



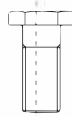
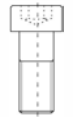
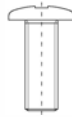
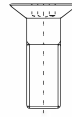
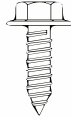
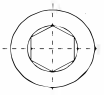

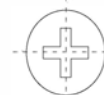
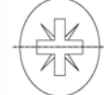
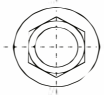












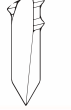
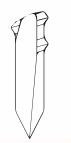

Fastenings Product Catalogue



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Screw Model

Head Type									
									
Hexagon Head	Cylindrical Head	Pan Head	Countersunk Head	Flange Head					
Hole Type									
									
Inner Hexagon Socket Head	Inner Hexagon Socket Flat Head	Cross Recess Head	Star-shaped Head	Hexagon Flange					
Thread Form									
									
TYPEA 10#-12T 12#-11T 14#-10T	6#-20T 7#-19T 8#-18T 10#-16T 12#-14T 14#-14T	TYPEC 8#-32T 10#-24T 12#-24T 14#-20T	HI-LOW	DOUBLE THREAD					
Drill Tail									
									
PYPE17	TAPPING	SPOON	WING TEKS	PT.1	PT.2	PT.3	PT.4	PT.5	PT.6

Fastenings Product Series I




Screw Series		
Full Thread Hexagon Head Bolt	Half Thread Hexagon Head Bolt	Round Set Screws with Cup Point
		
Cross Recess Pan Head Screw	Cross Recess Countersunk Head Screw	Inner Hexagon Socket Cylindrical Head Screw
		
Flat Washer	Dome Nut	Hexagon Nut
		
Self-tapping Screw Series		
Cross Recess Pan Head Self-tapping Screw	Cross Recess Countersunk Head Self-tapping Screw	Hexagon Flange Head Self-tapping Bolt
		
Self-drilling Tapping Screw Series		
Cross Recess Pan Head Self-drilling Tapping Screw	Cross Recess Countersunk Head Self-drilling Tapping Screw	Hexagon Flange Head Self-drilling Tapping Screw
		

Fastenings Product Series II


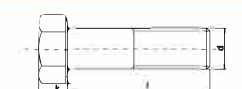

Other Series		
Inner hexagon socket cylindrical head screw	Galvanized Self-drilling Tapping Screw	Carbon Steel Self-tapping Screw
		
Cylindrical Head Welding Nail Connector	Big Hexagon Head Bolt Connection Pair	Torsional Bolt Connection Pair
		
Application Field		
		
		

Bolt Series


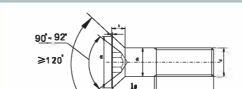

Hexagon head bolt with full thread

			Description: Full thread applies to the mechanical equipment which has high requirements on strength and accuracy, making two parts(structural component) joint together as a whole. Material : 316, 304								
Nominal diameter		M8	M10	M12	M14	M16	M18	M20	M22	M24	
Pitch	P	1.25	1.5	1.75	2	2	2.5	2.5	2.5	3	
K	A	max	5.45	6.56	7.68	8.98	10.18	11.72	12.72	14.22	15.22
		min	5.15	6.22	7.32	8.62	9.82	11.28	11.28	13.78	14.78
	B	max	5.54	6.69	7.79	9.09	10.29	11.85	12.85	14.35	15.35
		min	5.06	6.11	7.21	8.51	9.71	11.15	12.15	13.65	14.65
S	max	13	17	19	22	24	27	30	32	36	
	min	A	12.73	16.73	18.67	21.67	23.67	16.67	19.67	31.61	35.38
		B	12.57	16.57	18.48	21.16	23.16	16.15	19.16	31	35

Hexagon head bolt with half thread


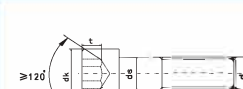

			Description: Apply to the mechanical equipment which has high requirements on strength and accuracy, making two parts (structural component) joint together as a whole. Material : 316, 304								
Nominal Diameter		M8	M10	M12	M14	M16	M18	M20	M22	M24	
Pitch	P	1.25	1.5	1.75	2	2	2.5	2.5	2.5	3	
b	l≤125	22	26	30	34	38	42	46	50	54	
	125<l≤200	28	32	36	40	44	48	52	56	60	
	l>200	/	45	49	53	57	61	65	69	73	
dz	max	8	10	12	14	16	18	20	22	24	
	min	A	7.78	9.78	11.73	13.73	15.73	17.73	19.67	21.67	23.67
		B	/	/	/	/	18.57	17.57	19.48	21.48	23.48
k	A	max	5.45	6.58	7.68	8.98	10.18	11.72	12.72	14.22	15.22
		min	5.15	6.22	7.32	8.62	9.82	11.28	11.28	13.78	14.78
	b	max	/	/	/	10.29	11.85	12.85	14.35	15.35	17.35
		min	/	/	/	9.71	11.15	12.15	13.65	14.65	16.65
s	max	3.5	13	17	19	22	24	27	30	32	36
	min	A	12.73	16.73	18.67	21.67	23.67	26.67	29.67	31.61	35.38
		B	/	/	/	/	23.16	26.16	29.16	31	35

Inner hexagon countersunk head screw




			Description: Apply to the mechanical equipment which has high requirements on strength and accuracy, making two parts (structural component) joint together as a whole. Material : 316, 304								
Nominal Diameter	d	M3	M4	M5	M6	M8	M10	M12	M14	M16	M20
Pitch	P	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5
dk	max	6.72	8.96	11.2	13.44	17.92	22.4	26.88	30.8	33.6	40.32
ds	max	3	4	5	6	8	10	12	14	16	20
k	max	1.86	2.48	3.1	3.72	4.96	6.2	7.44	8.4	8.8	10.16

Screw Series




Inner hexagon socket cylindrical head screw

			Description: Tightening force is bigger, need to drill a thread hole on the connected parts, and need special hexagon tools to work together. Material : 316, 304								
Thread specification		M4	M5	M6	M8	M10	M12	M14	M16	M20	M24
Pitch p		0.7	0.8	1	1.25	1.5	1.75	2	2	2.5	3
dk	Smooth head	7	8.5	10	13	16	18	21	24	30	36
max	Knurled head	7.22	8.72	10.22	13.27	16.27	18.27	21.33	24.33	30.33	36.39
k	max	4	5	6	8	10	12	14	16	20	24

Cross recessed pan head screw

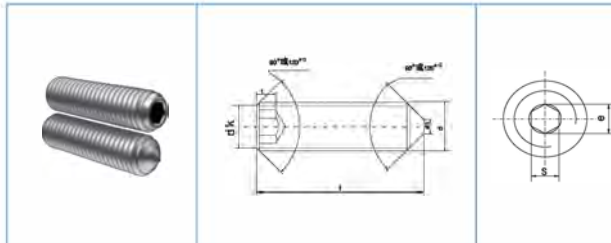
			Description: Apply to the mechanical equipment which has high requirements on strength and accuracy, making two parts(structural component) joint together as a whole. Material:316, 304								
Thread specification		M1.6	M2	M2.5	M3	M3.5	M4	M5	M6	M8	M10
Pitch p		0.35	0.4	0.45	0.5	0.6	0.7	0.8	1	1.25	1.5
a	max	0.7	0.8	0.9	1	1.2	1.4	1.6	2	2.5	3
dk	max	3.2	4	5	5.6	7	8	9.5	12	16	20
k	max	1.3	1.6	2.1	2.4	2.6	3.1	3.7	4.6	6	7.5
Groove No.	no.	0		1		2		3		4	

Cross recessed countersunk head screw

			Description: Apply to the mechanical equipment which has high requirements on strength and accuracy, making two parts(structural component) joint together as a whole. Material:316, 304								
Thread specification		M1.6	M2	M2.5	M3	M3.5	M4	M5	M6	M8	M10
Pitch p		0.35	0.4	0.45	0.5	0.6	0.7	0.8	1	1.25	1.5
a	max	0.7	0.8	0.9	1	1.2	1.4	1.6	2	2.5	3
dk	Theoretical max	3.6	4.4	5.5	6.3	8.2	9.4	10.4	12.6	17.3	20
	Nominal=max	3	3.8	4.7	5.5	7.3	8.4	9.3	11.3	15.8	18.3
k	max	1	1.2	1.5	1.65	2.35	2.7	2.7	3.3	4.65	5
Groove No.	no.	0		1		2		3		4	

Tightening & Spring Washer Series

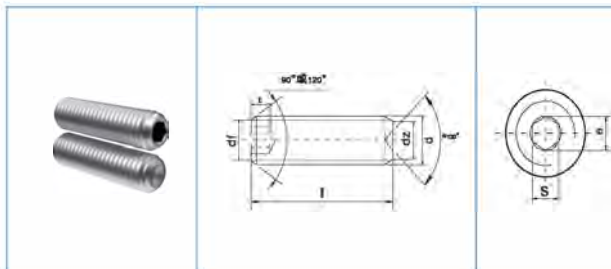
Inner hexagon prototype set screw



Description: The end is a conical or conical section. When installing, put the screw end into the tapered surface of the prefabricated installation pit, to achieve axial access to the circumferential positioning. Commonly used in the permanent fixation of parts on the mechanical axis, the fastening screw is one of the commonly used end forms.
Common material: 304, 316

Thread specification	d	M1.6	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20	M24
Pitch p		0.35	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5	3
dt	max	0.4	0.5	0.65	0.75	1	1.25	1.5	2	2.5	3	4	5	6

Inner hexagon recessed set screw



Description: The end is a ring formed by the crossing of two conical surfaces inside and outside. The contact surface of the flat end is small, contact stress is bigger, no need to prefabricate installation hole like cylinder end and taper. Usually applied to permanent and semi permanent assembly of these Fastened parts that not allowed prefabricated installation hole or extrusion damage.
Material: 316, 304

Thread specification	d	M1.6	M2	M2.5	M3	M4	M5	M6	M8	M10	M12	M16	M20	M24
Pitch p		0.35	0.4	0.45	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2.5	3
dt	max	0.8	1	1.2	1.4	2	2.5	3	5	6	8	10	14	16

Spring washer

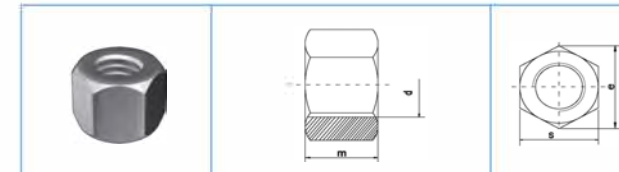


Description: Installed on the supporting surface of bolt, screw and nut, to prevent loosen and eliminate the gap after assembly.
Material: 316, 304

Specification		φ3	φ4	φ5	φ6	φ8	φ10	φ12	φ14	φ16	φ18	φ20	φ22	φ24
Inner diameter	d_{min}	3.1	4.1	5.1	6.1	8.1	10.2	12.2	14.2	16.2	18.2	20.2	22.5	24.5
Nominal diameter	S(b)	0.8	1.1	1.3	1.6	2.1	2.6	3.1	3.6	4.1	4.5	5	5.5	6
Thickness	h	1.6	2.2	2.6	2.6	4.2	5.2	6.2	7.2	8.2	9	10	11	12

Nut & Flat Washer Series

Hexagon nut



Description: Work together with bolt and screw, mostly used in these cases need to disassemble frequently.
Material: 316, 304

Thread specification		M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
Pitch	P	0.5	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5	2.5	3
Thickness	m	2.4	3.2	4	5	6	8	10	11	13	14	16	18	19
Opposite side	S_{max}	5.5	7	8	10	14	17	19	22	24	27	30	32	36

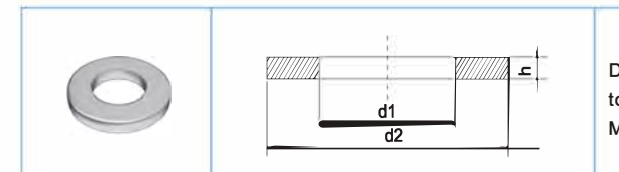
Dome nut



Description: Apply to the place where need to cover the end of screw thread, mostly used in the end of pipeline system, with the effect of anti-dust and damp proof.
Material: 316, 304

Thread specification		M3	M4	M5	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24
Pitch p		0.5	0.7	0.8	1	1.25	1.5	1.75	2	2	2.5	2.5	2.5	3
h		2.5	3	4	5	6	8	10	11	13	14	16	18	19
e, max		5	6	7.2	9.2	13	16	18	20	22	25	28	30	34
Thickness	h	6	7	9	11	15	18	22	24	16	29	32	35	38
l		5	5	6	7	11	13	16	17	19	22	25	26	28
Opposite side	S_{max}	5.5	7	8	10	13	16	18	21	24	27	30	24	36


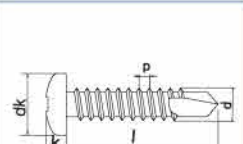
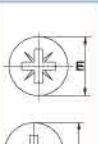

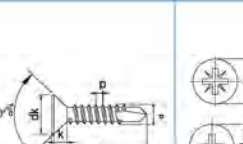
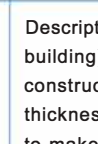

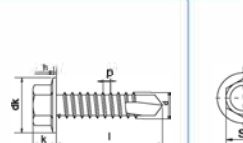
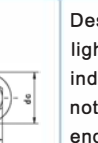
Flat washer




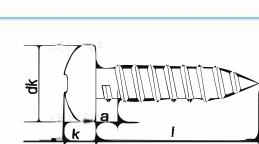
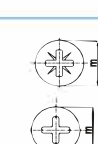

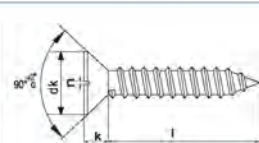
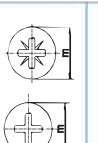

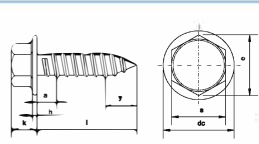
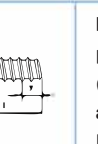
Description: Go with bolt, screw, nut, protecting the tightened surface, to avoid scratch, increasing the stressed area of the fastened parts.
Material: 316, 304

Specification		φ2	φ2.5	φ3	φ4	φ5	φ6	φ8	φ10	φ12	φ14	φ16	φ20	φ24	φ30	φ36
Inner diameter	d1	2.2	2.7	3.2	4.3	5.3	6.4	8.4	10.5	13	15	17	21	25	31	37
Outer diameter	d2	5	6	7	9	10	12	16	20	24	28	30	37	44	56	66
Thickness	h	0.3	0.5	0.5	0.8	1	1.6	1.6	2	2.5	2.5	3	3	4	4	5

Self-drilling Tapping Screw Series

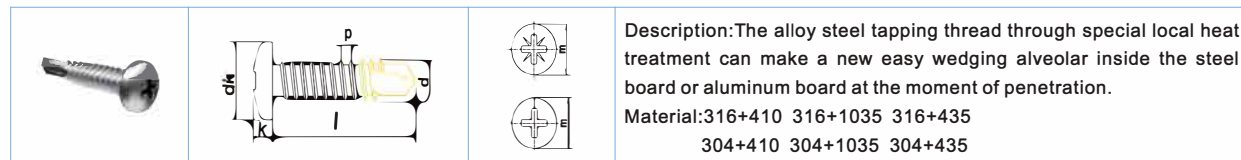
Cross recessed pan head self-drilling tapping screw							
			<p>Description: Apply to the connection of multi-layer plate and big-size panel(in lighter building), having a good comprehensive economic benefit in these industries like construction, automobile manufacturing etc. When selecting, please note that the thickness of the connected parts should be less than the length of the end of screw drill, to make sure the hole already formed before tapping. Use cross type screwdriver to screw. Material: 316, 304</p>				
Nominal diameter d		ST3.5	ST4.2	ST4.8	ST5.5	ST6.3	
Pitch	p	1.3	1.4	1.6	1.8	1.8	
dc	max	7	8	9.5	11	12	
	min	6.64	7.64	9.14	10.57	11.57	
k	max	2.6	3.1	3.7	4	4.6	
	min	2.35	2.8	3.4	3.7	4.3	
Groove No.		2			3		
Cross recessed countersunk self-drilling tapping screw							
			<p>Description: Apply to the connection of multi-layer plate and big-size panel(in lighter building),having a good comprehensive economic benefit in these industries like construction, automobile manufacturing etc. When selecting, please note that the thickness of the connected parts should be less than the length of the end of screw drill, to make sure the hole already formed before tapping. Use cross type screwdriver to screw. Material:316, 304</p>				
Nominal diameter d		ST3.5	ST4.2	ST4.8	ST5.5	ST6.3	
Pitch p		1.3	1.4	1.6	1.8	2.1	
dc	max	7.3	8.4	9.3	10.3	11.3	
	min	6.9	8	8.9	9.9	10.9	
k	max	2.35	2.6	2.8	3	3.15	
Groove No.		2			3		
Hexagon flange head self-drilling tapping screw							
			<p>Description: Apply to the connection of multi-layer plate and big-size panel(in lighter building), having a good comprehensive economic benefit in these industries like construction, automobile manufacturing etc. When selecting, please note that the thickness of the connected parts should be less than the length of the end of screw drill, to make sure the hole already formed before tapping. Use flange type screwdriver to screw. Material: 316, 304</p>				
Nominal diameter d		ST3.5	ST3.9	ST4.2	ST4.8	ST5.5	ST6.3
Pitch	p	1.3	1.3	1.4	1.6	1.8	1.8
h	min	0.6	0.6	0.8	0.9	1	1
	max	8.3	8.3	8.8	10.5	11	13.5
dc	min	7.6	7.6	8.1	9.8	10	12.2
	max	3.4	3.4	4.1	4.3	5.4	5.9
k	min	3	3	3.6	3.8	4.8	5.3
	max	5.5	5.5	7	8	8	10
s	max	5.32	5.32	6.78	7.78	7.78	9.78
	min						

Tapping Screw Series

Cross recessed pan head tapping screw										
			<p>Description: Apply to thin sheet metal(aluminum,copper,low carbon steel) parts and thicker metal parts or the thread connection between woodwork(main body). Use cross screwdriver to screw, and will leave a thread after screwing in. Material: 316, 304, 410</p>							
thread specification		ST2.2	ST2.9	ST3.5	ST4.2	ST4.8	ST5.5	ST6.3		
Pitch	P	0.8	1.1	1.3	1.4	1.6	1.8	1.8		
a	max	0.8	1.1	1.3	1.4	1.6	1.8	1.8		
d	max	2.8	3.5	4.1	4.9	5.5	6.3	7.1		
	dk	max	4	5.6	7	8	9.5	11		
dk	min	3.7	5.3	6.64	7.64	9.18	10.57	11.57		
	k	max	1.6	2.4	2.6	3.1	3.7	4	5.6	
k	min	1.4	2.15	2.35	2.8	3.8	3.7	4.3		
	r	min	0.1	0.1	0.1	0.2	0.2	0.25	0.28	
r	=	3.2	5	6	6.5	8	9	10		
Cross recessed countersunk head tapping screw										
			<p>Description: Apply to thin sheet metal(aluminum,copper,low carbon steel) parts and thicker metal parts or the thread connection between woodwork (main body). Use cross screwdriver to screw, and will leave a thread after screwing in.Screw head is not allowed to be left outside. Material: 316, 304, 410</p>							
thread specification		ST2.2	ST2.9	ST3.5	ST4.2	ST4.8	ST5.5	ST6.3		
Pitch	P	0.8	1.1	1.3	1.4	1.6	1.8	1.8		
a	max	0.8	1.1	1.3	1.4	1.6	1.8	1.8		
dk	Theoretical value	max	4.4	6.3	8.2	9.4	10.4	11.5	12.6	
	Actual value	max	3.8	5.5	7.3	8.4	9.3	10.3	11.3	
k		min	3.5	5.2	6.9	8	8.9	9.9	10.9	
k	max	1.1	1.7	2.35	2.6	2.8	3	3.15		
r	max	0.8	1.2	1.4	1.6	2	2.2	2.4		
Hexagon flange head tapping screw										
			<p>Description: Apply to thin sheet metal(aluminum,copper,low carbon steel) parts and thicker metal parts or the thread connection between woodwork (main body). Use flange type screwdriver to screw, and will leave a thread after screwing in. Material: 316, 304</p>							
thread specification		ST2.2	ST2.9	ST3.5	ST4.2	ST4.8	ST5.5	ST6.3	ST8	ST9.5
Pitch p		0.8	1.1	1.3	1.4	1.6	1.8	1.8	2.1	2.1
a	max	0.8	1.1	1.3	1.4	1.6	1.8	1.8	2.1	2.1
dc	max	4.5	6.4	7.5	8.5	10	11.2	12.8	16.8	21
k	max	2.2	3.2	3.8	4.3	5.2	6	6.7	8.6	10.7

Integrated Self-drilling Tapping Screw Series

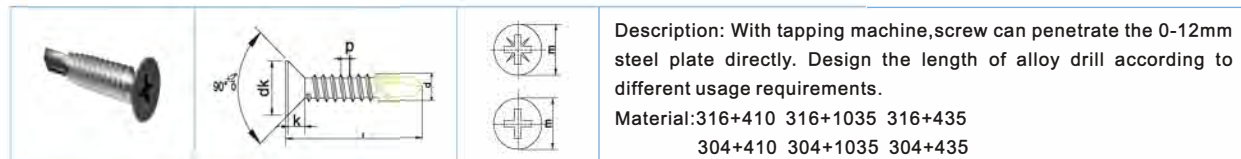
Cross recessed pan head integrated self-drilling tapping screw



Description: The alloy steel tapping thread through special local heat treatment can make a new easy wedging alveolar inside the steel board or aluminum board at the moment of penetration.
Material: 316+410 316+1035 316+435
304+410 304+1035 304+435

Nominal diameter d		ST3.5	ST4.2	ST4.8	ST5.5	ST6.3
Pitch p		1.3	1.4	1.6	1.8	1.8
dc	max	7	8	9.5	11	12
	min	6.64	7.64	9.14	10.57	11.57
k	max	2.6	3.1	3.7	4	4.6
	min	2.35	2.8	3.4	3.7	4.3
Groove No.		2			3	

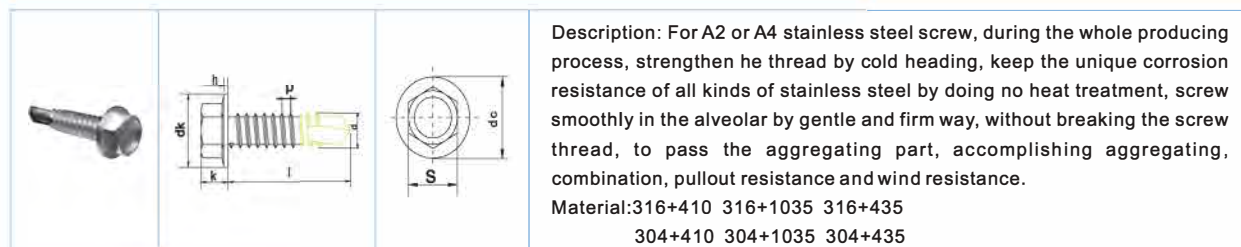
Cross recessed countersunk head integrated self-drilling tapping screw



Description: With tapping machine, screw can penetrate the 0-12mm steel plate directly. Design the length of alloy drill according to different usage requirements.
Material: 316+410 316+1035 316+435
304+410 304+1035 304+435

Nominal diameter d		ST3.5	ST4.2	ST4.8	ST5.5	ST6.3
Pitch p		1.3	1.4	1.6	1.8	2.1
dc	max	7.3	8.4	9.3	10.3	11.3
	min	6.9	8	8.9	9.9	10.9
k	max	2.35	2.6	2.8	3	3.15
Groove No.		2			3	

Hexagon flange head integrated self-drilling tapping screw

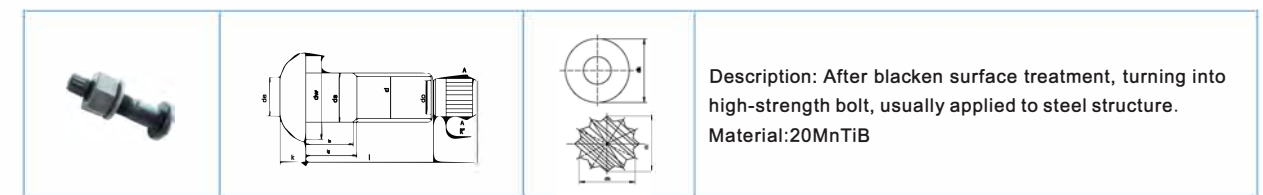


Description: For A2 or A4 stainless steel screw, during the whole producing process, strengthen the thread by cold heading, keep the unique corrosion resistance of all kinds of stainless steel by doing no heat treatment, screw smoothly in the alveolar by gentle and firm way, without breaking the screw thread, to pass the aggregating part, accomplishing aggregating, combination, pullout resistance and wind resistance.
Material: 316+410 316+1035 316+435
304+410 304+1035 304+435

Nominal diameter d		ST3.5	ST3.9	ST4.2	ST4.8	ST5.5	ST6.3
Pitch p		1.3	1.3	1.4	1.6	1.8	1.8
h	min	0.6	0.6	0.8	0.9	1	1
	max	8.3	8.3	8.8	10.5	11	13.5
dc	min	7.6	7.6	8.1	9.8	10	12.2
	max	3.4	3.4	4.1	4.3	5.4	5.9
k	min	3	3	3.6	3.8	4.8	5.3
	max	5.5	5.5	7	8	8	10
s	min	5.32	5.32	6.78	7.78	7.78	9.78

High-strength Bolt for Steel Structure

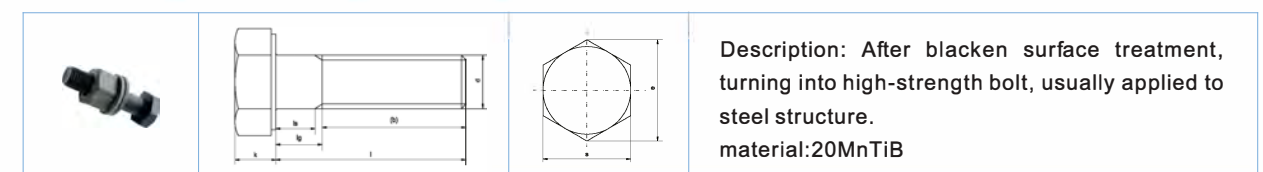
Torsion-shear type high-strength bolt



Description: After blacken surface treatment, turning into high-strength bolt, usually applied to steel structure.
Material: 20MnTiB

Thread specification d		M16	M20	M22	M24	M27	M30
Pitch p		2	2.5	2.5	3	3	3.5
da	max	18.83	24.4	26.4	28.4	32.4	35.84
	min	16.43	20.52	22.52	24.52	27.84	30.84
ds	max	16.43	20.52	22.52	24.52	27.84	30.84
	min	15.57	19.48	21.48	23.48	26.16	19.16
dk	max	27.9	34.5	38.5	41.5	42.8	46.5
k	Nominal	30	37	41	44	50	55
k''	max	10	13	14	15	17	19
do	≈	12	14	15	16	17	18

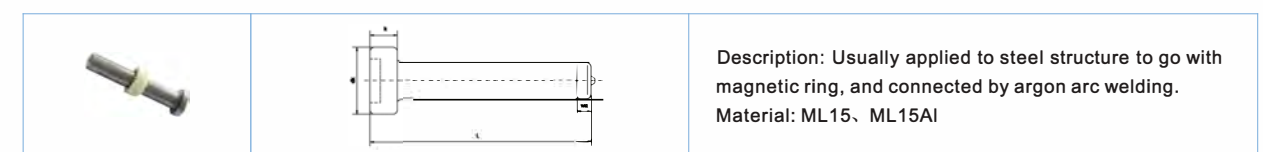
Big hexagon head high-strength bolt



Description: After blacken surface treatment, turning into high-strength bolt, usually applied to steel structure.
material: 20MnTiB

Thread specification d		M12	M16	M20	M22	M24	M27	M30
Pitch p		1.75	2	2.5	2.5	3	3	3.5
da	max	15.23	19.23	24.32	26.32	28.32	32.84	35.84
	min	12.43	16.43	20.52	22.52	24.52	27.84	30.84
e	min	22.78	29.56	37.29	39.55	45.2	50.85	55.37
k	Nominal	7.5	10	12.5	14	15	17	18.7
	max	21	27	34	36	41	16	50

Cylinder head welding nail



Description: Usually applied to steel structure to go with magnetic ring, and connected by argon arc welding.
Material: ML15, ML15AI

d Nominal		10	13	16	19	22	25
dk max		18.35	22.42	29.42	32.5	35.5	40.5
k max		7.15	8.45	8.45	10.45	10.45	12.55
WA		4	5	5	6	6	6

Carbon Steel Bolt (I)

Introduction of Carbon Steel Bolt

According to the performance grade, carbon steel bolt can be classified into 3.6, 4.6, 4.8, 5.6, 6.8, 8.8, 9.8, 10.9, 12.9 etc.

For example:

The material of the bolts is low carbon alloy steel or the medium carbon steel, meanwhile has grade 8.8 and above, after heat treatment (quenching, temper), these bolts called high-strength bolt, the others called ordinary bolt.

Performance grade consists of two figures which stand for the nominal tensile strength and yield ratio of bolt material. For example the performance grade 4.6 means:

- Nominal tensile strength is 400MPa
- Yield ratio is 0.6
- Yield strength is 240MPa from the formula 400×0.6

After the heat treatment of material, the high-strength bolt grade 10.9 can achieve the following performance:

- Nominal tensile strength 1000Mpa
- Yield ratio 0.9
- Yield strength $1000 \times 0.9 = 900$ MPa

The meaning of bolt performance grade is general international standard. The bolts with same performance grade, despite of the material and producing area, the performance are the same, just need to select the performance grade during designing.

Strength grade 8.8 and 10.9 means the bolt's shear stress grade is 8.8GPa and 10.9GPa. The 's' in 10.9s means steel structure.

High-strength bolt is mainly applied to steel structure project, to connect the steel plate.

- High-strength bolt can be classified into tor-shear type high-strength bolt and big hexagonal high strength bolt
- Big hexagonal head high strength bolt is the high strength grade in ordinary bolts, while the tor-shear type high strength bolt is the improved type of big hexagonal head high strength bolt.

Carbon Steel Bolt (II)

Outline of High-strength Bolt

Name	Material	Surface Treatment	Grade	Standard	Remark
Torsional shear type high strength bolt	20MnTiB/35VB	blacken	10.9S	GB/T3632	screw/ one flat washer/nut
Welding nail(stud)	ML15/ML15Al	nature finish	—	GB/T10433	screw/magnetic ring
Big hexagon head bolt	20MnTiB/35VB	blacken	10.9S	GB/T1228-1231	screw/ two flat washers/nut
Inner hexagon Cylindrical head screw	10B21/35/45	blacken/galvanized /dacromet	4.8/8.8/ 10.9/12.9	DIN912	configuration according to client's requirement
Hexagon flange bolt	10B21/35/45	galvanized	4.8/8.8/10.9	GB/T5787	
Double head screw	35/45	blacken/galvanized	4.8/8.8/12.9	GB/T953	

Performance grade

Category	Bolt	Nut	Washer
Form size	according to GB/T1228	according to GB/T1229	according to GB/T1230
Performance grade	10.9S	10H	35-45HRC
	8.8S	8H	35-45HRC

Mechanical properties

Thread specification M	Performance grade	Material	Tensile strength Mpa
M12-M24	10.9S	20MnTiB	1040-1240
M27-M30		35VB	
M12-M24	8.8S	20MnTiB	830-1030
M27-M30		35VB	

Material Performance Comparison of All Kinds of Self-drilling Tapping Screw

Material	Tensile strength N/mm ²	Hardness HV	Application	Appearance	Corrosion resistance	Working environment	Thickness of the fixed plate
1022A Coating nail	1000	surface: HV450-650 core: HV280-400	plastic+steel keel wood+thick engineering plastic wood+steel keel fiberboard+steel keel	electroplate	No red rust after leaving the entire screw in the neutral salt fog for 72 hours	neutrality indoor	apply to the steel plate with thickness below 12mm, not apply to stainless steel plate
SUS304	500-700	surface: HV210-270 core: HV190-230	plastic+thin plastic aluminum wood board+plastic plastic+thin steel wood+thin steel, aluminum board fiberboard+thin steel, aluminum board	nature finish	No red rust after leaving the screw head in the neutral salt fog for 120 hours	neutrality indoor exposed outdoor corrosive outdoor littoral area indoor	apply to the steel plate with thickness below 1mm, and the aluminum plate thickness below 6mm
SUS316	500-700	surface: HV210-270 core: HV190-230	plastic+thin plastic wood+plastic plastic+thin steel wood+thin steel, aluminum board	nature finish	No red rust after leaving the screw head in the neutral salt fog for 120 hours	neutrality indoor exposed outdoor corrosive outdoor littoral area indoor outdoor	apply to the steel plate with thickness below 1mm, and the aluminum plate thickness below 6mm
SUS410	1400-1600	surface: HV580-680 core: HV350-450	plastic+steel, stainless steel keel wood+thick engineering plastic wood+steel, stainless steel keel fiberboard+steel, stainless steel keel	nature finish	No red rust after leaving the screw head in the neutral salt fog for 72 hours	neutrality indoor exposed outdoor littoral area indoor	apply to the steel plate with thickness below 12mm, and the stainless steel plate thickness below 5mm

Notes:

1. Neutrality refers to the neutral climate in the inland. Corrosive environment is the environment with alkaline, sulfide, such as chemical, smelting, paper making, food and pharmaceutical factories, etc.
2. Littoral area: A region within 10KM from the coastline

Characteristics and application of the material 410

The material 410 (i.e. 1Cr13) is a kind of martensite stainless steel which has magnetism. Its main feature is that the core and surface hardness can be improved by heat treatment. It has a high comprehensive mechanical properties. But the corrosion resistance is not as good as 304,302. For the screw made of 410, no need to drill hole in advance, it can penetrate the steel plate directly, to realize drilling, tapping, locking at a time, saving time and labor. Though having a high comprehensive mechanical properties, its corrosion resistance is not good, need to pay attention to the application environment.

- no direct contact to rain water
- not suitable for strong acid and alkali
- not suitable for the environment with high humidity
- not suitable for seaside
- not suitable for the place near to chemical factory

If need to use in above cases, then must enhance the corrosion resistance first, which can be achieved by doing the treatment Dacromet on the surface. Otherwise, can not use directly.

National Accreditation Laboratory

Technology Innovated, Beauty Created

KIN LONG builds a provincial level technology center and owns a laboratory certified by China National Accreditation Service. KIN LONG establishes the research and development center sets up the market orientated product development mechanism. Owing more than 600 patents in China and abroad, KIN LONG was awarded as one of national high-end technology

enterprises.

Relying on strong R&D and test capacity, KIN LONG is also actively involved in the edition of National standard, Industrial standard and local standard. Till now, KIN LONG has completed editions of more than a hundred standards.



Common Used National Standard for Screw

S.N	National Standard No.	Name
1	GB/T5780	Hexagon head bolt/Grade C/Half thread
2	GB/T5781	Hexagon head bolt/Grade C/Full thread
3	GB/T5782	Hexagon head bolt/Grade A&B
4	GB/T5783	Hexagon head bolt/Full thread/Grade A&B
5	GB/T41	I-Shape hexagon nut/Grade C
6	GB/T6170	I-Shape hexagon nut/Grade A&B
7	GB/T93	Spring washer
8	GB/T97	Flat washer
9	GB/T859	Light-type spring washer
10	GB/T95	Flat washer/Grade C
11	GB/T67	Recessed pan head screw
12	GB/T68	Recessed countersunk head screw
13	GB/T70	Hexagon socket head cap screw
14	GB/T818	Cross recessed pan head screw
15	GB/T819	Cross recessed countersunk head screw
16	GB/T820	Cross recessed oval head screw
17	GB/T845	Cross recessed pan head tapping screw
18	GB/T846	Cross recessed countersunk head tapping screw
19	GB/T5283	Slotted countersunk head tapping screw
20	GB/T5284	Slotted oval head tapping screw
21	GB/T865	Countersunk head rivet
22	GB/T867	Cup head rivet
23	GB/T99	Slotted round head wood screw
24	GB/T100	Slotted countersunk head wood screw
25	GB/T101	Slotted oval head wood screw
26	GB/E950	Cross recessed round head wood screw
27	GB/T951	Cross recessed countersunk head wood screw
28	GB/T952	Cross recessed oval head wood screw
29	GB/T1014	Large oval head socket shank rivet
30	GB/T12615	Enclosed mushroom flat self-plugging rivet
31	GB/T12616	Enclosed countersunk flat self-plugging rivet
32	GB/T12617	Slotted countersunk flat self-plugging rivet
33	GB/T12618	Open type mushroom flat self-plugging rivet

Common Used Material Chemical Composition Table

Grade	chemical composition%										
	Type	C	Si	Mn	P	S	Ni	Cr	Mo	Cu	Others
302		0.15	1	2	0.045	0.03	8.0-10	17.0-19.0			Has a good anti-corrosion performance in these mediums like nitric acid, most organic acids and inorganic acids, water solution, phosphoric acid, alkali and gas etc, will obtain a higher strength after cold working.
302HQ/XM7		0.08	1	2	0.045	0.03	8.5-10.5	17.0-19.0		3.0-4.0	Has good cold working performance, suitable for the parts like cold heading etc.
303		0.15	1	2	0.2	≥0.15	8.0-10	17.0-19.0	≤0.60		Easy to lathe and cut.
303Cu		0.15	1	3	0.2	≥0.15	8.0-10	17.0-19.0	≤0.60	1.5-3.5	Easy to lathe and cut, suitable for automatic lathe.
304		0.08	1	2	0.045	0.03	8.0-10	18.0-20.0			Has good anti-corrosion performance, widely used.
304H		0.08	1	2	0.045	0.03	8.0-10	18.0-20.0			Has good anti-corrosion performance, strength will get bigger after cold working.
304HC		0.08	1	2	0.045	0.03	8.0-10	18.0-20.0		2.0-3.0	
304HCM		0.08	1	2	0.045	0.03	8.0-10	17.0-19.0		2.5-4.0	Good cold working performance and good corrosion resistance.
304L		0.03	1	2	0.045	0.03	9.0-13.0	18.0-20.0			Excellent corrosion resistance of grain boundary, suitable for the parts without heat treatment after welding.
304M		0.06	1	2	0.045	0.03	8.9-10	18.0-20.0			Good corrosion resistance and good drawing performance.
305		0.12	1	2	0.045	0.03	10.5-13.0	17.0-19.0			Good cold working performance and corrosion resistance.
305J1		0.08	1	2	0.045	0.03	10.0-13.0	16.5-19.0			Good cold working performance and corrosion resistance.
309S		0.08	1	2	0.045	0.03	12.0-15.0	22.0-24.0			Good heat resistance and oxidation resistance.
310S		0.08	1.5-3.0	2	0.045	0.03	19.0-22.0	22.0-26.0			Good heat resistance and oxidation resistance.
314		0.25	1.5-3.0	2	0.04	0.03	19.0-22.0	22.0-26.0			Better corrosion resistance than SUS 304 in these mediums like sea water and all kinds of organic acid etc.
316		0.08	1	2	0.045	0.03	10.0-14.0	16.0-18.0	2.0-3.0		Better corrosion resistance than SUS 304 in these mediums like sea water and all kinds of organic acid etc.
316Cu		0.03	1	2	0.045	0.03	10.0-14.0	16.0-18.0	2.0-3.0	2.0-3.0	Good cold impacting, good corrosion resistance.
316L		0.03	1	2	0.045	0.03	12.0-15.0	16.0-18.0	2.0-3.0		Important corrosion resistance material, has lower carbon content than SUS316, making it has better corrosion resistance of grain boundary.
321		0.08	1	2	0.045	0.03	9.0-13.0	17.0-19.0		Ti≤5*c%	Add Ti to SUS304, having a good corrosion resistance, suitable for fabricating welding core, diamagnetic instrument parts.
410		0.15	1	1		0.03		11.5-13.5			Having a certain degree of hardness, plasticity and toughness, and the ability to resist saltwater solution, nitric acid and some organic acid with low concentration.
416		0.15		1.25		≥0.15		12.0-14.0			Better cutting performance than SUS410, suitable for machining on automatic lathe.
420		0.26-0.4		1		0.03		12.0-14.0			Has better cutting performance.
410L		0.03	1	1	0.04	0.03		11.5-13.5			Has strong toughness.
430		0.12		1	0.04	0.03		16.0-18.0			The ability to resist corrosion in anti-oxidative media, but there is a tendency to intergranular attachment
430F		0.12	1	1.25	0.06	0.15		16.0-18.0			Has better cutting performance than SUS430, suitable for machining in automatic lathe.
631(J1)		0.09	1	1	0.04	0.03	6.5-8.5	16.0-18.0		AL0.75-1.5	Heat resistant spring action, aging treatment steel.