



MINATO SEIKI IRON WORKS CO.,LTD.

Lashing Solution Division

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WEB : <http://www.taiyo-lashing.com>

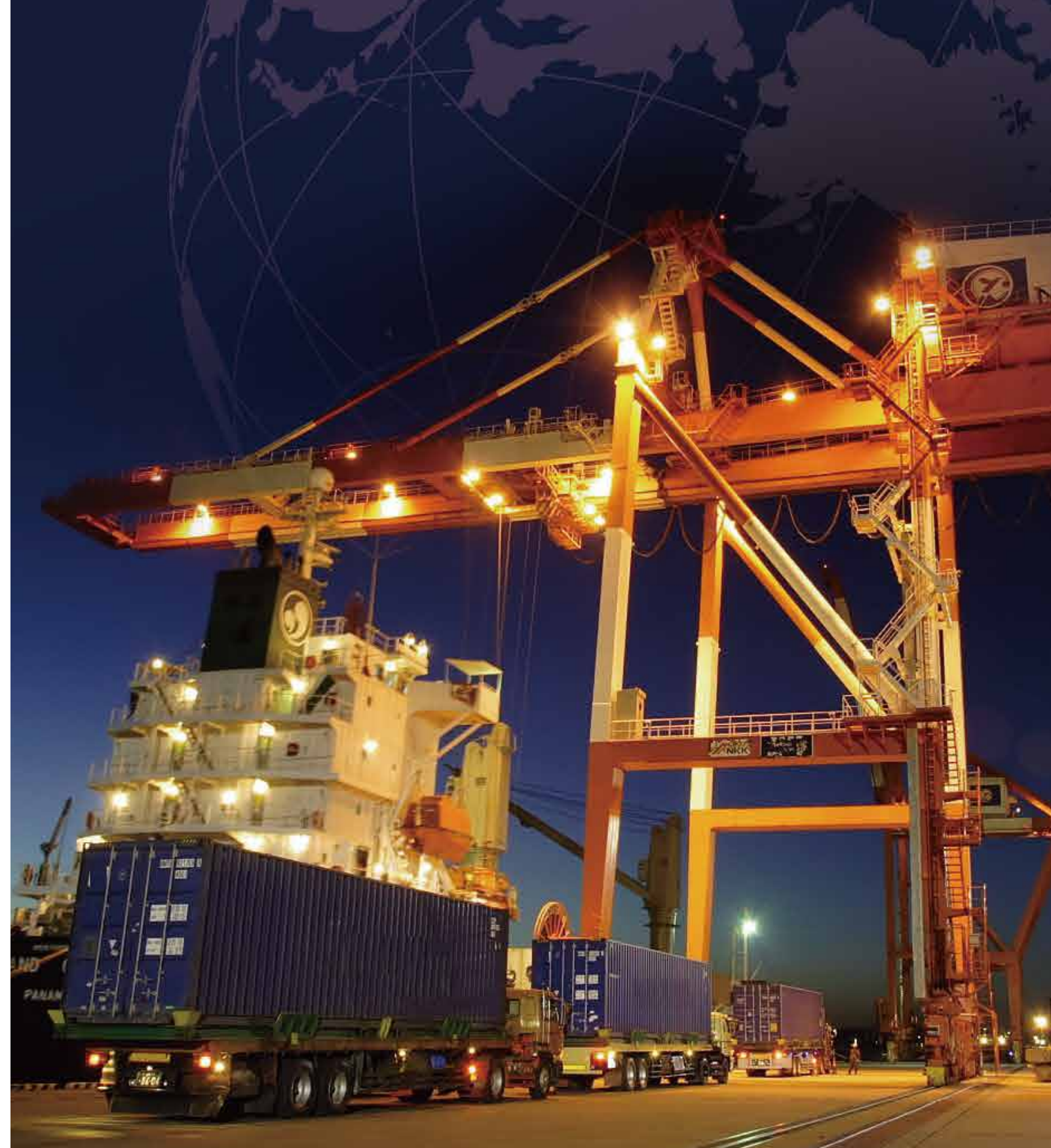
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TAIYO
CONTAINER SECURING SYSTEM



LASHING SOLUTION

TAIYO
CONTAINER SECURING SYSTEM



MINATO SEIKI IRON WORKS CO.,LTD.

Container Lashing System

Since the year 1985, TAIYO developed Semi-Automatic Twistlock Model : NA-7 as world's first which was revolutionary products in the container lashing fields. In 1990, approximately a half of technical patents concerned with container lashing devices belongs to TAIYO which means we are the leading company of container lashing devices in the world.

In 2005, we developed the Fully Automatic Twistlock Model : FA-8 which contribute a lot of profit to the customers - safety, quick and low cost cargo handling etc. Our technology contribute to the world both safety and cost reduction.



Fully Automatic Twistlock

TAIYO's latest model Fully Automatic Twistlock Model FA-8 is no need to "Lock"/"Unlock" work which contribute to the safety and laborsaving during container cargo handling.
*Comply with OSHA rules



Semi-Automatic Twistlock NA-3J(Dual Function)

Semi-Automatic Twistlock Model : NA-3J is the best seller in the world which have the function "Automatically Lock" and "Manually Unlock".

*Comply with OSHA rules



Twist Stacker

Twist Stacker Model : M-1ST is the "hanging type" which is used in the cargo hold.

*Comply with OSHA rules

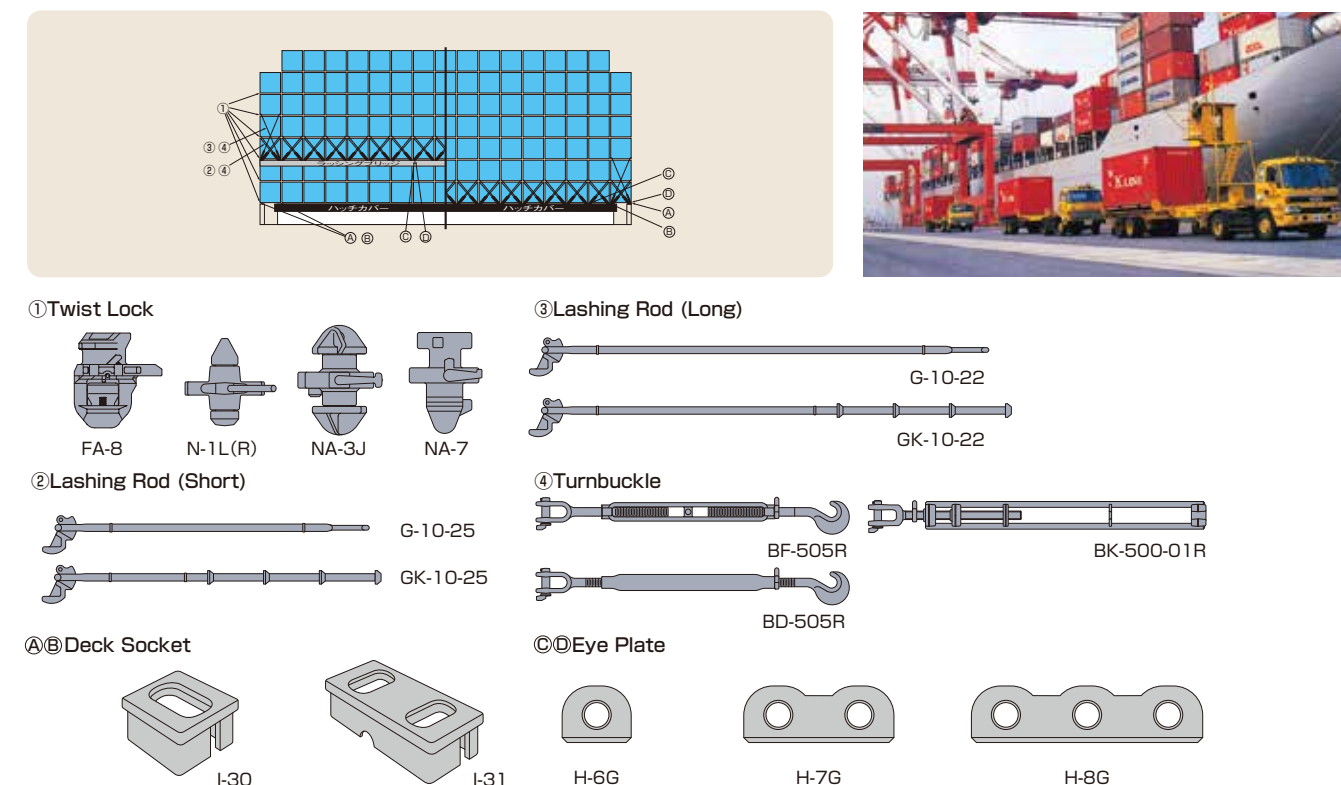
*OSHA rule : OSHA is a short word of "Occupational Safety & Health Administration" which regulate the labor's safety and health. TAIYO's products fully comply with OSHA rules.

Container Lashing System(Loose & Fixed Gears)

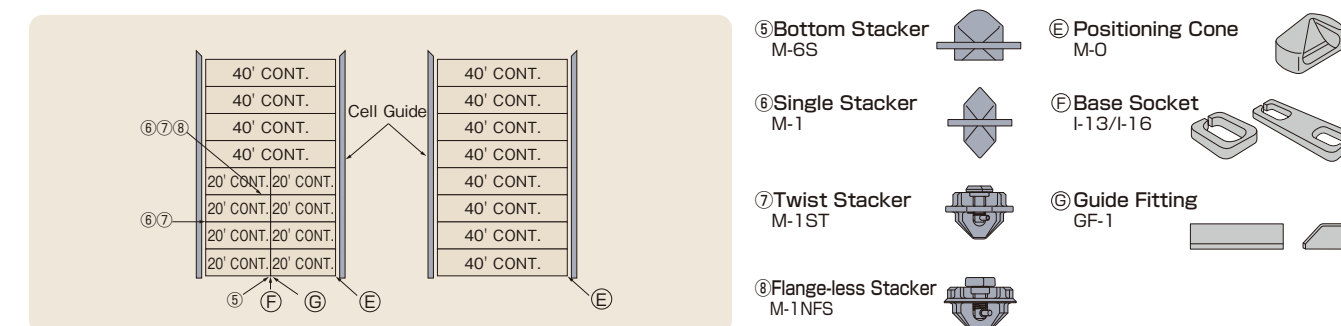
Container Vessel



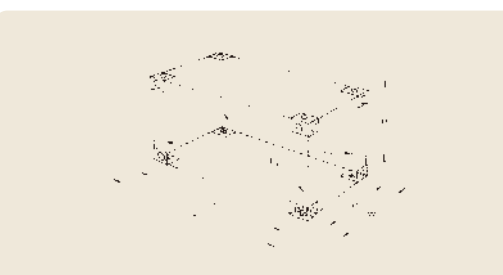
Ex : Lashing Pattern On Deck



Ex : Lashing Pattern In Hold



ISO Ocean Freight Container Box Standard (Outlook dimension)



■TABLE OF EXTERNAL DIMENSIONS OF ISO FREIGHT CONTAINER
(ISO 668:1995,ISO 668:1995/Amd.2.2005)

型式	HEIGHT (H)		WIDTH (W)		LENGTH (L)		S	P	D1・D2 MAX.
	DIMENSIONS	TOLERANCE	DIMENSIONS	TOLERANCE	DIMENSIONS	TOLERANCE			
1AAA	2896 (9'6")				12192 (40')	0 -10	11985		19
1AA	2591 (8'6")								
1A	2438 (8')	0	2438 (8')	0 -5	6058 (20')	0 -6	5853	2259	13
1CC	2591 (8'6")								
1C	2438 (8')	-5			13716 (45')	0 -10	13509		19
1EEE	2896 (9'6")								
1EE	2591 (8'6")								

Twistlock TATYO

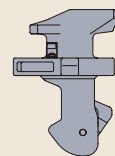
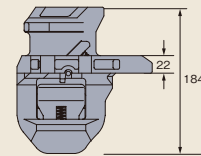
Fully Automatic Twistlock

Unit=mm

FA-8



NTW:6.5kg



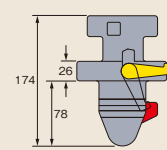
Semi Automatic Twistlock

Unit=mm

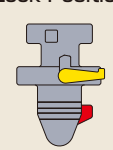
NA-7(Single Function)



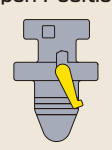
NTW:6.9kg



Lock Position



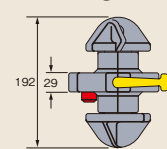
Open Position



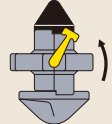
NA-3J(Dual Function)



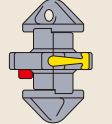
NTW:7.2kg



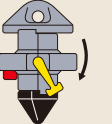
Upper Cone Open Position



Lock Position



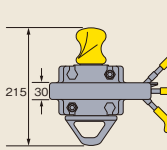
Lower Cone Open Position



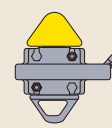
EM-1(Dual Function)



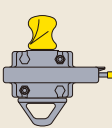
NTW:7.2kg



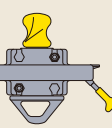
Upper Cone Open Position



Lock Position



Lower Cone Open Position



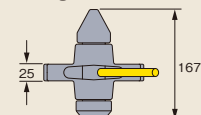
Manual Twistlock

Please confirm the locking position "left" or "right"

N-1L(Left Lock Type, 2 notch)



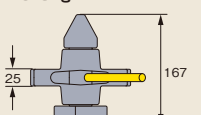
NTW:5.6kg



N-2L(Left Lock Type, 3 notch)



NTW:6.5kg



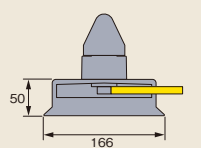
Sliding Twistlock

Please confirm the locking position "left" or "right"

N-3TL(Left Lock Type, for I-22/I-23)



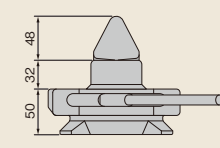
NTW:9.0kg



NA-9L(for I-102/I-103)



NTW:6.0kg



Lashing Rod & Turnbuckle TATYO

Lashing Rod

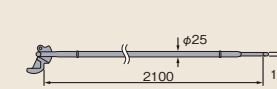
Please confirm "length" and "knob pitch" when you order the rods.

G-10-25
Short Rod

Unit=mm



B.L:50MT L=2100mm
NWT:10.4kg



G-10-25A
Equal-Lash Rod

Unit=mm



B.L:50MT L=2150mm
NWT:12.2kg

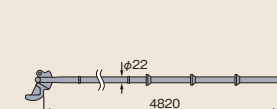


GK-10-22
Long Rod (Knob Type)

Unit=mm



B.L:36MT NWT:18.3kg

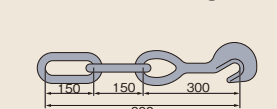


G-8-2R-50
Extension Rod

Unit=mm



B.L:50MT NWT:6.4kg

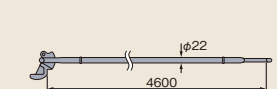


G-10-22
Long Rod

Unit=mm



B.L:36MT L=4600mm
NWT:16.3kg

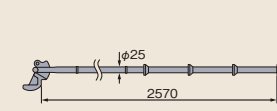


GK-10-25
Short Rod (Knob Type)

Unit=mm



B.L:50MT NWT:13.2kg

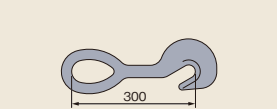


G-8-50
Extension Rod

Unit=mm



B.L:50MT NWT:3.0kg



Turnbuckle

Confirm required stroke

BF-505R
Turnbuckle (Frame Type)



BF-505

Unit=mm

B.L:50MT
Stroke min880~max1320
NWT:13.2kg



BF-505R

Unit=mm

B.L:50MT
Stroke min965~max1500
NWT:14.9kg



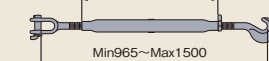
BD-505R
Turnbuckle (Pipe Type)



BD-505R

Unit=mm

B.L:50MT
Stroke min965~max1500
NWT:14.0kg



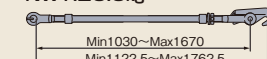
BF-505E
Equal-Lash Turnbuckle



BF-505E

Unit=mm

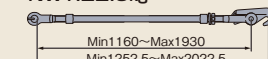
B.L:65MT
Stroke min1030~max1670
NWT:20.0kg



BF-505ELL

Unit=mm

B.L:65MT
Stroke min1160~max1930
NWT:22.6kg



BK-500-01R
Turnbuckle (Knob Type)



BK-500-01R

Unit=mm

B.L:50MT
Stroke min1146~max1481
NWT:14.9kg



Stacker, Bridge Fitting and Others TAIYO

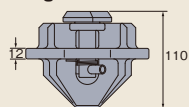
Twist Stacker

Unit:mm

■M-1ST Twist Stacker



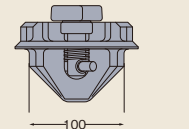
NWT:2.7kg



■M-1NFS Flange less Stacker



NWT:2.1kg



Vertical Stacker

Unit:mm

■M-1 Single Stacker



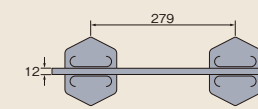
NWT:2.8kg



■M-2 Double Stacker



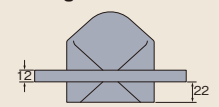
NWT:9.2kg



■M-6S(for I-31/I-16) Bottom Stacker



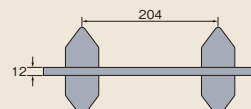
NWT:2.6kg



■M-3 Double Stacker



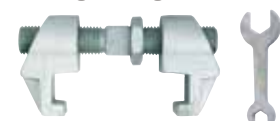
NWT:8.3kg



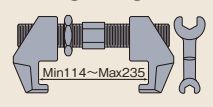
Bridge Fitting

Unit:mm

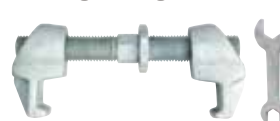
■L-3/LH-3 Bridge Fitting



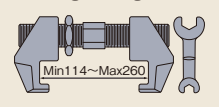
NWT :4.5kg/1.3kg



■L-3L/LH-3 Bridge Fitting



NWT :4.9kg/1.3kg



Release Bar (for twistlock operation)

Unit:mm

■Aluminum



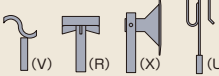
Head Piece



■Glass Fiber



Head Piece



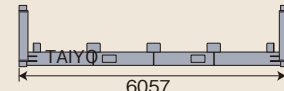
- Aluminum release bar is order made and we can provide required length.
- Over 5m long will be "joint type"(Ex : 10m=5m+5m)
- Please instruct head pieces when you order.
- Reference : Applicable twistlocks are : (V) for NA-7 (R) for NA-3J (U) for EM-1 and (H) for N-1/N-2

- Except model RL-V-20(2m), RL-V-50-1(5m) and RL-V-29(Joint 2.9m) are order made.
- Total length shall be adjusted by using joint 2.9m on 2m or 5m.(i.e.2m or 5m +2.9m pitch)
- Please instruct head pieces when you order.
- Except (V) type head pieces will be order made.
- Reference : Applicable twistlocks are : (V) for NA-7 (R) for NA-3J (U) for EM-1 and (H) for N-1/N-2

Flat Rack Container&Stowage Bin

■FR-20 20ft flat rack container & stowage bins(8pcs)

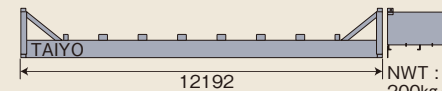
NWT :2400kg



NWT :200kg/1個

■FR-40 40ft flat rack container & stowage bins(14pcs)

NWT :5100kg



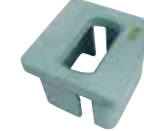
NWT :200kg/1個

Fixed Gear TAIYO

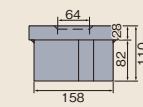
Deck Socket, Sliding Base and Eye Plate

Unit:mm

■I-30 Deck Socket (ISO Single)



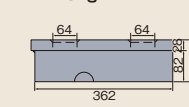
NWT:8.4kg



■I-31 Deck Socket(ISO Double)



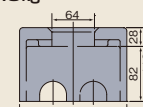
NWT:17.5kg



■I-50C Cast Steel Deck Socket (ISO Single)



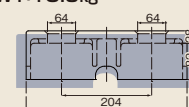
NWT:6.8kg



■I-51C Cast Steel Deck Socket (ISO Double)



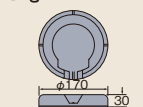
NWT:13.9kg



■I-102(Raised Type) Disk Socket



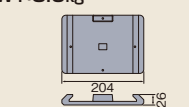
NWT:2.5kg



■I-22(for N-3TL) Sliding Base(Single)



NWT:3.0kg



■I-103(Sunken Type) Disk Socket



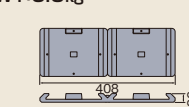
NWT:3.3kg



■I-23(for N-3TL) Sliding Base(Double)



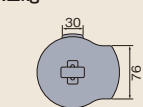
NWT:6.0kg



■I-100A(for I-102/I-103) Disk Socket Cover



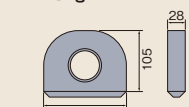
NWT:0.2kg



■H-6G Eye Plate(Single)



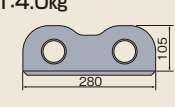
NWT:1.5kg



■H-7G Eye Plate (double)



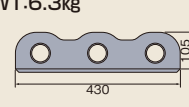
NWT:4.0kg



■H-8G Eye Plate (Triplicate)



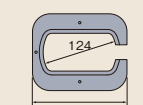
NWT:6.3kg



■I-13 Base Socket(Single)



NWT:2.4kg



■I-16 Base Socket(Double)



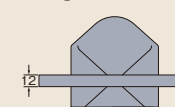
NWT:9.0kg



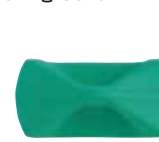
■M-6S(I-13/I-16用) Bottom Stacker



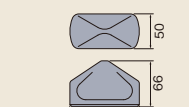
NWT:2.6kg



■M-0 Positioning Cone



NWT:1.3kg

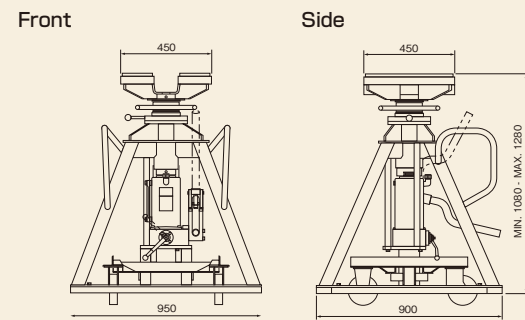


Vehicle Lashing Devices TAIYO

Sub Landing Gear



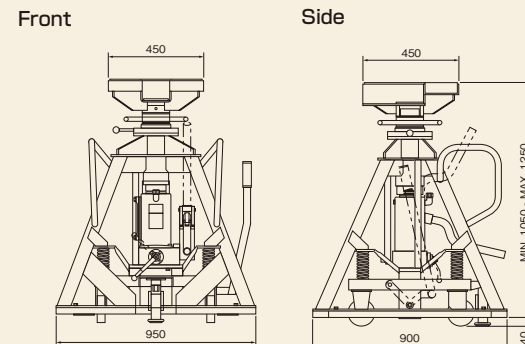
■PK-3B



NWT:	195kg
Lifting Load	30.0MT (294kN)
Breaking Load	60.0MT (588kN)



■PNS-3A (PNS-3B)



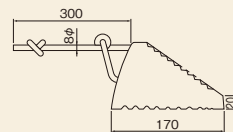
NWT:	約220kg
Lifting Load	30.0MT (294kN)
Breaking Load	60.0MT (588kN)

Vehicle Wheel Chocks



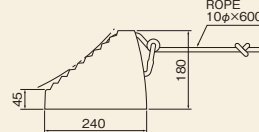
■P-6-S
(rubber made for small vehicle)

NWT:1.6kg



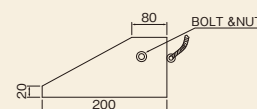
■P-6-L
(rubber made for big vehicle)

NWT:5.0kg



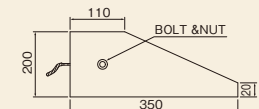
■P-5-S
(wooden made for small vehicle)

NWT:4.0kg



■P-5-L
(wooden made for big vehicle)

NWT:7.0kg



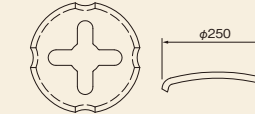
Fixed Gear TAIYO

Clover Leaf Plate

■J-5-250 (Raised Type)



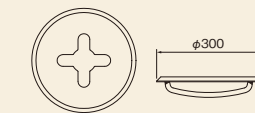
NWT:5.3kg



■J-4-300 (Flush Type)

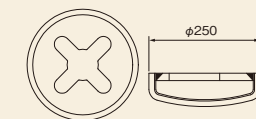


NWT:8.0kg



■J-4-250 (Flush Type)

NWT:10.3kg

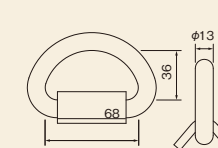


D-Ring

■H-1-13



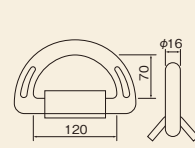
B.L	8.0MT (Vertical Tensile Strength)
NWT:	0.4kg



■H-1-16



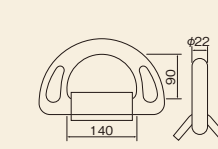
B.L	20.0MT (Vertical Tensile Strength)
NWT:	1.3kg



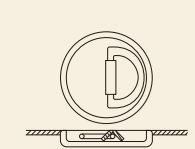
■H-1-22



B.L	50.0MT (Vertical Tensile Strength)
NWT:	4.3kg

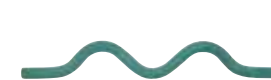


■H-2-16 (Sunken Type)

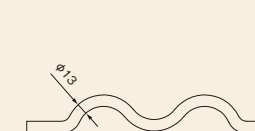


Clinkle Bar (Order made)

■HC-2-13



B.L	6.0MT
NWT:	0.5kg



■HC-2-19



B.L	18.0MT
NWT:	1.2kg

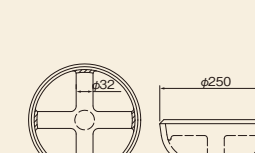


Lashing Socket

■JX-250



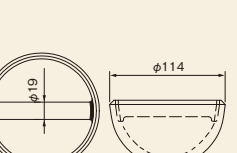
B.L	20.0MT (196kN)
NWT:	2.2kg



■JX-114R

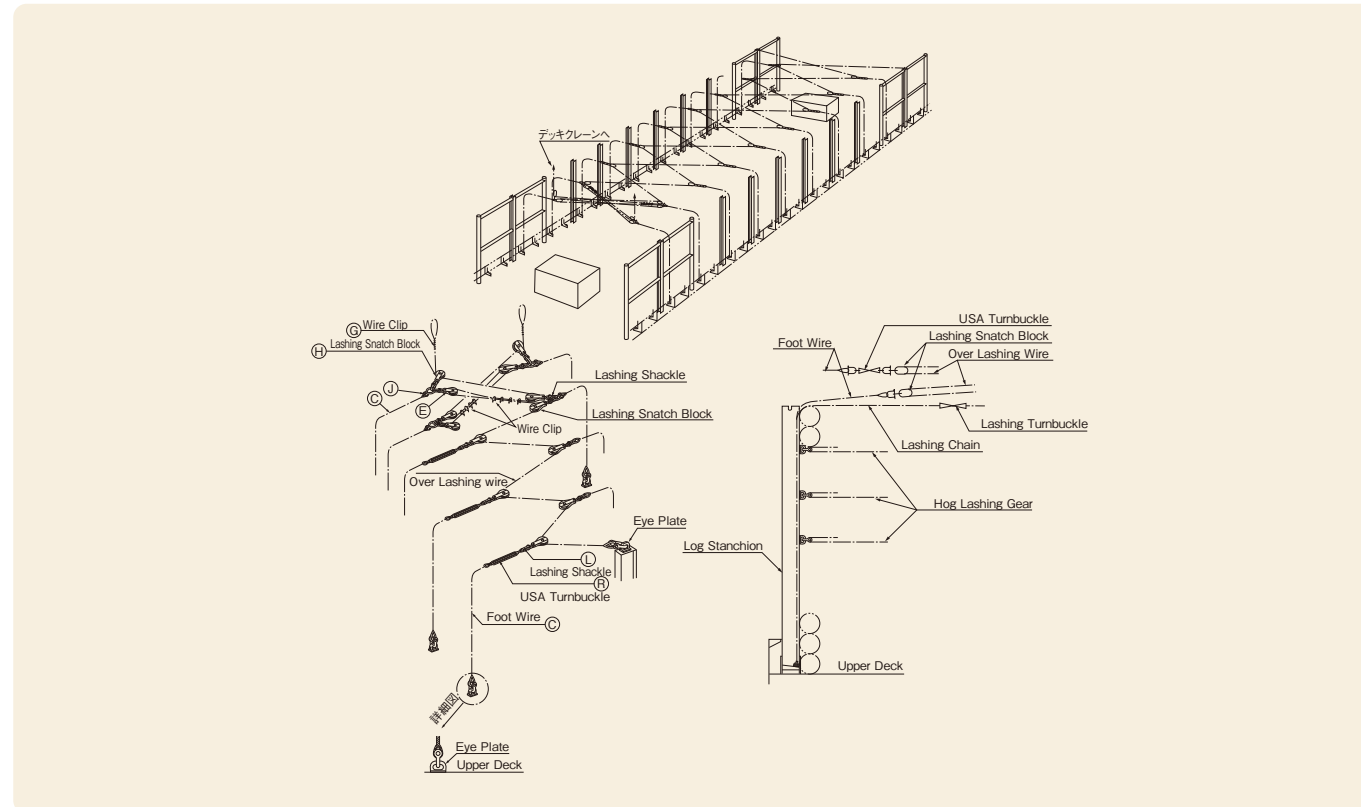


B.L	5.0MT (49kN)
NWT:	2.2kg



Log Lashing System

Ordinary lashing wire arrangement (reference only)

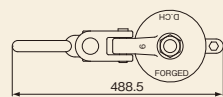


Lashing Snatch Block

■TS-150



NTW:14.7kg

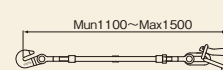


Lashing Turnbuckle (for chain use)

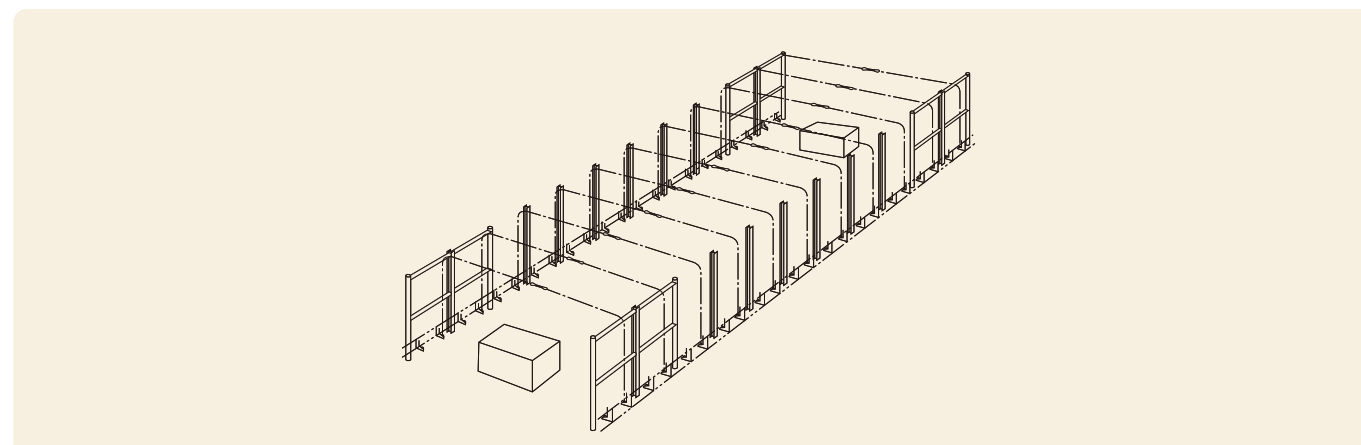
■BF-160H



NTW:12.5kg

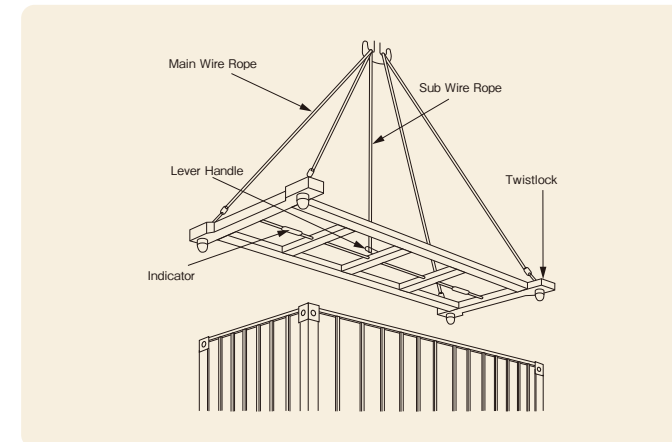


Ordinary lashing chain arrangement (reference only)



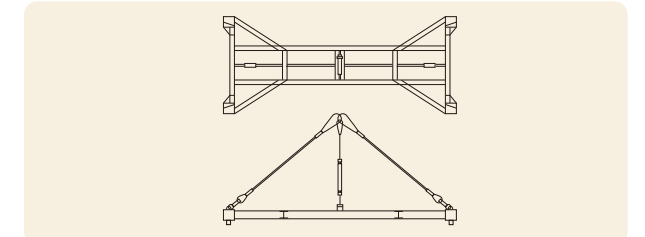
Lifting Device TAIYO

Container Lifting Spreader

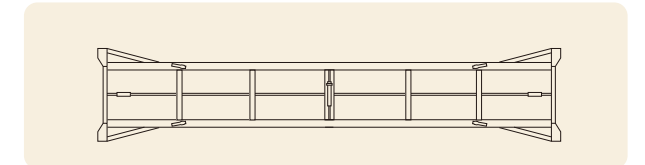


Both Semi Automatic operation type and Manual operation type are available

■20 feet

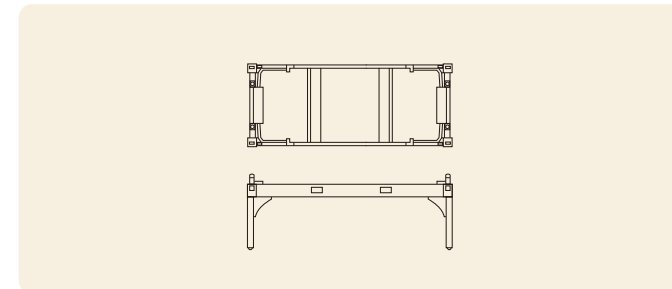


■40 feet

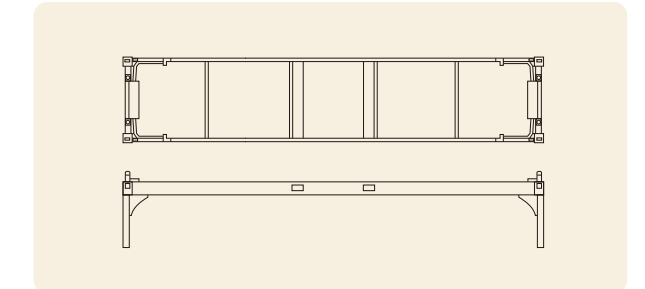


Over Height Attachment

■20 feet



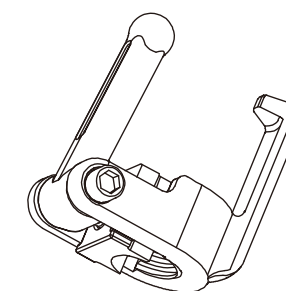
■40 feet



LOCK TIGHT

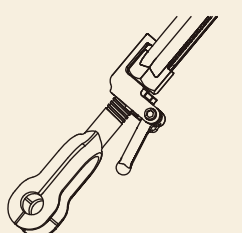
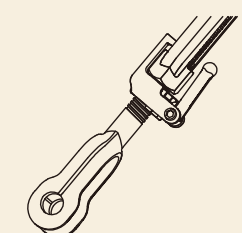


Safety locking piece to stop turnbuckle screw reversion turn.



LOCK

OPEN



Weight: Abt. 1.0kg. Operation is only PUSH or PULL the lever.
This locking piece is tightly to prevent turnbuckle shaft loose from sailing vibration.

Container Stack calculating software AutoLASH

AutoLASH is a calculation software to check container stack weight by using container data from the ship's loading computer. To secure loaded freight container you can change lashing pattern or change weight position as trial. And it is possible to apply optimized lashing pattern automatically.

