

Metrics



www.neiafasteners.com
E-Mail: orders@neiafasteners.com
1-800-782-6342

8530 "K" Street
Omaha, NE 68127
Phone: (402) 592-4988
Fax: (402) 592-9271

905 East Kansas Ave.
Arkansas City, KS 67005
Phone: (620) 442-7526
Fax: (620) 442-7583



www.nfc-usa.com
E-Mail: orders@nfc-usa.com
1-800-786-4658

1817 Jasper Street
Kansas City, MO 64116
Phone: (816) 221-8885
Fax: (816) 472-5555

2335 B-104 E. Chestnut Expwy.
Springfield, MO 65802
Phone: (417) 865-6246
Fax: (417) 865-0596

Table of Contents

Categorized Listing

Metrics

CAPSCREWS

Button Head Socket (Class 10.9)	7
Flange Bolts (Class 10.9)	11
Flat Head Socket (Class 10.9)	7
Hex Head (Class 8.8)	1
Extra Fine Thread Pitch	3
Fine Thread Pitch	3
Standard Thread Pitch	1
Hex Head (Class 10.9)	4
Socket Head (Class 12.9)	6

MACHINE SCREWS

Phillips Oval Head	13
Phillips Pan Head	14
Slotted Pan Head	14

NUTS

Flange	11
Hex	9
Class 8	9
Class 10	9
Hex Crown Lock	10
Hex Dome Cap	10
Hex Jam	10
Nylon Lock	9
Class 8	9
Class 10	9
Slotted/Castellated Hex	10
Wing	10

PIPE PLUG

Steel	8
-------	---

SALES AIDS

General Information	I
Markings	II
Metric Pitch Gauge	15

SET SCREWS

Socket (Class 12.9)	8
---------------------	---

THREADED ROD

	11
--	----

WASHERS

External Tooth Lock	13
Metric Flat	12
Split Lock	12
Wavy Spring	12

Table of Contents Alphabetized Listing

A	
ACCESSORIES	15
B	
Bolts	11
Button Head Socket (Class 10.9)	7
C	
Class 10	9
Class 8	9
E	
External Tooth Lock	13
Extra Fine Thread Pitch	3
F	
Fine Thread Pitch	3
Flange	11
Flange Nuts, Flange Bolts, Threaded Rod	11
Flat Head Socket (Class 10.9)	7
H	
Heat Treated Metric Flat	12
Hex	9
Hex Crown Lock	10
Hex Dome Cap	10
Hex Head (Class 8.8)	1-3
Hex Head Cap Screws	1-5
Hex Head Class (10.9)	4-5
Hex Jam	10
M	
Machine Screws	13-14
Metric Flat	12
Metric Pitch Gauge	15
Metric Threaded Rod	11
METRICS	1-15
N	
Nuts	9-11
Nylon Lock	9
P	
Phillips Oval Head	13
Phillips Pan Head	14
Pipe Plug	8
S	
Slotted Pan Head	14
Slotted/Castellated Hex Nut	10
Socket Head Cap Screws (Class 12.9)	6
Socket Head Screws	6-8
Socket Set Screw (Class 12.9)	8
Split Lock	12
Standard Thread Pitch	1-2, 4-6
Steel Pipe Plug	8
T	
THREADED ROD	11
W	
Washers	12
Washers and Machine Screws	13
Wavy Spring	12
Wing	10
Z	
Zinc Plated	11



Metrics

Identification: Metric screw threads are identified by a letter M for the thread form profile.

Thread Pitch: In the metric system pitch is used instead of threads per inch. Pitch refers to the distance in millimeters between the crest of each thread.

Metric Conversion: To convert length to millimeters multiply inches by 25.4. (*1 inch equals 25.4 mm*)

To convert length to inches multiply millimeters by .039370.

Wrench Size: We have shown wrench size for all hex head cap screws - this is the same as "distance across the flats."

Marking: Marking for all property classes 8.8 and higher is required for each screw of nominal diameter M5 (.2") and larger. For additional ISO requirements, see next page.

Metric Basics of Most Commonly Used Sizes

Nominal Bolt Diameter	Coarse Thread Pitch	Fine Thread Pitch	Extra-Fine Thread Pitch	Distance Across Flats	Wrench Size (MM)
3 mm	.50			5.5 mm	5.5
4 mm	.70			7 mm	7
5 mm	.80			8 mm	8
6 mm	1.00			10 mm	10
7 mm	1.00			11 mm	11
8 mm	1.25	1.00		13 mm	13
10 mm	1.50	1.25	1.00	17 mm	17
12 mm	1.75	1.50	1.25	19 mm	19
14 mm	2.00	1.50		22 mm	22
16 mm	2.00	1.50		24 mm	24
18 mm	2.50			27 mm	27
20 mm	2.50			30 mm	30
22 mm	2.50			32 mm	32
24 mm	3.00			36 mm	36
30 mm	3.50			46 mm	46



Metrics

HEXAGON BOLTS AND SCREWS

Hexagon bolts and screws should be marked with the designation symbol of the property class. The marking is obligatory for all property classes, preferably on the top of the head by indenting or embossing or on the side of the head by indenting. Marking is required for hexagon bolts and screws with the nominal thread diameters 5 mm and larger.

SOCKET HEAD CAP SCREWS

Socket head cap screws should be marked with the designation symbol of the property class. The marking is obligatory for property classes equal to or higher than 8.8, preferably on the side of the head by indenting or on the top of the head by indenting or embossing. Marking is required for socket head cap screws with nominal thread diameters 5 mm and larger.

MARKING SYMBOLS

Property Class 3.6 4.6 5.6 6.8 8.8 9.8 10.9 12.9

Marking Symbol* 3.6 4.6 5.6 6.8 8.8 9.8 10.9 12.9

* The period in the marking symbol may be omitted. When low carbon martensitic steel is used for property class 10.9, the symbol shall be underlined. Trade (identification) marking of the manufacturer is mandatory on all products which are marked with property classes.

LEFT HAND THREAD BOLTS AND SCREWS

Bolts and screws with left-hand thread shall be marked with symbols shown either on the top of the head or on the point. Marking is required for bolts and screws with nominal thread diameter 5 mm and larger.

STUDS

Studs shall be marked with the designation symbol of the property class. Marking is obligatory for property classes equal to or higher than 8.8, preferably on the extreme end of the threaded portion by indenting. For studs with interference fit, the marking shall be at the nut end. Marking is required for studs with nominal thread diameter equal to or greater than 5 mm.

Tightening Torques - Electrically Zinc Plated - Friction Coefficient 0.125

Property Class	Torque	Nominal Diameter -Coarse Thread																		
		M3	M4	M5	M6	M7	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36	M39
5.6	Nm	0.56	1.28	2.5	4.3	7.1	10.5	21	36	58	88	121	171	230	295	435	590	800	1030	1340
	ft/lb	0.41	0.94	1.84	3.1	5.2	7.7	15	26	42	64	89	126	169	217	320	435	590	759	988
8.8	Nm	1.28	2.9	5.75	9.9	16.5	24	48	83	132	200	275	390	530	675	995	1350	1830	2360	3050
	ft/lb	0.94	2.14	4.25	7.3	12.1	17.7	35	61	97	147	202	287	390	497	733	995	1349	1740	2249
10.9	Nm	1.8	4.1	8.1	14	23	34	67	117	185	285	390	550	745	960	1400	1900	2580	3310	4290
	ft/lb	1.33	3.02	5.97	10.3	16.9	25	49	86.2	135	210	287	405	549	708	1032	1401	1902	2441	3163
12.9	Nm	2.15	4.95	9.7	16.5	27	40	81	140	220	340	470	660	890	1140	1680	2280	3090	3980	5150
	ft/lb	1.59	3.65	7.15	12.1	19.9	29	59	103	162	250	346	486	658	840	1239	1681	2278	2935	3798

Property Class	Torque	Nominal Diameter -Fine Thread								
		M8 x 1	M10 x 1.25	M12 x 1.25	M14 x 1.5	M16 x 1.5	M18 x 1.5	M20 x 1.5	M22 x 1.5	M24 x 2
8.8	Nm	25	49	88	140	210	305	425	570	720
	ft/lb	18	36	64	103	154	224	313	420	531
10.9	Nm	35	68	125	195	295	425	600	800	1000
	ft/lb	25	50	92	143	217	313	442	590	737
12.9	Nm	42	82	150	235	350	510	720	960	1200
	ft/lb	30	60	110	173	258	376	531	706	885

Hex Head Cap Screws

Hex Head (Class 8.8)

Standard Thread Pitch



Class 8.8 – Zinc Plated
 Equivalent to Grade 5 Strength
 Heat Treated Alloy Steel
 DIN 933 (Fully Threaded)
 DIN 931 (Partially Threaded)

Item ID	Diameter	Length	Pitch	Wrench Size	Thread
60004	4	6	0.70	7	Full
60008	4	8	0.70	7	Full
60010	4	10	0.70	7	Full
60012	4	12	0.70	7	Full
60014	4	16	0.70	7	Full
60016	4	20	0.70	7	Full
60017	4	25	0.70	7	Full
60049	5	8	0.80	8	Full
60050	5	10	0.80	8	Full
60052	5	12	0.80	8	Full
60054	5	16	0.80	8	Full
60056	5	20	0.80	8	Full
60057	5	25	0.80	8	Full
60058	5	30	0.80	8	Partial
60059	5	35	0.80	8	Partial
60060	5	40	0.80	8	Partial
60061	5	45	0.80	8	Partial
60062	5	50	0.80	8	Partial
60090	6	10	1.00	10	Full
60092	6	12	1.00	10	Full
60094	6	16	1.00	10	Full
60096	6	20	1.00	10	Full
60097	6	25	1.00	10	Full
60098	6	30	1.00	10	Full
60099	6	35	1.00	10	Partial
60100	6	40	1.00	10	Partial
60101	6	45	1.00	10	Partial
60102	6	50	1.00	10	Partial
60104	6	60	1.00	10	Partial
60106	6	70	1.00	10	Partial
60142	7	12	1.00	11	Full
60144	7	16	1.00	11	Full
60146	7	20	1.00	11	Full
60147	7	25	1.00	11	Full
60148	7	30	1.00	11	Full
60149	7	35	1.00	11	Full
60150	7	40	1.00	11	Partial

Item ID	Diameter	Length	Pitch	Wrench Size	Thread
60192	8	12	1.25	13	Full
60194	8	16	1.25	13	Full
60196	8	20	1.25	13	Full
60197	8	25	1.25	13	Full
60198	8	30	1.25	13	Full
60199	8	35	1.25	13	Partial
60200	8	40	1.25	13	Partial
60201	8	45	1.25	13	Partial
60202	8	50	1.25	13	Partial
60203	8	55	1.25	13	Partial
60204	8	60	1.25	13	Partial
60205	8	65	1.25	13	Partial
60206	8	70	1.25	13	Partial
60207	8	75	1.25	13	Partial
60208	8	80	1.25	13	Partial
60210	8	90	1.25	13	Partial
60212	8	100	1.25	13	Partial
60214	8	110	1.25	13	Partial
60216	8	120	1.25	13	Partial
60218	8	130	1.25	13	Partial
60220	8	140	1.25	13	Partial
60222	8	150	1.25	13	Partial
60224	8	160	1.25	13	Partial
60256	10	20	1.50	17	Full
60257	10	25	1.50	17	Full
60258	10	30	1.50	17	Full
60259	10	35	1.50	17	Full
60260	10	40	1.50	17	Partial
60261	10	45	1.50	17	Partial
60262	10	50	1.50	17	Partial
60263	10	55	1.50	17	Partial
60264	10	60	1.50	17	Partial
60265	10	65	1.50	17	Partial
60266	10	70	1.50	17	Partial
60267	10	75	1.50	17	Partial
60268	10	80	1.50	17	Partial
60270	10	90	1.50	17	Partial
60272	10	100	1.50	17	Partial
60274	10	110	1.50	17	Partial
60276	10	120	1.50	17	Partial
60278	10	130	1.50	17	Partial
60280	10	140	1.50	17	Partial
60282	10	150	1.50	17	Partial
60284	10	160	1.50	17	Partial
60288	10	180	1.50	17	Partial
60307	12	25	1.75	19	Full
60308	12	30	1.75	19	Full
60309	12	35	1.75	19	Full
60310	12	40	1.75	19	Full
60311	12	45	1.75	19	Partial
60312	12	50	1.75	19	Partial
60313	12	55	1.75	19	Partial

Hex Head Cap Screws

Hex Head (Class 8.8)

Standard Thread Pitch

Item ID	Diameter	Length	Pitch	Wrench Size	Thread
60314	12	60	1.75	19	Partial
60315	12	65	1.75	19	Partial
60316	12	70	1.75	19	Partial
60317	12	75	1.75	19	Partial
60318	12	80	1.75	19	Partial
60320	12	90	1.75	19	Partial
60322	12	100	1.75	19	Partial
60324	12	110	1.75	19	Partial
60326	12	120	1.75	19	Partial
60328	12	130	1.75	19	Partial
60330	12	140	1.75	19	Partial
60332	12	150	1.75	19	Partial
60334	12	160	1.75	19	Partial
60338	12	180	1.75	19	Partial
60340	12	190	1.75	19	Partial
60342	12	200	1.75	19	Partial
60346	12	220	1.75	19	Partial
60377	14	25	2.00	22	Full
60378	14	30	2.00	22	Full
60379	14	35	2.00	22	Full
60380	14	40	2.00	22	Full
60381	14	45	2.00	22	Full
60382	14	50	2.00	22	Partial
60383	14	55	2.00	22	Partial
60384	14	60	2.00	22	Partial
60385	14	65	2.00	22	Partial
60386	14	70	2.00	22	Partial
60387	14	75	2.00	22	Partial
60388	14	80	2.00	22	Partial
60390	14	90	2.00	22	Partial
60392	14	100	2.00	22	Partial
60394	14	110	2.00	22	Partial
60396	14	120	2.00	22	Partial
60398	14	130	2.00	22	Partial
60400	14	140	2.00	22	Partial
60402	14	150	2.00	22	Partial
60408	14	180	2.00	22	Partial
60448	16	30	2.00	24	Full
60449	16	35	2.00	24	Full
60450	16	40	2.00	24	Full
60451	16	45	2.00	24	Full
60452	16	50	2.00	24	Full
60453	16	55	2.00	24	Partial
60454	16	60	2.00	24	Partial
60455	16	65	2.00	24	Partial
60456	16	70	2.00	24	Partial
60457	16	75	2.00	24	Partial
60458	16	80	2.00	24	Partial
60460	16	90	2.00	24	Partial

Item ID	Diameter	Length	Pitch	Wrench Size	Thread
60462	16	100	2.00	24	Partial
60464	16	110	2.00	24	Partial
60466	16	120	2.00	24	Partial
60468	16	130	2.00	24	Partial
60470	16	140	2.00	24	Partial
60472	16	150	2.00	24	Partial
60474	16	160	2.00	24	Partial
60478	16	180	2.00	24	Partial
60482	16	200	2.00	24	Partial
60486	16	220	2.00	24	Partial
60494	16	260	2.00	24	Partial
60540	18	30	2.50	27	Full
60541	18	35	2.50	27	Full
60542	18	40	2.50	27	Full
60543	18	45	2.50	27	Full
60545	18	50	2.50	27	Full
60546	18	55	2.50	27	Full
60547	18	60	2.50	27	Partial
60548	18	65	2.50	27	Partial
60549	18	70	2.50	27	Full
60550	18	75	2.50	27	Partial
60551	18	80	2.50	27	Partial
60553	18	90	2.50	27	Partial
60555	18	100	2.50	27	Partial
60620	20	40	2.50	30	Full
60622	20	45	2.50	30	Full
60623	20	50	2.50	30	Full
60624	20	55	2.50	30	Full
60625	20	60	2.50	30	Full
60626	20	65	2.50	30	Partial
60627	20	70	2.50	30	Partial
60628	20	75	2.50	30	Partial
60629	20	80	2.50	30	Partial
60631	20	90	2.50	30	Partial
60633	20	100	2.50	30	Partial
60635	20	110	2.50	30	Partial
60637	20	120	2.50	30	Partial
60639	20	130	2.50	30	Partial
60643	20	150	2.50	30	Partial
60735	24	110	3.00	36	Partial
60743	24	150	3.00	36	Partial

Hex Head Cap Screws

Hex Head (Class 8.8)

Fine Thread Pitch

Class 8.8 Zinc Plated
DIN 961 (Fully Threaded)
DIN 960 (Partially Threaded)

Item ID	Diameter	Length	Pitch	Wrench Size	Thread
61456	16	70	1.50	24	Partial
61458	16	80	1.50	24	Partial
61462	16	100	1.50	24	Partial

Item ID	Diameter	Length	Pitch	Wrench Size	Thread
61194	8	16	1.00	13	Full
61196	8	20	1.00	13	Full
61197	8	25	1.00	13	Full
61198	8	30	1.00	13	Full
61199	8	35	1.00	13	Partial
61200	8	40	1.00	13	Partial
61202	8	50	1.00	13	Partial
61204	8	60	1.00	13	Partial
61255	10	16	1.25	17	Full
61256	10	20	1.25	17	Full
61257	10	25	1.25	17	Full
61258	10	30	1.25	17	Full
61259	10	35	1.25	17	Full
61260	10	40	1.25	17	Full
61261	10	45	1.25	17	Full
61262	10	50	1.25	17	Full
61263	10	55	1.25	17	Partial
61264	10	60	1.25	17	Partial
61266	10	70	1.25	17	Partial
61267	10	75	1.25	17	Partial
61268	10	80	1.25	17	Partial
61270	10	90	1.25	17	Partial
61272	10	100	1.25	17	Partial
61274	10	110	1.25	17	Partial
61306	12	20	1.50	19	Full
61307	12	25	1.50	19	Full
61308	12	30	1.50	19	Full
61309	12	35	1.50	19	Full
61310	12	40	1.50	19	Full
61312	12	50	1.50	19	Full
61314	12	60	1.50	19	Partial
61316	12	70	1.50	19	Partial
61317	12	75	1.50	19	Partial
61318	12	80	1.50	19	Partial
61322	12	100	1.50	19	Partial
61378	14	30	1.50	22	Full
61380	14	40	1.50	22	Full
61382	14	50	1.50	22	Full
61384	14	60	1.50	22	Partial
61386	14	70	1.50	22	Partial
61388	14	80	1.50	22	Partial
61448	16	30	1.50	24	Full
61450	16	40	1.50	24	Full
61452	16	50	1.50	24	Full
61454	16	60	1.50	24	Partial
61455	16	65	1.50	24	Partial

Extra Fine Thread Pitch

Class 8.8 Zinc Plated
DIN 961 (Fully Threaded)
DIN 960 (Partially Threaded)

Item ID	Diameter	Length	Pitch	Wrench Size	Thread
62256	10	20	1.00	17	Full
62257	10	25	1.00	17	Full
62258	10	30	1.00	17	Full
62259	10	35	1.00	17	Full
62260	10	40	1.00	17	Full
62262	10	50	1.00	17	Partial
62264	10	60	1.00	17	Partial
62266	10	70	1.00	17	Partial
62268	10	80	1.00	17	Partial
62307	12	25	1.25	19	Full
62308	12	30	1.25	19	Full
62309	12	35	1.25	19	Full
62310	12	40	1.25	19	Full
62311	12	45	1.25	19	Full
62312	12	50	1.25	19	Full
62314	12	60	1.25	19	Partial
62316	12	70	1.25	19	Partial
62318	12	80	1.25	19	Partial
62351	18	45	1.50	27	Full
62370	18	90	1.50	27	Partial
62372	18	100	1.50	27	Partial
62374	18	120	1.50	27	Partial



Hex Head Cap Screws

Hex Head Class (10.9)

Standard Thread Pitch



Class 10.9 – Zinc Plated
Equivalent to Grade 8 Strength
Heat Treated Alloy Steel
DIN 933 (Fully Threaded)
DIN 931 (Partially Threaded)

Item ID	Diameter	Length	Pitch	Wrench Size	Thread
63167	6	10	1.00	10	Full
63168	6	12	1.00	10	Full
63169	6	16	1.00	10	Full
63170	6	20	1.00	10	Full
63171	6	25	1.00	10	Full
63172	6	30	1.00	10	Partial
63173	6	35	1.00	10	Partial
63174	6	40	1.00	10	Partial
63175	6	45	1.00	10	Partial
63176	6	50	1.00	10	Partial
63177	6	55	1.00	10	Partial
63178	6	60	1.00	10	Partial
63179	6	65	1.00	10	Partial
63180	6	70	1.00	10	Partial
63194	8	12	1.25	13	Full
63195	8	16	1.25	13	Full
63196	8	20	1.25	13	Full
63197	8	25	1.25	13	Full
63198	8	30	1.25	13	Full
63199	8	35	1.25	13	Partial
63200	8	40	1.25	13	Partial
63201	8	45	1.25	17	Partial
63202	8	50	1.25	13	Partial
63203	8	55	1.25	13	Partial
63204	8	60	1.25	13	Partial
63205	8	65	1.25	13	Partial
63206	8	70	1.25	13	Partial
63207	8	75	1.25	13	Partial
63208	8	80	1.25	13	Partial
63210	8	90	1.25	13	Partial
63212	8	100	1.25	13	Partial
63214	8	110	1.25	13	Partial
63216	8	120	1.25	13	Partial
63218	8	130	1.25	13	Partial
63220	8	140	1.25	13	Partial
63222	8	150	1.25	13	Partial
63255	10	16	1.50	17	Full

Item ID	Diameter	Length	Pitch	Wrench Size	Thread
63256	10	20	1.50	17	Full
63257	10	25	1.50	17	Full
63258	10	30	1.50	17	Full
63259	10	35	1.50	17	Full
63260	10	40	1.50	17	Partial
63261	10	45	1.50	17	Partial
63262	10	50	1.50	17	Partial
63263	10	55	1.50	17	Partial
63264	10	60	1.50	17	Partial
63265	10	65	1.50	17	Partial
63266	10	70	1.50	17	Partial
63267	10	75	1.50	17	Partial
63268	10	80	1.50	17	Partial
63270	10	90	1.50	17	Partial
63272	10	100	1.50	17	Partial
63274	10	110	1.50	17	Partial
63276	10	120	1.50	17	Partial
63278	10	130	1.50	17	Partial
63280	10	140	1.50	17	Partial
63282	10	150	1.50	17	Partial
63284	10	160	1.50	17	Partial
63306	12	20	1.75	19	Full
63307	12	25	1.75	19	Full
63308	12	30	1.75	19	Full
63309	12	35	1.75	19	Full
63310	12	40	1.75	19	Full
63311	12	45	1.75	19	Partial
63312	12	50	1.75	19	Partial
63313	12	55	1.75	19	Partial
63314	12	60	1.75	19	Partial
63315	12	65	1.75	19	Partial
63316	12	70	1.75	19	Partial
63317	12	75	1.75	19	Partial
63318	12	80	1.75	19	Partial
63320	12	90	1.75	19	Partial
63322	12	100	1.75	19	Partial
63324	12	110	1.75	19	Partial
63326	12	120	1.75	19	Partial
63328	12	130	1.75	19	Partial
63330	12	140	1.75	19	Partial
63332	12	150	1.75	19	Partial
63334	12	160	1.75	19	Partial
63338	12	180	1.75	19	Partial
63342	12	200	1.75	19	Partial
63403	14	25	2.00	22	Full
63404	14	30	2.00	22	Full
63405	14	35	2.00	22	Full
63406	14	40	2.00	22	Full
63408	14	50	2.00	22	Full
63410	14	60	2.00	22	Partial
63412	14	70	2.00	22	Partial
63414	14	80	2.00	22	Partial

Hex Head Cap Screws

Hex Head Class (10.9)

Standard Thread Pitch

Item ID	Diameter	Length	Pitch	Wrench Size	Thread
63416	14	90	2.00	22	Partial
63418	14	100	2.00	22	Partial
63419	14	110	2.00	22	Partial
63420	14	120	2.00	22	Partial
63421	14	130	2.00	22	Partial
63422	14	140	2.00	22	Partial
63423	14	150	2.00	22	Partial
63424	14	160	2.00	22	Partial
63426	14	180	2.00	22	Partial
63428	14	200	2.00	22	Partial
63448	16	30	2.00	24	Full
63450	16	40	2.00	24	Full
63451	16	45	2.00	24	Full
63452	16	50	2.00	24	Full
63454	16	60	2.00	24	Partial
63456	16	70	2.00	24	Partial
63458	16	80	2.00	24	Partial
63462	16	100	2.00	24	Partial
63464	16	110	2.00	24	Partial
63466	16	120	2.00	24	Partial
63470	16	140	2.00	24	Partial
63472	16	150	2.00	24	Partial
63474	16	160	2.00	24	Partial
63478	16	180	2.00	24	Partial
63482	16	200	2.00	24	Partial
63494	16	260	2.00	24	Partial
63626	20	60	2.50	30	Full
63628	20	70	2.50	30	Partial
63629	20	75	2.50	30	Partial
63630	20	80	2.50	30	Partial
63632	20	90	2.50	30	Partial
63634	20	100	2.50	30	Partial
63636	20	110	2.50	30	Partial
63638	20	120	2.50	30	Partial
63640	20	130	2.50	30	Partial
63642	20	140	2.50	30	Partial
63644	20	150	2.50	30	Partial
63646	20	160	2.50	30	Partial
63648	20	180	2.50	30	Partial

Socket Head Screws

Socket Head Cap Screws (Class 12.9)

Standard Thread Pitch



Class 12.9 – Black Oxide Finish
Exceeds Grade 8 Strength
176,900 PSI Minimum Tensile Strength
DIN 912

Item ID	Diameter	Length	Pitch	Key Size
64008	4	5	0.70	3
64011	4	10	0.70	3
64012	4	12	0.70	3
64014	4	16	0.70	3
64016	4	20	0.70	3
64017	4	25	0.70	3
64018	4	30	0.70	3
64050	5	8	0.80	4
64052	5	12	0.80	4
64054	5	16	0.80	4
64056	5	20	0.80	4
64057	5	25	0.80	4
64058	5	30	0.80	4
64060	5	40	0.80	4
64090	6	10	1.00	5
64092	6	12	1.00	5
64094	6	16	1.00	5
64096	6	20	1.00	5
64097	6	25	1.00	5
64098	6	30	1.00	5
64099	6	35	1.00	5
64100	6	40	1.00	5
64101	6	45	1.00	5
64102	6	50	1.00	5
64192	8	12	1.25	6
64194	8	16	1.25	6
64196	8	20	1.25	6
64197	8	25	1.25	6
64198	8	30	1.25	6
64199	8	35	1.25	6
64200	8	40	1.25	6
64201	8	45	1.25	6
64202	8	50	1.25	6
64204	8	60	1.25	6
64206	8	70	1.25	6
64208	8	80	1.25	6
64256	10	20	1.50	8
64257	10	25	1.50	8
64258	10	30	1.50	8
64259	10	35	1.50	8
64260	10	40	1.50	8
64261	10	45	1.50	8
64262	10	50	1.50	8

Item ID	Diameter	Length	Pitch	Key Size
64264	10	60	1.50	8
64266	10	70	1.50	8
64268	10	80	1.50	8
64307	12	25	1.75	10
64308	12	30	1.75	10
64309	12	35	1.75	10
64310	12	40	1.75	10
64312	12	50	1.75	10
64314	12	60	1.75	10
64316	12	70	1.75	10
64318	12	80	1.75	10
64320	12	90	1.75	10
64322	12	100	1.75	10
64448	16	30	2.00	14
64449	16	35	2.00	14
64450	16	40	2.00	14
64452	16	50	2.00	14
64454	16	60	2.00	14
64456	16	70	2.00	14
64458	16	80	2.00	14
64462	16	100	2.00	14
64625	20	60	2.50	17
64627	20	70	2.50	17
64629	20	80	2.50	17
64633	20	100	2.50	17

Socket Head Screws

Flat Head Socket (Class 10.9)



Class 10.9 – Heat Treated Steel
Black Finish
Equivalent to Grade 8 Strength
DIN 7991

Button Head Socket (Class 10.9)



Class 10.9 – Heat Treated Steel
Black Finish
Equivalent to Grade 8 Strength
ISO 7380

Item ID	Diameter	Length	Pitch	Key Size
64990	3	8	0.50	2
64991	3	10	0.50	2
64992	3	12	0.50	2
64993	3	16	0.50	2
65008	4	6	0.70	2.5
65009	4	8	0.70	2.5
65010	4	10	0.70	2.5
65012	4	12	0.70	2.5
65014	4	16	0.70	2.5
65016	4	20	0.70	2.5
65017	4	25	0.70	2.5
65049	5	8	.80	3
65050	5	10	.80	3
65052	5	12	.80	3
65054	5	16	.80	3
65056	5	20	.80	3
65057	5	25	.80	3
65058	5	30	.80	3
65059	5	35	.80	3
65088	6	8	1.00	4
65090	6	10	1.00	4
65092	6	12	1.00	4
65094	6	16	1.00	4
65096	6	20	1.00	4
65097	6	25	1.00	4
65098	6	30	1.00	4
65100	6	40	1.00	4
65194	8	12	1.25	5
65195	8	16	1.25	5
65196	8	20	1.25	5
65197	8	25	1.25	5
65198	8	30	1.25	5
65200	8	40	1.25	5
65204	8	60	1.25	5
65256	10	20	1.50	6
65257	10	25	1.50	6
65258	10	30	1.50	6
65259	10	35	1.50	6
65260	10	40	1.50	6
65306	12	20	1.75	8
65314	12	60	1.75	8

Item ID	Diameter	Length	Pitch	Key Size
66604	3	6	0.50	2
66605	3	8	0.50	2
66606	3	10	0.50	2
66607	3	12	0.50	2
66620	4	6	0.75	2.5
66621	4	8	0.75	2.5
66623	4	12	0.75	2.5
66625	4	16	0.75	2.5
66642	5	10	0.80	3
66643	5	12	0.80	3
66645	5	16	0.80	3
66646	5	20	0.80	3
66647	5	25	0.80	3
66648	5	30	0.80	3
66659	6	12	1.00	4
66661	6	16	1.00	4
66662	6	20	1.00	4
66663	6	25	1.00	4
66664	6	30	1.00	4
66678	8	12	1.25	5
66680	8	16	1.25	5
66681	8	20	1.25	5
66682	8	25	1.25	5
66683	8	30	1.25	5

Socket Head Screws

Socket Set Screw (Class 12.9)



Class 45H – Black Oxide Finish
Cup Point
DIN 916

Steel Pipe Plug



DIN 906

Item ID	Diameter	Length	Pitch	Key Size
69018	18	10	1.50	8

Item ID	Diameter	Length	Pitch	Key Size
65621	3	3	0.50	1.5
65622	3	4	0.50	1.5
65623	3	5	0.50	1.5
65624	3	6	0.50	1.5
65634	4	4	0.70	2
65635	4	5	0.70	2
65636	4	6	0.70	2
65637	4	8	0.70	2
65638	4	10	0.70	2
65639	4	12	0.70	2
65646	5	6	0.80	2.5
65648	5	8	0.80	2.5
65650	5	10	0.80	2.5
65652	5	12	0.80	2.5
65656	5	20	0.80	2.5
65686	6	6	1.00	3
65688	6	8	1.00	3
65690	6	10	1.00	3
65692	6	12	1.00	3
65694	6	16	1.00	3
65696	6	20	1.00	3
65698	6	25	1.00	3
65788	8	8	1.25	4
65790	8	10	1.25	4
65792	8	12	1.25	4
65794	8	16	1.25	4
65796	8	20	1.25	4
65798	8	25	1.25	4
65800	8	30	1.25	4
65850	10	10	1.50	5
65852	10	12	1.50	5
65854	10	16	1.50	5
65856	10	20	1.50	5
65857	10	25	1.50	5
65950	12	12	1.75	6
65952	12	16	1.75	6
65954	12	20	1.75	6
65956	12	25	1.75	6

Nuts

Hex

Class 8



Zinc Plated
Equivalent to Grade 5 Strength
DIN 934

Item ID	Diameter	Thread Pitch	Thread Type
66003	3	0.50	Standard
66004	4	0.70	Standard
66007	5	0.80	Standard
66010	6	1.00	Standard
66013	7	1.00	Standard
66016	8	1.25	Standard
66017	8	1.00	Fine
66022	10	1.50	Standard
66023	10	1.25	Fine
66024	10	1.00	Extra Fine
66028	12	1.75	Standard
66029	12	1.50	Fine
66030	12	1.25	Extra Fine
66031	14	2.00	Standard
66032	14	1.50	Fine
66034	16	2.00	Standard
66035	16	1.50	Fine
66037	18	2.50	Standard
66039	18	1.50	Extra Fine
66041	20	2.50	Standard
66042	20	1.50	Extra Fine
66044	22	2.50	Standard
66046	22	1.50	Extra Fine
66048	24	3.00	Standard
66050	24	1.50	Extra Fine
66052	30	3.50	Standard

Class 10

Item ID	Diameter	Thread Pitch	Thread Type
66056	6	1.00	Standard
66058	8	1.25	Standard
66060	10	1.50	Standard
66063	12	1.75	Standard
66066	14	2.00	Standard
66068	16	2.00	Standard
66070	18	2.50	Standard
66072	20	2.50	Standard

Nylon Lock

Class 8



Zinc Plated
DIN 985
Reusable
Vibration and Shock Proof

Item ID	Diameter	Thread Pitch	Thread Type
66204	4	0.70	Standard
66207	5	0.80	Standard
66210	6	1.00	Standard
66213	7	1.00	Standard
66216	8	1.25	Standard
66217	8	1.00	Fine
66222	10	1.50	Standard
66223	10	1.25	Fine
66224	10	1.00	Extra Fine
66228	12	1.75	Standard
66229	12	1.50	Fine
66230	12	1.25	Extra Fine
66231	14	2.00	Standard
66232	14	1.50	Fine
66234	16	2.00	Standard
66235	16	1.50	Fine
66237	18	2.50	Standard
66241	20	2.50	Standard

Class 10

Item ID	Diameter	Thread Pitch	Thread Type
66250	6	1.00	Standard
66252	8	1.25	Standard
66253	8	1.00	Fine
66254	10	1.50	Standard
66255	10	1.25	Fine
66257	12	1.75	Standard
66258	12	1.50	Fine
66263	14	2.00	Standard
66264	14	1.50	Fine
66265	16	2.00	Standard
66267	18	2.50	Standard
66268	20	2.50	Standard

Nuts

Hex Crown Lock



Zinc Plated
Class 10 Strength
DIN 980V

Item ID	Diameter	Thread Pitch	Thread Type
66276	6	1.00	Standard
66280	8	1.25	Standard
66282	10	1.50	Standard
66283	10	1.25	Fine
66285	12	1.75	Standard
66286	12	1.50	Fine
66288	14	2.00	Standard
66289	14	1.50	Fine
66290	16	2.00	Standard
66292	18	2.50	Standard
66294	20	2.50	Standard
66296	22	2.50	Standard
66298	24	3.00	Standard

Hex Dome Cap



Zinc Plated
Class 6 Strength
DIN 1587

Item ID	Diameter	Thread Pitch	Thread Type
66410	6	1.00	Standard

Hex Jam



Zinc Plated
Class 4 Strength
DIN 439A = Non-Chamfered up to M10
DIN 439B = Chamfered M12 & up

Item ID	Diameter	Thread Pitch	Thread Type
66310	6	1.00	Standard
66316	8	1.25	Standard
66322	10	1.50	Standard
66328	12	1.75	Standard

Wing



Zinc Plated

Item ID	Diameter	Thread Pitch	Thread Type
66420	6	1	Standard

Slotted/Castellated Hex Nut



Zinc Plated
DIN 935
Slotted up to 10mm
Castellated 12mm-16mm

Item ID	Diameter	Thread Pitch
66022SL	10	1.50
66023SL	10	1.25
66028SL	12	1.75
66029SL	12	1.50
66031SL	14	2.00
66032SL	14	1.50
66034SL	16	2.00

Flange Nuts, Flange Bolts, Threaded Rod

Flange

Nuts



Class 10
DIN 6923
Yellow Zinc
*Serrated

Item ID	Size	Thread Pitch	Hex Size
65992*	6	1.00	10
65993	8	1.25	13
65994	10	1.50	15
65995	12	1.75	18
65996	14	2.00	21
65998	16	2.00	24

Metric Threaded Rod

Zinc Plated



Class 4.6
DIN 975
1 Meter Length

Item ID	Diameter	Thread
93874	4	0.70
93989	5	0.80
93990	6	1.00
93991	8	1.25
93992	10	1.50
93875	12	1.75
93877	16	2.00

Bolts



Class 10.9
DIN 6921 or JIS B-1189
* Small Head

Item ID	Diameter	Length	Pitch	Wrench Size	Finish
65901	6	10	1.00	10	Zinc
65903	6	12	1.00	10	Zinc
65902	6	16	1.00	10	Zinc
65900	6	20	1.00	10	Zinc
65904	6	30	1.00	10	Zinc
65912	8	20	1.25	12*	Zinc
65915	8	25	1.25	12*	Zinc
65914	8	30	1.25	12*	Zinc
65916	8	35	1.25	12*	Zinc
65917	8	40	1.25	12*	Zinc
65931	10	30	1.50	15	Yellow Zinc
65932	10	35	1.50	15	Yellow Zinc
65933	10	40	1.50	15	Plain
65935	10	50	1.50	15	Plain
65925	12	30	1.75	16	Zinc
65927	12	40	1.75	16	Yellow Zinc

Washers

Metric Flat



Zinc Plated
DIN 125A

Item ID	Size	Inside Diameter	Outside Diameter	Thickness
67004	4	4.3	9	0.80
67005	5	5.3	10	1.00
67006	6	6.4	12	1.60
67007	7	7.4	14	1.60
67008	8	8.4	16	1.60
67010	10	10.5	20	2.00
67012	12	13.0	24	2.50
67014	14	15.0	28	2.50
67016	16	17.0	30	3.00
67018	18	19.0	34	3.00
67020	20	21.0	37	3.00
67022	22	23.0	39	3.00
67024	24	25.0	44	4.00

Heat Treated Metric Flat



Zinc Plated
DIN 125A

Item ID	Size	Inside Diameter	Outside Diameter	Thickness
67106	6	6.4	12	1.60
67108	8	8.4	16	1.60
67110	10	10.5	20	2.00
67112	12	13.0	24	2.50
67114	14	15.0	28	2.50
67116	16	17.0	30	3.00
67118	18	19.0	34	3.00
67120	20	21.0	37	3.00
67122	22	23.0	39	3.00
67124	24	25.0	44	4.00

Split Lock



Zinc Plated
DIN 127B

Item ID	Size	Inside Diameter	Outside Diameter	Thickness
67904	4	4.1	7.6	.90
67905	5	5.1	9.2	1.20
67906	6	6.1	11.8	1.60
67907	7	7.1	12.8	1.60
67908	8	8.1	14.8	2.00
67910	10	10.2	18.1	2.20
67912	12	12.2	21.1	2.50
67914	14	14.2	24.1	3.00
67916	16	16.2	27.4	3.50
67918	18	18.2	29.4	3.50
67920	20	20.2	33.6	4.00
67922	22	22.5	35.9	4.00
67924	24	24.5	40.0	5.00

Wavy Spring



Zinc Plated
DIN 137B
Material: Spring Steel

Item ID	Size	Inside Diameter	Outside Diameter	Thickness
67304	4	4.3	8	0.50
67305	5	5.3	10	0.50
67306	6	6.4	11	0.50
67307	7	7.4	12	.50
67308	8	8.4	15	.50
67310	10	10.5	18	.80
67312	12	13.0	24	1.20
67314	14	15.0	28	1.60
67316	16	17.0	30	1.60
67320	20	21.0	36	1.60
67324	24	25.0	44	1.80

Washers and Machine Screws

External Tooth Lock



Zinc Plated
DIN 6797A

Material: Spring Steel

Item ID	Size	Inside Diameter	Outside Diameter	Thickness
67504	4	4.3	8	0.50
67505	5	5.3	10	0.60
67506	6	6.4	11	0.70
67508	8	8.4	15	0.80
67510	10	10.5	18	0.90
67512	12	13	20.5	1.00

Phillips Oval Head



Class 4.8
Zinc Plated
DIN 966

Standard Thread Pitch

Item ID	Diameter	Length
68010	4	10
68012	4	12
68014	4	16
68016	4	20
68017	4	25
68018	4	30
68050	5	10
68052	5	12
68054	5	16
68056	5	20
68057	5	25
68058	5	30
68090	6	10
68092	6	12
68094	6	16
68096	6	20
68097	6	25
68098	6	30
68099	6	35
68100	6	40
68194	8	16
68196	8	20
68197	8	25

Machine Screws

Phillips Pan Head



Class 4.8
Zinc Plated
DIN 7985
Standard Thread Pitch

Item ID	Diameter	Length
68408	4	8
68410	4	10
68412	4	12
68414	4	16
68416	4	20
68417	4	25
68418	4	30
68450	5	10
68452	5	12
68454	5	16
68456	5	20
68457	5	25
68458	5	30
68490	6	10
68492	6	12
68494	6	16
68496	6	20
68497	6	25
68498	6	30
68499	6	35
68500	6	40
68592	8	12
68594	8	16
68596	8	20
68597	8	25
68598	8	30
68599	8	35
68600	8	40

Slotted Pan Head



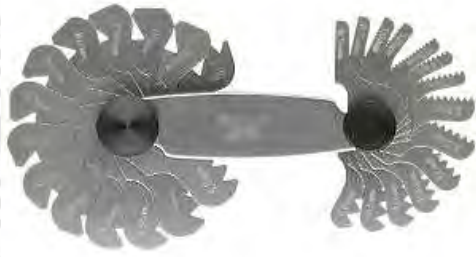
Class 4.8
Zinc Plated
DIN 85
Standard Thread Pitch

Item ID	Diameter	Length
68706	4	6
68708	4	8
68710	4	10
68712	4	12
68714	4	16
68716	4	20
68717	4	25
68718	4	30
68750	5	10
68752	5	12
68754	5	16
68756	5	20
68757	5	25
68758	5	30
68790	6	10
68792	6	12
68794	6	16
68796	6	20
68798	6	25
68799	6	30
68856	8	20
68857	8	25
68957	10	25



ACCESSORIES

Metric Pitch Gauge



24 Blades

Pitch: 0.25 through 6.00 mm

Item ID
00263