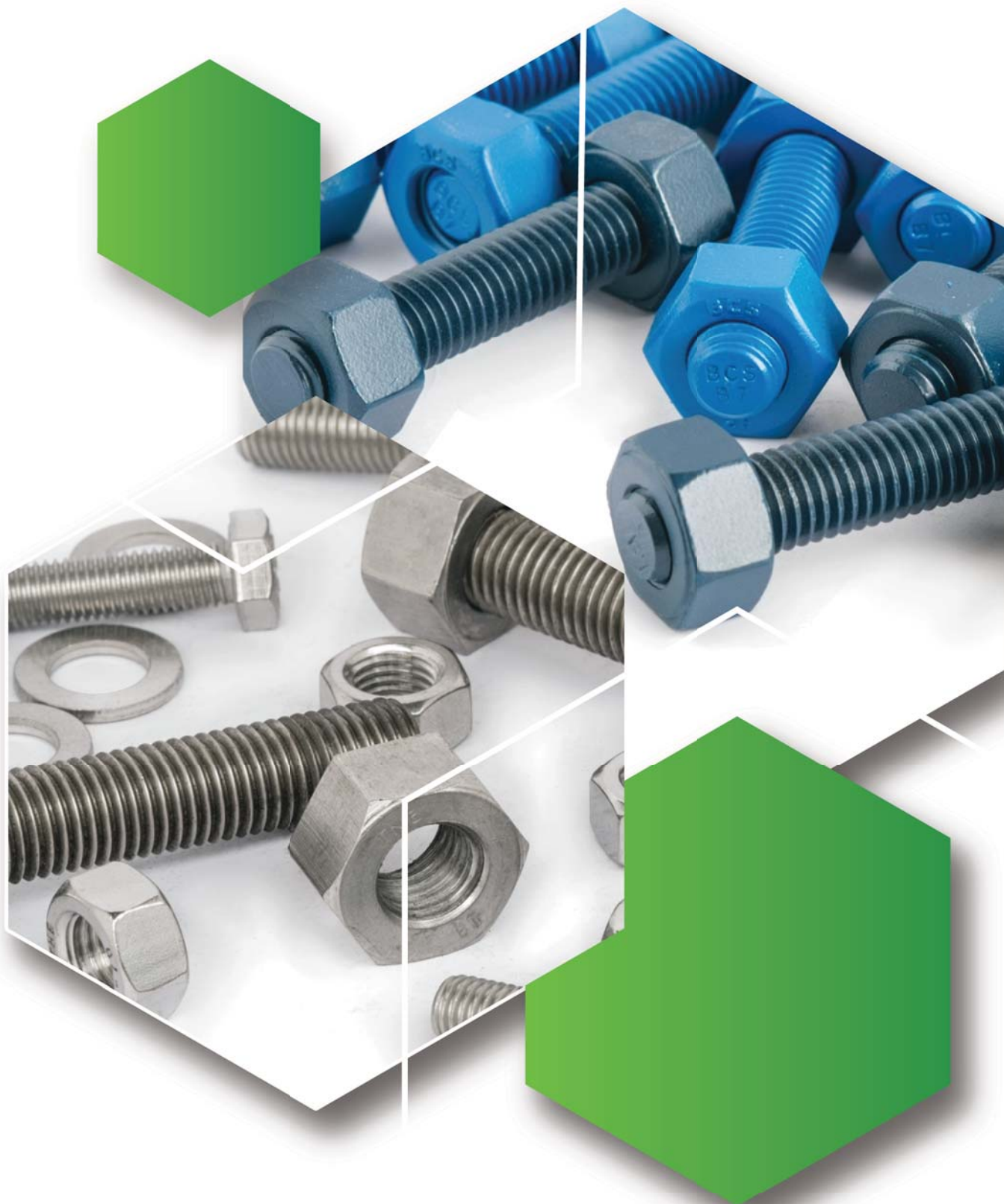




FASTENERS



RAYONG TRADING & SERVICE CO.,LTD.



RAYONG TRADING & SERVICE CO.,LTD.

“ เรามุ่งมั่นนำเสนอสินค้าได้มาตรฐาน และบริการด้วยคุณภาพ เพื่อสนองต่อความพึงพอใจสูงสุดของลูกค้า ”



ก่อตั้งเมื่อวันที่ 19 พฤษภาคม 2552 ดำเนินธุรกิจนำเข้าและจัดจำหน่ายอุปกรณ์ระบบท่อ อาทิเช่น ท่อ หน้าแปลน ข้อต่อ วาล์ว น๊อต สกรู ปะเก็น และผลิตภัณฑ์สำหรับอุดรอยรั่วท่อ ที่ใช้ในงานอุตสาหกรรมปิโตรเคมี อุตสาหกรรมน้ำมันและก๊าซ โรงไฟฟ้า โรงงานผลิตน้ำตาล อุตสาหกรรมอาหาร อุตสาหกรรมกระดาษ และอื่นๆ อีกทั้งเรารับผลิตน๊อต สกรู ที่เหมาะสำหรับการใช้งาน เฉพาะตามแบบ รวมไปถึงงานชุบ Electrogalvanized, Hot Dip Galvanized และเคลือบเทฟลอน นอกจากนี้ ยังให้บริการจัดหาสินค้าเกรดพิเศษจากทั้งในและต่างประเทศอีกด้วย

Has established in May 2009 we are importer and distributor of piping materials such as pipe, flange, fitting, valve, bolt, nut, screw, gasket and Rapp-it for using in various industries including petrochemical, oil & gas, power plant, sugar plant, food, paper & pulp and others. We also produce screw and bolts which suitable for specific applications including Electrogalvanized, Hot Dip Galvanized and Teflon coated. In addition, we also provide special grade both domestically and internationally

STUD BOLT

Materials



Bolt A193

Alloy Steel : B7, B7M, B16

Stainless Steel : B8, B8M

High Temperature

Bolt A320

Alloy Steel : L7, L7M

Low Temperature

Nut A194

Alloy Steel : 2H, 2HM, GR.4, GR.7, GR.7M

Stainless Steel : GR.8, GR.8M

High Pressure and High Temperature

Coating



PTFE (Blue)



PTFE (Green)



Electrogalvanized



Hot Dip Galvanized

Mechanical Properties

ASTM	Grade	Size	Tensile Strength (Min)		Yield Strength (Max)		Elongation (Min) %	Hardness	
			Mpa	ksi	Mpa	ksi		Brinell HB	Rockwell HR
A193 (Bolts)	B5	All Size	690	100	550	80	16	-	-
	B6	All Size	760	110	585	85	15	-	-
	B7	≤ 2 1/2"	860	125	725	105	16	321 max	35 C max
		2 3/4" to 4"	790	115	655	95	16	302 max	33 C max
		> 4"	690	100	515	75	18	277 max	29 C max
	B8 Cl.1	All Size	515	75	205	30	30	223 max	96 B max
	B16	≤ 2 1/2"	860	125	725	105	18	321 max	35 C max
		2 3/4" to 4"	760	110	655	95	17	302 max	33 C max
		> 4"	690	100	585	85	16	277 max	29 C max
A194 (Nuts)	2H	≤ 1 1/2"	-	-	-	-	-	248-352	24-38 C
		> 1 1/2"	-	-	-	-	-	212-352	38 C max
	3	All Size	-	-	-	-	-	248-352	24-38 C
	4	All Size	-	-	-	-	-	248-352	24-38 C
	6	All Size	-	-	-	-	-	228-271	20-28 C
	7	All Size	-	-	-	-	-	248-352	24-38 C
	8	All Size	-	-	-	-	-	126-300	60-105 B
A320 (Bolts&Nuts)	L7	All Size	860	125	725	105	16	-	-
	B8 Cl.1	All Size	515	75	205	30	30	223 max	96 B max

Chemical Properties

ASTM	Grade	Chemical Composition , %							
		C	Mn	P	S	Si	Cr	Mo	Other
				max.	max.				
A193 (Bolts)	B5	0.10 min	1.0 max	0.04	0.03	1.0 max	4.0-6.0	0.40-0.65	
	B6	0.15 max	1.0 max	0.04	0.03	1.0 max	11.5-13.5	-	
	B7	0.37-0.49	0.65-1.10	0.035	0.04	0.15-0.35	0.75-1.20	0.15-0.25	
	B8 Cl.1	0.08 max	2.0 max	0.045	0.03	1.0 max	18.0-20.0	-	Ni : 8-10.5
	B16	0.36-0.47	0.45-0.70	0.035	0.04	0.15-0.35	0.80-1.15	0.50-0.65	V & Al*
A194 (Nuts)	2H	0.04 min	1.0 max	0.04	0.05	0.04 max	-	-	
	3	0.10 min	1.0 max	0.04	0.03	1.0 max	4.0-6.0	0.40-0.65	
	4	0.4-0.5	0.7-0.9	0.035	0.04	0.15-0.35	-	0.20-0.30	
	6	0.15 max	1.0 max	0.04	0.03	1.0 max	11.5-13.5	-	
	7	0.37-0.49	0.65-1.10	0.04	0.04	0.15-0.35	0.75-1.20	0.15-0.25	
	8	0.08 max	2.0 max	0.045	0.03	1.0 max	18.0-20.0	-	Ni : 8-10.5
A320 (Bolts&Nuts)	L7	0.38-0.48	0.75-1.0	0.035	0.04	0.15-0.35	0.8-1.1	0.15-0.25	
	B8 Cl.1	0.08 max	2.0 max	0.045	0.03	1.0 max	18.0-20.0	-	Ni : 8-10.5

* A193 Grade B16 have Vanadium = 0.25-0.35 and Aluminium = 0.015 max

STUD BOLT



Xylan® Coating Statistic

Tensile Strength (ASTM D1708)	4000 - 5000 psi
Elongation (ASTM D1457)	50 %
Impact Strength (ASTM D256)	13 ft - lb/in
Hardness (ASTM D2240)	60 - 90 HB (Shore D)
Abrasion Resistance (Tabor)	> 15 mg
Coefficient of Friction (ASTM D1894)	0.15 - 0.35 static
Dielectric Strength (ASTM D149)	1400 volts per mil
Use Temperature	-100°F to 500°F max
Melting Point	n/a
Thermal Conductivity	n/a
Chemical Resistance (ASTM D543)	Good
Salt Spray Resistance (ASTM B117)	Excellent
Water Absorption (ASTM D570)	< 0.03 %
Thickness	0.0008" - 0.002 "

XYLAN OFFSHORE APPLICATION



Low Friction
as low as 0.02



Wear Resistance
even under extreme pressures



Chemical Resistance
in most environments



Corrosion Resistance
in most environments



Weather Resistance
against sunlight, salt water
and road chemicals



Wide Temperature Range
operating range from -420° to +550° F
(-250° to 285° C)



Wide Colour Range



Machineable



Excellent Adhesion Properties



More Visible



Less Torque



Fasteners resist
corrosion with
Xylan 1424 & 1070

Fasteners are more visible,
more easily replaced with
Xylan 1424 & 1070

Mooring systems
resist corrosion, are
easier to locate with
Xylan 1427 & 1070

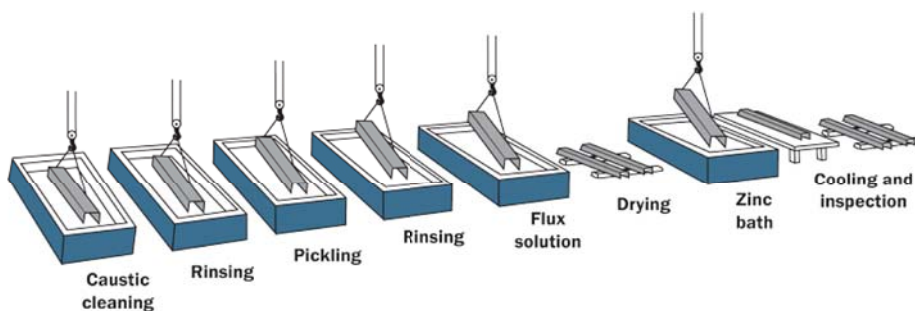
Coating

Hot Dip Galvanized

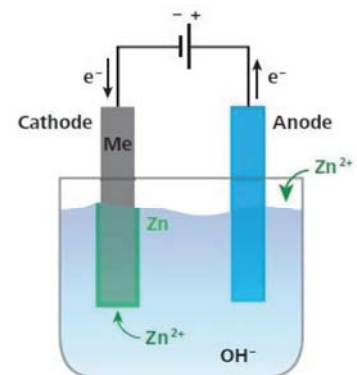
A common treatment of high - tensile fasteners in which the material is submerged in molten zinc (above 450°C) producing a constant oxide coating. The steel and liquid zinc bond together.

Electrogalvanized

A process where zinc is applied by using a current of electricity.



Hot Dip Galvanized Process



Electrogalvanized Process

WHY GALVANIZED



Less Maintenance Required

Self-maintaining, thicker, and maintenance costs of these steel items are inevitable lower



Lower Costs

Lower initial cost than a lot of other commonly specified corrosion protection coating for steel



Longer Life

On steel can excess long life, continually protecting steel against corrosive elements



Safety

Corrosion and rust with unprotected metal can weaken structures and create unsafe surface and edge for workers



Environmentally Friendly

The longevity of the maintenance-free coating provides environmental and economic benefits. Zinc exists naturally, so the byproducts released into the atmosphere are not harmful

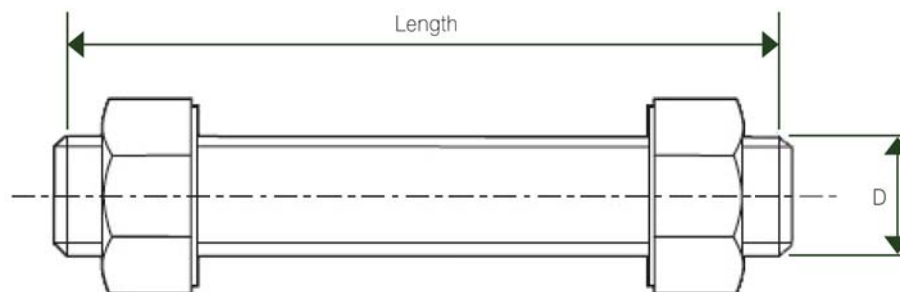
Imperial & Metric Thread Pitch

Thread series cover designations of diameter/pitch combinations that are measured by the number of threads per inch (TPI) applied to a single diameter.

Coarse Thread Series (UNC/UNRC) is the most common designation for general application bolts and nuts. Coarse thread is beneficial, because they are less likely to cross thread, more tolerant in adverse conditions and facilitate quick assembly.

Fine Thread Series (UNF/UNRF) is commonly used in precision applications. Because of the larger tensile stress areas, they have high tension strength. However, a longer engagement is required for fine thread applications than for coarse series threads to prevent stripping.

8 - Thread Series (8UN) is the specified thread forming method for several ASTM standards including A193 B7, A193 B8/8M and A320. This series is used for diameters one inch and above.

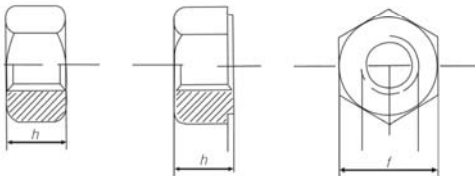


Imperial (TPI) Thread Per Inch						Metric Thread Pitch			Imperial/Metric Equivalent Value (mm)
Size (D)	UNC	UN8	UNF	BSW	BSF	Size (D)	Coarse	Fine	
1/8"	40	-	44	40	-	M3	0.5	0.35	3.1750
	32	-	36	-	-	M4	0.7	0.5	-
3/16"	24	-	32	24	32	M5	0.8	0.5	4.7625
1/4"	20	-	28	20	26	M6	1	0.75	6.3500
5/16"	18	-	24	18	22	M8	1.25	1	7.9375
3/8"	16	-	24	16	20	M10	1.5	1.25	9.5250
1/2"	13	-	20	14	18	M12	1.75	1.5	12.7000
9/16"	12	-	18	12	16	M14	2	1.5	14.2875
5/8"	11	-	18	11	14	M16	2	1.5	15.8750
	-	-	-	-	-	M18	2.5	1.5	-
3/4"	10	-	16	10	12	M20	2.5	1.5	19.0500
7/8"	9	-	14	9	11	M22	2.5	1.5	22.2250
1"	8	8	12(14)	8	10	M24	3	2	25.4001
1 1/8"	7	8	12	7	9	M27	3	2	28.5751
1 1/4"	7	8	12	7	9	M30	3.5	2	31.7501
1 3/8"	6	8	12	6	8	M33	3.5	2	34.9251
1 1/2"	6	8	12	6	8	M36	4	3	38.1001
1 5/8"	-	8	-	5	8	M39	4	3	41.2751
	-	-	-	-	-	M42	4.5	-	-
1 3/4"	5	8	-	5	7	M45	4.5	-	44.4501
1 7/8"	-	8	-	-	-	M48	5	-	47.6251
2"	4.5	8	-	4.5	7	M52	5	-	50.8001
2 1/4"	4.5	8	-	4	6	M56	5.5	-	57.1501
	-	-	-	-	-	M60	5.5	-	-
2 1/2"	1	8	-	4	6	M64	6	-	63.5001
2 3/4"	4	8	-	3.5	6	M72	6	-	69.8501
3"	4	8	-	3.5	5	M80	6	-	76.2002
3 1/4"	4	8	-	3.25	5		-	-	82.5502
3 1/2"	4	8	-	3.25	4.5	M90	6	-	88.9002
3 3/4"	4	8	-	3	4.5		-	-	95.2502
4"	4	8	-	3	4.5	M100	6	-	101.6002

STUD BOLT

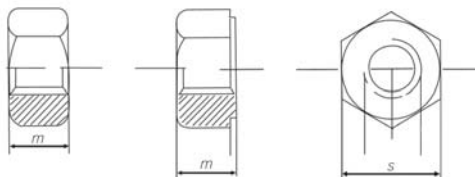
Dimension and Weight

HEAVY HEX NUTS UNC ASME B18.2.2



Thread diameter to fill	Dimension f		Dimension h			Nut Wgt(kg)
	Min(mm)	Max(mm)	Nom.	Min(mm)	Max(mm)	
3/8"	17.0	17.5	9.1	8.7	9.6	0.01
7/16"	18.5	19.1	10.7	10.2	11.2	0.02
1/2"	21.6	22.2	12.3	11.8	12.8	0.03
9/16"	23.0	23.8	13.9	13.3	14.4	0.04
5/8"	26.2	27.0	15.5	14.9	16.0	0.05
3/4"	30.8	31.8	18.7	18.0	19.3	0.09
7/8"	35.4	36.5	21.8	21.2	22.5	0.13
1"	40.0	41.3	25.0	24.3	25.7	0.19
1.1/8"	44.6	46.0	28.2	27.4	28.9	0.26
1.1/4"	49.2	50.8	31.0	30.1	31.8	0.37
1.3/8"	53.8	55.6	34.1	33.3	35.0	0.48
1.1/2"	58.4	60.3	37.3	36.4	38.2	0.58
1.5/8"	63.0	65.1	40.5	39.5	41.5	0.78
1.3/4"	67.6	69.9	43.7	42.6	44.7	0.96
1.7/8"	72.2	74.6	46.8	45.8	47.9	1.16
2"	76.8	79.4	50.0	48.9	51.1	1.40
2.1/4"	86.0	88.9	56.0	54.7	57.2	1.90
2.1/2"	95.3	98.4	62.3	61.0	63.6	2.56
2.3/4"	104.4	108.0	68.7	67.2	70.1	3.35
3"	113.7	117.5	75.0	73.5	76.5	4.32
3.1/4"	122.9	127.0	81.0	79.3	82.6	4.87
3.1/2"	132.1	136.5	87.3	85.6	89.1	6.45
3.3/4"	141.3	146.1	93.7	91.8	95.5	7.83
4"	150.5	155.6	100.0	98.1	102.0	9.80

HEX NUTS Metric EN 24033



Thread diameter to fill	Dimension s		Dimension m		Nut Wgt(kg)
	Min(mm)	Max(mm)	Min(mm)	Max(mm)	
M8	12.73	13.00	7.64	8.00	0.01
M10	16.73	17.00	9.64	10.00	0.01
M12	18.67	19.00	11.57	12.00	0.02
M14	21.67	22.00	13.57	14.00	0.03
M16	23.67	24.00	15.57	16.00	0.04
M18	26.67	27.00	17.57	18.00	0.06
M20	29.67	30.00	19.48	20.00	0.08
M22	31.61	32.00	21.48	22.00	0.09
M24	35.38	36.00	23.48	24.00	0.14
M27	40.38	41.00	26.48	27.00	0.20
M30	45.38	46.00	29.48	30.00	0.28
M33	49.26	50.00	32.38	33.00	0.36
M36	54.26	55.00	35.38	36.00	0.48
M39	59.26	60.00	38.38	39.00	0.62
M42	64.26	65.00	41.38	42.00	0.70
M45	69.26	70.00	44.38	45.00	0.99
M48	74.26	75.00	47.38	48.00	1.22
M52	79.26	80.00	51.38	52.00	1.47
M56	84.15	85.00	55.26	56.00	1.77
M60	89.13	90.00	59.26	60.00	2.08
M64	94.13	95.00	63.26	64.00	2.45
M68	99.13	100.00	67.26	68.00	2.84
M72	104.13	105.00	71.26	72.00	3.27
M76	109.13	110.00	75.26	76.00	3.74
M80	114.13	115.00	79.26	80.00	4.25
M85	119.13	120.00	84.13	85.00	4.83
M90	129.00	130.00	89.13	90.00	6.06
M95	134.00	135.00	94.13	95.00	6.80

STUD BOLT

STUD BOLT & NUT FOR FLANGE ASME B16.5



Flanges Size		Class 150 (PN 20)						Class 300 (PN 50)					
(ASME) NPS	(ISO) DN	Q'ty	Diameter		L(mm)			Q'ty	Diameter		L(mm)		
			UNC	ISO	RF	RTJ			UNC	ISO	RF	RTJ	
1/2	15	4	1/2	M14	60	-		4	1/2	M14	65		80
3/4	20	4	1/2	M14	65	-		4	5/8	M16	80		90
1	25	4	1/2	M14	65	80		4	5/8	M16	80		90
1 1/4	32	4	1/2	M14	70	85		4	5/8	M16	85		95
1 1/2	40	4	1/2	M14	70	85		4	3/4	M20	90		100
2	50	4	5/8	M16	85	95		8	5/8	M16	90		100
2 1/2	65	4	5/8	M16	90	100		8	3/4	M20	100		115
3	80	4	5/8	M16	90	100		8	3/4	M20	110		120
3 1/2	90	8	5/8	M16	90	100		8	3/4	M20	110		130
4	100	8	5/8	M16	90	100		8	3/4	M20	115		130
5	125	8	3/4	M20	95	110		8	3/4	M20	120		135
6	150	8	3/4	M20	100	115		12	3/4	M20	125		140
8	200	8	3/4	M20	110	120		12	7/8	M24	140		155
10	250	12	7/8	M24	115	130		16	1	M27	160		170
12	300	12	7/8	M24	120	135		16	1 1/8	M30	170		185
14	350	12	1	M27	135	150		20	1 1/8	M30	175		190
16	400	16	1	M27	135	150		20	1 1/4	M33	190		205
18	450	16	1 1/8	M30	150	160		24	1 1/4	M33	195		210
20	500	20	1 1/8	M30	160	170		24	1 1/4	M33	205		225
24	600	20	1 1/4	M33	175	185		24	1 1/2	M39	230		255

STUD BOLT

STUD BOLT & NUT FOR FLANGE ASME B16.5

Class 600 (PN 100)					Class 900 (PN 150)					Class 1500 (PN 250)					Class 2500 (PN 420)				
Q'ty	Diameter		L(mm)		Q'ty	Diameter		L(mm)		Q'ty	Diameter		L(mm)		Q'ty	Diameter		L(mm)	
	UNC	ISO	RF	RTJ		UNC	ISO	RF	RTJ		UNC	ISO	RF	RTJ		UNC	ISO	RF	RTJ
4	1/2	M14	75	75	4	3/4	M20	105	105	4	3/4	M20	105	105	4	3/4	M20	120	120
4	5/8	M16	90	90	4	3/4	M20	115	115	4	3/4	M20	115	115	4	3/4	M20	125	125
4	5/8	M16	90	90	4	7/8	M24	125	125	4	7/8	M24	125	125	4	7/8	M24	140	140
4	5/8	M16	95	95	4	7/8	M24	125	125	4	7/8	M24	125	125	4	1	M27	150	150
4	3/4	M20	110	110	4	1	M27	140	140	4	1	M27	140	140	4	1 1/8	M30	170	170
8	5/8	M16	110	110	8	7/8	M24	145	145	8	7/8	M24	145	145	8	1	M27	180	180
8	3/4	M20	120	120	8	1	M27	160	160	8	1	M27	160	160	8	1 1/8	M30	195	205
8	3/4	M20	125	130	8	7/8	M24	145	145	8	1 1/8	M30	180	180	8	1 1/4	M33	220	230
8	7/8	M24	140	140	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	7/8	M24	145	145	8	1 1/8	M30	170	170	8	1 1/4	M33	200	200	8	1 1/2	M39	255	260
8	1	M27	165	165	8	1 1/4	M33	190	190	8	1 1/2	M39	250	250	8	1 3/4	M45	300	310
12	1	M27	170	175	12	1 1/8	M30	190	195	12	1 3/8	M36	260	265	8	2	M52	345	355
12	1 1/8	M30	190	195	12	1 3/8	M36	220	220	12	1 5/8	M42	290	320	12	2	M52	380	395
16	1 1/4	M33	215	215	16	1 3/8	M36	235	235	12	1 7/8	M48	335	345	12	2 1/2	M64	490	510
20	1 1/4	M33	225	225	20	1 3/8	M36	255	255	16	2	M52	375	390	12	2 3/4	M70	540	560
20	1 3/8	M36	235	235	20	1 1/2	M39	275	280	16	2 1/4	M56	405	425	-	-	-	-	-
20	1 1/2	M39	255	255	20	1 5/8	M42	285	295	16	2 1/2	M64	445	470	-	-	-	-	-
20	1 5/8	M42	275	275	20	1 7/8	M48	325	340	16	2 3/4	M70	495	530	-	-	-	-	-
24	1 5/8	M42	290	295	20	2	M52	350	360	16	3	M76	540	565	-	-	-	-	-
24	1 7/8	M48	330	335	20	2 1/2	M64	440	455	16	3 1/2	M90	615	645	-	-	-	-	-

STUD BOLT



HEXAGON HEAD BOLT

Material : 8.8, 10.9 (F10T)

Stainless steel

304 (A2-70)

316 (A4-70)

Coating : HDG



HEAVY HEXAGON HEAD BOLT

Material : A325, A307-B

Coating : HDG



**HEXAGON SOCKET HEAD
CAP SCREW**

Material : 12.9

Stainless steel 304, 316

Coating : HDG



**HEXAGON SOCKET COUNTERSUNK
HEAD SCREW**

Material : 12.9

Stainless steel

Coating : HDG



**HEXAGON SOCKET BUTTON HEAD
CAP SCREW**

Material : 12.9

Stainless steel

Coating : HDG



U - BOLT

Material : Steel (SS400, A36)

Stainless steel 304, 316

Coating : Black, White zinc, HDG

STUD BOLT



**CROSS PAN(JP)/FLAT(JF)/TRUSS(JT)
HEAD MACHINE SCREWS**

Material : Steel, Stainless steel

Coating : White zinc , black



HEXAGON NUTS

Material : Steel (ss400, CL.8, 10.9)

Stainless steel 304,316

Coating : Black, White zinc, HDG



HEX NUTS

Material : A563

Coating : HDG



**MUSHROOM HEAD SQUARE
NECK BOLTS**

Material : Steel

Stainless steel 304

Coating : Chromium

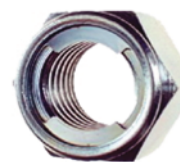


**HEXAGON LOCK NUTS
WITH PLASTIC INSERT**

Material : Steel, Nylon

Stainless steel 304,316

Coating : White zinc



**U LOCK NUT
(SELF LOCK NUT)**

Material : Stainless steel



PLAIN WASHER

Material : Steel (SS400, F436)

Stainless steel 304,316

Coating : Black, White zinc, HDG



SPRING WASHER

Material : SS400

Stainless steel 304,316

Coating : Black, White zinc, HDG



**INTERNAL/EXTERNAL
RETAINING RINGS**

Material : Steel

Stainless steel 304, 316



WING SCREWS

Material : Steel

Stainless steel

Coating : White zinc



WING NUTS

Material : Steel

Stainless steel

Coating : White zinc



EYE BOLTS (JIS, DIN580)

Material : Steel

Stainless steel 304

Coating : Yellow



EYE NUTS

Material : Steel

Stainless steel 304

Coating : Yellow



SPRING PIN

Material : Steel

Stainless steel 304

Coating : Black



SPLIT COTTER PINS

Material : Steel

Stainless steel

Coating : White zinc



SNAP PIN

Material : Steel

Coating : White zinc



**HEXAGON SOCKET
SET SCREWS**

Material : Steel 12.9

Stainless steel 304,316

STUD BOLT

STUD BOLT	MACHINE BOLT	U-BOLT / J-BOLT	WASHER
Material Bolt : A193 - B7, B7M, B8, B8M A320 - L7, L7M, SS400 Nut : A194 - 2H, GR.4, GR.7 2HM, GR.8, GR.8M	Material Carbon SS400 S45C A36 Stainless SUS304 SUS316	Material Carbon SS400 S45C A36 Stainless SUS304 SUS316	Material Carbon SS400 S45C A36 Stainless SUS304 SUS316 SUS410

Coating

PTFE

Hot Dip Galvanized

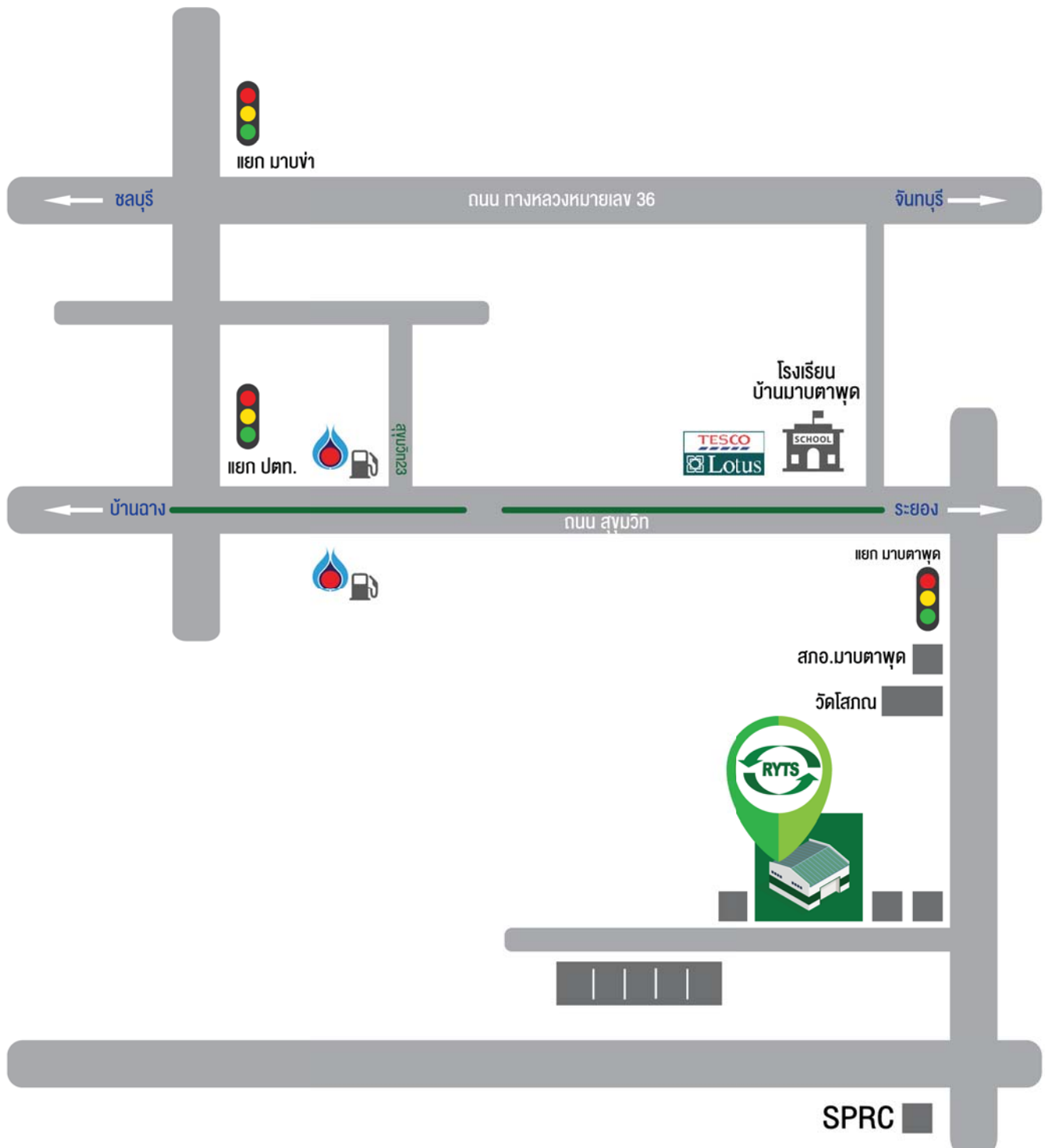
Electrogalvanized



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