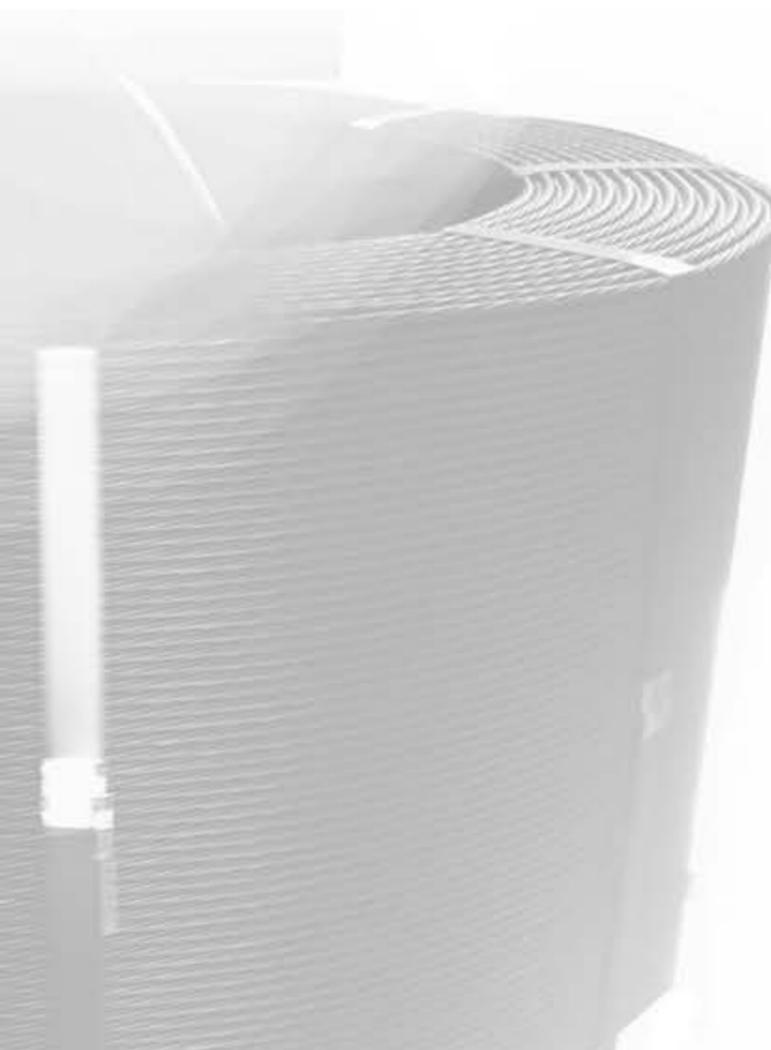




## SYSTEM FOR REINFORCEMENT AND STABLIZATION



### >> LIST AND CATALOG

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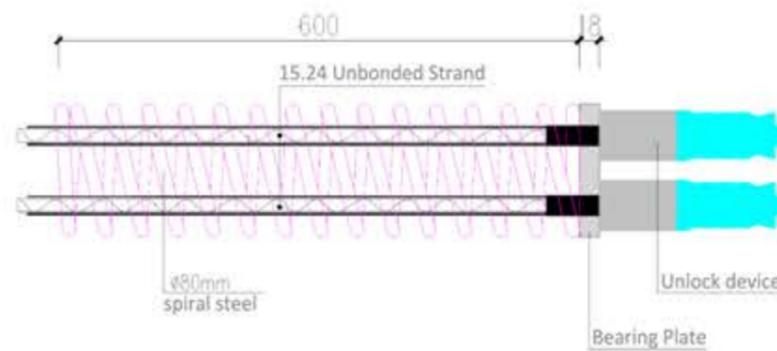
## >> RECOVERABLE ANCHOR CABLES

KHS15M3 pressure-type anchor cable, KHS15M4 pressure-type anchor cable, KHS15M5 pressure-type anchor cable. One unit of anchor cable is composed of 3, 4, and 5 unbonded steel strands which are internally anchored in the "special bearing body". The special bearing body can be Ensure the effective recycling of steel strands.

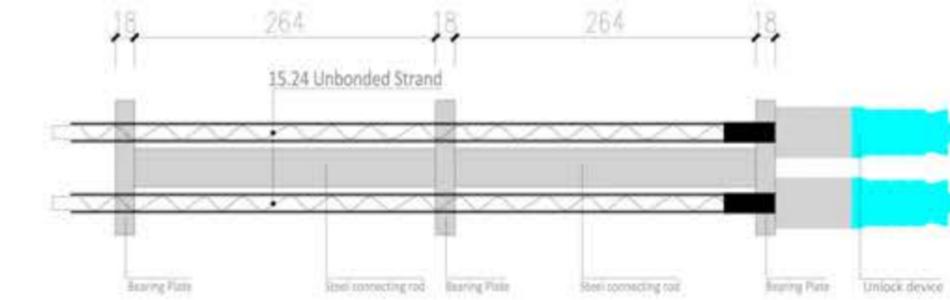
Before the construction of the prestressed anchor cable, a typical rock and soil layer should be selected for the basic test of the anchor cable pull-out strength, the number should be no less than 3, and a third party should be entrusted for verification, and the relevant data should be archived for future reference. Test requirements: ① The maximum test load of the basic test should not be less than the estimated failure load; ② The ultimate pull-out resistance test of the anchor cable adopts the multi-cycle loading method; ③ The basic test number of each anchor cable The number of anchor cables in the same soil layer should not be less than 3 pieces. Before the formal construction of the detachable core recovery type anchor cable, the dismantling process test shall be carried out, the number is 3, and a third party shall be entrusted to apply for a visa, and the relevant qualifications shall be archived for future reference. The formal construction shall be dismantled and accepted to ensure that all the anchor cables are removed.

CODE	Drilling Hole Dia (mm)	Bearing Plate Size (a*b*t)	Duct Inner Dia (D mm)	Designed Load (0.4-0.6T)/KN	Ultimate Load (KN)
KHS15M3	150~180	180*180*18	D90	184~276	460
KHS15M4	150~180	200*200*20	D90	248~372	620
KHS15M5	150~180	220*220*22	D110	300~450	750

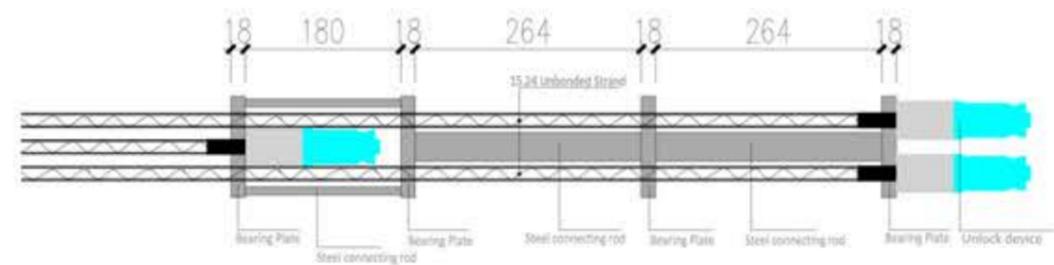
- P.S.
- The ultimate pulling force of the anchor cable in different soil layers and using different construction techniques will be different .
  - The actual bearing capacity of the anchor cable should be subject to its basic experimental data .



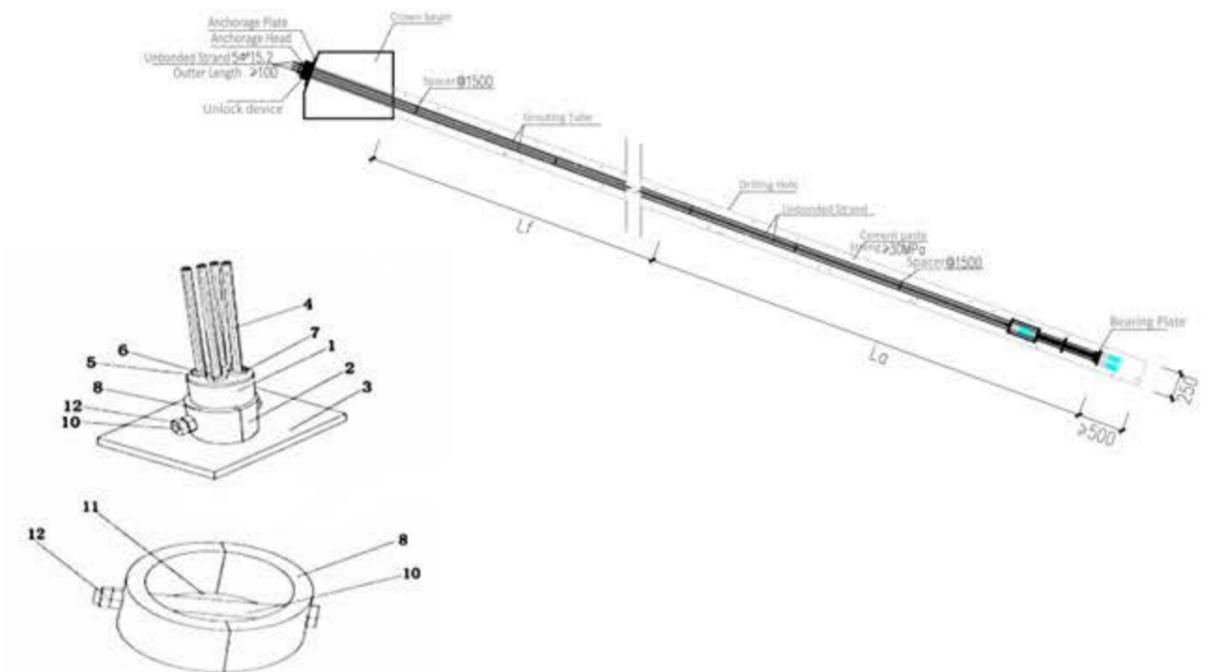
**KHS15M3 RECOVERABLE ANCHOR CABLE**



**KHS15M4 RECOVERABLE ANCHOR CABLE**



**KHS15M5 RECOVERABLE ANCHOR CABLE**



>> MONO-STRAND CABLE BOLT

Bulbs Cable Bolt



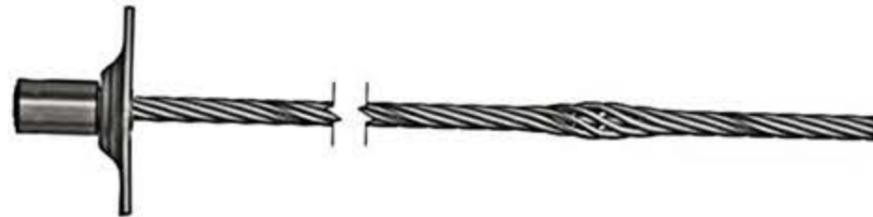
Specifications:

- BC15W7
- BC18W7
- BC22W7



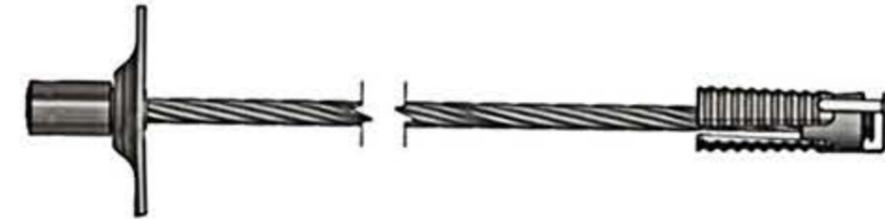
Features:

- Bulbs diameter can be customized
- Bulbs spacing 0.5m or 1m
- A single reserved end strand is used for preloading expansion force or binding



TECH ITEMS	BC15W7	BC18W7	BC22W7
CABLE DIA (mm)	15.24/ASTM A416	17.8/ASTM A416	21.6/ GB/T5224
BULBS DIA (mm)	25-30	28-34	32-48
CROSS AREA (mm <sup>2</sup> )	140	191	313
YIELD FORCE (KN)(Fp0.2)	229	311	466
BREAKING FORCE (KN)(Fm)	260	355	530
ELONHATION RATE (%) (@600mm)	6.5	6.5	6.5

Expansion Shell Cable Bolt



CABLE DIAMETER (MM)	UTS SYSTEM PERCENT OF UTS CABLE (%)	UTS CABLE (KN)	EXPANSION SHELL SIZE	DRILLING HOLE MINIMUM DIAMETER (MM)	DRILLING HOLE MAXIMUM DIAMETER (MM)
12.7	90	184	42	43.5	49
15.24	90	260	42	43.5	49



## >> HOLLOW CORE GROUTING CABLE BOLT

Hollow grouting anchor cable is mainly used in soft rock and deep roadway, large section chamber, gob side entry driving, gob side entry retaining, roadway repair, floor heave control and other complex and difficult conditions



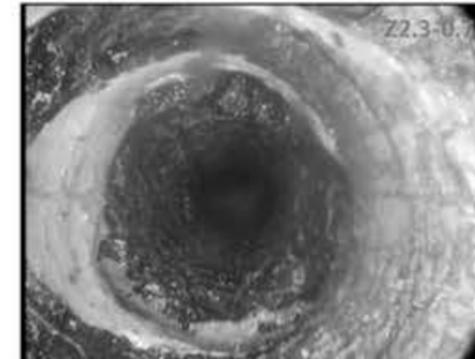
Specifications	SKZ22-1/1860	SKZ29-1/1770
Cable Diameter:mm	22	29
Length Range : mm	2500—12000	2500—12000
Hole Diameter: mm	∅30~∅35	∅35~∅40
Material T/S : MPa	1860	1770
Cable Breaking Force: kN	400	600
Elongation Rate : %	3.5	3.5
Resin anchor length: mm	1000~1500mm	1000~1500mm
Specification of hollow grouting tube: mm	7	10



Characteristics of full-length anchorage cable:

- The stiffness of support system is large;
- The load transfer characteristic of anchor cable is good;
- The support system has strong shear resistance.

Grouting changes the mechanical properties of surrounding rock of roadway



Before grouting



After grouting



- Improve the strength and integrity of surrounding rock of roadway.
- Network skeleton function
- Bonding and reinforcing effect
- The compression and compaction of high pressure grouting



>> SELF-DRILLING HOLLOW GROUTING ANCHOR BOLT



Domed Nut



Arch Plate

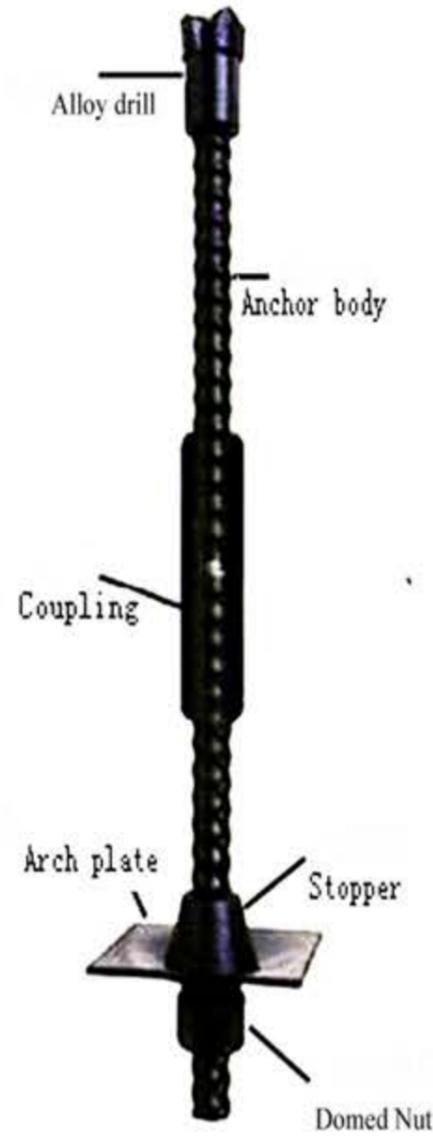


Alloy Drill



Stopper

SPEC	Over Dia * Wall Thk (mm)	Tensile Strength (KN)	Yield Strength (KN)	Elongation Rate (%)	Thread Direction	Pitch (mm)	Drilling Hole Dia (mm)
GQ-D25	25*3	≥150	-	≥6	Left	12.7	φ40-φ42
GQ-D25	25*5	≥180	-	≥6	Left or Right	10/12.7	φ40-φ42
GQ-D25	25*5(铁标)	≥153	≥102	≥21	Left or Right	10/12.7	φ40-φ42
GQ-D25	25*7(铁标)	≥193	≥128	≥21	Left or Right	10/12.7	φ40-φ42
GQ-D28	25*8	≥280	-	≥6	Left or Right	10/12.7	φ48
GQ-D32	32*6	≥280	-	≥6	Left or Right	10/12.7	φ50
GQ-D38	38*7	≥350	-	≥6	Left or Right	10/12.7	φ75
GQ-D51	51*8	≥500	-	≥6	Left or Right	10/12.7	φ80



**PITCH**  
Standard large pitch, strong anchoring force

**ANCHOR BOLT**  
Reinforcement of rock mass with longer bolts



**GROUTING**  
Grouting and support, double function

**Rock strength**  
Maintain the grouting pressure to achieve greater surrounding rock force



>> WATER EXPANDABLE ROCK BOLTS

Items	Unit	Specifications		
		PM12	PM16	PM24
Material	-	S275JR/S355MC	S275JR/S355MC	S275JR/S355MC
Breaking Load(≥)	kN	110	160	240
Yield Load(≥)	kN	100	130	200
Elongation (≥)	%	10	10	10
Grouting Pressure	Bar	300	240	300
Section diameter	mm	28	36	36
Diameter of original pipe	mm	41	54	54
Wall thickness	mm	2	2	3
Diameter of upper casing	mm	28	38	38
Diameter of expansion casing	mm	30/36	41/48	41/48
Optimum diameter expansion	mm	35-38	45-51	45-51
Hole diameter range	mm	32-39	43-42	43-52

Specifications				
PM24C	PM24H	MN12	MN16	MN24
S275JR/S355MC	S275JR/S355MC	S275JR	S275JR	S275JR
200	200	110	140	200
190	190	90	120	180
10	10	20	20	20
300	300	300	240	300
36	36	27.5	36	36
54	54	41	54	54
3	3	2	2	3
38	38	28	38	38
41/48	-	30/36	41/48	41/48
48-51	45-51	35-38	45-51	45-51
48-52	43-52	32-39	43-52	43-52

Water Expandable Rock Bolt's Performance

- Original shape of the bolt when inserted into drill hole. Water is pumped into the bolt, expanding the bolt.
- The bolt is then pressed against the rock, which provides high load friction
- The water pressure is then removed.

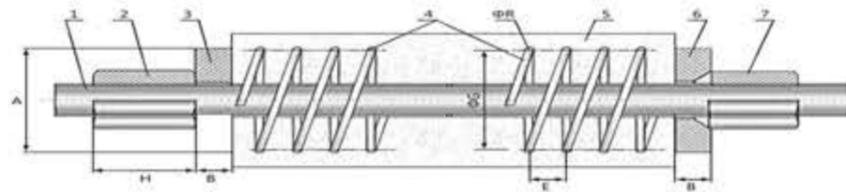


Yuanxian High-tech Material trading (Tianjin)

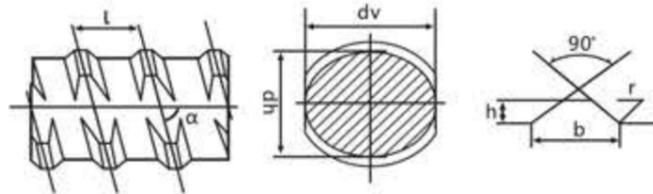
Address: 1-4-308 Huijin square, No.35 west five road,  
Tianjin Airport Economic Zone, Tianjin Pilot Free Trade Zone  
Tel:022 58711090, 13820020923, 18892293735  
Fax:022 58711090  
Email:info@yxmaterial.com  
Web:www.yxmaterial.cn



## High Strength Thread Bar system

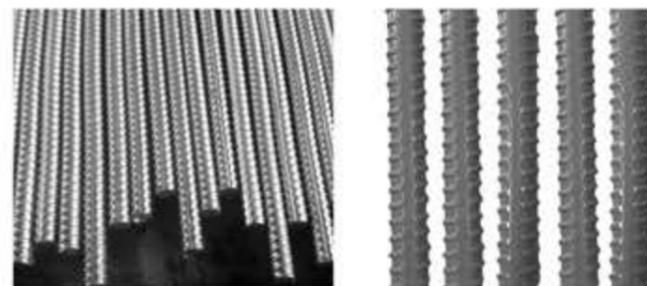


- 1 Full Thread Bar 全螺纹钢筋
- 2 Flat Hex Nut 平螺母
- 3 Flat Plate 平板
- 4 Spiral Rod 螺旋筋
- 5 Concrete 混凝土
- 6 Spherical Plate 球面板
- 7 Spherical Hex Nut 球面螺母



Diameter /mm	dh/mm		dv/mm		h/mm		b/mm		l/mm		r/mm	α
	Size	Tolerance	Size	Tolerance	Size	Tolerance	Size	Tolerance	Size	Tolerance		
15	14.7	±0.2	14.4	±0.5	1.0	±0.2	4.2	±0.3	10.0		0.5	78.5°
20	20.0	±0.4	20.0	+0.4-0.8	1.3	±0.3	4.8	±0.5	10.0	±0.2	1.2	80.5°
25	25.0		25.0	+0.4-0.8	1.6		6.0		12.0		1.5	81°
32	32.0	32.0		2.0	±0.4	7.0	16.0		2.0	81.5°		
36	36.0	±0.5	36.0	+0.5-1.2	2.2	±0.4	8.0	±0.3	18.0	±0.3	2.5	81.5°
40	40.0		40.0		2.5	±0.5	8.0		20.0		2.5	81.5°
50	50.0		50.0		3.0	-0.5	9.0		24.0		2.5	81.8°
63.5	63.5		63.5		3.0	±0.6	12.0		22.0		±0.4	2.5

Mechanical Properties														
Diameter /mm	Cross-sectional area/mm <sup>2</sup>	Weight (kg/m)	PSB830				PSB930				PSB1080			
			Min Yield Stress/Load	Min Ultimate Stress/Load										
15	177	1.4	Mpa	KN	Mpa	KN	Mpa	KN	Mpa	KN	Mpa	KN	Mpa	KN
20	314	2.47	830	147	1030	182	930	165	1080	191	1080	191	1230	218
25	491	4.1	830	408	1030	506	930	457	1080	530	1080	530	1230	604
32	804	6.65	830	667	1030	828	930	748	1080	868	1080	868	1230	989
36	1018	8.41	830	845	1030	1049	930	947	1080	1099	1080	1099	1230	1252
40	1257	10.34	830	1043	1030	1295	930	1169	1080	1358	1080	1358	1230	1546
50	1963	16.28	830	1629	1030	2022	930	1826	1080	2120	1080	2120	1230	2414
Elongation at fracture A/%			≥7				≥7				≥6			
Total Elongation at max force Agt/%			≥3.5				≥3.5				≥3.5			
Relaxation at 1000h			≤4				≤4				≤4			
Modulus of elasticity/Mpa			2x10 <sup>5</sup>				2x10 <sup>5</sup>				2x10 <sup>5</sup>			



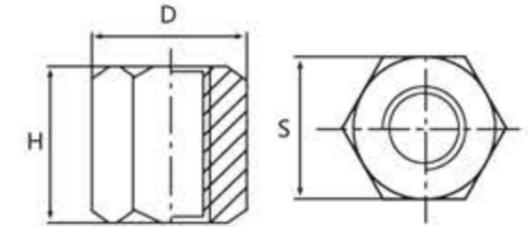
Surface: Hot dipped galvanized available;  
Epoxy coated available;  
Anti-rust processing available

## High Strength Thread Bar system

### Flat Hex Nuts & Spherical Hex Nut

Normally there are Full hex nut and spherical hex nut used in construction.

There is also lock nut, which is shorter and thinner than normal hex nut in the tensioning end.



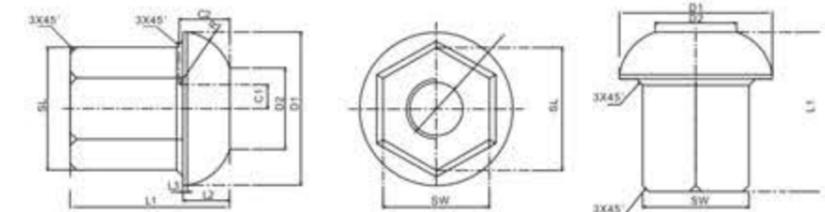
材料/Material 45#,40Cr



D mm	S mm	H mm	D mm	KG
15	30	50	34.5	0.22
15	30	100	34.5	0.45
20	32	45	37	0.17
25	50	60	55	0.70
32	65	72	75	1.40
36	65	80	75	1.45
40	70	100	81	2.12
50	80	110	92	3.1

### Domed Nut (Heavy Duty)

Sizes can be as customer's drawing.



Material 45#,40Cr



Dia.	Dimension					
	SW	SL	D1	D2	L1	L2
18	36	42	50	30	55	15
25	50	58	72	38	75	22
32	60	69	80	45	90	28
36	65	75	90	50	100	30
40	70	81	100	55	115	32
50	85	98	120	64	145	36



## High Strength Thread Bar system

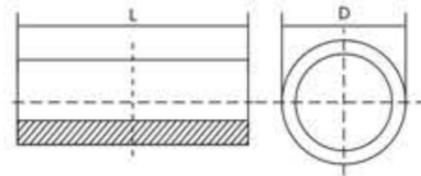
### Coupler

Coupler is designed to connect the thread bar to increase the length where projects request.



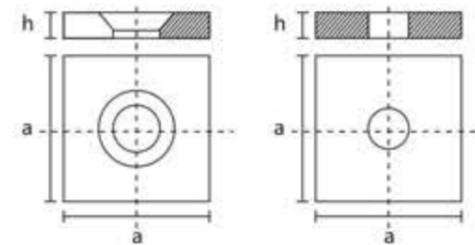
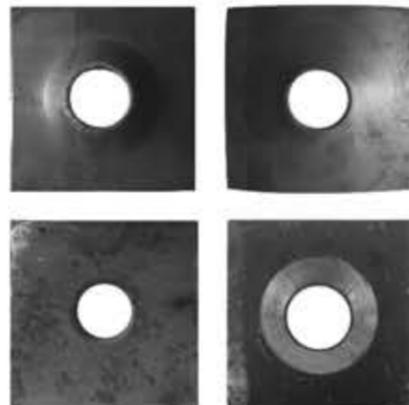
材料/Material 45#,40Cr,35CrMo,42CrMo

D mm	D mm	L mm	KG
15	38	110	0.8
20	38	110	0.7
25	50	132	1.35
32	60	168	2.4
36	70	200	3.6
40	75	220	5.2
50	90	270	9.8



### Anchor Plate

Anchor plate works closely working with the Nuts. And there are different types like flat,domed,spherical plate ect.



Material Q235B,Q345B

D mm	a mm	h mm	Material	KG
15	100	8	Q235	0.6
20	100	30	Q235	2.2
25	150	35	Q235	5.9
32	180	40	Q235	9.6
36	200	45	Q235	13.4
40	220	50	Q235	18.0
50	240	55	Q235	33.6

## Formwork Accessory



Hex Nut



Wing Nut



Wing Nut



Wing Nut



Wing Nut



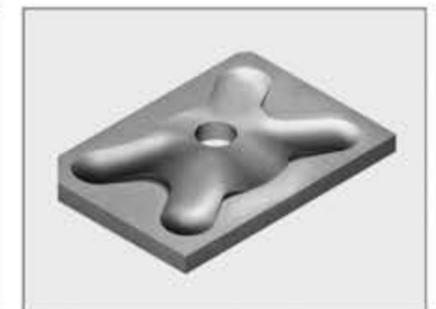
Water Stopper



Combine Nut Plate



Steel Cone



Steel Plate

We can also produce as your drawing.

