

MEC CATALOGUE

MEC Container Safety Systems GmbH



EXPERTISE AND PASSION

Since 1988, MEC has provided solutions which improve cargo safety, reliability and efficiency on container and roll-on/roll-off ships. It is our belief that expertise and passion, in combination with flexibility and high-quality service, are essential cornerstones required to master global challenges and ensure continued success in the future.

Working with our team of worldwide specialists, we constantly monitor your needs and respond with products and custom-engineered solutions providing highest safety, sustainability and durability - and setting new standards in our industry. This ongoing commitment was recently confirmed by our ISO 9001:2015 certification from renowned maritime assessors LRQA.

With branch offices in Hamburg, Singapore and Shanghai as well as stock and service agency in Jacksonville, we are ideally positioned to provide our customers highly effective support and after-sales service worldwide. Give us a try and see for yourself!

Kind regards,

Lennart Horstmann
CEO







CERTIFICATE OF APPROVAL

This is to certify that the Quality Management System of:

**MEC Container Safety Systems GmbH
Kühnehöfe 1, 22761 Hamburg
Germany**

has been approved by Lloyd's Register Quality Assurance
to the following Quality Management System Standards:

ISO 9001:2015

The Quality Management System is applicable to:

**Services and deliveries of optimized stowage systems,
fixed and loose lashing equipment, design and
development of lashing bridges, container cell-guide and
platforms. Development, design, testing and distribution
of lashing equipment for Container / PCTC / MPP vessels.**

Approval
Certificate No: KLN 4002574

Original Approval: 07 June 2016

Current Certificate: 07 June 2016

Certificate Expiry: 06 June 2019


Issued by: Lloyd's Register Deutschland GmbH
For and on behalf of: Lloyd's Register Quality Assurance Limited



LRI Deutschland GmbH, Adolf-Grimme-Allee 3, 50829 Köln, Deutschland, Handelsregister Nr. B 34587
For and on behalf of 1 Trinity Park, Bickenhill Lane, Birmingham, B37 7ES, United Kingdom

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LOOSE FITTINGS

Semi Automatic Twistlock – OSHA Confirm	7
Semi Automatic Twistlock – OSHA Confirm for Tandem Lift	8
Semi Automatic Twistlock – OSHA Confirm / Midlock	9
Large Seat Twistlock /Special Large Seat Twistlock	10
Standard Twistlock	11
Flat Rack / Lashing Bin	12
Dovetail Twistlock	13
Turnbuckle	13-14
Lashing Rod	15-16
External Lashing	17-19
Self Hanging Stacker	20
Stacking Cone	21
Compression Adapter / Bridge Fittings	22
Spacer	23
Actuator Pole and Tools	24

FIXED FITTINGS

Raised ISO Socket	26-27
Elongated Hole Socket	27-28
Lifting Socket	28, 30
Lashing Plate	30-31
Fixed and Removable D-Ring	31-35
Dovetail Sockets	35-36
Flush ISO Socket	37- 38
Guide Fitting/ Welding Cone	39

MANUALS

Container Securing Arrangement Plan	41
Cargo Securing Manual	42
Offset Plan Deck and Hold	43

DESIGN AND DEVELOPMENT

Lashing Bridge	45
Container Stanchion	46
Movable Cell Guides	47
Cell Guides on open top container vessel	48
5’ Adapter for 40’ Containers in 45’ Cell guides	49

FABRICATION CAPABILITIES

Fabrication capabilities	51-52
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GENERAL INFORMATION

Container Dimension	54
Transversal Distances	55
Code of Container Position	56
Overview of Loose Lashing Equipment	57
Container Arrangement on Hatch Covers	58
Container Arrangement on Hatch Covers with Lashing Bridges	59
Arrangement of Elongated Foundation	60
Iso Container Corner	61
Testing	62

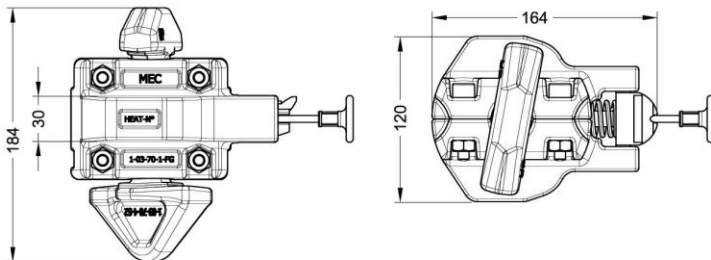
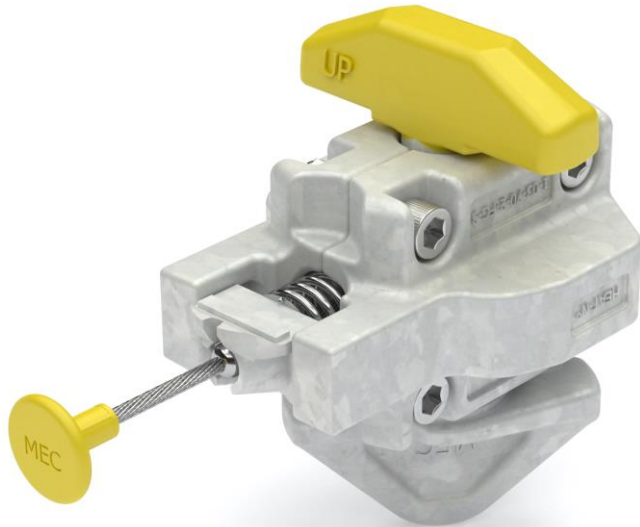


LOOSE FITTINGS

B6.11-S

Semi-Automatic Twistlock

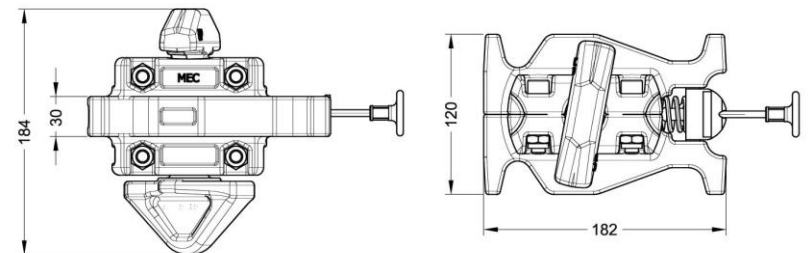
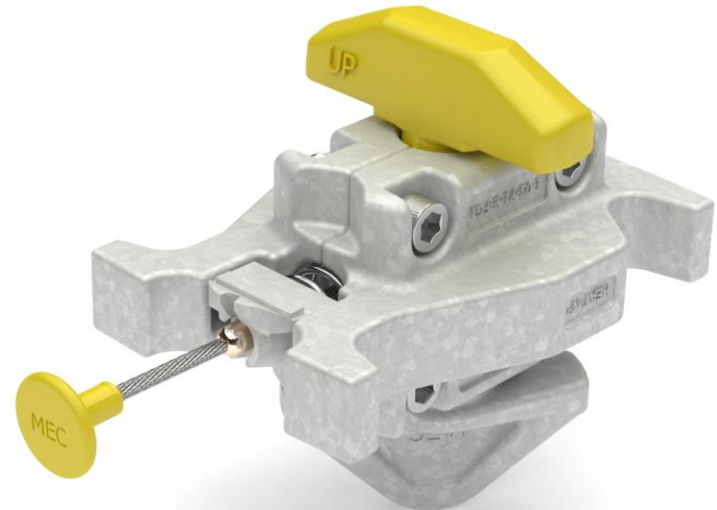
BL (kN):
Tension 500
Shear 420



B6.11-SLS

Semi-Automatic Twistlock, Large Seat

BL (kN):
Tension 500
Shear 420



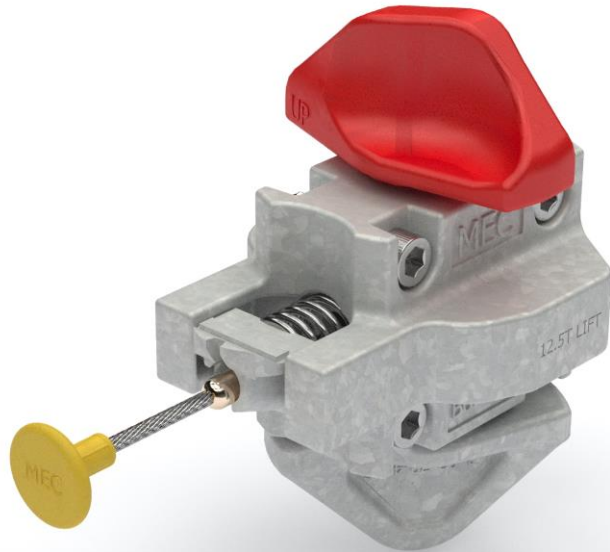
SEMI-AUTOMATIC TWISTLOCK – OSHA CONFIRM FOR TANDEM LIFT

B6.11-L

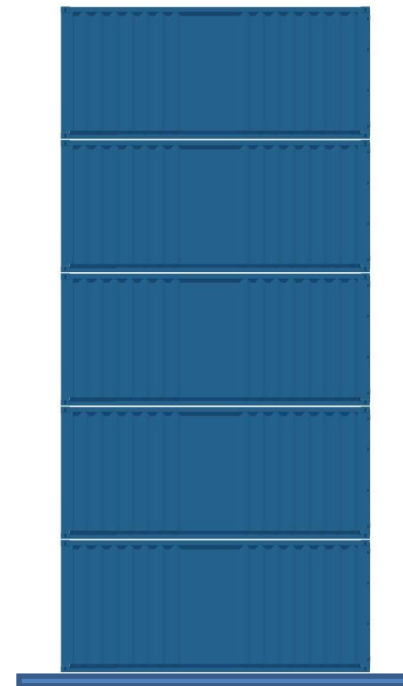
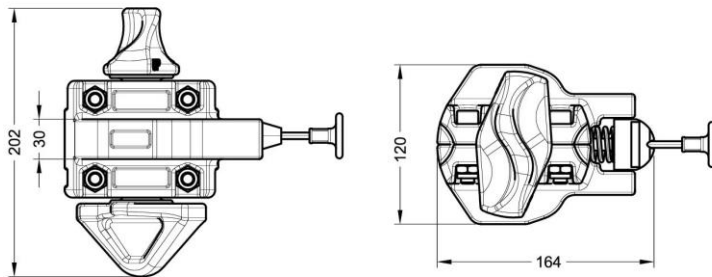
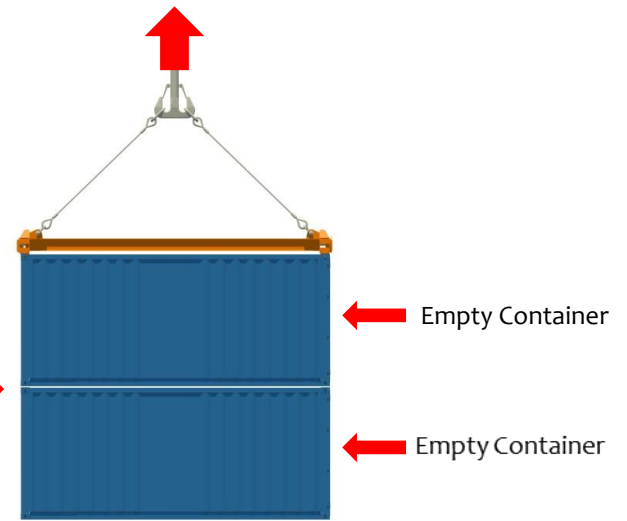
Semi-Automatic Twistlock for Lifting

BL (kN):
Tension 500
Shear 420
Lifting 250

For vertical tandem lifting
of two empty containers



B6.11-L

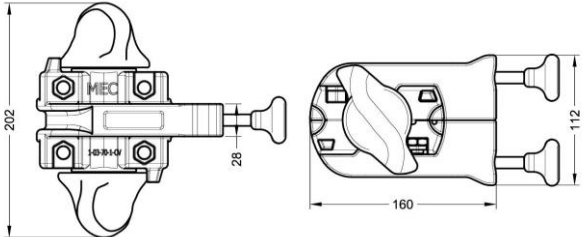
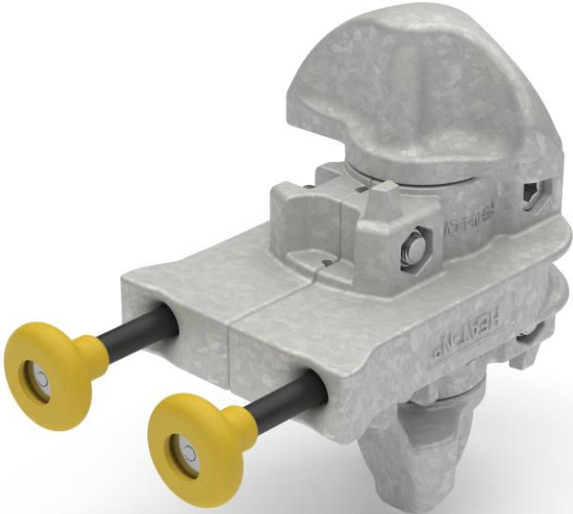


SEMI-AUTOMATIC TWISTLOCK – OSHA CONFIRM

MIDLOCK

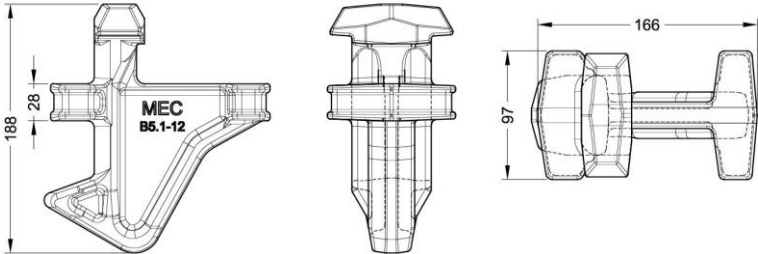
B6.11-CV
Semi-Automatic Twistlock

BL (kN):
Tension 500
Shear 420



B5.1-12
Midlock

BL (kN):
Tension 500
Shear 420

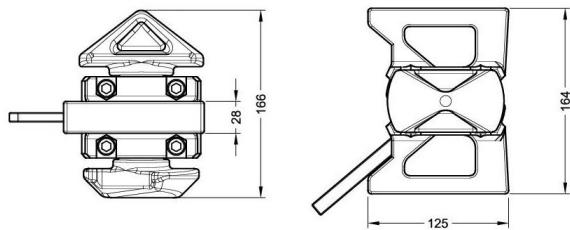
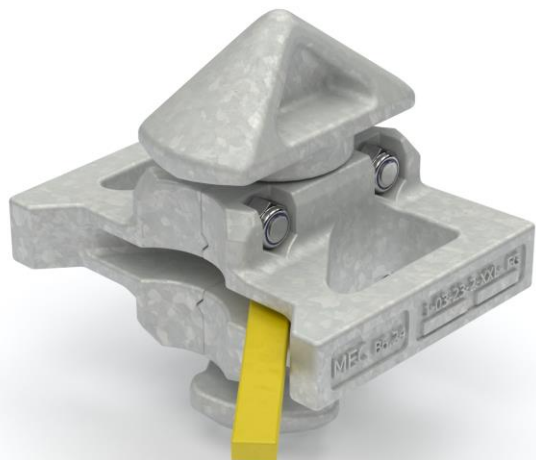


LARGE SEAT TWISTLOCK

B6.24

Large seat Twistlock

BL (kN):
Tension 500
Shear 420

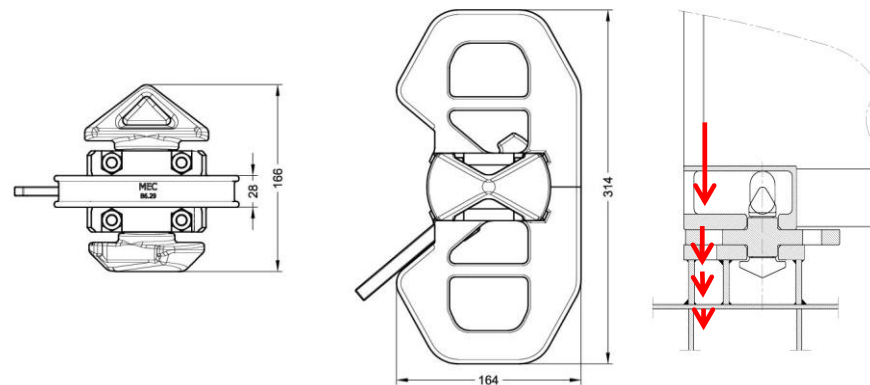


SPECIAL LARGE SEAT TWISTLOCK

B6.29

Special large seat Twistlock for 45' and 53' wide body container.

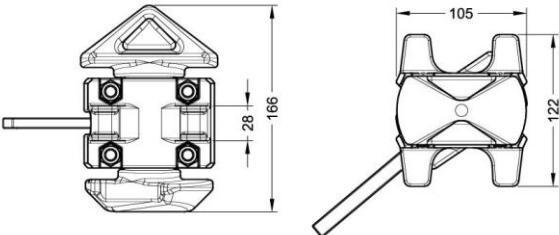
BL (kN):
Tension 500
Shear 420



STANDART TWISTLOCK

B6-12
Standard Twistlock

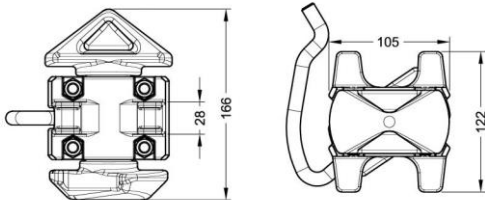
BL (kN):
Tension 500
Shear 420



B6-12-CG-L
Cell Guide Twistlock
L/H Closed

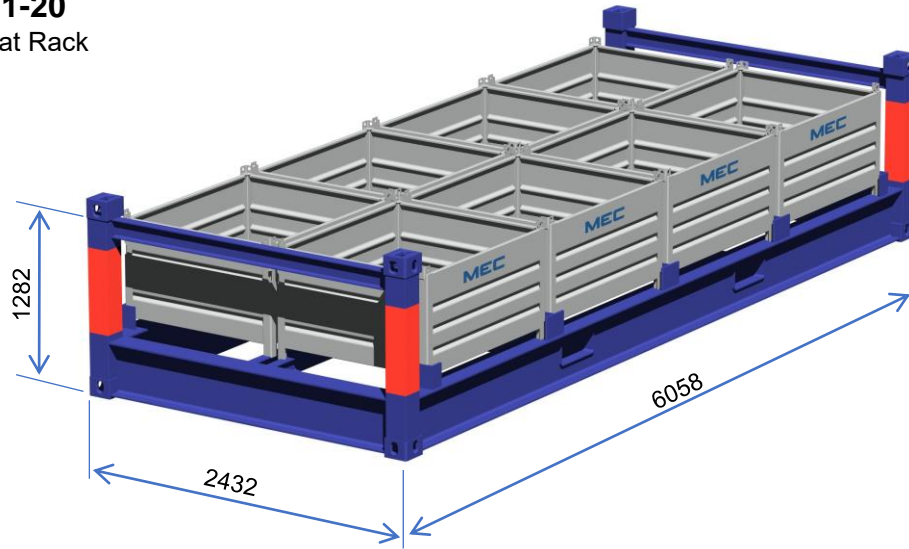
B6-12-CG-R
Cell Guide Twistlock
R/H Closed

BL (kN):
Tension 500
Shear 420

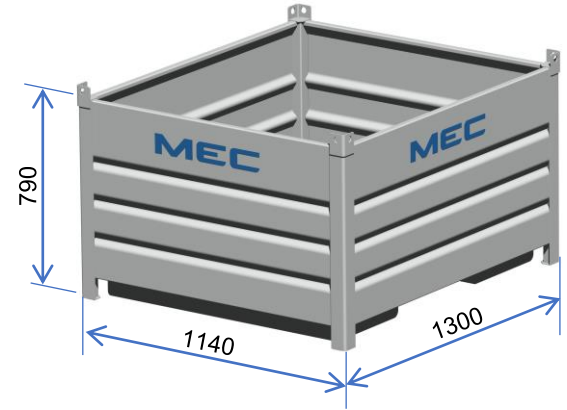


FLAT RACK / LASHING BIN

B14.1-20
20' Flat Rack

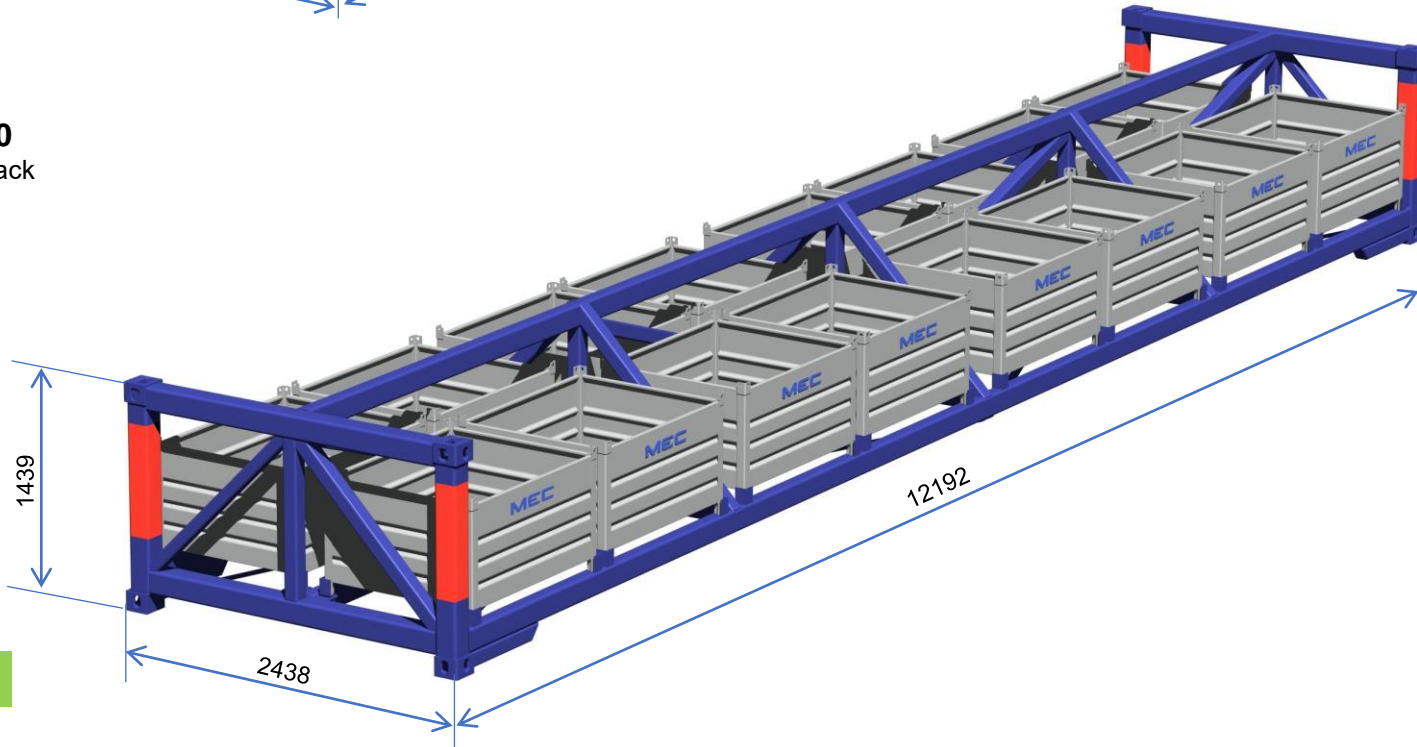


B14.1-1-09
Lashing Bin
Hot Dip Galvanized



Other dimensions on request

B14.1-40
40' Flat Rack

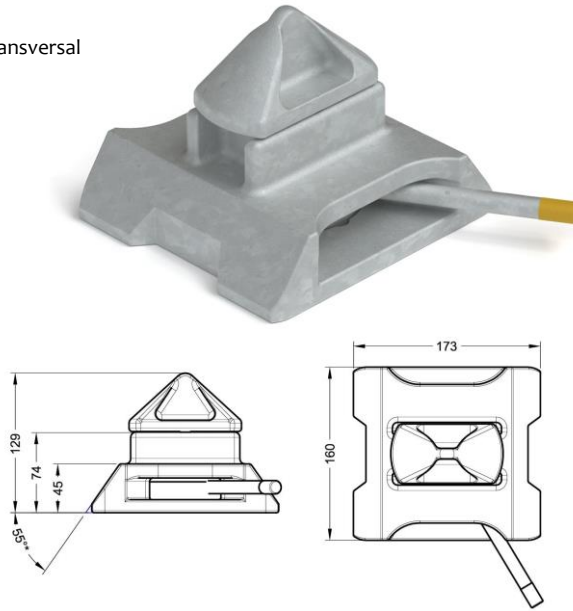


DOVETAIL TWISTLOCK

B6.4-55

Dovetail Twistlock, transversal

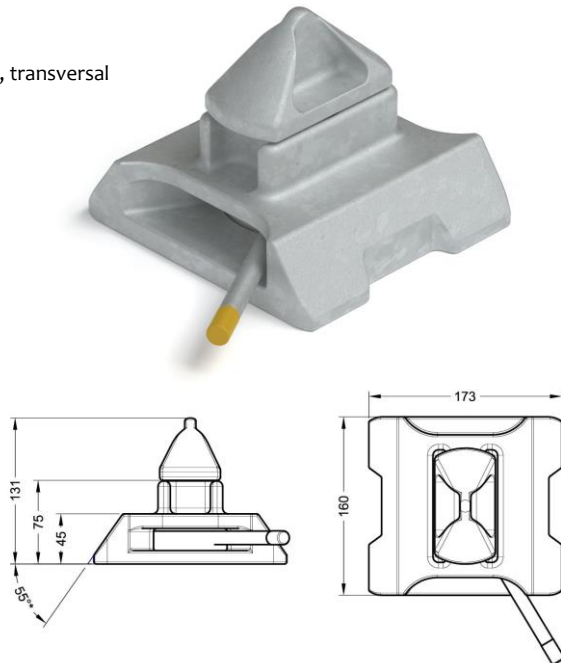
BL (kN):
Tension 500
Shear 420



B6.5-55

Dovetail Twistlock, transversal

BL (kN):
Tension 500
Shear 420

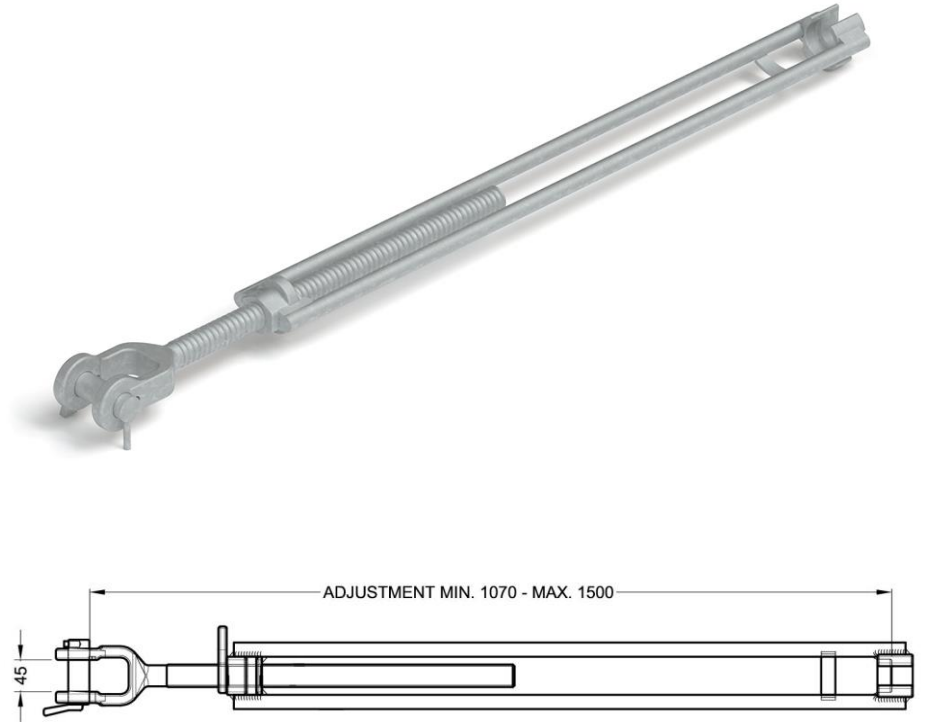


TURNBUCKLE

B1.20-1070/1500

Turnbuckle standard

BL (kN):
Tension 500

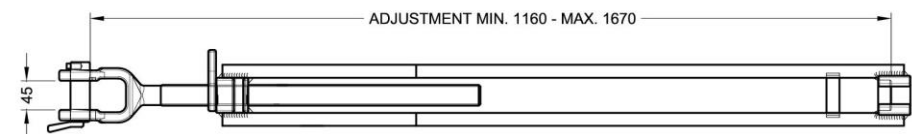
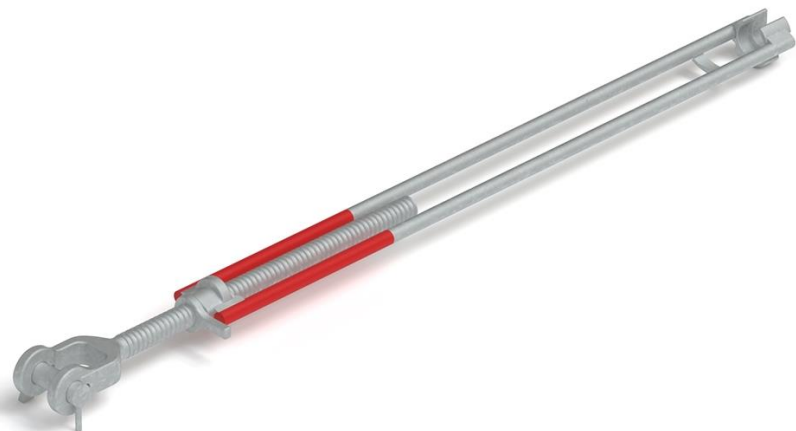


TURNBUCKLE

B1.20-1160/1670

Turnbuckle Extra long

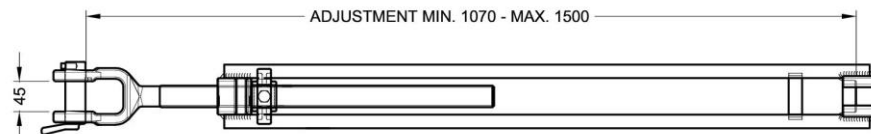
BL (kN):
Tension 500



B1.21-1070/1500

Turnbuckle with sliding Nut

BL (kN):
Tension 500

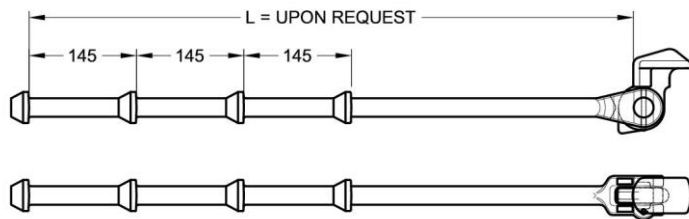


LASHING ROD

B2.35

Lashing Rod with Swivel Head / Knob Bar

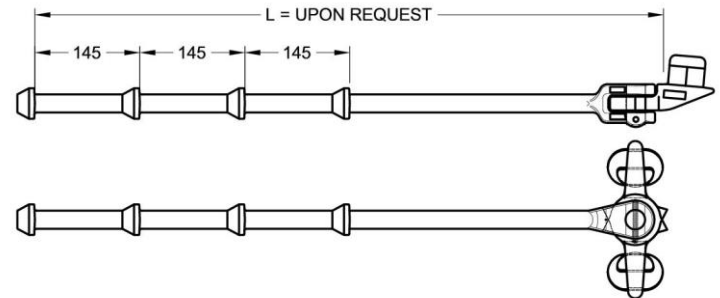
BL (kN):
Tension 500



B2.37

Vertical Lashing Rod

BL (kN):
Tension 500

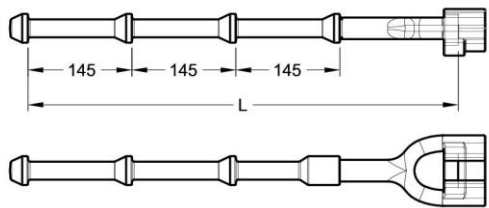


LASHING ROD

B2.9-3-L

Extension Rod with Knob Pocket

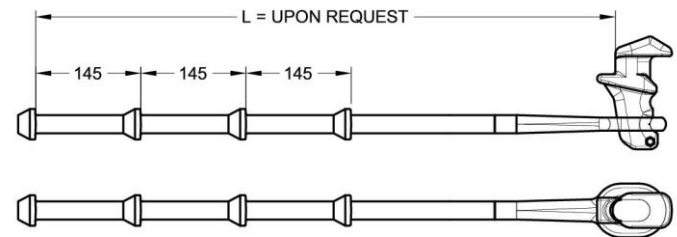
BL (kN):
Tension 500



B2.27

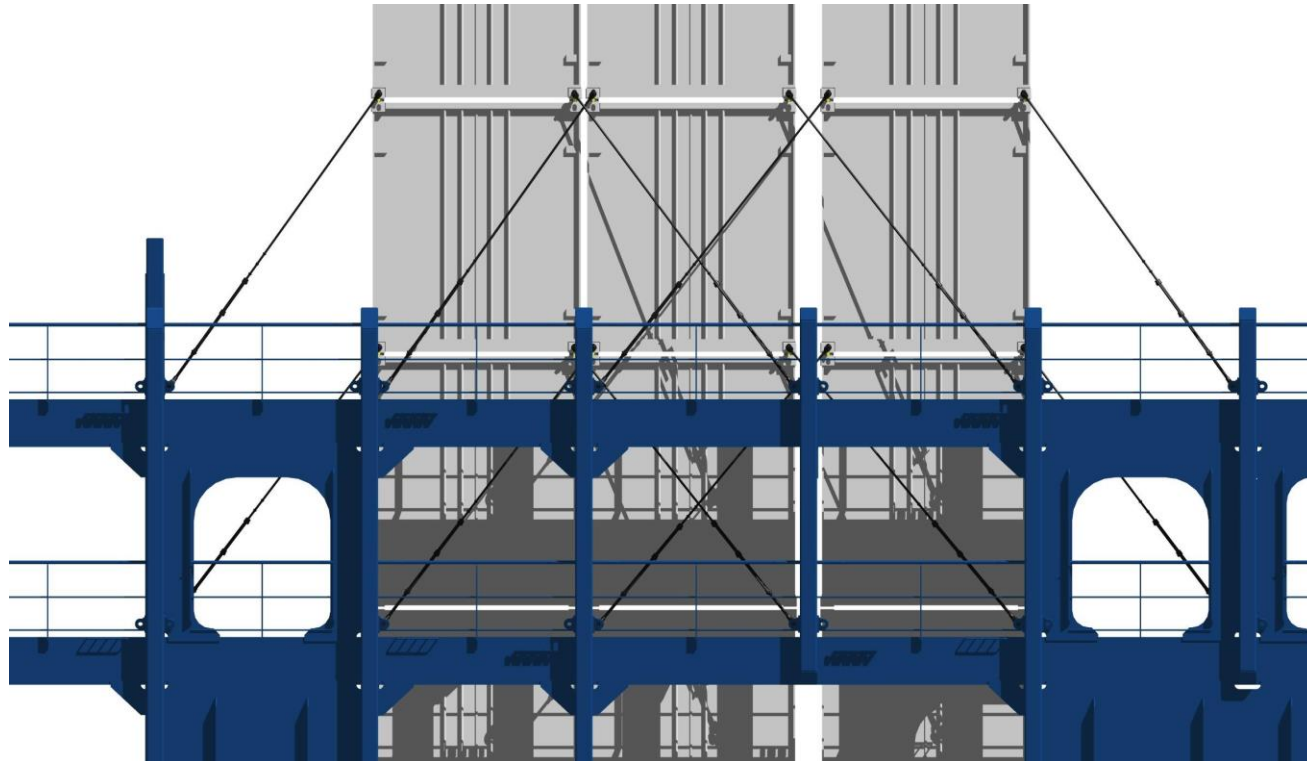
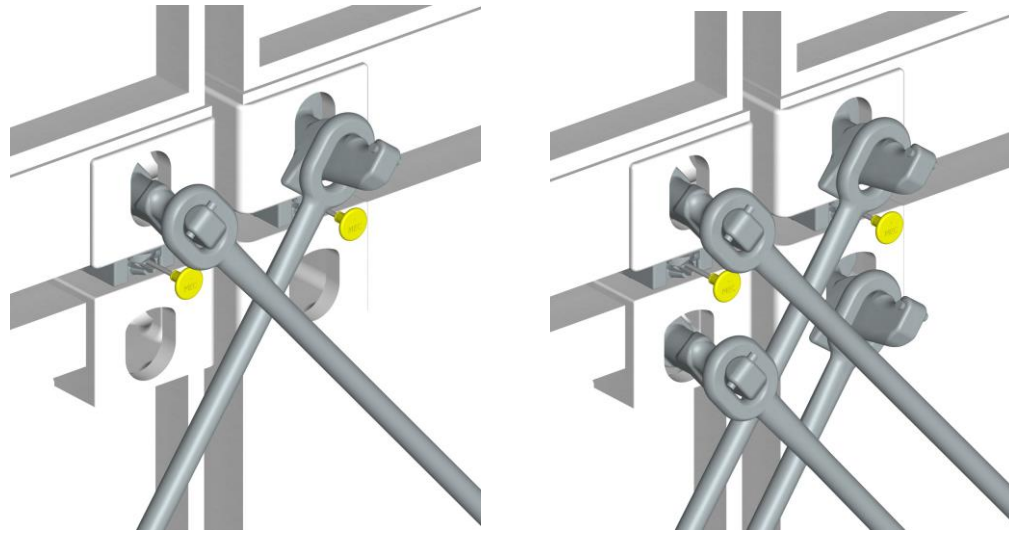
Lashing Rod for External Lashing

BL (kN):
Tension 500



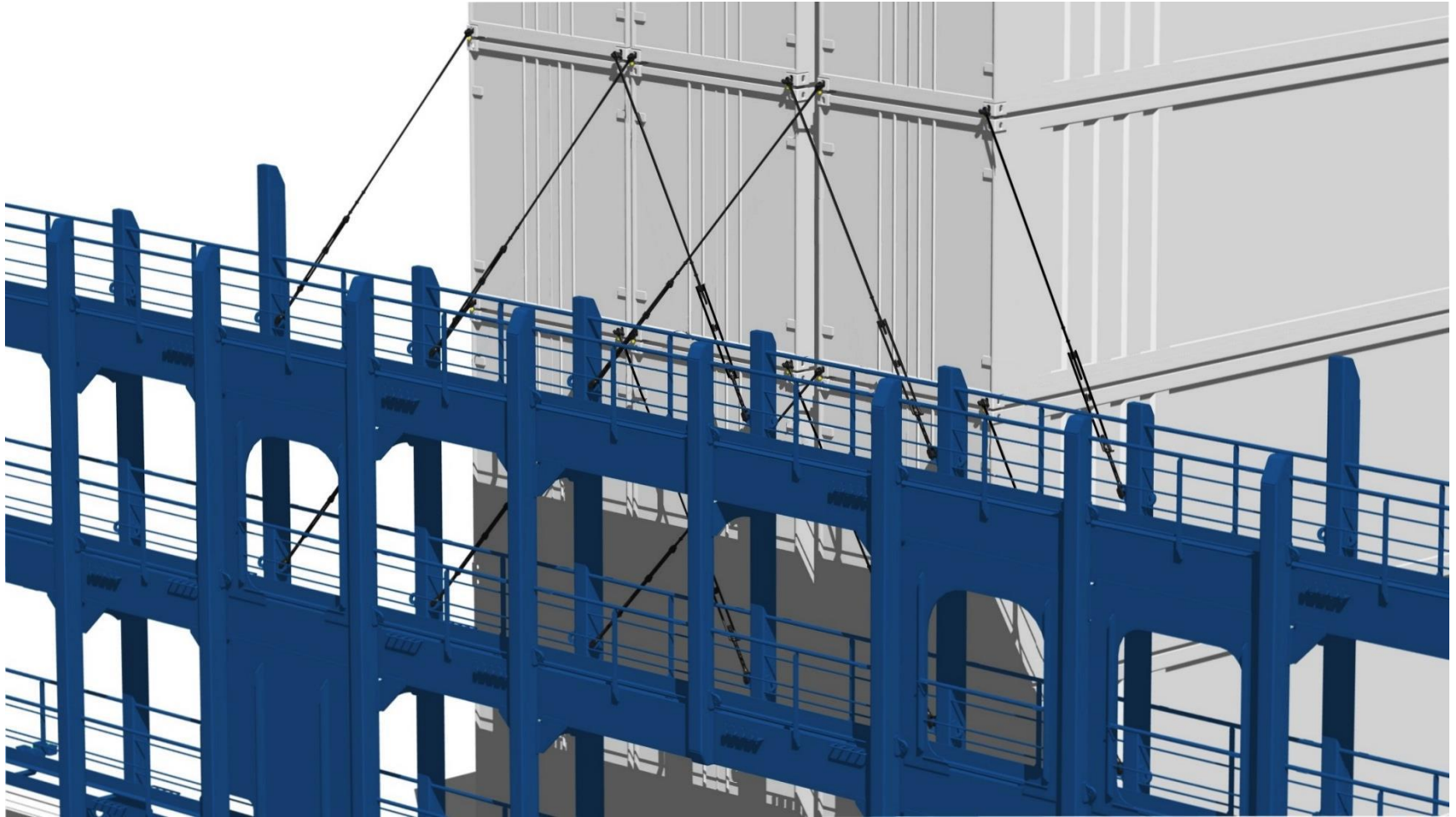
EXTERNAL LASHING

The external lashing system makes it possible to load higher stack weights and better weight distribution. Our newly developed swivel for external lashing allows easy and fast handling with a double cross lashing.



EXTERNAL LASHING

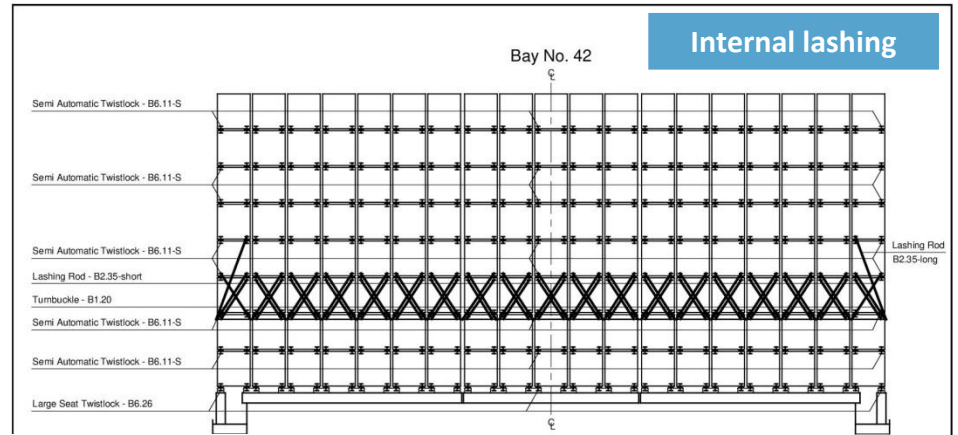
The external lashing system makes it possible to load higher stack weights and better weight distribution. Our newly developed swivel for external lashing allows easy and fast handling with a double cross lashing.



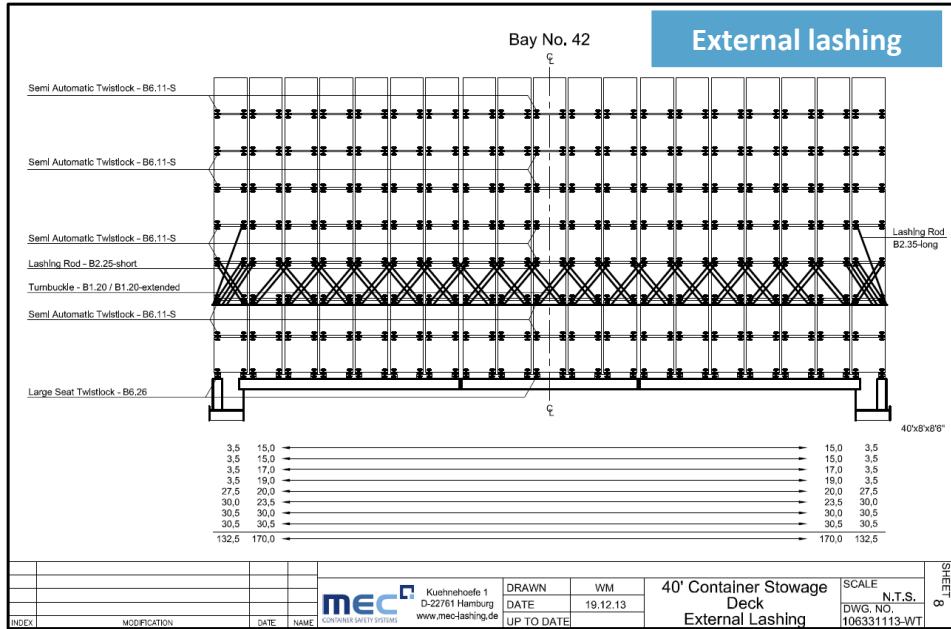
EXTERNAL LASHING

STACK WEIGHT COMPARISON

INTERNAL LASHING	EXTERNAL LASHING
3.5	15.0
3.5	15.0
13.5	17.0
29.0	19.0
29.5	20.0
30.0	23.5
30.5	30.0
30.5	30.5
170.0	170.0



Internal lashing



External lashing

→ 3.5	3.5	40'x8'x8'6"
→ 3.5	3.5	
→ 13.5	3.5	
→ 29.5	3.5	
→ 29.5	27.5	
→ 30.5	30.0	
→ 30.5	30.5	
→ 30.0	30.5	
→ 170.0	132.5	

shnehoefe 1 761 Hamburg mec-lashing.de	DRAWN	WM	40' Container Stowage Deck Internal Lashing	SCALE	N.T.S.
	DATE	13.12.13		DWG. NO.	106331113-WT
	UP TO DATE				

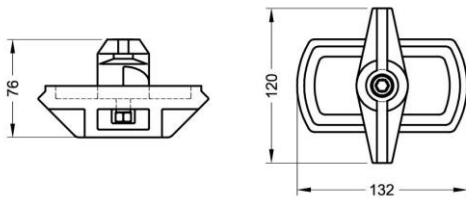
The external lashing system allows to drive higher stack weights and better weight distribution.

MEC Kusthoefe 1 D-22761 Hamburg www.mec-lashing.de				DRAWN	WM	40' Container Stowage Deck External Lashing	SCALE	N.T.S.
				DATE	19.12.13		DWG. NO.	106331113-WT
				UP TO DATE				

B4.2-10

Self-Hanging Stacker (Flangeless)

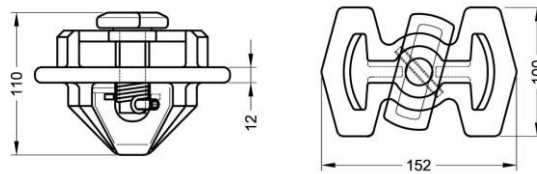
BL (kN):
Shear 420



B4.2-18

Self-Hanging Stacker with 12mm flange

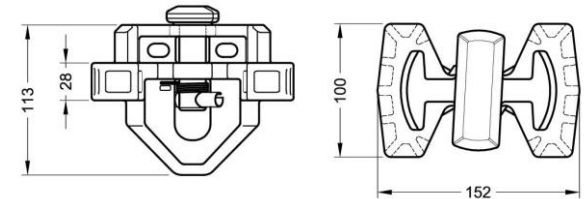
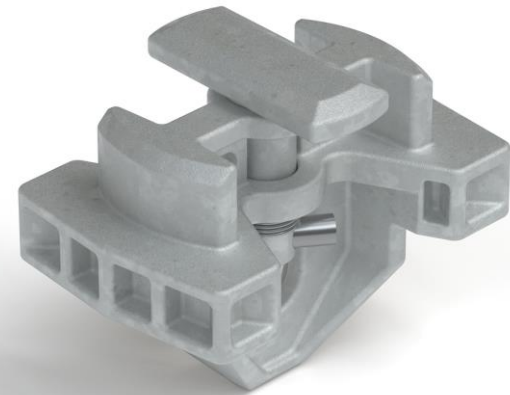
BL (kN):
Shear 420



B4.2-18-28

Self-Hanging Stacker with 28mm flange

BL (kN):
Shear 420

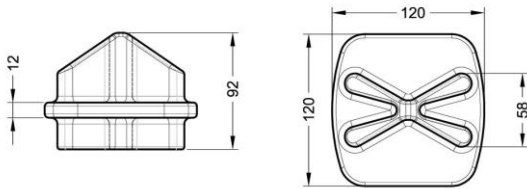


STACKING CONE

B4.1-4

Bottom stacking Cone

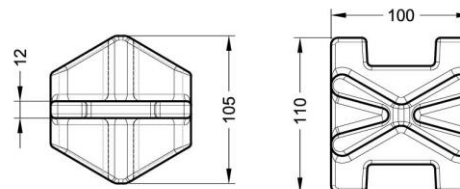
BL (kN):
Shear 420



B4.2-4

Single stacking cone

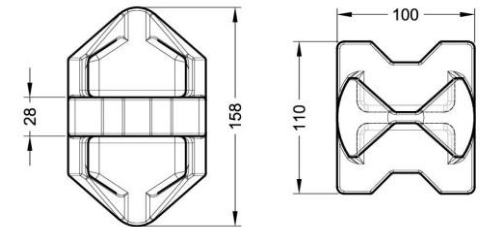
BL (kN):
Shear 420



B4.3-2

Single stacking cone with 28mm flange

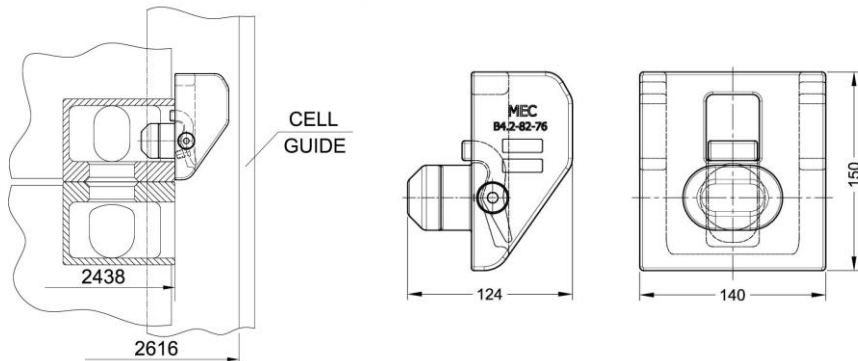
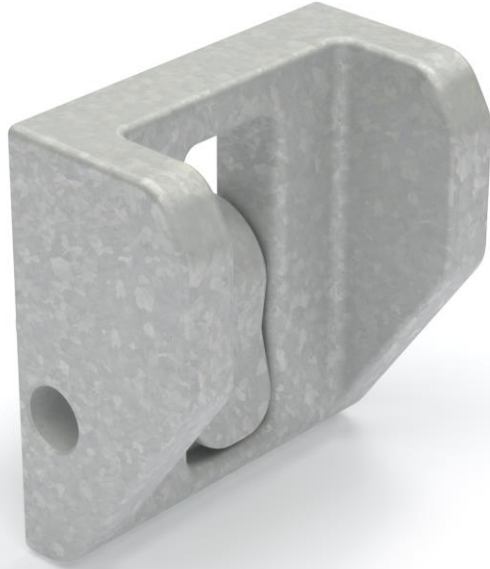
BL (kN):
Shear 420



PRESSURE ADAPTER FOR CELL-GUIDE

B4.2-82-76

Compression adapter



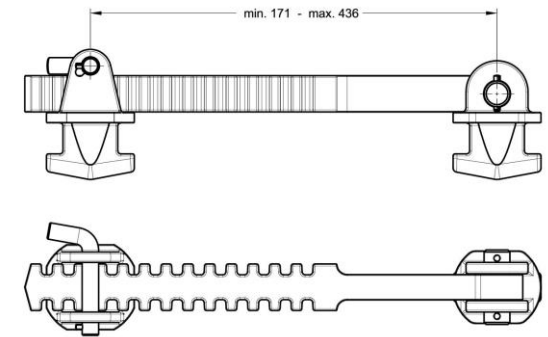
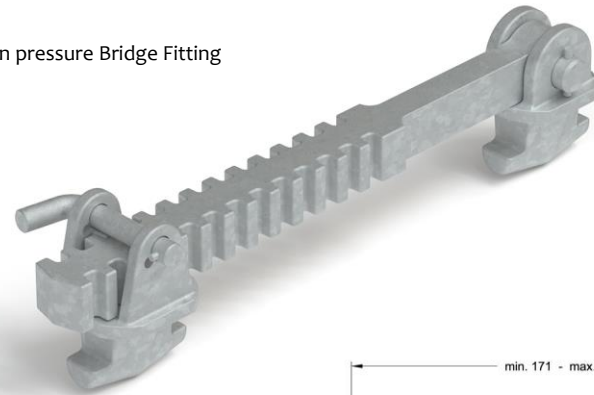
Other dimensions on request

BRIDGEFITTING

B7.10

Tension pressure Bridge Fitting

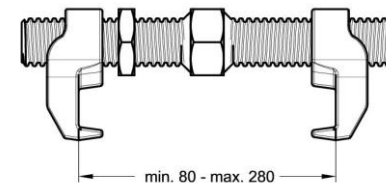
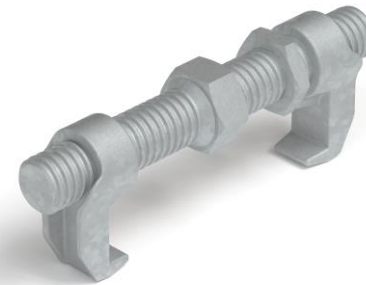
MEC
Lashing



B7.1

Bridge Fitti

BL (kN):
Tension 10c

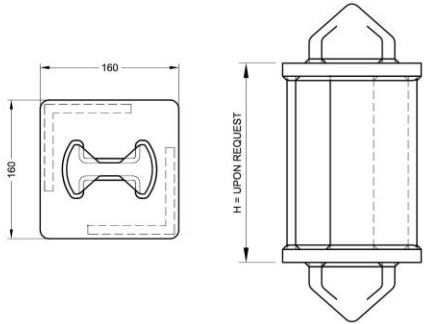


SPACER

B5.9-H

Spacer Cone/Cone

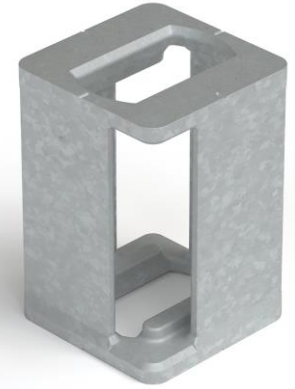
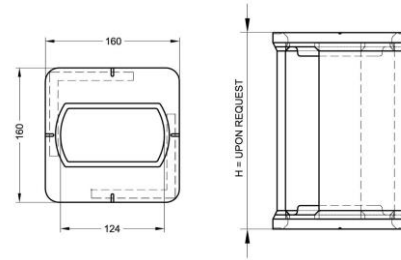
BL (kN):
Shear 420



B5.11-H

Spacer Hole/Hole

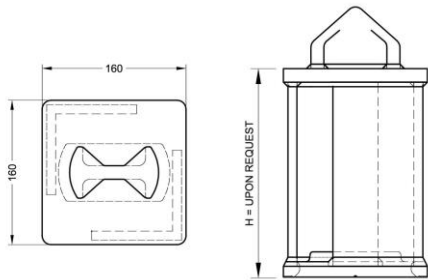
BL (kN):
Shear 500



B5.10-H

Spacer Cone/Cone

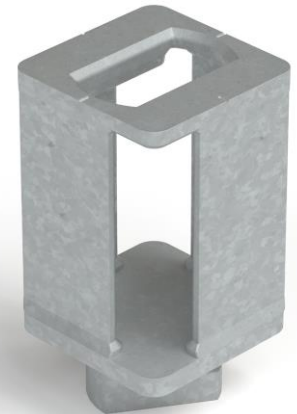
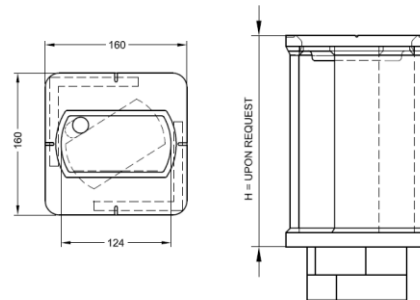
BL (kN):
Shear 420



B5.10-3-H

Spacer Cone/Cone

BL (kN):
Shear 420



ACTUATOR POLE AND TOOL

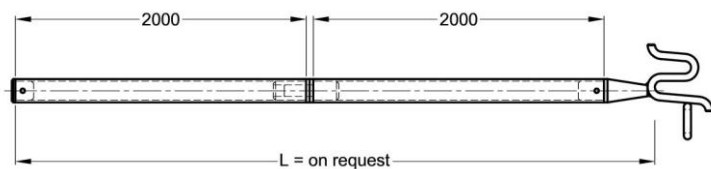
B6.8

Actuator Pole for Semi-Automatic Twistlock



Standard Length

B6.8-18	L=1,8m
B6.8-42	L=4,2m
B6.8-69	L=6,9m
B6.8-96	L=9,6m
B6.8-121	L=12,1m



B5.11-H

Turnbuckle Spanner



B1.13-1-1

Emergency Tool



FIXED FITTINGS



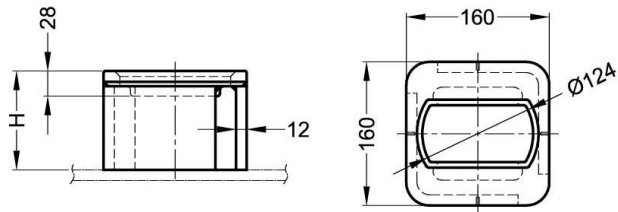
RAISED ISO SOCKET

A4.1-H-HI Single

BL (kN):
Tension 500
Shear 420



When ordering please specify the desired dimensions

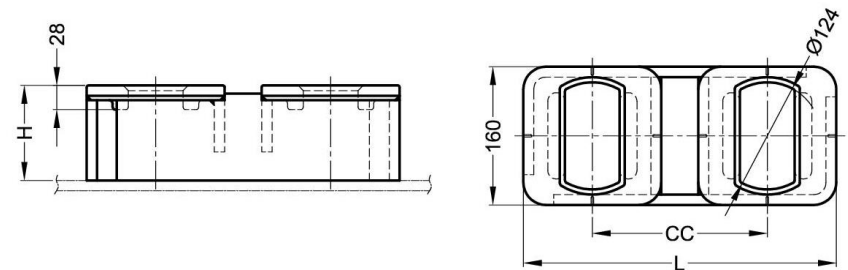


A4.2-CC-H-HI Double Transversal

BL (kN):
Tension 500
Shear 420



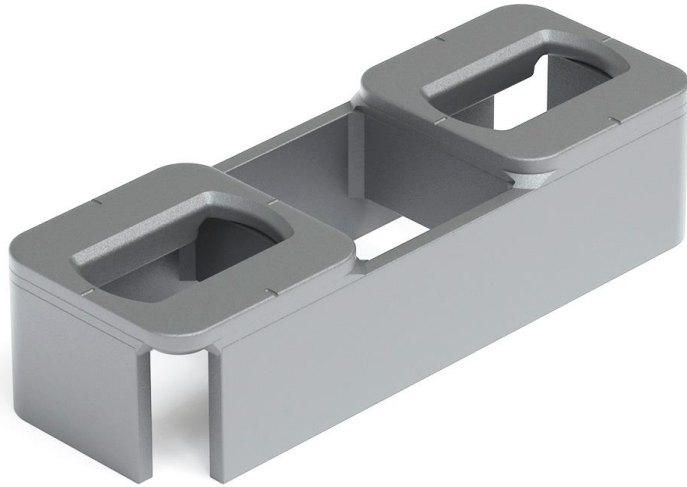
When ordering please specify the desired dimensions



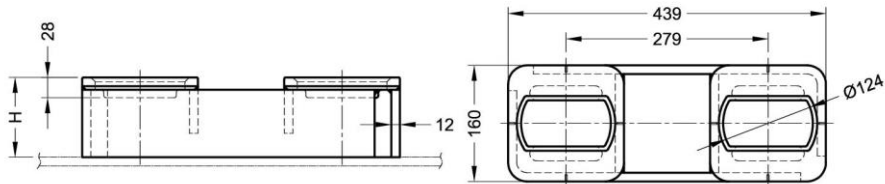
RAISED ISO SOCKET

A4.3-279-H-HI
Double Longitudinal

BL (kN):
Tension 500
Shear 420



When ordering please specify the desired dimensions



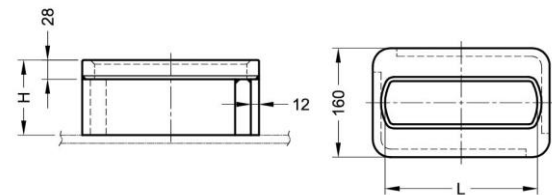
ELONGATED HOLE SOCKET

A5.1-L-H-HI
Single Sliding Elongated Hole

BL (kN):
Tension 500
Shear 420



When ordering please specify the desired dimensions



ELONGATED HOLE SOCKET

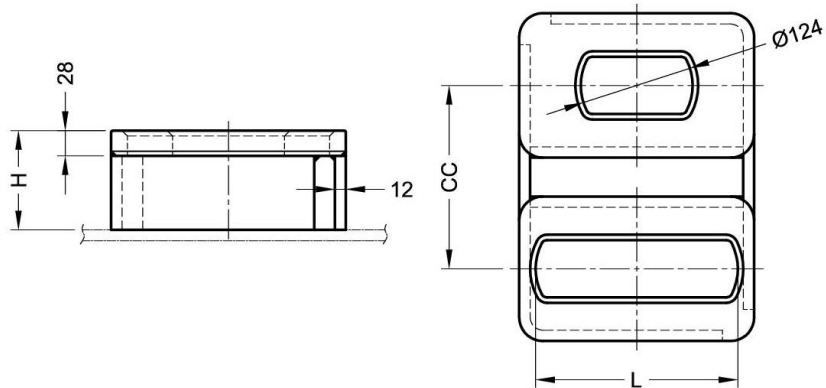
A5.2-CC-L-H-HI

Double Transversal Elongated Hole

BL (kN):
Tension 500
Shear 420



When ordering please specify the desired dimensions



LIFTING SOCKET

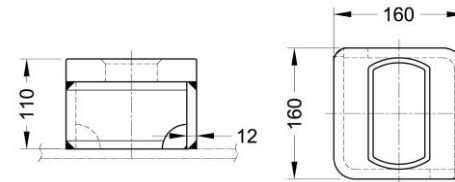
A7.5-28-110-HI

Single Lifting

BL (kN):
Tension 500
Shear 420



When ordering please specify the desired dimensions



FIXED FITTINGS



LIFTING SOCKET

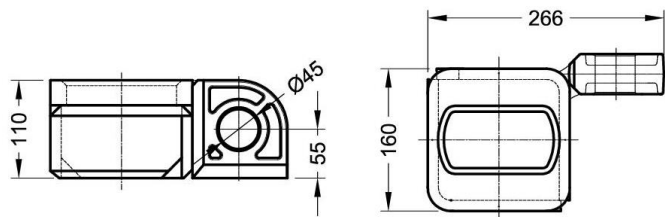
A7.2-RH/LH-FP-HI

With Crawfoot

BL (kN):

Tension 500

Shear 420



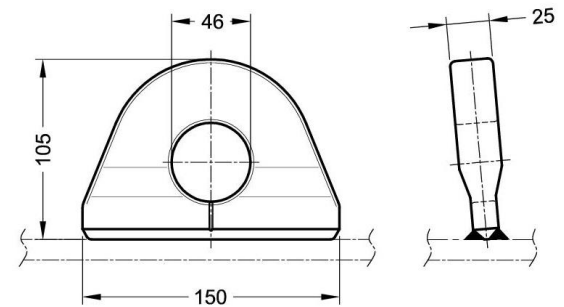
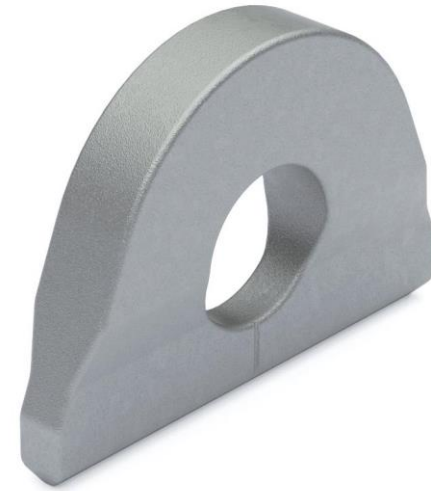
LASHING PLATE

A18.1-HI

Single

BL (kN):

Tension 500

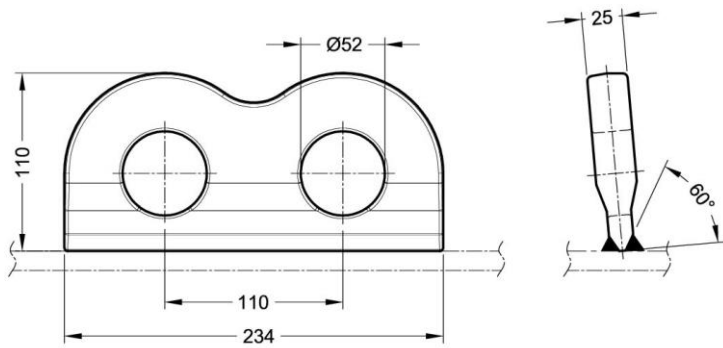


LASHING PLATE

A18.2-110-HI

Double

BL (kN):
Tension 500

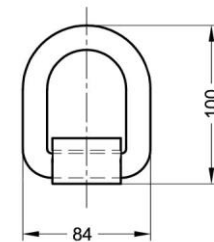


FIXED D-RING

A14.1-15

For PCTC Carrier

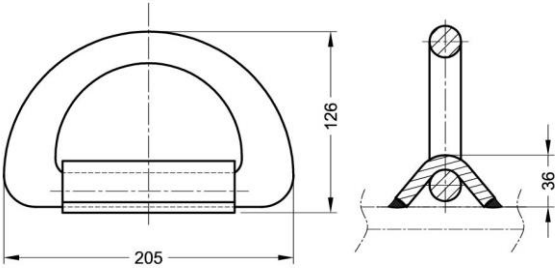
BL (kN):
Tension 150



FIXED AND REMOVABLE D-RING

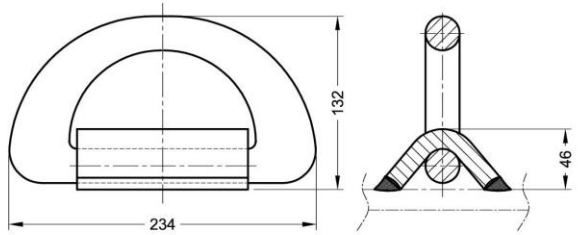
A14.2-1
D-Ring Single

BL (kN):
Tension 360



A14.6-1
D-Ring Single

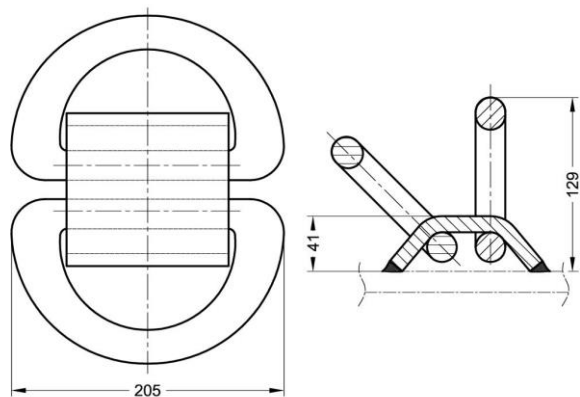
BL (kN):
Tension 500



FIXED D-RING

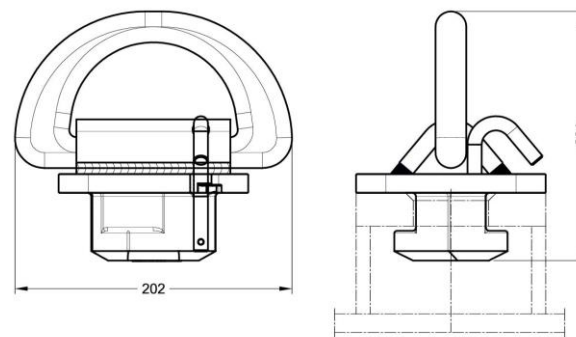
A14-3 D-Ring Double

BL (kN):
Tension 360



A16.1-1 For PCTC Carrier

BL (kN):
Tension 500

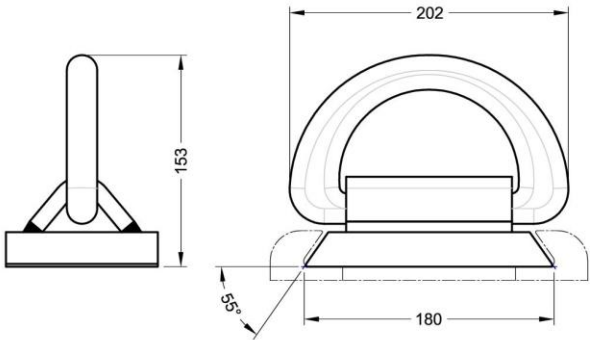


FIXED AND REMOVABLE D-RING

A16.8

D-Ring Single

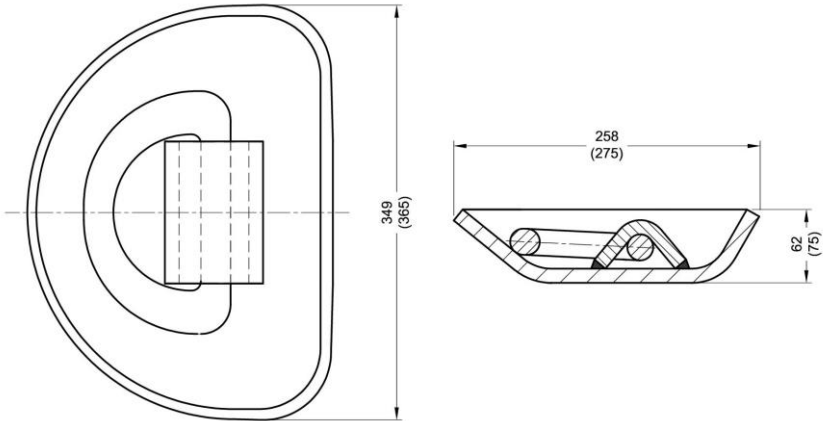
BL (kN):
Tension 360



A15-2-36(50)

Single Flush

BL (kN):
Tension 360/500



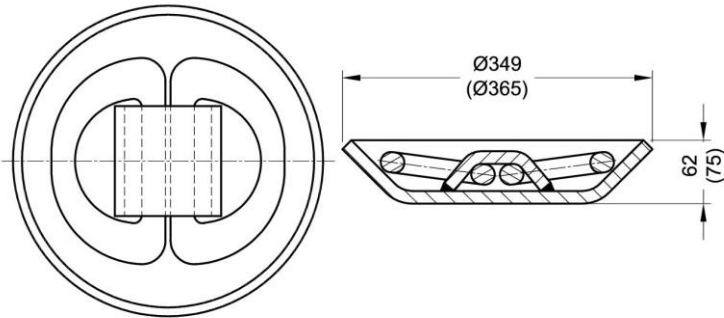
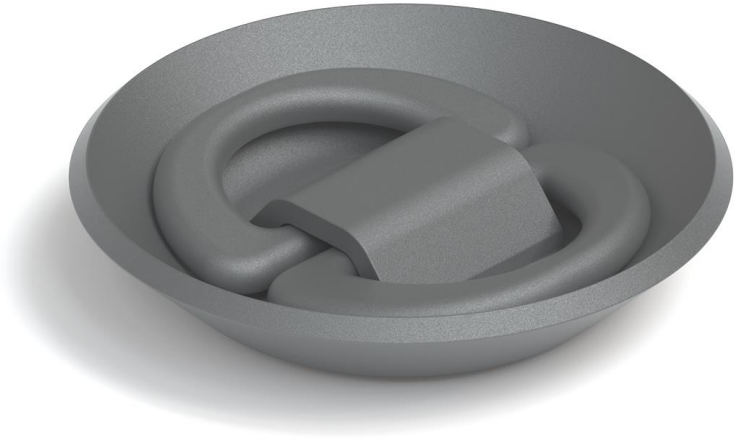
FIXED AND REMOVABLE D-RING

A14-3

Double Flush

BL (kN):

Tension 360/500



DOVETAIL SOCKET

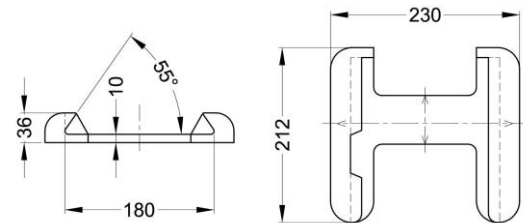
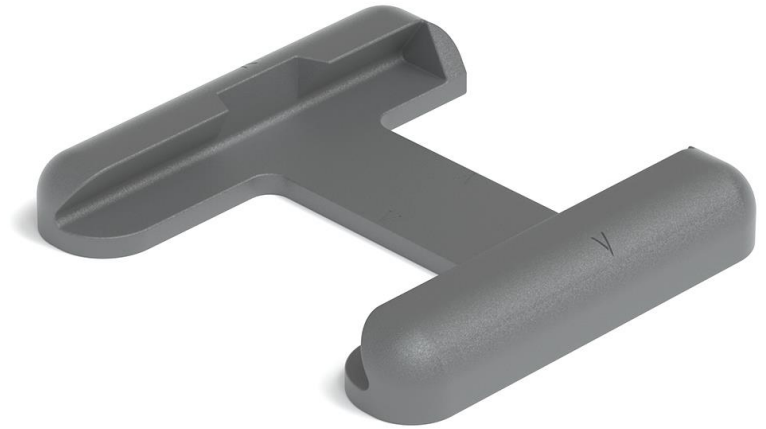
A16.1-G-55-3

Single 55°

BL (kN):

Tension 400

Shear 422



DOVETAIL SOCKET

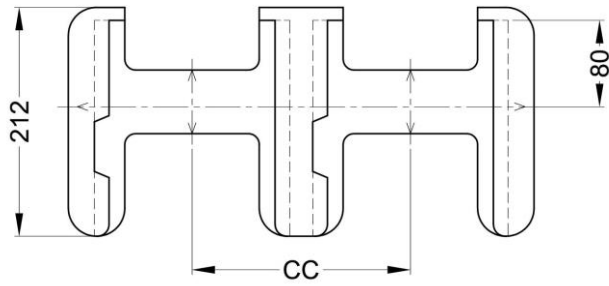
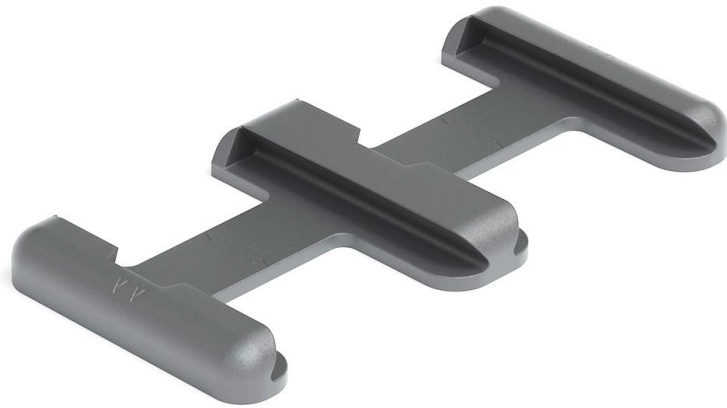
A6.2-CC-G-55

Double 55° Transversal

BL (kN):

Tension 400

Shear 420



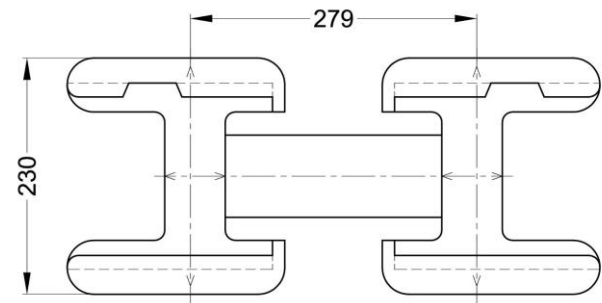
A16.3-279-G-55-3

Double 55° Longitudinal

BL (kN):

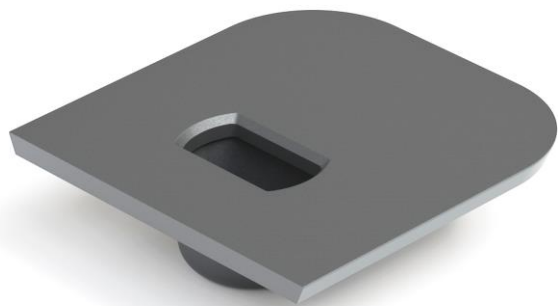
Tension 400

Shear 420



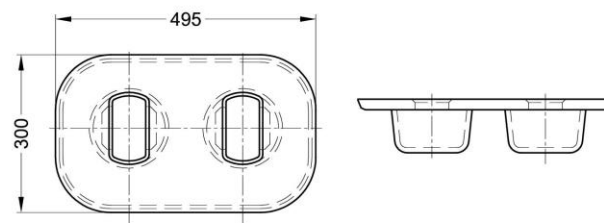
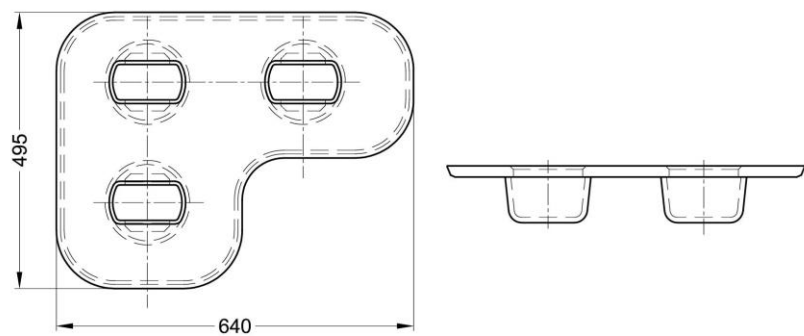
FLUSH ISO SOCKETS

Flush ISO sockets with different dimension and chamfer on request

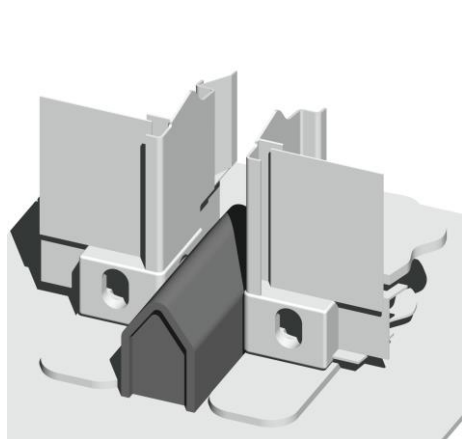


DOVETAIL SOCKET

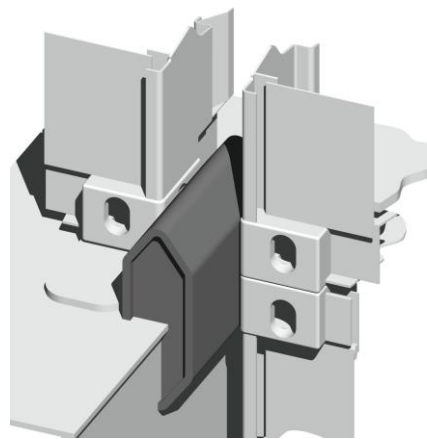
Examples of Flush ISO sockets



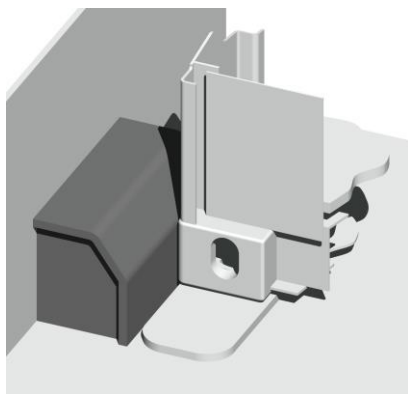
Configuration



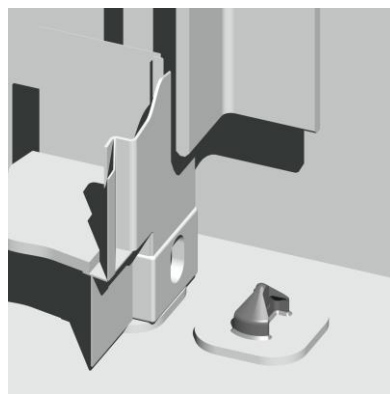
A9.1-L



A9.2-L



A9.3-L



A10.5-H

A9.1-L
Tank Top
Between Containers

BL (kN):
Shear 420

Dimensions on request
Available in Long and Short version



A9.2-L
Tank Step
Bulkhead

BL (kN):
Shear 420

Dimensions on request



A9.3-L
Bulkhead
Tank Top

BL (kN):
Shear 420

Dimensions on request



A10.5-H
Welding Cone

BL (kN):
Shear 420

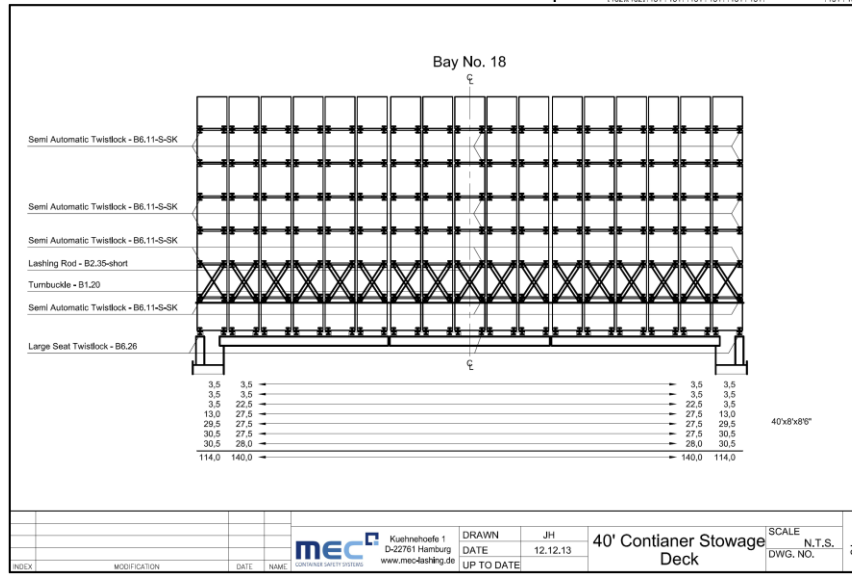
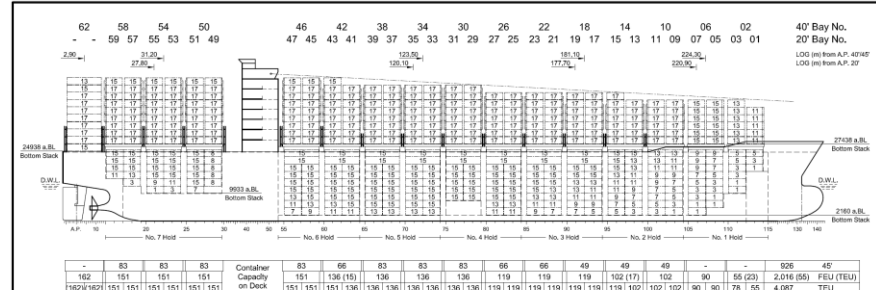


MANUALS



Container Securing Arrangement Plan

The Container Securing Arrangement Plan (CSA) is a handbook specifying the container lashing arrangements including lashing rods, turnbuckles, twistlocks and other elements on the container vessel. Our newest lashing software (with classification-society-specific programs) calculates optimum container weight distribution for the specific GM at hand. The CSA is normally approved by the classification society specified by the shipowner.

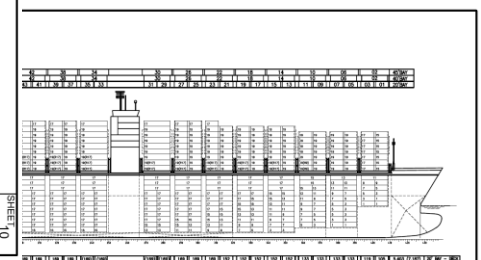


83	66	83	83	83	66	66	49	49	49	926	45'							
162	151	151	151	151	136	136	136	136	119	119	102 (17)	102	90	55 (23)	2,016 (55)	FEU (TEU)		
151	151	151	151	151	136	136	136	136	119	119	119	102	90	90	78	55	4,087	TEU

129 (2)	133	133	105	129	119 (4)	109 (4)	87 (14)	65 (11)	36 (11)	9 (9)	1,454 (113)	FEU (TEU)										
29	131	133	133	133	105	105	129	129	123	119	113	109	101	87	77	65	47	36	18	9	2,795	TEU

Max. Container Stack Weights		Main Dimensions	
Hatch Cover	90 t, 140 t	Length over all	abt. 270,90 m
Upper Deck	t, t	Length between perpendiculars	258,40 m
Holds	t, t	Breadth (moulded)	42,80 m
		Depth (moulded)	24,60 m
		Draught (design)	13,00 m
		Draught (scantling)	14,55 m
		Speed	abt. 22,5 kn
		Max. GM ₀	< 1,38 m
		Classification	GL / RINA

EC	Kuehnehoefe 1 D-22761 Hamburg www.mec4ashing.de	DRAWN	JH	SCALE	1:1100	
		DATE	12.12.2013			Container Arrangement Plan
		UP TO DATE				



MEC		Kuehnehoefe 1 D-22761 Hamburg www.mec4ashing.de	DRAWN	JH	40' Container Storage Deck	SCALE	N.T.S. DWG. NO.
MOD.	MODIFICATION	DATE	DATE	DATE			
			12.12.13	UP TO DATE			

DIMENSION OF CONTAINERS		CONTAINER CAPACITIES		MAX. STACK WEIGHT		MAIN PARTICULARS	
20' ISO Cont.	20'x8'x8'6"	On deck	7.187 TEU	ON DECK / HATCH COVERS	Length overall	about 366,0 m	
40' ISO Cont.	40'x8'x8'6"	In hold	5.923 TEU	20'	Length between perp.	350,0 m	
45' ISO Cont.	45'x8'x8'6"	Total	13.110 TEU	40/45'	Breadth, moulded	48,2 m	
				40/45' Bay 70	Depth, moulded	29,80 m	
					Design draught, moulded	14,0 m	
					Scantling draught, moulded	15,5 m	
					GM (m)	1,4 m	
					Classification Society:	GL	

MEC		Kuehnehoefe 1 D-22761 Hamburg www.mec4ashing.de	DRAWN	JH	Container Arrangement Plan	SCALE	N.T.S. DWG. NO.
MOD.	MODIFICATION	DATE	DATE	DATE			
			12.12.13	UP TO DATE			

Cargo Securing Manual

The Cargo Securing Manual (CSM) contains all relevant information pertaining to cargo securing on board the ship including:

- Handling and maintenance instructions
- Copy of the CSA
- List of all fixed and loose lashing elements;
- Specifying working load limit, proof load, ultimate load and manufacturer of each.
- Detailed part drawings of fixed and loose lashing elements
- Copies of the class approval certificates for all fixed and loose lashing elements on board the ship
- Permissible acceleration factors for multi-layer container stacks and nonstandardized cargo
- The CSM is generally approved by the responsible classification society on behalf of the flag state of the vessel.



CONTAINER SAFETY SYSTEMS



APPROVED
MEC 0/CPH/1383 Rev.1.1
SEE LETTER Date: 2017-02-20



2.400 TEU Hybrid ConRo Vessel

Hull No.	DNV Register No.	Ship's Name
2022 / B135	D33798	EL COQUI
2023 / B136	D33798	TAINO

Container Securing Arrangement Plan

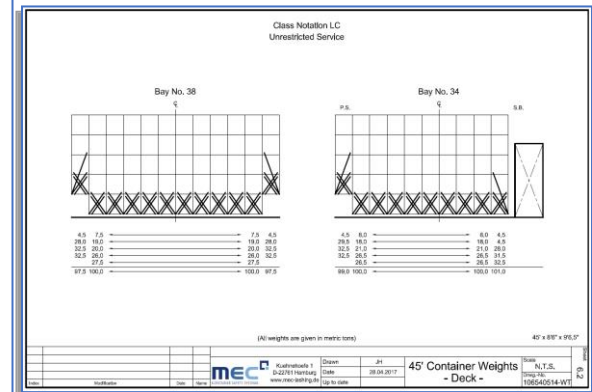
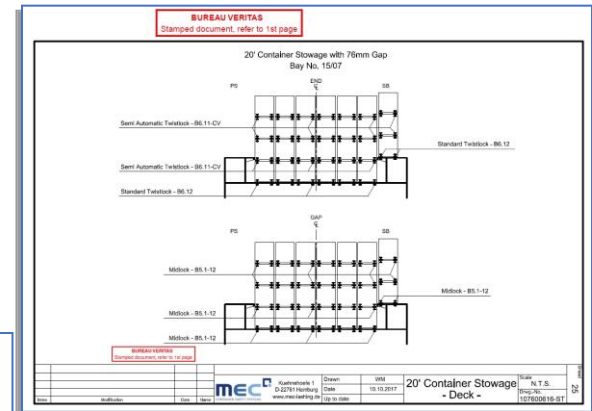
Class Notation LC for Unrestricted Service and RSCS for Standard- and Individual Routes
Route No. 5: North Atlantic Service
Route No. 29: West Coast – Hawaii Service
Route No. 30: Florida – Puerto Rico Service

The CSA displays the maximum permissible weights and the maximum number of containers. By reducing stacked containers an improved weight distribution can be achieved. The maximum permissible stack weight on hatch covers and the modification of the GM must be observed. A load optimized weight distribution is calculated by means of the onboard loading computer.

MEC 106540514
MEC GmbH Hamburg

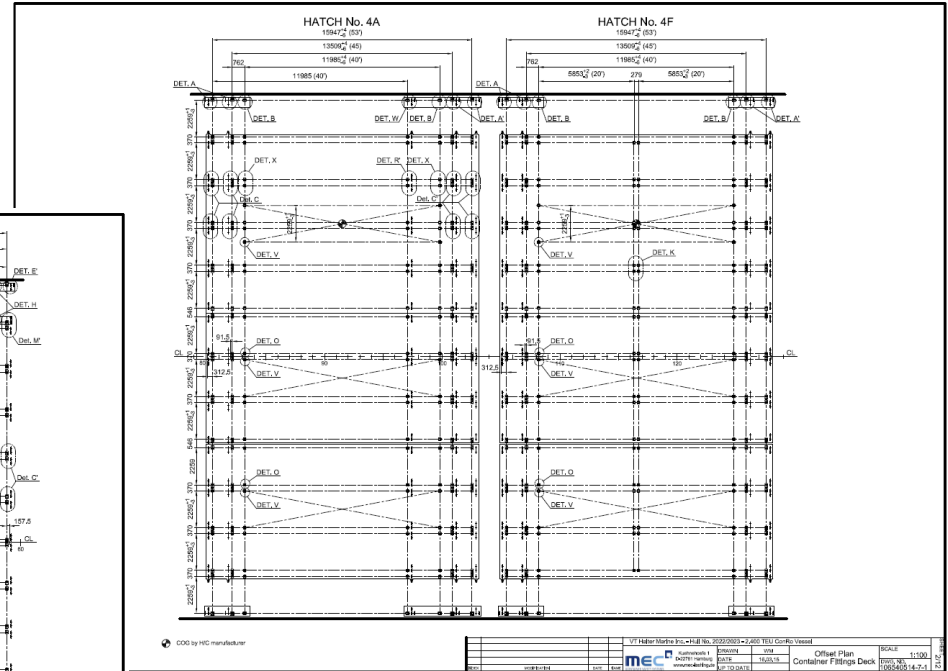
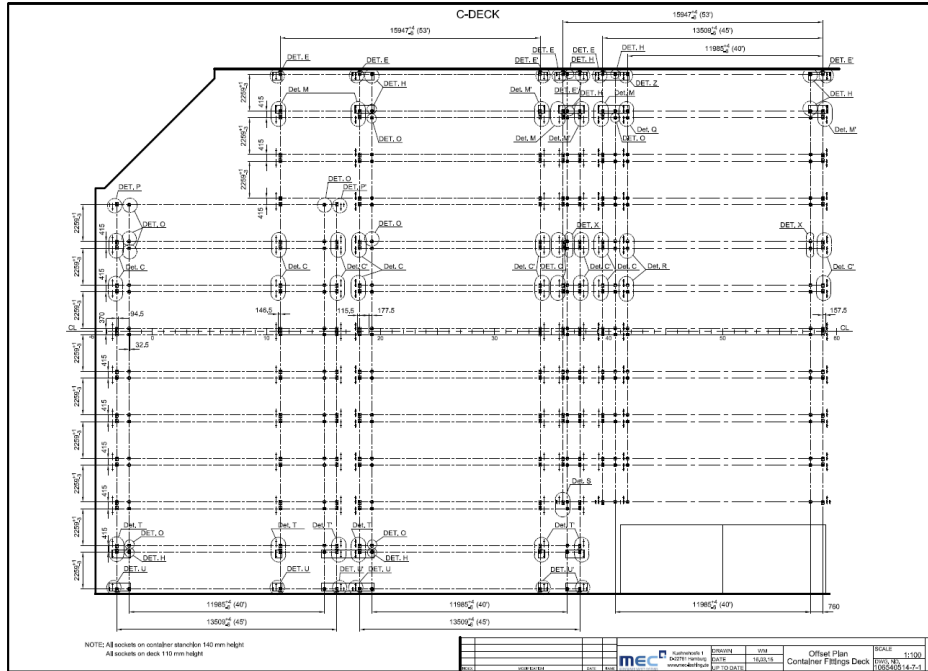
Revision E: 10.11.2017

MEC Container Safety Systems GmbH – Kuelshoeke 1 – D-22761 Hamburg – Ph.: +49-40-756 026-0 – Fax: +49-40-756 026-50
 info@mec-lashing.de – www.mec-lashing.de

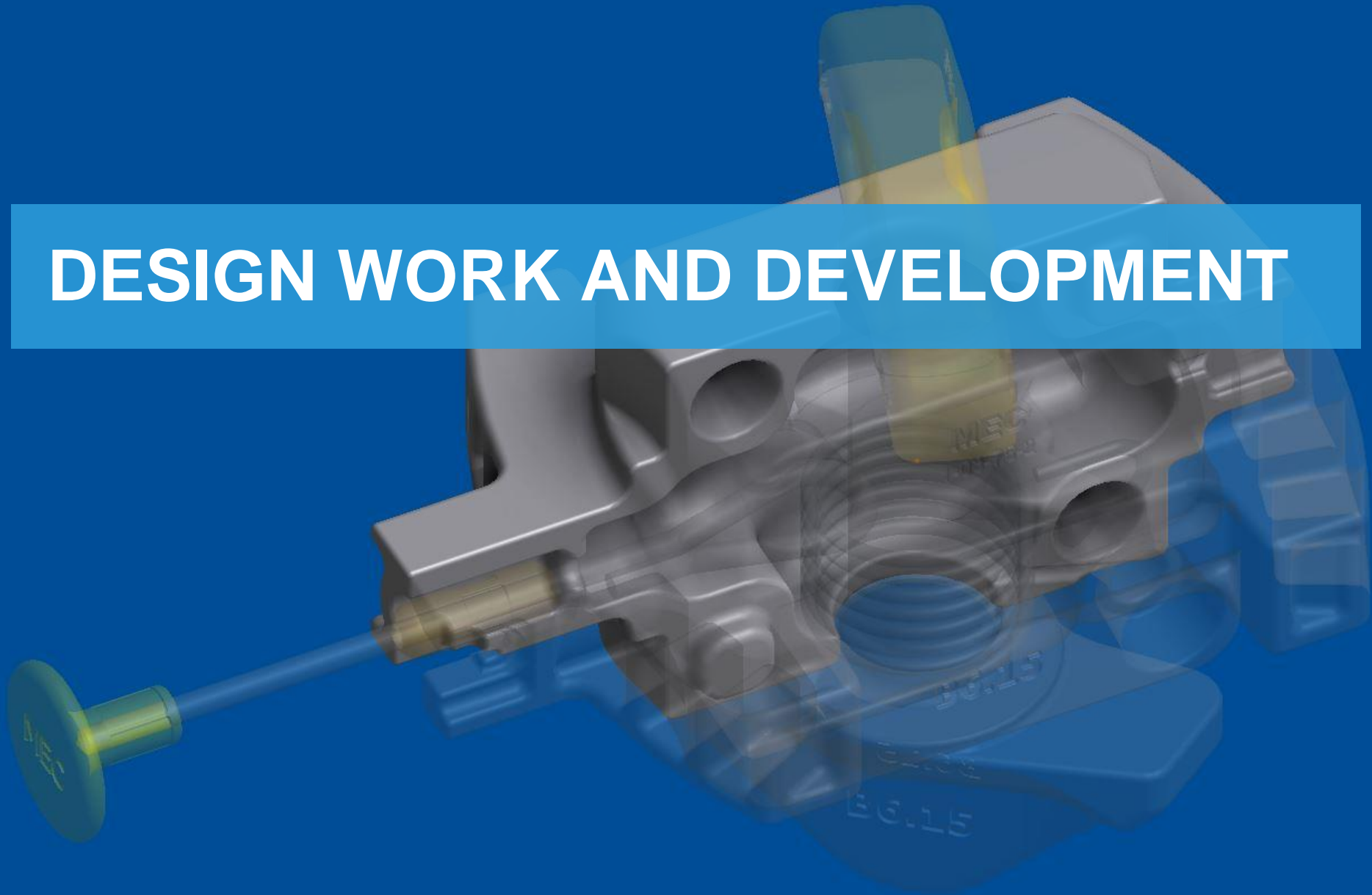


Offset Plans Deck and Hold

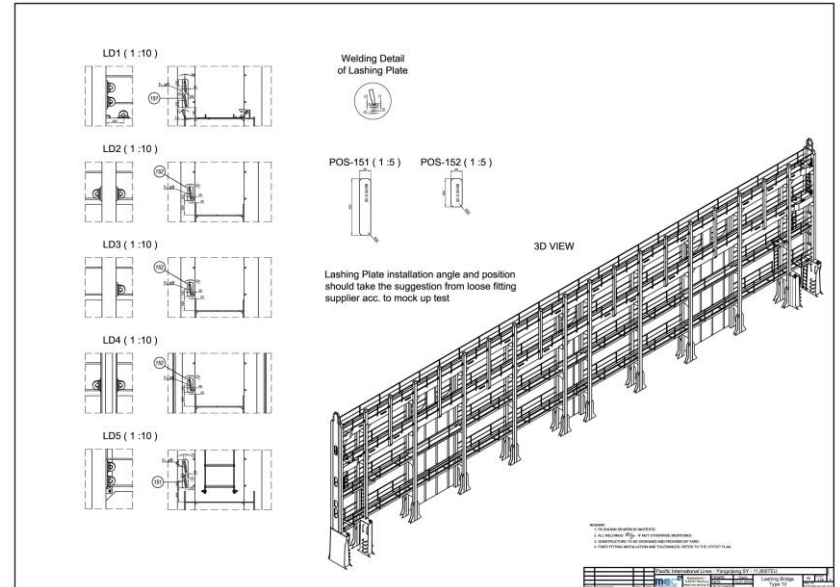
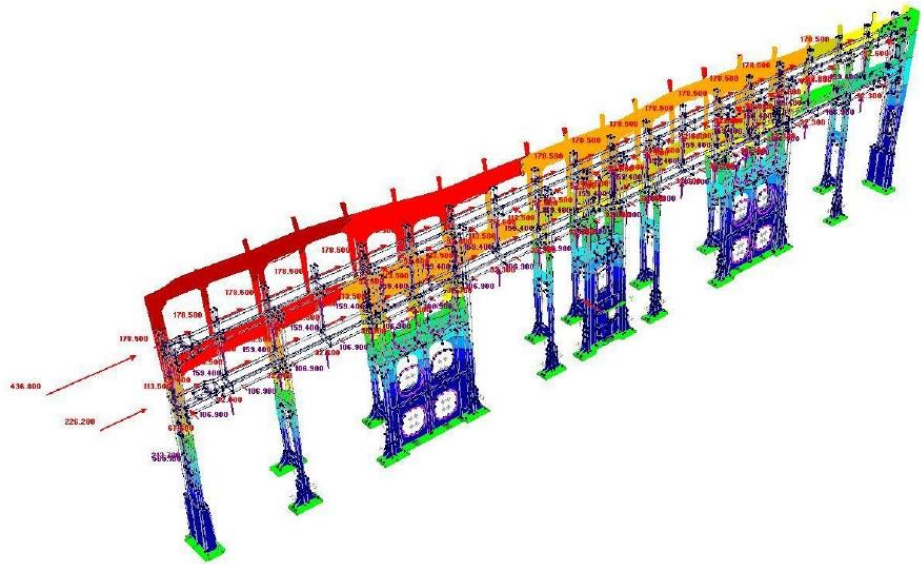
Offset plans are indicating the exact position of sockets, single and double lashing plates on weather deck and guide fittings and welding cones in hold. When receiving an order for fixed lashing equipment, MEC always prepares offset drawings if not otherwise specified. Offset drawings do not need to be approved by classification societies.



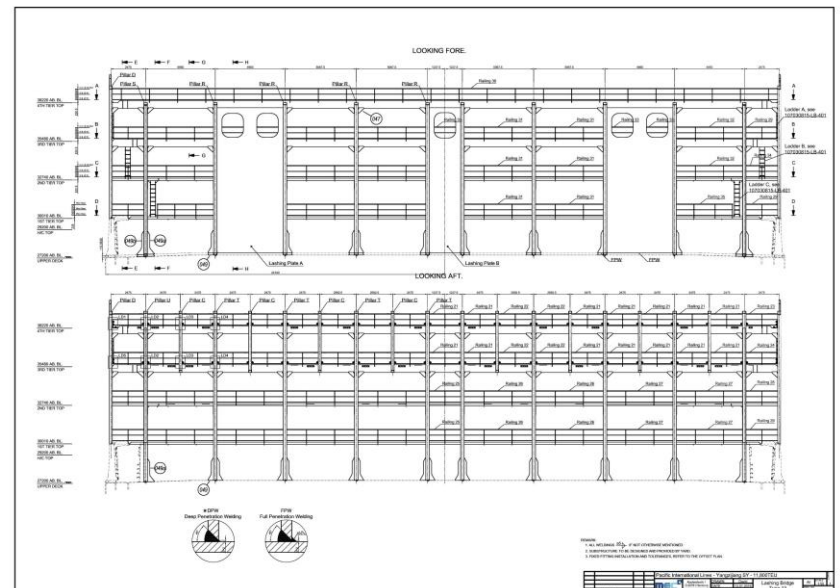
DESIGN WORK AND DEVELOPMENT



Lashing Bridge



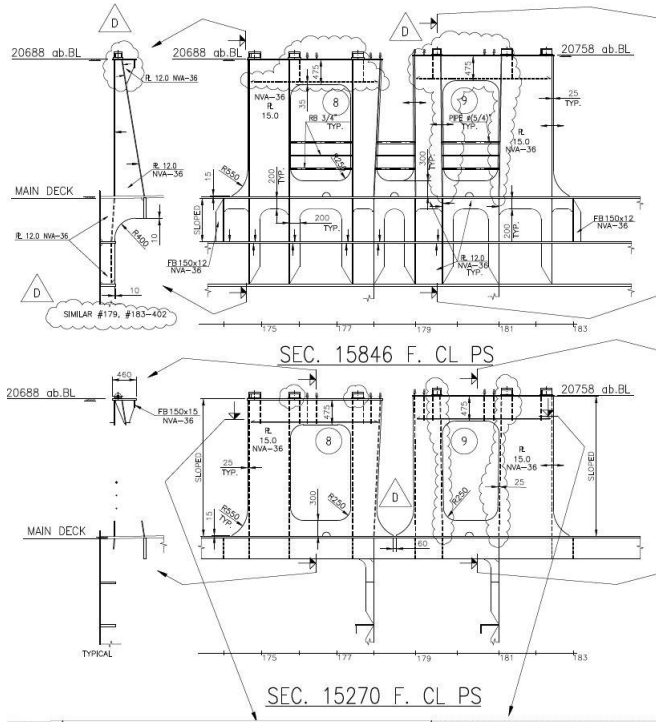
MEC provides lashing bridges design from FEM calculation to workshop drawings



DESIGN AND DEVELOPMENT

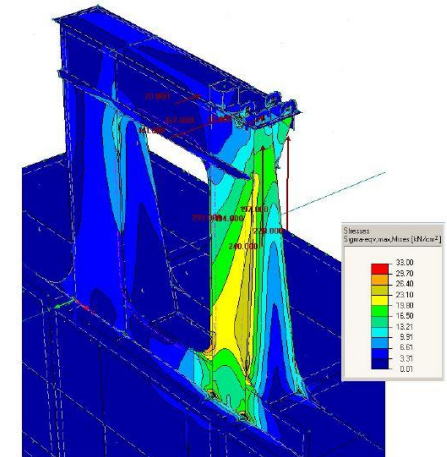
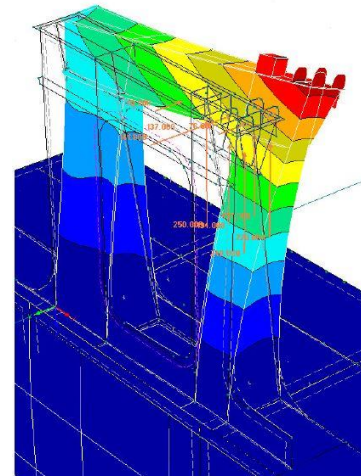
Container stanchion

MEC designs stanchions from conception to workshop drawings

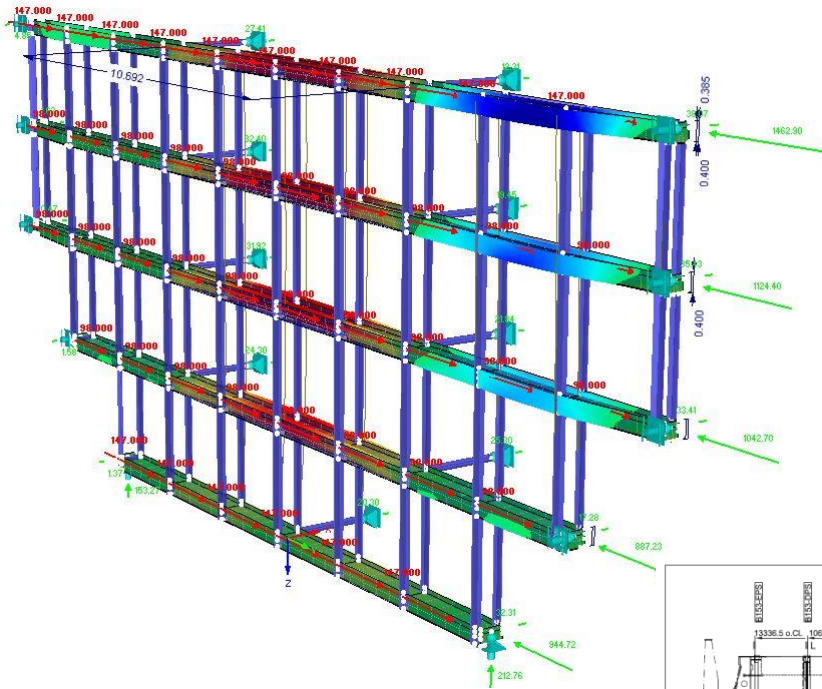


LCI Deformation

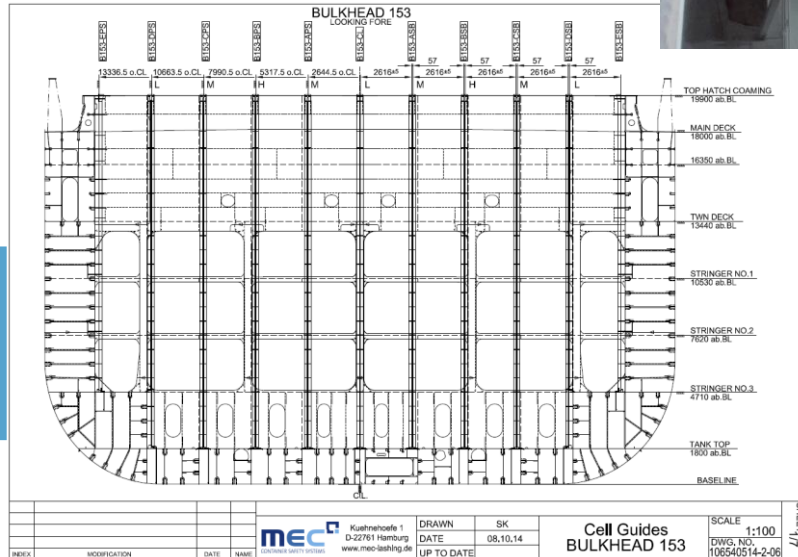
LCI Maximum sigma eqv acc. Mises



Movable Cell Guides



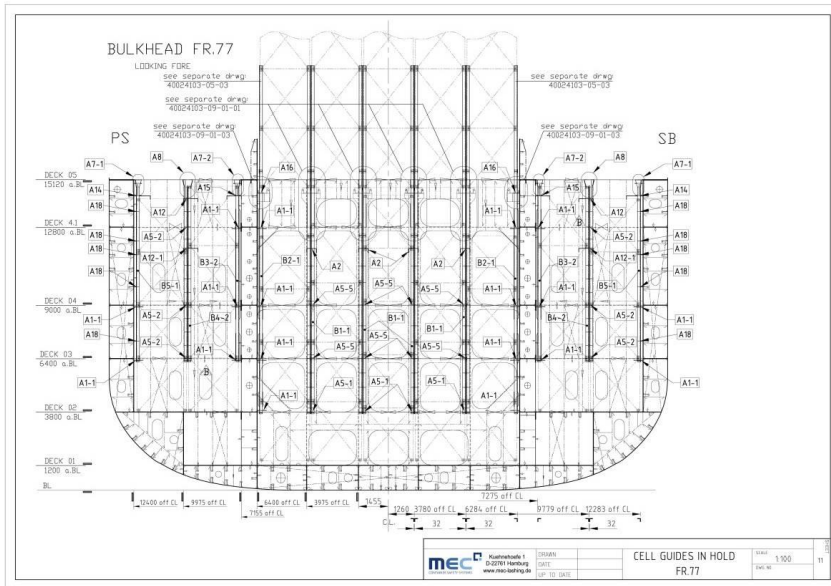
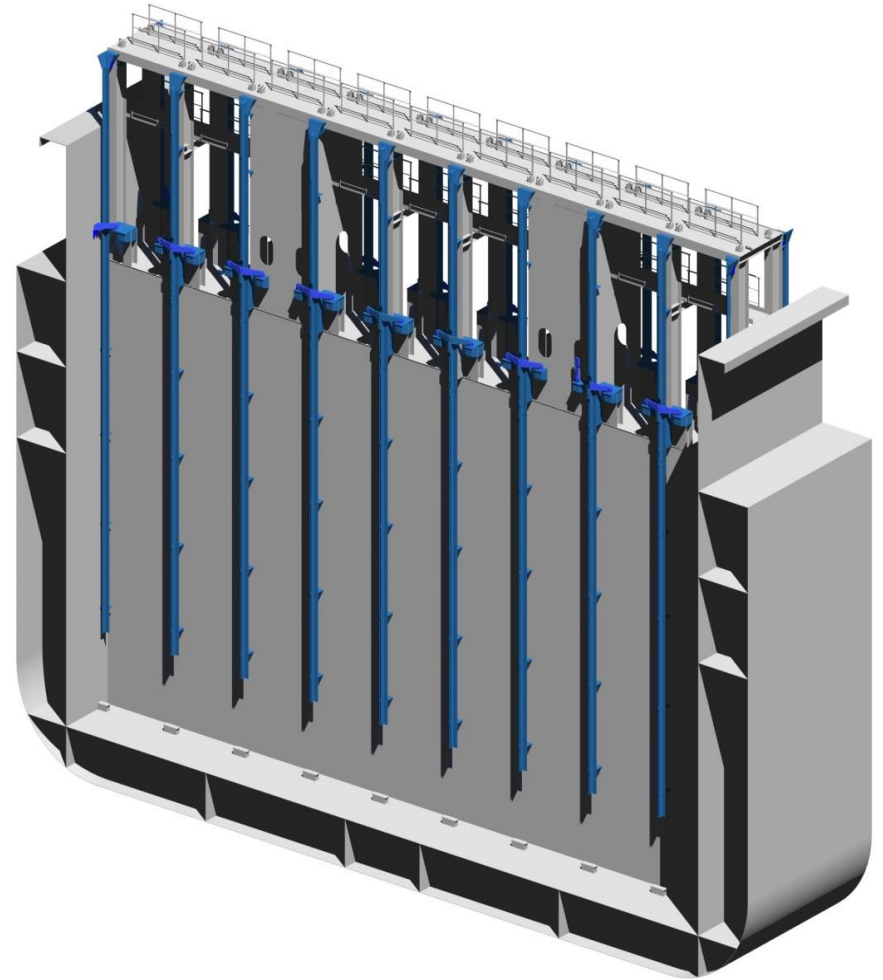
MEC provides all types cell guides design from FEM calculations to workshop drawings



DESIGN AND DEVELOPMENT

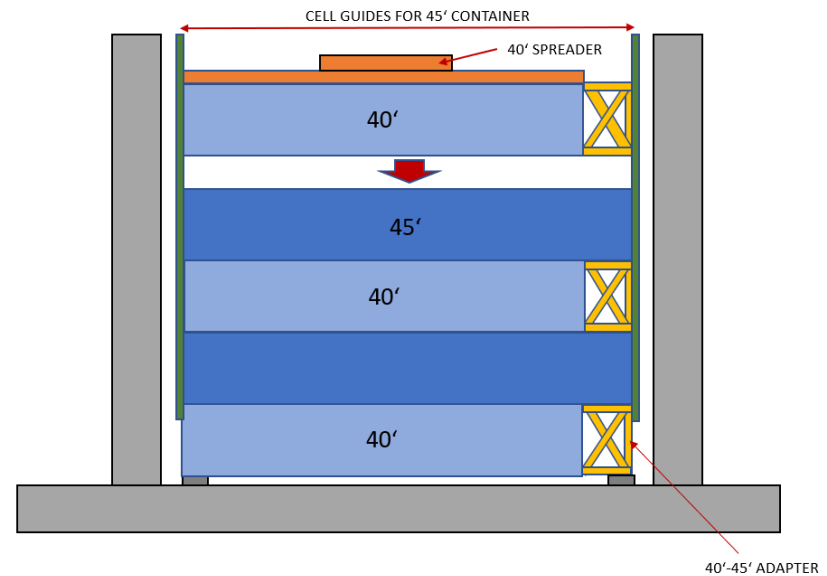
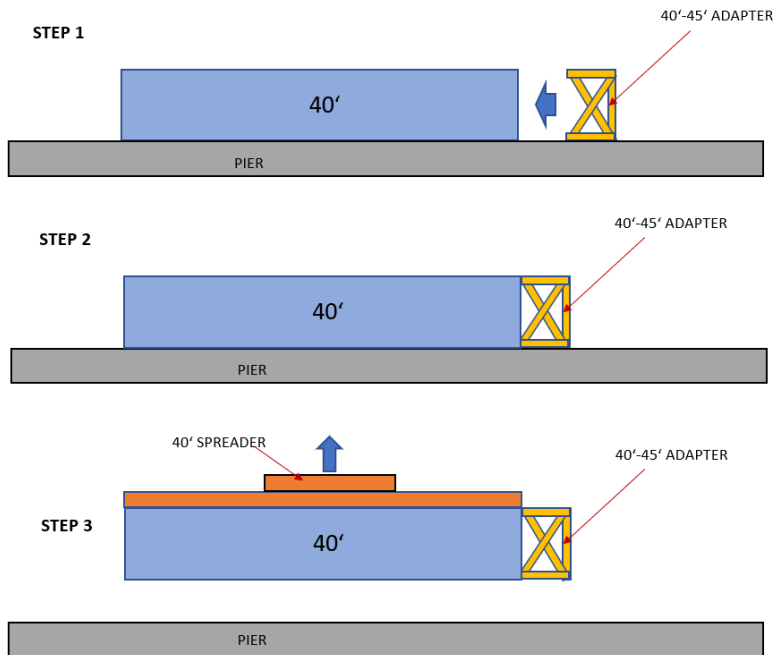
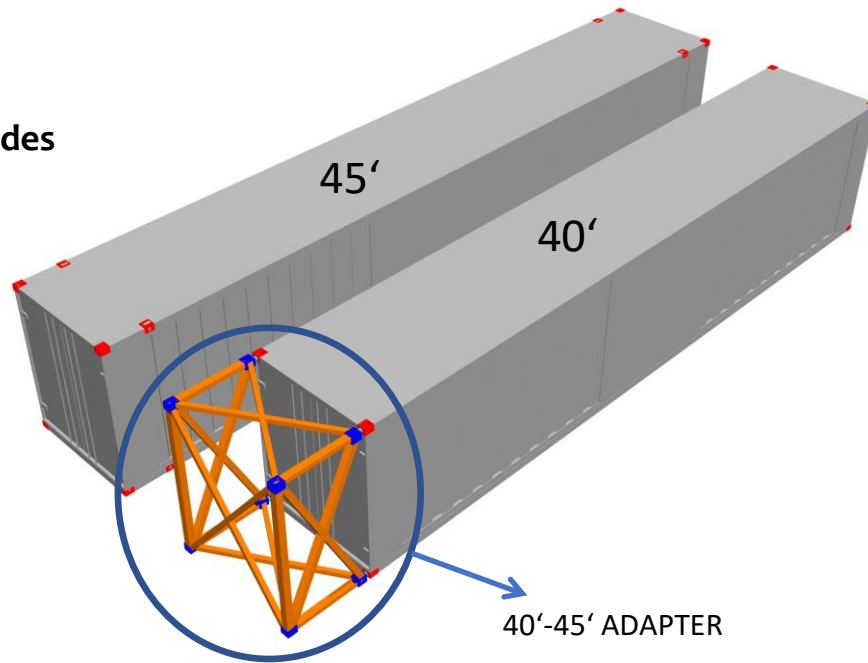
Cell Guides on open top container vessel

- Concept
- Strength calculations
- Basic design
- Workshop drawings
- Production
- Installation



5' Adapter for 40' Containers in 45' Cell guides

- High flexibility of 40' and 45' Container in 45' Cell Guide
- No stackweight reduction
- Mixed storage possible
- Easy connection of Adapter to Container
- Movable Cell Guides can be avoided





FABRICATION CAPABILITIES



FABRICATION

- Welded construction
- Casting
- Forging
- Assembly
- Installation
- Hot-dip galvanizing







GENERAL INFORMATION

MAXGROSS TARE PAYLOAD CU. CAP.

32,500 KGS 3,100 KGS 29,400 KGS 84.0 CU. M.

CAUTION

MAX. WT. TARE WT. PAYLOAD CU. CAP.

32,500 KGS 3,100 KGS 29,400 KGS 84.0 CU. M.

M. G. W. TARE NET CU. CAP.

32,500 KGS 3,100 KGS 29,400 KGS 84.0 CU. M.

MAXGROSS TARE NET CU. CAP.

32,500 KGS 3,100 KGS 29,400 KGS 84.0 CU. M.

MAXGROSS TARE NET CU. CAP.

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CAUTION

MAX. WT. TARE WT. PAYLOAD CU. CAP.

32,500 KGS 3,100 KGS 29,400 KGS 84.0 CU. M.

MAXGROSS TARE NET CU. CAP.

32,500 KGS 3,100 KGS 29,400 KGS 84.0 CU. M.

M. G. W. TARE NET U.C. P.

32,500 KGS 3,100 KGS 29,400 KGS 84.0 CU. M.

CAUTION

MAXGROSS TARE WT. PAYLOAD CU. CAP.

32,500 KGS 3,100 KGS 29,400 KGS 84.0 CU. M.

M. G. W. TARE NET CU. CAP.

32,500 KGS 3,100 KGS 29,400 KGS 84.0 CU. M.

M. G. W. TARE NET CU. CAP.

32,500 KGS 3,100 KGS 29,400 KGS 84.0 CU. M.

CAUTION

MAX. WT. TARE WT. PAYLOAD CU. CAP.

32,500 KGS 3,100 KGS 29,400 KGS 84.0 CU. M.

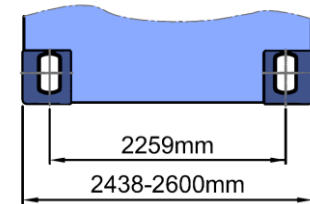
MAXGROSS TARE PAYLOAD CU. CAP.

32,500 KGS 3,100 KGS 29,400 KGS 84.0 CU. M.

CAUTION

SIZE (side view)	LENGTH	WIDTH	HEIGHT
53'	(16154mm)	8'6" (2591mm)	9'6 1/2"
49'	(14935mm)	2600mm	9'6" (2896mm)
24 1/2'	(2x7430mm)	2600mm	9'6" (2896mm)
48'	(14630mm)	8'6" (2591mm)	9'6 1/2"
45'	(13716mm)	8' (2438mm)	9'6 1/2"
43'	(13107mm)	8' (2438mm)	8'6"
40' ISO	(12192mm)	8' (2438mm)	8' 8" 9' 8'6" 9'6"
40' EURO	(12192mm)	2500mm	8'6" 9'6"
40' Bell Lines *	(12192mm)	2500mm	8'6" 9'6" 9'
35'	(10659mm)	8' (2438mm)	8'6"
30'	(9125mm)	8' (2438mm)	8' 8'6"
24' (Matson)	(7315mm)	8' or 8'6" (2438mm or 2591mm)	8'6" 9'6"
20'	(2x6058mm)	8' (2438mm or 2500mm)	8' 8'6" 9'6"

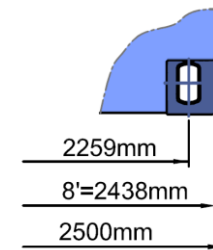
Standard Container



Tolerances

Width: +0/-5 mm for all containers
 Height: +0/-5 mm for all containers
 Length: +0/-10 mm for 53' - 30' containers
 +0/-6 mm for 24 V' - 20' containers

*Bell Lines or CPC Container (top view)



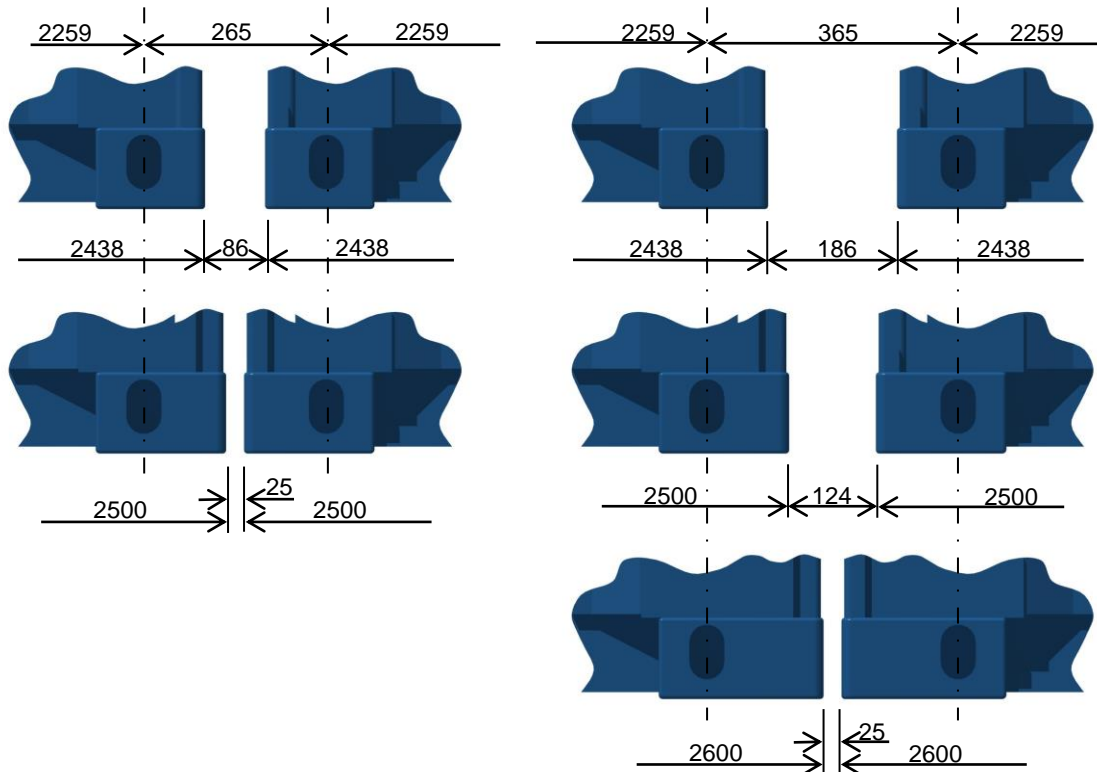
Note

The dimension of the non-ISO-Standardized container sizes are preliminary.
 Common distance trans, centre/centre 2259 mm

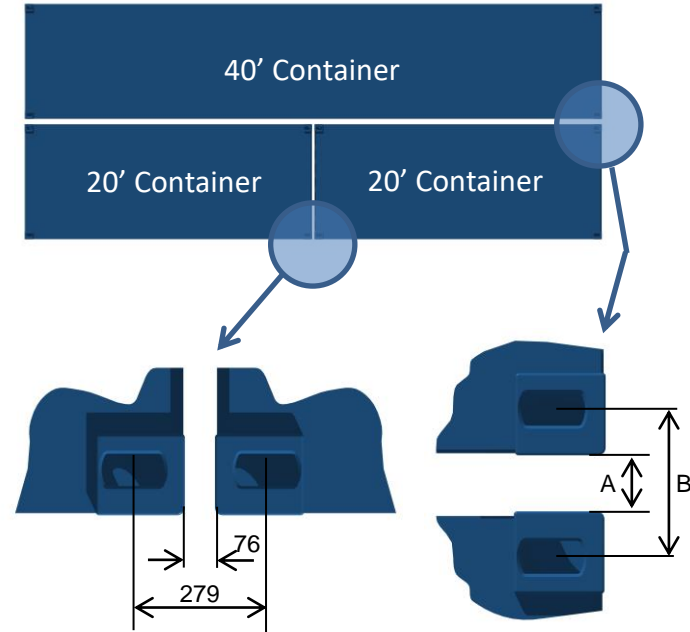
TRANSVERSAL DISTANCES

Transversal Distances of Euro Containers

Width of Container	Container Distances
[mm]	centre to centre
2500	265
2600	356



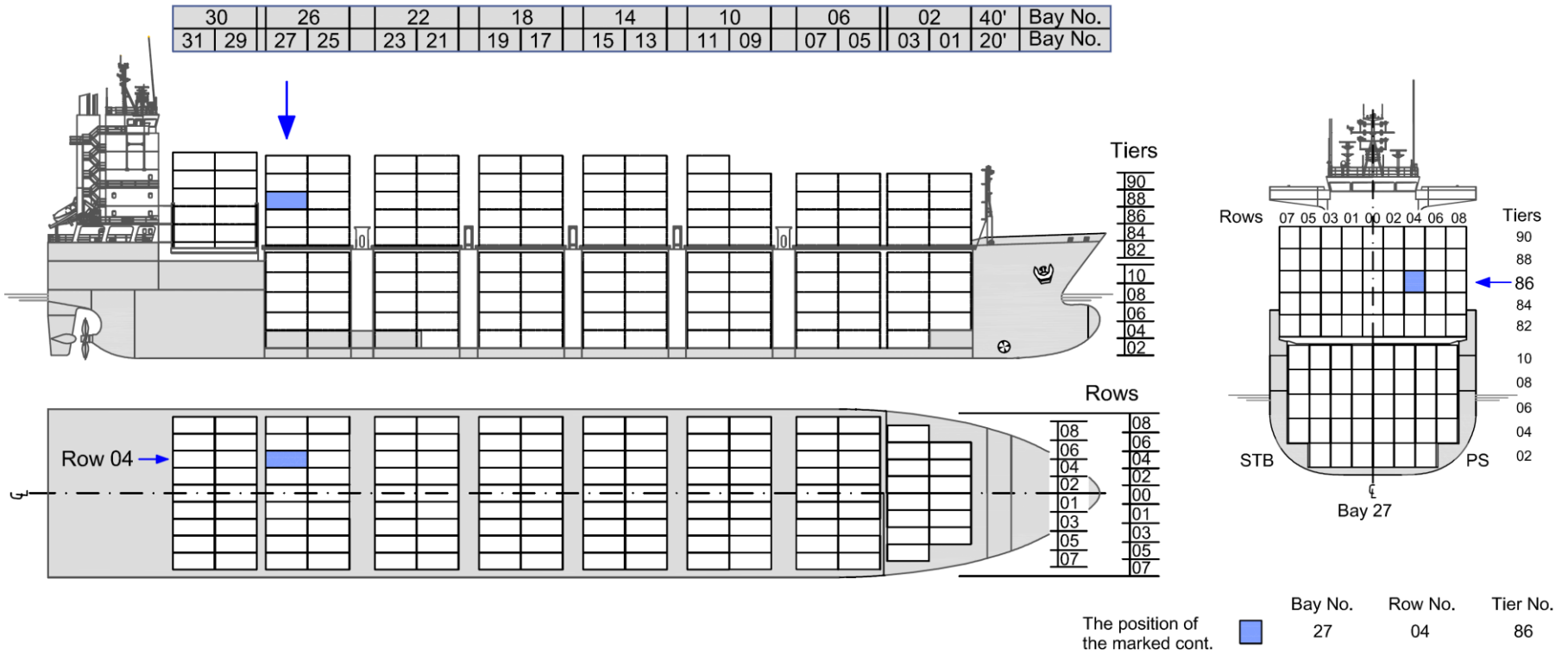
Width of Containers 2438 mm according to ISO 668 (1995)



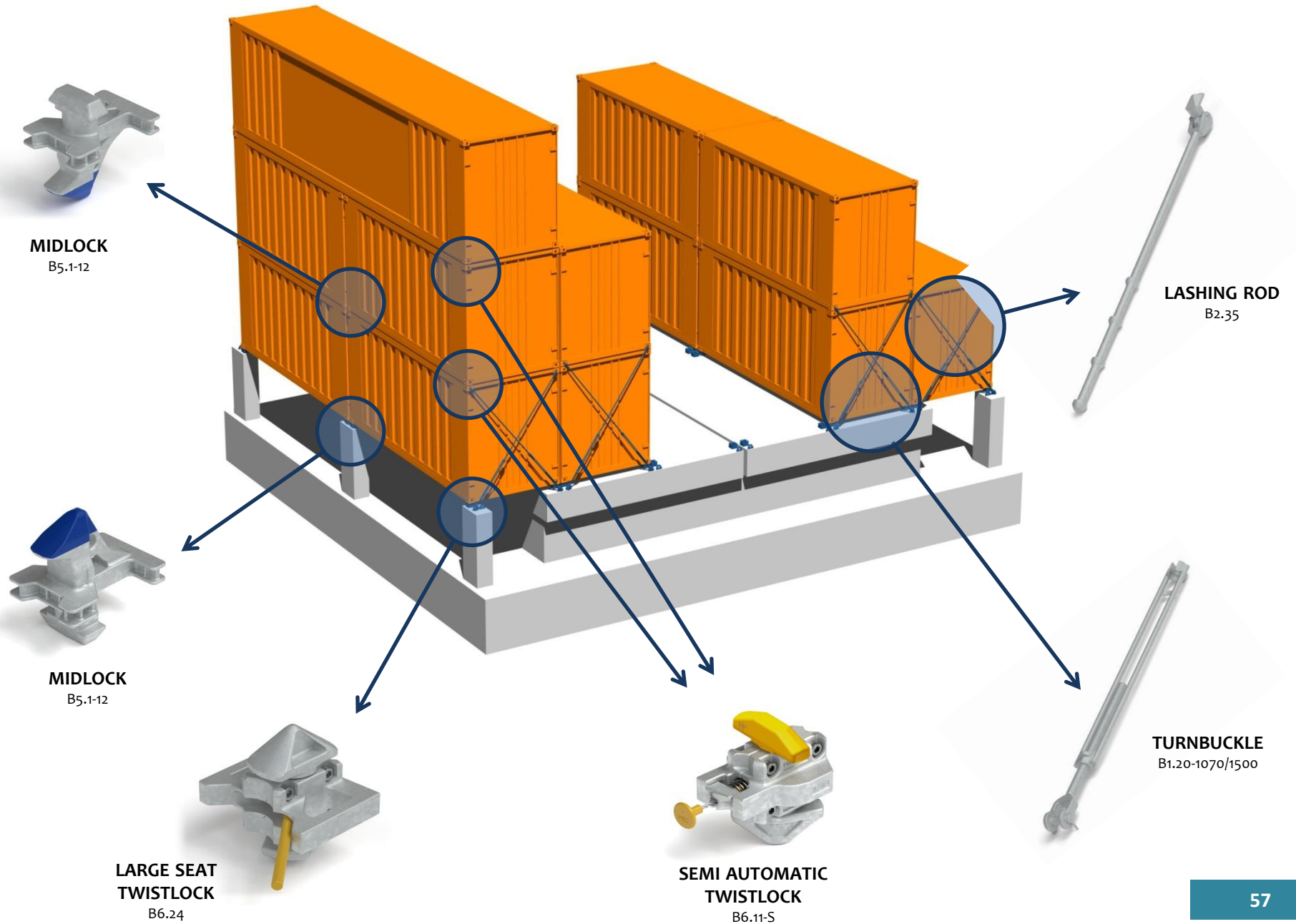
Container Spaces	Container Distances
A	B centre to centre
[mm]	[mm]
25	203
38	216
80	258
186	365

The figures shown are the most common. Additional dimensions are also possible.

CODE OF CONTAINER POSITION



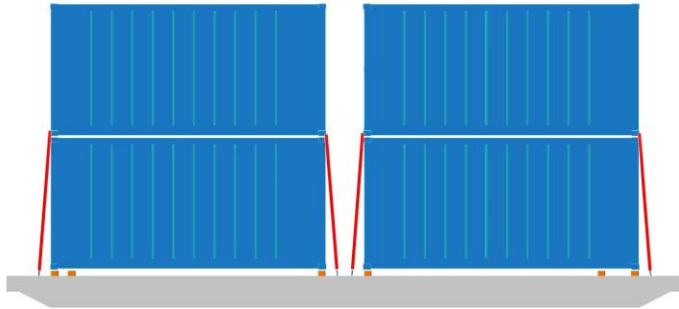
OVERVIEW OF LOOSE LASHING EQUIPEMENT



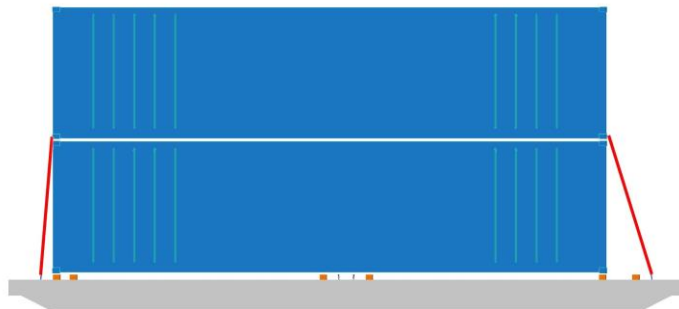
CONTAINER ARRANGEMENT ON HATCH COVERS

Asymmetrical Arrangement of sockets

20' Containers

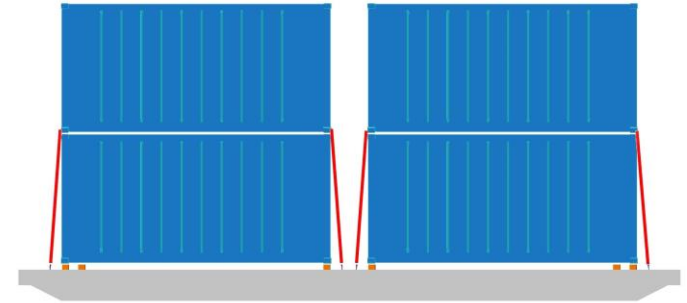


40' Containers

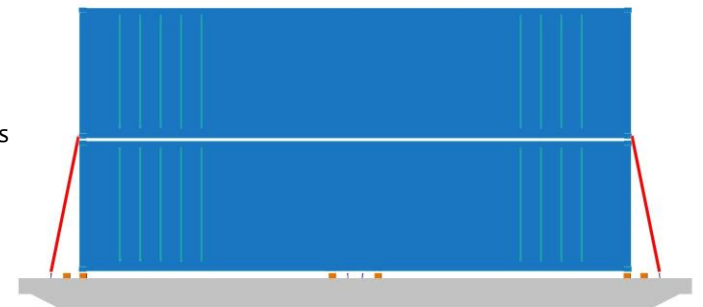


Symmetrical Arrangement of sockets

20' Containers

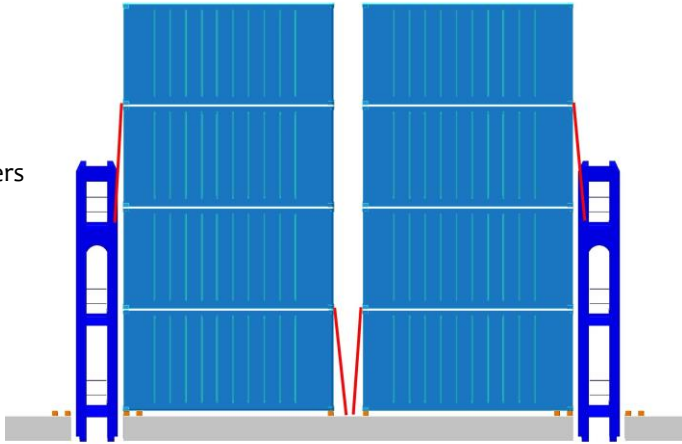


40' Containers

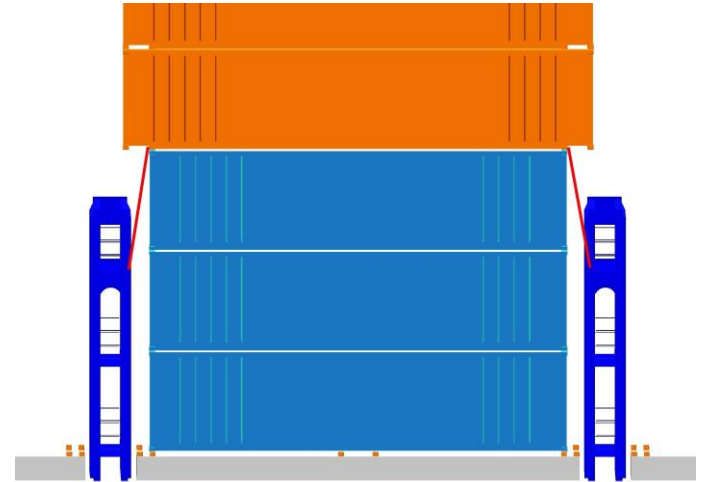


CONTAINER ARRANGEMENT ON HATCH COVERS

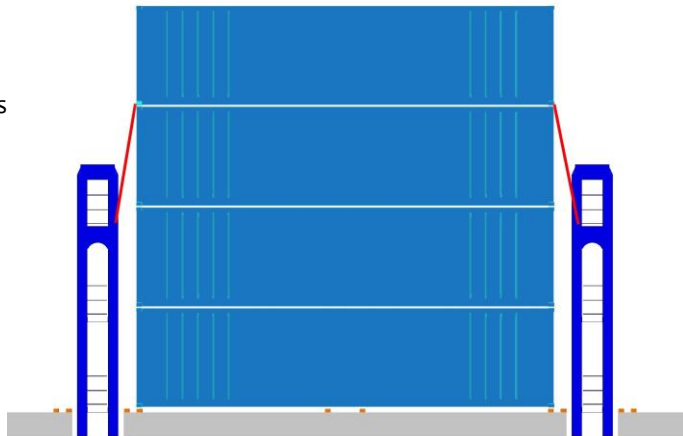
20' Containers

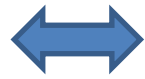


45' Containers

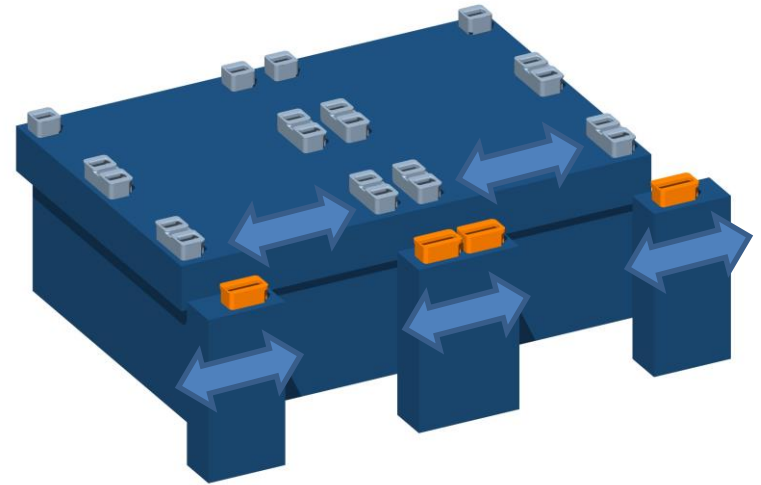
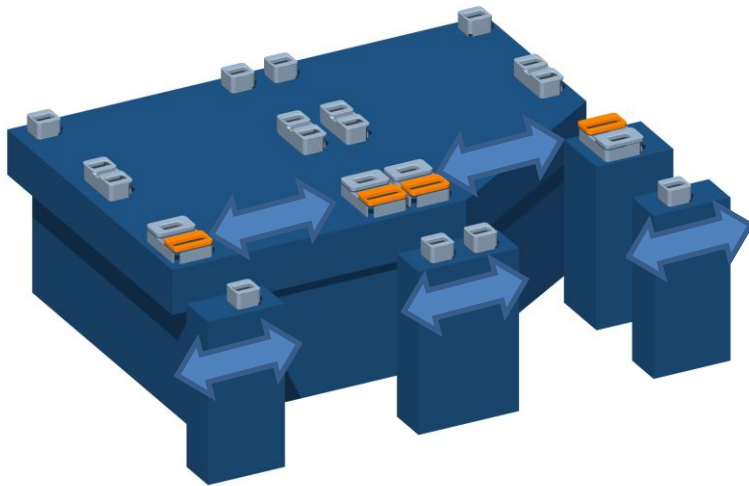


40' Containers





Orange-marked sockets with elongated holes due to displacement between container stanchions and hatch cover



ISO CONTAINER CORNER

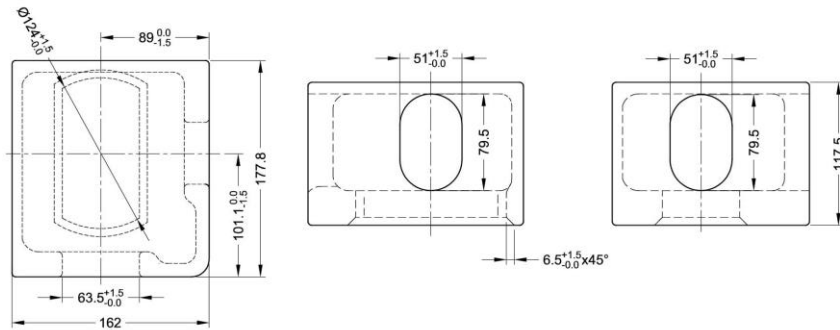
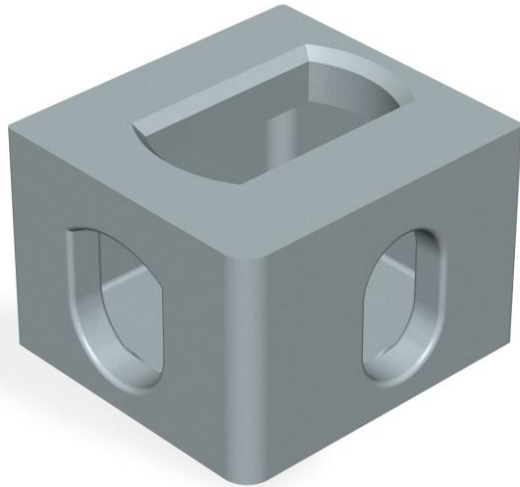
B25.1-OR

Container Corner Top Right

B25.1-OL

Container Corner Top Left

BL (kN):
Tension 500
Shear 420



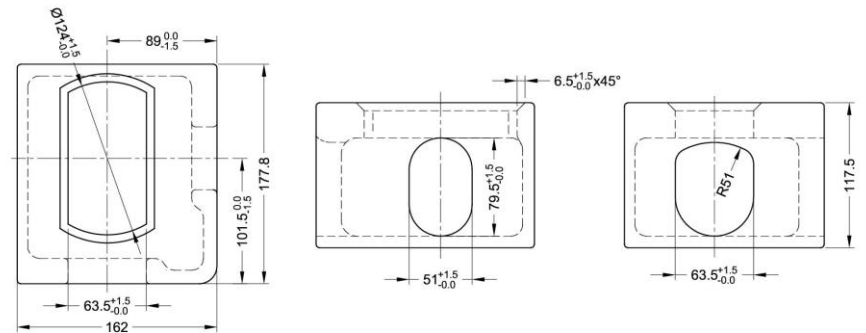
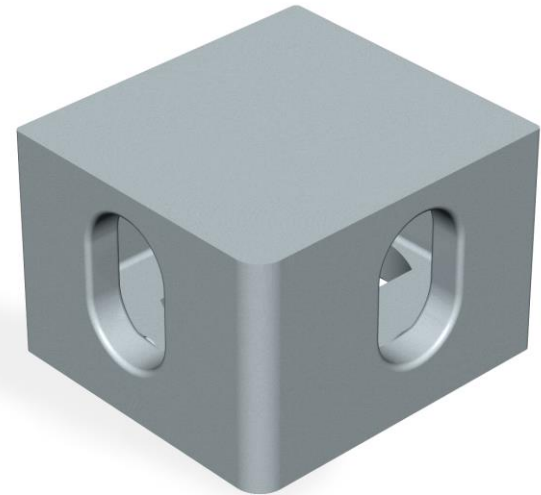
B25.1-UR

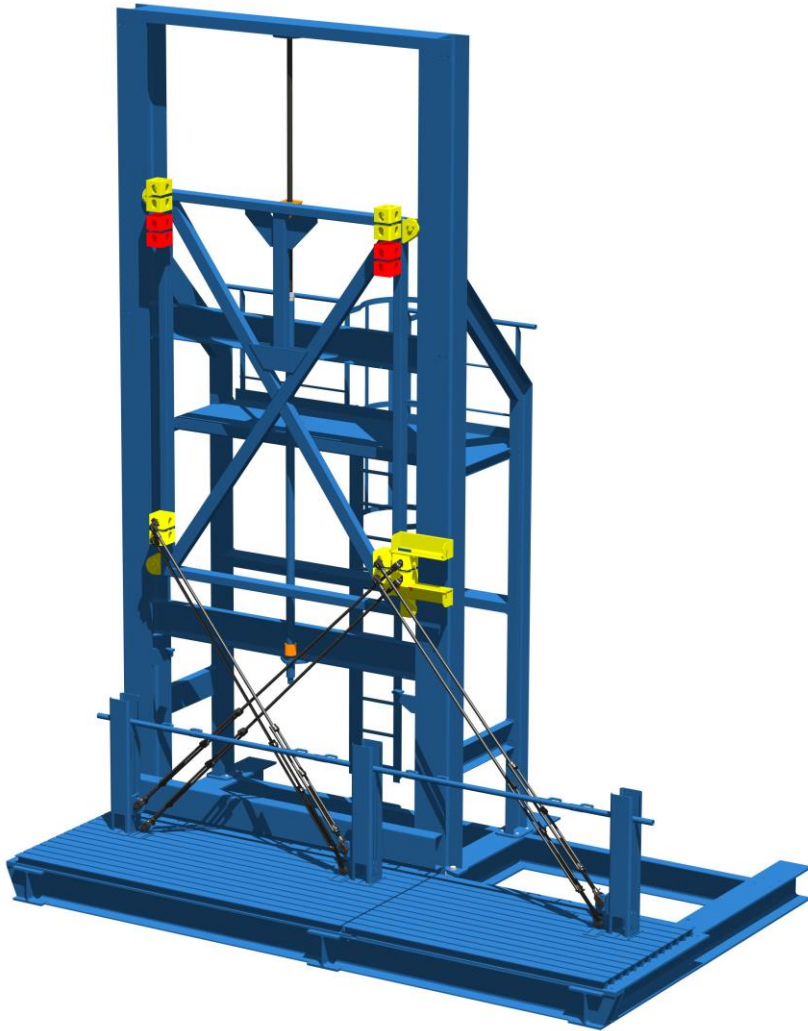
Container Corner Bottom Right

B25.1-UL

Container Corner Bottom Left

BL (kN):
Tension 500
Shear 420





Mock-up test rack
For internal and external lashing

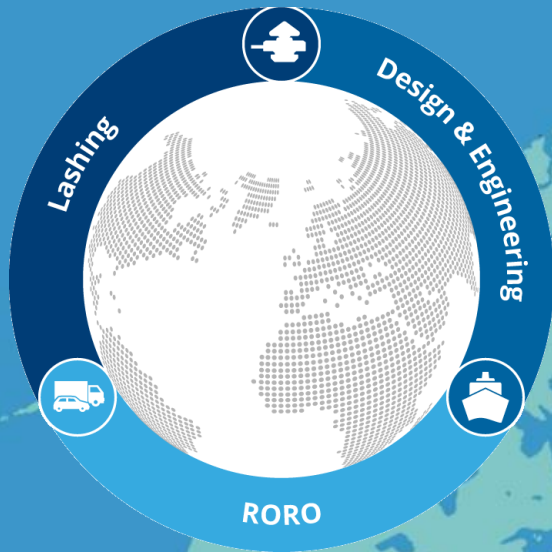


Testing of 11 loose lashing
equipment



Shear test of twistlock





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