenches

Length	Part No.	Price/ 100 Pcs	Box Qty	Length	Part No.	Price/ 100 Pcs	Box Qty
1/16	108468	1,065	100	1.5	125648	1,065	100
5/64	110164	1,174	100	2	122263	1,065	100
3/32	110180	1,174	100	2.5	122270	1,174	100
1/8	110213	1,391	100	3	121093	1,843	100
5/32	110246	1,801	100	4	119953	2,248	100
3/16	115915	2,449	100	5	122245	3,200	100
7/32	115948	3,548	100	6	122245	6,027	100
1/4	115981	5,894	50	8	121066	10,058	50
5/16	115997	8,719	50	10	115557	18,922	50
3/8	116013	20,116	25	12	120859	27,832	25
1/2	116046	25,738	25	14	120806	44,018	25
9/16	116063	37,582	10	17	111100	60,743	10
5/8	116080	60,772	10	19	138487	95,739	10
3/4	116096		10	22	111133	128,723	10
				24	402603	216,706	5
				27	402604	381,102	5
				32	402605		2
					402606		2

## Hex Wrench Sets

STANDARD (METRIC)				
Sets	Wrenches Box Set	Part No.	Price / 100 Pcs	Box Qty
Standard (Metric)	 1.5mm, 2mm, 2.5mm, 3mm, 4mm, 5mm, 6mm, 8mm, 10mm, Set of 9	402616	330	40
STANDARD (INCH)				
Sets	Wrenches Box Set	Part No.	Price / 100 Pcs	Box Qty
Standard (Inch)	 1/16", 5/64", 3/32", 1/8", 5/32", 3/16", 7/32", 1/4", 5/16", 3/8", Set of 10	402615	347	40

**1. Specifications :**

A. Inch Series : BS : 2470 B. Metric Series : IS : 3082, DIN 911.

**2. Material :** UNBRAKO High Grade Alloy Steel.

**3. Mechanical Properties :** Hardness : HRC 47 (Min).

**4. Plating :** No guarantee can given for Unbrako Products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.

# Hex Head Fasteners 10.9/Gr.8

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# Hex Head Bolts / Screws

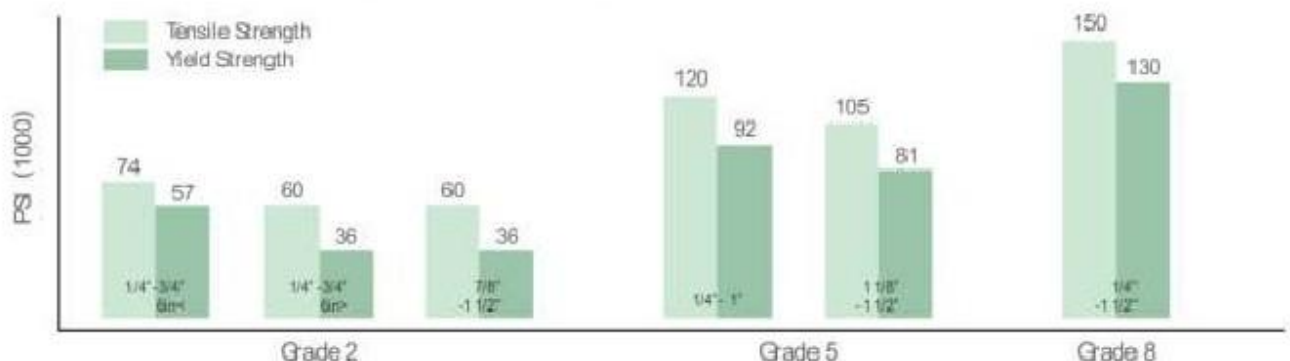
## In-house Destructive And Non-destructive Testing:

- Chemical product check analysis
- Heat treatment tests
- Room temperature tension tests (or at 0° C)
- Low temperature impact tests (upto -196° c)
- X-Ray Fluorescence Analysis
- Hardness tests
- UTS test
- Proof load test
- Macrotech tests
- Microtech tests
- Grains size
- Decarburization tests
- Ultra soud testing
- M.P.I tests
- Stress rupture tests

- **RELIABILITY** : Once tightened, Grade 8 bolts will remain tight and maintain the permanent strength of the joint. Absence of heavy stress concentration due to absence of bearing between bolts and plates.
- **ECONOMY** : Fewer high strength bolts are required than M. S. bolts and rivets. Drilling of close holes is not required. Overall weight the structure will be very light.
- **SIMPLICITY** : A minimum of skill is required in tightening and the operators need only to follow a few simple rules.
- **CONVENIENCE** : Whether in the workshop or at site, H.S.S. Bolts enable joints to be made easily. Welding of site splices can be eliminated, avoiding difficulties of welding in adverse weather conditions. Absence of pneumatic hammers used in riveted joints reduce noise level considerably.



## Comparison of Different Grades





## Hex Head Bolts/Screws

Metric

DIA	M4			M5			M6			M8		
	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty
10	170001	253	500	170013	268	500	170029	347	500			
12	170002	262	500	170014	272	500	170030	366	500	170049	529	500
16	170003	430	500	170015	429	500	170031	379	500	170050	536	200
18	170004	430	500	170016	440	500	170032	384	500	170051	483	200
20	170005	372	500	170017	354	500	170033	379	500	170052	483	200
22	170006	378	500	170018	377	500	170034	390	500	170053	547	200
25	170007	378	500	170019	372	500	170035	392	500	170054	530	200
30	170008	377	500	170020	401	500	170036	410	500	170055	593	200
35	170009	387	500	170021	406	500	170037	439	200	170056	695	200
40	170010	411	500	170022	430	500	170038	461	200	170057	737	200
45	170011	463	500	170023	470	500	170039	490	200	170058	797	200
50	170012	514	500	170024	565	500	170040	524	200	170059	867	200
55	240001	565	500	170025	595	500	170041	576	200	170060	950	100
60	240002	617	500	170026	649	200	170042	630	200	170061	1,072	100
65				170027	737	200	170043	683	100	170062	1,107	100
70				170028	795	200	170044	736	100	170063	1,194	100
75				240003	852	200	170045	742	100	170064	1,232	100
80							170046	782	100	170065	1,277	100
90							170047	881	100	170066	1,650	100
100							170048	979	100	170067	1,988	50
110							551178	1,507	100	240010	2,802	50
120							550866	1,638	100	240011	3,091	50
130							550867	1,765	100	240012	3,383	50
140							550868	1,894	100	550872	3,744	50
150							550869	2,023	100	550873	3,983	50
160										787951	4,212	50
170										787952	4,430	50
180										787953	4,680	50
190										787954	4,898	50
200										787955	5,127	50

Grey highlighted items are full threaded

- Specifications :** Generally conforming to IS : 1364, ISO : 4014/4017, DIN 931/933.
- Threads :** ISO Metric 6g as per IS:4218.
- Material and Mechanical Properties :** Property Class 10.9 as per IS : 1367.
- Note :** Shaded size are fully threaded. Prices for fully threaded screws beyond shaded sizes will cost 10% extra.
- Orders for Property class 8.8 can be accepted subject to our confirmation on the basis of item wise quantities.  
Price list for 8.8 available separately.
- Upto 80MM Dia can be manufactured against request.
- Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



## Hex Head Bolts/Screws

Metric

DIA	M10			M12			M14			M16		
Length	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty
16	170068	905	200									
18	170069	899	200									
20	170070	849	200	170093	1,393	100				170142	3,150	50
22	170071	934	200							170143	3,150	50
25	170072	917	200	170094	1,513	100	170121	2,406	50	170144	3,173	25
30	170073	990	100	170095	1,502	100	170122	2,593	50	170145	3,477	25
35	170074	1,041	100	170096	1,585	100	170123	2,697	25	170146	3,477	25
40	170075	1,264	100	170097	1,805	100	170124	2,885	25	170147	3,441	25
45	170076	1,466	100	170098	2,002	50	170125	3,115	25	170148	3,649	25
50	170077	1,502	100	170099	2,141	50	170126	3,453	25	170149	3,920	25
55	170078	1,564	100	170100	2,296	50	170127	3,530	25	170150	4,357	25
60	170079	1,717	100	170101	2,394	50	170128	3,688	25	170151	4,596	25
65	170080	1,810	50	170102	2,503	50	170129	3,891	25	170152	4,713	25
70	170081	1,903	50	170103	2,830	50	170130	4,127	25	170153	5,029	25
75	170082	2,034	50	170104	2,932	50	170131	4,328	25	170154	5,393	25
80	170083	2,341	50	170105	3,110	50	170132	4,582	25	170155	6,190	25
90	170084	2,595	50	170106	3,350	25	170133	5,020	25	170156	6,613	25
100	170085	2,983	50	170107	3,914	25	170134	5,777	25	170157	6,864	15
110	170086	3,444	50	170108	4,275	25	170135	6,280	25	170158	7,614	15
120	170087	3,749	25	170109	4,530	25	170136	6,973	25	170159	8,698	15
130	170088	4,211	50	170110	4,789	25	170137	7,548	25	170160	10,228	15
140	170089	4,672	50	170111	5,682	25	170138	9,774	25	170161	10,368	15
150	170090	5,006	30	170112	7,592	25	170139	10,788	25	170162	11,800	15
160	170091	5,337	25	170113	7,959	20	170140	12,047	25	170163	12,816	15
180	170092	6,005	25	170114	8,652	20	170141	12,924	25	170164	14,414	15
200	550876	6,673	25	170115	11,434	25	550887	14,360	25	170165	15,603	10
220				170116	16,442	25				170166	20,168	10
240				170117	16,848	20				170167	21,705	10
260				170118	17,210	20				170168	22,144	10
280				170119	18,794	18				170169	24,447	10
300				170120	20,136	18				170170	31,425	10

Grey highlighted items are full threaded

- Specifications :** Generally conforming to IS : 1364, ISO : 4014/4017, DIN 931/933.
- Threads :** ISO Metric 6g as per IS:4218.
- Material and Mechanical Properties :** Property Class 10.9 as per IS : 1367.
- Note :** Shaded size are fully threaded. Prices for fully threaded screws beyond shaded sizes will cost 10% extra.
- Orders for Property class 8.8 can be accepted subject to our confirmation on the basis of item wise quantities.  
Price list for 8.8 available separately.
- Upto 80MM Dia can be manufactured against request.
- Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.





## Hex Head Bolts/Screws

Metric

M18				M20			M22		
DIA	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty
35				170190	6,915	25			
40	170171	6,178	25	170191	6,915	25			
45	170172	6,439	25	170192	7,244	25			
50	170173	6,638	25	170193	7,192	25	170215	10,254	10
55	170174	7,092	25	170194	7,314	25	170216	11,043	10
60	170175	7,561	25	170195	8,168	25	170217	11,405	10
65	170176	8,259	25	170196	8,283	25	170218	12,213	10
70	170177	8,741	25	170197	8,548	10	170219	12,637	10
75	170178	8,758	10	170198	8,484	10	170220	12,637	10
80	170179	9,304	10	170199	9,413	10	170221	13,072	10
90	170180	10,867	10	170200	9,691	10	170222	13,603	10
100	170181	11,992	10	170201	10,298	10	170223	14,489	10
110	170182	12,539	10	170202	10,967	10	170224	15,454	10
120	170183	13,087	10	170203	12,344	10	170225	16,823	10
130	170184	14,014	10	170204	13,140	10	170226	17,982	10
140	170185	15,092	10	170205	14,298	10	170227	18,948	10
150	170186	16,743	10	170206	15,258	10	170228	19,896	10
160	170187	18,090	10	170207	14,996	10	170229	20,831	10
180	170188	19,898	10	170208	17,854	10	170230	23,762	5
200	170189	21,709	10	170209	20,904	10	170231	25,806	5
220	240020	23,519	10	170210	22,528	10	170232	27,881	5
240	240021	25,328	10	170211	31,255	5	170233	42,826	5
260	240022	27,137	10	170212	32,822	5	170234	46,391	5
280	240023		8	170213	34,391	6	170235	48,174	5
300	240024		8	170214	37,518	6	170236	53,544	5
					40,629	6		57,370	5

Grey highlighted items are full threaded

- Specifications :** Generally conforming to IS : 1364, ISO : 4014/4017, DIN 931/933.
- Threads :** ISO Metric 6g as per IS:4218.
- Material and Mechanical Properties :** Property Class 10.9 as per IS : 1367.
- Note :** Shaded size are fully threaded. Prices for fully threaded screws beyond shaded sizes will cost 10% extra.
- Orders for Property class 8.8 can be accepted subject to our confirmation on the basis of item wise quantities.**  
Price list for 8.8 available separately.
- Upto 80MM Dia can be manufactured against request.**
- Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



## Hex Head Bolts/Screws

Metric

DIA	M24			M27			M30		
Length	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty
50	170237	12,927	10	170259	25,914	5	170281	34,350	5
55	170238	12,370	10	170260	25,914	5	170282	34,350	5
60	170239	13,458	10	170261	25,914	5	170283	34,350	5
65	170240	13,926	10	170262	25,914	5	170284	34,350	5
70	170241	14,762	10	170263	25,914	5	170285	34,350	5
75	170242	15,293	10	170264	27,868	5	170286	34,350	5
80	170243	16,722	10	170265	29,162	5	170287	35,747	5
90	170244	17,857	10	170266	31,749	5	170288	38,803	5
100	170245	19,314	10	170267	34,350	5	170289	41,758	5
110	170246	20,187	5	170268	37,041	5	170290	45,933	5
120	170247	21,186	10	170269	37,980	5	170291	46,948	5
130	170248	22,344	5	170270	39,230	5	170292	49,062	5
140	170249	23,407	5	170271	41,714	5	170293	52,105	5
150	170250	24,550	5	170272	44,198	5	170294	55,031	3
160	170251	29,316	5	170273	48,813	5	170295	62,262	3
170	240025	30,594	5	550941	51,407	5	550947	65,405	3
180	170252	31,874	5	170274	54,002	5	170296	68,568	3
190	240026	33,130	5						
200	170253	34,386	5	170275	58,822	5	170297	74,800	5
220	170254	49,296	5	170276	81,062	4	170298	90,248	3
240	170255	51,063	5	170277	87,410	4	170299	96,598	3
260	170256	52,830	4	170278	93,143	3	170300	102,961	3
280	170257	58,101	4	170279	98,861	3	170301	109,311	2
300	170258	71,028	4	170280	103,499	3	170302	115,647	2

Grey highlighted items are full threaded

- Specifications :** Generally conforming to IS : 1364, ISO : 4014/4017, DIN 931/933.
- Threads :** ISO Metric 6g as per IS:4218.
- Material and Mechanical Properties :** Property Class 10.9 as per IS : 1367.
- Note :** Shaded size are fully threaded. Prices for fully threaded screws beyond shaded sizes will cost 10% extra.
- Orders for Property class 8.8 can be accepted subject to our confirmation on the basis of item wise quantities.  
Price list for 8.8 available separately.
- Upto 80MM Dia can be manufactured against request.
- Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



## Hex Head Bolts/Screws

Metric

DIA	M33			M36			M42			M48		
Length	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty
75	170303	47,152	5									
80	170304	49,857	5	170320	59,646	5						
90	170305	52,884	5	170321	64,188	3	170336	94,128	3			
100	170306	56,633	5	170322	66,774	3	170337	99,537	2	787845	138,424	2
110	170307	60,895	4	170323	71,316	4	170338	104,977	2	787846	146,032	2
120	170308	62,350	4	170324	72,698	3	170339	105,785	2	787847	146,890	2
130	170309	65,702	4	170325	76,506	3	170340	110,252	10	787848	153,010	2
140	170310	69,774	4	170326	80,870	3	170341	116,388	10	550980	170,926	2
150	170311	73,771	4	170327	85,206	3	170342	122,510	9	787849	178,661	2
160	170312	77,210	4	170328	93,628	3	170343	128,640	9	787850	186,450	2
180	170313	84,545	3	170329	108,576	2	170344	140,325	8	550981	201,973	2
200	170314	91,967	3	170330	117,690	2	170345	146,674	7	550982	209,312	2
220	170315	111,224	3	170331	141,105	2	170346	188,138	7	550983	266,059	2
240	170316	119,424	2	170332	151,268	9	170347	202,102	6	550984	283,788	2
260	170317	128,376	2	170333	161,418	8	170348	216,109	6	787851	301,517	2
280	170318	137,282	2	170334	171,589	8	170349	230,089	6	551123	319,245	2
300	170319	146,176	2	170335	205,981	7	170350	244,059	6	787852	336,974	2

Grey highlighted items are full threaded

- Specifications** : Generally conforming to IS : 1364, ISO : 4014/4017, DIN 931/933.
- Threads** : ISO Metric 6g as per IS:4218.
- Material and Mechanical Properties** : Property Class 10.9 as per IS : 1367.
- Note** : Shaded size are fully threaded. Prices for fully threaded screws beyond shaded sizes will cost 10% extra.
- Orders for Property class 8.8 can be accepted subject to our confirmation on the basis of item wise quantities.  
Price list for 8.8 available separately.
- Upto 80MM Dia can be manufactured against request.
- Plating** : No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.

Important \* long delivery items-subject to extended deliveries ( 3 to 4 months ). Users are advised to plan their requirements in advance.



## Hex Head Bolts/Screws

Inch(UNC)

DIA	1/4			5/16			3/8			1/2		
Length	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty
1/2	170351	415	500	170364	553	500	170381	891	200			
5/8	170352	515	500	170365	530	500	170382	891	200			
3/4	170353	468	500	170366	510	500	170383	777	200	170400	1,673	100
7/8	170354	422	500	170367	558	200	170384	938	200	170401	1,660	100
1	170355	461	500	170368	555	200	170385	766	200	170402	1,763	100
1-1/4	170356	472	500	170369	611	200	170386	856	200	170403	1,966	100
1-1/2	170357	522	200	170370	744	200	170387	967	200	170404	2,098	100
1-3/4	170358	572	200	170371	834	200	170388	1,129	200	170405	2,256	50
2	170359	628	200	170372	888	200	170389	1,239	100	170406	2,455	25
2-1/4	170360	690	200	170373	977	200	170390	1,358	100	170407	2,711	25
2-1/2	170361	768	200	170374	1,072	200	170391	1,490	100	170408	2,887	25
2-3/4	170362	844	200	170375	1,159	200	170392	1,660	100	170409	3,125	25
3	170363	922	200	170376	1,220	200	170393	1,759	100	170410	3,506	25
3-1/4	240027	1,063	200	170377	1,301	100	170394	1,945	100	170411	3,760	25
3-1/2	240028	1,075	200	170378	1,402	100	170395	1,999	100	170412	3,889	25
3-3/4	240029	1,147	100	170379	1,731	100	170396	2,450	100	170413	4,092	25
4	240030	1,230	100	170380	1,912	100	170397	2,634	100	170414	4,263	25
4 1/4							170398	2,929	100	170415	4,527	25
4 1/2							170399	3,100	50	170416	4,932	25
5				551065	2,151	100	240034	3,444	50	170417	5,387	25
5 1/2				551066	2,390	100	240035	3,789	50	170418	6,577	25
6							240036	4,133	25	170419	7,985	25
6-1/2									25	170420	9,809	25
7									25	170421	11,997	25
7 1/2									25	170422	12,858	25
8									25		13,714	25

Grey highlighted items are full threaded

- Specifications :** Generally conforming to ANSI B 18.2.1
- Threads :** Unified Coarse, 2A as per ANSI B1.1.
- Material & Mechanical Properties :** Grade 8 as per SAE J 429
- Note :** Non-shaded sizes if required in full thread will cost 10% extra.  
: Upto 4 Inch Dia can be manufactured against request.
- Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



## Hex Head Bolts/Screws

Inch(UNC)

DIA	5/8			3/4			7/8			1		
	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty
1	170423	3,080	25									
1.1/4	170424	3,438	25									
1.1/2	170425	3,607	25	170445	6,330	25				170487	13,830	10
1.3/4	170426	3,848	25	170446	6,570	25				170488	13,830	10
2	170427	4,042	25	170447	7,000	25	170467	16,551	10	170489	14,537	10
2.1/4	170428	4,401	25	170448	7,688	25	170468	16,551	10	170490	15,101	10
2.1/2	170429	4,816	25	170449	8,065	25	170469	13,345	10	170491	15,793	10
2.3/4	170430	5,205	25	170450	8,798	10	170470	13,345	10	170492	16,839	10
3	170431	5,610	25	170451	9,144	10	170471	13,981	10	170493	18,443	10
3.1/4	170432	5,974	25	170452	9,545	10	170472	15,419	10	170494	19,157	10
3.1/2	170433	6,328	25	170453	10,318	10	170473	15,419	10	170495	19,963	10
3 3/4	170434	6,999	25	170454	11,075	10	170474	16,542	10	170496	21,974	10
4	170435	7,184	25	170455	11,588	10	170475	17,331	10	170497	21,974	10
4 1/4	170436	7,435	25	170456	11,873	10	170476	18,373	10	170498	24,228	10
4 1/2	170437	7,712	25	170457	12,422	10	170477	19,248	10	170499	24,228	5
5	170438	8,681	25	170458	13,214	10	170478	20,711	10	170500	27,034	5
5 1/2	170439	9,987	20	170459	14,839	10	170479	21,819	10	170501	29,219	5
6	170440	10,469	10	170460	15,234	10	170480	23,159	10	170502	30,571	5
6.1/2	170441	12,214	10	170461	16,462	10	170481	24,440	5	170503	33,153	5
7	170442	13,154	10	170462	16,462	10	170482	26,978	5	170504	35,733	5
7.1/2	170443	14,093	10	170463	17,688	10	170483	28,373	5	170505	38,234	5
8	170444	14,350	10	170464	19,382	10	170484	29,624	5	170506	40,004	5
9				170465	20,263	10	170485	33,661	5	170507	44,989	5
10				170466	22,797	8	170486	35,220	5	170508	49,333	4
11				240038	24,230	8				170509	51,801	4
12										170510	56,509	4

Grey highlighted items are full threaded

- Specifications :** Generally conforming to ANSI B 18.2.1
- Threads :** Unified Coarse, 2A as per ANSI B1.1.
- Material & Mechanical Properties :** Grade 8 as per SAE J 429
- Note :** Non-shaded sizes if required in full thread will cost 10% extra.  
: Upto 4 Inch Dia can be manufactured against request.
- Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



## Hex Head Bolts/Screws

Inch(UNC)

DIA	1-1/8			1-1/4			1-3/8		
Length	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty
1	170511	15,534	5						
1.1/4	170512	16,847	5						
1.1/2	170513	18,384	10						
1.3/4	170514	19,007	10						
2	170515	20,467	10						
2.1/4	170516	21,936	5						
2.1/2	170517	23,189	5	170534	30,710	5	170551	37,186	5
2.3/4	170518	24,440	5	170535	32,169	5	170552	38,854	5
3	170519	25,900	5	170536	33,629	5	170553	40,736	5
3.1/4	170520	27,368	5	170537	35,512	5	170554	43,033	5
3.1/2	170521	28,619	5	170538	37,186	5	170555	45,124	5
3.3/4	170522	30,079	5	170539	39,062	5	170556	47,421	5
4	170523	31,539	5	170540	40,736	4	170557	49,510	5
4.1/4	170524	33,006	5	170541	42,404	5	170558	51,808	4
4.1/2	170525	34,467	5	170542	44,286	4	170559	53,898	4
5	170526	37,186	5	170543	47,836	5	170560	58,286	4
5.1/2	170527	40,107	5	170544	51,178	3	170561	62,672	3
6	170528	42,826	5	170545	54,735	4	170562	67,060	3
7	170529	48,466	3	170546	61,627	3	170563	75,627	3
7.1/2	170530	51,178	5	170547	64,970	3	170564	80,014	3
8	170531	54,105	3	170548	68,519	3	170565	84,401	3
9	170532	75,627	4	170549	75,627	3	170566	93,174	2
10	170533	65,385	3	170550	82,517	3	170567	101,949	2

Grey highlighted items are full threaded

- Specifications :** Generally conforming to ANSI B 18.2.1
- Threads :** Unified Coarse, 2A as per ANSI B1.1.
- Material & Mechanical Properties :** Grade 8 as per SAE J 429
- Note :** Non-shaded sizes if required in full thread will cost 10% extra.  
: Upto 4 Inch Dia can be manufactured against request.
- Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



## Hex Head Bolts/Screws

Inch(UNC)

DIA	1-1/2			1-3/4			2		
Length	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty	Part No.	Price/ 100 Pcs.	Box Qty
2.1/2	170568	46,791	5	170585	75,568	3	170602	105,794	2
2.3/4	170569	49,089	5	170586	78,768	3	170603	110,140	2
3	170570	51,393	5	170587	81,978	3	170604	114,266	2
3.1/4	170571	53,476	4	170588	85,413	2	170605	118,612	2
3.1/2	170572	56,195	4	170589	88,613	2	170606	122,966	2
3.3/4	170573	58,701	4	170590	92,049	2	170607	127,320	2
4	170574	61,419	3	170591	95,948	2	170608	131,666	2
4.1/4	170575	63,925	3	170592	99,839	2	170609	136,021	2
4.1/2	170576	66,643	3	170593	103,730	2	170610	141,056	2
5	170577	71,861	3	170594	111,520	2	170611	151,365	2
5.1/2	170578	77,086	3	170595	119,303	2	170612	161,437	2
6	170579	82,311	2	170596	127,093	2	170613	171,745	2
7	170580	92,337	2	170597	142,201	2	170614	191,207	2
7.1/2	170581	97,561	3	170598	149,756	2	170615	201,516	2
8	170582	102,785	2	170599	157,772	2	170616	211,815	2
9	170583	113,228	2	170600	173,345	2	170617	231,968	2
10	170584	123,677	2	170601	188,917	2	170618	252,576	2

Grey highlighted items are full threaded

- Specifications :** Generally conforming to ANSI B 18.2.1
- Threads :** Unified Coarse, 2A as per ANSI B1.1.
- Material & Mechanical Properties :** Grade 8 as per SAE J 429
- Note :** Non-shaded sizes if required in full thread will cost 10% extra.  
: Upto 4 Inch Dia can be manufactured against request.
- Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



## Hex Nuts

Size (mm)	Grade	Part No.	Price/ 100 Pcs.	Pcs. Per Box	Pcs. Per Carton
M6 X 1	8	550303	135	500	9000
M6 X 1	10	170619	161	500	9000
M8 X 1.25	8	550304	184	200	2400
M8 X 1.25	10	170620	210	200	2400
M10 X 1.5	8	550305	356	200	2400
M10 X 1.5	10	170621	407	200	2400
M12 X 1.75	8	550306	580	200	1600
M12 X 1.75	10	170623	917	200	2400
(M12) X 1.5	10	170622	917	200	2400
(M14) X 1.5	10	170625	1,064	100	800
M14 X 2	10	170626	1,064	100	800
M16 X 2	8	550307	1,155	100	800
M16 X 2	10	170627	1,393	100	800
(M18) X1.5	10	170629	2,092	100	600
M18 X 2.5	10	170630	2,092	100	600
(M20)X 1.5	10	170631	2,678	50	300
M20 X 2.5	10	170632	2,678	50	300
M22 X 2.5	10	170633	3,077	50	200
M24 X 3	10	170634	4,603	50	200
M27 X 3	10	170635	7,433	25	150
M30 X 3.5	10	170636	10,703	25	150
M33 X 3.5	10	170637	14,724	10	80
M36 X 4	10	170638	19,007	10	80
M39 X 4	10	170639	25,925	10	40
M42 X 4.5	10	170640	31,844	10	40
M45 X 4.5	10	170641	38,043	10	40
M48 X 5	10	170642	45,833	10	40
M52 X 5	10	170643	54,265	4	16
M56 X 5.5	10	170644	70,141	4	16
M60 X 5.5	10	550301	131,512	3	12
M64 X 6	10	170645	140,280	3	12
M72 X 6	10	550302	251,160	2	8

1. **Specifications** : For Nuts with Metric Threads IS : 1364, ISO 4032

2. **Threads** : ISO Metric 6H as per is : 4218, ISO 261, ISO 965.

3. **Material Mechanical Properties** : Property Class as tabulated as per IS : 1367, ISO 898, Part-II.

4. **Note** : Size in brackets are non-preferred standards.

5. **Plating** : No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



Hex Nuts

Size (mm)	Grade	Part No	Price/ 100 Pcs.	Pcs. Per Box	Pcs. Per Carton
			148		
			204		
			293		
			670		
			670		
			1,393		
			2,455		
			3,309		
			5,200		
			7,344		
			10,417		
			13,305		
			18,094		

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Studbolt (Metric)	75
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Heavy Hex Nut (Metric)	81
Heavy Hex Nut (Inch)	82

- Specifications :** For Nuts with UNC Threads : (ANSI B 18.2.2).
- Threads :** Unified Coarse, 2B As Per ANSI B1.1.
- Material Mechanical Properties :** Grade as tabulated as per SAE J 995.
- Plating :** No guarantee can given for Unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.

Nylock Nut (Din 982, (ISO 7040 Grade-8) Blue Ring

Size (mm)	Part No.	Price/ 100 Pcs.	Pcs. Per Box	Pcs. Per Carton
		169		
		303		
		669		
		958		
		1,016		
		1,558		
		2,015		
		2,063		
		4,090		
		4,376		



# Petrochemical Fasteners

Wide Range of Unbrako Studbolts and Nuts for Gas, Petroleum & Chemical Industries.

ISO 9001:2008 and ISO/TS 16949:2002 Quality Assured.

## Product Capability Coatings

- Plain (Self Colour)
- Hot Dipped Galvanized
- Mechanically Plated
- Zinc Plated
- PTFE
- Xylan™
- Molybond™
- Cadmium
- Phosphate and Oil



## Size Range

Length Range  
Inch : upto 10 feet  
Metric : upto 3 meters

Diameter Range  
Inch : 3/8" to 4"  
Metric : M10 to M100



STUDBOLTS (ASTM Spec)	Screw Fastening Material (generic)	Material	COMPATIBLE NUTS (ASTM Spec)
A193 Grade B7	Cr - Mo	4140 / 4142 / 4145	A194 Grade 2H
A193 Grade B7M	Cr - Mo	4140 / 4142 / 4145	A194 Grade 2HM
A193 Grade B8	18 Cr - 8 Ni	304	A194 Grade 8
A320 Grade B8M	18 Cr - 10 Ni - 2 Mo	316	A194 Grade 8M
A193 Grade B16	Cr MoV	EN 40CrMoV4	A194 Grade 4 or 7
A320 Grade L7	Cr - Mo	4140 / 4142 / 4145	A194 Grade 4 or 7
A320 Grade L7M	Cr - Mo	4140 / 4142 / 4145	A194 Grade 4M or 7M
A193 Grade B5	5 Cr	501	A194 Grade 3
A193 Grade B6	12 Cr	410	A194 Grade 6
A193 Grade B8T	18 Cr - 10 Ni - Ti	321	A194 Grade 8T

\* Grey Highlighted items can be made-to-order. Not all material is stocked, however is available on request



## Stud Bolt With 2 Heavy Hex Nuts

Metric

DIA	M12		M16		M18		M20		M22	
Length	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs
60	350001	3,116	350013	5,997						
70	350002	3,418	350014	6,496	350033	9,111				
80	350003	3,689	350015	6,994	350034	9,770	350055	12,507		
90	350004	3,954	350016	7,502	350035	10,427	350056	13,270	350078	17,513
100	350005	4,227	350017	8,075	350036	11,077	350057	14,117	350079	18,163
110	350006	4,492	350018	8,536	350037	11,690	350058	14,880	350080	18,586
120	350007	4,764	350019	9,074	350038	12,348	350059	15,660	350081	19,584
130	350008	5,074	350020	9,572	350039	12,969	350060	16,461	350082	20,545
140	350009	5,459	350021	10,081	350040	13,619	350061	17,270	350083	21,505
150	350010	5,732	350022	10,578	350041	14,194	350062	18,048	350084	22,504
160	350011	5,997	350023	11,190	350042	14,843	350063	18,851	350085	23,471
170	350012	6,307	350024	11,690	350043	15,470	350064	19,660	350086	24,432
180			350025	12,226	350044	16,121	350065	20,129	350087	25,436
190			350026	12,734	350045	16,734	350066	20,930	350088	26,321
200			350027	13,270	350046	17,384	350067	21,739	350089	27,312
210			350028	13,770	350047	18,004	350068	22,511	350090	28,280
220			350029	14,269	350048	18,623	350069	23,319	350091	29,279
230			350030	14,805	350049	19,273	350070	24,083	350092	30,245
240			350031	15,312	350050	19,887	350071	24,893	350093	31,245
250			350032	15,811	350051	20,545	350072	25,700	350094	32,205
260					350052	21,164	350073	26,472	350095	33,210
270					350053	21,777	350074	27,273	350096	34,170
280					350054	22,427	350075	28,091	350097	35,177
290							350076	28,855	350098	36,136
300							350077	29,663	350099	37,128
320									350100	39,094

- 1. Studbolt Specification :** Generally conforming to ASTM A193 / Grade : B7
- 2. Nut Specification :** Generally conforming to ASTM A194 / Grade : 2H
- 3. Note :** Prices for ASTM Grade B7M.L7, L7M, B16, B8, Yellow Zinc Cr6+, Xylan® (PTFE) available on request.
  - : Small quantities less than one standard carton will be subject to surcharge by your unbrako distributor.
  - : Check availability in stock at the time of order.
- 4. Plating :** No guarantee can given for unbrako products which are plated by users or by outside plates, who may not have considered hydrogen embrittlement problem.



## Stud Bolt with 2 Heavy Hex Nuts

DIA	M24		M27		M30		M33		Metric	
	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs
90	350101	19,402								
100	350102	20,855								
110	350103	22,389	350126	30,783						
120	350104	23,161	350127	32,590	350151	41,172				
130	350105	24,318	350128	34,094	350152	42,707	350180	54,140		
140	350106	25,474	350129	35,554	350153	44,635	350181	56,408	350208	71,078
150	350107	26,623	350130	37,051	350154	46,564	350182	58,828	350209	73,799
160	350108	27,782	350131	38,508	350155	48,484	350183	61,096	350210	76,522
170	350109	28,937	350132	40,016	350156	50,019	350184	63,365	350211	79,243
180	350110	30,049	350133	41,557	350157	51,947	350185	65,785	350212	81,966
190	350111	31,206	350134	43,101	350158	53,875	350186	67,599	350213	84,235
200	350112	32,318	350135	44,635	350159	55,417	350187	70,018	350214	86,956
210	350113	34,011	350136	46,177	350160	57,338	350188	72,287	350215	89,678
220	350114	35,177	350137	47,713	350161	59,258	350189	74,706	350216	92,415
230	350115	36,324	350138	48,870	350162	61,187	350190	77,277	350217	95,198
240	350116	37,474	350139	50,374	350163	63,114	350191	80,151	350218	97,391
250	350117	38,631	350140	51,871	350164	66,193	350192	82,268	350219	100,112
260	350118	39,788	350141	53,338	350165	68,113	350193	84,688	350220	102,835
270	350119	40,945	350142	54,836	350166	70,035	350194	86,200	350221	105,406
280	350120	42,094	350143	56,302	350167	71,933	350195	88,469	350222	108,129
290	350121	43,252	350144	57,754	350168	73,891	350196	90,737	350223	112,060
300	350122	44,288	350145	59,258	350169	75,426	350197	92,702	350224	114,631
320	350123	46,677	350146	62,223	350170	79,274	350198	97,239	350225	120,074
340	350124	48,983	350147	65,187	350171	82,737	350199	101,927	350226	125,520
360	350125	51,296	350148	68,160	350172	86,200	350200	106,162	350227	130,964
380			350149	71,115	350173	90,048	350201	110,849	350228	136,106
400			350150	74,079	350174	93,520	350202	115,084	350229	141,247
420					350175	96,975	350203	119,773	350230	146,691
440					350176	100,824	350204	124,008	350231	151,682
460					350177	104,287	350205	128,544	350232	157,277
480					350178	108,136	350206	132,779	350233	162,571
500					350179	111,607	350207	137,618	350234	167,863

- 1. Studbolt Specification :** Generally conforming to ASTM A193 / Grade : B7
- 2. Nut Specification :** Generally conforming to ASTM A194 / Grade : 2H
- 3. Note :** Prices for ASTM Grade B7M.L7, L7M, B16, B8, Yellow Zinc Cr6+, Xylan® (PTFE) available on request.  
: Small quantities less than one standard carton will be subject to surcharge by your unbrako distributor.  
: Check availability in stock at the time of order.
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## Stud Bolt with 2 Heavy Hex Nuts

Metric

DIA	M39		M42		M45		M48		M52		M56	
Length	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs
150	350235	91,190										
160	350236	94,215	350261	116,295								
170	350237	97,543	350262	120,074	350286	145,618						
180	350238	100,415	350263	124,008	350287	149,724	350310	179,811				
190	350239	103,439	350264	127,788	350288	154,086	350311	184,801	350333	218,222		
200	350240	106,918	350265	131,720	350289	158,336	350312	189,792	350334	223,817		
210	350241	109,944	350266	135,501	350290	162,873	350313	194,933	350335	229,414	350355	266,464
220	350242	113,119	350267	139,447	350291	166,880	350314	199,773	350336	235,916	350356	272,968
230	350243	116,295	350268	143,153	350292	171,840	350315	204,914	350337	241,361	350357	279,772
240	350244	119,319	350269	147,008	350293	176,029	350316	209,905	350338	247,561	350358	286,124
250	350245	122,797	350270	150,480	350294	180,264	350317	214,895	350339	253,459	350359	292,779
260	350246	125,821	350271	154,253	350295	184,801	350318	220,038	350340	259,508	350360	299,432
270	350247	128,997	350272	158,185	350296	189,337	350319	225,028	350341	265,254	350361	305,632
280	350248	132,022	350273	162,131	350297	194,329	350320	230,018	350342	271,456	350362	312,287
290	350249	138,677	350274	165,905	350298	198,866	350321	235,086	350343	277,352	350363	319,092
300	350250	141,701	350275	169,693	350299	204,158	350322	240,000	350344	283,401	350364	325,443
320	350251	146,238	350276	177,406	350300	213,080	350323	249,829	350345	295,499	350365	338,147
340	350252	152,287	350277	184,801	350301	219,432	350324	260,415	350346	306,237	350366	351,453
360	350253	158,185	350278	190,548	350302	228,052	350325	270,396	350347	318,488	350367	364,460
380	350254	164,839	350279	196,295	350303	236,824	350326	280,377	350348	330,282	350368	377,617
400	350255	170,888	350280	203,554	350304	242,721	350327	290,359	350349	342,229	350369	390,774
420	350256	176,937	350281	210,964	350305	250,434	350328	300,490	350350	346,766	350370	403,477
440	350257	183,289	350282	217,920	350306	258,147	350329	310,471	350351	358,411	350371	416,483
460	350258	189,337	350283	225,331	350307	265,859	350330	320,604	350352	369,905	350372	429,790
480	350259	195,538	350284	232,619	350308	273,723	350331	330,586	350353	381,397	350373	442,797
500	350260	202,646	350285	240,099	350309	281,285	350332	340,566	350354	393,194	350374	455,802

- 1. Studbolt Specification :** Generally conforming to ASTM A193 / Grade : B7
- 2. Nut Specification :** Generally conforming to ASTM A194 / Grade : 2H
- 3. Note :** Prices for ASTM Grade B7M.L7, L7M, B16, B8, Yellow Zinc Cr6+, Xylan® (PTFE) available on request.
  - : Small quantities less than one standard carton will be subject to surcharge by your unbrako distributor.
  - : Check availability in stock at the time of order.
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## Stud Bolt with 2 Heavy Hex Nuts

Inch

DIA	1/2		5/8		3/4		7/8		1	
Length	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs
2.1/4	550309	4,160								
2.3/4	550310	4,462	550322	7,621						
3	550311	4,773	550323	8,091	550338	12,484				
3.1/2	550312	5,074	550324	8,552	550339	13,209	550353	19,250		
4	550313	5,384	550325	9,014	550340	13,951	550354	20,264	550368	27,660
4.1/2	550314	5,695	550326	9,474	550341	14,684	550355	21,263	550369	28,961
4.3/4	550315	6,004	550327	9,936	550342	15,395	550356	22,268	550370	30,275
5	550316	6,314	550328	10,397	550343	16,137	550357	23,281	550371	31,607
5.1/2	550317	6,616	550329	10,866	550344	16,863	550358	24,273	550372	32,922
6	550318	6,926	550330	11,320	550345	17,602	550359	25,255	550373	34,208
6.1/2	550319	7,546	550331	12,446	550346	19,070	550360	27,221	550374	36,824
7	550320	7,857	550332	12,907	550347	19,569	550361	28,280	550375	38,140
7.1/2	550321	8,159	550333	13,408	550348	20,295	550362	29,036	550376	39,652
8			550334	14,368	550349	21,685	550363	31,002	550377	41,618
8.1/2			550335	14,873	550350	22,382	550364	32,015	550378	43,145
9			550336	15,334	550351	23,116	550365	32,968	550379	44,689
9-1/2			550337	15,842	550352	23,804	550366	33,952	550380	45,445
10							550367	35,917	550381	48,167
10-1/2									550382	49,330
11									550383	50,873
11-1/2									550384	52,022

- 1. Studbolt Specification :** Generally conforming to ASTM A193 / Grade : B7
- 2. Nut Specification :** Generally conforming to ASTM A194 / Grade : 2H
- 3. Note :** Prices for ASTM Grade B7M.L7, L7M, B16, B8, Yellow Zinc Cr6+, Xylan® (PTFE) available on request.
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## Stud Bolt with 2 Heavy Hex Nuts

Inch

DIA	1-1/8		1-1/4		1-1/2		1-5/8	
Length	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs
4-1/2	550385	39,305						
4-3/4	550386	40,831	550406	52,779				
5	550387	42,768	550407	54,730				
5-1/2	550388	44,340	550408	56,651	550429	90,062		
6	550389	45,821	550409	58,979	550430	93,006	550458	111,153
6-1/2	550390	49,301	550410	63,213	550431	99,190	550459	118,336
7	550391	50,873	550411	65,135	550432	102,275	550460	121,890
7-1/2	550392	52,385	550412	67,070	550433	105,860	550461	125,520
8	550393	55,879	550413	71,304	550434	111,909	550462	132,627
8-1/2	550394	57,422	550414	73,634	550435	114,934	550463	136,106
9	550395	58,979	550415	75,161	550436	117,958	550464	140,038
9-1/2	550396	60,900	550416	77,474	550437	121,361	550465	143,667
10	550397	64,000	550417	81,723	550438	127,561	550466	150,472
10-1/2	550398	65,890	550418	83,645	550439	130,586	550467	154,253
11	550399	67,433	550419	85,912	550440	132,764	550468	157,580
11-1/2	550400	68,960	550420	87,878	550441	134,593	550469	161,209
12	550401	72,454	550421	91,947	550442	140,642	550470	168,922
12-1/2	550402	73,973	550422	94,064	550443	143,667	550471	172,552
13	550403	75,759	550423	96,166	550444	146,691	550472	176,635
13-1/2	550404	79,228	550424	100,415	550445	152,891	550473	183,439
14	550405	80,922	550425	102,533	550446	156,144	550474	187,523
14-1/2			550426	104,650	550447	159,168	550475	191,152
15			550427	106,767	550448	162,192	550476	194,933
15-1/2			550428	111,001	550449	168,242	550477	201,738
16					550450	171,190	550478	205,520
16-1/2					550451	174,215	550479	208,997
17					550452	177,088	550480	212,627
17-1/2					550453	183,289	550481	220,038
18					550454	186,616	550482	223,817
18-1/2					550455	189,792	550483	227,144
19					550456	195,841	550484	234,706
19-1/2					550457	198,866	550485	238,336
20							550486	241,965
20-1/2							550487	245,594
21							550488	252,552
22							550489	260,112

- 1. Studbolt Specification :** Generally conforming to ASTM A193 / Grade : B7
- 2. Nut Specification :** Generally conforming to ASTM A194 / Grade : 2H
- 3. Note :** Prices for ASTM Grade B7M, L7, L7M, B16, B8, Yellow Zinc Cr6+, Xylan® (PTFE) available on request.
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## Stud Bolt with 2 Heavy Hex Nuts

Inch

DIA	1-3/4		1-7/8		2		2-1/4	
Length	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs	Part No.	Price/ 100 Pcs
6-1/2	550490	143,667	550521	168,317				
7	550491	148,204	550522	172,930				
7-1/2	550492	152,287	550523	178,132				
8	550493	160,755	550524	187,976				
8-1/2	550494	164,839	550525	192,741	550554	228,355		
9	550495	169,375	550526	197,732	550555	233,648	550585	312,438
9-1/2	550496	173,610	550527	202,646	550556	239,393	550586	319,696
10	550497	182,382	550528	212,249	550557	250,737	550587	334,214
10-1/2	550498	186,616	550529	217,164	550558	256,484	550588	341,776
11	550499	190,926	550530	221,701	550559	261,776	550589	349,035
11-1/2	550500	195,093	550531	226,843	550560	267,674	550590	356,295
12	550501	203,848	550532	236,521	550561	278,942	550591	370,963
12-1/2	550502	207,940	550533	241,361	550562	284,688	550592	378,222
13	550503	212,324	550534	248,847	550563	290,359	550593	385,632
13-1/2	550504	220,491	550535	256,332	550564	301,246	550594	400,301
14	550505	224,658	550536	261,428	550565	306,993	550595	407,939
14-1/2	550506	228,838	550537	266,162	550566	312,438	550596	414,969
15	550507	233,119	550538	270,698	550567	318,184	550597	422,229
15-1/2	550508	241,549	550539	281,586	550568	329,678	550598	434,025
16	550509	245,776	550540	286,275	550569	335,122	550599	441,133
16-1/2	550510	250,025	550541	291,115	550570	340,566	550600	448,544
17	550511	254,517	550542	295,954	550571	346,313	550601	455,499
17-1/2	550512	262,419	550543	305,783	550572	357,277	550602	470,320
18	550513	265,904	550544	310,775	550573	362,948	550603	477,428
18-1/2	550514	270,926	550545	315,765	550574	368,544	550604	484,535
19	550515	280,332	550546	325,443	550575	379,582	550605	499,053
19-1/2	550516	284,460	550547	330,434	550576	385,329	550606	506,101
20	550517	288,816	550548	335,727	550577	390,320	550607	513,117
20-1/2	550518	292,855	550549	340,566	550578	396,218	550608	520,376
21	550519	301,397	550550	350,094	550579	407,560	550609	535,046
22	550520	309,896	550551	360,226	550580	419,204	550610	549,260
23			550552	375,046	550581	435,688	550611	565,140
24			550553	384,724	550582	447,182	550612	585,480
25					550583	464,271	550613	606,576
26					550584	474,857	550614	621,094
27							550615	642,720

- 1. Studbolt Specification :** Generally conforming to ASTM A193 / Grade : B7
- 2. Nut Specification :** Generally conforming to ASTM A194 / Grade : 2H
- 3. Note :** Prices for ASTM Grade B7M.L7, L7M, B16, B8, Yellow Zinc Cr6+, Xylan® (PTFE) available on request.
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## Heavy Hex Nuts (ASTM A194 GR2H)

Metric

Size	Part No.	Price/100 Pcs	Box Quantity
M12	551700	1,382	200
M16	270001	1,673	150
M18	270002	2,495	100
M20	270003	3,236	75
M22	270004	3,962	50
M24	270005	5,549	50
M27	270006	8,313	25
M30	270007	11,712	25
M33	270008	15,074	20
M36	270009	20,642	10
M39	270010	26,333	10
M42	270011	34,233	8
M45	270012	41,999	5
M48	270013	51,242	5
M52	270014	63,844	4
M56	270015	74,329	4

Inch

Size	Part No.	Price/100 Pcs	Box Quantity
1/2"	270016	1,200	200
9/16"	270017	1,484	175
5/8"	270018	2,171	125
3/4"	270019	3,537	75
7/8"	270020	5,431	50
1"	270021	7,767	30
1-1/8"	270022	10,823	25
1-1/4"	270023	14,991	15
1-3/8"	270024	19,448	15
1-1/2"	270025	24,990	10
1-5/8"	270026	30,913	8
1-3/4"	270027	38,928	6
1-7/8"	270028	45,994	6
2"	270029	94,090	5

- Nut Specification :** Generally conforming to ASTM A194 / Grade : 2H
- Note :** Prices for ASTM Grade B7M.L7, L7M, B16, B8, Yellow Zinc Cr6+, Xylan® (PTFE) available on request.
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  - : Check availability in stock at the time of order.
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## Prestigious Petrochemical Clientele



Separate Petrochemical Catalogue available on request

# Terms & Conditions

## Delivery:

All offers for delivery from stocks are subject to goods remaining unsold at the time of receipt of order. For forward delivery, dates are given without any guarantee and no responsibility can be accepted by the company for delay in delivery or failure to deliver due to circumstances beyond the company's control..

## Infringement of patent and trade mark:

When products are forged to customer's drawings and / or specifications, the responsibility to ensure that these do not result in infringement of any patent or trademark will lie entirely with customer concerned and the customer will be solely responsible for the consequence in case of any such infringement.

## Order confirmation:

The company accepts no responsibility for orders booked by the company's salesman or representatives, till it is confirmed in writing by the company..

## Acceptance and return:

Wrong dispatches should be notified to the company within 15days from the date of receipt of goods and the Company's consent should be obtained in writing before return of such goods.

## Force Majeure:

The company shall not be responsible for failure or delay in delivering the goods or any part thereof (or any consequential damages) due to acts of God, enemies of the Government of India, wars, revolution, embargo, riots, civil or political disturbances, strikes, lock-outs, stoppages of labour..

## Disclaimer

All information contained in this catalogue has been prepared to assist users in their requirements for fasteners. The information is based on International Fastener Standards. All such source material and information beyond

.the control of Deepak Fasteners Ltd (DFL) is subject to change.

Whilst every care has been taken to ensure that all information and technical data is accurate, DFL will not be liable to any customer that relies on any matter, fact or representation nor will it be liable for any subsequent damage or loss resulting from the use of any information contained in this catalogue. Customers are advised to make their own enquiries or seek independent advice regarding the fitness and suitability of the products listed. The products listed in this catalogue might not be stocked at DFL at all times and customers are advised to

.enquire the availability of the same. E. & O.E.

## Comparison of Different Strength Grades

SAE	B.S.	IS 1.S.D. DIN	ULTIMATE TENSILE STRENGTH			HARDNESS		
			Tonnes/In <sup>2</sup> (Kgf/mm <sup>2</sup> )	Newtons/mm <sup>2</sup> Min. (Kgf/mm <sup>2</sup> )	Pounds/In <sup>2</sup> Min. (Kgf/mm <sup>2</sup> )	BHN	HRb	HRc
		4.6		400 (40.8)		114 209	67 95	
GRADE 1					60,000 (42.3)	(121) (241)	70 100	
		4.8		420 (42.8)		124 209	71 95	
		5.6		500 (51.0)		147 209	79 95	
GRADE 2					74,000 (52.1)	(154) (241)	80 100	
		5.8		520 (53.0)		152 209	82 95	
	P		35/45 (55.2/71.0)			152 207		
		6.8		600 (61.2)		181 238	89 99	
	R		45/55 (71.0/86.8)			201 285		
	S		50/60 (78.9/94.7)			223 310		(20/33)
		8.8		800 ≤ M16 830 > M16 (81.6) (84.6)		219/285 242/319		20/30 23/34
GRADE 5					1,20,000 (84.6)	(266) (318)		25/34
	T		55/65 (86.8/102.6)			248 335		(24/36)
	U		60/70 (94.7/110.5)			269 331		(28/36)
	V		65/75 (102.6/118.4)			293 370		(31/40)
GRADE 8					1,50,00 (105.7)	(311) (362)		33/39
		10.9		1,040 (106.0)		295 362		31/39
	W		70/80 (110.5/126.3)			311 375		(33/41)
	X		75/85 (118.4/134.2)			341 410		(37/44)
		12.9		1,220 (124.4)		353 412		38/44
	Y		80/90 (126.3/142.0)			363 429		(39/46)
	Z		100 Min (157.8)			444		(47)

Note : 1. : 1Kgf=9.81 Newtons 1Kgf/mm<sup>2</sup>=1421.7 Psi 2. : Values in brackets are approximate conversions

## How Identify Unbrako Products

PRODUCTS	METRIC SERIES	PRODUCTS	INCH SERIES
Socket Head Cap Screw M4 to M5		Socket Head Cap Screw 1/8" to 3/16"	
Socket Head Cap Screw M6 to M24		Socket Head Cap Screw 3/16" tp 3/8"	
Socket Head Cap Screw M27 to M42		Socket Head Cap Screw 1/2" to 1"	
Socket Counter Sunk Cap Screw M5 to M24			
Socket Set Screw 1.5 A/F		Socket Set Screw 1.8" to 3/4" (1/8 to 3/4")	
Hexagon Wrenches 1.5 A/F to 3 A/F		Hexagon Wrenches 1/16" A/F to 1/8	
Hexagon Wrenches 4 A/F to 32 A/F		Hexagon Wrenches 5/32" A/F to 3/4" A/F	
Hexagon Head Bolts M4 to M42		Hexagon Head Bolts All Sizes	
Hexagon Nut M12 to M42		Hexagon Head Bolts All Sizes	
High Strength Structural Bolts M16 To M30		Hexagon Nuts All Sizes	
High Strength Structural Bolts M16 To M30			
Washers For High Strength Structural Bolts			
Special / Auto OEM Replacement Market Bolts & Nuts		Special / Autot OEM Replacement Market	
Hex Head Bolt/Screws M16 to M36 SS-304/316			
Stud With Two NUTs M12 to M56		Stud with Two Nuts 1/2 to 2-1/4	

According to stamping area on the Product Unbrako/U-130 Stamp will be used

NOTE:- "E" Marking on SHCS, is the internal coding it can be changed with any alphabetic



## Specialized Coating

A Product's lifespan and performance is not only measured by it's quality, grade and and specification, but also by it's surface finish. Choosing the correct coating for the application will prevent corrosion, enhance aesthetic value and add strength to the fastener, extending it's life and performance..

Unbrako excels in a variety of coatings done in-house, designed specifically to provide the required protection in such harsh environment. Technical information of a few of these coatings is set out below:.

MAIN COATINGS		ELECTROLYTIC COATINGS ZINC CADMIUM	HOT-DIP GALVANISATION	SHERARDIZATION	METALLIC COATING "GEOMET" ®	PTFE
<b>Type of material</b>		All metals	Steels	Steels	All metals	All metals
<b>Process temperature</b>		Bath t° < 90°C Baking temp. < 250°C	460°C - 550°C	350°C - 400 °C	20°C Process 300°C Baking	300°C Baking
<b>Maximum service temperature without damage of coating</b>		Zinc : 250°C Max Cadmium : 235°C Max chromating Zinc & Cadmium : 70°C max	300°C max	500°C max	280°C max	280°C max
<b>Usual thickness</b>		Cadmium : 3 µm to 20 µm	50 µm - 70 µm	20 µm - 60 µm	5 µm - 15 µm	10 µm - 20 µm
<b>Average Friction Coefficient</b>	without lubrication	0.16 - 0.22	Seizure risks when bolt stress is >40% YS	≈ 0.29	0.15 - 0.25	0.15 - 0.25
	with lubrication	0.08 - 0.12	0.13 - 0.16	0.08 - 0.12	0.08 - 0.12	0.08 - 0.12
<b>Salt spray test (red corrosion)</b>		Zinc 5 to 7 µm : 48 h min Zinc chromating 5 to 7 µm : 96 h min Reinforced chromating : 200 h min	70µm : 400 h min	Test not praticable without chromating With chromating 20µm : 400 h min With chromating 35µm : 700 h min	chromating 5-7 µm : 400h min 8-10 µm : 1000h min	1000h min
<b>Hydrogen embrittlement</b>		Descaling with inhibitor imperative baking for 100 Mpa steels	Descaling with inhibitor No risk process	No risk process	No risk process	No risk process
<b>Aspect</b>		Bright	Matt or glossy	Matt gray	Matt aluminum	Matt Blue

NOTE:- Specialist assistance is recommended when selecting these coatings.

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