

## www.ds7.co.kr DOOSUNG METAL CO.,LTD.

















514-12 Wondangdae-ro, Seo-gu, Incheon-si, Korea (196-9, Wanggil-dong) **Tel**. +82-32-565-0287~9 **Fax**. +82-32-563-6840 **E-mail**. ds7@ds7.co.kr Reliable company for clients Management for creating new values

**DOOSUNG** 

METAL CO.,LTD



DOOSUNG METAL CO,,LTD



## DOOSUNG METAL CO.,LTD INTROCUTION

Our company was established in 1981 exerting the greatest effort to produce bolt, nut, and metal products.

Bolt products are the longest metal item in the history of mankind and have also been closely related to humans longer than any other products.

Placing priority on consumers all the times, we will make our best to pursue harmony, honesty, and responsibility and become a reliable company for clients by focusing on the development of high quality and new products.

Support and concern will be much appreciated.

Doosung Metal Co., Ltd.

CEO, Gwangbae Kim

## HISTORY

1983	• Established Doosung Electricity Company as license number 256	2009	Established the 2nd factory in Moondeung Doosung Metal in Shandong, China
1987	Established Doosung Bolt	2009	• Registered as a venture company 2009-0223535
1993	• Purchased the building for Doosung Bolt	2010	$\bullet$ Certified as the research and development department
	Inspecting Factory	2010	• 60132 certificate as a clean business area
1997	• Registered for Doosung Bolt Factory	2012	Registered as a managerial innovative small
1998	• Joined Korea Metal Industry Cooperative		and medium company 120702-00698
1999	• 91-046-22 for different types of business in Small and Medium Business Corporation	2012	Selected as an outstanding products from small and medium company in Seogu, Incheon, Korea
1999	Certified with ISO in Korea Quality Certificate Center (AC-01898)	2014	<ul> <li>Established 2nd factory in Gimpo in September</li> <li>2nd factory in Gimpo at 162-2 Daebyeok-ri, Daegot -myeon, Gimpo-si, Korea</li> </ul>
2000	• Selected as an outstanding company by Kookmin Bank		
2001	Small and Medium Business Corporation (selected as a promising small and medium company)	2015	Selected as an outstanding company for creating an opportunity for employment     Technological innovative small and medium
2002	• Established Doosung Metal Product Ltd. in Shandong, China		companies (INNO-BIZ) certificate  • Registered with patents and utility model
2003	• Renamed the company to Doosung Hwasner Corporation	2016	Designated as a work-study company



## LOCATION

### **O** KOREA

Doosung Metal Co., Ltd. INCHEON

514-12 Wondangdae-ro, Seo-gu, Incheon, Korea (196-9, Wanggil-dong)

Tel: +82-32-565-0287~9 Fax: +82-32-563-6840 Homepage: http://www.ds7.co.kr

GIMPO

162-2 Daebyeok-ri, Daegot-myeon, Gimpo-si, Gyeonggi-do, Korea

## O CHINA

Weihai Doosung Metal Ltd. Weihai Bogo Trade Ltd.

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O2 DOOSUNG METAL O3

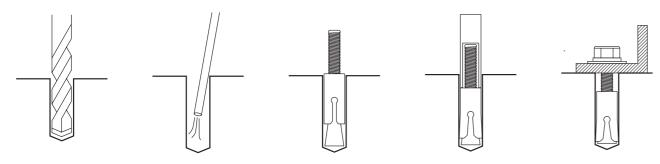
# DOOSUNG METAL | PRODUCT DOOS UNG METAL ANCHOR TYPE Set Anchor Strong Anchor (Cut Anchor) Wedge Anchor Drop in Anchor • Stair anchor

## **ANCHOR** TYPE

## 1. SET ANCHOR

Set anchor is comprised of sleeve and main body. When hitting the bolt, sleeve is withdrawn and fixed more closely with the bore of hole. Especially, it is useful when high level of proof stress is required and is also used for attachment including elevator or guide rail. Depending on theusage, it is classified into sus and steel.

## Set Anchor Construction Method



- 1. Select an appropriate drill in the specifications and make a hole
- 2. Remove dust in the hole and insert bolt and cap after separating nut and washer
- 3. Use set anchoring punch, place it on the cap, hit it with hammer, and expand the cap
- 4. Place attached items, assemble washer and bolt, use spanner, and squeeze the nut

## ▶ Set Anchor - Size list

Sleve Size	Full Length L (mm)	Screw Length b (mm)	Cap Length d (mm)	Drill Bit d1 (mm)	Min. Drill Depth (mm)	Max. Tensile Strength (Kgf)	Max. Shear Strength (Kgf)	
M6 (W1/4)	50	20	30	10	33	1,080	900	
MO (ME/16)	60	25	35	12	38	1025	1 200	
M8 (W5/16)	70	35	33	12	30	1,835	1,200	
M10 (W3/8)	70	40	40	14	44	2,160	2100	
WITO (W3/6)	100	50	40	14	44	2,160	2,100	
	100	60						
M12 (W1/2)	125	80	50	17	55	3,200	3,400	
	150	100						
	100	80	80 60 100					
M16 (W5/8)	125	80		21.5	65	4,300	5,300	
	150	100						
	150	80			85	6,500		
M20 (W3/4)	200	130	75	25			7,500	
	250	180						
	200	120						
M22 (W7/8)	250	170	100	28	110	8,000	10,000	
	300	220						
	200	100						
M24 (W1)	250	150	120	32	130	10,000	12,000	
	300	200						



## b L1

## Explanation of the usage

Set anchor has supplemented the previous inconvenience for having to hold the location of placement line on the concrete making it convenient to attach objects on the preferred area. Hereupon, it squeezes the nut according to the construction in order and anchors the bolt.

## Usage

Guard fence, cooling/heating construction, sign construction, machine installation, and etc.

## ▶ Texture of the product

Regular steel, stainless steel, and regular molten plate

## ETC. Anchor









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## **ANCHOR** TYPE

## 2. STRONG ANCHOR (CUT ANCHOR)

Able to attach any types of devices by using the bolt in a random length after laying.



## Explanation of the usage

After laying the concrete, strong anchor is optimally used to fix the objects by utilizing hexagon bolt and wires.

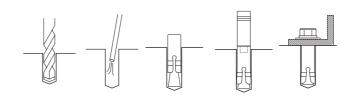
## Usage

Used for any types of construction including building construction, electricity construction, cooling/heating construction, auxiliary construction for operation, partition construction, ceiling construction, and machine installation construction

### ▶ Texture of materials

Regular steel, STS steel, and regular molten plate

## Strong Anchor Construction Method



- 1. Make a hole on the electronic field of anchor with an appropriate drill
- 2. Put anchor plug to the hole
- 3. Use punch and hit it with hammer
- 4. Use tool and squeeze bolt

## Strong Anchor - Size list

Sleve Size	Total Length	Screw Length	Sleeve Outside(Φ)		Pin Size (mm)	)	Drill Size	Tensile Strength	
Sieve Size	L (mm)	L1 (mm)	b (mm)	е	f	g	(mm)	(Kgf)	
M6 (W1/4)	30	15	10.5	5.0	7.0	14.0	11.0	901	
M8 (W5/16)	35	17	12.0	5.5	9.0	16.0	12.5	1,848	
M10 (W3/8)	40	18	14.3	7.5	11.0	19.0	14.5	2,220	
M12 (W1/2)	50	22	17.5	9.5	14.0	23.5	18.0	3,785	
M16 (W5/8)	60	27	21.5	12.5	17.5	30.0	22.0	5,180	
M20 (W3/4)	80	35	25.5	16.0	20.0	32.0	26.5	5,500	
M22 (W7/8)	90	40	28.5	19.0	25.5	40.0	29.5	6,200	
M24 (W1)	110	50	31.5	20.0	30.0	45.0	33.0	8,000	

## **ANCHOR** TYPE

## 3. WEDGE ANCHOR

Product available to be processed faster than set anchor without anchor punch.

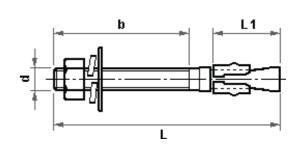


## Explanation of usage

Wedge anchor is the fast and reliable penetrating and attaching anchor. With a cold-forming process, texture is solid and strong. In case of penetrating attachment, base plate hole and anchor hole shall not be consistent without causing problem. Unlike set anchor, it is inserted without particular tools while requiring only about 5 times of rotation to complete the setting. Therefore, it provides faster and safer function than set anchor and also pullout force.

## Usage

Anywhere set anchor is used.



## ▶ Wedge Anchor - Size list

Sleve Size	Total Length L (mm)	Thread Length L1 (mm)	Large Boole Depth b (mm)	Small Fastenable (mm)	Drill Size (mm)	Tensile Strength (Kgf)	
	75	25	65	10			
M8	95	25	65	30	8	2,500	
	115	25	65	50			
	80	30	70	10			
	90	30	70	20			
M10	110	35	70	40	10	3,500	
	120	35	100	20			
	140	35	100	30			
	70	30	60	10		4,250	
	90	30	70	20			
M12	110	35	90	20	12		
	120	35	95	25			
	140	35	95	45			
	120	40	110	10			
M16	145	40	115	30	16	7000	
M16	160	40	115	45	10	7,000	
	220	40	170	50			
	150	45	115	35			
M20	170	45	130	40	20	12.250	
WZU	220	45	150	70	20	12,250	
	270	45	65 65 65 65 65 65 65 65 65 65 65 65 65 6	70			

## **ANCHOR** TYPE

## 4. DROP IN ANCHOR & ETC ANCHOR

Able to attach any types of devices by using the bolt in a random length after laying.



## Drop in Anchor - Size list

Sleve Size	Total Length L (mm)	Screw Length L1 (mm)	Depth of Punching b (mm)	Drill Size (mm)	Pull Out Load (Kgf)
M6 (W1/4)	25	10	25	8	950
M8 (W5/16)	30	14	30	10	1,350
M10 (W3/8)	40	15	40	12	1,950
M12 (W1/2)	50	20	50	16	2.900
M16 (W5/8)	65	25	65	20	4,850
M20 (W3/4)	80	35	80	25	5,900





Stair Anchor





## BOLT TYPE

## **BOLT TYPE**

- Shank Bolt
- Hexagon Bolt
- Round Bolt
- Insert
- Screw Bolt
- Top knot Bolt
- Hook Bolt
- E.G.I Bolt
- U Bolt
- Washbowl Bolt

• ⊏ Bolt

• L Anchor / J Anchor

• Full Thread ROD

Shank Bolt



Round Bolt



Screw Bolt



Hexagon Bolt



Insert



▶ Top knot Bolt



## **BOLT** TYPE

## **BOLT**

Product for anchoring the pillars or machines by burying on the concrete floor when installing machines or constructing.









L Anchor / J Anchor

U Bolt





Washbowl Bolt

▶ □ Bolt



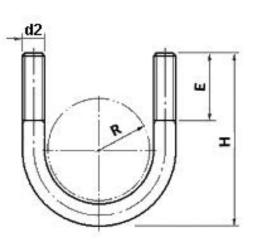


## ▶ Full Thread ROD



U Bolt Metric





## Metric

Unit : mm

		U-BOLT										
Nominal Size	Out dia of Pipe	R	d2	TY	PE A	TYF	PE B	TYPE C				
			uz.	Н	Е	Н	Е	Н	Е			
15	21.7	12	M10	-	-	39	20	47	30			
20	27.2	15	M10	-	-	45	20	53	30			
25	34.0	18	M10	-	-	52	20	60	30			
32	42.7	23	M10	-	-	60	20	68	30			
40	48.6	26	M10	-	-	66	20	74	30			
50	60.5	32	M10	-	-	78	20	86	30			
65	76.3	40	M12	-	-	98	25	108	35			
80	89.1	46	M12	-	-	110	25	120	35			
90	101.6	52	M12	-	-	123	25	133	35			
100	114.3	59	M16	141	50	-	-	-	-			
125	139.8	72	M16	167	50	-	-	-	-			
150	165.2	85	M16	192	50	-	-	-	-			
175	190.7	98	M16	218	50	-	-	-	-			
200	216.3	111	M20	249	60	-	-	-	-			
225	241.8	124	M20	274	60	-	-	-	-			
250	267.4	137	M20	300	60	-	-	-	-			
300	318.5	163	M24	357	70	-	-	-	-			
350	355.6	181	M24	394	70	-	-	-	-			
400	406.4	207	M24	444	70	-	-	-	-			
450	457.2	233	M30	505	85	-	-	-	-			

DOOSUNG METAL | PRODUCT

## NUT TYPE

## **NUT TYPE**

- Flange Nut
- Round Connecting Nut
- Cap Nut
- Hex Connecting Nut
- Wing NutSpring Nut
- Hex Nut





Round Connecting Nut



Cap Nut



Hex Connecting Nut

Spring Nut



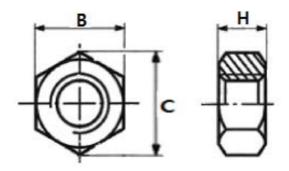
Wing Nut

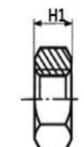




## Hex Nut Metric







## Metric

Unit: mm

		ŀ	1			H <sub>1</sub>				В				Pit	ch		
Bolt			Tolerance				Tolerance	!		Toleran		Tolerance					
Diameter	Basic	Finish	Semi- Finish	Regular	Basic	Finish	Semi- Finish	Regular	Basic	Finish	Semi- Finish	Regular		Coarse	Fine		
M5	5	-0.30	-0.48	±0.6	3.6	0	0	10.6	10	0 -0.3	0 -0.6	0 -0.6	11.5	1	-		
M8	6.5	0	0		5	-0.3	-0.48	±0.6	13	0	0	0	15	1.25	1		
M10	8	-0.36	-0.58	±0.8	6				17	-0.25	-0.7	-0.7	19.6	1.5	1.25		
M12	10	0.50	0.50		7	0	0		19				21.9	1.75	1.25		
(M14)	11			8	8	-   -	-0.58	- +0.8	22		0		25.4	2	1.5		
M16	13		0	0 -0.70	0		10	0.70	0.50		24	0 -0.35	0 -0.8	-0.8	27.7	2	1.5
(M18)	15	0 -0.43			±0.9	11				27	0.55	0.0	0.0	31.2	2.5	1.5	
M20	16	0.43	0.70		12				30	1			34.6	2.5	1.5		
(M22)	18				13	0	0	±0.9	32				37	2.5	1.5		
M24	19				14	-0.43	-0.70	±0.9	35				41.6	3	2		
(M27)	22				16				41	0 -0.4	0 -1.0	-1.0	47.3	3	2		
M30	24	0 -0.52	0 -0.84	±1.0	18				45	0.4	-1.0	-1.0	53.1	3.5	2		
(M33)	26	0.52	0.04		20	0			50				57.7	3.5	2		
M36	29				21	0 -0.52	0 -0.84	±1.0	55	0	0	0	63.5	4	3		
M42	34				25	0.52	0.04		65	-0.45	-1.2	-1.2	75	4.5	-		

## Unified

Unit : inch

		В		(			Н			H <sub>1</sub>		Runout or Bearing Surface-FIR		
Nominal Size or Basic													Hex Nuts with Specified proof Lood	
Major Dia of Thread	V	Vidth Acros Flats	5S	Width Con	Across irers		Thickness Hex Nuts			Thickness avy Mex N	Less than 15 Equal 0.000psi to 150,000 and all Hex psi and jam Nuts Greater			
	Basic	Max	Min	Max	Min	Basic	Max	Min	Basic	Max	Min	Max	Min	
1/4 0.2500	7/16	0.438	0.428	0.505	0.488	7/32	0.226	0.212	5/32	0.164	0.150	0.015	0.010	
5/16 0.3125	1/2	0.500	0.489	0.577	0.557	17/64	0.273	0.258	3/16	0.195	0.180	0.016	0.011	
3.8 0.3150	9/16	0.562	0.551	0.650	0.628	21/54	0.337	0.320	7/32	0.227	0.210	0.017	0.012	
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	0.018	0.013	
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	0.019	0.014	
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	0.020	0.015	
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	0.021	0.016	
3/4 0.7500	1-1/8	1.125	1.088	1.299	1.240	41/64	0.665	0.617	27/64	0.445	0.398	0.023	0.018	
7/8 0.8750	1-5/6	1.312	1.269	1.516	1.447	3/4	0.776	0.274	31/64	0.510	0.458	0.025	0.020	
1 1.0000	1-1/2	1.500	1.450	1.732	1.653	55/64	0.887	0.831	35/64	0.575	0.519	0.027	0.022	
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	0.030	0.025	
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	0.033	0.028	
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	0.036	0.031	
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	0.039	0.034	

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## DOOSUNGMETAL

## WASHER&CAP

### WASHER&CAP TYPE

- Spring Washer
- Press Cap (Regular)
- Flat Washer
- Press Long Cap

- Square Washer
- Pipe Cap

DOOSUNGMETAL

## **BUILDING MATERIALS**

### **BUILDING MATERIALS TYPE**

- KP Bolt & Nut
- Casting and Wing nut
- Bolt and Nut for construction
- Welding Stud/Arc shield
- Ground ROD • Flat Tie
  - Sepa Bolt
    - Tie Bolt
- Al Form Tie Sepa Tie

Spring Washer



Press Cap (Regular)



Flat Washer



Press Long Cap



Square Washer



Pipe Cap



▶ KP Bolt & nut



Bolt and Nut for construction



Ground ROD

Casting and Wing Nut

• Al Form Sepa Tie



Welding Stud/Arc Shield



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## **BUILDING MATERIALS TYPE**

## **BUILDING MATERIALS**

Flat tie, as a representative construction material, is a material inserted between euroforms. It is used to adjust the interval depending on the length.



CASTINGS

## **CASTINGS TYPE**

- Turnbuckle
- Wire Clip
- Eye Bolt
- Eye Nut









Eye Bolt

Eye Nut





DOOSUNG METAL | PRODUCT

## DOOSUNGMETAL

## RUBBER&PLASTIC

## **RUBBER&PLASTIC TYPE**

- Channel Cap
- Full Thread ROD Cap
- Wall Plug

## DOOSUNGMETAL

## FENCE ACCESSORY

## **FENCE TYPE**

- Base Plate
- Stainless Hex Bolt and Nut
- Stainless U Band (Flat Clip)
- Stainless Fence Bolt
- Stainless Set Anchor
- Anchor Type Pillar
- Basic Type Pillar
- Mesh Fence Net

Channel cap









Fisher

Wall Plug





Base Plate



Stainless U Band (Flat Clip)



Stainless Set Anchor



Stainless Hex Bolt and Nut

• Stainless Hex Nut



Stainless Fence Bolt



Stainless Hex Nut



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## **FENCE** TYPE

## **MESH FENCE**

It is a practical product that is used in a wide range including home, government buildings, farms, factory, physical facilities, and protection for industrial facilities and stream.

## ▶ How to construct each pillar of mesh fence





## **Anchor Type Pillar**

- Install in the cement and concrete area. Installation is available with square with at least 14cm of width Available to manufacture 5m in 60m from the base plate (Base 60cm/ 90cm/ 1.2cm/ 1.5cm/ 1.8cm/2.0cm)
- Height of pillar is from the base plate to the top.

## **Basic Type Pillar**

- Install in the soil or gravel pillar. After excavating the ground, cement or ready-mixed concrete (foundation stone) are used to fix the pillar
- Basic pillar is delivered with the size of 90cm including the height of 60cm and areas for it to be buried for 30cm at the bottom

Areas for installation

• Dirt or gravel area

Fixed on the ground

• 30cm

## Mesh fence pillar, size, and related parts

Areas for installation

Fixed on the ground

• Fix the anchor bolt

Cement area

## Anchor type

### Usage

Size

Anchor bolt-type

- 76.3X2.0t
- 76.3X1.4t

## **Parts**

- · Anchor bolt
- Fixing band
- Bolt ad nut

### Basic type

### Usage

## Bed excavation

### Size • 76.3X2.0t

• 76.3X1.4t

- Fixing band
- · Bolt and nut

## Mesh Fence parts



Mesh Fence net

- As a net connecting through the clip on the pillar, height is generally from 600mm to 200mm. It is standardized in 150mm in one column and 50mm for width
- Thickness is 4.3t that is electronically welded. Light green, white, and all other colors are usable for manufacturing.

Mesh Fence net Anchor type Basic type 76.3X2.0t 76.3X2.0t

## Clip (Mesh Anchoring band)

76.3X1.4t

32X25X0.6t

76.3X1.4t



Stainless Anchor

3/8X70mm



Stainless Hex Bolt and Nut (mesh fixing 3/T)

8X110mm



Stainless Hex Nut

8mm



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## DOOSUNGMETAL

## **ETC&FASTENER**

### **ETC&FASTENER TYPE**

- Locking device
- Bracket (Two-Edges type)
- Hole down Clamp (Separated type)
- Bracket (Two-Edges type)
- Angle
- Duct Channel
- Cover Clamp
- Hole-down Clamp (Assembled type) H Beam Clamp
- Non-Pin Hanger (G-Hanger)
- Separate Clamp
- Pipe Hanger

## Locking Device



Bracket (Single Edge Type)



▶ Hole down Clamp (Separated type)



▶ Bracket (Two-Edges type)



Angle



Duct Channel



Fasner is a welding for bolt or nut sets that are used in binding for steel materials.

**ETC&FASTENER** 





**ETC&FASTENER** TYPE

Non-Pin Hanger (G-Hanger)



Pipe Hanger



▶ Hole-Down Clamp (Assembled type)



Separate Clamp



H Beam Clamp



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