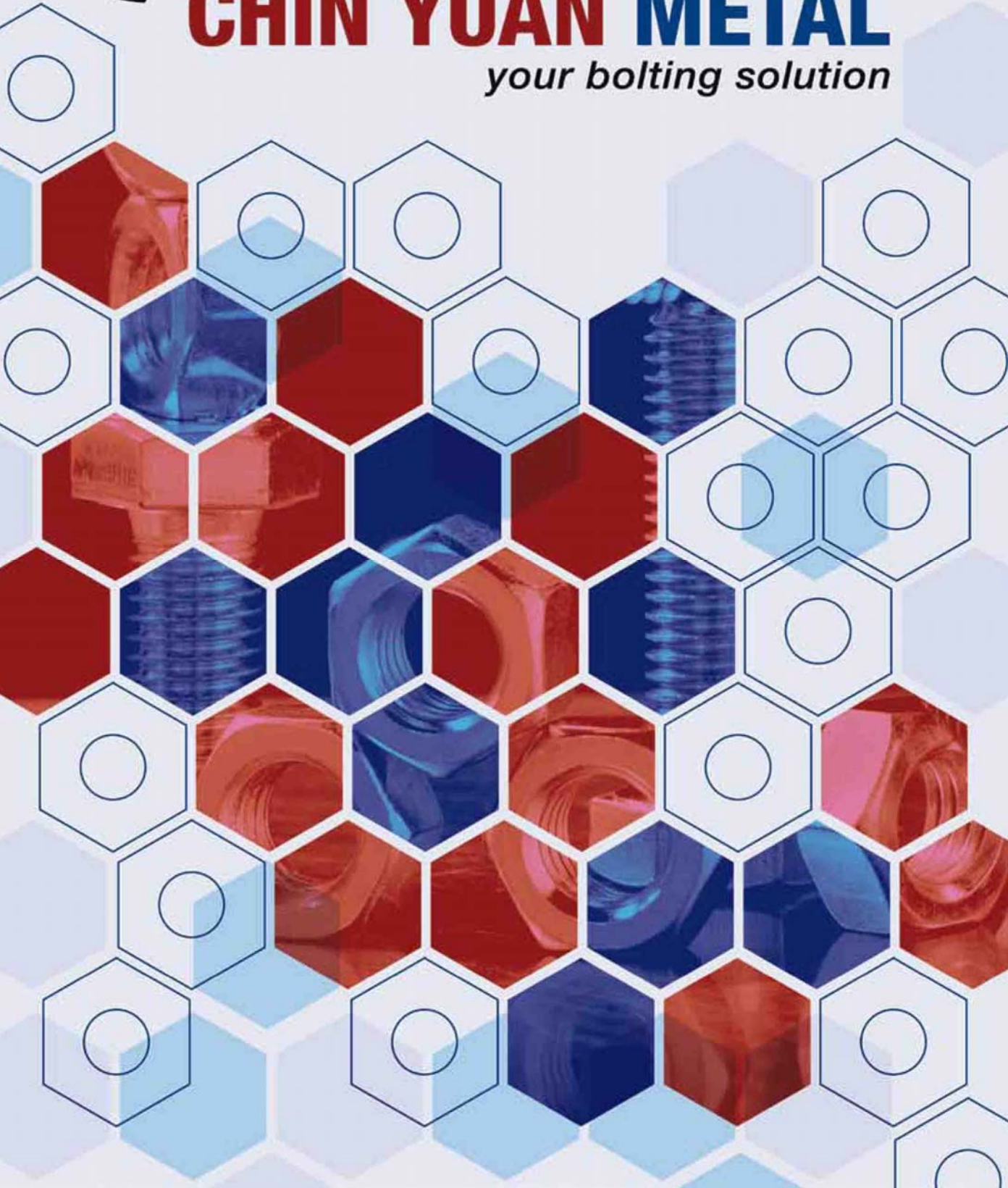




# CHIN YUAN METAL

*your bolting solution*





## CHIN YUAN METAL

*your bolting solution*

18 Tuas Street  
Singapore 638455

tel ☎ 65 6265 8550

fax ☎ 65 6262 8950  
☎ 65 6264 8550

[www.chinyuanmetal.com](http://www.chinyuanmetal.com)

Established 1985 | Company Registration No. 190000227C

## STRUCTURALLY SOUND, CONTINUOUSLY COMMITTED

Chin Yuan Metal is a leading manufacturer and distributor of Bolts and Nuts worldwide.

With the philosophy of continuous improvement and customer satisfaction, Chin Yuan Metal has grown from a small hardware enterprise to become a reputable global player today. As we pursue our commitment to service excellence, we begin to expand our services from sales to assisting our customer resolve on-site problems.

We believe that our success lies in prompt response and strong technical support, both highly critical attributes to our customers. These principles have guided us through the years bringing us to where we are now, your bolting solution that is always **CONNECTING TO YOU.**

We proudly manufacture and distribute our bolts and nuts to the companies in the oil, gas and chemical industry, the construction industry, as well as other large scale public projects.

### ACCOLADES & CERTIFICATION :

FPC Certificate – **BC 1:2008**

ISO Certificate – **ISO 9001:2008**

Safety – **OHSAS 18001:2007**







## TECHNOLOGY INNOVATORS

Chin Yuan Metal offers a wide range of regular and custom-made fasteners made to internationally-upheld safety and quality standards for various projects worldwide. We remain at the forefront in implementing new safety standards and technology by continually upgrading ourselves and investing heavily in state-of-the-art machinery that deliver fasteners of the highest quality.

## QUALITY CUSTOMER SERVICE

We take pride in delivering excellent customer service through prompt response and willingness to our clients, operations and challenges. To further commit to our service standards, Chin Yuan Metal has attained the ISO 9001 certification in 2000.

## EXCEPTIONAL EXPORT EXPERTISE

We manufacture and export hardware to countries such as Brunei Darussalam, Hong Kong, Indonesia, Korea, Malaysia, Pakistan, Philippines, Saudi Arabia, Thailand and the UAE.

Our experienced export department can assist you to arrange for cost-efficient and prompt delivery of your products. You can be rest assured that your orders will arrive on time and in good shape anywhere in the world.





# BOLTS & NUTS

Chin Yuan Metal stocks a large quantity of standard and high-strength structural hexagonal head bolts to meet our customer's daily urgent requirements.

We are able to handle immediate delivery for all regular grades of bolts & studs (full-threaded, both-ends-threaded, one-end-threaded), hexagonal bolts (unthreaded and blanks), nuts and socket screws to the following materials:

**GENERAL ENGINEERING GRADES:**

BS 4190 & BS 3692 (4.6, 4.8, 5.6, 8.8 and higher grades 10.9, 12.9)

**PETROCHEMICAL GRADES:**

ASTM-A193 (B5, B6, B7, B7M, B16, B8, B8M), A194 (2H, 7, 7M, 8M, 8MA), A320 (L7, L7M, B8, B8M)

**STAINLESS STEEL BOLTING GRADES:**

A453, SS304, SS310, SS316, A321, UNS 32760 etc.

We also store non-standard raw materials for fast manufacturing should the need arises. Storing our extensive stock on a computerised system allows us to check our stock availability and react promptly to your needs.

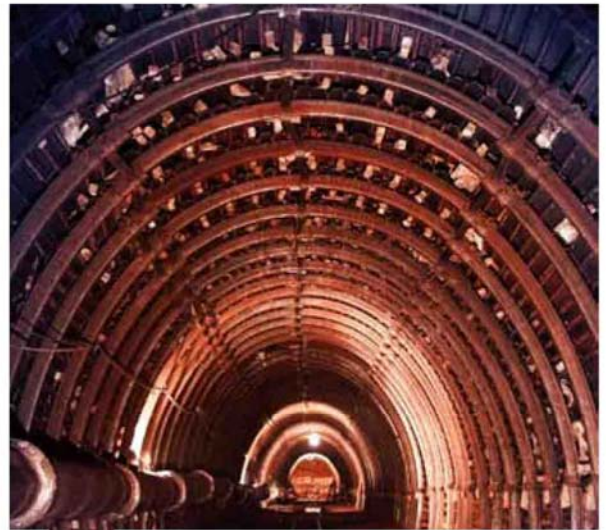
All products are manufactured to specification of **ASTM, BS, DIN, JIS, SAE, BS EN, NACE**, etc.



# PIPE ACCESSORIES

Our complete production capabilities enable us to manufacture the full range of pipe accessories (U-Bolts, Pipe Clamps, Eye Bolts, Anchor Bolts for proprietary projects, etc.

Should you require any assistance with your project, we will be pleased to have our technical team provide the necessary support, letting you have a peace of mind.



# TUNNELING WORKS

Chin Yuan Metal is approved by the Land Transport Authority (LTA) of Singapore to supply unique Bolts for Mass Rapid Transit (MRT) system in Singapore. Our capability in fabricating high quality bolts for specific requirements remain unparalleled in the region.

For tunneling projects, we are able to supply tie rods, rock bolts, inserts and reinforcement couplers for tunnel reinforcement purposes, third rail and viaducts.



# SPECIAL FABRICATION

Chin Yuan Metal has immediate capabilities to respond to a wide-range of request for non-standard material and projects around the world. This includes welding and machining according to drawing and customer specifications, offering our customers hassle-free flexibility and precise customisation.

Our strong alliance with manufacturers around the world enable us to further fabricate non-regular items and high-grade materials.



# COATING SERVICES

## WITH XYLAN PRIMER COAT



Notably, we also provide specialised coating services. We can enhance a multitude of different surfaces and materials to improve their efficiency and/or increase their longevity of use and meet all customers requirement with our outstanding quality services.

- Zinc Plating
- Nickel Plating
- Hot-Dipped Galvanized
- Cadmium Plating
- Bi – Chromating
- Fluorocarbon Coating
- Neoprene Coating
- Polyolefin Coating
- Zinc-Nickel Plating
- Zinc Phosphate

Other coating improvements and protections are also available. Just ask our salesmen and we are happy to assist you.

Oil and Gas Industry around the world are mainly concerned, foremost on Safety and Environment. Their Risk Assessment outline two major concerns:

1. The Magnitude for potential problems.
2. The Frequency of occurrence.

That's why Bolts and Nuts play its part of the assembly on these industries, by securing and doing its job in terms of durability and high consistency. In connection, coatings are introduced to CYM Bolts and Nuts to produce a more enhanced and outstanding performance in this field. Through XYLAN primer coat and top coat combination, WHITFORD improved CYM Bolts and Nuts resistivity on material deterioration in a harsh and corrosive environment. Furthermore, Bolts and Nuts with XYLAN coating gives a more reliable and repeatable torque-tension in all construction designing processes for Petrochemical Industries.

CHIN YUAN METAL proudly endorses XYLAN coating in the reassuring support of WHITFORD Quality Approved Coater (QAC) program that ensures the highest quality performance of our Bolts and Nuts .

## **BOLTS & NUTS**



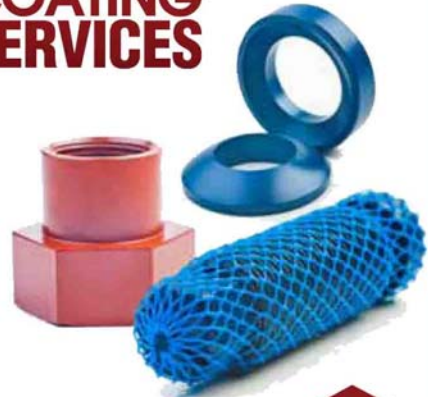
## **PIPE ACCESSORIES**



## **CIVIL WORKS**



## **COATING SERVICES**



## **TUNNELING WORKS**





# FLUOROCARBON COATING

Fluorocarbon coating is commonly used in Petrochemical Companies. This coating has high resistance to corrosion and is non-reactive with many chemicals.

Chin Yuan Metal is a Whitford Quality Approved Coater for fasteners, as well as an invited member of Whitford's Quality Co-operative Programme.

In view of the high quality of these coatings and rising customer demands, Chin Yuan Metal set up a factory in Malaysia in 2002, specialising in fluorocarbon coating. XYLAN coating meets the salt-spray test reference standards ASTM B117 and D160++ which makes CYM coated bolts highly recommended for petrochemical plants, oil rigs, ship building and engineering constructions.



## WITH XYLAN PRIMER COAT



XYLAN has the lowest coefficient of friction and the highest temperature resistance of any of the fluorocarbon coating systems. XYLAN based products can typically withstand intermittent and continuous temperature of 215°C and 180°C respectively. XYLAN coatings are very good electrical insulators. XYLAN coated bolts are inert to a wide range of common industrial chemicals, able to resist extreme weather conditions and outlast ordinary bolts used in similar situations.

### Ways to Reach 15% Red Rust as per ASTM B117

Xylan	Xylan 1014	Xylan 1424	Xylan 1424	Xylan 1424	Xylan 1424
Primer	P-92	-	-	-	-
Surface Treatment	Zinc Phosphate	Zinc Phosphate	Zinc Plating	Zinc Nickel Plating	Cadmium Plating
Substrates	Steel	Steel	Steel	Steel	Steel
Salt Spray Hours	500 hours	1,500 hours	2,500 hours	4,000 hours	4,000 hours



**XYLAN coated CYM bolts are highly recommended for petrochemical plants, oil rigs, ship building and engineering constructions.**





# **TECHNICAL SPECIFICATIONS**

- ◆ **BOLTS AND NUTS**
- ◆ **HEX BOLTS dimensional chart**
- ◆ **FULLY THREADED STUD BOLT weight chart**
- ◆ **HEX NUTS dimensional chart**
- ◆ **PIPE SUPPORT SYSTEM**
- ◆ **FOUNDATION ANCHOR BOLTS**
- ◆ **STUD BOLT FOR FLANGES TO ANSI/ASME B16.5**



**BOLTS**

ASTM A193										ASTM A320	
		B7	B7M	B16	B8 CL1	B8 CL2	B8M CL1	B8M CL2	L7	L7M	
Chemical Analysis	Carbon,Max	0.37 - 0.49	0.37 - 0.49	0.36 - 0.47	0.08	0.08	0.08	0.38 - 0.48	0.38 - 0.48	0.38 - 0.48	
	Manganese,Max	0.65 - 1.10	0.65 - 1.10	0.45 - 0.70	2.00	2.00	2.00	0.75 - 1.00	0.75 - 1.00	0.75 - 1.00	
	Phosphorus,Max	0.035	0.035	0.035	0.045	0.045	0.045	0.035	0.035	0.035	
	Sulfur,Max	0.040	0.040	0.040	0.030	0.030	0.030	0.040	0.040	0.04	
	Silicon,Max	0.15 - 0.35	0.15 - 0.35	0.15 - 0.35	1.00	1.00	1.00	0.15 - 0.35	0.15 - 0.35	0.15 - 0.35	
	Chromium	0.75 - 1.20	0.75 - 1.20	0.80 - 1.15	18.0 - 20.0	16.0 - 18.0	16.0 - 18.0	0.80 - 1.10	0.80 - 1.10	0.80 - 1.10	
	Nickel	-	-	-	8.0 - 11.0	10.0 - 14.0	16.0 - 18.0	-	-	-	
	Molybdenum	0.15 - 0.25	0.15 - 0.25	0.50 - 0.65	-	2.00 - 3.00	2.00 - 3.00	0.15 - 0.25	0.15 - 0.25	0.15 - 0.25	
	Vanadium	-	-	0.20 - 0.35	-	-	-	-	-	-	
	Aluminium,Max	-	-	0.015	-	-	-	-	-	-	
Mechanical Requirements	Tensile Strength, Min Ksi	125	100	125	75	115	75	110	125	100	
	Tensile Strength, Min Mpa	860	690	860	515	795	515	690	860	690	
	Yield Strength, Min Ksi	105	80	105	30	80	30	95	105	80	
	Yield Strength, Min Mpa	720	550	725	205	550	205	550	725	550	
	Elongation in 4D Min %	16	18	18	30	15	30	15	16	18	
	Reduction of Area, Min %	50	50	50	50	35	50	40	50	50	
	Hardness, HB Max	321	235	321	223	321	223	321	321	235	

**NUTS**

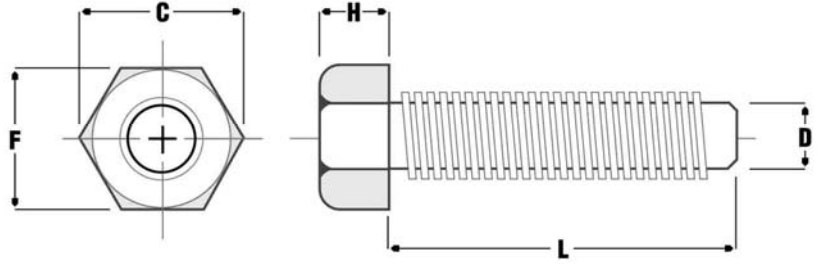
ASTM A194										
		2H	3	4	6	7	8	8T	8M	8F
Chemical Analysis	Carbon	> 0.40	> 0.10	0.40 - 0.50	< 0.15	0.37 - 0.49	< 0.08	< 0.08	< 0.08	< 0.15
	Manganese	< 1.00	< 1.00	0.70 - 0.90	< 1.00	0.65 - 1.00	< 2.00	< 2.0	< 2.0	< 2.00
	Phosphorus	< 0.040	< 0.040	< 0.035	< 0.040	< 0.035	< 0.045	0.045	< 0.045	< 2.00
	Sulfur	< 0.050	< 0.030	< 0.040	> 0.030	< 0.04	< 0.03	0.03	< 0.030	< 0.06
	Silicon	< 0.040	< 1.00	0.15 - 0.35	< 1.00	0.15 - 0.35	< 1.00	< 1.0	< 1.00	< 1.0
	Nickel						8.00 - 11.00	9.0 - 12.0	10.0 - 14.0	8.0 - 10.0
	Chromium		4.0 - 6.0		11.5 - 13.5	0.75 - 1.20	18.0 - 20.0	17.0 - 19.0	16.0 - 18.0	17.0 - 19.0
	Molybdenum		0.40 - 0.65	0.20 - 0.30		0.15 - 0.25			2.0 - 3.0	
	Titanium, Min							5 x (C+N)		
Requirements	Brinell Hardness	248 - 327	248 - 327	248 - 327	228 - 271	248 - 327	126 - 300	126 - 300	126 - 300	126 - 300
Equivalents	AISI	-	501	-	410	4142	304	321	316	303
	AFNOR	CC 45	Z 12 - CD5	45 D2	Z12 CF13	45 CD4	Z6 CN 18-09	Z6 CNT 18-10	Z6 CNT 18-10	Z10 CND 18-09
	DIN	C 45	12 Cr Mo 19-5	-	X10 Cr13	42 GrMo4	X5 CrNi 18-09	X10CrNiTi 18-09	X10CrNiTi 18-09	X12CrNiS 18-08
	BS	4882 2H 1506-162	4882 Gr3 1506-625	4882 Gr4 1506-240	-	4882 Gr7 1506-621 GrA	4882 Gr8 1506-801 GrB	4882 Gr8T 1506-821 GrB	4882 Gr8M 1506-845	4882 Gr8F 1506-801 Gr AM

**SIZE RANGE:**

3/8 inch - 4 inch, M10 - M36

**FINISH:**

- Black
- Electro-Galvanized
- Cadmium Plated
- Hot Dipped Galvanized
- Xylan® Coating (Fluorocarbon Coating)



**ASTM A325, A490**

**ASME B 18.2.6 - 2006**

Bolt Diameter (D) (inches)	F Width Across Flats			C Width Across Corners		H Head Height		
	Basic	Max.	Min.	Max.	Min.	Basic	Max.	Min.
1/2	7/8	0.875	0.850	1.010	0.969	5/16	0.323	0.302
5/8	1 1/16	1.062	1.031	1.227	1.175	25/64	0.403	0.378
3/4	1 1/4	1.250	1.212	1.443	1.383	15/32	0.483	0.455
7/8	1 7/16	1.438	1.394	1.660	1.589	35/64	0.563	0.531
1	1 5/8	1.625	1.575	1.876	1.796	39/64	0.627	0.591
1 1/8	1 13/16	1.812	1.756	2.093	2.002	11/16	0.718	0.658
1 1/4	2	2.000	1.938	2.309	2.209	25/32	0.813	0.749
1 3/8	2 3/16	2.188	2.119	2.526	2.416	27/32	0.878	0.810
1 1/2	2 3/8	2.375	2.300	2.742	2.622	15/16	0.974	0.902

**ASTM A193 B7/B8/B8M/B16, A320 L7/B8/B8M, A307B**


**ASME B 18.2.1 - 1996**

Bolt Diameter (D) (inches)	F Width Across Flats			C Width Across Corners		H Head Height		
	Basic	Max.	Min.	Max.	Min.	Basic	Max.	Min.
1/2	3/4	0.750	0.725	0.866	0.826	11/32	0.364	0.302
5/8	15/16	0.938	0.906	1.083	1.033	27/64	0.444	0.378
3/4	1 1/8	1.125	1.088	1.299	1.240	1/2	0.524	0.455
7/8	1 5/16	1.312	1.269	1.516	1.447	37/64	0.604	0.531
1	1 1/2	1.500	1.450	1.732	1.653	43/64	0.700	0.591
1 1/8	1 11/16	1.688	1.631	1.949	1.859	3/4	0.780	0.658
1 1/4	1 7/8	1.875	1.812	2.165	2.066	27/32	0.876	0.749
1 3/8	2 1/16	2.062	1.994	2.382	2.273	29/32	0.940	0.810
1 1/2	2 1/4	2.250	2.175	2.598	2.480	1	1.036	0.902

**BS 4190 : 2001 Gr.4.6, 8.8, 10.9, 12.9**

**METRIC**

Bolt Diameter (D) (mm)	F Width Across Flats		C Width Across Corners		H Head Height	
	Max.	Min.	Max.	Min.	Max.	Min.
M10	17.00	16.57	19.6	18.72	7.45	6.55
M12	19.00	18.48	21.9	20.83	8.45	7.55
M16	24.00	23.16	27.7	26.17	10.45	9.55
M20	30.00	29.16	34.6	32.95	13.90	12.10
M22	32.00	31.00	36.9	35.03	14.90	13.10
M24	36.00	35.00	41.6	39.55	15.90	14.10
M27	41.00	40.00	47.3	45.20	17.90	16.10
M30	46.00	45.00	53.1	50.85	20.05	17.95
M33	50.00	49.00	57.7	55.37	22.05	19.95
M36	55.00	53.80	63.5	60.79	24.05	21.95

 Please check with us for other material requirements.



**SIZE RANGE:**

3/8 inch - 4 inch, M8 - M125

**FINISH:**

Black  
 Electro-Galvanized  
 Cadmium Plated  
 Hot Dipped Galvanized  
 Xylan® Coating (Fluorocarbon Coating)

**FULLY THREADED STUD BOLT weight chart**

**TECHNICAL SPECIFICATIONS**

**MATERIAL:**

Grade 4.6, Grade 8.8, Grade 10.9 & Grade 12.9  
 ASTM A193 B7 / B8 / B8M / B16  
 A320 L7 / B8 / B8M, SS304, SS316, A453-660, UNS32760  
 Please check with us for other materials



**WEIGHT CHART OF STUDBOLT WITHOUT NUTS – ANSI TYPE (KG EACH)**

(denomination in inches)

L	1/2"	5/8"	3/4"	7/8"	1"	1 1/8"	1 1/4"	1 3/8"	1 1/2"	1 5/8"	1 3/4"
50	0.040	0.063	0.092	0.127	0.166	0.215					
60	0.048	0.076	0.111	0.152	0.199	0.258					
70	0.056	0.088	0.129	0.177	0.233	0.301					
80	0.063	0.101	0.147	0.203	0.266	0.343	0.431	0.529			
90	0.071	0.113	0.166	0.228	0.299	0.386	0.485	0.595			
100	0.079	0.126	0.184	0.253	0.332	0.429	0.539	0.661			
110	0.087	0.139	0.203	0.279	0.366	0.472	0.592	0.727			
120	0.095	0.151	0.221	0.304	0.399	0.515	0.646	0.793	0.954	1.129	1.320
130	0.103	0.164	0.240	0.329	0.432	0.558	0.700	0.859	1.033	1.223	1.429
140	0.111	0.176	0.258	0.355	0.465	0.601	0.754	0.925	1.113	1.317	1.539
150	0.119	0.189	0.277	0.380	0.499	0.644	0.808	0.991	1.192	1.411	1.649
160		0.202	0.295	0.405	0.532	0.687	0.862	1.057	1.272	1.505	1.759
170		0.214	0.313	0.431	0.565	0.730	0.916	1.123	1.351	1.599	1.869
180		0.270	0.332	0.456	0.598	0.773	0.970	1.189	1.431	1.693	1.979
190				0.481	0.632	0.816	1.023	1.255	1.510	1.787	2.089
200				0.507	0.665	0.859	1.077	1.321	1.590	1.882	2.199
210					0.698	0.902	1.131	1.387	1.669	1.976	2.309
220					0.731	0.945	1.185	1.454	1.749	2.070	2.419
230					0.765	0.987	1.239	1.520	1.828	2.164	2.529
240					0.798	1.030	1.293	1.586	1.908	2.258	2.639
250							1.347	1.652	1.987	2.352	2.749
260							1.400	1.718	2.066	2.446	2.859
270									2.146	2.540	2.969
280									2.225	2.634	3.079
290									2.305	2.728	3.189
300									2.384	2.822	3.299
310									2.464	2.916	3.409
320										3.011	3.519
330										3.105	3.629
340										3.199	3.739
350										3.293	3.849
<b>NUTS</b>	<b>0.031</b>	<b>0.050</b>	<b>0.088</b>	<b>0.129</b>	<b>0.184</b>	<b>0.254</b>	<b>0.330</b>	<b>0.431</b>	<b>0.550</b>	<b>0.713</b>	<b>0.859</b>

**WEIGHT CHART OF STUDBOLT WITHOUT NUTS – ANSI TYPE (KG EACH)**

(denomination in metric)

L	M12	M14	M16	M18	M20	M22	M24	M27	M30	M33	M36
30	0.021	0.029									
40	0.029	0.039									
50	0.036	0.049	0.066	0.082	0.103	0.127					
60	0.043	0.059	0.079	0.098	0.124	0.152	0.178	0.230	0.282		
70	0.050	0.068	0.092	0.115	0.144	0.177	0.208	0.268	0.328		
80	0.057	0.078	0.105	0.131	0.165	0.203	0.237	0.307	0.375	0.461	0.567
90	0.064	0.088	0.118	0.147	0.186	0.228	0.267	0.345	0.422	0.519	0.638
100	0.071	0.098	0.131	0.164	0.206	0.253	0.297	0.383	0.469	0.577	0.709
110	0.079	0.108	0.144	0.180	0.227	0.279	0.326	0.422	0.516	0.634	0.780
120	0.086	0.117	0.158	0.196	0.248	0.304	0.356	0.460	0.563	0.692	0.851
130		0.127	0.171	0.213	0.268	0.329	0.386	0.499	0.610	0.750	0.922
140			0.184	0.229	0.289	0.355	0.416	0.537	0.657	0.808	0.997
150				0.245	0.309	0.380	0.445	0.575	0.704	0.865	1.064
160				0.262	0.330	0.405	0.475	0.614	0.751	0.923	1.135
170				0.278	0.351	0.431	0.505	0.652	0.798	0.981	1.206
180				0.295	0.371	0.456	0.534	0.690	0.845	1.038	1.277
190				0.311	0.392	0.481	0.564	0.729	0.892	1.096	1.347
200					0.413	0.507	0.594	0.767	0.938	1.154	1.418
210								0.805	0.985	1.211	1.489
220								0.844	1.032	1.269	1.560
230								0.882	1.079	1.327	1.631
240								0.920	1.126	1.384	1.702
250									1.173	1.442	1.773
260									1.220	1.500	1.844
270									1.267	1.557	1.915
280										1.615	1.986
290										1.673	2.057
300										1.730	2.128
310										1.788	2.198
320										1.846	2.268
330										1.904	2.338
<b>NUTS</b>	<b>0.030</b>	<b>0.044</b>	<b>0.057</b>	<b>0.067</b>	<b>0.097</b>	<b>0.137</b>	<b>0.201</b>	<b>0.285</b>	<b>0.305</b>	<b>0.483</b>	<b>0.633</b>

**SIZE RANGE:**

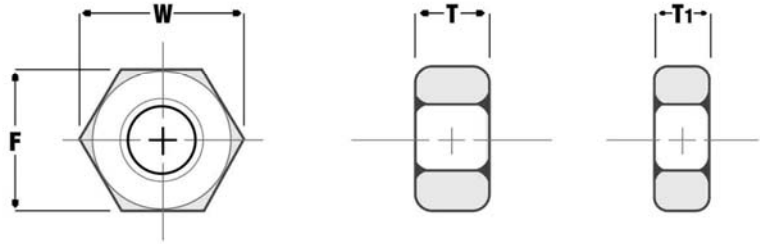
3/8" - 4", M8 - M125

**MATERIAL:**

Class 4, 8, 10  
 ASTM A194 2H / 4 / 7 / 7M / 8 / 8M  
 SS304, SS316, A453-660, UNS32760  
 Please check with us for other materials

**FINISH:**

Black  
 Electro-Galvanized  
 Cadmium Plated,  
 Hot Dipped Galvanized  
 Xylan® Coating (Fluorocarbon Coating)



**DIMENSIONS OF IMPERIAL RANGE HEAVY HEX NUTS**

**ANSI B 18.2.2 - 1987**

Nominal Size or Basic Major Diameter of Thread	F Width Across Flats			W Width Across Corners		T Thickness Heavy Hex Nuts			T1 Thickness Hex Jam Nuts			
	Basic	Max.	Min.	Max.	Min.	Basic	Max.	Min.	Basic	Max.	Min.	
	1/4	0.2500	7/12	0.438	0.428	0.505	0.488	7/12	0.226	0.212	5/32	0.163
5/16	0.3125	1/2	0.500	0.489	0.577	0.577	17/64	0.273	0.258	3/16	0.195	0.180
3/8	0.3750	9/16	0.562	0.551	0.650	0.628	21/64	0.337	0.320	7/32	0.227	0.210
7/16	0.4375	11/16	0.688	0.675	0.794	0.768	3/8	0.385	0.365	1/4	0.260	0.240
1/2	0.5000	3/4	0.750	0.736	0.866	0.840	7/16	0.448	0.427	5/16	0.323	0.302
9/16	0.5625	7/8	0.875	0.861	1.010	0.982	31/64	0.496	0.473	5/16	0.324	0.301
5/8	0.6250	15/16	0.938	0.922	1.083	1.051	35/64	0.559	0.535	3/8	0.387	0.363
3/4	0.7500	1-1/8	1.125	1.088	1.299	1.240	41/64	0.665	0.617	27/64	0.446	0.398
7/8	0.8750	1-5/16	1.312	1.269	1.516	1.447	3/4	0.776	0.724	31/64	0.510	0.458
1	1.0000	1-1/2	1.600	1.450	1.732	1.653	55/64	0.887	0.831	35/64	0.550	0.519
1-1/8	1.1250	1-11/16	1.688	1.631	1.949	1.859	31/32	0.999	0.939	39/64	0.639	0.579
1-1/4	1.2500	1-7/8	1.875	1.812	2.165	2.066	1-1/16	1.094	1.030	23/32	0.751	0.687
1-3/8	1.3750	"2-1/16	2.062	1.994	2.382	2.273	1-11/64	1.206	1.138	25/32	0.815	0.747
1-1/2	1.5000	"2-1/4	2.250	2.175	2.598	2.480	1-9/32	1.317	1.245	27/32	0.880	0.808

**DIMENSIONS OF METRIC RANGE HEAVY HEX NUTS**

**ANSI B 18.2.4.6M - 2010**

Nominal Size or Basic Major Diameter of Thread	F Width Across Flats		C Width Across Corners		T Thickness Across Hex Nuts	
	Basic	Max.	Max.	Min.	Basic	Max.
M12 x 1.75	21.00	20.16	24.25	22.78	12.30	11.90
M14 x 2.00	24.00	23.16	27.71	26.17	14.30	13.60
M16 x 2.00	27.00	26.16	31.18	29.56	17.10	16.40
M20 x 2.50	34.00	33.00	39.26	37.29	20.70	19.40
M22 x 2.50	36.00	35.00	41.57	39.55	23.60	22.30
M24 x 3.00	41.00	40.00	47.34	45.20	24.20	22.90
M27 x 3.00	46.00	45.00	53.12	50.85	27.60	26.30
M30 x 3.50	50.00	49.00	57.74	55.37	30.70	29.10
M36 x 4.00	60.00	58.80	69.28	66.44	36.60	35.00
M42 x 4.50	70.00	67.90	80.83	77.41	42.00	40.40
M48 x 5.00	80.00	77.60	92.38	88.46	48.00	46.40
M56 x 5.50	90.00	87.20	103.92	99.41	56.00	54.10
M64 x 6.00	100.00	96.80	115.47	110.35	64.00	62.10
M72 x 6.00	110.00	106.40	127.02	121.30	72.00	70.10
M80 x 6.00	120.00	116.00	138.56	132.24	80.00	78.10
M90 x 6.00	135.00	130.50	155.88	148.77	90.00	87.80
M100 x 6.00	150.00	145.00	173.21	165.30	100.00	97.80



**SIZE RANGE:**

1/2" - 36"  
15DN - 900DN  
*Other dimensions can be made-to-order*

**FINISH:**

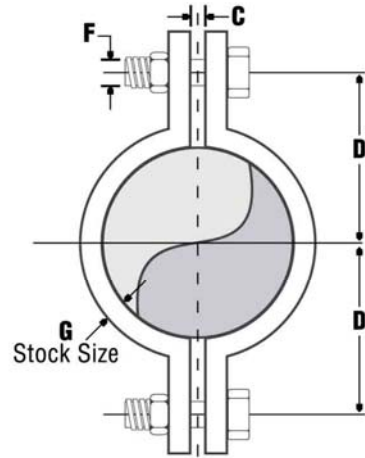
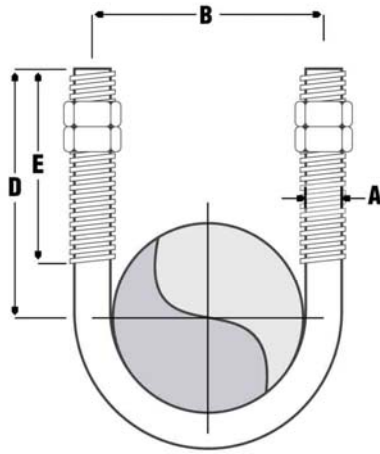
Black  
Electro-Galvanized  
Cadmium Plated  
Hot Dipped Galvanized  
Various Xylan® Coating  
(Fluorocarbon Coating)

**MATERIAL:**

Carbon Steel (A36, SS400, Grade 4.6, Grade 8.8)  
Alloy Steel (A193 B7 / B8 / B8M, A320 L7 / B8 / B8M)  
Stainless Steel (SS304, SS304L, SS316, SS316L)  
*Please check with us for other material requirements*

**OPTIONAL:**

U-Bolts – Saddle Clamp, Neoprene Lining,  
Polyolefin Lining, Base Plate,  
Thermoplastic Rod  
  
Clamps – 3 Bolt Pipe Clamp, Eye Bolt  
Neoprene Lining, Hex Bolts / Nuts,  
U-Clamps



Pipe	DN	A	B	C	D	E	F	G (W x T)
1/2"	15	1/4"	24	22	30	28	6	25 x 3
3/4"	20	1/4"	30	22	36	33	6	25 x 3
1"	25	1/4"	36	25	42	34.5	6	25 x 3
1 1/4"	32	1/4"	46	28	52	44	10	32 x 3
1 1/2"	40	3/8"	52	30	62	48.5	10	32 x 3
2"	50	3/8"	64	32	74	50	10	32 x 3
2 1/2"	65	3/8"	80	35	90	57.5	10	40 x 3
3"	80	3/8"	92	35	102	67.5	10	40 x 3
4"	100	1/2"	118	40	116	80	12	40 x 3
5"	125	1/2"	144	55	130	97.5	12	40 x 5
6"	150	1/2"	170	55	156	112.5	12	40 x 5
8"	200	5/8"	222	65	186	135	16	50 x 6
10"	250	5/8"	274	65	238	175	16	50 x 6
12"	300	3/4"	326	75	294	210	20	50 x 10
14"	350	7/8"	362	90	348	230	24	65 x 10
16"	400	7/8"	414	90	384	265	24	65 x 12
20"	500	1"	518	110	490	335	24	75 x 16
24"	600	1"	620	110	542	390	24	75 x 16



**SIZE RANGE:**

M8 to M100

**FINISH:**

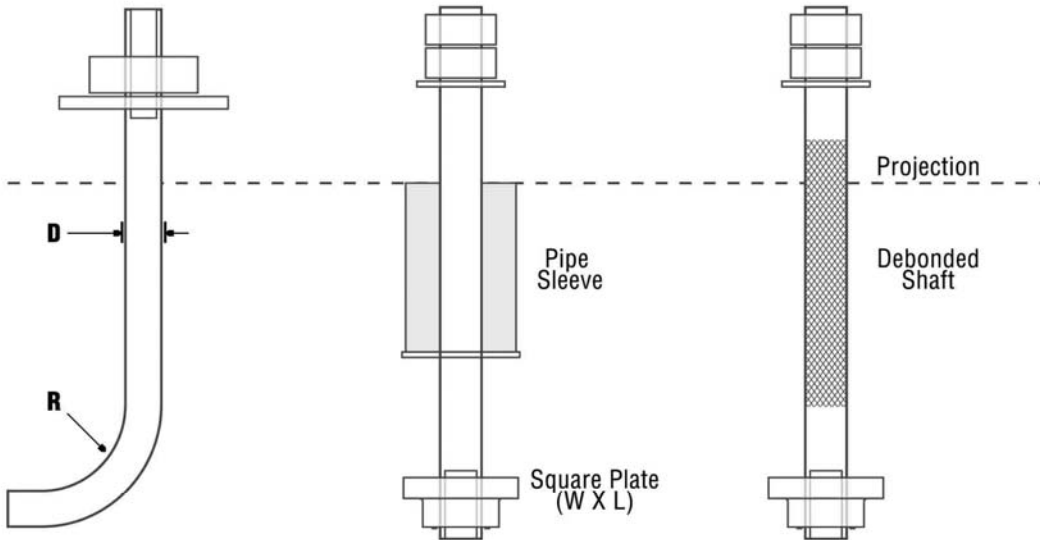
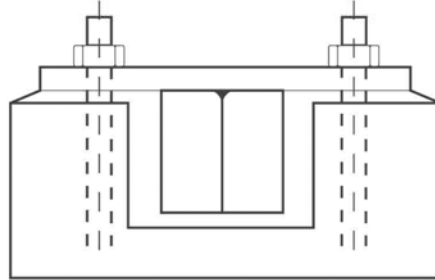
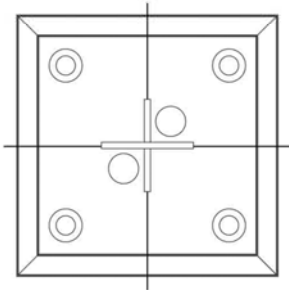
Black  
 Electro-galvanized  
 Hot Dipped Galvanized (ASTM A153 / EN ISO 1461)

**MATERIAL:**

Carbon Steel (ASTM A36, JIS SS400, BS 4190 Gr 4.6, BS EN10025 S275)  
 High Tensile (BS 4190 Gr 8.8, BS EN10025 S355, ST52-3)

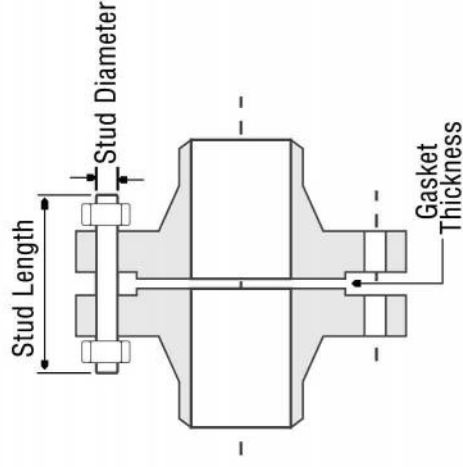
**OPTIONAL:**

Debonded Shaft  
 Tapered End  
 Pipe Sleeves  
 Steel Lugs



We are able to fabricate a variety of Anchor Bolts and Plates according to project requirements and drawings. Our technical team will be pleased to issue test certificates and supporting documents to provide assurance that you will be receiving the highest quality goods at competitive prices. Additionally, our experienced staffs are able to verify material and dimensions stated in drawings to meet the most stringent needs of your project.





**RATING: 150 LBS**

**RATING: 300 LBS**

Nom. Size	No. of Bolts	Dia of Stud	Length (RF)	Length (RTJ)	No. of Bolts	Dia of Stud	Length (RF)	Length (RTJ)
1/2"	4	1/2"	2 1/4"	-	4	1/2"	2 1/2"	3"
3/4"	4	1/2"	2 1/2"	-	4	5/8"	3"	3 1/2"
1"	4	1/2"	2 1/2"	3"	4	5/8"	3"	3 1/2"
1 1/4"	4	1/2"	2 3/4"	3 1/4"	4	5/8"	3 1/4"	3 3/4"
1 1/2"	4	1/2"	2 3/4"	3 1/4"	4	3/4"	3 1/2"	4"
2"	4	5/8"	3 1/4"	3 3/4"	8	5/8"	3 1/2"	4"
2-1/2"	4	5/8"	3 1/2"	4"	8	3/4"	4"	4 1/2"
3"	4	5/8"	3 1/2"	4"	8	3/4"	4 1/4"	4 3/4"
4"	8	5/8"	3 1/2"	4"	8	3/4"	4 1/2"	5"
5"	8	3/4"	3 3/4"	4 1/4"	8	3/4"	4 3/4"	5 1/4"
6"	8	3/4"	4"	4 1/2"	12	3/4"	4 3/4"	5 1/2"
8"	8	3/4"	4 1/4"	4 3/4"	12	7/8"	5 1/2"	6"
10"	12	7/8"	4 1/2"	5"	16	1"	6 1/4"	6 3/4"
12"	12	7/8"	4 3/4"	5 1/4"	16	1 1/8"	6 3/4"	7 1/4"
14"	12	1"	5 1/4"	5 3/4"	20	1 1/8"	7"	7 1/2"
16"	16	1"	5 1/4"	5 3/4"	20	1 1/4"	7 1/2"	8"
18"	16	1 1/8"	5 3/4"	6 1/4"	24	1 1/4"	7 3/4"	8 1/4"
20"	20	1 1/8"	6 1/4"	6 3/4"	24	1 1/4"	8"	8 3/4"
24"	20	1 1/4"	6 3/4"	7 1/4"	24	1 1/2"	9"	10"

**RATING: 600 LBS**

**RATING: 900 LBS**

Nom. Size	No. of Bolts	Dia of Stud	Length (RF)	Length (RTJ)	No. of Bolts	Dia of Stud	Length (RF)	Length (RTJ)
1/2"	4	1/2"	3"	3"	4	3/4"	4 1/4"	4 1/4"
3/4"	4	5/8"	3 1/2"	3 1/2"	4	3/4"	4 1/2"	4 1/2"
1"	4	5/8"	3 1/2"	3 1/2"	4	7/8"	5"	5"
1 1/4"	4	5/8"	3 3/4"	3 3/4"	4	7/8"	5"	5"
1 1/2"	4	3/4"	4 1/4"	4 1/4"	4	1"	5 1/2"	5 1/2"
2"	8	5/8"	4 1/4"	4 1/4"	8	7/8"	5 3/4"	5 3/4"
2-1/2"	8	3/4"	4 3/4"	4 3/4"	8	1"	6 1/4"	6 1/4"
3"	8	3/4"	5"	5"	8	7/8"	5 3/4"	5 3/4"
4"	8	7/8"	5 3/4"	5 3/4"	8	1 1/8"	6 3/4"	6 3/4"
5"	8	1"	6 1/2"	6 1/2"	8	1 1/4"	7 1/2"	7 1/2"
6"	12	1"	6 3/4"	6 3/4"	12	1 1/8"	7 1/2"	7 3/4"
8"	12	1 1/8"	7 1/2"	7 3/4"	12	1 3/8"	8 3/4"	8 3/4"
10"	16	1 1/4"	8 1/2"	8 1/2"	16	1 3/8"	9 1/4"	9 1/4"
12"	20	1 1/4"	8 3/4"	8 3/4"	20	1 3/8"	10"	10"
14"	20	1 3/8"	9 1/4"	9 1/4"	20	1 1/2"	10 3/4"	11"
16"	20	1 1/2"	10"	10"	20	1 5/8"	11 1/4"	11 1/2"
18"	20	1 5/8"	10 3/4"	10 3/4"	20	1 7/8"	12 3/4"	13 1/4"
20"	24	1 5/8"	11 1/4"	11 1/2"	20	2"	13 3/4"	14 1/4"
24"	24	1 7/8"	13"	13 1/4"	20	2 1/2"	17 1/4"	18"

## **CHIN YUAN METAL**

*your bolting solution*

**18 Tuas Street**  
Singapore 638455

*tel* ☉ 65 6265 0550 *fax* ☉ 65 6262 0550  
☉ 65 6264 0550

*email* [sales@chinyuanmetal.com](mailto:sales@chinyuanmetal.com)  
*web* [www.chinyuanmetal.com](http://www.chinyuanmetal.com)