



Rotating Lifting Points



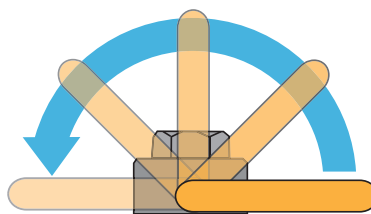


Available in bolt sizes
M8 to M100 and with working
load limits (WLL) 0.3t to 20t.

FRENO LINKBOLT

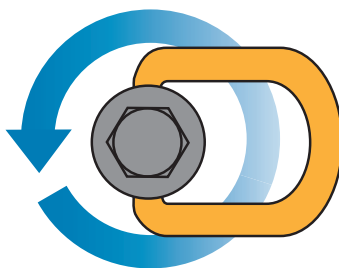


Safety factor 5:1
in all lifting directions



* allowed range of link movement

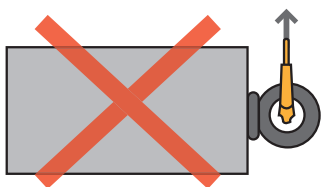
Pivots **180°**
from the surface.



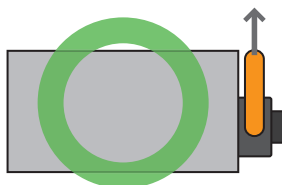
Rotates **360°**
around its axis.

Inspection tool available (optional).
Please see page 11.

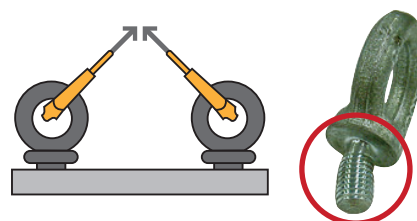
Warning! Side-lifting with
conventional eye bolts is
dangerous and prohibited
by law in many countries.



FRENO LINKBOLT is the ideal
solution for safe side-lifting.



If the bolts are not evenly with the
surface during multi-point lifting ...
... **conventional eye bolts may bend!**



Features / Advantages

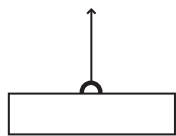
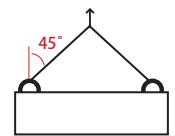
- The link (eye part) always aligns itself to the load direction – ideal for safe side-lifting.
- Higher WLL than JIS eye bolt of the same size.
- From a variety of products you will easily find the right FRENO LINKBOLT model for your lifting needs.

Main Applications

- Lifting and turning of molds for large plastic components (for bumpers, instrument panels, door trims etc.)
- Lifting and turning of molds for aluminum parts (for engine blocks, head covers etc.)
- Lifting of precast concrete (PC) parts (columns, stairs)
- For use as lifting piece during subway construction, to move machines etc.
- For machine tool delivery and maintenance
- Moving nacelles and parts during wind generator installation

**3 times stronger
than a regular eye bolt!**

FRENO LINKBOLT A / JIS Eye Bolt Strength Comparison

Lifting Method	Straight Lifting (1 bolt)		45 Degree Lifting (2 bolts)	
				
Bolt Diameter (mm)	Working Load Limit (t)			
	Eye Bolt	FRENO	Eye Bolt	FRENO
12	0.22	0.8	0.22	1.1
16	0.45	1.6	0.45	2.2
20	0.63	2.8	0.63	3.9
24	0.95	3.7	0.95	5.2
30	1.5	6.3	1.5	8.8
36	2.3	8.0	2.3	11.2
42	3.4	10.0	3.4	14.1
48	4.5	12.0	4.5	16.9

Note: The working load limits for 45° lifting with eye bolts apply when the surfaces of each bolt sit firmly on the surface of the lifted object, and the rings of the eye bolts are oriented on the same plane. (according to JIS B 1168)



Special Specifications

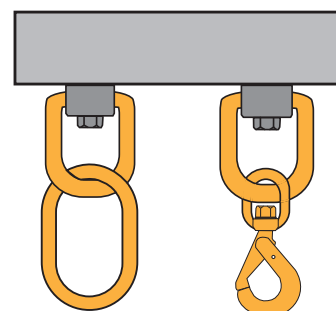
We can provide special specifications as follows.



electroless nickel
plated FRENO with
excellent abrasion and
corrosion resistance
(for semiconductor or
precision factories,
food hygiene-related
sites, etc.)



modified
bolt lengths

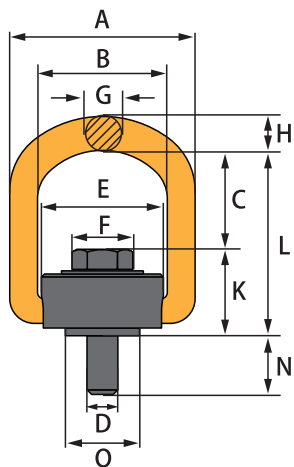


combination with hooks, master
links or other lifting accessories

*Image for illustrative purposes only

FRENO LINKBOLT A

Safety factor 5:1



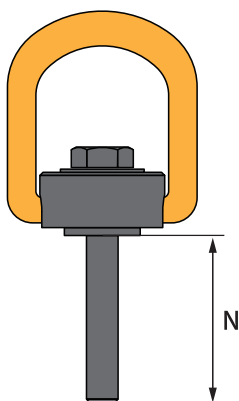
A [Metric Regular]

3 times higher working load limit (WLL) compared to a conventional JIS eye bolt of the same bolt size.

Special specifications like different bolt type or length are available. Please contact us for further details.

Product Code	WLL (t)	Bolt Size D	Pitch (mm)	Dimensions (mm)												Tightening Torque (Nm) Min - Max	Weight (kg)
				A	B	C	E	F	G	H	K	L	N	O			
A-8	0.3	M8	1.25	60	42	34	40	13	8	11	27	61	14	24	8 - 15	0.25	
A-10	0.5	M10	1.5	60	42	33	40	17	8	11	28	61	19	24	12 - 20	0.26	
A-12	0.8	M12	1.75	89	57	56	51	19	13	17	39	95	19	37	18 - 29	0.81	
A-14	1.2	M14	2	89	57	55	51	22	13	17	40	95	24	37	25 - 40	0.83	
A-16	1.6	M16	2	89	57	54	51	24	13	17	41	95	24	37	30 - 49	0.85	
A-18	2.3	M18	2.5	126	82	79	80	27	19	23	55	134	32	51	40 - 65	2.6	
A-20	2.8	M20	2.5	126	82	78	80	30	19	23	56	134	32	51	49 - 78	2.6	
A-22	3.1	M22	2.5	126	82	77	80	32	19	23	57	134	37	51	50 - 170	2.7	
A-24	3.7	M24	3	126	82	76	80	36	19	23	58	134	37	51	59 - 196	2.7	
A-27	5.0	M27	3	179	117	105	111	41	27	32	77	182	45	73	78 - 245	7.1	
A-30	6.3	M30	3.5	179	117	103	111	46	27	32	79	182	50	73	108 - 294	7.2	
A-33	7.0	M33	3.5	179	117	101	111	50	27	32	81	182	55	73	150 - 330	7.3	
A-36	8.0	M36	4	179	117	99	111	55	27	32	83	182	60	73	177 - 392	7.6	
A-42	10.0	M42	4.5	220	142	127	136	65	31	39	102	229	65	95	230 - 450	13.2	
A-48	12.0	M48	5	220	142	123	136	75	31	39	106	229	69	95	294 - 585	13.8	
A-48L	15.0	M48	5	246	152	120	145	75	35	43	112	232	78	95	294 - 585	15.6	

* A-48L is a non-stock item. Please inquire for availability and delivery dates.



A [Long Bolt]

Same WLL as FRENO LINKBOLT A

Product Code	WLL (t)	N (mm)
A-16 N34	1.6	34
A-16 N39	1.6	39
A-16 N49	1.6	49
A-16 N69	1.6	69
A-20 N42	2.8	42
A-20 N47	2.8	47
A-20 N57	2.8	57
A-20 N67	2.8	67
A-24 N47	3.7	47
A-24 N67	3.7	67
A-24 N87	3.7	87

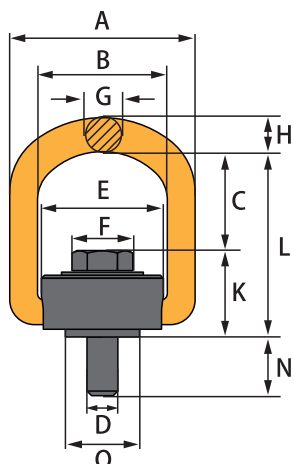
* The above are stock sizes.

Other lengths available on request.

A [Fine Thread] * Please check availability.

Same WLL as FRENO LINKBOLT A

Product Code	WLL (t)	Pitch (mm)
A-8 P1	0.3	1
A-10 P1.25	0.5	1.25
A-12 P1.25	0.8	1.25
A-14 P1.5	1.2	1.5
A-16 P1.5	1.6	1.5
A-18 P1.5	2.3	1.5
A-20 P1.5	2.8	1.5
A-22 P1.5	3.1	1.5
A-24 P2	3.7	2
A-27 P2	5.0	2
A-30 P2	6.3	2
A-33 P2	7.0	2
A-36 P3	8.0	3

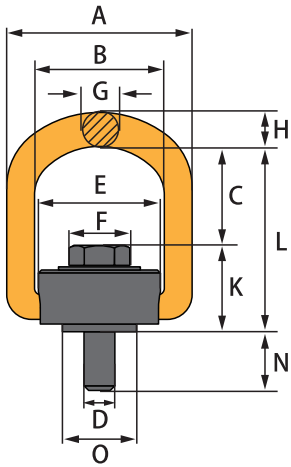


A [Inch Whitworth] * Please check availability.

Product Code	WLL (t)	Bolt Size D	Dimensions (mm)												Tightening Torque (Nm) Min - Max	Weight (kg)
			A	B	C	E	F	G	H	K	L	N	O			
A-W3/8	0.35	W3/8	60	42	34	40	17	8	11	27	61	19	24	12 - 20	0.25	
A-W1/2	0.8	W1/2	89	57	55	51	21	13	17	40	95	19	37	18 - 29	0.81	
A-W5/8	1.4	W5/8	89	57	53	51	26	13	17	42	95	24	37	30 - 49	0.84	
A-W3/4	2.2	W3/4	126	82	78	80	32	19	23	56	134	32	51	49 - 78	2.6	
A-W7/8	3.0	W7/8	126	82	76	80	35	19	23	58	134	37	51	50 - 170	2.7	
A-W1	3.7	W1	126	82	73	80	41	19	23	61	134	37	51	59 - 196	2.8	
A-W1 1/4	6.0	W1 1/4	179	117	100	111	50	27	32	82	182	50	73	108 - 294	7.3	
A-W1 1/2	8.0	W1 1/2	179	117	95	111	58	27	32	87	182	60	73	177 - 392	7.7	
A-W2	12.0	W2	220	142	117	136	77	31	39	112	229	69	95	294 - 585	14.0	

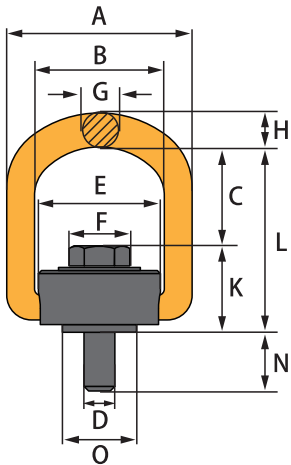
FRENO LINKBOLT A

Safety factor 5:1



A [Inch Unified] * Please check availability.

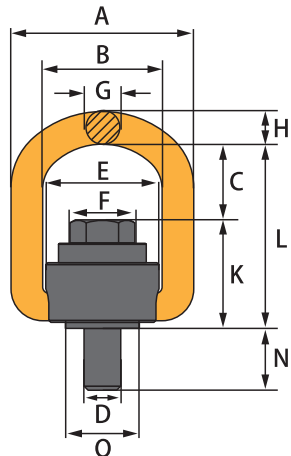
Product Code	WLL (t)	Bolt Size D	Dimensions (mm)												Tightening Torque (Nm) Min - Max	Weight (kg)
			A	B	C	E	F	G	H	K	L	N	O			
A-3/8-16UNC	0.35	3/8-16UNC	60	42	34	40	17	8	11	27	61	19	24	12 - 20	0.25	
A-1/2-13UNC	0.8	1/2-13UNC	89	57	55	51	21	13	17	40	95	19	37	18 - 29	0.81	
A-5/8-11UNC	1.4	5/8-11UNC	89	57	53	51	26	13	17	42	95	24	37	30 - 49	0.84	
A-3/4-10UNC	2.2	3/4-10UNC	126	82	78	80	32	19	23	56	134	32	51	49 - 78	2.6	
A-7/8-9UNC	3.0	7/8-9UNC	126	82	76	80	35	19	23	58	134	37	51	50 - 170	2.7	
A-1-8UNC	3.7	1-8UNC	126	82	73	80	41	19	23	61	134	37	51	59 - 196	2.8	
A-1 1/4-7UNC	6.0	1 1/4-7UNC	179	117	100	111	50	27	32	82	182	50	73	108 - 294	7.3	
A-1 1/2-6UNC	8.0	1 1/2-6UNC	179	117	95	111	58	27	32	87	182	60	73	177 - 392	7.7	
A-2-4.5UNC	12.0	2-4.5UNC	220	142	117	136	77	31	39	112	229	69	95	294 - 585	14.0	



A [Oil-free Washer] * Please check availability.

For applications of constant inverting and lifting, we recommend the FRENO LINKBOLT with oil-free washer. The washer ensures smooth rotation even under load.

Product Code	WLL (t)	Bolt Size D	Pitch (mm)	Dimensions (mm)												Tightening Torque (Nm) Min - Max	Weight (kg)
				A	B	C	E	F	G	H	K	L	N	O			
A-12W	0.8	M12	1.75	89	57	55	51	19	13	17	40	95	18	37	18 - 29	0.82	
A-16W	1.6	M16	2	89	57	53	51	24	13	17	42	95	23	37	30 - 49	0.85	
A-20W	2.8	M20	2.5	126	82	77	80	30	19	23	57	134	31	51	49 - 78	2.6	
A-24W	3.7	M24	3	126	82	75	80	36	19	23	59	134	36	51	59 - 196	2.7	
A-30W	6.3	M30	3.5	179	117	101	111	46	27	32	81	182	48	73	108 - 294	7.3	



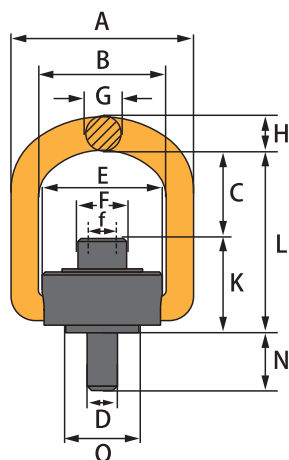
A [Bearing]

For applications of constant inverting and lifting, the FRENO LINKBOLT with an in-built bearing is the best choice. The bearing ensures smooth rotation even under load.

Product Code	WLL (t)	Bolt Size D	Pitch (mm)	Dimensions (mm)												Tightening Torque (Nm) Min - Max	Weight (kg)
				A	B	C	E	F	G	H	K	L	N	O			
A-12S	0.8	M12	1.75	89	57	43	51	19	13	17	52	95	21	37	18 - 29	0.96	
A-16S	1.4	M16	2	89	57	41	51	24	13	17	54	95	26	37	30 - 49	1.0	
A-20S	2.6	M20	2.5	126	82	62	80	30	19	23	72	134	31	51	49 - 78	2.9	
A-24S	3.7	M24	3	126	82	60	80	36	19	23	74	134	36	51	59 - 196	3.7	
A-30S	6.0	M30	3.5	179	117	80	111	46	27	32	102	182	47	73	108 - 294	8.1	
A-36S	7.5	M36	4	179	117	76	111	55	27	32	106	182	61	73	177 - 392	8.5	
A-42S	10.0	M42	4.5	220	142	98	136	65	31	39	131	229	65	95	230 - 450	10.0	
A-48S	12.0	M48	5	220	142	97	136	75	31	39	132	229	69	95	294 - 585	15.2	

FRENO LINKBOLT A

Safety factor 5:1

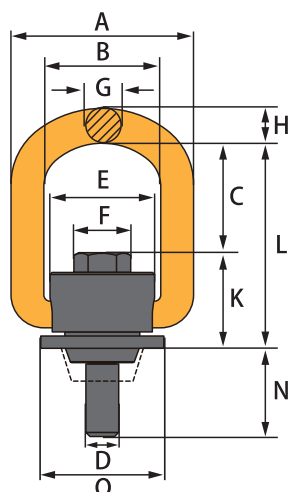


A [Hexagonal Hole Bolt] * Please check availability.

FRENO LINKBOLT compatible with hexagonal wrenches.

Product Code	WLL (t)	Bolt Size D	Pitch (mm)	Dimensions (mm)												Tightening Torque (Nm) Min - Max	Weight (kg)
				A	B	C	E	F	f	G	H	K	L	N	O		
A-8E	0.3	M8	1.25	60	42	32	40	13	6	8	11	29	61	14	24	8 - 15	0.25
A-10E	0.5	M10	1.5	60	42	30	40	16	8	8	11	31	61	19	24	12 - 20	0.26
A-12E	0.8	M12	1.75	89	57	52	51	18	10	13	17	43	95	19	37	18 - 29	0.81
A-16E	1.6	M16	2	89	57	48	51	24	14	13	17	47	95	24	37	30 - 49	0.85
A-20E	2.8	M20	2.5	126	82	71	80	30	17	19	23	63	134	32	51	49 - 78	2.6
A-24E	3.7	M24	3	126	82	67	80	36	19	19	23	67	134	37	51	59 - 196	2.7
A-30E	6.3	M30	3.5	179	117	92	111	45	22	27	32	90	182	50	73	108 - 294	7.2
A-36E	8.0	M36	4	179	117	86	111	54	27	27	32	96	182	60	73	177 - 392	7.6

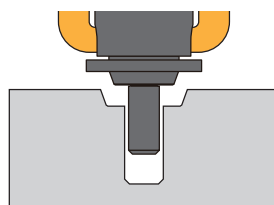
* The f dimension is the facing width of the hexagonal hole.



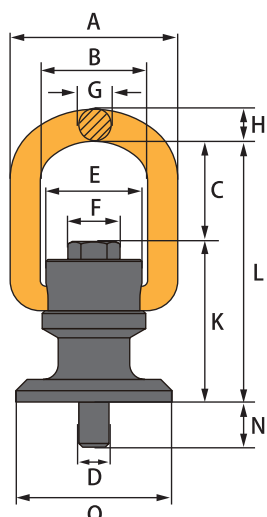
A [Seat Washer] * Please check availability.

Used for lifting secondary concrete products with countersinks on inserts.

Product Code	WLL (t)	Bolt Size D	Pitch (mm)	Dimensions (mm)											Tightening Torque (Nm)	Weight (kg)
				A	B	C	E	F	G	H	K	L	N	O		
A-16H	1.4	M16	2	89	57	54	51	24	13	17	47	101	43	60	49	1.0
A-20H	2.8	M20	2.5	126	82	78	80	30	19	23	63	141	50	90	78	3.1
A-24H	3.7	M24	3	126	82	76	80	36	19	23	65	141	60	90	196	3.2
Corresponding Countersink Dimensions				Product Code			Top Ø (mm)			Bottom Ø (mm)			Depth (mm)			
				A-16H			40			30			9 - 16			
				A-20H			50			40			12 - 20			
				A-24H			50			40			12 - 20			



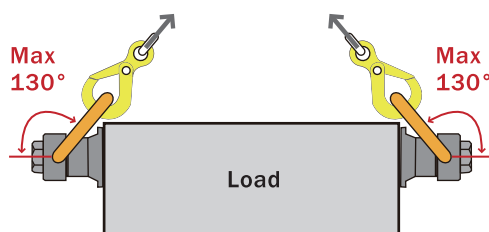
Please check countersink dimensions before sending us your product inquiry.



A [Wide Swing Angle] * Please check availability.

Moves 130° from the bolt mounting axis. Larger movement angle for a wider range of applications.

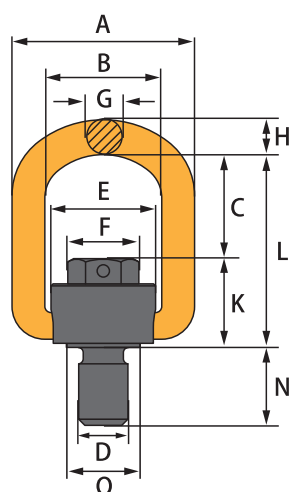
Product Code	WLL (t)	Bolt Size D	Pitch (mm)	Dimensions (mm)												Tightening Torque (Nm)	Weight (kg)
				A	B	C	E	F	G	H	K	L	N	O			
A-16K	1.6	M16	2	89	57	54	51	24	13	17	86	140	24	83	50	1.7	
A-20K	2.8	M20	2.5	126	82	78	80	30	19	23	114	192	34	103	80	4.5	
A-24K	3.7	M24	3	126	82	76	80	36	19	23	116	192	39	103	200	4.6	



Caution: Make sure not to exceed the maximum movable link angle.

FRENO LINKBOLT B

Safety factor 5:1



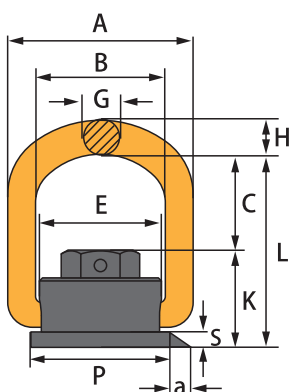
For thread holes suitable for JIS (Japanese Industrial Standard) eye bolts. Use type A for size M20 or smaller. Special specifications like different bolt type or length are available. Please contact us for details.

Product Code	WLL (t)	Bolt Size D	Pitch (mm)	Dimensions (mm)												Tightening Torque (Nm) Min - Max	Weight (kg)
				A	B	C	E	F	G	H	K	L	N	O			
B-24	0.95	M24	3	89	57	52	51	30	13	17	43	95	38	36	18 - 29	0.95	
B-30	1.5	M30	3.5	89	57	52	51	30	13	17	45	97	45	43	20 - 39	1.1	
B-36	2.3	M36	4	126	82	72	80	46	19	23	63	135	55	51	34 - 49	3.1	
B-42	3.4	M42	4.5	126	82	72	80	46	19	23	65	137	65	59	49 - 98	3.4	
B-48	4.3	M48	5	126	82	72	80	46	19	23	65	137	70	68	59 - 147	3.7	
B-64	9.0	M64	6	179	117	94	111	65	27	32	91	184	90	89	88 - 392	9.6	
BB-64	15.0	M64	6	246	152	115	145	85	35	43	120	235	90	110	137 - 785	17.4	
B-80	15.0	M80	6	246	152	115	145	85	35	43	120	235	105	110	137 - 785	19.2	
B-100	15.0	M100	6	246	152	115	145	85	35	43	120	235	130	130	137 - 785	23.1	
MB-64	20.0	M64	6	272	174	127	163	85	42	49	148	275	82	150	196 - 785	27.1	
MB-80	20.0	M80	6	272	174	127	163	85	42	49	148	275	105	150	196 - 785	29.0	
MB-100	20.0	M100	6	272	174	127	163	85	42	49	148	275	130	150	196 - 785	32.7	

* B-100, MB-64, MB-80 and MB-100 are non-stock items. Please inquire for availability and delivery dates.

FRENO LINKBOLT C (Weld-on type)

Safety factor 5:1

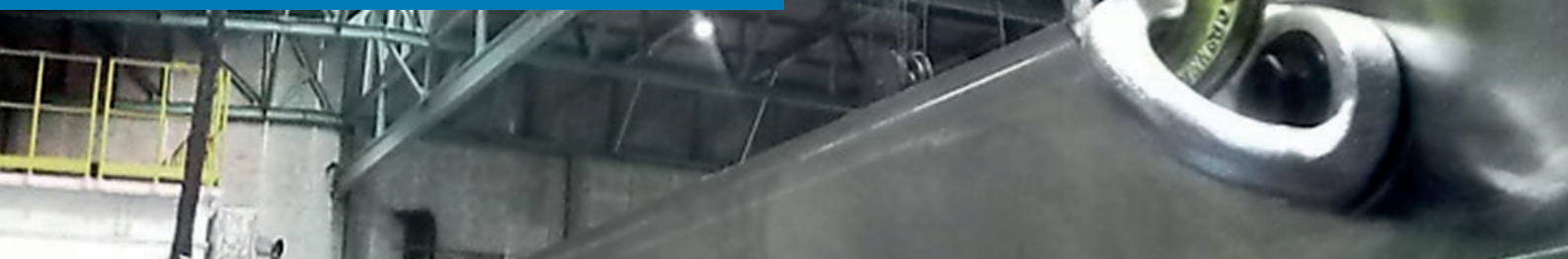


Welding (arc welding) shall be performed by a qualified person. Welding should be performed all around the base of the link bolt with the specified leg length (a). Use a welding rod that meets JIS Z3212 D5016 (LB-52A or equivalent). After welding, inspect the weld for cracks using penetrant test, magnetic particle test, etc.

Product Code	WLL (t)	Dimensions (mm)											Weight (kg)
		a	A	B	C	E	G	H	K	L	P	S	
C-10	0.5	3	60	42	32	40	8	11	32	64	45	5	0.31
C-16	1.6	5	89	57	52	51	13	17	48	100	60	7	0.98
C-24	4.0	8	126	82	71	80	19	23	71	142	85	10	3.1
C-36	8.0	12	179	117	94	111	27	32	99	192	120	14	8.5

For a table of working load limits depending on the lifting method [please see page 10](#).

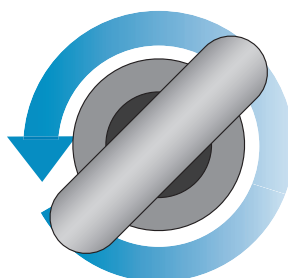
Available in bolt sizes
M8 to M48 and with working
load limits (WLL) 0.2t to 10t.



ROTARY EYE BOLT



Safety factor 5:1
in all lifting directions



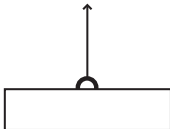
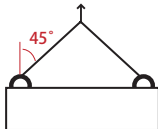
Rotates **360°**
around its axis.

Features / Advantages

- Thanks to its small turning radius, it can be mounted where space is limited.
- Higher WLL than JIS eye bolt of the same size.
- Ideal for side-lifting of molds or concrete parts.

2.5 times stronger than a regular eye bolt!

ROTARY EYE BOLT / JIS Eye Bolt Strength Comparison

Lifting Method	Straight Lifting (1 bolt)		45 Degree Lifting (2 bolts)	
				
Bolt Diameter (mm)	Working Load Limit (t)			
	Eye Bolt	ROTARY	Eye Bolt	ROTARY
12	0.22	0.6	0.22	0.8
16	0.45	1.2	0.45	1.6
20	0.63	2.0	0.63	2.8
24	0.95	2.6	0.95	3.6
30	1.5	4.0	1.5	5.6
36	2.3	6.0	2.3	8.4
42	3.4	7.5	3.4	10.5
48	4.5	10.0	4.5	14.1

Note: The working load limits for 45° lifting with eye bolts apply when the surfaces of each bolt sit firmly on the surface of the lifted object, and the rings of the eye bolts are oriented on the same plane. (according to JIS B 1168)

Long Bolt Version

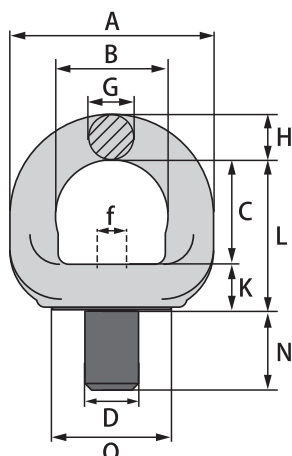
- Bolt sizes: M8 - M36
- WLL: 0.2t - 6t
- Max bolt length:
140mm - 160mm



We cut the bolt length
according to your request.

ROTARY EYE BOLT

Safety factor 5:1



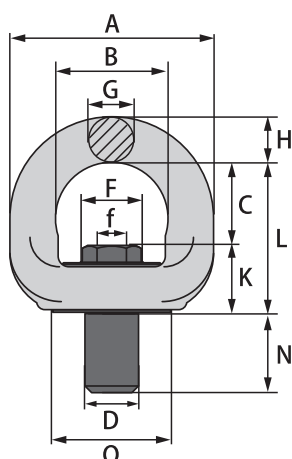
ROTARY EYE BOLT [RE-A Type]

The eye part rotates 360° when the bolt is tightened.

For tightening of bolt sizes M8 to M24 a tightening tool or a commercially available hex wrench can be used.

Product Code	WLL (t)	Bolt Size D	Pitch (mm)	Dimensions (mm)											Tightening Torque (Nm) Min - Max	Weight (kg)
				A	B	C	f	G	H	K	L	N	O			
RE-8A	0.2	M8	1.25	50	30	27	5	9	10	11	38	12	30	4 - 8	0.18	
RE-10A	0.3	M10	1.5	50	30	27	5	9	10	11	38	15	30	4 - 10	0.18	
RE-12A	0.6	M12	1.75	56	34	30	6	10	11	14	44	18	36	4 - 15	0.25	
RE-16A	1.2	M16	2	64	38	35	8	12	13	15	50	24	40	8 - 30	0.4	
RE-20A	2.0	M20	2.5	76	44	40	10	15	16	18	58	30	44	16 - 50	0.7	
RE-24A	2.6	M24	3	90	52	50	10	17	19	21	71	36	48	25 - 80	1.0	

* The f dimension is the facing width of the hexagonal hole.



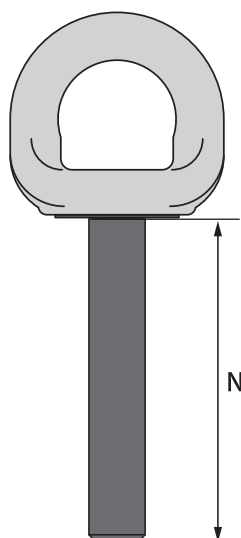
ROTARY EYE BOLT [RE Type]

The eye part rotates 360° when the bolt is tightened.

For tightening of bolt sizes M30 and larger a commercially available spanner or hex wrench can be used.

Product Code	WLL (t)	Bolt Size D	Pitch (mm)	Dimensions (mm)											Tightening Torque (Nm) Min - Max	Weight (kg)
				A	B	C	F	f	G	H	K	L	N	O		
RE-30	4.0	M30	3.5	112	62	54	24	10	24	25	35	89	45	64	40 - 150	2.1
RE-36	6.0	M36	4	134	74	67	27	10	28	30	39	106	54	72	60 - 210	3.5
RE-42	7.5	M42	4.5	152	84	70	30	-	32	34	48	118	63	84	80 - 300	5.1
RE-48	10.0	M48	5	174	94	80	36	-	38	40	54	134	72	96	120 - 450	8.0

* The f dimension is the facing width of the hexagonal hole.



ROTARY EYE BOLT [LONG BOLT]

We cut the bolt length according to your request.

Product Code	WLL (t)	Max Bolt Length N (mm)
RE-8A	0.2	160
RE-10A	0.3	160
RE-12A	0.6	160
RE-16A	1.2	160
RE-20A	2.0	160
RE-24A	2.6	160
RE-30	4.0	160
RE-36	6.0	140

For a table of working load limits depending on the lifting method please see page 10.

Tightening and inspection tools available (optional). Please see page 11.

* RE-30 and RE-36 with hexagonal head.



Working Load Limits depending on Lifting Method

Safety factor 5:1

Lifting Method											
Lifting Angle (α)		0°	90°	0°	90°	60°	90°	120°	60°	90°	120°
Mode Coefficient		1	1	2	2	1.73	1.41	1	2.59	2.12	1.5
Product Code		Working Load Limit (t)									
F R E N O A	A-8, A-8E	0.3	0.3	0.6	0.6	0.51	0.42	0.3	0.77	0.63	0.45
	A-W3/8, A-3/8-16UNC	0.35	0.35	0.7	0.7	0.6	0.49	0.35	0.9	0.74	0.52
	A-10, A-10E	0.5	0.5	1.0	1.0	0.86	0.7	0.5	1.2	1.0	0.75
	A-12, A-12W, A-12S, A-12E, A-W1/2, A-1/2-13UNC	0.8	0.8	1.6	1.6	1.3	1.1	0.8	2.0	1.6	1.2
	A-14	1.2	1.2	2.4	2.4	2.0	1.6	1.2	3.1	2.5	1.8
	A-16S, A-16H, A-W5/8, A-5/8-11UNC	1.4	1.4	2.8	2.8	2.4	1.9	1.4	3.6	2.9	2.1
	A-16, A-16W, A-16E, A-16K	1.6	1.6	3.2	3.2	2.7	2.2	1.6	4.1	3.3	2.4
	A-W3/4, A-3/4-10UNC	2.2	2.2	4.4	4.4	3.8	3.1	2.2	5.6	4.6	3.3
	A-18	2.3	2.3	4.6	4.6	3.9	3.2	2.3	5.9	4.8	3.4
	A-20S	2.6	2.6	5.2	5.2	4.4	3.6	2.6	6.7	5.5	3.9
	A-20, A-20W, A-20E, A-20H, A-20K	2.8	2.8	5.6	5.6	4.8	3.9	2.8	7.2	5.9	4.2
	A-W7/8, A-7/8-9UNC	3.0	3.0	6.0	6.0	5.1	4.2	3.0	7.7	6.3	4.5
	A-22	3.1	3.1	6.2	6.2	5.3	4.3	3.1	8.0	6.5	4.6
	A-24, A-24W, A-24S, A-24E, A-24H, A-24K, A-W1, A-1-8UNC	3.7	3.7	7.4	7.4	6.4	5.2	3.7	9.5	7.8	5.5
	A-27	5.0	5.0	10.0	10.0	8.6	7.0	5.0	12.9	10.6	7.5
	A-30S, A-W1 1/4, A-1 1/4-7UNC	6.0	6.0	12.0	12.0	10.3	8.4	6.0	15.5	12.7	9.0
	A-30, A-30W, A-30E	6.3	6.3	12.6	12.6	10.8	8.8	6.3	16.3	13.3	9.4
	A-33	7.0	7.0	14.0	14.0	12.1	9.8	7.0	18.1	14.8	10.5
	A-36S	7.5	7.5	15.0	15.0	12.9	10.5	7.5	19.4	15.9	11.2
	A-36, A-36E, A-W1 1/2, A-1 1/2-6UNC	8.0	8.0	16.0	16.0	13.8	11.2	8.0	20.7	16.9	12.0
	A-42, A-42S	10.0	10.0	20.0	20.0	17.3	14.1	10.0	25.9	21.2	15.0
	A-48, A-48S, A-W2, A-2-4.5UNC	12.0	12.0	24.0	24.0	20.7	16.9	12.0	31.0	25.4	18.0
	A-48L	15.0	15.0	30.0	30.0	25.9	21.1	15.0	38.8	31.8	22.5
F R E N O B	B-24	0.95	0.95	1.9	1.9	1.6	1.3	0.95	2.4	2.0	1.4
	B-30	1.5	1.5	3.0	3.0	2.5	2.1	1.5	3.8	3.1	2.2
	B-36	2.3	2.3	4.6	4.6	3.9	3.2	2.3	5.9	4.8	3.4
	B-42	3.4	3.4	6.8	6.8	5.8	4.7	3.4	8.8	7.2	5.1
	B-48	4.3	4.3	8.6	8.6	7.4	6.0	4.3	11.1	9.1	6.4
	B-64	9.0	9.0	18.0	18.0	15.5	12.6	9.0	23.3	19.0	13.5
	BB-64, B-80, B-100	15.0	15.0	30.0	30.0	25.9	21.1	15.0	38.8	31.8	22.5
	MB-64, MB-80, MB-100	20.0	20.0	40.0	40.0	34.6	28.2	20.0	51.8	42.4	30.0
F R E N O C	C-10	0.5	0.5	1.0	1.0	0.86	0.7	0.5	1.2	1.0	0.75
	C-16	1.6	1.6	3.2	3.2	2.7	2.2	1.6	4.1	3.3	2.4
	C-24	4.0	4.0	8.0	8.0	6.9	5.6	4.0	10.3	8.4	6.0
	C-36	8.0	8.0	16.0	16.0	13.8	11.2	8.0	20.7	16.9	12.0
R O T A R Y	RE-8A	0.2	0.2	0.4	0.4	0.34	0.28	0.2	0.51	0.42	0.3
	RE-10A	0.3	0.3	0.6	0.6	0.51	0.42	0.3	0.77	0.63	0.45
	RE-12A	0.6	0.6	1.2	1.2	1.0	0.8	0.6	1.5	1.2	0.9
	RE-16A	1.2	1.2	2.4	2.4	2.0	1.6	1.2	3.1	2.5	1.8
	RE-20A	2.0	2.0	4.0	4.0	3.4	2.8	2.0	5.1	4.2	3.0
	RE-24A	2.6	2.6	5.2	5.2	4.4	3.6	2.6	6.7	5.5	3.9
	RE-30	4.0	4.0	8.0	8.0	6.9	5.6	4.0	10.3	8.4	6.0
	RE-36	6.0	6.0	12.0	12.0	10.3	8.4	6.0	15.5	12.7	9.0
	RE-42	7.5	7.5	15.0	15.0	12.9	10.5	7.5	19.4	15.9	11.2
	RE-48	10.0	10.0	20.0	20.0	17.3	14.1	10.0	25.9	21.2	15.0

*Specifications may change at any time without notice to improve product design and performance.

Warning 1:

Lifting methods marked with a * refer to straight lifting. When using a wire sling, make sure to use a fitting with a bearing. The rotational force generated by an untwisting wire sling bears the risk of loosening the rotating lifting point.

Warning 2:

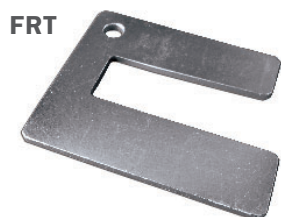
When lifting concrete products with inserted threads, the following two problems may occur.

1. There may not be enough space for close contact of concrete surface and the bearing surface of the rotating lifting point.
2. The screw engagement may be insufficient (not enough bolt length to be inserted into the thread).

Due to 1. and 2., the load limits listed in above WLL table may not apply.

Please check the insert dimensions of concrete parts you want to lift, and contact us.

FRENO LINKBOLT Inspection Tool



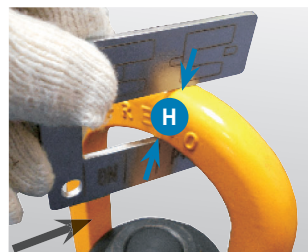
Tool Code	Corresponding FRENO LINKBOLT		
	FRENO A	FRENO B	FRENO C
FRT-1	8, 10	-	10
	W3/8		
	3/8-16UNC		
FRT-2	12, 14, 16	24, 30	16
	W1/2		
	W5/8		
	1/2-13UNC		
	5/8-11UNC		
FRT-3	18, 20, 22, 24	36, 42, 48	24
	W3/4		
	W7/8		
	W1		
	3/4-10UNC		
	7/8-9UNC		
	1-8UNC		
FRT-4	27, 30, 33, 36	64	36
	W1 1/4		
	W1 1/2		
	1 1/4-7UNC		
	1 1/2-6UNC		
FRT-5	42, 48	-	-
	W2		
	2-4.5UNC		
FRT-6	48L	80, 100	-
		BB-64	
FRT-7	-	MB-64	-
		MB-80	
		MB-100	

Inspection FRENO LINKBOLT

H dimension (wear of link top)

Insert the link into the tool.

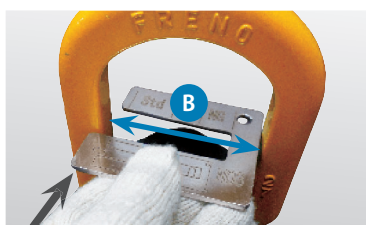
If the link reaches "NG", the wear limit has been exceeded.



B dimension (link deformation)

Insert tool in lengthwise direction.

The shorter end should go through. If the shorter end doesn't go through or the longer end does, the deformation limit has been exceeded.

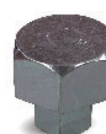


ROTARY EYE BOLT Tools

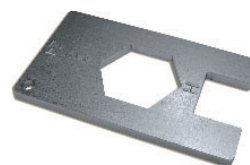
RET-A



RET-T



RET



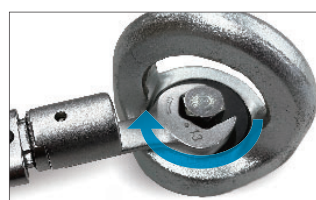
Type	Tool Code	Corresponding ROTARY EYE BOLT
RET-A	RET-8A/10A	RE-8A, RE-10A
	RET-12A	RE-12A
	RET-16A	RE-16A
	RET-20A	RE-20A
	RET-24A	RE-24A
RET-T	RET-8T/10T	RE-8A, RE-10A
	RET-12T	RE-12A
	RET-16T	RE-16A
	RET-20T	RE-20A
	RET-24T	RE-24A
RET	RET-30	RE-30
	RET-36	RE-36
	RET-42	RE-42
	RET-48	RE-48

Tightening



Tool RET-A (for RE-8A to RE-24A)

Insert the tool into the hexagonal hole of the bolt. Turn the eye part by hand to temporarily tighten it. (Eye and the bolt are fixed and rotate at the same time.)



Tool RET-T (for RE-8A to RE-24A)

When tightening a bolt according to the appropriate tightening torque, insert the tool into the hexagonal hole of the bolt and tighten it with a hexagonal torque wrench.



Tool RET (for RE-30 to RE-48)

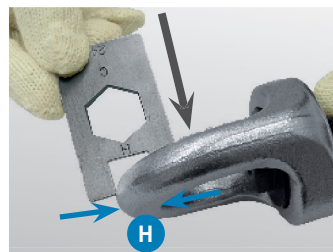
Attach the tool to the hexagonal head of the bolt. Turn the eye part by hand to temporarily tighten it. (Eye and bolt are fixed and rotate at the same time.)

Inspection RE (using tool RET)

H dimension (wear of eye top)

Insert the eye into the tool.

The tool should not reach the center of the eye. If it does, the wear limit has been exceeded.



C dimension (eye deformation)

Insert the tool into the eye.

The tool should not reach the center of the eye. If it does, the deformation limit has been exceeded.





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how to get in touch with us, please visit our website.
www.martec.co.jp

For videos about high-end lifting products,
please check out our YouTube channel.
www.youtube.com/@MartecLiftingEquipment



* When purchasing products, please read the enclosed instructions carefully before use.

** Catalogue issued November 2024. Specifications may change at any time without notice to improve product design and performance.



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