



PRICE LIST

DFL-18, w.e.f. 21st June, 2022

Socket Screws	11
Durlok [®]	31
Hex Bolt, Nut & Washer	36
Construction	51
Petrochemical	63

Largest Industrial Fasteners Manufacturer in India

NOTE

Plating: All the products, unless otherwise ordered, 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.
GST extra as applicable.

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About Unbrako



West Coast Distribution Center

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 work-manship 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.



Certified Laboratory

Our Laboratory is NABL ISO/IEC 17025:2005 certified, which facilitates in maintaining consistently high quality. The fasteners go through strict quality checks at every stage of the process. Our inspection facilities are equipped with state-of-the-art equipment for testing of both physical and metallurgical aspects of fasteners for the most demanding applications:

- Tensile & Hardness testing
- Salt spray testing
- Digital profile analysis
- X-ray analysis of coating thickness
- Chemical composition analysis (Spectrometer)
- Impact Testing
- Dynamic fatigue testing
- Torque tension and friction testing
- Eddy current Testing
- Metallurgical Microscope with Image Analyzer



ISO 9001:2015



NABL
ISO/IEC 17025:2005



CE Certification
14399 & 15048

International Certifications

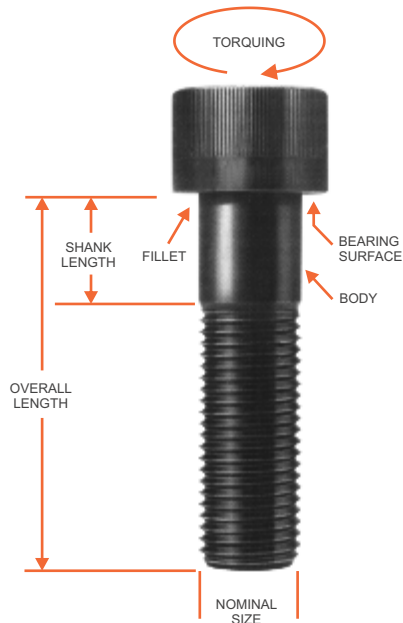
Our production facilities are ISO 9001, IATF 16949, ISO 14001 and BS OHSAS 18001 Certified. Our fasteners meet or exceed International Standards like DIN, ISO, ASTM, IS, BS etc. We have expertise not only in standard products, but also in made-to-order customized products.

Specialized Coatings

We excel in a variety of coatings, which are done in-house. These are designed to provide required protection in different environments, e.g. Hot Dip Galvanizing, Mechanical Galvanizing, Electroplating (Zinc & Copper Cadmium), PTFE Coating, Zinc-Al Flake Coating (Geomet, Delta Protekt) and Unbrako Wiscoat Coating.



Product Terminology



BODY

The unthreaded portion of the shank of a threaded fastener.

FILLET

Concave junction between the head and shank.

HEAD

A headed fastener has one end enlarged into a preformed shape.

OVERALL LENGTH

The Overall length of a headed fastener is the distance from intersection between the bearing surface & the ExtremeEnd point fastener, measured parallel to the axis of the fastener. The length of a headless fastener is the distance from one extreme end to the other end, also measured parallel to the fastener.

NOMINAL SIZE

It is the basic major diameter of the thread.

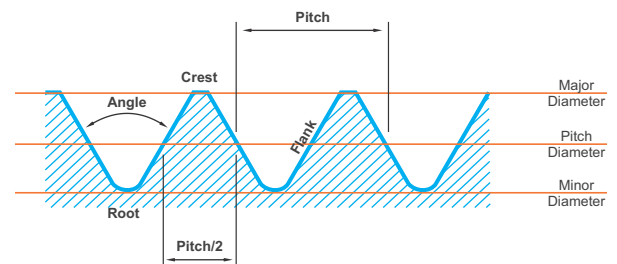
SHANK

The Shank Length is minimum length of the unthreaded cylindrical portion of the shank.

TORQUING

It is the act of tightening a fastener by turning either the bolt or nut.

Thread Terminology



CREST

The outermost tip of a male thread as seen in a thread profile.

FLANK

The thread surface connecting the crest with the root.

BEARING SURFACE

The supporting or locating surface of a fastener with respect to the part it fastens or mates.

MAJOR DIAMETER

The largest diameter of a thread.

MINOR DIAMETER

The smallest diameter of a thread.

PITCH

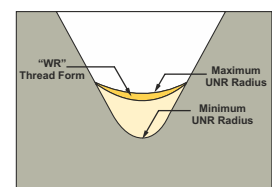
The distance from a point on a screw thread to the corresponding point on the next screw thread.

PITCH DIAMETER

Is the diameter of a theoretical cylinder that passes through the threads at a position that the width of thread ridge and thread groove are equal.

ROOT

The Root of the thread is the bottom of the groove between two flank.



Thread Terminology

THREAD LAPS

Are surface defects caused by the folding over of metal in the thread.



THREAD RUNOUT

is the area between the thread and shank or head of the fasteners. The Unbrako radiused root runout provides a smooth form that distributes stress and increases the life of the fastener considerably.

THREAD STRESS AREA

The area of a cylindrical bar of the same material and properties as the thread and capable of supporting the same ultimate tensile load.

Mechanical Terminology

CREEP

Deformation that occurs over a period of time when a fastener is subjected to a constant stress at a constant high temperature.



ELONGATION

is the increase in the thread length of a fastener that would occur during tightening or loading.



ENDURANCE LIMIT

The strength level below which a bolt or joint member will have an essentially infinite life under cyclic loading.

FATIGUE LIFE

is the number of cycles of fluctuating stress and strain of a specified nature that a fastener will sustain before failure occurs.



IMPACT TEST

A test to determine the energy absorbed in fracturing a test bar at high velocity.

PROOF LOAD

is a specified test load which a fastener must withstand without any indication of failure.

PROOF TEST

is any specified test required for a fastener to indicate that is suitable for the purpose intended.

ROCKWELL HARDNESS (Hrc)

This is a specific method of measuring the hardness of a fastener. The "c" denotes a specific size indenter which penetrates the surface of the prepared specimen.

SHEAR JOINT

A joint in which the fastener has the load applied across the axis and which tends to sever it.

SHEAR STRENGTH

This is the maximum strength of the fastener when it is subjected to shear (transverse) loading.



TENSILE STRENGTH

Is the force or stress required to break a fastener when the force or stress is applied in straight tension.



TENSION JOINT

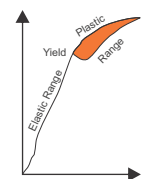
A joint in which the fastener has the load applied to the longitudinal direction and which tends to elongate it.

TORSION

is the twisting force applied to a fastener during tightening.

YIELD STRENGTH

This is the maximum force or stress that can be applied to a fastener without permanent (plastic) deformation occurring.



Quick Product Selection Guide

PRODUCT	TENSILE STRENGTH		SIZE RANGE				EQUIVALENT STANDARDS					
	Property Class		Diameter		Length							
	Psi. Min.	N/mm ²	Metric	Inch*	Metric	Inch*	IS	ISO	DIN	BS	ANSI	JIS
Socket Head Cap Screws 	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
Socket Countersunk Head Screws 	160000	1,050 (12.9)	M3 to M24	3/16" to 5/16"	6 to 60 mm	3/8" to 1.1/4"	6761	--	7991	4168 2470	B18.3.5M	--
Socket Button Head Cap Screws 	--	1,050 (12.9)	M3 to M12	--	6 to 50 mm	--	--	7380	9427	4168	B18.3.4M	--
Socket Head Shoulder Screw 	--	(12.9)	M6 to M24	--	10 to 120 mm	--	--	7379	9841	4168	--	--
Socket Set Screws Knurled Cup 	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
Durlok Bolt 	--	12.9	M6 to M20	--	12 to 100 mm	--	As Per Unbrako Specification					
Hex Wrenches 	Hardness HRc 47 Min.		1.5 to 32 mm	1/16" to 3/4"	--	--	3082	2936	911	4168 2470	B18.3.2M	B4648
Hex Head Bolts 	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
Hex Nuts 	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
High Strength Structural Bolts, Nuts, Washers 	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
Stud With 2 Heavy nuts 	Stud B7 Nut 2H		M12-M56	1/2" to 2-1/4"	60 to 500 mm	2.1/4" to 27"					A193 A194	
Special Products 	--	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.

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 / 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.

Socket Screws

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- 29 Dowel Pins



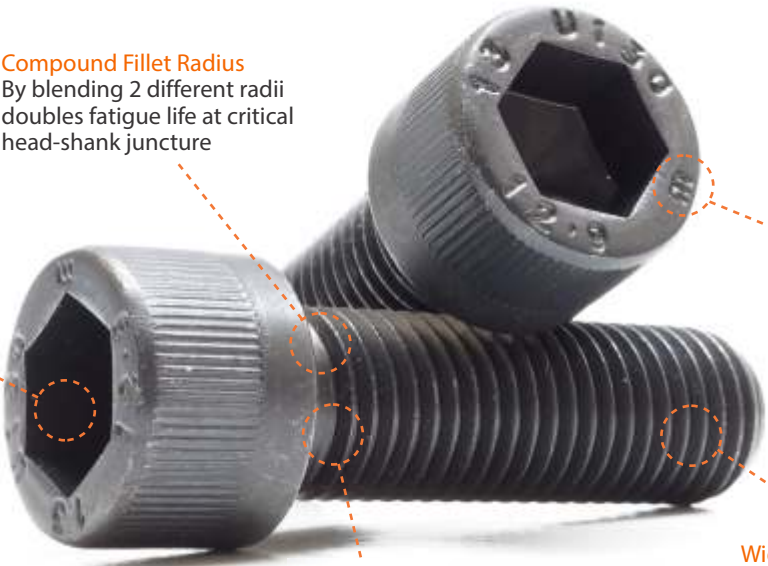
Unbrako Socket Range

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, aerospace, petrochemical, heavy machinery and military sectors.

Unbrako socket screws meet/exceed industry standards. Unbrako is 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



Compound Fillet Radius
By blending 2 different radii doubles fatigue life at critical head-shank juncture

Better installation ability
Deep, accurate socket for perfect fit and high-torque wrenching

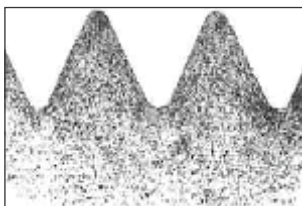
Patented E-Code™ "Lot Code" Markings
The ultimate in fastener traceability

Higher Min ULT Tensile
Unbrako Socket Screws are 10,000 PSI stronger than industry standard

3R Radiused Root Runout Thread
Increases fatigue life up to 300%

Wide Radius Threads
Fully formed radiused thread increases fatigue life 100% over flat root thread forms.

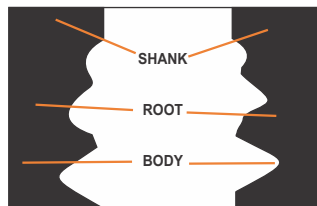
Contour flow & root radius



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.

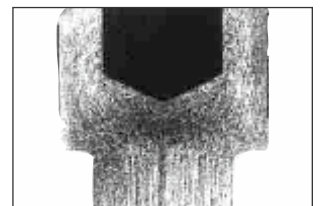
The sharp angle at the root of conventional threads results in high stress concentration and crack initiation points.

Forged heads



Controlled head forging, uniform grain flow and unbroken flow lines, make heads stronger, minimizes failure in vital fillet area, and improves 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.



Marking*

Socket Head Cap Screw - Metric

Diameter	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	1,774	500							
4	104152	795	500							
5	104154	809	500	104161	767	500	106218	1,252	500	
6	104155	825	500	104162	795	500	103002	1,078	500	
8	104157	837	500	104163	817	500	122097	788	500	
10	104159	853	500	104164	837	500	113583	658	500	
12	106216	880	500	104166	923	500	120870	658	500	
16							103003	656	500	
20							113623	656	500	
25							103010	720	500	
30							103013	843	500	
35							106219	1,054	500	
40							406027	1,206	500	
45							700034	1,335	500	

Diameter	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	1,018	500	106224	872	500				
8	113810	719	500	122122	743	500	103042	1,009	200	
10	113839	573	500	122243	411	500	122111	667	200	
12	121077	516	500	121094	411	500	120872	634	200	
16	103014	538	500	103024	449	500	103044	601	200	
20	125753	577	500	113970	482	200	119790	669	200	
25	125381	633	500	121096	516	200	119937	750	200	
30	103018	750	500	103029	626	200	122121	847	200	
35	103019	822	200	115292	688	200	121090	929	200	
40	103021	907	200	103030	750	200	121075	1,009	200	
45	103022	1,036	200	103031	813	200	122087	1,092	200	
50	103023	1,188	200	103035	822	200	112624	1,190	200	
55	400835	1,910	200	103038	1,407	200	113128	1,296	200	
60	180011	2,438	200	103040	1,803	200	122088	2,397	200	
65	551167	3,157	200	106225	1,954	200	103047	2,486	200	
70				106228	2,103	200	103048	2,593	200	
75				700072	2,561	200	103049	2,836	200	
80				404774	2,705	200	103051	3,073	200	
90				181525	2,986	200	103052	3,300	200	
100				551170	4,026	200	103053	3,726	200	
110							103054	4,935	100	
120							103055	5,501	100	
130							183896	5,935	100	
140							700097	6,370	100	
150							551172	6,773	100	

*Note: "X" marking on SHCS is the internal coding for product traceability, it can be changed with any alphanumeric.
All Products of sizes smaller than M5 or 1/4" have no head marking due to space constraint

Grey highlighted items are full threaded



Socket Head Cap Screw - Metric

Diameter	M8 Wrench Key Size 6mm			M10 Wrench Key Size 8mm			M12 Wrench Key Size 10mm			M14 Wrench Key Size 12mm			
	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
10	103056	1,286	200										
12	114972	977	200	106237	1,465	200							
16	103058	813	200	103080	1,355	200	106247	3,985	100				
20	122086	876	200	113163	1,239	200	112607	3,554	100				
25	119351	898	200	115060	1,372	100	122250	3,092	100	400528	8,033	50	
30	119383	1,045	200	122114	1,471	100	122251	2,967	100	400529	8,033	50	
35	122113	1,076	200	113257	1,588	100	125530	3,109	100	400530	6,757	50	
40	113143	1,232	200	100845	1,788	100	114996	3,049	100	400531	6,914	50	
45	121076	1,381	200	121088	1,962	100	115075	3,245	50	400532	7,035	50	
50	121068	1,433	200	125660	2,135	100	112360	3,170	50	120863	7,203	50	
55	103063	1,575	100	103087	2,308	100	122255	3,502	50	400533	7,287	50	
60	121070	1,691	100	122217	2,487	100	122260	3,701	50	112000	7,733	50	
65	103064	1,806	100	103088	2,657	100	122261	3,896	50	400534	7,838	50	
70	103066	1,932	100	125786	2,829	50	103098	4,106	50	400535	8,458	50	
75	103069	2,037	100	103090	3,012	50	103099	4,289	50	400536	8,930	50	
80	103070	3,066	100	103091	4,373	50	103100	5,135	50	400537	9,366	20	
90	103073	3,539	100	103094	4,977	50	103103	5,801	50	400538	9,576	20	
100	103075	4,205	100	103095	5,854	50	122142	6,715	50	400539	11,865	25	
110	103076	5,245	100	103096	6,904	50	125791	8,054	25	400540	12,899	25	
120	103077	6,122	50	103097	6,988	50	103104	9,272	25	400508	13,939	25	
130	106230	7,523	50	106240	9,613	50	103107	11,261	25	180223	16,144	25	
140	106231	8,080	50	106241	10,747	50	103108	12,542	25	180103	17,278	25	
150	106232	8,731	50	106242	11,939	50	103110	13,839	25	180225	18,417	25	
160	106233	9,923	100	106243	16,365	50	107456	22,801	25	180226	19,963	10	
170	700125	10,712	100	210001	18,044	50	181063	25,079	20	210002	21,802	10	
180	106234	11,292	100	106244	18,409	25	107458	25,079	20	180227	23,086	10	
200	106235	12,478	100	106245	19,678	25	107459	27,137	20	551663	26,056	10	
220				400517	25,281	25	400570	31,304	20	791320	28,662	10	
230							183555	39,205	20	791321	29,819	10	
240							400571	46,997	20	791322	31,123	10	
260				809653	25,970	20	400572	53,706	20	791323	33,439	10	
280				811605	28,090	20	400573	56,267	20	791324	36,045	10	

Grey highlighted items are full threaded

1. Specifications : Generally conforming to IS 2269, DIN 912, ISO 4762.
2. Threads : ISO Metric (Coarse Series) 5g6g as per IS 4218, ISO 261, ISO 965.
3. Material : Unbrako high grade alloy steel.
4. Mechanical Properties : Property Class 12.9 as per IS 1367, ISO 898 Part I.
5. Note : Upto 80mm Diameter can be manufactured against request.
6. For sizes beyond those listed, prices available on request.
7. 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.
8. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

*Note: "X" marking on SHCS is the internal coding for product traceability, it can be changed with any alphanumeric.

All Products of sizes smaller than M5 or 1/4" have no head marking due to space constraint

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



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/ 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
20	210003	7,828	50										
25	106248	7,771	50					210006	19,100	25			
30	103112	7,771	50	183894	21,011	20		107465	19,038	10			
35	103113	6,377	50	400541	21,284	20		107466	19,288	10			
40	125751	6,541	50	400542	18,627	20		103130	16,407	10	180408	24,814	10
45	103115	6,813	50	400606	18,758	25		103131	16,983	10	180409	26,254	10
50	112474	6,790	25	100844	18,916	10		103132	16,281	10	180181	21,982	10
55	103117	7,114	25	400543	19,037	10		103136	16,758	10	180182	24,707	10
60	112594	7,303	25	400544	19,178	10		103137	16,502	10	180183	25,405	10
65	103118	7,634	20	400545	19,346	25		103138	17,038	10	180184	28,292	10
70	103119	8,237	20	400546	20,664	10		103141	18,725	10	180185	27,452	10
75	103120	8,715	20	400547	22,003	10		103142	19,381	10	210007	32,120	10
80	125658	9,114	20	400549	22,433	10		103143	19,317	10	180186	32,120	10
90	103122	9,319	10	400550	22,880	10		103144	20,152	10	180187	33,679	10
100	103123	11,566	10	400551	23,993	10		103145	21,722	10	180188	35,522	10
110	103124	12,563	20	400548	26,555	25		103146	24,043	10	180189	38,609	10
120	103126	13,577	20	400552	29,085	15		103148	26,364	10	180190	41,732	5
130	103127	15,719	20	180311	31,642	10		103150	28,655	10	180191	54,868	5
140	103128	16,826	20	180229	34,172	10		103151	30,956	10	180192	64,108	5
150	103129	17,929	20	180407	36,703	10		103152	33,374	10	180193	85,460	5
160	103364	35,679	10	180230	41,609	10		107462	42,777	10	180194	1,07,710	5
170	180418	39,727	10	210005	49,274	10		180495	48,846	10	791330	1,11,824	5
180	107460	39,727	10	100231	51,182	10		107463	48,846	10	180196	1,18,470	5
200	107448	43,906	10	551668	53,361	10		107464	50,936	10	180198	1,26,800	5
220	400574	45,922	10	791325	68,219	10		400553	55,480	10	210008	1,35,538	5
230	182815	47,954	10	791326	71,737	10		181001	70,392	5	791331	1,41,373	5
240	400575	47,954	10	791327	74,549	10		400554	86,951	5	210009	1,50,389	5
260	400576	49,975	10	791328	80,175	10		400555	1,06,663	5	210010	1,61,445	5
280	400577	51,996	10	551667	85,802	10		400556	1,26,357	5	210011	1,67,816	5
300	400578	54,033	10	791329	91,428	10		400557	1,35,382	5	210012	1,79,806	5
340								796973	1,49,460	5			

Grey highlighted items are full threaded

1. Specifications : Generally conforming to IS 2269, DIN 912, ISO 4762.
2. Threads : ISO Metric (coarse series) 5g6g as per IS 4218, ISO 261, ISO 965.
3. Material : Unbrako high grade alloy steel.
4. Mechanical Properties : Property Class 12.9 as per IS 1367, ISO 898 Part I.
5. Note : Upto 80mm diameter can be manufactured against request.
6. For sizes beyond those listed, prices on application.
7. 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.
8. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

*Note : "X" marking on SHCS is the internal coding for product traceability, it can be changed with any alphanumeric.

All Products of sizes smaller than M5 or 1/4" have no head marking due to space constraint

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



Socket Head Cap Screw - Metric

Diameter	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	20,953	10							
50	103155	20,071	10					551648	48,902	5
55	103157	22,575	10							
60	103158	23,205	10	180233	43,041	5	180207	44,107	5	
65	103159	25,745	10	581201	45,714	5	210014	43,803	5	
70	103160	26,318	10	180326	46,687	5	116464	47,901	5	
75	103161	27,888	10	210013	49,059	5	182283	47,901	5	
80	103162	29,316	10	406161	49,796	5	140610	49,796	5	
90	103163	30,749	10	406162	54,668	5	140611	53,543	5	
100	103165	32,429	10	406163	58,443	5	140612	58,443	5	
110	103166	35,264	10	406164	61,971	5	140613	61,971	5	
120	103167	38,115	10	400607	65,751	5	140614	65,751	5	
130	103168	40,961	5	406165	66,392	5	140615	70,355	5	
140	103170	43,796	5	406166	73,054	5	140616	73,054	5	
150	103171	46,657	5	400608	77,658	5	140617	77,658	5	
160	104143	75,737	5	400609	1,22,294	5	140618	1,22,294	4	
170				406167	1,29,251	5				
180	104146	81,034	5	406168	1,35,272	5	140620	1,35,272	4	
200	104147	86,741	5	400579	1,47,173	5	140621	1,47,173	5	
220	400560	92,825	5	180003	1,83,419	4	400622	1,82,606	3	
240	400561	1,00,196	5	406171	2,03,159	4	400623	1,96,403	3	
260	400562	86,489	5	406172	2,21,293	3	140624	2,10,194	2	
280	400563	1,08,939	5	406173	2,36,150	3	140625	2,23,991	2	
300	400564	1,16,724	5	406174	2,51,029	3	400626	2,37,778	2	
310	818254	1,11,481	5							
320	400565	1,14,752	5				180848	2,50,690	2	
340	400566	1,21,295	5							
370										
380							818243	2,85,364	2	
400	786983	1,65,179	3				182648	2,91,712	2	
							183066	3,04,432	2	

- Specifications : Generally conforming to IS 2269, DIN 912, ISO 4762.
- Threads : ISO Metric (coarse series) 5g6g 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 diameter 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.
- Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

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Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



Socket Head Cap Screw - Metric

Diameter	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	71,983	5							
80	180254	74,954	5	140629	89,565	5				
90	400649	81,176	5	140630	97,666	5	182336	1,46,003	5	
100	400628	84,966	5	140631	1,00,455	5	400645	1,59,946	12	
110	180255	89,565	5	400632	1,05,910	4	700380	1,64,293	12	
120	180256	97,666	5	140633	1,10,486	4	183113	1,78,665	10	
130	405492	1,02,270	5	400634	1,14,167	4	182331	1,82,507	10	
140	180257	1,08,764	4	140635	1,26,019	3	700383	1,97,476	9	
150	180258	1,14,167	4	140636	1,30,562	3	180960	2,01,619	9	
160	180259	1,51,767	4	140637	1,75,705	3	181289	2,81,976	9	
180	180261	1,68,000	3	140639	1,96,317	3	182059	2,99,269	8	
200	180263	1,82,606	3	140640	2,12,755	2	181290	3,24,220	7	
220	210016	2,26,422	3	180294	2,63,054	2	400647	4,06,746	7	
240	210017	2,44,004	3	140641	2,70,289	2	182510	4,23,979	6	
260	210018	2,55,092	2	140642	2,89,471	9	700390	4,52,226	6	
280	210019	2,69,157	2	180411	3,08,714	8	181291	4,80,497	6	
300	210020	2,90,252	2	140643	3,28,120	8	180863	5,08,762	6	
320				180490	3,62,217	8				
340				181287	3,81,600	8	700394	5,33,028	5	
360				183067	4,00,983	8	700395	5,59,680	5	
380				183068	4,20,365	5	700396	5,86,332	3	
400				400644	4,39,748	5	700397	6,12,983	3	
420				796957	5,16,523	5				
460				796960	5,60,135	5				
480				796961	5,81,940	3				
500				551866	6,03,746	3				
520				796963	6,25,552	3				
560				796965	6,69,163	3				
580				796966	6,90,968	2				
650				796968	7,67,288	2				

- Specifications : Generally conforming to IS 2269, DIN 912, ISO 4762.
- Threads : ISO Metric (coarse series) 5g6g 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 diameter 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.
- Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

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Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



Socket Head Cap Screw - Inch (BSW)

Diameter	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/ 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
3/8	400056	597	200	400068	714	200							
1/2	400057	597	200	400069	694	200	400085	986	200	400101	1,492	200	
5/8	400058	527	200	400070	679	200	400086	840	200	400102	1,449	200	
3/4	400059	597	200	400071	714	200	400087	901	200	400103	1,243	200	
7/8	551219	634	200	400072	738	200	400088	914	200	400104	1,419	200	
1	400061	668	200	400073	800	200	400089	977	200	400105	1,379	200	
1 1/4	400062	739	200	400074	879	200	400090	1,120	200	400106	1,512	100	
1 1/2	400063	843	200	400075	1,009	200	400091	1,254	200	400107	1,683	100	
1 3/4	400064	960	200	400076	1,235	200	400092	1,482	200	400108	2,012	50	
2	400065	960	200	400077	1,202	200	400093	1,482	200	400109	2,089	100	
2 1/4	210021	1,135	200	400078	2,435	200	400094	1,780	200	400110	2,413	100	
2 1/2	400066	1,264	200	400079	2,506	200	400095	1,780	100	400111	2,592	100	
2 3/4				400080	2,930	200	404433	2,171	100	400112	2,900	100	
3				400081	2,930	200	400096	2,110	100	400113	2,900	100	
3 1/4				400082	3,514	200	701026	3,626	100	400114	4,246	50	
3 1/2				400083	3,416	200	400098	3,626	100	400115	4,349	50	
4				400084	3,870	100	400099	4,303	100	400116	5,105	50	
4 1/2							400100	6,939	100	400117	7,738	50	
5							701030	7,820	100	400118	9,181	50	
5 1/2										400181	11,034	50	
6										400119	11,680	50	

Grey highlighted items are full threaded

1. Specifications : Generally conforming to BS 2470.
2. Threads : BS Whitworth Fine, Medium as per BS 84.
3. Material : Unbrako high grade alloy steel.
4. Mechanical Properties : As per BS 2470
5. Note : Upto 4 Inch Dia can be manufactured against request.
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.
7. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

*Note : "X" marking on SHCS is the internal coding for product traceability, it can be changed with any alphanumeric.
All Products of sizes smaller than M5 or 1/4" have no head marking due to space constraint



Socket Head Cap Screw - Inch (BSW)

Diameter	7/16"			1/2"			5/8"		
	Wrench Key Size 5/16"			Wrench Key Size 3/8"			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	3,456	100	400130	3,804	100			
7/8	791967	3,456	100	402942	3,804	100	210033	7,390	50
1	400121	3,343	100	400131	3,232	100	400150	7,190	50
1 1/4	400122	3,343	100	400132	3,388	100	400151	6,248	50
1 1/2	400123	3,408	100	400133	3,447	50	400152	6,467	50
1 3/4	400124	3,644	100	400134	3,682	50	400153	6,879	50
2	400125	3,644	100	400135	3,764	50	400154	7,205	20
2 1/4	210025	4,188	50	400136	4,342	50	400155	7,828	20
2 1/2	701059	4,387	50	400137	4,342	50	400156	8,048	20
2 3/4	210026	4,724	50	400138	4,888	50	400157	8,594	20
3	400127	4,816	20	400139	4,964	50	400158	8,835	20
3 1/4	210027	6,405	50	400140	6,534	50	701096	9,873	10
3 1/2	400128	6,230	50	400141	6,534	20	400159	9,986	10
4	400129	7,215	20	400142	7,681	25	400160	12,239	10
4 1/2	210028	10,369	50	400143	9,285	25	400161	12,632	15
5	210029	10,362	25	400144	11,430	25	400162	13,932	15
5 1/2	210030	12,139	50	400145	12,584	20	400163	17,785	20
6	210031	12,152	25	400146	13,026	20	400164	19,380	20
6 1/2				400147	25,845	20	400165	40,047	10
7				400148	26,363	15	400166	41,163	10
7 1/2				210032	27,396	15	210035	42,742	10
8				400149	29,345	25	400167	44,166	10
8 1/2							210036	59,407	10
9							210037	57,913	10
10							210038	75,779	10

Grey highlighted items are full threaded

1. Specifications : Generally conforming to BS 2470.
2. Threads : BS Whitworth Fine, Medium as per BS 84.
3. Material : Unbrako High Grade Alloy Steel.
4. Mechanical Properties : As per BS 2470
5. Note : Upto 4 Inch Dia can be manufactured against request.
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.
7. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

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All Products of sizes smaller than M5 or 1/4" have no head marking due to space constraint



Socket Head Cap Screw - Inch (BSW)

Diameter	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	18,442	50							
1 1/4	400168	17,942	10							
1 1/2	400169	15,824	10	400187	25,483	10	210054	23,888	15	
1 3/4	400170	16,184	10	210043	27,230	10	210055	24,825	15	
2	400171	16,638	10	400188	26,490	10	400194	25,301	10	
2 1/4	400172	16,996	10	404637	29,332	10	404571	28,037	10	
2 1/2	400173	16,996	10	400189	28,536	10	400195	28,037	10	
2 3/4	400174	18,816	10	210044	32,986	10	210056	31,577	10	
3	400175	19,343	10	400190	32,154	10	400196	30,719	10	
3 1/4	400176	20,097	10	701133	36,452	10	210057	33,874	10	
3 1/2	400177	19,550	10	400191	35,462	10	400197	33,874	10	
4	400178	21,071	10	400192	37,414	10	400198	37,417	5	
4 1/2	400179	24,920	10	701136	43,994	10	400199	41,915	5	
5	400180	27,075	10	701137	48,583	10	400200	46,429	5	
5 1/2	701121	30,796	10	210047	50,584	10	183785	48,328	5	
6	400182	33,802	10	400193	55,381	10	400201	53,934	5	
6 1/2	400183	43,209	10	210048	96,148	5	210059	88,733	5	
7	400184	44,210	10	701139	96,148	5	400202	91,923	5	
7 1/2	210040	46,478	10	210050	99,624	5	210060	95,210	5	
8	400185	46,129	10	210051	99,019	5	400203	98,401	5	
8 1/2	210041	55,022	10	210052	1,07,416	5	210061	1,07,605	5	
9	400186	55,022	10	210053	1,07,416	5	210062	1,10,703	5	
10	701127	61,136	5	551078	1,22,240	5	210063	1,23,003	5	

Grey highlighted items are full threaded

1. Specifications : Generally conforming to BS 2470.
2. Threads : BS Whitworth Fine, Medium as per BS 84.
3. Material : Unbrako high grade alloy steel.
4. Mechanical Properties : As per BS 2470
5. Note : Upto 4 Inch Dia can be manufactured against request.
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.
7. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

*Note : "X" marking on SHCS is the internal coding for product traceability, it can be changed with any alphanumeric.
All Products of sizes smaller than M5 or 1/4" have no head marking due to space constraint



Countersunk Socket Head Cap Screws (CSK) - Metric

Diameter	M3		M4		M5		M6		M8	
	Wrench Key Size 2mm		Wrench Key Size 2.5mm		Wrench Key Size 3mm		Wrench Key Size 4mm		Wrench Key Size 5mm	
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
6	106283	1,043								
8	103303	1,223	103309	668	103318	977	103325	764		
10	103304	1,307	103311	668	103319	546	103328	771		
12	103305	1,402	103312	567	103320	567	103329	662	103337	1,005
14					401676	737	401678	819		
16	103306	1,591	103313	762	103321	762	103330	824	103338	976
18			401675	775	401677	771	401679	873	401681	989
20	103308	1,780	103315	785	103322	779	103331	887	103340	1,048
25	106284	1,958	103316	956	103323	916	103332	1,027	103341	1,202
30	106285	2,060	103317	1,150	103324	1,150	103333	1,182	103342	1,374
35			220001	2,373	106289	1,528	103334	1,342	103343	1,562
40			220002	2,546	220005	2,373	103335	1,579	103344	1,833
45			220003	2,882	220006	2,704	220008	2,812	106297	2,057
50			220004	3,229	220007	3,018	220009	3,518	220011	3,223
55							220010	3,869	220012	3,850
60									220013	4,198
70									106301	5,247
Qty. Per Box	200									

Diameter	M10		M12		M16		M20		M24	
	Wrench Key Size 6mm		Wrench Key Size 8mm		Wrench Key Size 10mm		Wrench Key Size 12mm		Wrench Key Size 14mm	
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
12	103345	1,718								
16	103347	1,633								
20	103348	1,403	103353	3,166						
25	103349	1,622	103354	2,961						
30	103350	1,859	103355	3,376	103359	5,759				
35	103351	2,126	103356	3,664	103360	6,206	106328	12,078		
40	103352	2,436	103357	3,951	103361	6,631	106332	10,478		
45	106302	2,751	106311	4,472	106318	7,082	106334	11,228		
50	106303	3,087	103358	4,879	103362	7,534	106335	12,384	220032	25,425
55	106304	3,502	106312	5,481	106320	7,954	106336	13,273	220033	27,557
60	220014	3,875	106313	5,906	103363	8,405	106337	14,612	401689	29,685
65	220015	4,548	220020	6,647	183908	9,245	183912	15,784	220034	31,816
70	220016	4,899	220021	7,156	106321	9,718	106338	16,819	401690	33,948
75	220017	6,297	220022	7,697	220025	10,196	183913	17,854	220035	36,078
80	220018	6,717	220023	8,285	220026	10,710	106339	18,889	401691	38,207
90	220019	7,558					106341	19,924	401692	42,470
100					106325	12,143	106342	24,063	401693	48,293
110					629621	14,684	220029	27,944	701356	54,115
120							220030	30,639	183179	59,940
130							220031	33,333	701358	65,763
Qty. Per Box	100		50		25		10		5	

Quantity per box 25
Quantity per box 200

- Note : All sizes are fully threaded. 2. Specifications : Generally conforming to IS 6761, ISO 10642, DIN 7991.
- Threads : ISO Metric, 5g6g as per IS 4218. 4. Material : UNBRAKO high grade alloy steel.
- Mechanical Properties : Property Class 12.9 as per IS 1367, ISO 898 Part - I
- Bold black lines are used to indicate quantity per box.
- Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.



Socket Low Head Cap Screws (LHCS) - Metric

Diameter	M4 Wrench Key Size 3mm		M5 Wrench Key Size 4mm		M6 Wrench Key Size 5mm		M8 Wrench Key Size 6mm	
	Part No.	₹ Price/ 100 Pcs	Part No.	₹ Price/ 100 Pcs	Part No.	₹ Price/ 100 Pcs	Part No.	₹ Price/ 100 Pcs
Length								
8	106250	1,166	106262	1,192	106263	1,239		
10	106251	924	103500	824	103508	825		
12	106255	835	103501	835	103509	828	103519	1,075
15			400790	767	400792	1,132	400791	1,317
16	106256	877	103502	767	103511	798	103520	966
20	106257	935	103597	824	103512	872	103521	1,003
25	106260	966	103503	882	103515	966	103525	1,082
30	406185	1,699	103505	1,019	103516	1,084	103526	1,217
35					103517	1,187	103528	1,319
40					103518	1,770	103529	1,420
45					106264	1,964		
Qty. Per Box	200							

DIA	M10 Wrench Key Size 8mm			M12 Wrench Key Size 10mm			M16 Wrench Key Size 12mm			M20 Wrench Key Size 14mm		
	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
Length												
16	103532	1,487	200									
20	103533	1,314	200	103549	3,657	100						
25	103534	1,453	200	103550	3,245	100						
30	103535	1,628	200	103551	3,127	100	103562	6,425	25			
35	103536	1,723	200	103552	3,162	100	103563	6,906	25			
40	103538	1,858	100	103553	3,185	50	103564	6,785	25	103578	16,163	25
45	106271	3,162	100				106277	6,425	25			
50	103541	3,435	100	103554	3,434	50	103565	7,312	25	103580	18,994	25
55	106272	3,720	100									
60				103555	4,963	50	103566	10,722	25	103581	21,826	25
90							103574	15,289	25			
100							103575	16,461	25	103599	33,860	25

Grey highlighted items are full threaded

- Specifications : Generally conforming to Unbrako Specification DIN 7984 + 6912 (Except for Head & Socket Dims), ASME B18.3.1M
- Threads : ISO Metric (Coarse Series) 5g6g.
- Mechanical Properties : Property Class 10.9 as per IS 1367, ISO 898 Part I.
- For sizes beyond those listed, prices on 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.
- Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.



Socket Head Shoulder Screws - Metric

Diameter	M6 (M5) Wrench Key Size 3mm			M8 (M6) Wrench Key Size 4mm			M10 (M8) Wrench Key Size 5mm			M12 (M10) Wrench Key Size 4mm			
	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
10	105364	4,890	50										
12	105365	5,305	50	105375	4,882	50							
15	401484	6,128	50	401486	6,134	50	401487	7,472	50	401485	16,222	25	
16	105366	6,128	50	105377	6,293	50	105388	7,685	50	105404	9,987	25	
20	105368	6,950	50	105379	7,063	50	105390	8,537	50	105406	10,989	25	
25	105370	7,980	50	105380	8,028	50	105392	9,609	50	105407	12,247	25	
30	105372	9,011	50	105381	8,996	50	105393	10,674	50	105410	13,504	25	
40	105373	10,627	50	105383	10,928	50	105394	12,806	50	105411	16,018	25	
50				105386	11,999	50	105395	13,449	50	105412	17,913	25	
60							105396	14,215	50	105416	20,342	25	
70							105402	16,012	50	105417	21,613	25	
80							106422	17,788	50	105420	22,597	25	
90										105427	22,867	25	
100										105433	26,954	25	

Diameter	M16 (M12) Wrench Key Size 8mm			M20 (M16) Wrench Key Size 10mm			M24 (M20) Wrench Key Size 12mm			
	Length	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty
30	105434	20,779	25							
40	105435	24,432	25	105441	57,000	10				
50	105436	28,084	25	105442	64,471	10	401488	1,97,146	5	
60	105437	31,734	25	105444	71,940	10	401489	2,15,705	5	
70	105438	35,387	25	105448	79,412	10	401490	2,34,262	5	
80	105440	37,735	25	105449	86,881	10	401491	2,52,827	5	
90	106343	39,132	25	105450	94,353	10	401492	2,71,383	5	
100	106344	46,341	25	106347	1,01,820	10	401493	2,89,942	5	
120	106346	71,522	25	106348	1,16,761	10	401494	3,27,063	5	

1. Specifications : Generally conforming to BS 4168, DIN 9841, ISO 7379.
2. Thread Class : 5g6g (Precision Ground to h8 tolerance on the Shoulder (Size Indicator Ground Diameter))
3. Material : Unbrako High Grade Alloy Steel.
4. Mechanical Properties : Properties Class conforming to 12.9 as per ISO 898 Part - I.
5. Method of Specifying : The nominal diameter of a shoulder screw is the diameter of the shoulder & not the thread diameter but it is recommended that both are quoted, e.g. 16mm (M12) x 70mm long to BS 4168.
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.
7. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



Socket Set Screws (Grub Screws)





Knurled Cup Point

Metric

Diameter	M3		M4		M5		M6		M8	
	Wrench Key Size 1.5mm		Wrench Key Size 2mm		Wrench Key Size 2.5mm		Wrench Key Size 3mm		Wrench Key Size 4mm	
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
3	104076	399								
4	103172	394	103182	331	809760	230				
5	103175	399	103185	331	103194	230				
6	103176	394	103186	335	103195	233	103207	244	180002	499
8	103177	400	103187	358	103196	233	103208	265	103224	307
10	103178	422	103188	352	103197	254	103209	273	103227	326
12	103179	448	103189	404	103198	306	103211	342	103228	372
16	103180	478	103191	478	103199	326	103212	383	103229	452
20	551093	619	103193	669	103202	437	103214	471	103230	585
25	551678	780	701961	725	103203	572	103217	586	103231	887
30			406498	1,321	103204	686	103218	727	103235	1,073
35			551679	1,756	181179	1,077	103219	1,237	103236	1,481
40			551680	2,260	551094	1,347	103220	1,399	103237	1,729
45							103221	1,545	701998	2,003
50							103222	1,817	103240	2,277
55									551095	3,558
60									551096	4,331
65									551097	4,493
Qty. Per Box	200									

1. Specification : Generally conforming to the following standards
2. Threads : ISO Metric, 5g6g 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 POINTS SHOWN BELOW WILL BE 25% EXTRA (MOQ applicable).
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.
7. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

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

				
	FLAT	CONE	DOG / HALF 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

Metric

Diameter	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	640						
10	103241	480	551687	943				
12	103244	559	103256	792				
16	103245	745	103258	1,137	106352	2,629		
20	103246	918	103259	1,201	103274	2,957	104149	7,102
25	103247	1,344	103260	1,647	103276	3,615	103286	8,223
30	103249	1,657	103261	1,953	103277	4,140	103287	9,507
35	103251	2,010	103262	2,584	103278	4,978	103288	10,840
40	103252	2,289	103263	3,271	103279	5,731	103289	11,680
45	103253	2,614	103269	4,026	103281	7,072	103290	16,883
50	103254	3,037	103270	4,410	103282	8,025	103292	18,403
55	551098	4,502	103271	7,586	103283	10,774	103293	20,570
60	183091	5,916	103272	6,788	103284	11,270	103294	21,858
65	551099	6,179	551100	9,859	551102	16,431	551105	24,633
70			551101	11,448	182790	23,003	551106	26,004
75					551103	25,738	551107	28,271
80					551104	26,290	793979	31,300
Qty. Per Box	100				50			

1. Specifications : Generally conforming to the following standards

//// Quantity per box 200

2. Threads : ISO Metric, 5g6g 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 (MOQ applicable).

6. Bold black lines are used to indicate quantity per box.

7. 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.

8. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

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

				
	FLAT	CONE	DOG / HALF 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

Diameter	3/16"		1/4"		5/16"		3/8"	
	Wrench Key Size 3/32"		Wrench Key Size 1/8"		Wrench Key Size 5/32"		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	249						
1/4	400951	243	400961	288				
5/16	400952	255	400963	304	400986	304		
3/8	400953	264	400965	318	400977	318	400988	426
1/2	400954	303	400967	324	400978	385	400989	504
5/8	551209	341	400969	422	400979	410	400990	595
3/4	400956	419	400970	641	400980	537	400991	887
1	400957	594	400972	625	400982	753	400993	1,183
1 1/4			400973	727	400984	887	400994	1,290
1 1/2			400974	1,231	400983	1,803	400995	2,563
1 3/4			551108	1,841	551109	1,926	400996	2,760
2			180730	1,646	400985	2,280	400997	3,260
Qty. Per Box	200						100	

Diameter	1/2"		5/8"		3/4"	
	Wrench Key Size 1/4"		Wrench Key Size 5/16"		Wrench Key Size 3/8"	
Length	Part No.	₹ Price/ 100 Pcs	Part No.	₹ Price/ 100 Pcs	Part No.	₹ Price/ 100 Pcs
1/2	401003	850				
5/8	401005	954	401015	2,251		
3/4	401006	1,348	401016	2,320	401024	5,142
1	401008	2,119	401017	2,679	401025	6,191
1 1/4	401009	2,075	401018	4,139	551110	7,628
1 1/2	401010	4,817	401019	6,527	401026	10,607
1 3/4	401012	6,273	401020	8,801	401027	12,488
2	401013	6,862	401021	8,003	401028	14,692
2 1/2	401014	8,641	401022	11,661	401029	17,986
3	702408	10,595	401023	16,729	401030	25,606
Qty. Per Box	100		50			

1. Specifications : As per standard ASME/ANSI B18.3.
2. Threads : BS Whitworth, Medium as per BS 84
3. Material : Unbrako high grade alloy steel.
4. Mechanical Properties : As per BS 2470.
5. NOTE : PRICES FOR SPECIAL POINTS 25% EXTRA (MOQ applicable).
6. Socket set screws with BSF/UNC/UNF threads can also be manufactured subject to MOQ. Price on request.
7. Bold black lines are used to indicate quantity per box.
8. 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.
9. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



Button Head Socket Screws - Metric

Diameter	M3 Wrench Key Size 2mm			M4 Wrench Key Size 2.5mm			M5 Wrench Key Size 3mm			M6 Wrench Key Size 4mm			
	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
5	180248	859	200										
6	106353	859	200	180200	620	200	180398	1,129	200				
8	106354	696	200	106360	620	200	180175	1,076	200	180249	1,313	200	
10	106357	799	200	106361	620	200	106365	620	200	106372	815	200	
12	106358	888	200	106363	681	200	106366	681	200	106373	667	200	
15				401218	829	200	401219	799	200	401222	948	200	
16	106359	1,125	200	106364	803	200	106367	799	200	106374	948	200	
18							406269	1,747	200	401223	948	200	
20							106368	893	200	106375	1,022	200	
22							401220	2,043	200				
25							106369	1,045	200	106376	1,065	200	
30							106370	1,260	200	106378	1,111	200	

Diameter	M8 Wrench Key Size 5mm			M10 Wrench Key Size 6mm			M12 Wrench Key Size 8mm			
	Length	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty
10	106379	1,363	200							
12	106380	1,155	200							
15	401226	1,184	200							
16	106382	987	200	106392	1,880	200	106403	3,996	100	
20	106384	1,213	200	106393	1,544	200	106404	4,292	100	
25	106385	1,421	200	106396	1,785	200	106405	4,470	100	
30	106386	1,628	200	106399	2,037	200	106406	5,002	100	
35	106389	1,843	200	106401	2,325	200	106407	5,536	100	
40	106390	2,100	200	106402	2,576	100	106408	6,067	50	
50							106413	7,134	50	

1. Specifications : Generally conforming to BS 4168.
2. Thread : ISO Metric (Coarse Series) 5g6g.
3. Material : Unbrako High Grade Alloy Steel.
4. Mechanical Properties : Properties Class conforming to 12.9 as per BS 6104, ISO 898 Part - I.
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.
6. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

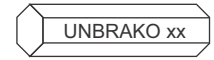


Flange Button Head Socket Screws - Metric

Diameter	M3 Wrench Key Size 2mm			M4 Wrench Key Size 2.5mm			M5 Wrench Key Size 3mm			
	Length	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty
6		404977	1,462	200						
8					404982	1,288	200			
10					404983	1,496	200	404988	1,331	200
12					404984	1,658	200	404989	1,449	200
16					404986	1,914	200	404991	1,747	200
20								404992	1,836	200
25								404994	1,954	200

Diameter	M6 Wrench Key Size 4mm			M8 Wrench Key Size 5mm			M10 Wrench Key Size 6mm			
	Length	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty
10		180079	1,910	200	405005	4,057	200			
12		404997	1,879	200	405007	1,836	200			
16		404999	2,205	200	405009	2,131	200	405016	3,700	200
20		405001	2,521	200	405011	2,398	200	405017	4,145	200
25		405003	2,917	200	405012	2,769	200	405018	4,707	200
30		405004	3,316	200	405013	3,139	200	405019	5,284	200
40					405015	3,849	200			

1. Specification : Generally conforming to Unbrako specification.
2. Thread : ISO Metric (Coarse Series) 5g6g.
3. Material : Unbrako high grade alloy steel.
4. Mechanical Properties : Properties Class conforming to 12.9 as per ISO 898 Part - I.
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.
6. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.





XX-Size

Marking*

Hexagon Wrenches

Length	Part No.	₹ Price/ 100 Pcs	Box Qty	Length	Part No.	₹ Price/ 100 Pcs	Box Qty
1/16	108468	1,331	100	1.5	125648	1,331	100
5/64	110164	1,468	100	2	122263	1,331	100
3/32	110180	1,468	100	2.5	122270	1,331	100
1/8	110213	1,468	100	3	121093	1,468	100
5/32	110246	1,739	100	4	119953	2,304	100
3/16	115915	2,253	100	5	122245	2,811	100
7/32	115948	3,063	50	6	121066	4,003	50
1/4	115981	4,437	50	8	115557	7,537	50
5/16	115997	7,371	25	10	120859	12,579	25
3/8	116013	10,903	25	12	120806	23,663	25
1/2	116046	25,156	10	14	111100	34,806	25
9/16	116063	32,187	10	17	138487	55,048	10
5/8	116080	46,999	10	19	111133	75,963	10
3/4	116096	75,999	10	22	402603	1,19,728	5
				24	402604	1,60,977	5
				27	402605	2,71,006	2
				32	402606	4,76,594	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	41,328	50
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	43,353	50

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.
5. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



Dowel Pins

Metric

Diameter	M2			M3		
Length	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty
8	407831	1,076	40			
10	407832	1,090	40	115001	1,240	40
12	407833	1,105	40	115002	1,254	40
14						
16	407835	1,131	40	115003	1,308	40
18	407836	1,131	40	402118	1,336	40
20	407837	1,145	40	115004	1,348	40
24						
28				402120	1,500	40
30				115007	1,567	40
32				402121	1,635	40
36				406345	1,772	40
40				402124	1,908	40

Diameter	M4			M5		
Length	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty
10	115010	1,377	40	402133	1,444	40
12	115011	1,417	40	115021	1,485	40
14				402134	1,527	40
16	115012	1,500	40	115022	1,567	40
18						
20	115015	1,567	40	115024	1,662	40
24	407127	1,649	40	407128	1,744	40
28	402128	1,772	40	402137	1,893	40
30	115017	1,854	40	115026	1,989	40
32				402138	2,072	40
36				406347	2,248	40
40				115028	2,426	40
50	402132	2,711	40	115031	2,917	40

1. Specifications : Generally conforming to DIN 6325.

2. Material : Unbrako high grade alloy steel.

Unbrako dowel pins are through hardened and precision ground from nominal to 0.0002" over size on Inch sizes and a surface finish of 0.15 micrometers max. On both Metric and Inch products.

Genuine Unbrako Dowel Pins should only be supplied against these List Prices.

CAUTION: Unbrako advise that correct tools should be used for the application.

Safety goggles should be worn for your security and protection.

3. 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.



Dowel Pins

Metric

Diameter	M6			M8			M10		
Length	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty
12	402141	1,813	40						
16	115032	1,935	40						
18	402143	1,989	40						
20	115034	2,057	40	115049	2,889	40	115063	3,980	40
24	115037	2,179	40	406349	3,107	40	406351	4,320	40
28	402145	2,357	40	402150	3,378	40			
30	115038	2,468	40	115053	3,543	40	115066	4,960	40
32	402146	2,576	40	402151	3,693	40			
36	406348	2,793	40	406350	4,007	40	406352	5,641	40
40	115043	3,013	40	115055	4,307	40	115070	6,105	40
45				115056	4,756	40	115071	6,759	40
50	115046	3,597	40	115057	5,151	40	402161	7,344	40
55				402153	5,560	40			
60	115047	4,142	40	115058	5,954	40	402163	8,531	40
70							402164	9,716	40
90							402167	12,100	40
100							402169	13,313	40

Diameter	M12			M16		
Length	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty
24	406353	5,505	40			
30	402174	6,364	40			
32				406218	12,429	20
36	406354	7,277	40			
40	402178	7,889	40	406220	14,908	20
50	402180	9,511	40			
60	402182	11,079	40			
70	402183	12,645	40	406225	24,582	20
80	402184	14,212	40	406226	27,797	20
90				406227	31,042	20
100	402186	17,400	40			

1. Specifications : Generally conforming to DIN 6325.

2. Material : Unbrako high grade alloy steel.

Unbrako dowel pins are through hardened and precision ground from nominal to 0.0002" over size on Inch sizes and a surface finish of 0.15 micrometers max. On both Metric and Inch products.

Genuine Unbrako Dowel Pins should only be supplied against these List Prices.

CAUTION: Unbrako advise that correct tools should be used for the application.

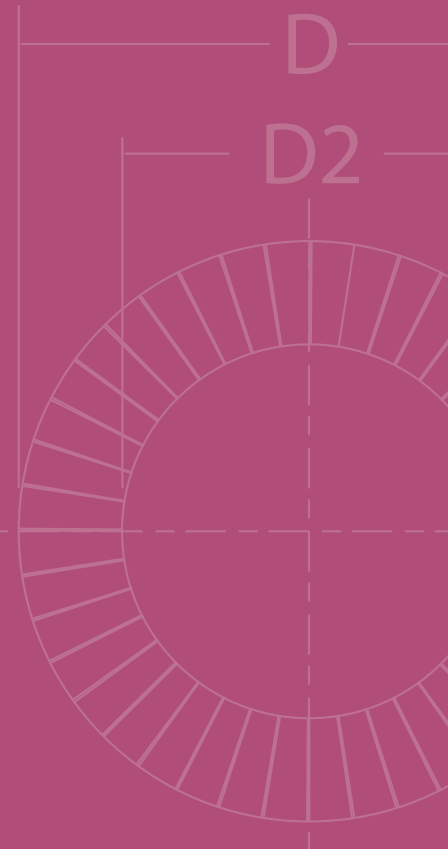
Safety goggles should be worn for your security and protection.

3. 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.

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST

Durlok

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34	Durlok® Screws
35	Durlok® Nuts
35	Durlok® Washers



Durlok[®] Anti-Vibration self-locking fasteners

Will not loosen or unscrew even under the most severe transverse jarring and vibration.

Effectiveness at elevated temperatures upto 300° C is ensured.

Reusability is guaranteed with locking ability maintained.



Unique head design ensures absence of 'notch-effect' after assembly

Embedding is no greater than with standard types of fasteners.

Closely controlled manufacturing for extra safety and reliability.

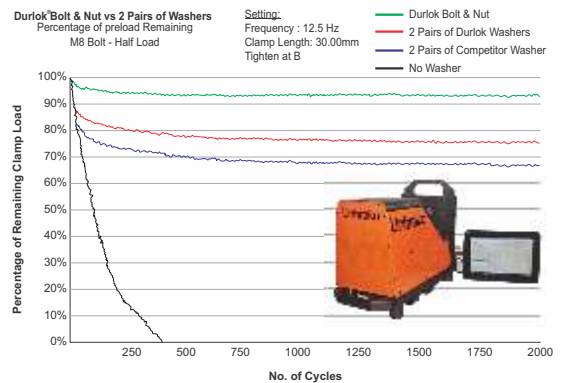
Advantages

During the 1960's, Dr. Junker while working in Unbrako's Koblenz facility in Germany completed his seminal work on the self-loosening behavior of bolted joints. This in turn led to the design of the original Durlok[®] anti-vibration nuts & bolts. The Durlok 12.9 nuts & bolts are designed for high-performance critical applications and do not require a washer. However, our industrial OEM customers requested a Durlok product in washer form for applications where it was deemed desirable to use a washer in the joint design. Thus we began researching and developed Unbrako's new Durlok locking wedge washer.

The Durlok[®] washer when used in combination with standard hex helps achieve self-locking properties. It is an anti-vibration solution that not only prevents bolted joint failure, but also enables the bolted joint to retain its pre-load, thus reducing maintenance requirements. The test regime highlighted this feature (fig 1).



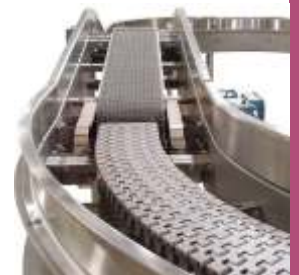
Vibration Resistance Testing / Junker Test



Durlok[®] Applications

Automotive Engines
Power Unit Accessories
Transmission Units
Frames and Chassis Units
Bodywork
Vibratory Feeders
Shaking Chutes, Hoppers

Electrical equipments
Construction Machinery and Ancillary Equipments
Agriculture Machinery
Percussion Drilling Tools & Power Wrenches
Domestic Appliance





Durlok® Screws - Metric

The Durlok 12.9 nuts & Screws are designed for high-performance critical anti-vibration applications and do not require a washer.

Diameter	M6			M8			M10			M12			
	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
12	190540	3,405	200	190570	3,494	200							
16	190560	2,604	200	190590	3,079	200	190620	4,071	200				
20	190160	2,872	200	190210	3,331	200	190270	3,182	200	183640	5,861	100	
25	190170	3,198	200	190220	3,672	200	190280	3,464	200	190320	6,009	100	
30	190180	3,522	200	190230	3,996	200	190290	3,775	200	190330	6,067	100	
35				190600	4,350	200	190630	4,707	200	190660	6,218	100	
40				190240	4,677	200	190300	5,063	100	190340	6,691	50	
45				408127	5,476	200	190640	5,417	100	190670	7,134	50	
50				190610	5,861	100	190310	5,773	100	190350	7,578	50	
55										190680	8,022	50	
60				407393	6,580	200				190360	8,910	50	
70										190700	9,858	50	
80										190710	10,776	50	

Diameter	M14			M16			M20			
	Length	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty	Part No.	₹ Price/ 100 Pcs	Box Qty
25	190730	11,634	25							
30	190370	12,137	25	190410	25,991	25				
35	190740	12,878	25	190420	25,991	25				
40	190380	13,025	25	190430	25,991	25	190875	42,924	25	
45	190750	13,410	25	190820	20,395	25	405793	37,744	25	
50	190760	14,209	25	190440	20,958	25				
55				405105	22,054	25				
60	190770	15,275	25	190450	23,593	25	190885	42,332	25	
70				190460	25,812	25	190890	44,403	25	
80				190855	26,940	25	190900	48,253	25	
90				190860	29,099	25	190910	52,100	25	
100				190870	31,232	25				

1. Specification : Conforming to Unbrako Standard. (Separate catalogue available on request).
2. Thread : Conforming to DIN 13 Medium Fit (6g)
3. Material : Unbrako high grade alloy steel.
4. Mechanical Properties : Property Class 12.9 as per 898 part - I.
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.



Durlok® Nuts

Length	Part No.	₹ Price/100 Pcs	Box Qty
M6	404916	967	200
M8	404917	1,453	200
M10	405202	2,196	200
M12	404918	4,040	100
M14	405240	6,185	50
M16	404915	7,449	50
M20	403618	15,780	50

1. Specification: conforming to Unbrako Standard. 2. Thread: According to DIN 13 6H.
3. Material: Unbrako high grade alloy steel. 4. Mechanical Properties: Property Class 12.

Durlok® Washers



Durlok Washers are used with standard Hex bolt & nut for self-locking anti-vibration properties.

Length	Part No.	₹ Price/100 Pcs	Box Qty	Length	Part No.	₹ Price/100 Pcs	Box Qty
M6	551087	2,773	200	M18	550262	10,871	100
M6L	551088	3,616	200	M18L	550263	19,183	100
M8	551089	3,616	200	M20	550264	10,871	100
M8L	550253	4,896	200	M20L	550265	19,183	100
M10	550254	4,896	200	M22	550266	15,026	100
M10L	550255	5,116	200	M22L	550267	28,454	100
M12	550256	5,116	200	M24	550268	19,183	100
M12L	550257	7,513	100	M24L	550269	34,528	50
M14	550258	7,513	100	M27	550270	27,654	50
M14L	550259	10,871	100	M27L	550271	34,528	50
M16	550260	7,034	100	M30	550272	29,733	50
M16L	550261	10,871	100	M30L	550273	43,800	25

1. Note: L = Larger Outer Dia
2. Inch series available on request.
3. Stainless Steel prices available on request.
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 Bolts

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48	Hexagon Weld Nut
49	Nylock Nut Blue Ring DIN 985 - Grade 8 /10
49	Nylock Nut Blue Ring ISO 7040 - Grade 8 /10
49	All Metal Prevailing Torque Nut DIN 980M & DIN 980V
50	Spring Washer - Square Section
50	Spring Washer - Flat Section
50	Hardened Washer



Hex Head Bolts / Screws

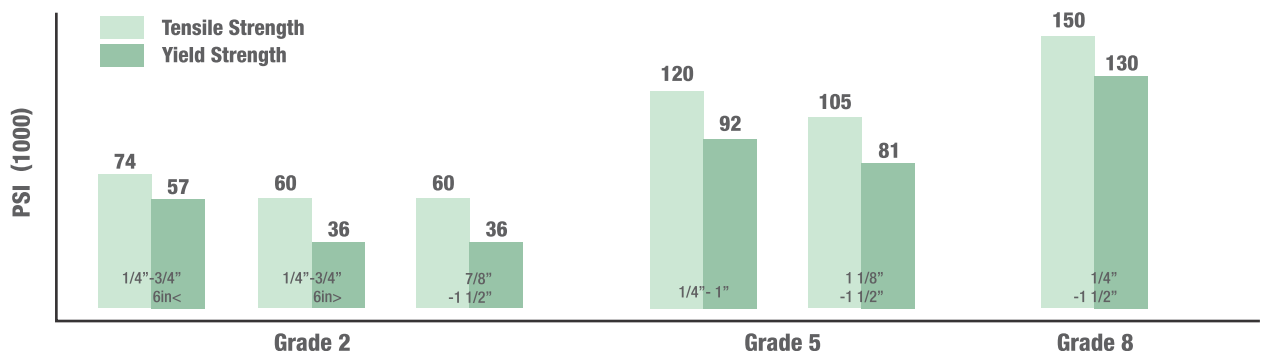
In-house Destructive And Non destructive Testing:

- Chemical product check analysis
- Heat treatment tests
- Room temprature 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

- **ROLLED THREADS** : Rolling threads results in best quality highest -strength thread because of; (1) more accurate and uniform thread dimensions, giving a better fit between threaded parts and fewer concentrated loads at points of misfit; (2) smoother thread surfaces &, thus, fewer scratches and other markings to initiate cracks, or galling; and (3) higher yield, tensile, & shear properties to better withstand service loads.
- **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.



Comparison of Different Grades





10.9 Hex Head Bolts/Screws - Metric

DIA	M4			M5			M6			M8			
	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
8	550616	405	500					550628	635	500			
10	170001	361	500	170013	383	500	170029	497	500	550642	844	500	
12	170002	375	500	170014	390	500	170030	524	500	170049	714	500	
16	170003	616	500	170015	572	500	170031	543	500	170050	725	200	
18	170004	616	500	170016	631	500	170032	550	500	170051	607	200	
20	170005	532	500	170017	508	500	170033	543	500	170052	607	200	
22	170006	541	500	170018	540	500	170034	559	500	170053	738	200	
25	170007	541	500	170019	532	500	170035	561	500	170054	737	200	
30	170008	540	500	170020	575	500	170036	587	500	170055	825	200	
35	170009	554	500	170021	581	500	170037	630	200	170056	830	200	
40	170010	588	500	170022	616	500	170038	659	200	170057	926	200	
45	170011	661	500	170023	673	500	170039	701	200	170058	1,012	200	
50	170012	736	500	170024	810	500	170040	750	200	170059	1,104	200	
55	240001	810	500	170025	853	500	170041	825	200	170060	1,186	100	
60	240002	884	500	170026	930	200	170042	901	200	170061	1,367	100	
65				170027	1,056	200	170043	977	100	170062	1,402	100	
70				170028	1,138	200	170044	1,054	100	170063	1,486	100	
75				240003	1,221	200	170045	1,063	100	170064	1,541	100	
80							170046	1,119	100	170065	1,709	100	
90							170047	1,262	100	170066	2,141	100	
100							170048	1,403	100	170067	2,392	50	
110							551178	2,157	100	240010	2,706	50	
120							550866	2,346	100	240011	3,446	50	
130							550867	2,527	100	240012	3,634	50	
140							550868	2,714	100	550872	4,338	50	
150							550869	2,898	100	550873	4,848	50	
160										787951	5,861	50	
170										787952	6,164	50	
180										787953	6,323	50	
190										787954	6,816	50	
200										787955	7,134	50	

Grey highlighted items are full threaded

1. Specifications : Generally conforming to IS 1364, ISO 4014/4017.
2. Threads : ISO Metric 6g as per IS 4218.
3. Material and Mechanical Properties : Property Class 10.9 as per IS 1367.
4. Note : Prices for fully threaded screws beyond shaded sizes will cost 10% extra.
5. 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.
6. Upto 80mm Diameter can be manufactured against request.
7. 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.
8. Bolts/Screws as per DIN 931/933 will be manufactured against specific order with minimum order quantity of each size.
9. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



10.9 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	1,259	200	550673	2,277	100						
18	170069	1,251	200									
20	170070	1,181	200	170093	1,939	100				170142	4,384	50
22	170071	1,299	200							170143	4,384	50
25	170072	1,275	200	170094	2,044	100	170121	3,174	50	170144	4,415	25
30	170073	1,318	100	170095	2,029	100	170122	3,264	50	170145	4,666	25
35	170074	1,318	100	170096	2,141	100	170123	3,397	25	170146	4,680	25
40	170075	1,667	100	170097	2,086	100	170124	3,585	25	170147	4,736	25
45	170076	1,733	100	170098	2,609	50	170125	3,324	25	170148	5,077	25
50	170077	1,874	100	170099	2,797	50	170126	3,739	25	170149	5,378	25
55	170078	1,997	100	170100	2,902	50	170127	4,478	25	170150	5,740	25
60	170079	2,139	100	170101	3,055	50	170128	4,291	25	170151	6,166	25
65	170080	2,280	50	170102	3,206	50	170129	4,785	25	170152	6,515	25
70	170081	2,421	50	170103	3,571	50	170130	5,329	25	170153	6,919	25
75	170082	2,563	50	170104	3,718	50	170131	5,594	25	170154	7,407	25
80	170083	2,985	50	170105	3,934	50	170132	5,901	25	170155	8,084	25
90	170084	3,313	50	170106	4,311	25	170133	6,459	25	170156	8,642	25
100	170085	3,599	50	170107	5,036	25	170134	7,449	25	170157	9,395	15
110	170086	3,906	50	170108	5,594	25	170135	8,454	25	170158	10,197	15
120	170087	4,610	25	170109	5,957	25	170136	8,949	25	170159	11,376	15
130	170088	5,545	50	170110	6,333	25	170137	9,639	25	170160	13,601	15
140	170089	5,733	50	170111	7,617	25	170138	13,600	25	170161	13,880	15
150	170090	6,965	30	170112	10,563	25	170139	15,011	25	170162	16,419	15
160	170091	7,427	25	170113	10,937	20	170140	16,761	25	170163	17,103	15
180	170092	8,355	25	170114	11,864	20	170141	17,982	25	170164	19,237	15
200	550876	9,286	25	170115	15,687	25	550887	19,391	25	170165	20,827	10
220				170116	23,543	25	550888	27,271	20	170166	28,060	10
240				170117	24,123	20	550889	29,498	20	170167	30,199	10
260				170118	24,643	20	550890	31,723	20	170168	30,811	10
280				170119	26,912	18	550891	34,159	18	170169	34,014	10
300				170120	28,834	18	550892	36,454	18	170170	39,834	10

Grey highlighted items are full threaded

1. Specifications : Generally conforming to IS 1364, ISO 4014/4017.
2. Threads : ISO Metric 6g as per IS 4218.
3. Material and Mechanical Properties : Property Class 10.9 as per IS 1367.
4. Note : Prices for fully threaded screws beyond shaded sizes will cost 10% extra.
5. 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.
6. Upto 80mm Diameter can be manufactured against request.
7. 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.
8. Bolts/Screws as per DIN 931/933 will be manufactured against specific order with minimum order quantity of each size.
9. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



10.9 Hex Head Bolts/Screws - Metric

DIA	M18			M20			M22			
	Length	Part No.	₹ Price/ 100 pcs	Box Qty	Part No.	₹ Price/ 100 pcs	Box Qty	Part No.	₹ Price/ 100 pcs	Box Qty
30				550751	9,765	25				
35	550735	7,993	25	170190	9,622	25				
40	170171	8,596	25	170191	9,622	25	550775	13,037	10	
45	170172	8,959	25	170192	9,765	25	550776	11,599	10	
50	170173	9,236	25	170193	10,005	25	170215	12,855	10	
55	170174	9,868	25	170194	10,511	25	170216	13,838	10	
60	170175	10,176	25	170195	11,132	25	170217	14,334	10	
65	170176	10,521	25	170196	11,495	10	170218	16,098	10	
70	170177	11,132	25	170197	11,804	10	170219	16,635	10	
75	170178	11,795	10	170198	12,409	10	170220	17,207	10	
80	170179	11,795	10	170199	12,764	10	170221	17,870	10	
90	170180	12,541	10	170200	13,573	10	170222	19,035	10	
100	170181	13,301	10	170201	14,355	10	170223	19,328	10	
110	170182	14,627	10	170202	15,157	10	170224	22,111	10	
120	170183	15,422	10	170203	16,419	10	170225	23,596	10	
130	170184	16,112	10	170204	17,542	10	170226	24,887	10	
140	170185	16,831	10	170205	18,240	10	170227	26,121	10	
150	170186	18,002	10	170206	19,243	10	170228	27,356	10	
160	170187	19,962	10	170207	21,881	10	170229	29,776	5	
180	170188	21,616	10	170208	23,792	10	170230	32,315	5	
200	170189	23,262	10	170209	25,619	10	170231	33,236	5	
220	240020	27,998	10	170210	44,755	5	170232	61,323	5	
240	240021	31,086	10	170211	46,999	5	170233	66,426	5	
260	240022	33,676	10	170212	49,244	6	170234	68,981	5	
280	240023	36,268	8	170213	53,722	6	170235	76,669	5	
300	240024	38,859	8	170214	58,177	6	170236	82,148	5	

Grey highlighted items are full threaded

1. Specifications : Generally conforming to IS 1364, ISO 4014/4017.
2. Threads : ISO Metric 6g as per IS 4218.
3. Material and Mechanical Properties : Property Class 10.9 as per IS 1367.
4. Note : Prices for fully threaded screws beyond shaded sizes will cost 10% extra.
5. 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.
6. Upto 80mm Diameter can be manufactured against request.
7. 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.
8. Bolts/Screws as per DIN 931/933 will be manufactured against specific order with minimum order quantity of each size.
9. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.



10.9 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
40	550791	20,052	10							
45	550792	16,189	10							
50	170237	16,189	10	170259	37,105	5	170281	47,794	5	
55	170238	16,245	10	170260	37,105	5	170282	47,794	5	
60	170239	16,831	10	170261	37,105	5	170283	47,794	5	
65	170240	16,831	10	170262	37,105	5	170284	47,794	5	
70	170241	18,470	10	170263	37,105	5	170285	47,794	5	
75	170242	19,153	10	170264	39,905	5	170286	47,794	5	
80	170243	21,044	10	170265	41,592	5	170287	49,737	5	
90	170244	22,460	10	170266	45,461	5	170288	53,990	5	
100	170245	24,280	10	170267	49,187	5	170289	58,102	5	
110	170246	25,243	5	170268	53,039	5	170290	63,911	5	
120	170247	26,651	10	170269	54,384	5	170291	65,321	5	
130	170248	27,921	5	170270	56,174	5	170292	68,264	5	
140	170249	29,246	5	170271	59,731	5	170293	72,497	5	
150	170250	30,683	5	170272	63,287	5	170294	76,569	3	
160	170251	33,368	5	170273	66,953	5	170295	85,283	3	
170	240025	33,368	5	550941	66,953	5	550947	91,003	3	
180	170252	36,256	5	170274	73,998	5	170296	94,072	3	
190	240026	37,637	5							
200	170253	39,102	5	170275	80,687	5	170297	102,533	5	
220	170254	70,588	5	170276	111,314	4	170298	123,653	3	
240	170255	73,116	5	170277	119,796	4	170299	132,469	3	
260	170256	75,648	4	170278	127,887	3	170300	141,279	3	
280	170257	83,195	4	170279	135,650	3	170301	150,088	2	
300	170258	101,706	4	170280	141,969	3	170302	160,062	2	
310	813503	101,706	4							
340							551125	188,983	2	
400							550952	219,293	2	

Grey highlighted items are full threaded

1. Specifications : Generally conforming to IS 1364, ISO 4014/4017.
2. Threads : ISO Metric 6g as per IS 4218.
3. Material and Mechanical Properties : Property Class 10.9 as per IS 1367.
4. Note : Prices for fully threaded screws beyond shaded sizes will cost 10% extra.
5. 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.
6. Upto 80mm Diameter can be manufactured against request.
7. 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.
8. Bolts/Screws as per DIN 931/933 will be manufactured against specific order with minimum order quantity of each size.
9. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



10.9 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
70				550845	85,200	5							
75	170303	67,517	5	550846	83,794	5	631194	122,835	4				
80	170304	68,355	5	170320	85,407	5	550858	127,225	3				
90	170305	72,582	5	170321	91,910	3	170336	134,782	3				
100	170306	77,527	5	170322	95,614	3	170337	142,528	2	787845	192,601	2	
110	170307	83,526	4	170323	102,117	4	170338	150,315	2	787846	203,185	2	
120	170308	85,618	4	170324	104,096	3	170339	151,474	2	787847	204,379	2	
130	170309	90,194	4	170325	109,549	3	170340	157,870	10	787848	212,896	2	
140	170310	95,837	4	170326	115,799	3	170341	166,656	10	550980	237,823	2	
150	170311	105,632	4	170327	122,006	3	170342	175,423	9	787849	248,584	2	
160	170312	105,685	4	170328	128,242	3	170343	184,199	9	787850	254,936	2	
180	170313	115,904	3	170329	149,007	2	170344	200,931	8	550981	275,108	2	
200	170314	126,115	3	170330	161,339	2	170345	210,022	7	550982	291,232	2	
220	170315	152,543	3	170331	193,410	2	170346	269,396	7	550983	337,011	2	
240	170316	163,815	2	170332	207,485	9	170347	289,390	6	550984	359,478	2	
260	170317	176,154	2	170333	221,568	8	170348	309,447	6	787851	419,523	2	
280	170318	188,458	2	170334	235,281	8	170349	329,465	6	551123	444,190	2	
300	170319	200,441	2	170335	282,501	7	170350	349,468	6	551143	468,857	2	

Grey highlighted items are full threaded

1. Specifications : Generally conforming to IS 1364, ISO 4014/4017.
2. Threads : ISO Metric 6g as per IS 4218.
3. Material and Mechanical Properties : Property Class 10.9 as per IS 1367.
4. Note : Prices for fully threaded screws beyond shaded sizes will cost 10% extra.
5. 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.
6. Upto 80mm Diameter can be manufactured against request.
7. 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.
8. Bolts/Screws as per DIN 931/933 will be manufactured against specific order with minimum order quantity of each size.
9. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

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



Gr. 8 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	617	500	170364	823	500	170381	1,286	200				
5/8	170352	765	500	170365	788	500	170382	1,286	200				
3/4	170353	696	500	170366	758	200	170383	1,121	200	170400	2,365	100	
7/8	170354	628	200	170367	829	200	170384	1,355	200	170401	2,398	100	
1	170355	685	200	170368	825	200	170385	1,107	200	170402	2,545	100	
1 1/4	170356	701	200	550992	908	200	170386	1,228	200	170403	2,637	100	
1 1/2	170357	777	200	170370	1,088	200	170387	1,332	100	170404	2,602	50	
1 3/4	170358	850	200	170371	1,193	200	170388	1,451	100	170405	3,256	25	
2	170359	933	200	170372	1,228	200	170389	1,583	100	170406	3,546	25	
2 1/4	170360	1,025	200	170373	1,409	100	170390	1,701	100	170407	3,916	25	
2 1/2	170361	1,142	200	170374	1,409	100	170391	1,827	100	170408	4,169	25	
2 3/4	170362	1,228	200	170375	1,569	100	170392	1,995	100	170409	3,947	25	
3	170363	1,372	200	170376	1,653	100	170393	2,199	100	170410	5,062	25	
3 1/4	240027	1,580	200	170377	1,667	100	170394	2,364	50	170411	4,576	25	
3 1/2	240028	1,597	100	170378	1,786	100	170395	2,530	50	170412	5,615	25	
3 3/4	240029	1,704	100	170379	2,469	100	170396	3,062	25	170413	5,098	25	
4	240030	1,829	100	170380	2,602	100	170397	3,257	25	170414	6,155	25	
4 1/4				551064	2,678	100	170398	3,209	25	170415	5,715	25	
4 1/2	787956	2,036	100	551065	2,825	100	170399	3,334	25	170416	7,121	25	
5	551063	2,250	100	551066	2,602	100	240034	3,564	50	170417	7,777	25	
5 1/2				787957	3,879	100	240035	5,471	50	170418	9,495	25	
6				787958	4,205	100	240036	5,968	50	170419	11,530	25	
6 1/2										240037	12,060	25	
7										170420	13,071	20	
7 1/2										170421	14,124	25	
8										170422	14,710	25	

Grey highlighted items are full threaded

1. Specifications : Generally conforming to ANSI B 18.2.1
2. Threads : Unified Coarse, 2A as per ANSI B1.1.
3. Material & Mechanical Properties : Grade 8 as per SAE J 429
4. Note : Non-shaded sizes if required in full thread will cost 10% extra.
: Upto 4 Inch Dia can be manufactured against request.
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.
6. For Hex Bolt/Screws BSW, above prices will apply.
7. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.



Gr. 8 Hex Head Bolts/Screws - Inch (UNC)

DIA	5/8			3/4			7/8			1			
	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	170423	4,447	25										
1 1/4	170424	4,952	25	551032	8,841	25							
1 1/2	170425	5,208	25	170445	9,406	25	551044	13,322	10	170487	18,491	10	
1 3/4	170426	5,301	25	170446	9,763	25	787988	13,957	10	170488	18,491	10	
2	170427	5,559	25	170447	10,402	25	170467	14,661	10	170489	18,526	10	
2 1/4	170428	5,873	25	170448	11,048	25	170468	24,594	10	170490	21,804	10	
2 1/2	170429	6,445	25	170449	11,585	25	170469	16,259	10	170491	20,109	10	
2 3/4	170430	6,968	25	170450	12,646	10	170470	17,019	10	170492	21,462	10	
3	170431	7,491	25	170451	13,127	10	170471	17,800	10	170493	22,446	10	
3 1/4	170432	7,972	25	170452	14,041	10	170472	19,893	10	170494	24,433	10	
3 1/2	170433	8,635	25	170453	14,501	10	170473	22,911	10	170495	25,466	10	
3 3/4	170434	8,970	25	170454	15,798	10	170474	20,981	10	170496	26,442	10	
4	170435	9,786	25	170455	16,259	10	170475	22,111	10	170497	28,033	10	
4 1/4	170436	10,163	25	170456	16,935	10	170476	23,931	10	170498	34,982	10	
4 1/2	170437	10,539	25	170457	17,431	10	170477	28,601	10	170499	30,843	5	
5	170438	11,858	25	170458	18,554	10	170478	26,338	10	170500	32,936	5	
5 1/2	170439	11,313	20	170459	19,774	10	170479	27,740	10	170501	35,028	5	
6	170440	13,978	10	170460	20,827	10	170480	29,428	10	170502	37,191	5	
6 1/2	170441	15,896	10	170461	21,964	10	170481	31,122	5	170503	39,374	5	
7	170442	16,628	10	170462	23,094	10	170482	32,789	5	170504	41,473	5	
7 1/2	170443	17,375	10	170463	24,147	10	170483	42,160	5	170505	43,559	5	
8	170444	18,142	10	170464	25,277	10	170484	36,075	5	170506	46,447	5	
9	551069	23,309	10	170465	30,109	10	170485	50,018	5	170507	66,850	5	
10	551070	25,903	10	170466	33,874	8	170486	52,334	5	170508	73,305	4	
11				240038	36,004	8				170509	76,974	4	
12				551222	39,277	8				170510	83,968	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.
- For Hex Bolt/Screws BSW, above prices will apply.
- Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.



Gr. 8 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	23,083	5						
1 1/4	170512	25,033	5						
1 1/2	170513	27,317	10						
1 3/4	170514	28,243	10						
2	170515	30,412	10						
2 1/4	170516	32,596	5	551302	43,121	5			
2 1/2	170517	34,457	5	170534	45,633	5	170551	55,256	5
2 3/4	170518	36,317	5	170535	47,802	5	170552	57,736	5
3	170519	38,485	5	551062	49,971	5	170553	60,531	5
3 1/4	170520	40,668	5	170537	52,770	5	170554	63,943	5
3 1/2	170521	42,525	5	170538	55,256	5	170555	67,052	5
3 3/4	170522	44,696	5	170539	58,043	5	170556	70,464	5
4	170523	46,865	5	170540	60,531	4	170557	73,569	5
4 1/4	170524	49,044	5	170541	63,010	5	170558	76,984	4
4 1/2	170525	51,215	5	170542	65,807	4	170559	80,089	4
5	170526	55,256	5	170543	71,081	5	170560	86,608	4
5 1/2	170527	59,595	5	170544	76,047	3	170561	93,126	3
6	170528	63,637	5	170545	81,332	4	170562	99,646	3
6 1/2				551072	87,489	3			
7	170529	72,019	3	170546	91,573	3	170563	112,377	3
7 1/2	170530	76,047	5	170547	96,542	3	170564	118,896	3
8	170531	80,396	3	170548	101,815	3	170565	125,414	3
9	170532	112,377	4	170549	112,377	3	170566	138,450	2
10	170533	97,159	3	170550	122,614	3	170567	151,489	2

Grey highlighted items are full threaded

1. Specifications : Generally conforming to ANSI B 18.2.1
2. Threads : Unified Coarse, 2A as per ANSI B1.1.
3. Material & Mechanical Properties : Grade 8 as per SAE J 429
4. Note : Non-shaded sizes if required in full thread will cost 10% extra.
: Upto 4 Inch Dia can be manufactured against request.
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.
6. For Hex Bolt/Screws BSW, above prices will apply.
7. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.



Gr. 8 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	69,528	5	170585	112,289	3	170602	157,204	2
2 3/4	170569	72,943	5	170586	117,044	3	170603	163,661	2
3	170570	76,368	5	170587	121,813	3	170604	169,793	2
3 1/4	170571	79,461	4	170588	126,918	2	170605	176,250	2
3 1/2	170572	83,504	4	170589	131,673	2	170606	182,721	2
3 3/4	170573	87,225	4	170590	136,779	2	170607	189,188	2
4	170574	91,264	3	170591	142,571	2	170608	195,647	2
4 1/4	170575	94,989	3	170592	148,354	2	170609	202,118	2
4 1/2	170576	99,027	3	170593	154,136	2	170610	209,600	2
5	170577	106,781	3	170594	165,712	2	170611	224,919	2
5 1/2	170578	114,546	3	170595	177,277	2	170612	239,884	2
6	170579	122,310	2	170596	188,853	2	170613	255,202	2
7	170580	137,207	2	170597	211,301	2	170614	284,120	2
7 1/2	170581	144,970	3	170598	222,529	2	170615	299,439	2
8	170582	152,732	2	170599	234,439	2	170616	314,743	2
9	170583	168,251	2	170600	257,579	2	170617	344,690	2
10	170584	183,774	2	170601	280,719	2	170618	375,312	2

Grey highlighted items are full threaded

1. Specifications : Generally conforming to ANSI B 18.2.1
2. Threads : Unified Coarse, 2A as per ANSI B1.1.
3. Material & Mechanical Properties : Grade 8 as per SAE J 429
4. Note : Non-shaded sizes if required in full thread will cost 10% extra.
: Upto 4 Inch Dia can be manufactured against request.
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.
6. For Hex Bolt/Screws BSW, above prices will apply.
7. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.



Hex Nuts - ISO 4032 - Class 8/10

Size (mm)	Grade	Part No.	₹ Price/100 pcs	Pcs. Per Box	Pcs. Per Carton
M4 X 0.7	8	793230	112	1000	18000
M5 X 0.8	8	793201	139	700	12600
M6 X 1	8	550303	193	500	9000
M8 X 1.25	8	550304	248	200	2400
M10 X 1.5	8	550305	461	200	2400
M12 X 1.75	8	550306	718	200	1600
M16 X 2	8	550307	1,654	100	800
M6 X 1	10	170619	224	500	9000
M8 X 1.25	10	170620	251	200	2400
M10 X 1.5	10	170621	488	200	2400
(M12) X 1.5	10	170623	765	200	2400
M12 X 1.75	10	170622	735	200	2400
(M14) X 1.5	10	170625	1,465	100	800
M14 X 2	10	170626	1,523	100	800
M16 X 2	10	170627	1,883	100	800
(M18) X1.5	10	170629	2,783	100	600
M18 X 2.5	10	170630	2,783	100	600
(M20)X 1.5	10	170631	3,617	50	300
M20 X 2.5	10	170632	3,617	50	300
M22 X 2.5	10	170633	4,361	50	200
M24 X 3	10	170634	6,061	50	200
M27 X 3	10	170635	10,642	25	150
M30 X 3.5	10	170636	15,206	25	150
M33 X 3.5	10	170637	21,023	10	80
M36 X 4	10	170638	27,216	10	80
M39 X 4	10	170639	37,122	10	40
M42 X 4.5	10	170640	45,597	10	40
M45 X 4.5	10	170641	54,473	10	40
M48 X 5	10	170642	65,627	10	40
M52 X 5	10	170643	73,304	4	16
M56 X 5.5	10	170644	100,435	4	16
M60 X 5.5	10	550301	182,983	3	12
M64 X 6	10	170645	189,497	3	12
M72 X 6	10	550302	349,458	2	8

1. Specifications : 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.
6. Nuts as per DIN934 will be manufactured against specific order with minimum order quantity of each size
7. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



Hex Nuts

Size	Grade	Part No	₹ Price/100 pcs	Pcs. Per Box	Pcs. Per Carton
1/4	8	170646	206	500	9000
5/16	8	170647	258	500	9000
3/8	8	170648	391	200	2400
7/16	8	170658	663	200	1600
1/2	8	170649	933	200	1600
5/8	8	170650	1,996	200	1600
3/4	8	170651	3,516	50	400
7/8	8	170652	4,499	50	200
1	8	170653	6,940	50	200
1-1/8	8	170654	10,218	25	150
1-1/4	8	170655	14,916	25	100
1-3/8	8	170656	17,973	25	100
1-1/2	8	170657	24,443	10	40

1. Specifications : For Nuts with UNC Threads : (ANSI B 18.2.2).
2. Threads : Unified Coarse, 2B As Per ANSI B1.1.
3. Material Mechanical Properties : Grade as tabulated as per SAE J 995.
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.
5. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.



Hexagon Weld Nut

Size (mm)	Part No.	₹ Price/ 100 pcs	Pcs. Per Box	Pcs. Per Carton
M6	136004	157	500	9000
M8	136001	299	200	2400
M10	136002	550	200	2400
M12	136003	783	200	1600

1. Specifications : Generally conforming to DIN 929. Grade 6
2. 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.
3. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.
4. No head marking.



Nylock Nut

(Nylon Ring Insert) (Duly White Zinc Plated)

DIN 985

Grade-8

Size (mm)	Part No.	₹ Price/ 100 pcs	Pcs. Per Box	Pcs. Per Carton
M6	290001	147	500	9000
M8	290002	294	200	2400
M10	290003	637	200	2400
M12	290004	933	200	2400
M12 X1.5	290005	1,001	200	2400
M14	290006	1,533	100	800
M16	560957	2,063	100	800
M16X1.5	630379	2,113	100	800
M20	630380	4,452	50	300
M20 X1.5	630381	3,920	50	300
M24	791270	9,148	50	200



Nylock Nut

(Nylon Ring Insert) (Duly White Zinc Plated)

ISO 7040

Grade-8

Size (mm)	Part No.	₹ Price/ 100 pcs	Pcs. Per Box	Pcs. Per Carton
M6	630448	213	500	9000
M8	630449	382	200	2400
M10	630450	845	200	2400
M12	630451	1,209	200	2400
M12X1.5	630452	1,284	200	2400
M14	630453	1,967	100	800
M16	630454	2,544	100	800
M16X1.5	630455	2,604	100	800
M20	630456	5,164	50	300
M20X1.5	630457	5,525	50	300
M24	630768	10,519	50	200

DIN 985

Grade-10

Size (mm)	Part No.	₹ Price/ 100 Pcs.	Pcs. Per Box	Pcs. Per Carton
M10	630305	754	200	2400
M12	630306	1,113	200	2400
M16	290007	2,374	100	800
M16 X 1.5	290008	2,454	100	800
M20	290009	4,728	50	300
M24	290010	9,612	50	200

ISO 7040

Grade-10

Size (mm)	Part No.	₹ Price/ 100 pcs	Pcs. Per Box	Pcs. Per Carton
M10	630458	976	200	2400
M12	630459	1,381	200	2400
M16	630460	2,706	100	800
M16 X1.5	630461	2,574	100	800
M20	630462	5,478	50	300
M24	630463	12,190	50	200



All Metal Prevailing Torque Nut

DIN 980V / ISO7042

(Duly White Zinc Plated)

Grade-10

Size (mm)	Part No. DIN	Part No. ISO	₹ Price/ 100 pcs	Pcs. Per Box	Pcs. Per Carton
M6	796311		447	500	9000
M8	796314		867	200	2400
M10	816933	796315	1,509	200	2400
M12	816934	796313	2,384	200	2400
M16	796312		4,523	100	800
M20	796310		8,702	50	300
M24	787170		16,459	50	300



Metal Insert Prevailing Torque Nut - DIN 980M

(Duly White Zinc Plated)

Grade-10

Size (mm)	Part No.	₹ Price/ 100 pcs	Pcs. Per Box	Pcs. Per Carton
M6	815003	1,266	500	9000
M8	815004	1,406	200	2400
M10	815005	1,560	200	2400
M12	815006	2,274	200	2400
M14	815013	3,445	100	800
M16	814419	4,548	100	800
M20	814420	9,536	50	300
M22	815007	13,645	50	300
M24	814421	20,623	50	300

1. 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.



Spring Washer - Square Section

Size (mm)	Part No.	₹ Price/ 100 pcs	Pcs. Per Box	Pcs. Per Carton	Size (mm)	Part No.	₹ Price/ 100 pcs	Pcs. Per Box	Pcs. Per Carton
3MM	171758	20	2000	160000	18MM	171767	315	100	2400
4MM	171759	24	2000	90000	20MM	171768	584	100	1500
5MM	171760	29	2000	48000	22MM	171769	654	50	1000
6MM	171761	27	1000	30000	24MM	171770	869	50	1200
8MM	171762	53	1000	24000	27MM	171771	997	50	700
10MM	171763	95	500	12000	30MM	171772	1,743	50	500
12MM	171764	115	500	7000	33MM	171773	2,054	25	400
14MM	171765	190	200	4800	36MM	171774	2,984	25	350
16MM	171766	286	100	3000	39MM	171775	3,231	25	250



1. Specifications : Generally conforming to IS 6735/1972 & DIN 7980

Spring Washer - Flat Section

Size (mm)	Part No.	₹ Price/ 100 pcs	Pcs. Per Box	Pcs. Per Carton	Size (mm)	Part No.	₹ Price/ 100 pcs	Pcs. Per Box	Pcs. Per Carton
3MM	171776	20	2000	140000	18MM	171785	508	100	1800
4MM	171777	23	2000	120000	20MM	171786	757	100	1400
5MM	171778	29	2000	60000	22MM	171787	820	50	800
6MM	171779	52	1000	32000	24MM	171788	1,227	50	700
8MM	171780	87	1000	14000	27MM	171789	1,369	50	700
10MM	171781	125	500	7000	30MM	171790	2,498	50	500
12MM	171782	186	500	5000	33MM	171791	3,997	25	200
14MM	171783	289	200	3200	36MM	171792	4,185	25	350
16MM	171784	436	100	3000	39MM	171793	4,392	25	250



1. Specifications : Generally conforming to DIN 127 B, IS 3063 & BS 4464

Hardened Washer for 10.g Bolts



Size (mm)	Part No.	₹ Price/ 100 pcs	Pcs. Per Box	Pcs. Per Carton
M12	551111	582	500	4000
M16	551112	1,019	200	1600
M20	551113	1,543	100	800
M22	631368	1,860	100	800
M24	551114	2,177	100	600
M27	630476	3,653	100	400
M30	630477	4,566	100	400
M36	796066	7,444	100	400



1. Specifications : Generally conforming to 300HV minimum. For Unbrako Hardened Washer 10.9 Bolts

2. 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.

3. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

Construction

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Construction Fasteners

Arc Welding Stud

*Prices available on request.



The UNBRAKO ARC Welding Stud also known as Shear Connector is used in the construction of tall buildings, bridges and steel structures. Drawn-arc process is used for stud welding. It improves the strength of the structure.

Product Range :
Metric: M13, M16, M19, M22, M25 – Any Length

Inch: 1/2", 5/8", 3/4", 7/8", 1" – Any Length

Direct Tension Indicator



UNBRAKO Direct Tension Indicators, also known as Auto Torque Indicators, are single-use mechanical load cells designed to indicate the magnitude of preload in the assembly. It shows if the bolt is properly tensioned, very useful while tensioning High Strength Structural Bolts.

Product Range :
Metric: M16 – M36 as per BS EN 14399-9
Unbrako Feeler Gauge is available to check if the required torque is achieved.

High Strength Structural Bolt Assembly



Compared to the conventional methods of riveting or welding, UNBRAKO Pre-load bolts maintain the permanent strength of the joint due to reduced stress concentration. Hence, it does not permit loosening, making it most ideal where vibration is involved.

Product Range :
Metric: M12 to M36
Any Length

As per BS EN 15048-1/2 & 14399-3/4 or as per IS 3757

Auto Torque Check Bolt Assembly (TC Bolt)



Unbrako
Electric
Shear Wrench

UNBRAKO Auto Torque Check Bolt also known as Tension Control Bolt is an easy to install Heavy Duty Bolt used in Steel Frame Construction. It has its own built-in torque control device. The outer socket of wrench rotates the nut until the torque control groove in the spline shears off on achieving proper bolt tension.

Product Range :
Metric: M12 – M36 (any length) – As Per BS EN 14399 - 10

Unbrako Electric Shear Wrench is also Available.

Rebar Coupler

The Rebar COUPLER system is a threaded connection of two bars through a threaded sleeve that guarantees an ultimate tensile strength of the splice (joint) greater than that of the parent bar. It is suitable for joining reinforcement bars end to end.



Total Solution Bolt Assembly Tamper Proof



The Innovative 6 wedge shaped design acts to convert radial force into axial force, increasing pressure onto the contact surface of the application. Even under extreme vibration, bolt does not loosen.



IS 3757 High Strength Structural Bolts - Metric

DIA	M16			M20			M22			
	Length	International Part No.	₹ Price/ 100 pcs	Box Quantity	International Part No.	₹ Price/ 100 pcs	Box Quantity	International Part No.	₹ Price/ 100 pcs	Box Quantity
40	300001	5,495	25	300021	10,156	25				
45	300002	5,986	25	300022	10,930	25				
50	300003	6,297	25	300023	11,429	25	300041	15,501	10	
55	300004	6,503	25	300024	11,937	25	300042	15,941	10	
60	300005	6,935	25	300025	12,756	20	300043	16,594	10	
65	300006	7,315	25	300026	13,317	20	300044	18,112	10	
70	300007	7,731	25	300027	13,794	10	300045	18,974	10	
75	300008	8,274	25	300028	14,320	10	300046	19,567	10	
80	300009	9,086	25	300029	14,724	10	300047	20,256	10	
90	300010	9,528	25	300030	15,650	10	300048	22,268	10	
100	300011	10,336	25	300031	16,553	10	300049	22,774	10	
110	300012	11,162	25	300032	17,193	10	300050	24,585	10	
120	300013	12,309	15	300033	18,650	10	300051	26,211	10	
130	300014	14,133	10	300034	20,056	10	300052	27,673	10	
140	300015	14,359	10	300035	20,675	10	300053	28,939	10	
150	300016	17,025	10	300036	21,790	10	300054	30,345	10	
160	300017	18,426	10	300037	25,955	10	300055	34,433	5	
170	300018	19,567	10	300038	27,054	10	300056	35,879	5	
180	300019	20,707	10	300039	28,158	10	300057	37,319	5	
200	300020	23,356	10	300040	31,576	10	300058	40,117	5	
220				630603	42,976	10				

1. Specifications : Bolts IS 3757.
2. Threads : Bolts ISO Metric 6g as per IS 4218.
3. Material and Mechanical Properties: Bolts - Property Class 10.9S as per IS 1367.
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.
5. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.



IS 3757 High Strength Structural Bolts - Metric

DIA	M24			M27			M30			M36		
	International Part No.	₹ Price/ 100 pcs	Box Quantity	International Part No.	₹ Price/ 100 pcs	Box Quantity	International Part No.	₹ Price/ 100 pcs	Box Qty	International Part No.	₹ Price/ 100 pcs	Box Qty
55	300059	20,187	10									
60	300060	20,900	10	300076	42,559	5						
65	300061	22,637	10	300077	44,548	5						
70	300062	22,985	10	300078	44,248	5						
75	300063	25,003	10	300079	47,286	5	300092	57,115	5			
80	300064	25,487	10	300080	49,411	5	300093	59,137	5			
90	300065	28,161	5	300081	52,497	5	300094	60,771	5			
100	300066	30,247	5	300082	56,362	5	300095	65,168	5			
110	300067	30,989	5	300083	58,681	5	300096	70,939	5			
120	300068	32,204	5	300084	60,313	5	300097	72,316	5	581151	1,27,844	5
130	300069	33,601	5	300085	62,040	5	300098	75,790	5	581153	1,35,150	4
140	300070	35,044	5	300086	65,770	5	300099	80,282	5	581155	1,42,245	4
150	300071	36,627	5	300087	69,460	5	300100	84,613	5	581157	1,49,620	4
160	300072	41,621	5	300088	76,504	5	300101	95,546	4	581159	1,56,645	4
170	300073	45,110	5	300089	84,428	5	300102	1,05,035	4	581161	1,63,669	4
180	300074	47,148	5	300090	84,240	5	300103	1,04,867	4	581163	1,70,975	4
200	300075	50,654	5	300091	91,421	5	300104	1,14,084	4	581167	1,84,742	3
220	792919	61,905	5				581122	1,23,302	3	581171	1,98,790	3
240							581126	1,32,521	3	581175	2,12,841	3
260	786800	72,758	4				581130	1,41,741	3	581179	2,27,592	3
280										581183	2,41,641	3
300										581186	2,55,690	3

IS 6623 High Strength Structural Nuts

Metric

Diameter	M16	M20	M22	M24	M27	M30	M36
International Part No.	131001	131002	131003	131004	131005	131006	581348
₹ Price/100 pcs	2,685	5,438	6,349	9,112	14,740	18,657	32,172
Box Quantity	100	50	50	25	10	10	10

IS 6649 Structural Washer

Metric

Diameter	M16	M20	M22	M24	M27	M30	M36
International Part No.	132001	132002	132003	132004	132005	132006	581349
₹ Price/100 pcs	1,700	2,128	3,031	3,204	5,151	6,408	9,764
Box Quantity	200	100	100	100	100	100	10

1. Specifications : Bolts IS 3757, Nuts IS 6623, Washers IS 6649.
2. Threads : Bolts ISO Metric 6g as per IS 4218.
3. Material and Mechanical Properties : Bolts - Property Class 10.9S as per IS 1367.
Nuts: Property Class 10S as per IS 1367. Washer: Hardness: HRC 38-45 as per IS 6649
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.
5. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



High Tensile Track Shoe Bolts & Square Nuts

Suitable for BEML (KOMATSU) Earthmovers

Equivalent O.E. Part No. (For Ref. Only)	Size	Description	Model	International Part No.	₹ Price/ 100 pcs
130.32.11212	M16 x 1.5 x 57	T.S. Bolt	D50, D50A 15	330001	8,154
130.32.11220	M16 x 1.5	T.S. Sq. Nut	D50, D50A 15	330002	3,084
130.32.11212/130.32.11220	M16 x 1.5 x 57	T.S. Bolt & Sq. Nut	D50, D50A 15	550287	11,237
205.32.51210	M18 x 1.5 x 58	T.S. Bolt	PC220	330003	10,035
01803.01824	M18 x 1.5	T.S. Sq. Nut	Pc220	330004	3,634
205.32.51210/01803.01824	M18 x 1.5 x 58	T.S. Bolt & Sq. Nut	PC220	550288	13,669
150.32.11210	M19 x 1.5 x 65	T.S. Bolt	D80, D80A 12	330005	12,545
150.32.11210/150.32.21311	M19 x 1.5 x 65	T.S. Bolt & Sq. Nut	D80, D80A 12	550289	16,784
113CT51096	M19 x 1.5 x 62	T.S. Bolt	D80, D80A 12	330006	12,545
113CT51096/150.32.21311	M19 x 1.5 x 62	T.S. Bolt & Sq. Nut	D80, D80A 12	550290	16,784
150.32.21311	M19 x 1.5	T.S. Sq. Nut	D80, D80A 12	330007	4,239
207.32.11350	M20 x 1.5 x 63	T.S. Bolt	PC300	330008	14,008
-----	M20 x 1.5	T.S. Sq. Nut	PC300	550308	4,515
207.32.11350	M20 x 1.5 x 63	T.S. Bolt & Sq. Nut	PC300	550291	18,522
176.32.11210	M24 x 1.5 x 78.5	T.S. Bolt	D155	330009	22,371
178.32.11220	M24 x 1.5	T.S. Sq. Nut	D155	330010	7,378
176.32.11210/178.32.11220	M24 x 1.5 x 78.5	T.S. Bolt & Sq. Nut	D155	550292	29,749
195.32.11210	M27 x 1.5 x 82.5	T.S. Bolt	D355	330011	29,271
195.32.11221	M27 x 1.5	T.S. Sq. Nut	D355	330012	11,782
195.32.11210/195.32.11221	M27 x 1.5 x 82.5	T.S. Bolt & Sq. Nut	D355	550294	41,053

Suitable for L & T Poclair Earthmovers

Equivalent O.E. Part No. (For Ref. Only)	Size	Description	Model	International Part No.	₹ Price/ 100 pcs
W 00 330.71	5/8" UNFx2.1/4"	T.S. Bolt	90 CK	330017	8,154
K 01345.36	5/8" UNF	T.S. Sq. Nut	90 CK	330018	4,128
W 00 330.71/K 01345.36	5/8" UNFx2.1/4"	T.S. Bolt & Sq. Nut	90 CK	550296	12,282
U 02330-77	7/8" UNFx2.66"	T.S. Bolt	300 CK	330014	17,146
Z 02345-07	7/8" UNF	T.S. Sq. Nut	300 CK	330015	7,273
U 02330-77/Z 02345-07	7/8" UNFx2.66"	T.S. Bolt & Sq. Nut	300 CK	550298	24,419

1. Specifications : Forged from high grade alloy steel.
2. Mechanical Properties : Track Shoe Bolt Grade 12.9, Square Nut HRC 32-38
3. 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.
4. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



High Tensile Track Shoe Bolts & Square Nuts

Suitable for Caterpillar Earthmovers

Equivalent O.E. Part No. (For Ref. Only)	Size	Description	Model	International Part No.	₹ Price/ 100 pcs
7H 3597	5/8" UNF x 2.3/32"	T.S. Bolt	D4, D5	330016	7,736
5M 8756	5/8" UNF x 2.1/4"	T.S. Bolt	D4, D5	330017	8,154
1M 1408	5/8" UNF	T.S. Sq. Nut	D4, D5	330018	4,128
7H 3597/1M 1408	5/8" UNF x 2.3/32"	T.S. Bolt & Sq. Nut	D4, D5	550295	11,865
5M 8756/1M 1408	5/8" UNF x 2.1/4"	T.S. Bolt & Sq. Nut	D4, D5	550296	12,282
7 H3598	3/4" UNF x 2.3/8"	T.S. Bolt	D6, D7	330019	12,336
1S1860	3/4" UNF	T.S. Sq. Nut	D6, D7	330020	5,112
7 H3598/1S1860	3/4" UNF x 2.3/8"	T.S. Bolt & Sq. Nut	D6, D7	550297	17,448
7H 3599	7/8" UNF x 2.66" (2 21/32)	T.S. Bolt	D8	330014	17,146
2S2140	7/8" UNF (2 21/32)	T.S. Sq. Nut	D8	330015	7,273
7H 3599/2S2140	7/8" UNF x 2.66"	T.S. Bolt & Sq. Nut	D8	550298	24,418
9M 7445	1" UNS x 2.94" (2 15/16)	T.S. Bolt	D8	330021	24,462
1S6421	1" UNS	T.S. Sq. Nut	DS9	330022	10,025
9M 7445/1S6421	1" UNS x 2.94" (2 15/16)	T.S. Bolt & Sq. Nut	DS9	550299	34,488

Suitable for HM-TEREX & HM DEMAG Earthmovers

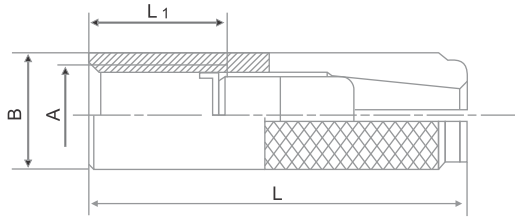
Equivalent O.E. Part No. (For Ref. Only)	Size	Description	Model	International Part No.	₹ Price/ 100 pcs
01801340	3/4" x UNF x 2.3/4"	T.S. Bolt	H31, H36, H41	630419	13,745
06400140	3/4" UNF	T.S. Sq. Nut	H36	330020	5,112
01801340/06400140	3/4" x UNF x 2.3/4"	T.S. Bolt & Sq. Nut	H31, H36, H41	816932	18,856
06327940	7/8" UNF x 3.11/32" (84.9 mm)	T.S. Bolt	H51, H55	330023	20,281
06400240	7/8" UNF	T.S. Sq. Nut	H51	330015	7,273
06327940/06400240	7/8" UNF x 3.11/32" (84.9 mm)	T.S. Bolt & Sq. Nut	H51, H55	550300	27,554

1. Specifications : Forged from high grade alloy steel.
2. Mechanical Properties : Track Shoe Bolt Grade 12.9, Square Nut HRC 32-38
3. 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.
4. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

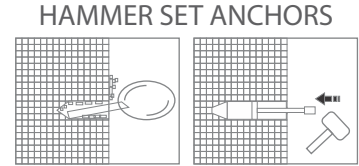
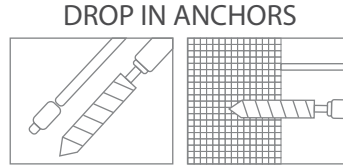
Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



Drop In Anchors



Raw Material:
Special steel developed by UNBRAKO USA



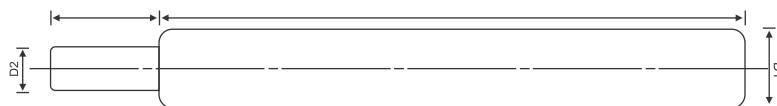
Value Are In KN

Main Technical Index	M6 x 25	M8 x 30	M10 x 40	M12 x 50	M16 x 60
Design tensile breaking strength	3.3	5.3	7.0	11.9	16.1
Design breaking shearing force	4.1	6.7	7.8	14.3	18.1
Safety Tensile breaking strength	2.4	3.8	5.0	8.5	11.5
Safety breaking shearing force	2.9	3.9	5.6	10.2	12.9

Drop In Anchors

Code	International Part No.	Size (A)	External Diameter (B)	Thread Length (L1)	Body Length (L)	Box Quantity	Carton Quantity	₹ Price/ 100 pcs
DANCH0625ZP	551654	M6	8.0	10	25	100	3600	708
DANCH0830ZP	551655	M8	10.0	13	30	100	1800	924
DANCH1040ZP	551656	M10	12.0	15	40	50	1000	1,438
DANCH1250ZP	530269	M12	16.0	20	50	50	600	3,407
DANCH1660ZP	551657	M16	20.0	25	60	25	300	5,741

ONE ANCHOR SETTING TOOL FREE WITH PACK OF 100 ANCHOR SETS



Drop In Anchors Setting Tools

Code	SIZE	D1	D2	L1	L2
ANCHT06	6	9.900	4.700	97.790	17.000
ANCHT08	10	12.700	7.950	114.300	25.400
ANCHT10	12	15.875	9.525	127.000	31.750
ANCHT12	16	19.050	12.700	139.700	38.100

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



Direct Tension Indicator BS EN 14399-9

(Auto Torque Indicator) For 8.8S Bolt Assembly
(Duly Mechanical Zinc Plated)

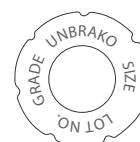
Size	International Part No.	₹ Price/100 pcs	Pcs/Box	Pcs/Carton
M16	630330	3,187	100	1200
M20	370002	5,696	100	800
M22	370003	6,895	50	400
M24	370004	9,235	50	400
M27	370005	11,693	50	300



Direct Tension Indicator BS EN 14399-9

(Auto Torque Indicator) For 10.9 S Bolt Assembly
(Duly Mechanical Zinc Plated)

Size	International Part No.	₹ Price/100 pcs	Pcs/Box	Pcs/Carton
M24	370006	9,235	50	400
M27	370007	11,693	50	300
M30	370008	17,058	25	200
M36	370009	24,501	25	150



1. Specification : Generally conforming to BS EN 14399-9

Note : Separate catalogue can be provided on request.

2. Products can be supplied with Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

Unbrako Upset Parallel Threaded Coupler

DIA	International Part No.	Bar Designation No. [mm]	Outer Dia [mm]	Length in mm	Thread size	₹ Price/ 100 pcs	Carton
12	787739	4 [13]	20	28	M14x2	8,290	400
16	787740	5 [16]	26	40	M20x2.5	13,470	200
20	787741	6 [19]	34	48	M24x3	17,961	100
25	787743	8 [25]	42	60	M30x3.5	27,632	60
28	787744	9 [29]	48	66	M33x3.5	41,447	40
32	787745	10 [32]	53	72	M36x4	50,082	28
36	787746	11 [36]	60	84	M42x4.5	80,132	23
40	787747	14 [43]	65	90	M45x4.5	1,03,274	20



1. Specifications: ASTM A615, A706, A775, IS 1786, 16172

2. Material and Mechanical Properties: as per Unbrako Spec.

3. Finish: Self/Plain

Separate Construction Catalogue available on request

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST

TWIST-OFF TYPE TENSION CONTROL STRUCTURAL BOLT

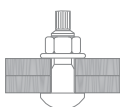
Tension control structural bolt is an easy to install heavy duty bolt used in steel frame construction. The combination of high tensile strength and ductility results in a structural bolt that can be employed in almost all steel work connections. This high strength positive tension shear bolt has its own built in torque control device.

Unbrako electric shear wrench is used for tightening the bolt. The outer socket rotates the nut until the torque control groove in the spline shears off, thereby achieving proper bolt tension. This shear area is designed to facilitate the ideal seating torque requirements for the installation of the bolt. No specialist operator expertise is required as the correct installation is automatically realized through the design of the bolt.

Installation Procedure:

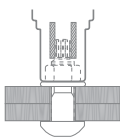
(Step 1)

- Place bolt through hole in the joining members. Attach washer & run up nut finger tight to the working members.



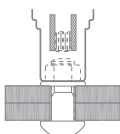
(Step 2)

- Fit the inner socket of the drive unit firmly over the bolt tip (spline).
- Engage the outer socket over the nut by pushing the shear wrench.
- Pull lever switch to on. The outer socket rotates the nut. As the tensile load increases the torque tension in the bolt also increases until the bolt reaches its designed shear strength and shears in the designated portion of the bolt.



(Step 3)

- Turn off wrench when bolt tip (Spline) shears off.



(Step 4)

- Pull the shear wrench back to remove outer socket from the nut.
- Pull the eject lever on the wrench to discharge the severed bolt tip (Spline) from the inner socket



Unbrako Electric Torque/Shear Wrench

	EXTENSION SOCKETS						
	M12	M16	M20	M22	M24	M27	M30
UNB-16E	●	●					
UNB-20E	●	●	●				
UNB-22E	●	●	●	●			
UNB-24E		●	●	●	●		
UNB-27E		●	●	●	●	●	
UNB-30E						●	●

Unbrako Electric wrenches are available with various socket extensions to match different sizes of Unbrako Tension Control Bolts, allowing easy & accurate installation.

Advantages of Tension Control Bolts

- Quick, safe and easy to Install
- Speed of Installation.
- Visual inspection.
- Substantial cost savings.
- Consistent Tension is assured in application.
- No specialist torque wrenches or gauges required.
- No specialist operator expertise required for installation.
- Single operator installation & Reduced operator fatigue.



Applications

- Stadium
- Bridges
- Buildings
- Airport / Railway Station
- Gantry Advertisement
- Rivet Replacement





Pre-Load Tension Control Structural Bolts System HRC - BS EN 14399-10

Metric

DIA	M12			M16			M20		
Length	International Part No.	₹ Price/ 100 pcs	Box Quantity	International Part No.	₹ Price/ 100 pcs	Box Quantity	International Part No.	₹ Price/ 100 pcs	Box Quantity
30	550001	3,341	50						
35	550002	3,640	50						
40	550003	3,940	50	550009	7,001	25	797881	13,883	25
45	550004	4,246	50	550010	7,537	25	797882	14,564	25
50	550005	4,546	50	550011	7,846	25	550037	14,267	25
55	550006	4,860	50	550012	8,073	25	550038	14,818	25
60	550007	5,165	50	550013	8,590	25	550039	15,659	25
65	550008	5,479	50	550014	9,077	25	550040	16,282	20
70	550231	5,784	50	550015	9,621	25	550041	16,888	10
75				550016	10,323	25	550042	17,517	10
80				550017	11,330	25	550043	18,041	10
85				550018	11,800	25	550044	19,029	10
90				550019	11,705	25	550045	19,418	10
95				550020	12,526	25	550046	20,625	10
100				550021	12,899	25	550047	20,768	10
110				550023	13,765	25	550049	21,489	10
120				550025	15,151	15	550051	23,231	10
130				550027	16,814	15	550053	24,863	10
140				550029	16,839	10	550055	25,540	10
150				550031	19,791	10	550057	26,869	10
160				550033	21,204	10	550059	31,494	10
170				550035	22,340	10	550061	32,464	10
180				550236	23,468	5	550063	33,535	10
190				550237	24,944	5	550065	35,655	10
200				550238	26,096	5	550067	36,875	10

1. Specifications : Bolts BS EN 14399-10
2. Material and Mechanical Properties: Bolts - Property Class 10.9 HRC
3. Finish: Black Oxide

NOTE:

- 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.
- Products also available in Zinc-Flake and KoteEnviroGrin® coating. Prices available on request.
- Tension Control Structural Bolt with Hex Head also available on request, prices will remain same.



***Unbrako Electric Shear Wrench**

For assembly & installation of Tension Control Structural Bolt at site Unbrako electric shear wrench can be made available for hire/sale.

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



Pre-Load Tension Control Structural Bolts System HRC - BS EN 14399-10

Metric

DIA	M22			M24			M27		
	International Part No.	₹ Price/ 100 pcs	Box Quantity	International Part No.	₹ Price/ 100 pcs	Box Quantity	International Part No.	₹ Price/ 100 pcs	Box Quantity
Length									
50	797884	20,353	10						
55				795192	27,389	10			
60	550069	20,798	10	550098	27,358	10	797885	52,600	5
65	550070	22,179	10	550099	29,527	10	797886	54,854	5
70	550071	23,561	10	550100	29,808	10	550144	54,721	5
75	550072	24,331	10	550101	32,351	10	550145	58,266	5
80	550073	25,101	10	550102	32,866	10	550146	60,531	5
85	550074	26,362	10	550103	34,746	10	550147	62,229	5
90	550075	27,621	10	550104	36,181	10	550148	64,311	5
95	550076	27,944	10	550105	37,289	10	550149	66,915	5
100	550077	28,281	10	550106	38,735	10	550150	68,600	5
110	550079	30,481	10	550108	39,608	10	550152	72,085	5
120	550081	32,395	10	550110	40,867	5	550154	74,098	5
130	550083	34,109	10	550112	42,618	5	550156	75,987	5
140	550085	35,626	10	550114	44,301	5	550158	81,220	5
150	550087	37,398	5	550116	46,145	5	550160	85,004	5
160	550089	41,250	5	550118	52,347	5	550162	93,924	5
170	550091	42,494	5	550120	56,541	5	550164	1,03,630	5
180	550093	43,687	5	550122	58,759	5	550166	1,03,466	5
190	550095	45,032	5	550124	61,230	5	550168	1,08,073	5
200	550097	46,310	5	550126	59,938	5	550170	1,08,407	5

1. Specifications : Bolts BS EN 14399-10
2. Material and Mechanical Properties: Bolts - Property Class 10.9 HRC
3. Finish: Black Oxide

NOTE:

- 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.
- Products also available in Zinc-Flake and KoteEnviroGrin® coating. Prices available on request.
- Tension Control Structural Bolt with Hex Head also available on request, prices will remain same.



***Unbrako Electric Shear Wrench**

For assembly & installation of Tension Control Structural Bolt at site
Unbrako electric shear wrench can be made available for hire/sale.

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



Pre-Load Tension Control Structural Bolts System HRC - BS EN 14399-10

DIA	M30			M36		
Length	International Part No.	₹ Price/ 100 pcs	Box Quantity	International Part No.	₹ Price/ 100 pcs	Box Quantity
60	795195	65,294	5			
70	550251	71,130	5	797889	1,22,846	4
75	797888	70,480	5	797890	1,26,214	4
80	550188	72,853	5	797891	1,29,583	4
85	550189	73,410	5	797892	1,28,923	4
90	550190	74,131	5	797893	1,33,278	4
95	550191	77,041	5	797894	1,35,484	4
100	550192	79,689	5	797895	1,39,771	4
110	550194	87,254	5	797896	1,47,488	3
120	550196	88,513	5	797897	1,55,956	3
130	550198	92,287	5	797898	1,64,531	3
140	550200	97,876	5	797899	1,73,105	3
150	550202	1,03,504	5	797900	1,81,681	3
160	550204	1,16,893	4	797901	1,90,256	3
170	550206	1,28,505	4	797902	1,98,830	3
180	550208	1,28,202	4	797903	2,07,405	3
190	550210	1,34,786	3	797904	2,15,873	3
200	550212	1,39,511	4	797905	2,24,448	3

1. Specifications : Bolts BS EN 14399-10
2. Material and Mechanical Properties: Bolts - Property Class 10.9 HRC
3. Finish: Black Oxide

NOTE:

- 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.
- Products also available in Zinc-Flake and KoteEnviroGrin® coating. Prices available on request.
- Tension Control Structural Bolt with Hex Head also available on request, prices will remain same.

Nut - BS EN 14399-10 (HRD) k-class K1

Metric

Diameter	M12	M16	M20	M22	M24	M27	M30	M36
International Part No.	798047	798048	798049	630627	798050	798051	630628	798052
₹ Price/100 pcs	1,348	2,988	5,750	6,701	10,500	14,740	18,657	34,612
Box Quantity	100	100	50	50	25	10	10	10

Washer - BS EN 14399-6

Metric

Diameter	M12	M16	M20	M22	M24	M27	M30	M36
International Part No.	625773	625774	625775	630632	625776	802087	625777	625778
₹ Price/100 pcs	850	1,605	2,260	3,216	3,184	5,264	6,289	11,444
Box Quantity	200	200	100	100	100	100	50	50

Washer - JIS B 1186

Metric

Diameter	M12	M16	M20	M22	M24	M27	M30	M36
International Part No.	819318	819319	819320	819321	819322	819323	819324	819325
₹ Price/100 pcs	1,130	2,306	3,304	6,067	6,180	8,664	12,961	18,739
Box Quantity	200	200	100	100	100	100	50	50

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST

Petrochemical

Page Contents

66 Studbolt - Metric

69 Studbolt - Inch

72 Heavy Hex Nut



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

Diameter Range	Inch : 3/8" to 4"
	Metric : M10 to M100
Length Range	Inch : upto 10 feet
	Metric : upto 3 meters



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 - Metric without nuts

DIA	M12		M16		M18		M20		M22	
	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	552001	2,065	552013	3,795						
70	552002	2,409	552014	4,427	552033	5,735				
80	552003	2,753	552015	5,059	552034	6,554	552055	7,917		
90	552004	3,097	552016	5,692	552035	7,374	552056	8,907	552078	10,979
100	552005	3,442	552017	6,324	552036	8,194	552057	9,895	552079	12,200
110	552006	3,785	552018	6,956	552037	9,012	552058	10,885	552080	13,421
120	552007	4,131	552019	7,589	552038	9,832	552059	11,875	552081	14,641
130	552008	4,474	552020	8,221	552039	10,651	552060	12,865	552082	15,860
140	552009	4,818	552021	8,854	552040	11,471	552061	13,854	552083	17,080
150	552010	5,163	552022	9,487	552041	12,290	552062	14,844	552084	18,300
160	552011	5,507	552023	10,119	552042	13,109	552063	15,834	552085	19,520
170	552012	5,850	552024	10,751	552043	13,928	552064	16,823	552086	20,741
180			552025	11,383	552044	14,748	552065	17,812	552087	21,960
190			552026	12,016	552045	15,566	552066	18,802	552088	23,180
200			552027	12,648	552046	16,387	552067	19,792	552089	24,400
210			552028	13,281	552047	17,206	552068	20,781	552090	25,620
220			552029	13,914	552048	18,025	552069	21,771	552091	26,839
230			552030	14,546	552049	18,844	552070	22,760	552092	28,059
240			552031	15,177	552050	19,663	552071	23,750	552093	29,280
250			552032	15,810	552051	20,482	552072	24,739	552094	30,500
260					552052	21,303	552073	25,729	552095	31,721
270					552053	22,121	552074	26,719	552096	32,940
280					552054	22,941	552075	27,709	552097	34,160
290							552076	28,697	552098	35,380
300							552077	29,687	552099	36,600
320									552100	39,040

1. Studbolt Specification : Generally conforming to ASTM A193 / Grade B7.
2. Note : Prices for ASTM Grade B7M, L7, L7M, L43, B16, B8, B8M. Check availability in stock at the time of order.
3. 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.
4. Products can be supplied with Yellow Zinc Cr6+, Xylan® PTFE, Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

**Note: Above prices are only for the Fully Stud Bolt without Nuts.
For Nuts please follow the prices on Page no. 71**



Stud Bolt - Metric without nuts

DIA	M24		M27		M30		M33		M36	
	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	552101	12,925								
100	552102	14,361								
110	552103	15,797	552126	20,601						
120	552104	17,232	552127	22,474	552151	27,713				
130	552105	18,669	552128	24,347	552152	30,021	552180	37,324		
140	552106	20,105	552129	26,220	552153	32,330	552181	40,195	552208	47,436
150	552107	21,540	552130	28,092	552154	34,641	552182	43,067	552209	50,824
160	552108	22,978	552131	29,965	552155	36,949	552183	45,937	552210	54,213
170	552109	24,414	552132	31,838	552156	39,258	552184	48,808	552211	57,600
180	552110	25,849	552133	33,711	552157	41,569	552185	51,680	552212	60,989
190	552111	27,285	552134	35,584	552158	43,878	552186	54,551	552213	64,377
200	552112	28,722	552135	37,456	552159	46,186	552187	57,421	552214	67,766
210	552113	30,157	552136	39,329	552160	48,497	552188	60,293	552215	71,155
220	552114	31,593	552137	41,202	552161	50,806	552189	63,164	552216	74,542
230	552115	33,030	552138	43,075	552162	53,114	552190	66,035	552217	77,930
240	552116	34,465	552139	44,948	552163	55,425	552191	68,906	552218	81,318
250	552117	35,901	552140	46,821	552164	57,734	552192	71,777	552219	84,707
260	552118	37,339	552141	48,693	552165	60,043	552193	74,648	552220	88,094
270	552119	38,775	552142	50,566	552166	62,353	552194	77,520	552221	91,483
280	552120	40,210	552143	52,439	552167	64,662	552195	80,390	552222	94,871
290	552121	41,646	552144	54,312	552168	66,971	552196	83,262	552223	98,260
300	552122	43,083	552145	56,185	552169	69,282	552197	86,132	552224	1,01,648
320	552123	45,954	552146	59,930	552170	73,899	552198	91,874	552225	1,08,425
340	552124	48,826	552147	63,676	552171	78,518	552199	97,618	552226	1,15,202
360	552125	51,698	552148	67,422	552172	83,136	552200	1,03,358	552227	1,21,978
380			552149	71,167	552173	87,755	552201	1,09,102	552228	1,28,754
400			552150	74,913	552174	92,375	552202	1,14,844	552229	1,35,531
420					552175	96,992	552203	1,20,586	552230	1,42,307
440					552176	1,01,612	552204	1,26,328	552231	1,49,084
460					552177	1,06,231	552205	1,32,071	552232	1,55,860
480					552178	1,10,848	552206	1,37,812	552233	1,62,637
500					552179	1,15,468	552207	1,43,555	552234	1,69,413

1. Studbolt Specification : Generally conforming to ASTM A193 / Grade B7.
2. Note : Prices for ASTM Grade B7M, L7, L7M, L43, B16, B8, B8M. Check availability in stock at the time of order.
3. 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.
4. Products can be supplied with Yellow Zinc Cr6+, Xylan® PTFE, Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

**Note: Above prices are only for the Fully Stud Bolt without Nuts.
For Nuts please follow the prices on Page no. 71**

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



Stud Bolt - Metric without nuts

Marking*

DIA	M39		M42		M45		M48		M52		M56	
	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	552235	61,063										
160	552236	65,134	552261	74,787								
170	552237	69,205	552262	79,461	552286	93,263						
180	552238	73,276	552263	84,135	552287	98,749	552310	1,10,966				
190	552239	77,346	552264	88,810	552288	1,04,235	552311	1,17,131	552333	1,40,640		
200	552240	81,418	552265	93,485	552289	1,09,721	552312	1,23,296	552334	1,48,042		
210	552241	85,488	552266	98,159	552290	1,15,207	552313	1,29,460	552335	1,55,444	823506	1,84,897
220	552242	89,558	552267	1,02,833	552291	1,20,694	552314	1,35,625	552336	1,62,846	823507	1,93,703
230	552243	93,630	552268	1,07,507	552292	1,26,179	552315	1,41,791	552337	1,70,248	823508	2,02,508
240	552244	97,700	552269	1,12,181	552293	1,31,666	552316	1,47,955	552338	1,77,650	823509	2,11,312
250	552245	1,01,772	552270	1,16,855	552294	1,37,151	552317	1,54,120	552339	1,85,053	823510	2,20,116
260	552246	1,05,842	552271	1,21,530	552295	1,42,638	552318	1,60,284	552340	1,92,455	823511	2,28,921
270	552247	1,09,912	552272	1,26,204	552296	1,48,123	552319	1,66,449	552341	1,99,856	823512	2,37,726
280	552248	1,13,984	552273	1,30,878	552297	1,53,610	552320	1,72,615	552342	2,07,259	823513	2,46,531
290	552249	1,18,054	552274	1,35,552	552298	1,59,096	552321	1,78,779	552343	2,14,661	823514	2,55,335
300	552250	1,22,125	552275	1,40,226	552299	1,64,582	552322	1,84,944	552344	2,22,063	823515	2,64,139
320	552251	1,30,267	552276	1,49,574	552300	1,75,554	552323	1,97,272	552345	2,36,868	823516	2,81,749
340	552252	1,38,408	552277	1,58,923	552301	1,86,525	552324	2,09,603	552346	2,51,671	823517	2,99,359
360	552253	1,46,550	552278	1,68,272	552302	1,97,498	552325	2,21,932	552347	2,66,476	823518	3,16,968
380	552254	1,54,693	552279	1,77,620	552303	2,08,470	552326	2,34,262	552348	2,81,279	823519	3,34,576
400	552255	1,62,834	552280	1,86,968	552304	2,19,442	552327	2,46,591	552349	2,96,083	823520	3,52,187
420	552256	1,70,976	552281	1,96,316	552305	2,30,414	552328	2,58,921	552350	3,10,887	823521	3,69,796
440	552257	1,79,118	552282	2,05,664	552306	2,41,386	552329	2,71,251	552351	3,25,692	823522	3,87,405
460	552258	1,87,260	552283	2,15,014	552307	2,52,358	552330	2,83,580	552352	3,40,495	823523	4,05,014
480	552259	1,95,400	552284	2,24,362	552308	2,63,331	552331	2,95,909	552353	3,55,300	823524	4,22,623
500	552260	2,03,542	552285	2,33,710	552309	2,74,304	552332	3,08,240	552354	3,70,105	823525	4,40,233

1. Studbolt Specification : Generally conforming to ASTM A193 / Grade B7.
2. Note : Prices for ASTM Grade B7M, L7, L7M, L43, B16, B8, B8M. Check availability in stock at the time of order.
3. 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.
4. Products can be supplied with Yellow Zinc Cr6+, Xylan® PTFE, Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

**Note: Above prices are only for the Fully Stud Bolt without Nuts.
For Nuts please follow the prices on Page no. 71**



Stud Bolt - Inch without nuts

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	552375	2,340								
2 3/4	552376	2,726	552388	4,329						
3	552377	3,111	552389	4,908	552404	7,160				
3 1/2	552378	3,497	552390	5,487	552405	8,076	823540	11,087		
4	552379	3,882	552391	6,065	552406	8,992	823541	12,339	823545	15,986
4 1/2	823526	4,269	552392	6,643	552407	9,908	552421	13,593	823546	17,625
4 3/4	823527	4,654	552393	7,222	552408	10,824	552422	14,846	823547	19,263
5	552382	5,039	552394	7,801	552409	11,740	552423	16,100	823548	20,902
5 1/2	823528	5,425	552395	8,378	552410	12,655	552424	17,353	552438	22,542
6	552384	5,810	552396	8,957	552411	13,571	552425	18,606	552439	24,180
6 1/2	823529	6,582	823532	10,355	552412	15,404	552426	20,487	552440	27,457
7	823530	6,967	552398	10,934	552413	16,029	552427	22,366	552441	29,097
7 1/2	823531	7,353	823533	11,559	823537	16,945	552428	23,378	552442	31,025
8			552400	12,766	552415	17,813	552429	24,584	823549	33,435
8 1/2			823534	13,391	823538	18,681	552430	26,415	823550	35,363
9			823535	13,970	552417	20,464	823542	28,246	552445	37,291
9 1/2			823536	14,596	823539	21,331	823543	29,500	552446	38,255
10							823544	30,705	823551	41,629
10 1/2									823552	43,075
11									823553	45,003
11 1/2									823554	46,449

1. Studbolt Specification : Generally conforming to ASTM A193 / Grade B7.
2. Note : Prices for ASTM Grade B7M, L7, L7M, L43, B16, B8, B8M. Check availability in stock at the time of order.
3. 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.
4. Products can be supplied with Yellow Zinc Cr6+, Xylan® PTFE, Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

**Note: Above prices are only for the Fully Stud Bolt without Nuts.
For Nuts please follow the prices on Page no. 71**



Stud Bolt - Inch without nuts

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	823555	23,225						
4 3/4	823556	25,153	823570	31,594				
5	823557	27,563	823571	34,005				
5 1/2	823558	29,491	823572	36,415	823587	55,389		
6	823559	31,419	823573	39,307	823588	59,246	823614	68,316
6 1/2	815620	35,757	552476	44,609	823589	66,958	823615	77,474
7	815621	37,685	823574	47,019	823590	70,813	823616	81,813
7 1/2	815622	39,613	552478	49,430	823591	75,152	823617	86,150
8	815623	42,988	552479	54,732	823592	82,864	823618	95,310
8 1/2	812570	45,880	815624	57,624	823593	86,721	823619	99,647
9	815627	47,808	815625	59,552	823594	90,577	823620	1,04,468
9 1/2	823560	50,219	823575	62,445	823595	94,915	823621	1,08,806
10	823561	54,075	823576	67,747	552504	1,02,627	823622	1,17,483
10 1/2	823562	56,484	823577	70,156	823596	1,06,483	823623	1,22,303
11	823563	58,412	552485	73,049	823597	1,08,894	823624	1,26,641
11 1/2	823564	60,341	823578	75,458	552507	1,11,304	823625	1,30,979
12	823565	64,679	823579	80,521	823598	1,19,016	823626	1,40,620
12 1/2	823566	66,607	823580	83,171	823599	1,22,872	823627	1,45,439
13	823567	68,777	823581	85,823	823600	1,26,728	823628	1,50,020
13 1/2	823568	73,115	823582	91,125	823601	1,34,441	823629	1,59,178
14	823569	75,283	823583	93,776	823602	1,38,297	823630	1,63,757
14 1/2			823584	96,427	823603	1,42,153	823631	1,68,336
15			823585	99,078	823604	1,46,010	823632	1,72,916
15 1/2			823586	1,04,380	823605	1,53,240	823633	1,81,592
16					823606	1,57,096	823634	1,86,172
16 1/2					823607	1,60,953	823635	1,90,750
17					823608	1,64,809	823636	1,95,330
17 1/2					823609	1,72,521	823637	2,04,489
18					823610	1,76,378	823638	2,09,067
18 1/2					823611	1,80,233	823639	2,13,647
19					823612	1,87,945	823640	2,22,806
19 1/2					823613	1,91,802	823641	2,27,384
20							823642	2,31,964
20 1/2							823643	2,36,542
21							823644	2,45,219
22							823645	2,54,378

1. Studbolt Specification : Generally conforming to ASTM A193 / Grade B7.
2. Note : Prices for ASTM Grade B7M, L7, L7M, L43, B16, B8, B8M. Check availability in stock at the time of order.
3. 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.
4. Products can be supplied with Yellow Zinc Cr6+, Xylan® PTFE, Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

Note: Above prices are only for the Fully Stud Bolt without Nuts.

For Nuts please follow the prices on Page no. 71

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



Stud Bolt - Inch without nuts

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	823646	90,883	823677	1,05,038				
7	823647	96,185	823678	1,10,822				
7 1/2	823648	1,01,488	823679	1,17,088				
8	823649	1,12,093	823680	1,29,621				
8 1/2	823650	1,17,395	823681	1,35,405	823708	1,54,817		
9	823651	1,22,697	823682	1,41,671	823709	1,61,566	823737	2,07,315
9 1/2	823652	1,27,999	552593	1,47,938	823710	1,68,797	823738	2,16,473
10	823653	1,39,086	823683	1,59,988	823711	1,82,775	823739	2,34,790
10 1/2	823654	1,44,388	823684	1,66,255	823712	1,90,005	823740	2,43,948
11	823655	1,49,690	823685	1,72,039	823713	1,96,754	823741	2,53,107
11 1/2	823656	1,54,993	823686	1,78,305	823714	2,03,984	823742	2,62,265
12	823657	1,65,597	823687	1,90,598	823715	2,18,204	823743	2,80,582
12 1/2	823658	1,70,900	823688	1,96,623	823716	2,25,193	823744	2,89,740
13	823659	1,76,202	823689	2,02,888	823717	2,32,183	823745	2,98,899
13 1/2	823660	1,86,566	823690	2,15,181	823718	2,46,162	823767	3,17,216
14	823661	1,91,627	823691	2,21,205	823719	2,53,150	823768	3,26,374
14 1/2	823662	1,96,929	552603	2,27,231	823720	2,60,140	823748	3,35,532
15	823663	2,02,231	823692	2,33,256	823721	2,67,130	823749	3,44,691
15 1/2	823664	2,12,835	823693	2,46,753	815626	2,81,590	823750	3,59,152
16	823665	2,18,138	823694	2,52,778	823722	2,88,338	823751	3,68,311
16 1/2	823666	2,23,441	823695	2,58,803	823723	2,95,087	823752	3,77,469
17	823667	2,28,984	823696	2,64,829	823724	3,02,077	552667	3,86,387
17 1/2	823668	2,38,865	823697	2,77,120	823725	3,16,055	823753	4,04,462
18	823669	2,43,203	823698	2,83,387	823726	3,23,043	823754	4,13,620
18 1/2	823670	2,49,470	823699	2,89,413	552640	3,30,034	823755	4,22,538
19	823671	2,61,038	823700	3,01,704	823727	3,44,012	823756	4,40,374
19 1/2	823672	2,66,341	823701	3,07,970	823728	3,51,001	823757	4,49,291
20	823673	2,71,643	823702	3,14,236	823729	3,57,992	823758	4,57,967
20 1/2	823674	2,76,945	823703	3,20,503	823730	3,64,980	823759	4,67,125
21	823675	2,87,549	823704	3,32,553	823731	3,78,958	823760	4,85,443
22	823676	2,98,154	823705	3,45,086	823732	3,93,420	823761	5,03,277
23			823706	3,63,403	823733	4,14,388	823762	5,23,040
24			823707	3,75,695	823734	4,28,367	823763	5,48,348
25					823735	4,49,816	823764	5,75,099
26					823736	4,63,313	823765	5,92,934
27							823766	6,20,169

1. Studbolt Specification : Generally conforming to ASTM A193 / Grade B7.
2. Note : Prices for ASTM Grade B7M, L7, L7M, L43, B16, B8, B8M. Check availability in stock at the time of order.
3. 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.
4. Products can be supplied with Yellow Zinc Cr6+, Xylan® PTFE, Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

Note: Above prices are only for the Fully Stud Bolt without Nuts.

For Nuts please follow the prices on Page no. 71

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST



Marking*

Heavy Hex Nuts (ASTM A194 GR2H)

Metric			
Size	Part No.	₹ Price/100 Pcs	Box Quantity
M12	551700	1,495	200
M16	270001	2,819	150
M18	270002	3,686	100
M20	270003	5,393	75
M22	270004	6,716	50
M24	270005	9,311	50
M27	270006	13,381	25
M30	270007	17,299	25
M33	270008	22,744	20
M36	270009	29,780	10
M39	270010	37,991	10
M42	270011	49,388	8
M45	270012	60,592	5
M48	270013	73,927	5
M52	270014	1,22,052	4
M56	270015	1,38,968	4

Inch			
Size	Part No.	₹ Price/100 Pcs	Box Quantity
1/2"	470001	1,530	200
5/8"	470002	2,767	125
3/4"	470003	4,508	75
7/8"	470004	6,922	50
1"	470005	9,899	30
1 1/8"	470006	13,794	25
1 1/4"	470007	19,103	15
1 3/8"	470008	24,784	15
1 1/2"	470009	31,847	10
1 5/8"	470010	39,396	8
1 3/4"	470011	49,609	6
1 7/8"	470012	58,615	6
2"	470013	1,19,907	5
2 1/4"	812801	1,40,053	5

1. Nut Specification : Generally conforming to ASTM A194 / Grade 2H
2. Note : Prices for ASTM Grade 2HM, 4, 7, L43, B16, B8, B8M. Check availability in stock at the time of order.
3. 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.
4. Products can be supplied with Yellow Zinc Cr6+, Xylan® PTFE, Hot Dip Galvanized and Electro Galvanized Plating. Prices available on request.

Recommended Retail Prices in Rupees per 100 Pieces Exclusive of GST

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, or work stoppages.

Disclaimer

All information contained in this Pricelist 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 Pricelist 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 ² (Kgf/mm ²)	Newtons/mm ² Min. (Kgf/mm ²)	Pounds/In ² Min. (Kgf/mm ²)	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/mm²=1421.7 Psi 2. : Values in brackets are approximate conversions

How Identify Unbrako Products

PRODUCT		Marking	PRODUCT		Marking
Socket Head Cap Screw	Metric : M5 to M24		Nylock Nut M6 to M24 Grade : 8 and 10		
	Inch : 1/4" to 1" BSW			Hardened Washer (Type A) M16 to M36	
Socket Countersunk Cap Screw M5 & M24			High Strength Structural Bolt M16 to M36		
Socket Low Head Cap Screw M5 to M20				High Strength Structural Nut M16 to M36	
Socket Head Shoulder Screw M6 to M24			High Strength Structural Washer 		
Button Head Socket Screw M5 to M12			Track Shoe Bolt and Square Nut Metric : M16 to M27 Inch : 5/8" to 1"		
Flange Button Head Socket Screw M5 to M10					
Hexagon Wrench Set	Metric : 4 A/F to 32 A/F		Direct Tension Indicator Washer M16 to M27 		
	Inch : 5/32" A/F to 3/4" A/F		Stainless Steel Socket Head Cap Screw M5 to M30 		
Durlok Bolt & Nut M6 to M20			Stainless Steel Hex Head Bolt/Screws M5 to M30 SS-304/316 		
Hex Head Bolt/Screw	Metric : M5 to M48		Stainless Steel Hex Nut M5 to M30 SS-304/316 		
	Inch : All Sizes		Stainless Steel Plain Washer 		
Hex Nut	Metric : M6 to M72, Inch : 1/4" to 1 1/2" Grade 8 - UNC		Studbolt and Nuts Metric : M12 to M56 Inch : 1/2" to 2 1/4" 		

According to stamping area on the Product either Unbrako or U130 marking will be used
 Note : "X" marking on SHCS is the internal coding for product traceability, it can be changed with any alphanumeric.
 All Products of sizes smaller than M5 or 1/4" have no head marking due to space constraint



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	METALLIC COATING ZINC FLAKE	PTFE
Type of material		All metals	Steels	All metals	All metals
Process temperature		Bath temp. 90°C max. Baking temp. 200°C max.	460°C - 550°C	Bath temp. 20°C max. Baking temp. 300°C max.	Bath temp. 30°C max. Baking temp. 300°C max.
Maximum service temperature without damage of coating		70°C max	300°C max	300°C max	300°C max
Usual thickness		3 µm to 15 µm	min. Individual - 43µm min. Average - 54µm	min. 5 µm max. Subject to required SST Life	15 µm min
Average Friction Coefficient	without lubrication	0.16 - 0.22	Seizure risks when bolt stress is >40% YS	0.12 - 0.25	0.08 - 0.16
	with lubrication	0.08 - 0.12	0.10 - 0.16	0.08 - 0.16	no additional lubrication required
Salt spray test (SST) (red corrosion)		Zinc 5 to 7µm : 48 h min Zinc chromating 5 to 7 µm : 96 h min Reinforced chromating : 200 h min	70µm : 400 h min	500 Hrs. to 1000 Hrs. Subjected to coating Thickness	1000h min
Hydrogen embrittlement		Descaling with inhibitor imperative baking for 100 Mpa steels	Descaling with inhibitor No risk process	No risk process	No risk process
Aspect		Bright	Matt or glossy	Matt aluminum	Matt Blue

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

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