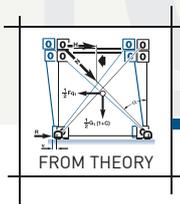
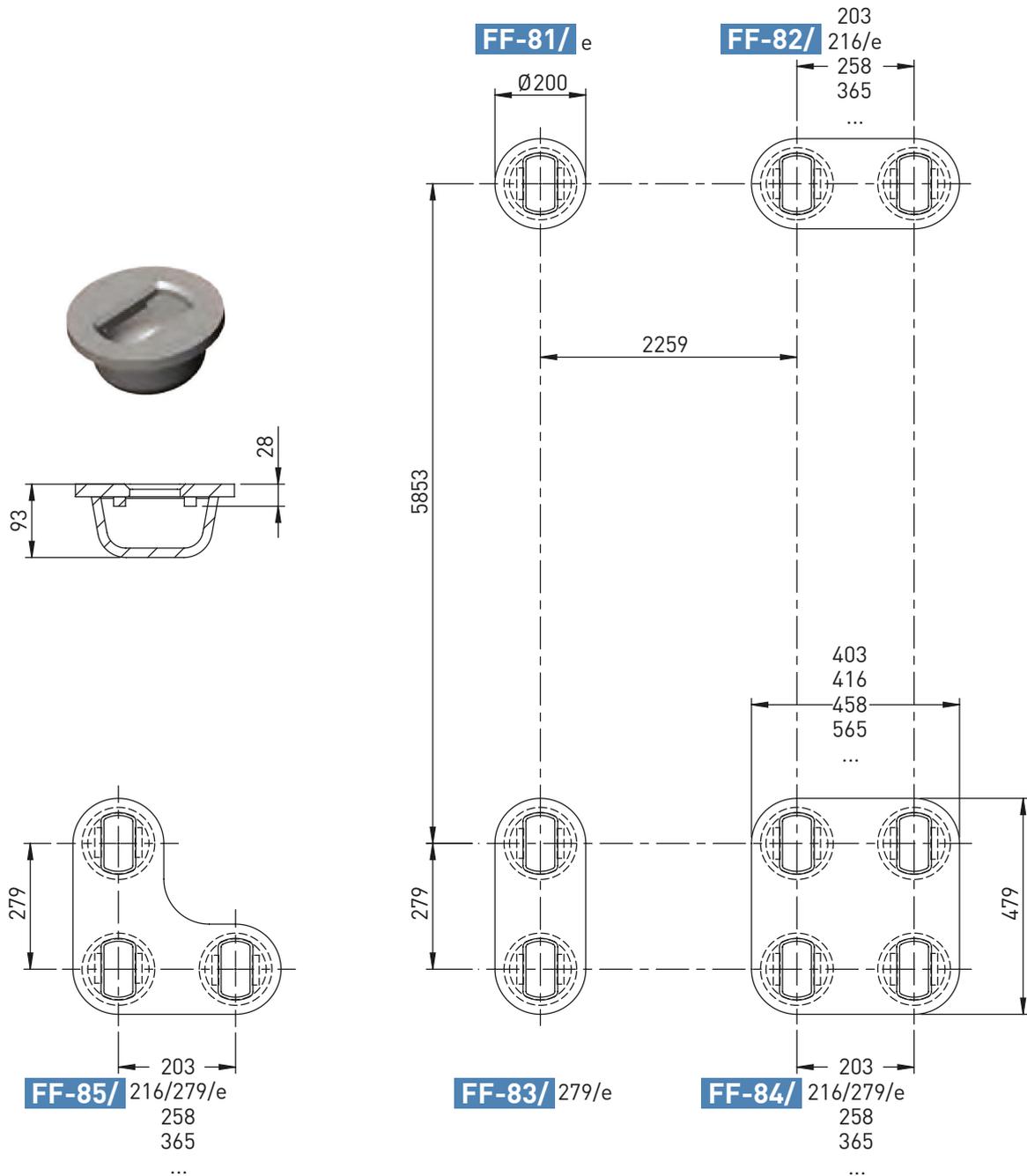


FIXED LASHING EQUIPMENT





Flush ISO Foundation - With Collar



■ SPECIFICATIONS

(MSL) Max. securing load: tension 250kN, shear 210kN
 (MBL) Min. breaking load: tension 500kN, shear 210kN
 Approval possible from any classification society
 Edge preparation see page 8
 Pressure tested for watertightness

■ PLUG FOR ISO-HOLE



FF-70
plastic

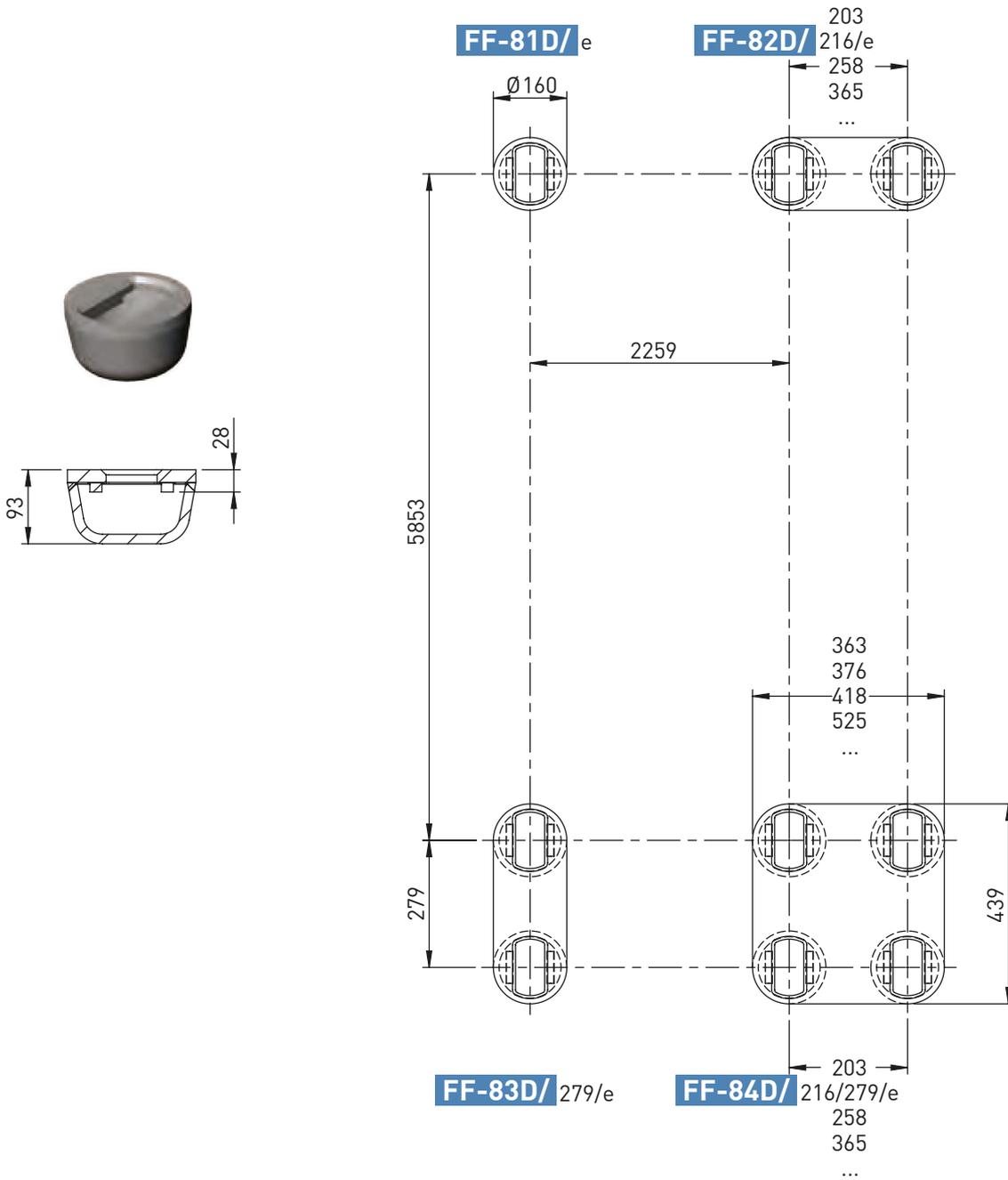


FF-90
rubber



TO PRACTICE

Flush ISO Foundation - Without Collar



SPECIFICATIONS

(MSL) Max. securing load: tension 250kN, shear 210kN
 (MBL) Min. breaking load: tension 500kN, shear 420kN
 Approval possible from any classification society
 Edge preparation see page 8
 Pressure tested for watertightness

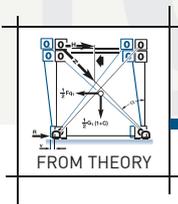
PLUG FOR ISO-HOLE



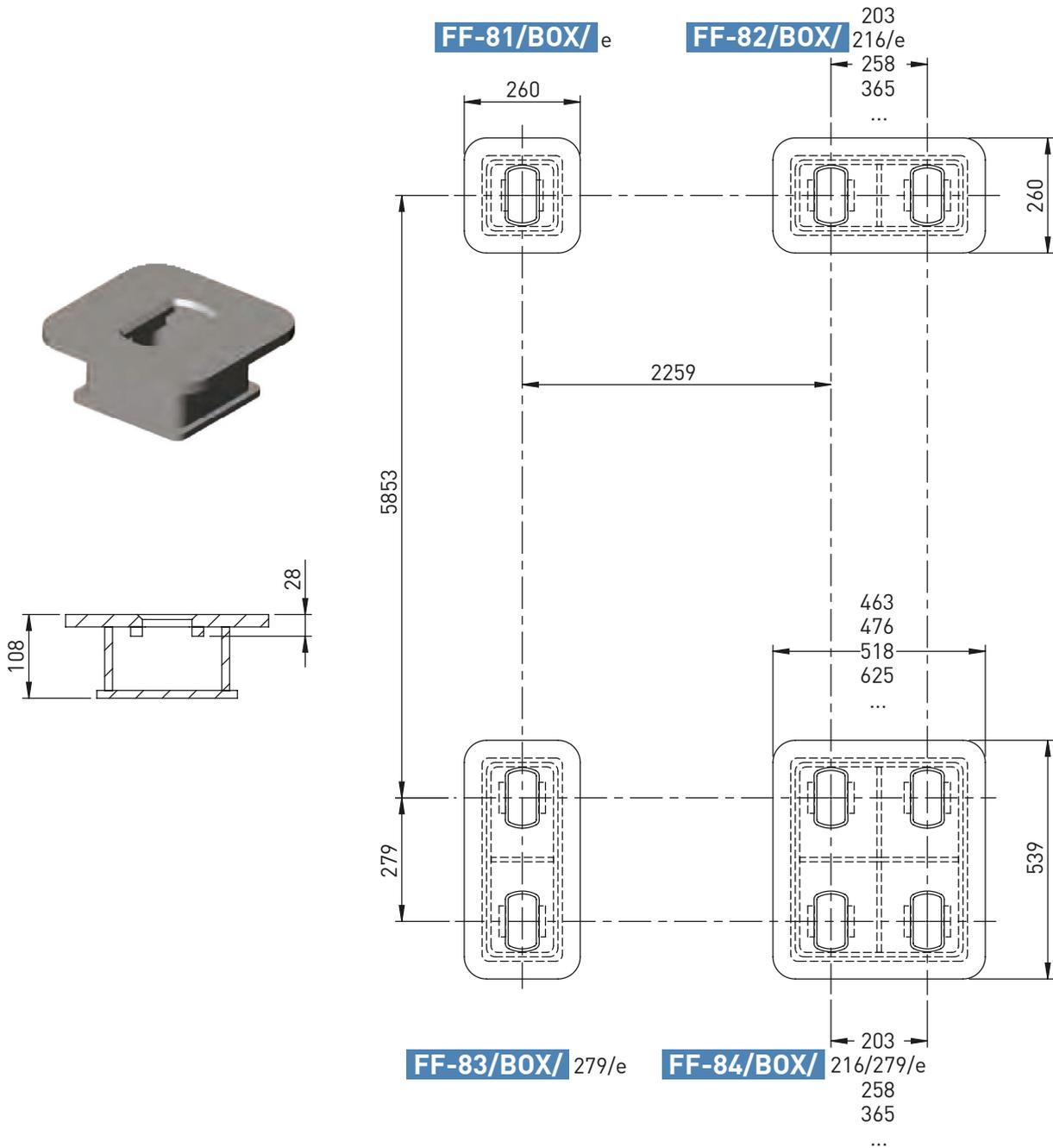
FF-70
plastic



FF-90
rubber



Flush ISO Foundation - Box Shaped



■ SPECIFICATIONS

(MSL) Max. securing load: tension 250kN, shear 210kN
 (MBL) Min. breaking load: tension 500kN, shear 420kN
 Approval possible from any classification society
 Edge preparation see page 8
 Pressure tested for watertightness

■ PLUG FOR ISO-HOLE



FF-70
plastic

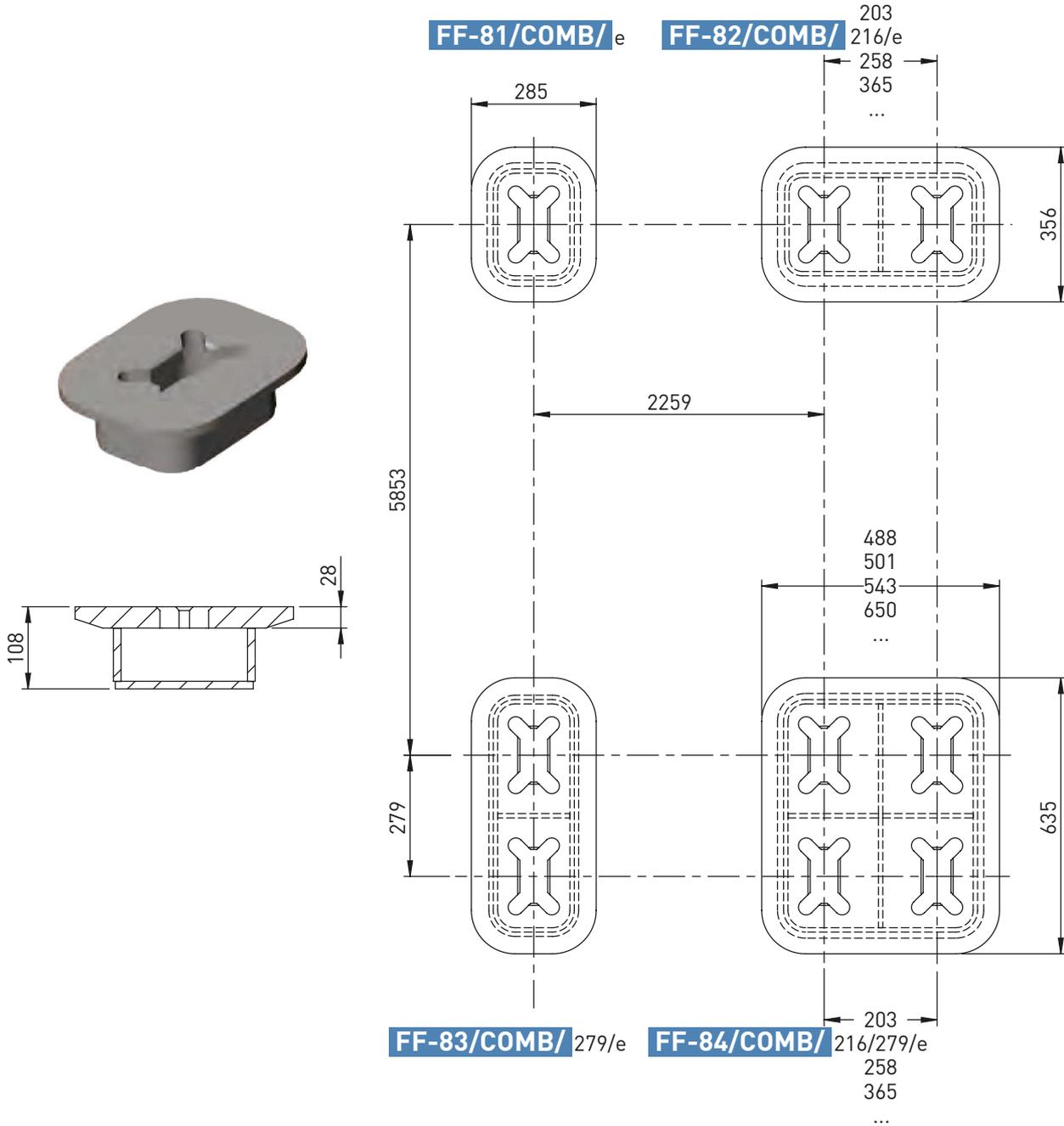


FF-90
rubber



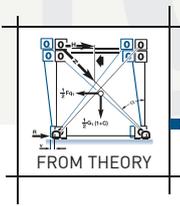
TO PRACTICE

Flush ISO Foundation - Combination

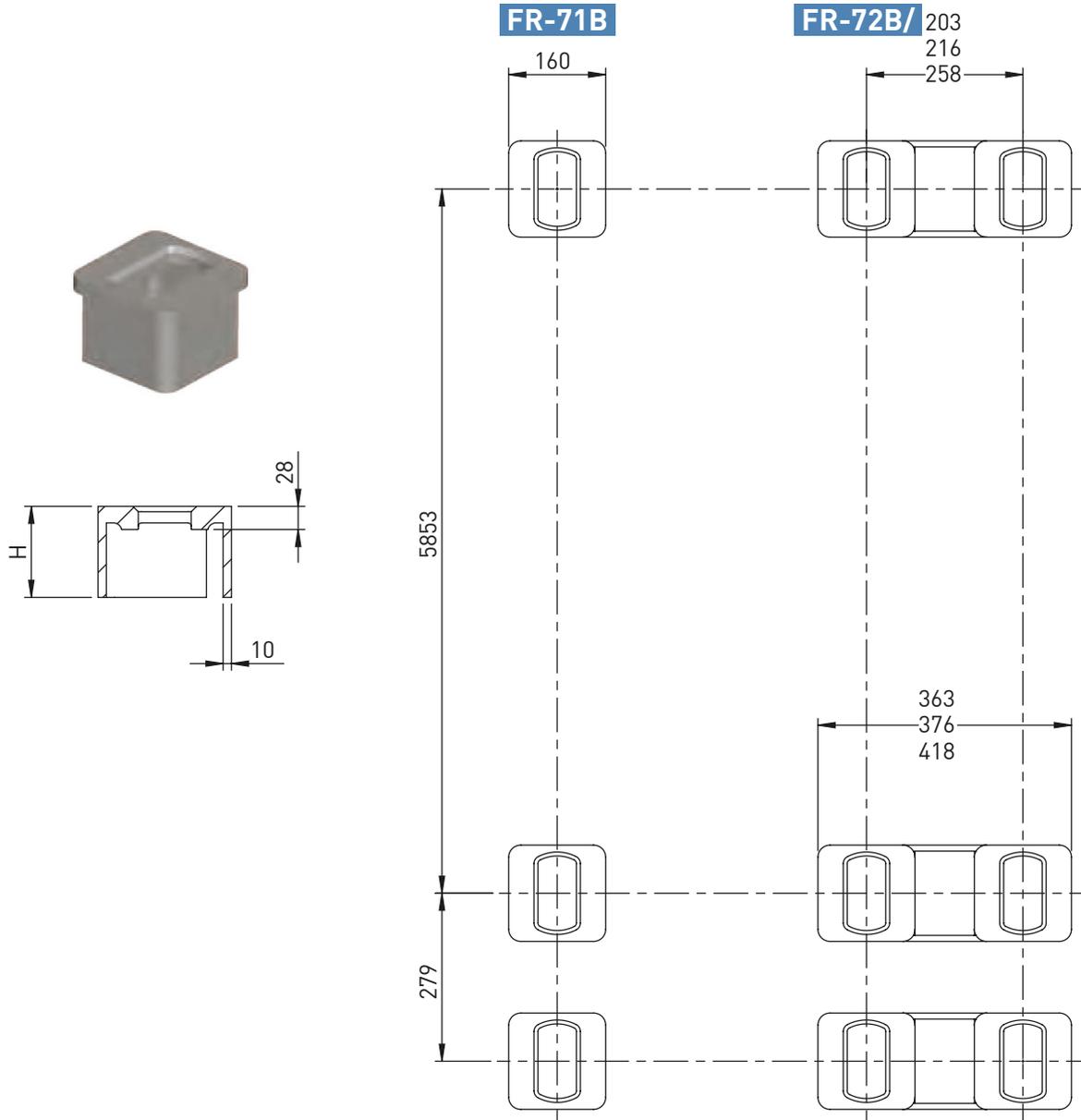


SPECIFICATIONS

- (MSL) Max. securing load: tension 250kN, shear 210kN of ISO hole
- (MSL) Max. securing load: tension 2x100kN of elephant foot sleeves
- (MBL) Min. breaking load: tension 500kN, shear 420kN of ISO hole
- (MBL) Min. breaking load: tension 2x200kN of elephant foot sleeves
- Approval possible from any classification society
- Edge preparation see page 8
- Pressure tested for watertightness
- To be used in combination with: twistlock & elephant foot



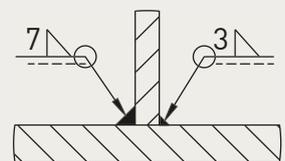
Raised ISO Foundations



■ SPECIFICATIONS

(MSL) Max. securing load: tension 250kN, shear 210kN
 (MBL) Min. breaking load: tension 500kN, shear 420kN
 Approval possible from any classification society
 Standard H = 110mm
 Maximum H = 160mm, minimum H = 65mm

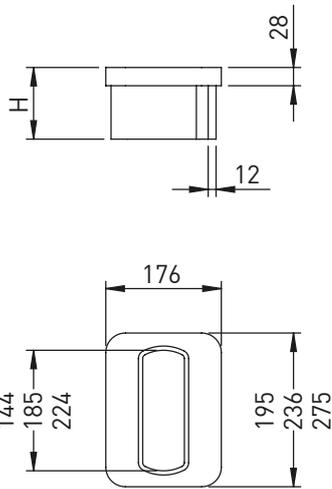
■ WELDING DETAIL



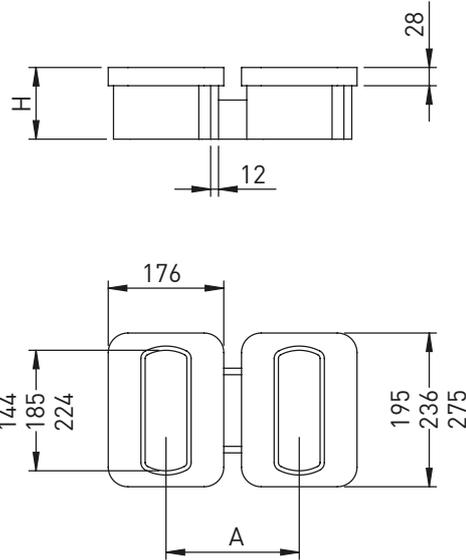


Raised ISO Foundations - Elongated

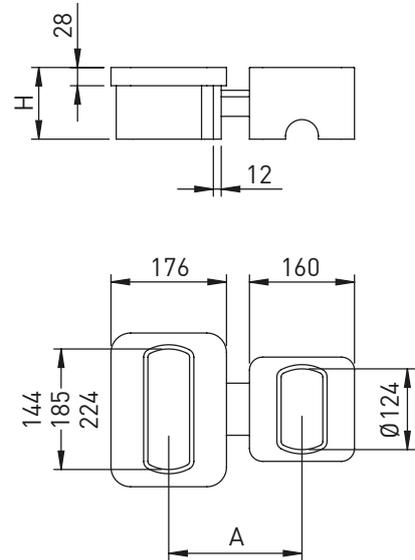
FR-71Q



FR-72Q/A



FR-72DQ/A



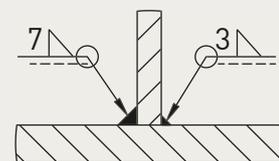
SLIDING RANGES

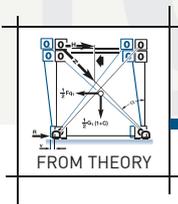
- 144mm ISO hole = sliding range of ±10mm
- 185mm ISO hole = sliding range of ±30mm
- 224mm ISO hole = sliding range of ±50mm

SPECIFICATIONS

(MSL) Max. securing load: tension 250kN, shear 210kN
 (MBL) Min. breaking load: tension 500kN, shear 420kN
 Approval possible from any classification society
 Standard H = 110mm
 Maximum H = 160mm, minimum H = 65mm
 A = center distance of ISO holes: 203, 216, 258mm

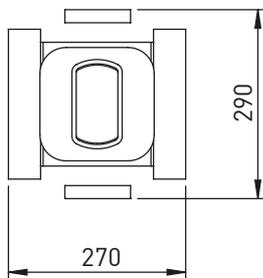
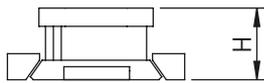
WELDING DETAIL



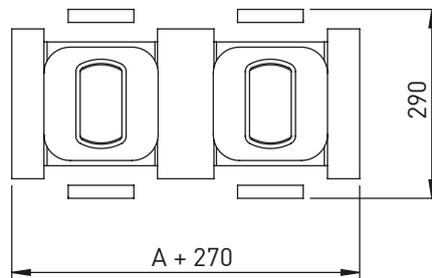
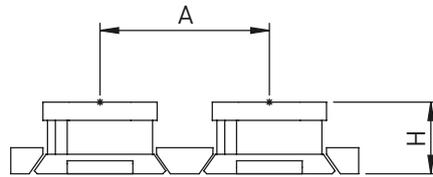


Sliding ISO Foundations - Longitudinal

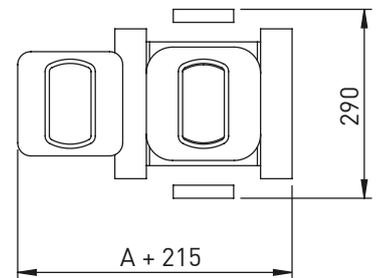
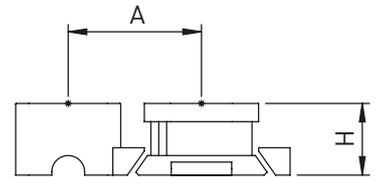
FR-74Q



FR-75Q/A



FR-75/A

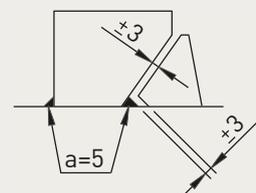


■ SLIDING RANGES $\pm 30\text{mm}$

■ SPECIFICATIONS

(MSL) Max. securing load: tension 250kN, shear 210kN
 (MBL) Min. breaking load: tension 500kN, shear 420kN
 Approval possible from any classification society
 Standard H = 110mm
 Maximum H = 180mm, minimum H = 85mm
 A = center distance of ISO holes: 203, 216, 258mm

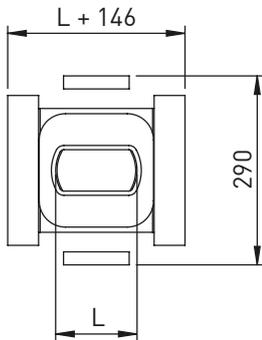
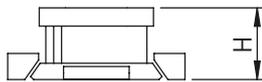
■ WELDING DETAIL



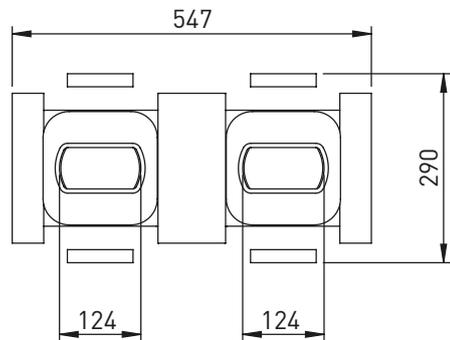
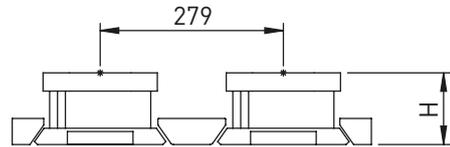


Sliding ISO Foundations - Transversal

FR-76Q



FR-77Q/279

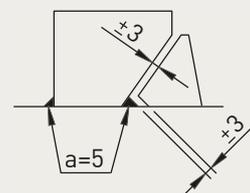


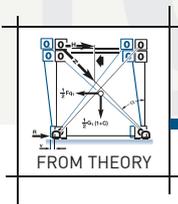
■ SLIDING RANGES ±30mm

■ SPECIFICATIONS

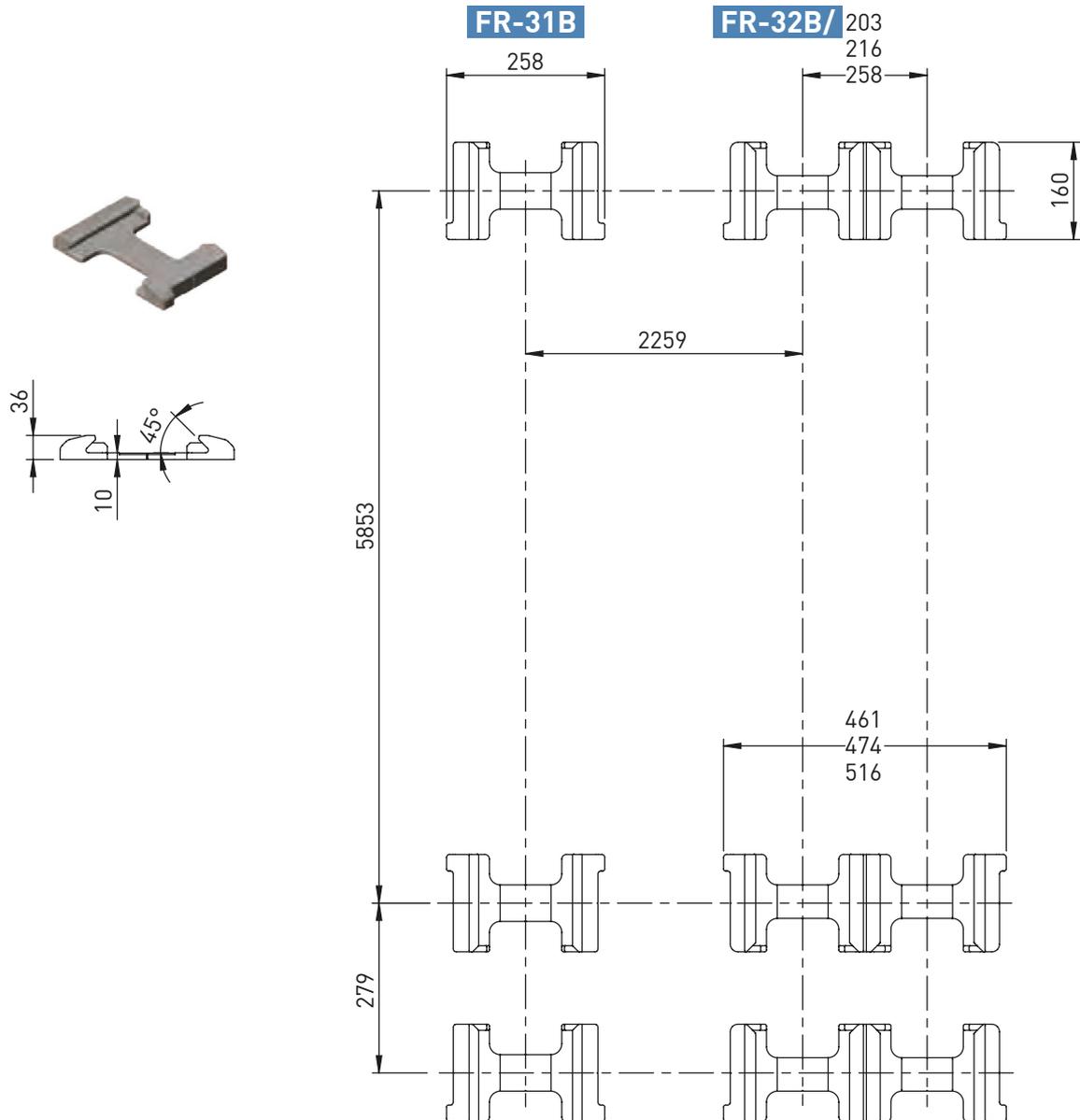
(MSL) Max. securing load: tension 250kN, shear 210kN
 (MBL) Min. breaking load: tension 500kN, shear 420kN
 Approval possible from any classification society
 Standard H = 110mm
 Maximum H = 180mm, minimum H = 85mm
 L = dimension of ISO hole: 124, 144, 185 & 224mm

■ WELDING DETAIL





45° Dovetail Foundations - Standard



■ SPECIFICATIONS

(MSL) Max. securing load: tension 250kN, shear 210kN

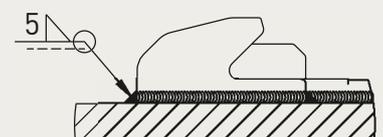
(MBL) Min. breaking load: tension 500kN, shear 420kN

Approval possible from any classification society

Guiding angle 45°

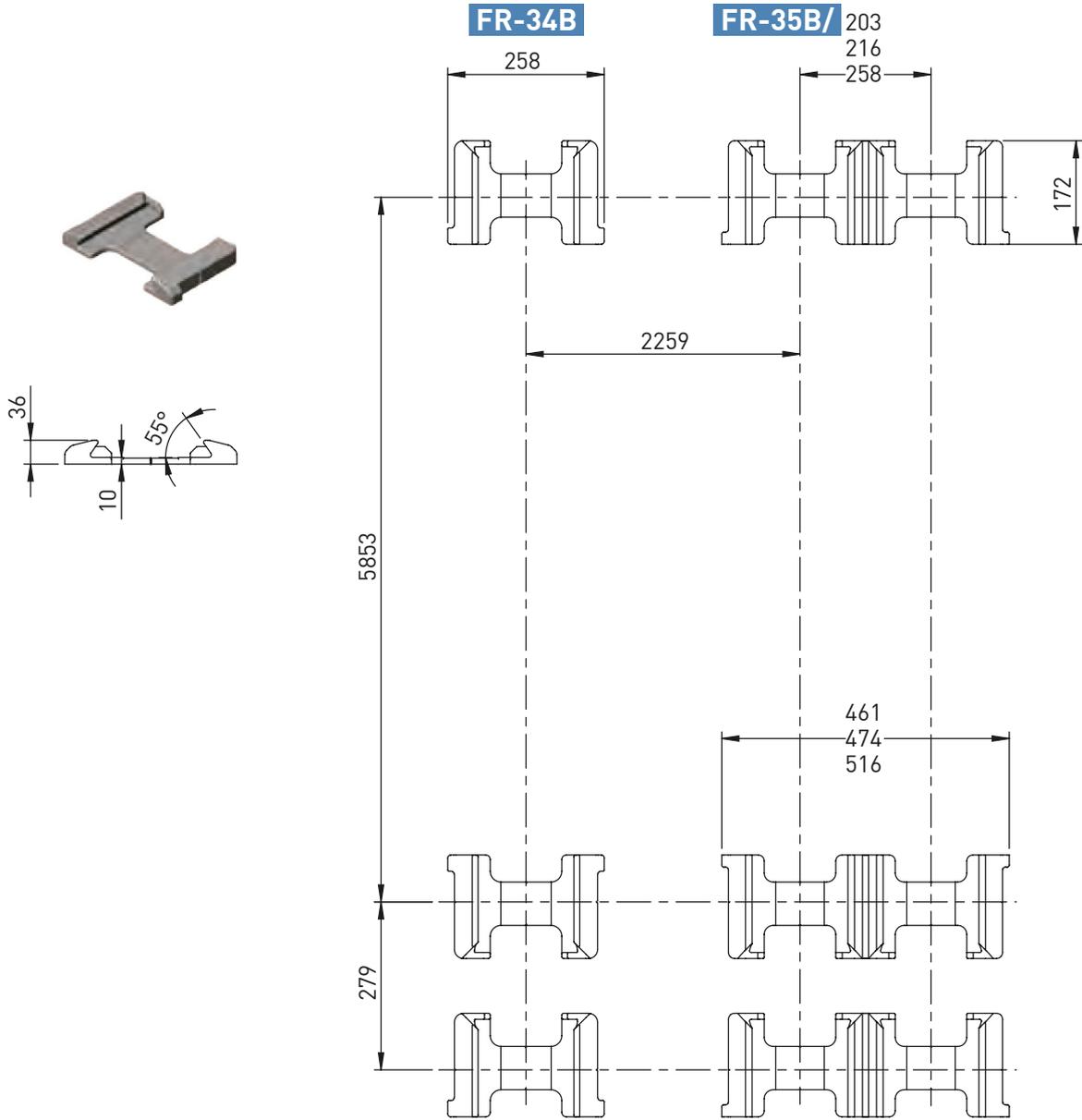
To be used in combination with: B-45, B-45L, B-46 & B-46L

■ WELDING DETAIL





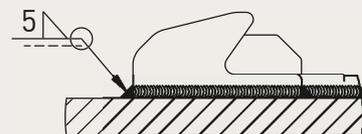
55° Dovetail Foundations - Standard

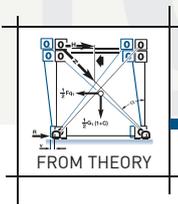


SPECIFICATIONS

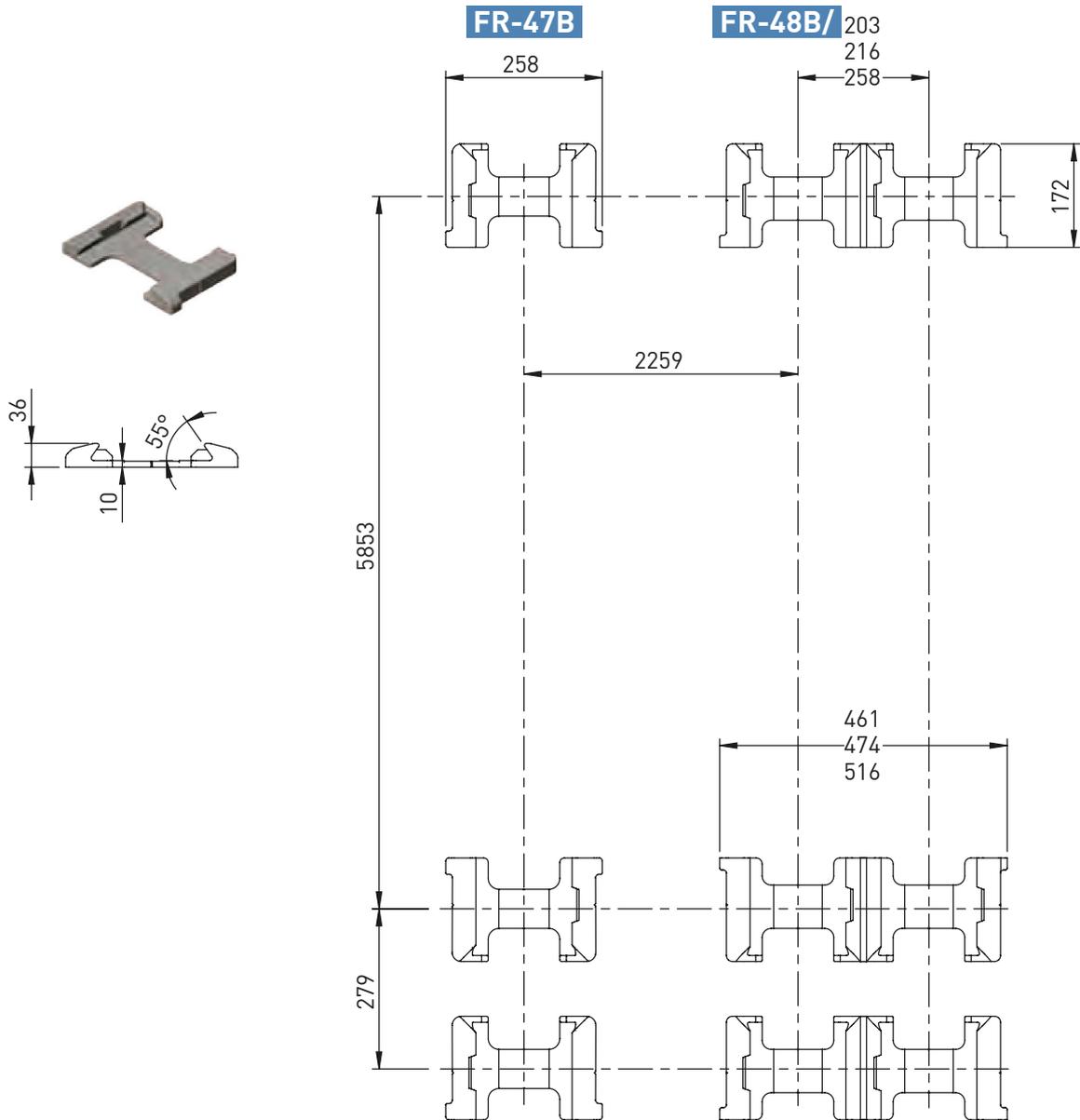
(MSL) Max. securing load: tension 250kN, shear 210kN
(MBL) Min. breaking load: tension 500kN, shear 420kN
Approval possible from any classification society
Guiding angle 55°
To be used in combination with: B-55A, B-56 & B-57

WELDING DETAIL





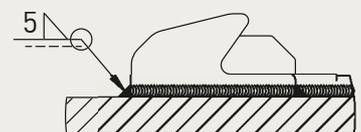
55° Dovetail Foundations - Standard

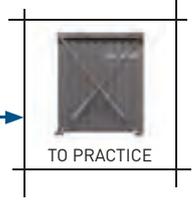


■ SPECIFICATIONS

(MSL) Max. securing load: tension 250kN, shear 210kN
 (MBL) Min. breaking load: tension 500kN, shear 420kN
 Approval possible from any classification society
 Guiding angle 55°
 To be used in combination with: B-55A, B-56 & B-57

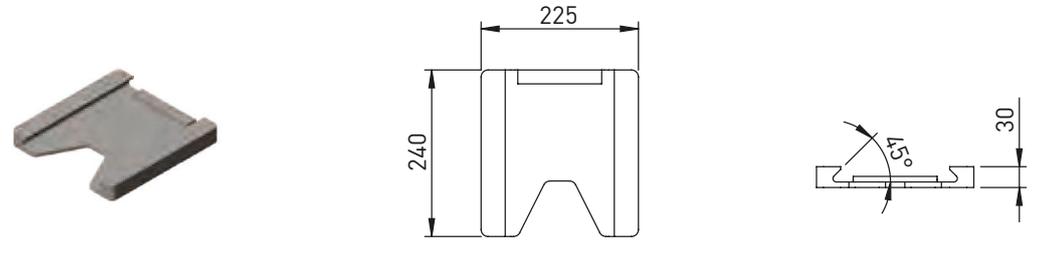
■ WELDING DETAIL





Dovetail Foundations - Elongated

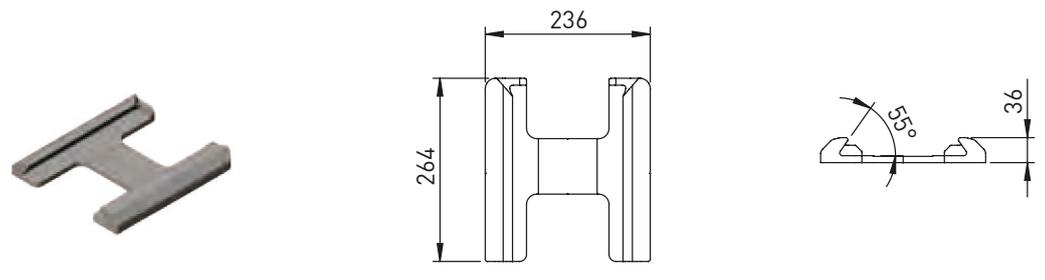
FR-31Q



SPECIFICATIONS

(MSL) Max. securing load: tension 150kN, shear 210kN
 (MBL) Min. breaking load: tension 300kN, shear 420kN
 Approval possible from any classification society
 Guiding angle 45°
 To be used in combination with: B45 & B-46

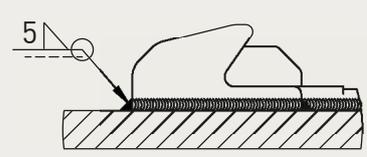
FR-34BQ



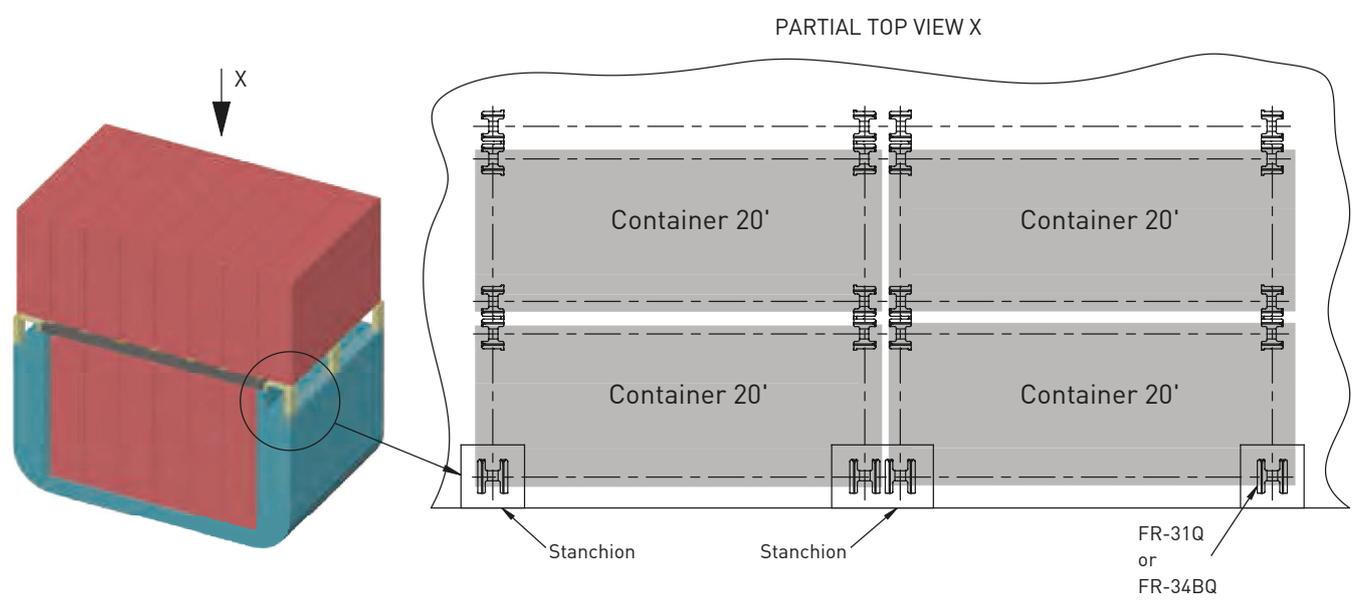
SPECIFICATIONS

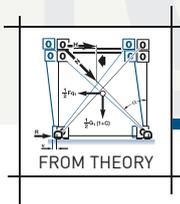
(MSL) Max. securing load: tension 250kN, shear 210kN
 (MBL) Min. Breaking load: tension 500kN, shear 420kN
 Approval possible from any classification society
 Guiding angle 55°
 To be used in combination with: B-55A, B-56 & B-57

WELDING DETAIL



TYPICAL ARRANGEMENT OF ELONGATED DOVETAIL FOUNDATIONS

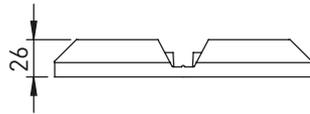




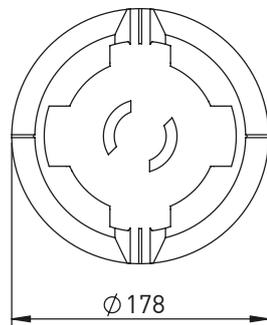
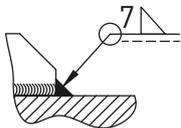
Breech Base Foundations

FR-22

Raised breech base

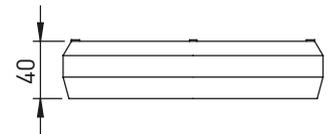


WELDING DETAIL

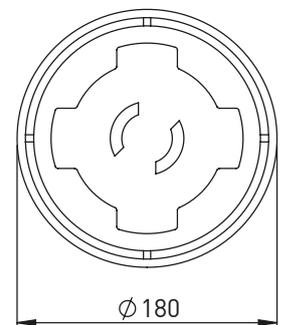
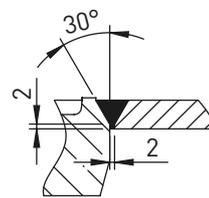


FF-31

Flush breech base



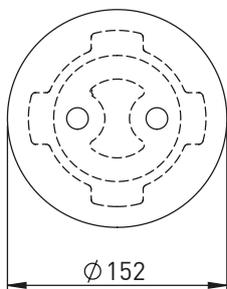
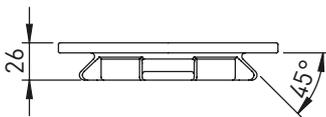
WELDING DETAIL



ACCESSORIES

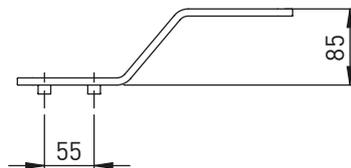
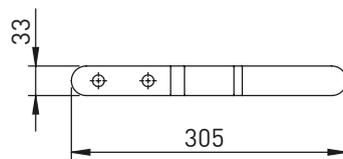
FF-80

Breech base socket cover



FF-80A

Wrench



PRACTICE



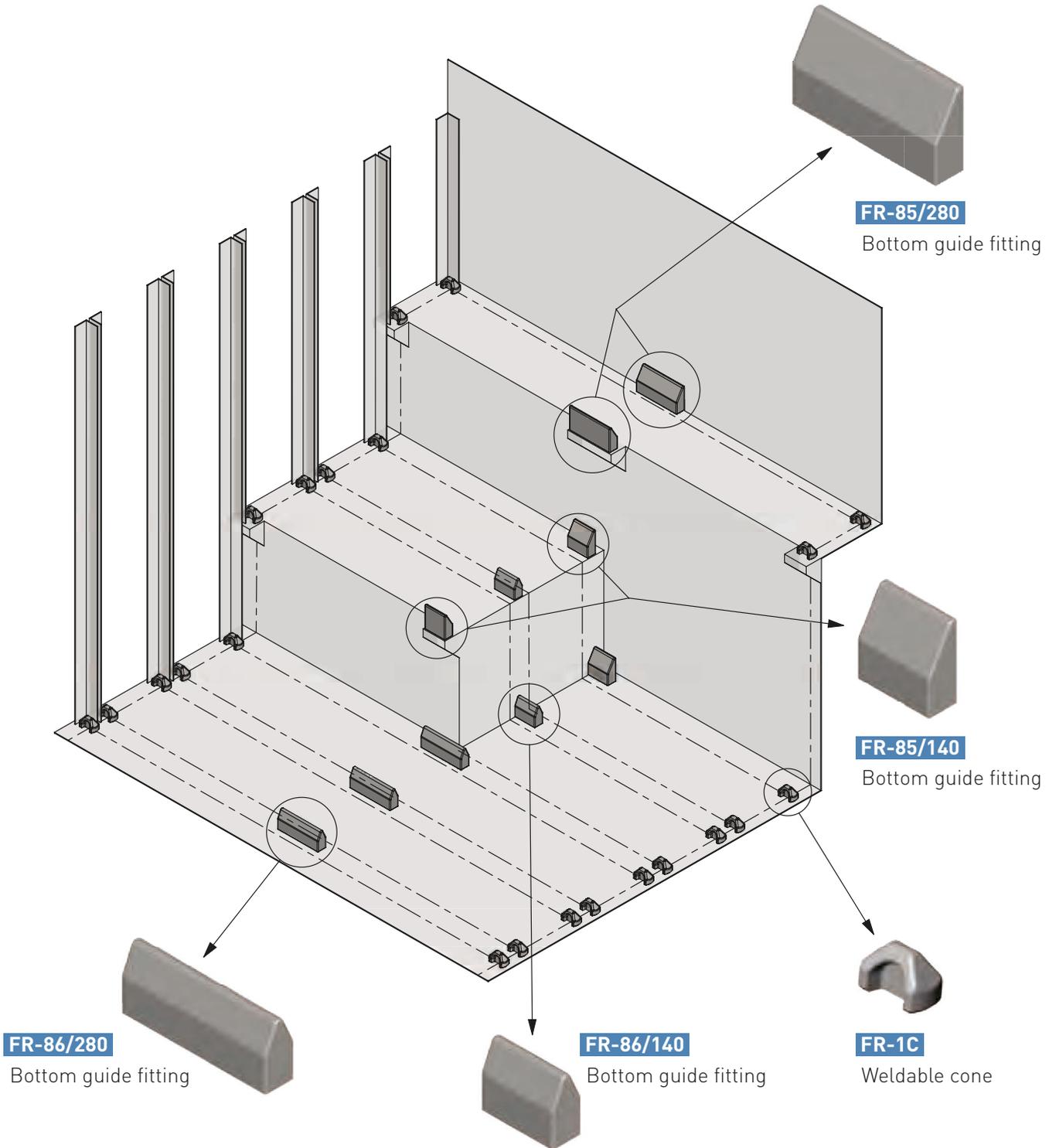
SPECIFICATIONS

(MSL) Max. securing load: tension 250kN, shear 210kN
 (MBL) Min. breaking load: tension 500kN, shear 420kN
 To be used in combination with: B-22R, LE-12



TO PRACTICE

Guide Fittings In Combination With Cell Guides

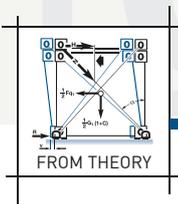


■ SPECIFICATIONS

(MSL) Max. securing load: shear 210kN

(MBL) Min. breaking load: shear 420kN

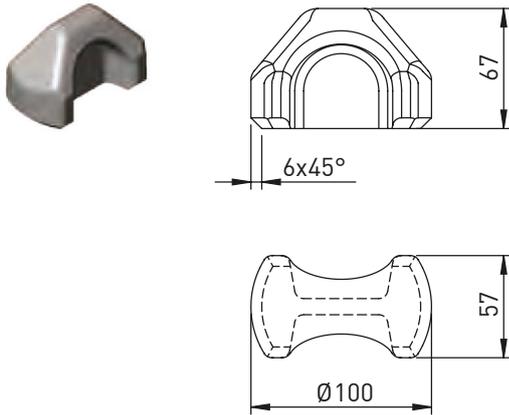
Placed at free end of 20' containers, stowed in 40' cell guides



Welding Cones

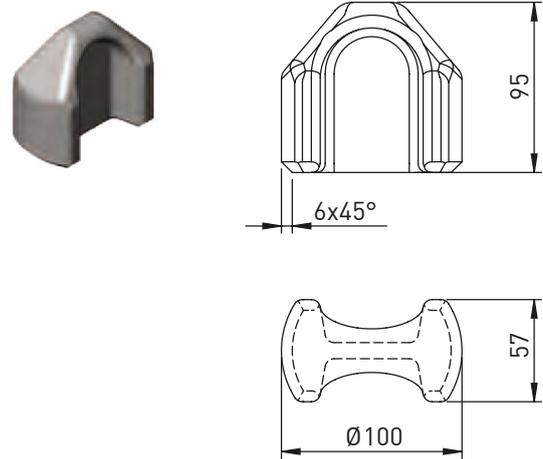
FR-1C

Weldable cone



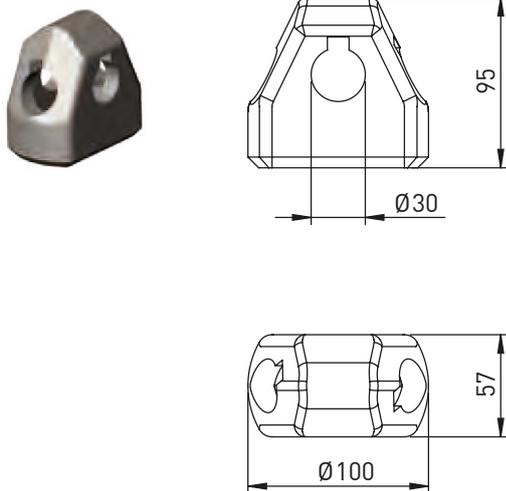
FR-1C/95

Weldable cone



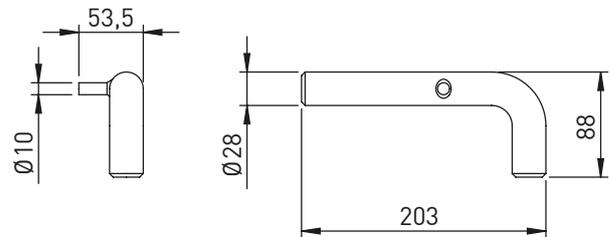
FR-3

Weldable locking cone

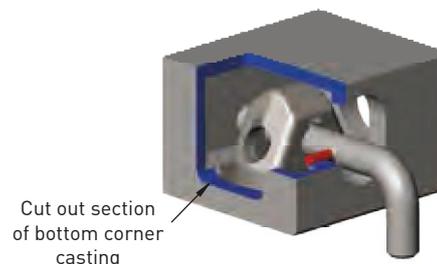


SB-1

Locking pin



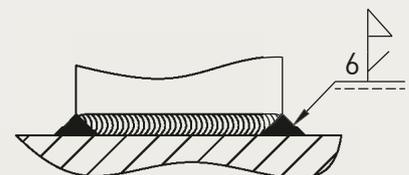
PRACTICE

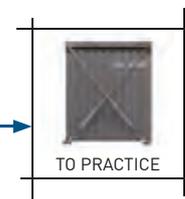


SPECIFICATIONS

- (MSL) Max. securing load: shear 210kN
- (MSL) Max. securing load: tension for FR-3 with SB-1, 200kN
- (MSL) Min. breaking load: shear 420kN
- (MSL) Min. breaking load: tension for FR-3 with SB-1, 400kN

WELDING DETAIL

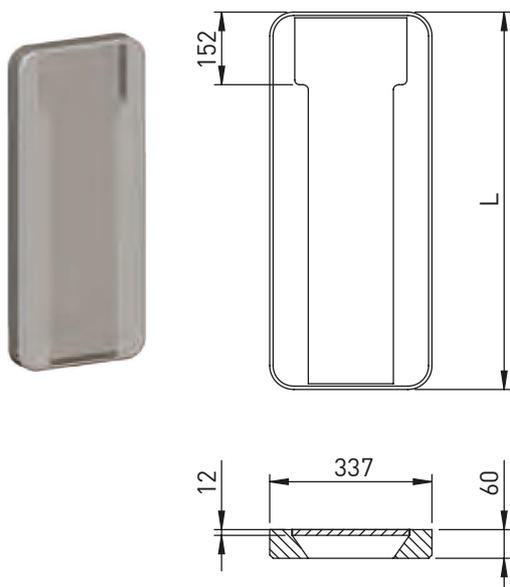




Counter Bearings

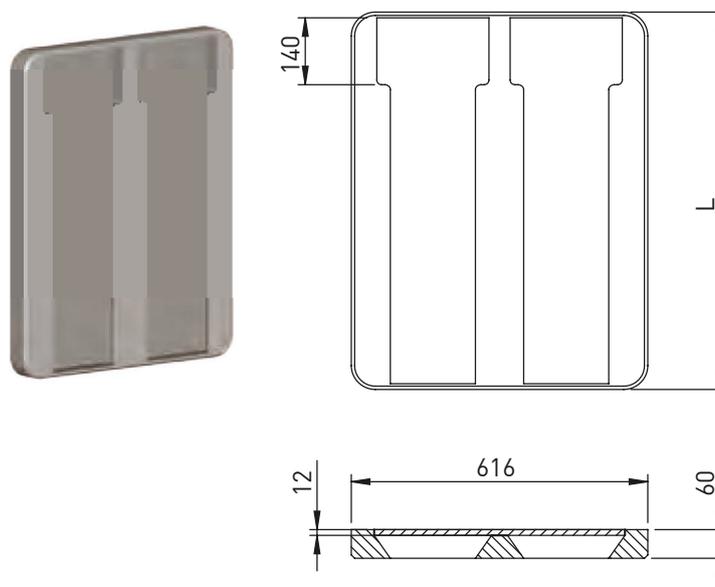
FF-55/L

Single flush counter bearing



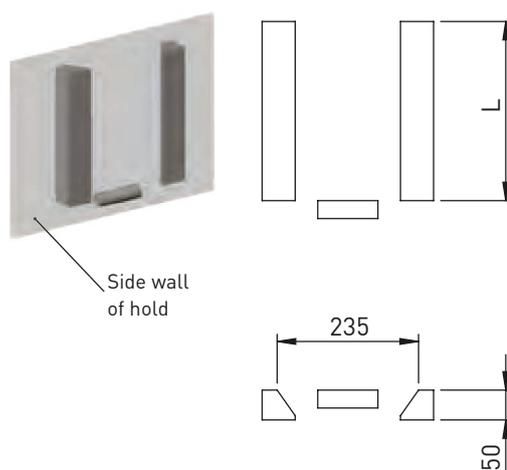
FF-56/L

Double flush counter bearing



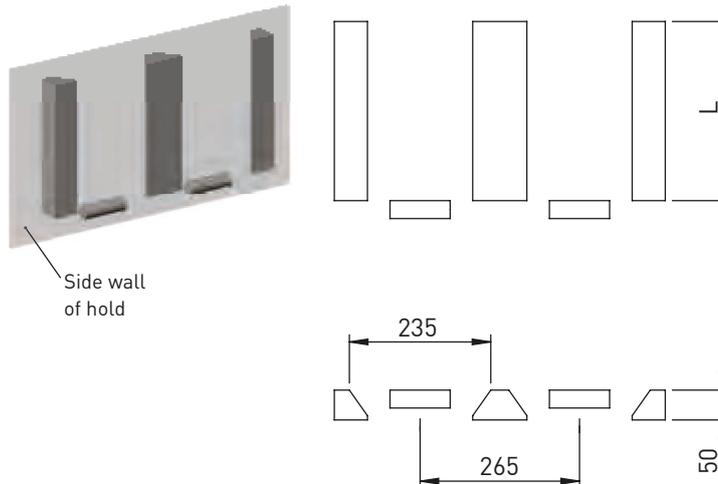
FR-61/L

Single raised counter bearing



FR-62/L

Double raised counter bearing



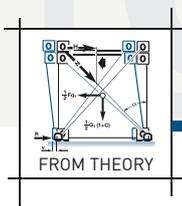
SPECIFICATIONS

(MSL) Max. securing load: tension 425kN

(MBL) Min. breaking load: tension 850kN

Other types on request

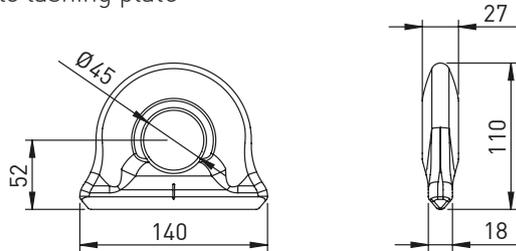
To be used in combination with: IT-14/A, TT-14/A



Lashing Plates

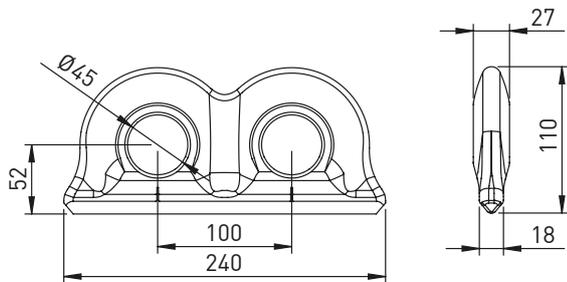
LE-31

Single lashing plate



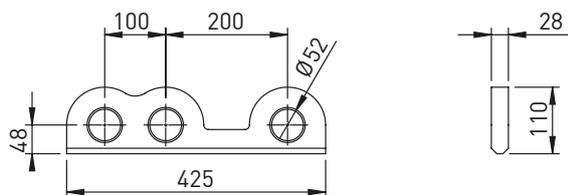
LE-32

Lashing plate with 2 eyes



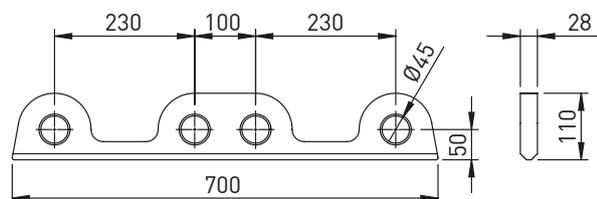
LE-33

Lashing plate with 3 eyes



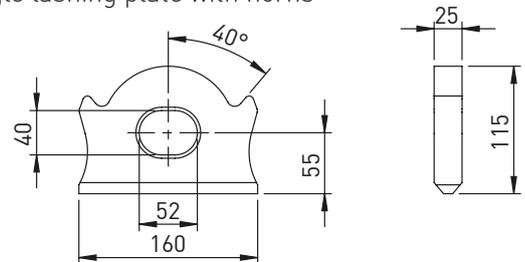
LE-34

Lashing plate with 4 eyes



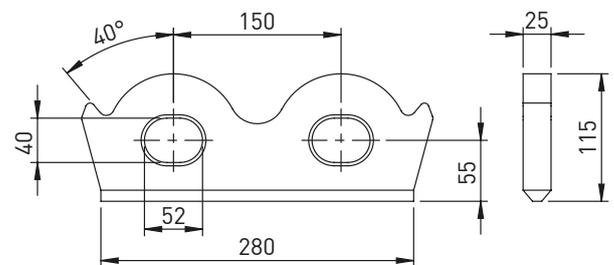
LE-31A

Single lashing plate with horns



LE-32A

Lashing plate with 2 eyes and horns



Because of the oval eye and special horns on both sides of the lashing plate the turnbuckle can either be:

- placed diagonally, or

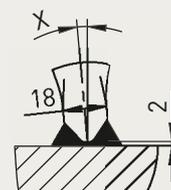
- laid down horizontally



SPECIFICATIONS

- (MSL) Max. Securing load: tension 250kN
- (MBL) Min. Breaking load: tension 500kN
- Other types on request

WELDING DETAIL



Angle X as per alignment of lashing rod



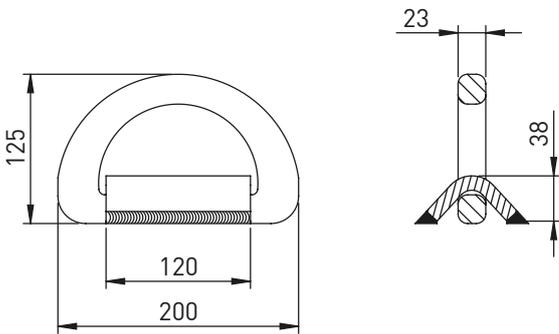
TO PRACTICE

Cargo Lashing Eyes

LE-1/36

D-ring with strap

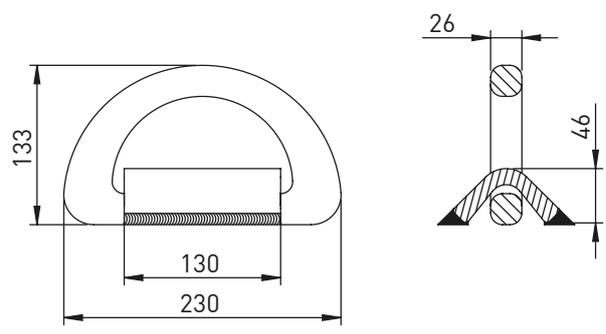
D-ring: LE-1X/36
Strap: LE-1Y/36



LE-1/50

D-ring with strap

D-ring: LE-1X/50
Strap: LE-1Y/50



SPECIFICATIONS

(MSL) Max. securing load: tension 180kN
(MBL) Min. breaking load: tension 360kN

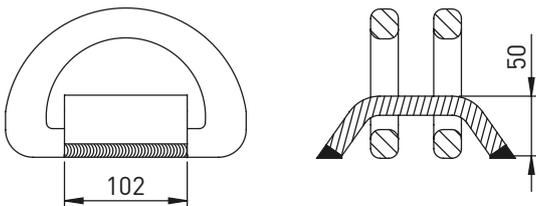
SPECIFICATIONS

(MSL) Max. securing load: tension 245kN
(MBL) Min. breaking load: tension 490kN

LE-2/36

Double D-ring with strap

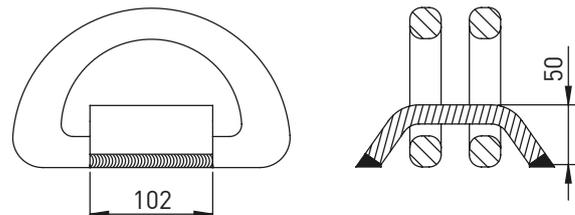
D-ring: LE-1X/36 (x2)
Strap: LE-2Y/36



LE-2/50

Double D-ring with strap

D-ring: LE-1X/50 (x2)
Strap: LE-2Y/50

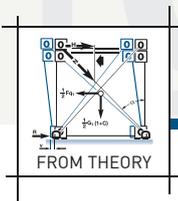


SPECIFICATIONS

(MSL) Max. securing load per ring: tension 180kN
(MBL) Min. breaking load per ring: tension 360kN

SPECIFICATIONS

(MSL) Max. securing load per ring: tension 245kN
(MBL) Min. breaking load per ring: tension 490kN

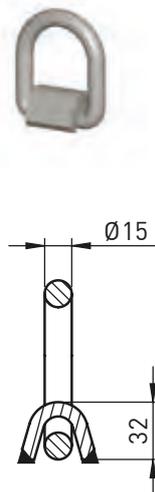
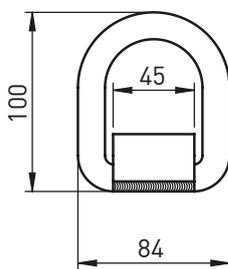


Cargo Lashing Eyes

LE-1/15

D-ring with strap

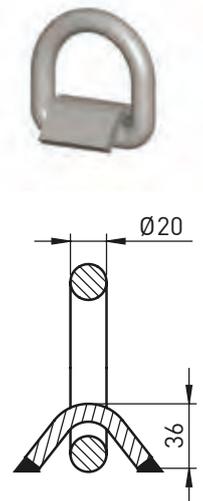
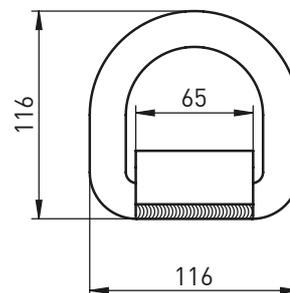
D-ring: LE-1X/15
Strap: LE-1Y/15



LE-1/20

D-ring with strap

D-ring: LE-1X/20
Strap: LE-1Y/20



SPECIFICATIONS

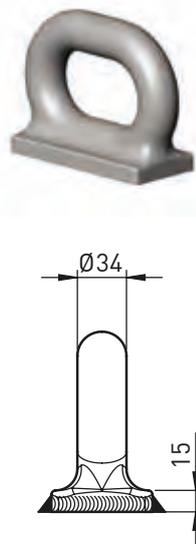
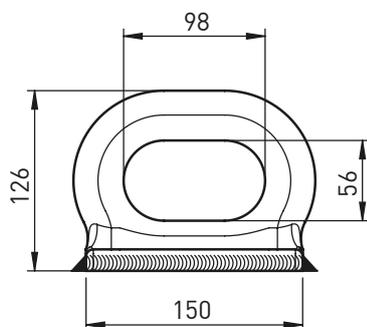
(MSL) Max. securing load: 75kN
(MBL) Min. breaking load: 150kN

SPECIFICATIONS

(MSL) Max. securing load: 100kN
(MBL) Min. breaking load: 200kN

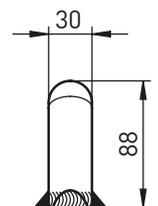
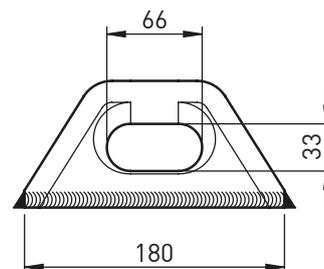
LE-7

Pad eye



LE-7C/3

Oval eye plate



SPECIFICATIONS

(MSL) Max. securing load: tension 98kN (lashing applications)
(MBL) Min. breaking load: tension 196kN
Safe working load: 49kN (lifting applications)

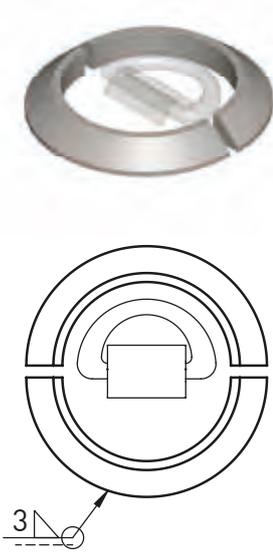
SPECIFICATIONS

(MSL) Max. securing load: 30kN
(MBL) Min. breaking load: 60kN

Cargo Lashing Points

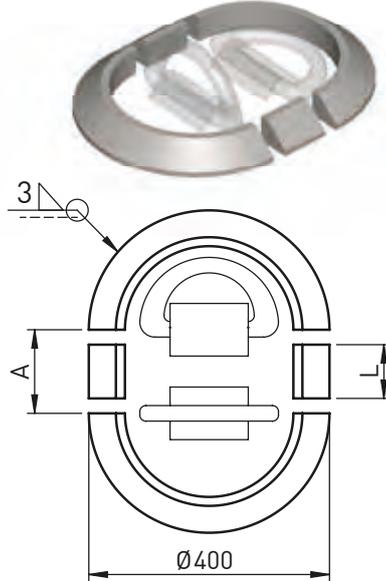
LE-1Z/50

Protection ring for single D-ring



LE-2Z/50

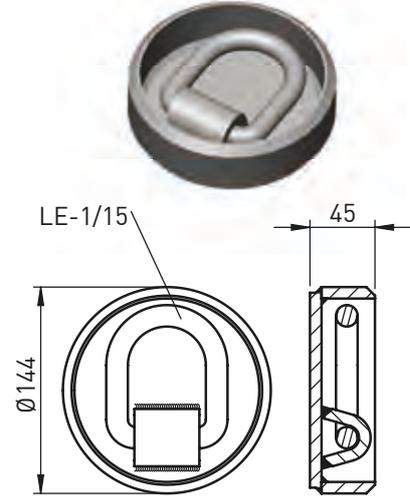
Protection ring for double D-ring



L = 0, in case of 1 D-ring
L = A - 20mm, in case of 2 D-rings

LE-8C

Flush D-ring

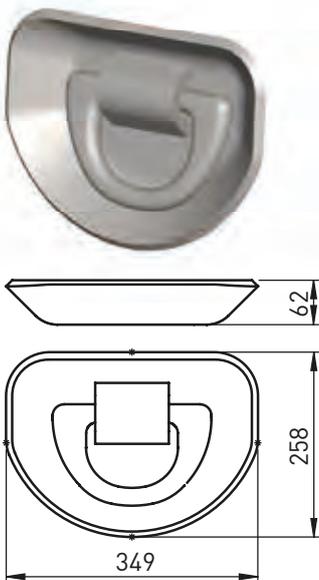


SPECIFICATIONS

(MSL) Max. securing load: tension 75kN
(MBL) Min. breaking load: tension 150kN

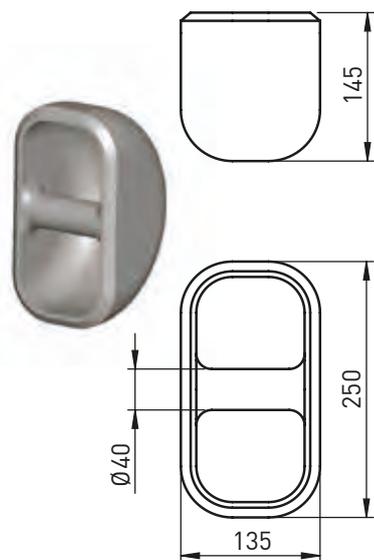
LE-8B

Flush D-ring



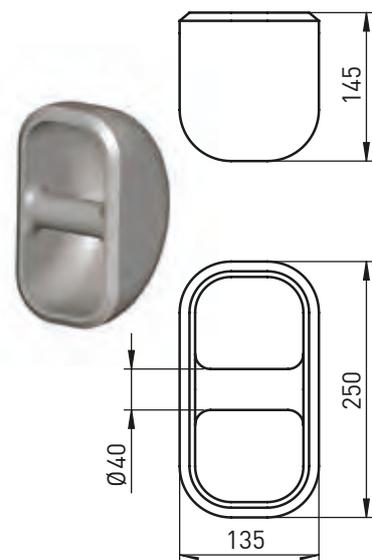
FF-3

Flush lashing pot



FF-3/50

Flush lashing pot



SPECIFICATIONS

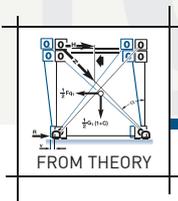
(MSL) Max. securing load: tension 245kN
(MBL) Min. breaking load: tension 490kN

SPECIFICATIONS

(MSL) Max. securing load: tension 177kN
(MBL) Min. breaking load: tension 354kN

SPECIFICATIONS

(MSL) Max. securing load: tension 245kN
(MBL) Min. breaking load: tension 490kN

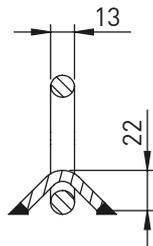
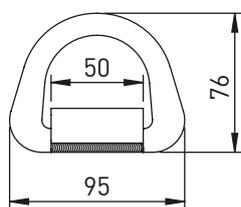


Car Lashing Eyes

LE-10

D-ring with strap

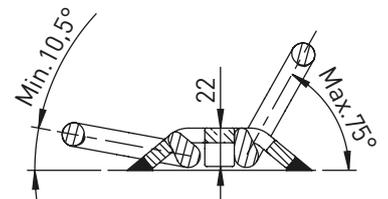
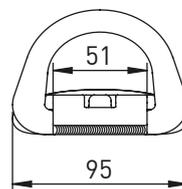
D-ring: LE-10X
Strap: LE-10Y



LE-11

D-ring with strap

D-ring: LE-11X
Strap: LE-11Y



SPECIFICATIONS

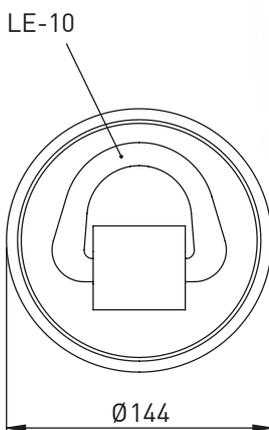
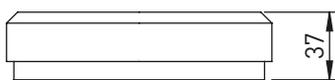
(MSL) Max. securing load: 38kN
(MBL) Min. breaking load: 76kN

SPECIFICATIONS

(MSL) Max. securing load per ring: 38kN
(MBL) Min. breaking load per ring: 76kN

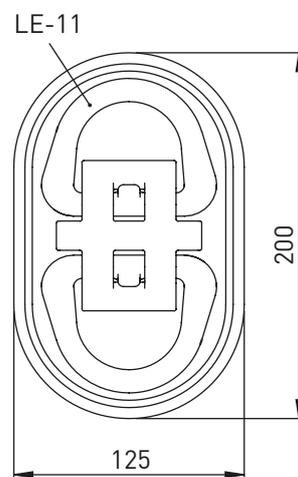
LE-8F

Flush D-ring



LE-9E

Flush double D-ring

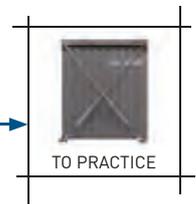


SPECIFICATIONS

(MSL) Max. securing load: 38kN
(MBL) Min. breaking load: 76kN

SPECIFICATIONS

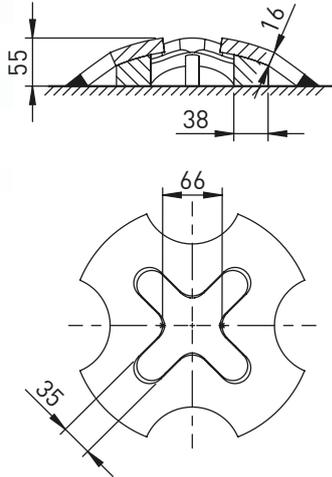
(MSL) Max. securing load per ring: 38kN
(MBL) Min. breaking load per ring: 76kN



Elephant Foot Lashing Points

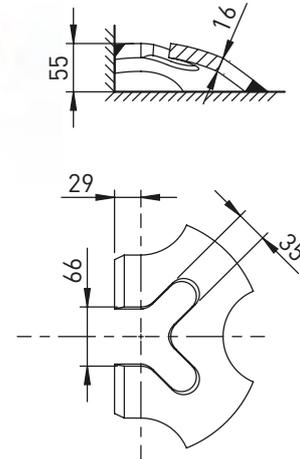
FR-6B

Convex lashing point



FR-6A

Convex lashing point



SPECIFICATIONS

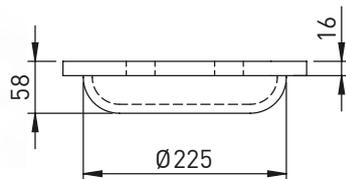
(MSL) Max. securing load: 2x100kN
(MBL) Min. breaking load: 2x200kN

SPECIFICATIONS

(MSL) Max. securing load: 2x100kN
(MBL) Min. breaking load: 2x200kN

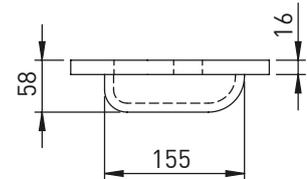
FF-8

Elephant foot lashing point with collar



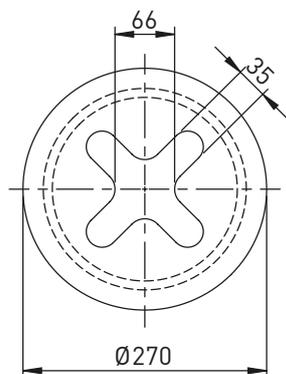
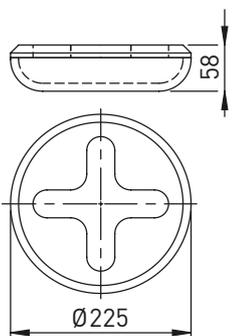
FF-9

Elephant foot lashing point with collar



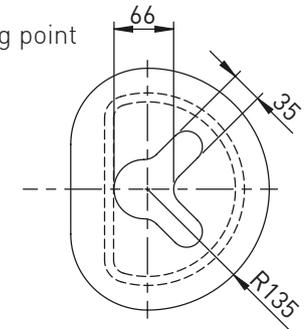
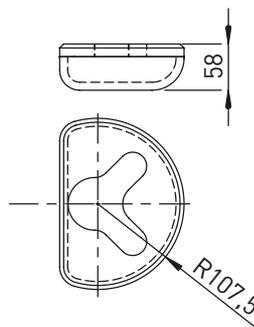
FF-8A

Elephant foot lashing point without collar



FF-9A

Elephant foot lashing point without collar

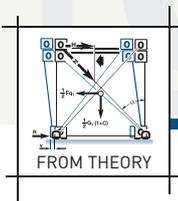


SPECIFICATIONS

(MSL) Max. securing load: 2x100kN
(MBL) Min. breaking load: 2x200kN

SPECIFICATIONS

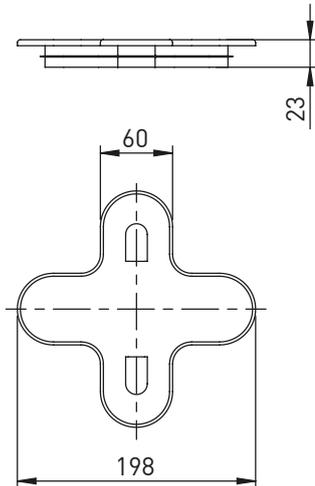
(MSL) Max. securing load: 2x100kN
(MBL) Min. breaking load: 2x200kN



Vehicle Lashing Points

FF-94

Plug

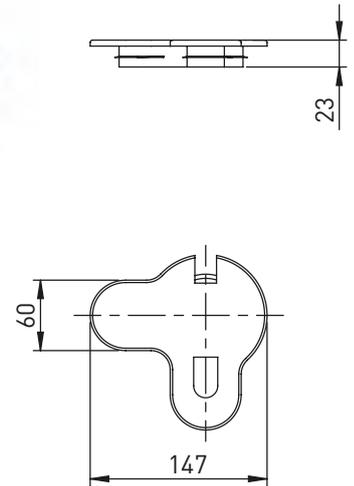


SPECIFICATIONS

Fits in FF-8 and FF-8A
Material: plastic

FF-92

Plug

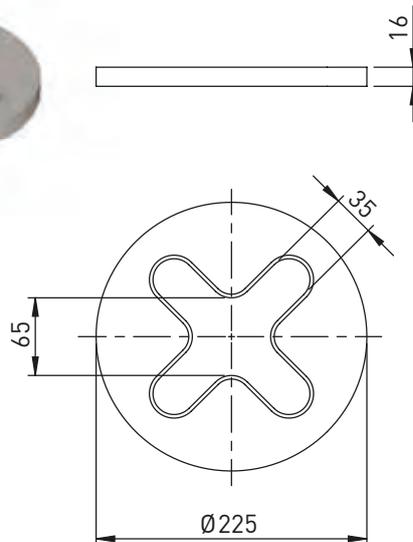


SPECIFICATIONS

Fits in FF-9 and FF-9A
Material: plastic

FF-8A/T

Top plate for elephant foot fitting

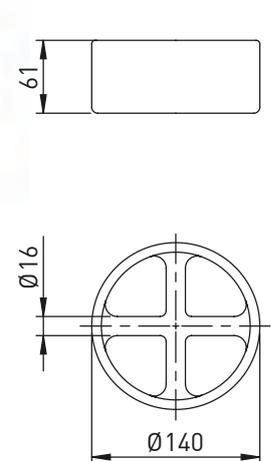


SPECIFICATIONS

(MSL) Max. securing load: 2x100kN
(MBL) Min. breaking load: 2x200kN
Edge preparation see page 8

FF-4

Crossbar lashing pot



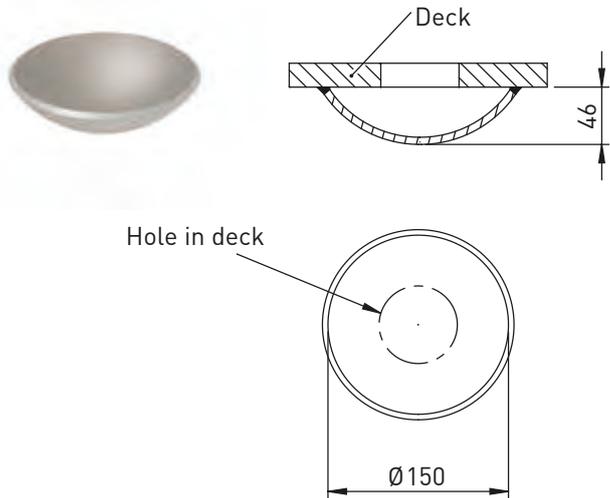
SPECIFICATIONS

(MSL) Max. securing load: 2x40kN
(MBL) Min. breaking load: 2x80kN

Car Lashing Points

FF-2/150

Cup for lashing hole

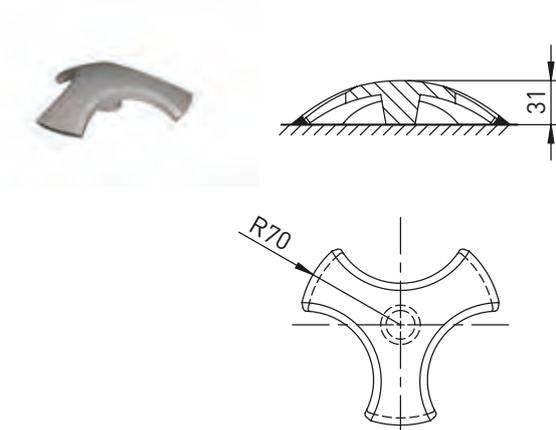


SPECIFICATIONS

Prevents water ingress to lower decks

FR-7B

Car lashing point

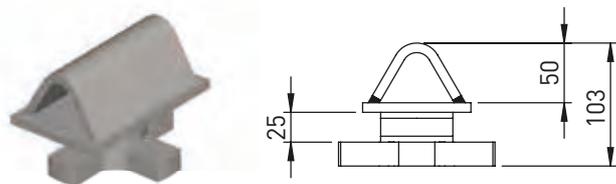


SPECIFICATIONS

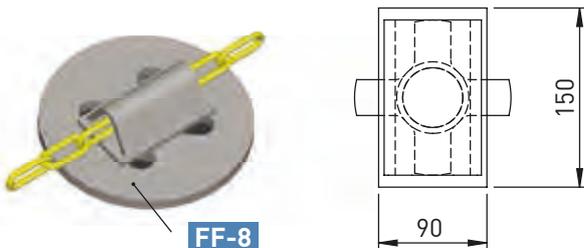
(MSL) Max. securing load: 50kN
(MBL) Min. breaking load: 100kN

LE-46

Chain strap



PRACTICE



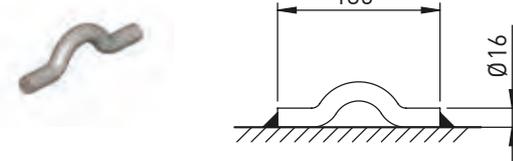
FF-8

SPECIFICATIONS

(MSL) Max. securing load: shear 60kN
(MBL) Min. breaking load: shear 120kN

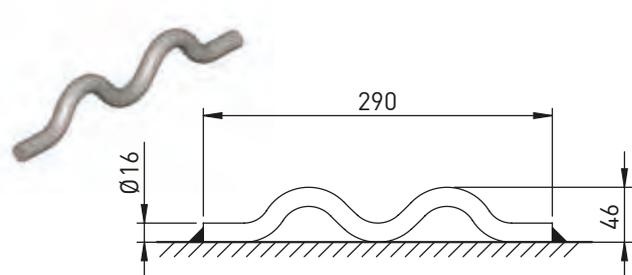
LE-14/1

Crinckle bar



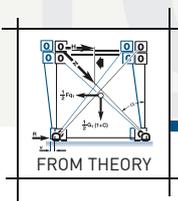
LE-14/2

Double crinckle bar



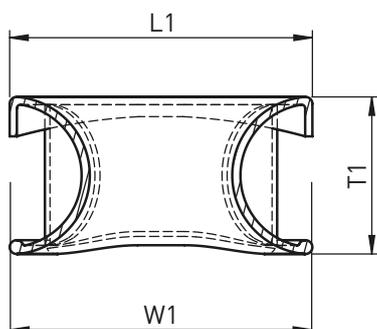
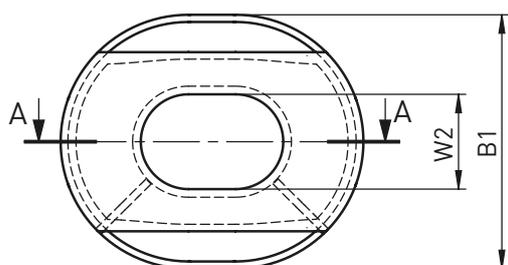
SPECIFICATIONS

(MSL) Max. securing load: 30kN
(MBL) Min. breaking load: 60kN



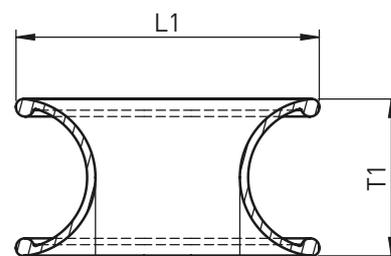
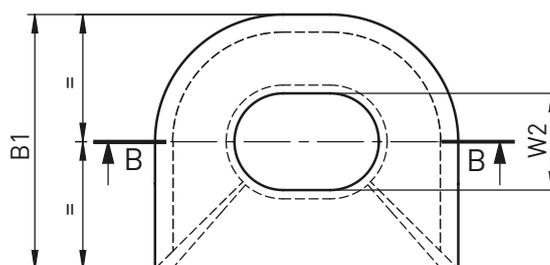
Panama Chocks

MC-A-..



SECTION A-A

MC-C-..



SECTION B-B

TYPE	NOM. TOWING PULL [kN]	DIMENSIONS (mm)					WEIGHT (kg)	
		B1	T1	L1	W1	W2	MC-A-..	MC-C-..
MC-...-3	30	390	250	450	200	140	42	48
MC-...-5	50	480	300	550	250	180	74	85
MC-...-8	80	585	360	680	320	225	120	136
MC-...-12	120	710	440	840	400	270	185	211
MC-...-20	200	840	520	1020	500	320	285	326
MC-...-32	320	1100	700	1300	600	400	795	840

SPECIFICATION

In accordance with DIN 81915

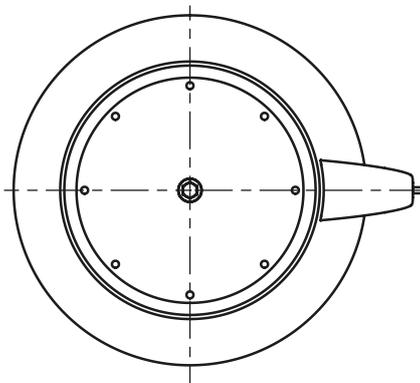
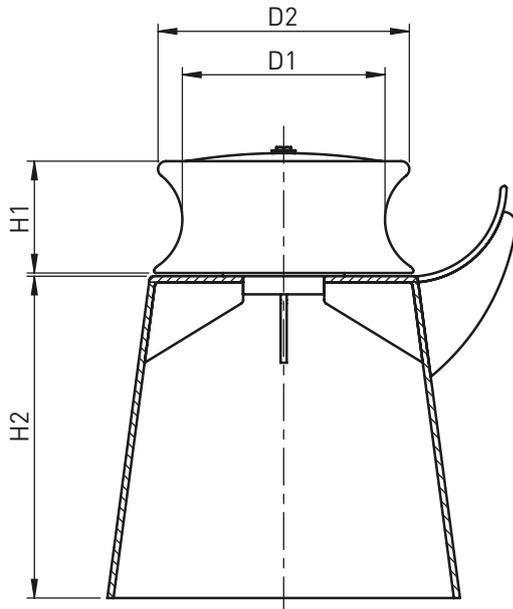
■ Various types available on request



TO PRACTICE

Warping Roller

MC-01

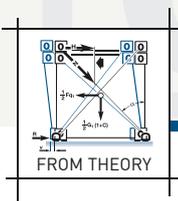


TYPE	NOM. TOWING PULL (kN)	BREAKING LOAD OF ROPE (kN)	ROPE Ø (mm)	DIMENSIONS (mm)			
				D1	D2	H1	H2
MC-01/1	10	90	12	160	195	80	200-800
MC-01/2	20	150	16	200	245	102	200-800
MC-01/3	30	220	20	250	300	126	200-800
MC-01/5	50	350	24	320	390	160	200-800
MC-01/8	80	500	32	400	490	208	200-800
MC-01/12	120	800	40	450	560	256	200-800
MC-01/20	200	1150	48	500	620	278	200-600
MC-01/32	320	1750	48	560	740	348	200-600

SPECIFICATIONS

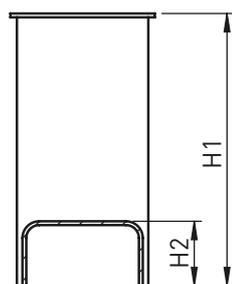
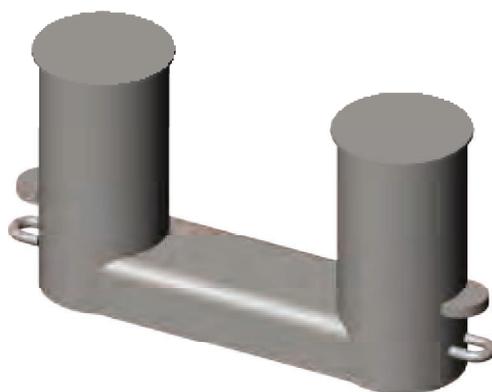
In accordance with DIN 81907
Treatment: 1x shop primer

■ Various types available on request

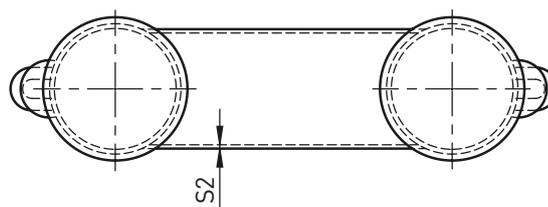
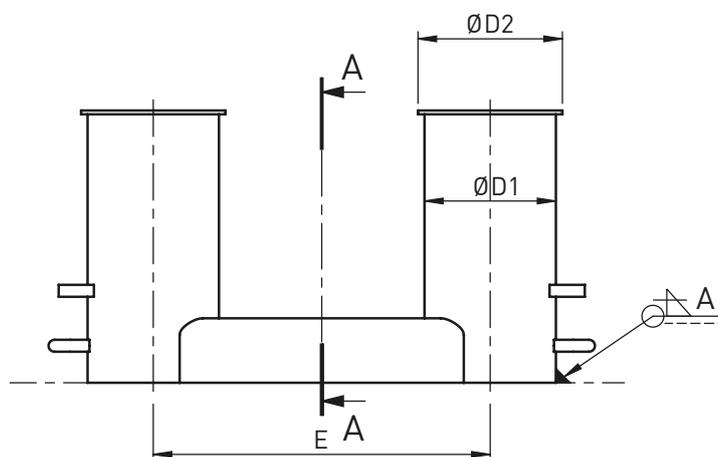


Double Bollard

MC-02



SECTION A-A



TYPE	NOM. TOWING PULL (kN)	WEIGHT (kg)	TUBE (D1) (mm)	DIMENSIONS (mm)						
				B	D2	E	H1	H2	S2	A
MC-02/1	10	15	139,7 x 5	130	160	350	305	105	5	4
MC-02/2	20	35	193,7 x 6,3	180	215	500	395	115	6	4
MC-02/3	30	85	273 x 10	250	300	650	505	135	8	5
MC-02/5	50	140	323,9 x 10	300	355	800	600	150	8	6
MC-02/8	80	235	355,6 x 14,2	330	390	950	685	175	10	8
MC-02/12	120	435	457 x 16	420	490	1100	770	195	16	12
MC-02/20	200	590	508 x 17,5	470	545	1250	870	230	16	12
MC-02/32	320	740	559 x 20	530	600	1400	880	270	16	12

SPECIFICATIONS

In accordance with DIN 82607
Treatment: 1x shop primer

■ Various types available on request

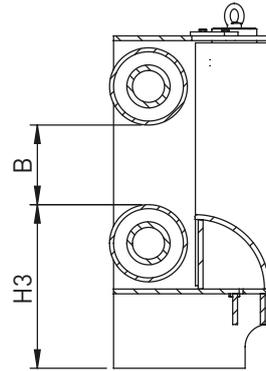
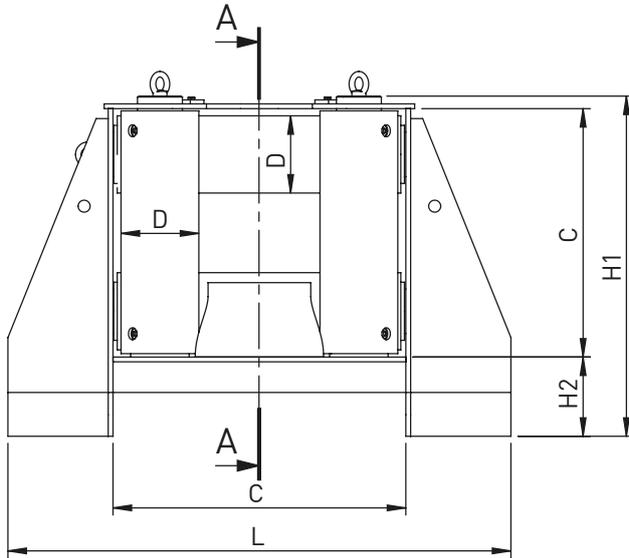


TO PRACTICE

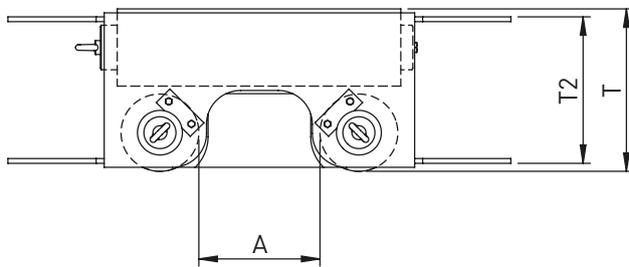
Roller Fairleads

MC-07/D

Deck type



SECTION A-A

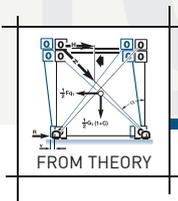


TYPE	NOM. TOWING PULL (kN)	DIMENSIONS [mm]										WEIGHT (kg)
		L	T	H1	A	B	C	D	T2	H2	H3	
MC-07/D/1	10	460	130	348	120	80	260	60	120	70	160	30
MC-07/D/2	20	640	174	464	180	100	364	82	160	80	212	68
MC-07/D/3	30	800	219	579	220	120	454	102	180	100	267	140
MC-07/D/5	50	900	264	676	250	140	524	127	240	120	312	251
MC-07/D/8	80	1000	290	757	280	150	580	140	260	140	355	382
MC-07/D/12	120	1200	368	876	300	160	680	178	320	150	410	657
MC-07/D/16	160	1300	400	948	320	169	732	194	350	170	452	827
MC-07/D/20	200	1350	500	1082	340	180	856	244	450	180	518	1193
MC-07/D/32	320	1700	608	1355	400	250	1026	298	550	220	608	2200

SPECIFICATIONS

In accordance with DIN 81902
Treatment: 1x shop primer

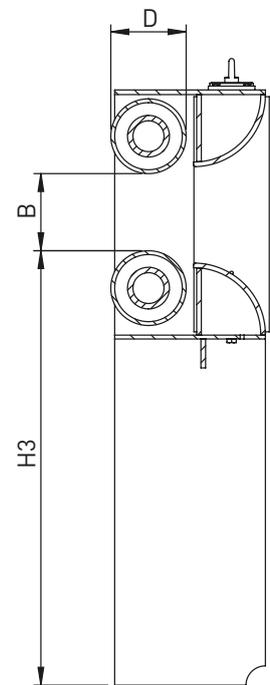
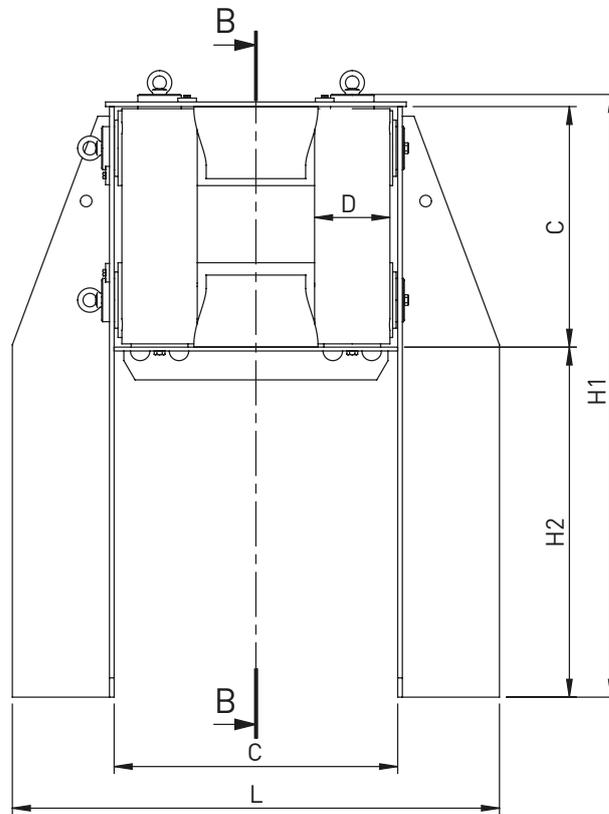
■ Various types available on request



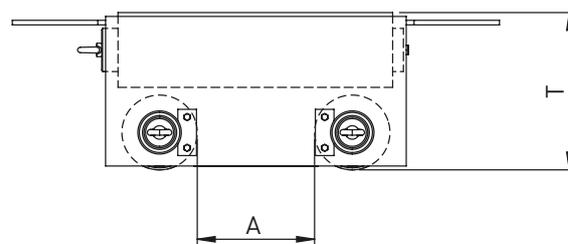
Roller Fairleads

MC-07/B

Bulwark type



SECTION B-B



TYPE	NOM. TOWING PULL (kN)	DIMENSIONS (mm)					
		L	T	A	B	C	D
MC-07/B/1	10	460	130	120	80	260	60
MC-07/B/2	20	640	174	180	100	364	82
MC-07/B/3	30	800	219	220	120	454	102
MC-07/B/5	50	900	264	250	140	524	127
MC-07/B/8	80	1000	290	280	150	580	140
MC-07/B/12	120	1200	368	300	160	680	178
MC-07/B/16	160	1300	400	320	169	732	194
MC-07/B/20	200	1350	500	340	180	856	244
MC-07/B/32	320	1700	608	400	250	1026	298

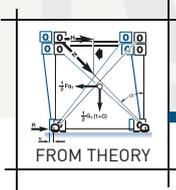
SPECIFICATIONS

In accordance with DIN 81902
 Treatment: 1x shop primer
 Dimensions H1, H2 & H3 to be specified

■ Various types available on request

LOOSE LASHING EQUIPMENT

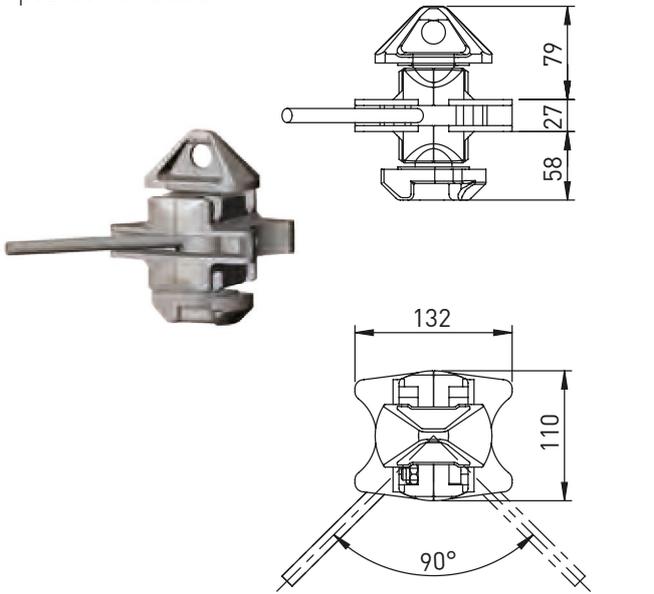




Manual Twistlocks

T-1

3-position twistlock



T-1L

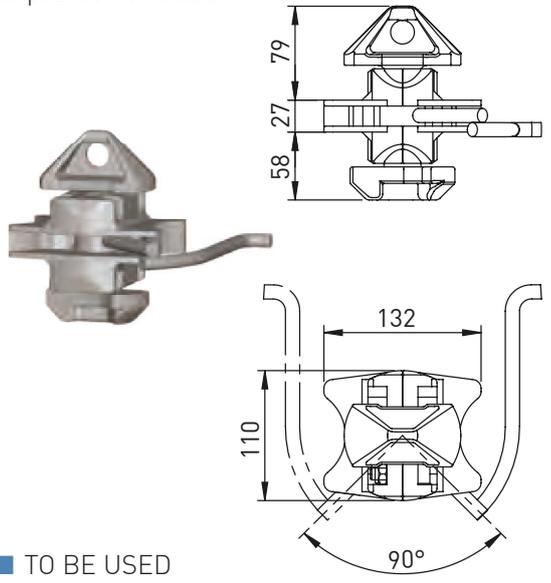
left locking

T-1R

right locking

T-1/UP

3-position twistlock



■ TO BE USED
IN CELL
GUIDES

T-1L/UP

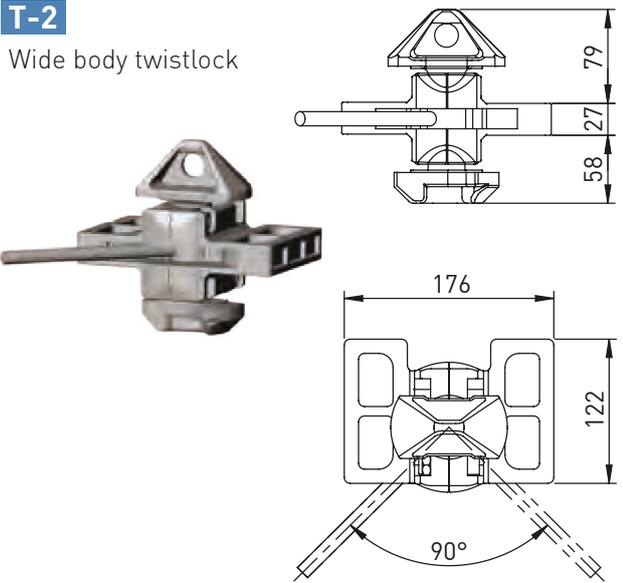
left locking

T-1R/UP

right locking

T-2

Wide body twistlock

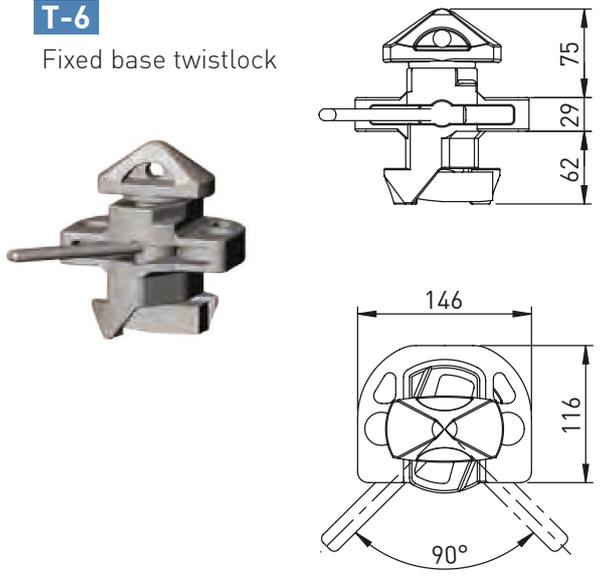


T-2L

left locking

T-6

Fixed base twistlock



T-6L

left locking

T-6R

right locking

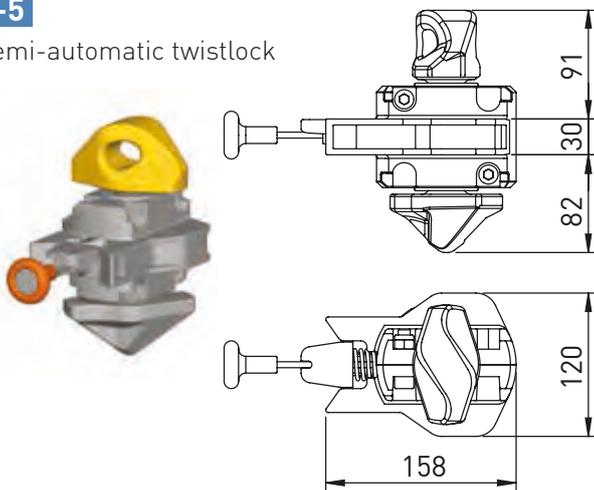
■ SPECIFICATIONS

(MSL) Max. securing load: tension 250kN, shear 210kN
 (MBL) Min. breaking load: tension 5000kN, shear 420kN
 To be used in ISO-holes

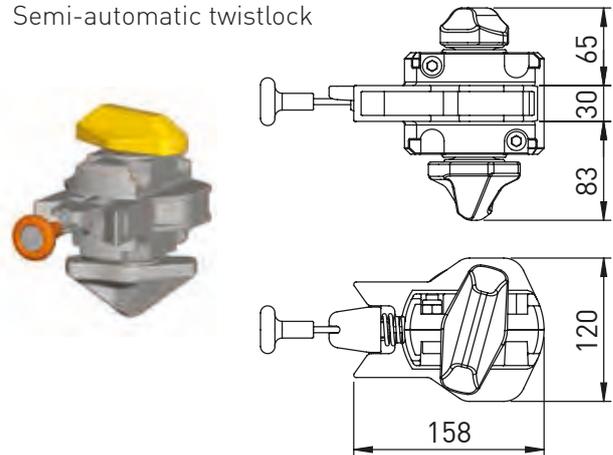
TO PRACTICE

Semi-Automatic Twistlocks

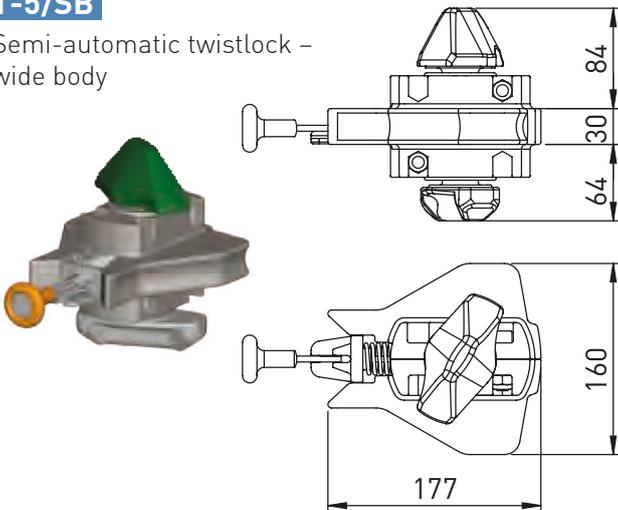
T-5
Semi-automatic twistlock



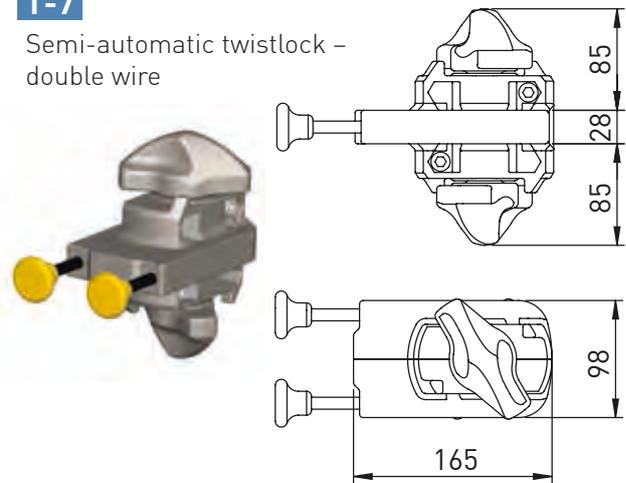
T-5B
Semi-automatic twistlock



T-5/SB
Semi-automatic twistlock - wide body



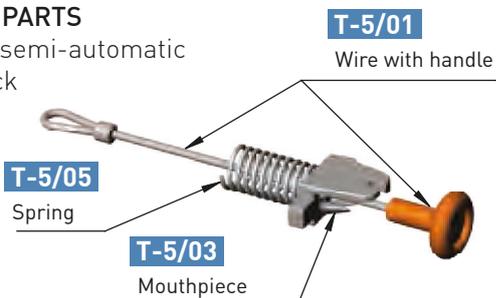
T-7
Semi-automatic twistlock - double wire



SPECIFICATIONS

(MSL) Max. securing load: tension 250kN, shear 210kN
(MBL) Min. breaking load: tension 500kN, shear 420kN
To be used in ISO-holes

SPARE PARTS for T-5 semi-automatic twistlock



PT nut M10



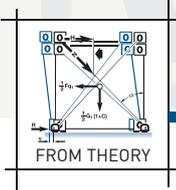
Bolt DIN 912 M10x45



S-99A

Emergency tool

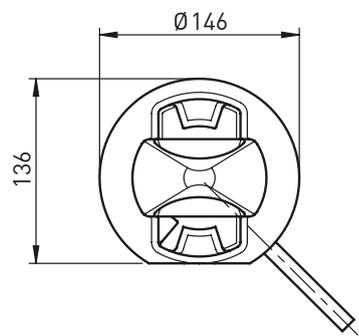
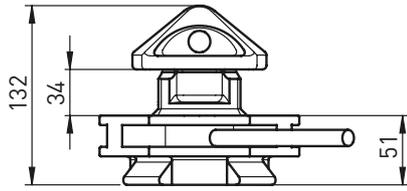




Bottom Twistlocks - Standard

B-22

Breech base bottom twistlock



B-22R

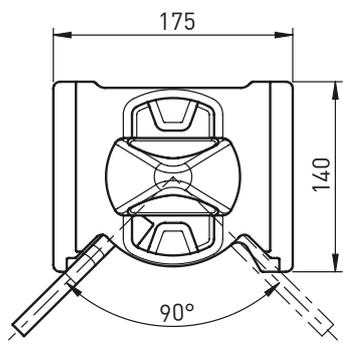
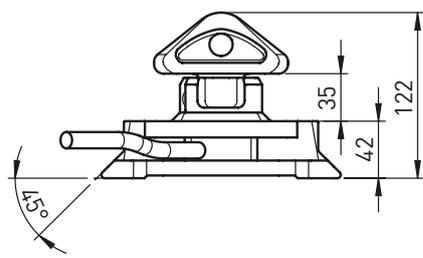
right locking

TO BE USED IN COMBINATION WITH:

- FF-31
- FR-22

B-45

45° U-frame bottom twistlock



B-45L

left locking

B-45R

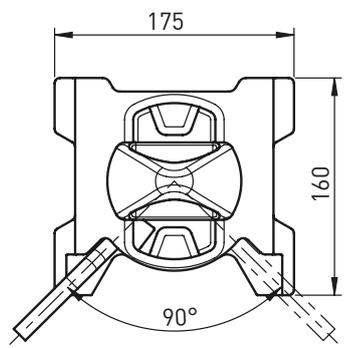
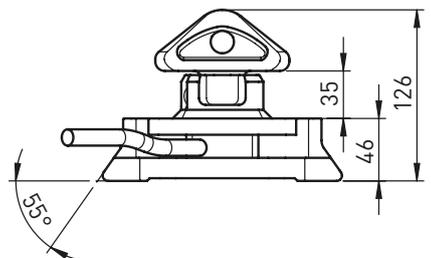
right locking

TO BE USED IN COMBINATION WITH:

- FR-31B
- FR-32B/A
- FR-31Q

B-55A

55° U-frame bottom twistlock with cut-out section



B-55AL

left locking

B-55AR

right locking

TO BE USED IN COMBINATION WITH:

- FR-34B
- FR-35B/A
- FR-34BQ
- FR-47B
- FR-48B/A

SPECIFICATIONS

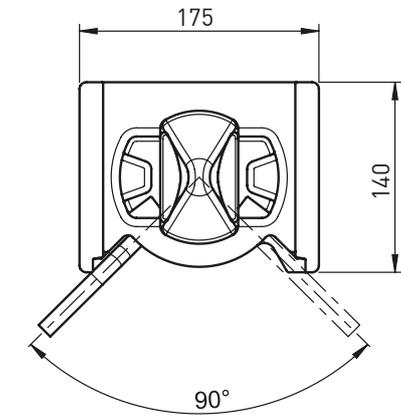
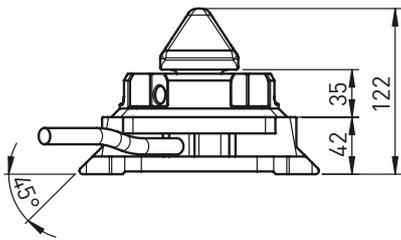
(MSL) Max. securing load: tension 250kN, shear 210kN
 (MBL) Min. breaking load: tension 500kN, shear 420kN
 Approval from any classification society



Bottom Twistlocks - Transversal

B-46

45° U-frame bottom twistlock



B-46L

left locking

B-46R

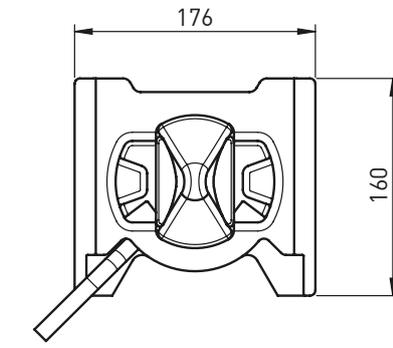
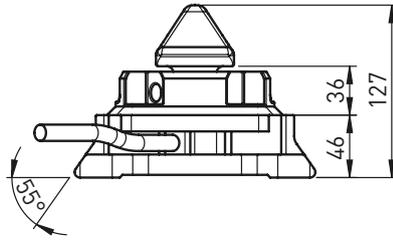
right locking

TO BE USED IN COMBINATION WITH:

- FR-31B
- FR-32B/A
- FR-31Q

B-56

55° U-frame bottom twistlock



B-56L

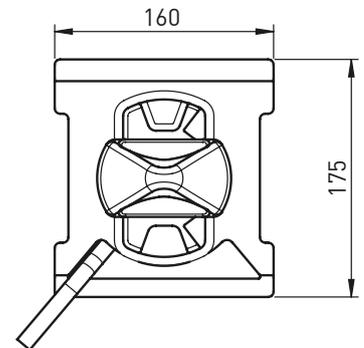
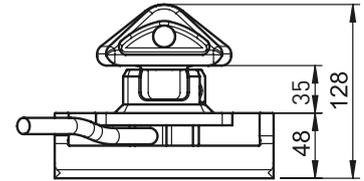
left locking

TO BE USED IN COMBINATION WITH:

- FR-34B
- FR-35B/A
- FR-34BQ
- FR-47B
- FR-48B/A

B-57

55° U-frame bottom twistlock



B-57L

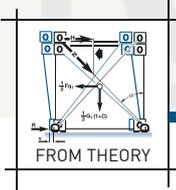
left locking

TO BE USED IN COMBINATION WITH:

- FR-34B
- FR-35B/A
- FR-34BQ
- FR-47B
- FR-48B/A

SPECIFICATIONS

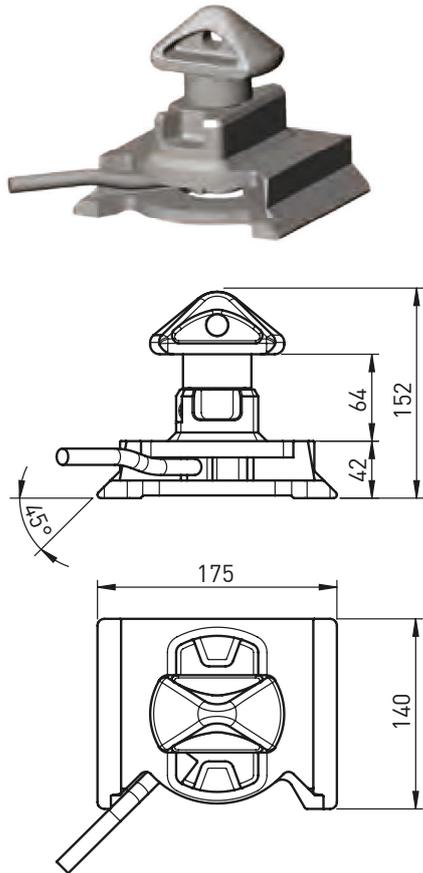
(MSL) Max. securing load: tension 250kN, shear 210kN
 (MBL) Min. breaking load: tension 500kN, shear 420kN



Bottom Twistlocks - Line Load

B-45L

45° U-frame bottom twistlock



B-45LL

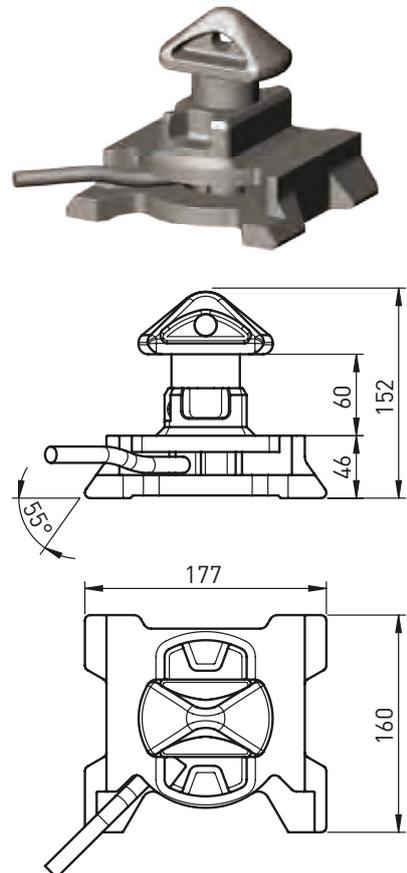
left locking

TO BE USED IN COMBINATION WITH:

- FR-31B
- FR-32B/A
- FR-31Q

B-55L

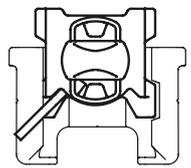
55° U-frame bottom twistlock



B-55LL

left locking

■ PRACTICE



TO BE USED IN COMBINATION WITH:

- FR-34B
- FR-35B/A
- FR-34BQ
- FR-47B
- FR-48B/A

■ SPECIFICATIONS

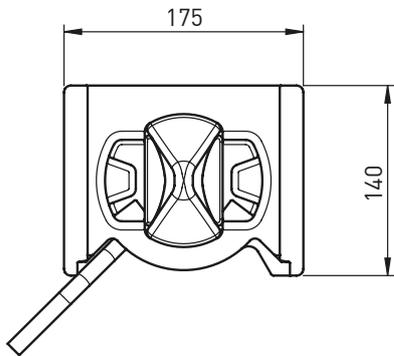
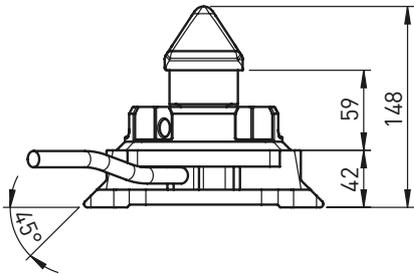
(MSL) Max. securing load: tension 250kN, shear 210kN
 (MBL) Min. breaking load: tension 500kN, shear 420kN
 Approval from any classification society
 For recess depth of 72 - 80mm



Bottom Twistlocks - Line Load Transversal

B-46L

45° U frame bottom twistlock



B-46LL

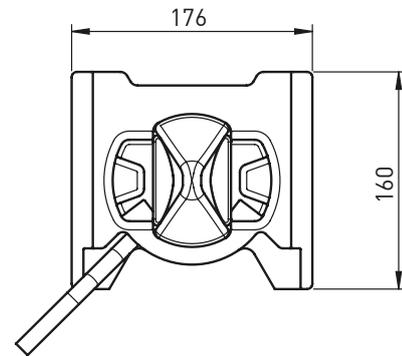
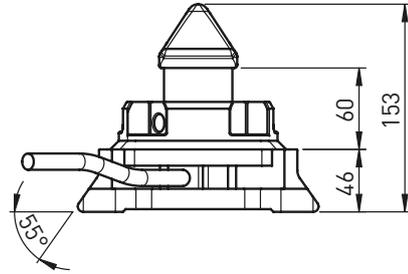
left locking

TO BE USED IN COMBINATION WITH:

FR-31B
FR-32B/A
FR-31Q

B-56L

55° U-frame bottom twistlock



B-56LL

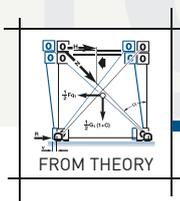
left locking

TO BE USED IN COMBINATION WITH:

FR-34B
FR-35B/A
FR-34BQ
FR-47B
FR-48B/A

SPECIFICATIONS

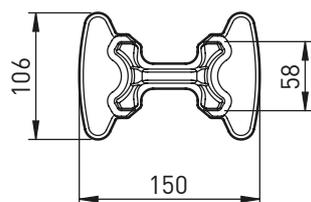
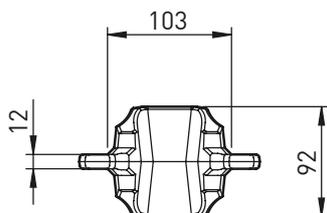
(MSL) Max. securing load: tension 250kN, shear 210kN
(MBL) Min. breaking load: tension 500kN, shear 420kN
Approval from any classification society



Stackers

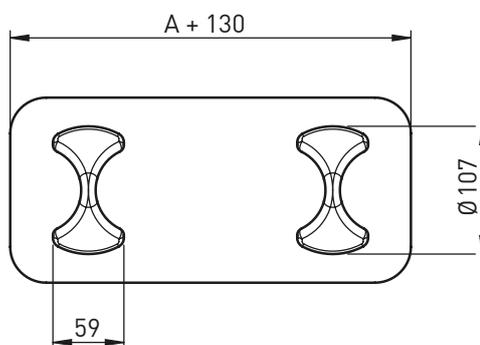
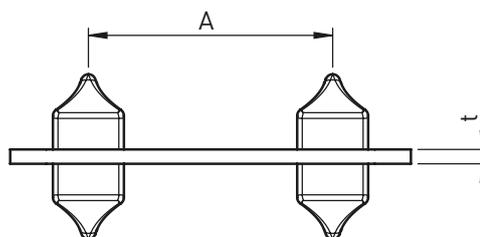
SI-1

Single stacker



SI-2/A/t

Double stacker



STANDARD SIZES

TYPE	A (mm)
SI-2/203/12	203
SI-2/216/12	216
SI-2/258/12	258
SI-2/366/12	366

SPECIFICATIONS

(MSL) Max. securing load: shear 210kN

(MBL) Min. breaking load: shear 420kN

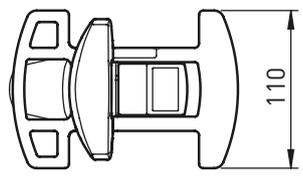
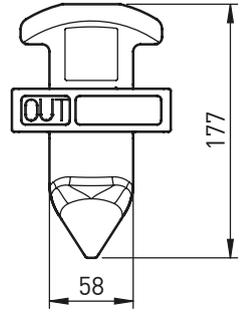
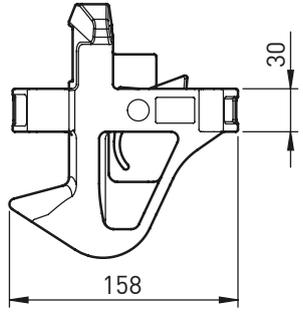
Standard 't': 12mm, other thicknesses upon request



Stackers

SI-6C

Semi-automatic stacker

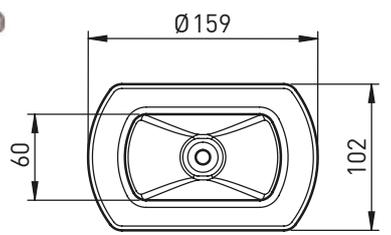
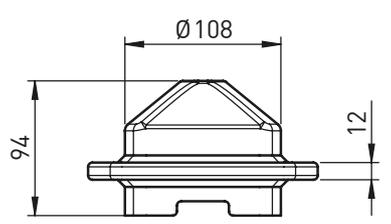


SPECIFICATIONS

(MSL) Max. Securing load: tension 250kN, shear 210kN
 (MBL) Min. breaking load: tension 500kN, shear 420kN
 Only to be used in combination with intermediate twistlocks

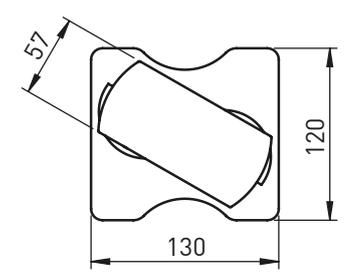
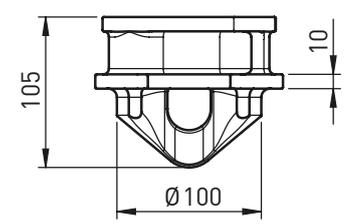
SB-5

ISO bottom stacker



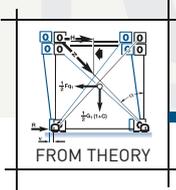
SI-5D

Terminal stacker



SPECIFICATIONS

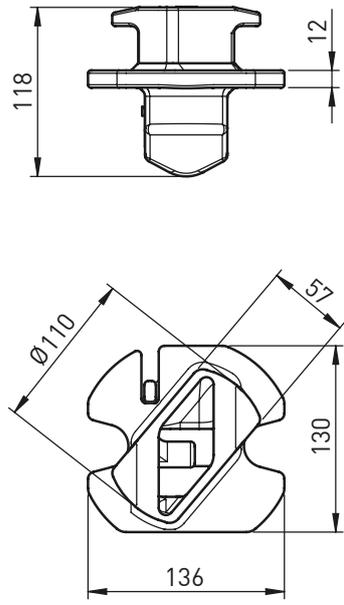
(MSL) Max. Securing load: shear 210kN
 (MBL) Min. Breaking load: shear 420kN



Stackers

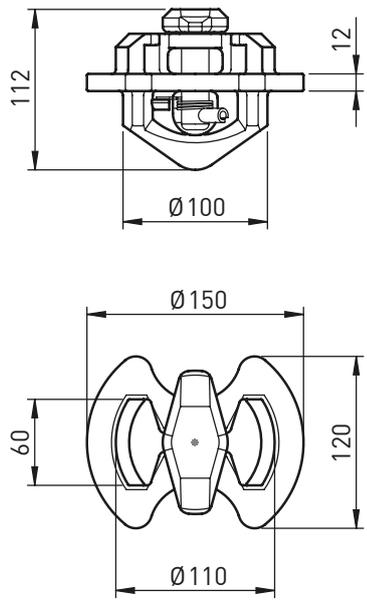
SI-7A

Safety stacker



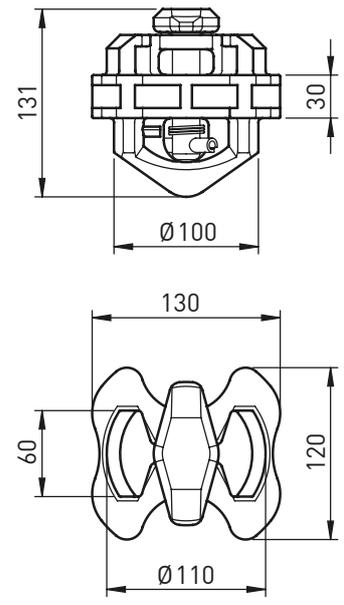
SI-7D

Self-hanging stacker



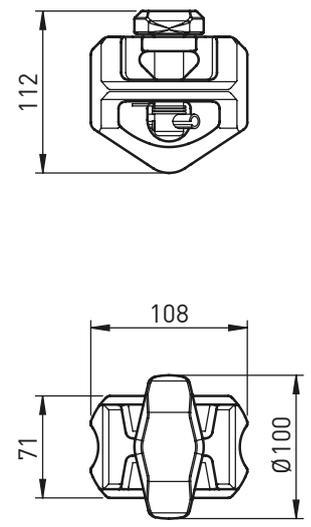
SI-7D/30

Self-hanging stacker



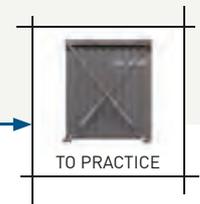
SI-7F

Safety stacker



SPECIFICATIONS

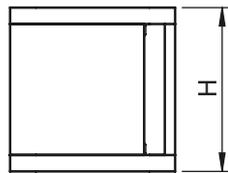
- (MSL) Max. securing load: shear 210kN
- (MBL) Min. breaking load: shear 420kN



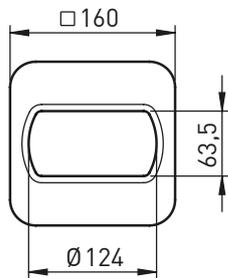
Height Adapter

SI-10

Height adapter

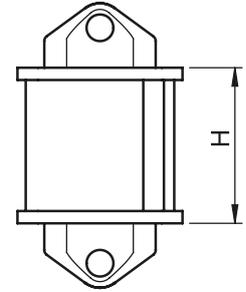


■ H = 210mm

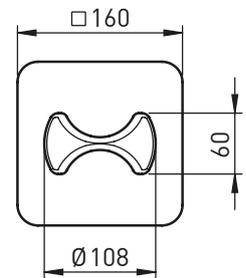


SI-11

Intermediate stacker



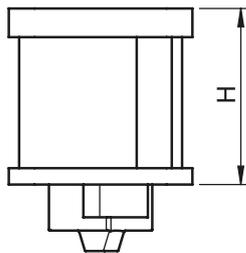
■ H = 164mm



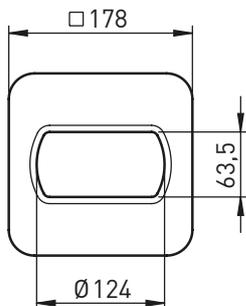
■ No restrain for uplift

SI-12

Height adapter

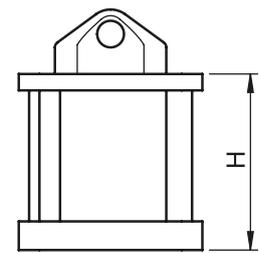


■ H = 152mm
= 305mm

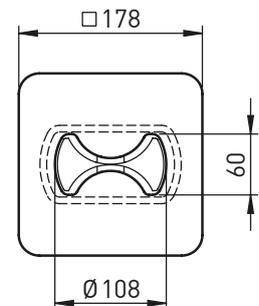


SI-14

Compensating cone



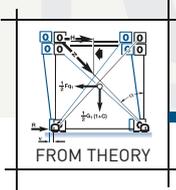
■ H = 152mm
= 305mm



■ No restrain for uplift

SPECIFICATIONS

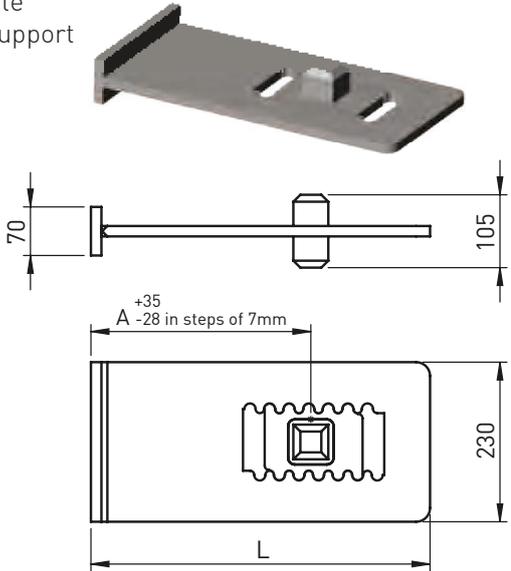
Other heights upon request
Strength depends on height



Side Supports

IP-04

Intermediate pressure support

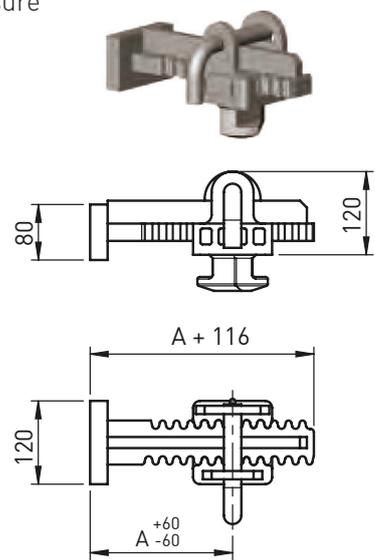


SPECIFICATIONS

(MSL) Max. securing load: tension 650kN
(MBL) Min. breaking load: tension 850kN

TP-04

Top pressure support

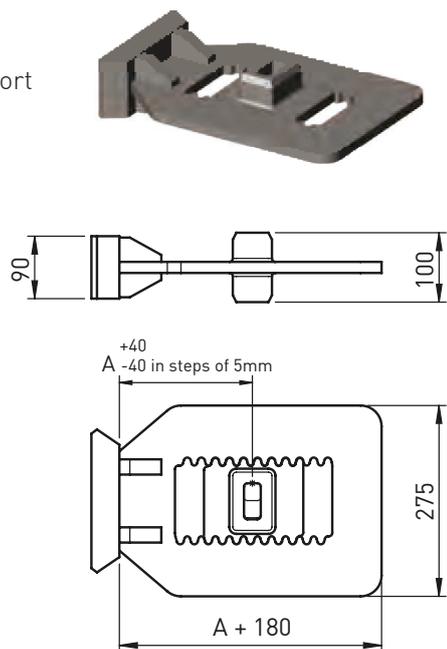


SPECIFICATIONS

(MSL) Max. securing load: tension 250kN
(MBL) Min. breaking load: tension 324kN

IT-14

Intermediate tension support

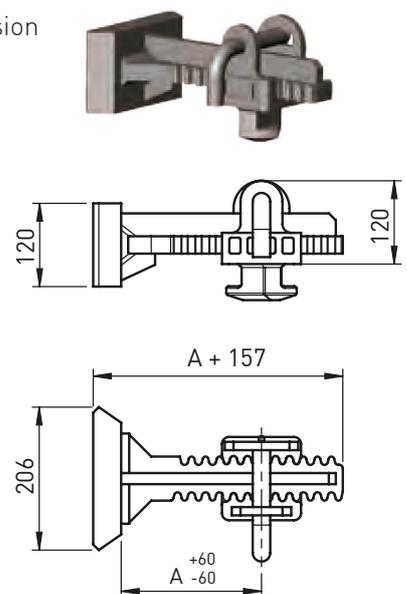


SPECIFICATIONS

(MSL) Max. securing load: tension 650kN
(MBL) Min. breaking load: tension 850kN

TT-14

Top tension support



SPECIFICATIONS

(MSL) Max. securing load: tension 250kN
(MBL) Min. breaking load: tension 324kN

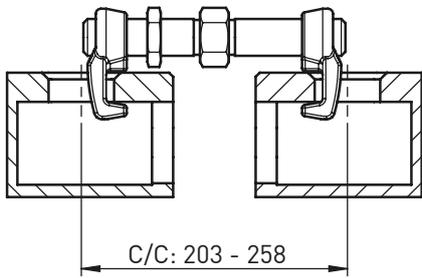


TO PRACTICE

Bridge Fittings

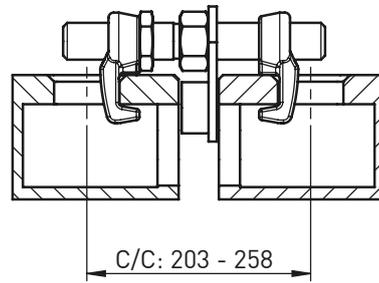
CL-1/50

Bridge fitting



CL-2

Bridge fitting



SPECIFICATIONS

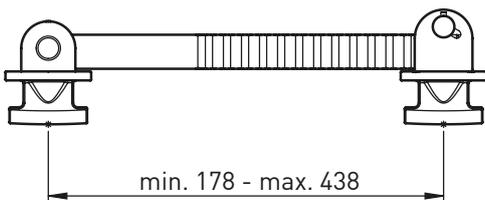
(MSL) Max. securing load: tension 50kN
(MBL) Min. breaking load: tension 100kN

SPECIFICATIONS

(MSL) Max. securing load: tension 50kN
(MBL) Min. breaking load: tension 100kN

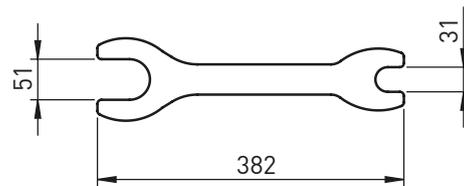
CL-6A

Bridge fitting



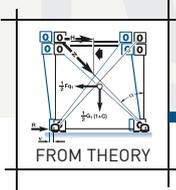
S-91/30-50

Bridge fitting key



SPECIFICATIONS

(MSL) Max. securing load: tension 150kN
(MBL) Min. breaking load: tension 300kN



Lashing Rods

LR-03/L (Eye type)

One tier high:
L = 2400
Two tier high:
L = 4600



LR-04/L (Extension rod)

L = 310
L = 420
L = 600



LR-63/L (Knob type)

One tier high:
L = 2450
Two tier high:
L = 4700
L = 4950

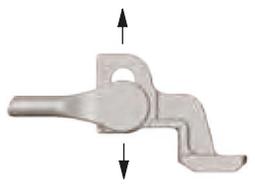


LR-64/L (Extension rod)

L = 405
L = 550



LR-63E/L (External type)



LR-65B/L (For vertical lashing)

Two tier high:
L = 4400



LR-65T/L (For vertical lashing)

Two tier high:
L = 4400



SPECIFICATIONS

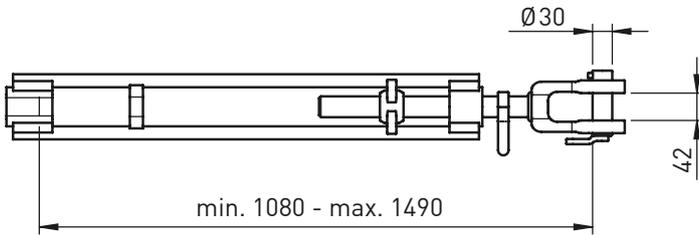
(MSL) Max. securing load: tension 250kN
(MBL) Min. breaking load: tension 500kN



Turnbuckles

S-32B

Turnbuckle with jaw



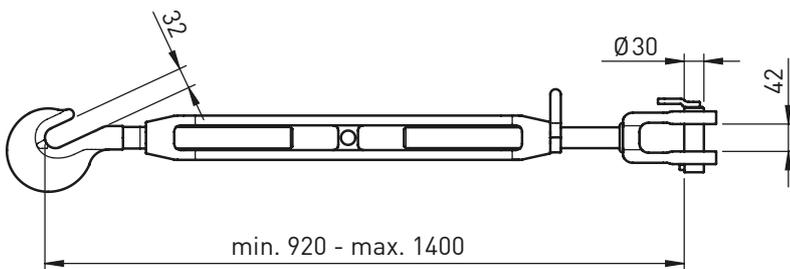
S-97A

Spanner for S-32B



S-312/50

Turnbuckle with jaw and hook



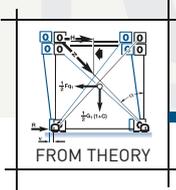
S-96

Pin spanner for S-312/50
S-24
S-25



SPECIFICATIONS

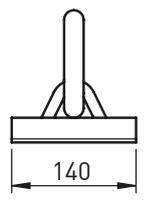
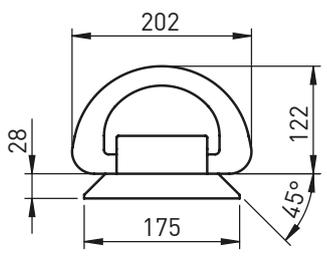
(MSL) Max. securing load: tension 250kN
(MBL) Min. breaking load: tension 500kN



Removable Lashing Points

LE-4

45° U-frame D-ring

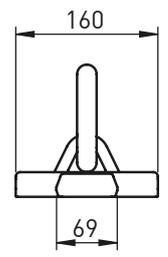
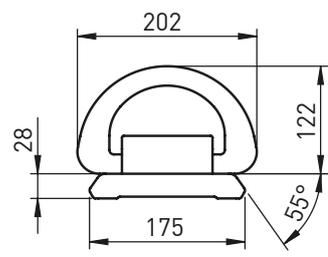


SPECIFICATIONS

MSL*: tension 176kN
 MBL*: tension 353kN

LE-5A

55° U-frame D-ring

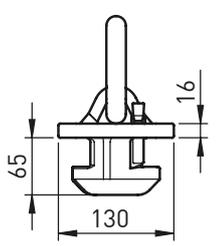
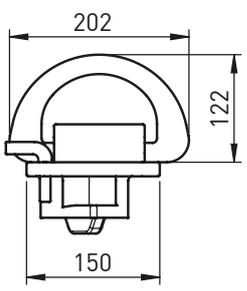


SPECIFICATIONS

MSL*: tension 176kN
 MBL*: tension 353kN

LE-3

Turnfoot D-ring

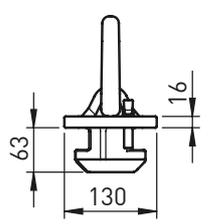
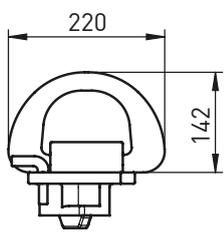


SPECIFICATIONS

MSL*: tension 176kN
 MBL*: tension 353kN

LE-3/50

Turnfoot D-ring

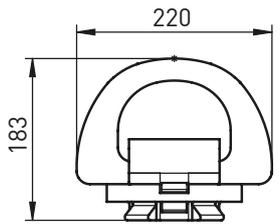


SPECIFICATIONS

MSL*: tension 250kN
 MBL*: tension 500kN

LE-12

Breach base D-ring

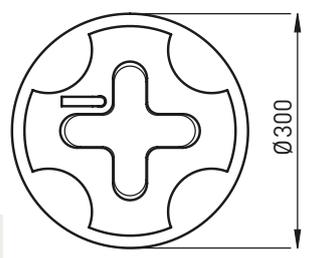
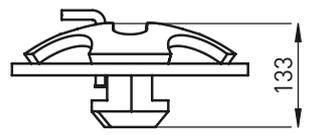


SPECIFICATIONS

MSL*: tension 250kN
 MBL*: tension 500kN

LE-6

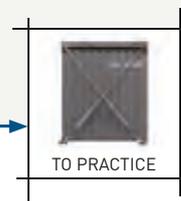
Turnfoot lashing point



SPECIFICATIONS

MSL*: tension 100kN
 MBL*: tension 200kN

* MSL = Max. securing load
 MBL = Min. breaking load

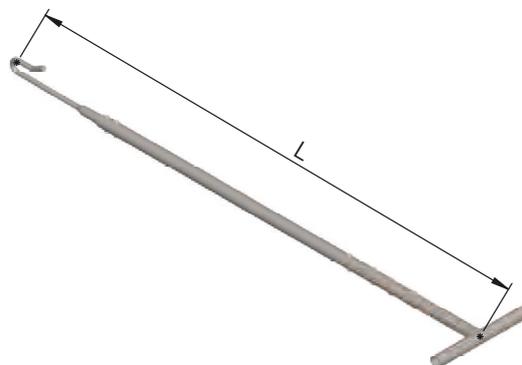


Tools

S-90/L

Actuator pole
(For standard twistlock)

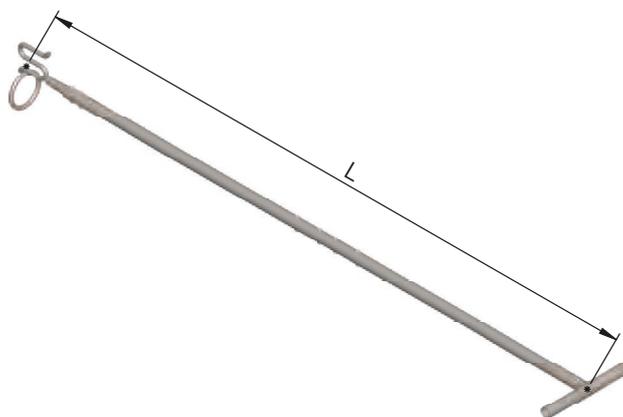
REF.	L IS ACCORDING TO ORDERS (mm)
S-90/4.0	4000
S-90/6.0	6000



S-99/L

Operation pole
(For semi-automatic twistlock)

REF.	L IS ACCORDING TO ORDERS (mm)
S-99/7.5	7500
S-99/5.0	5000
S-99/1.8	1800

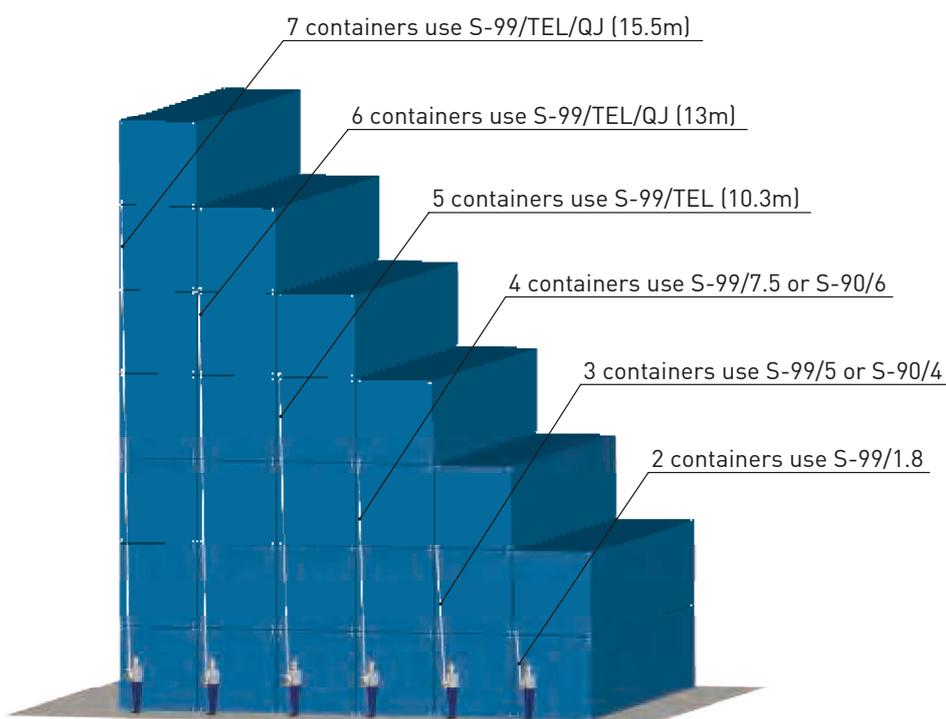


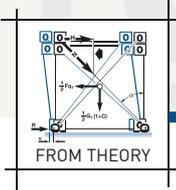
■ Also available as telescopic or quick joint:

S-99/TEL (telescopic)



S-99/TEL/QJ (quick joint)



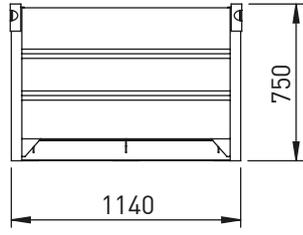
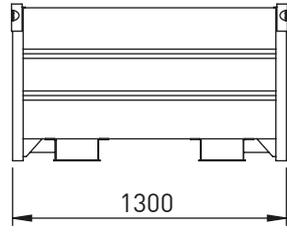


Flat Racks

Z-8/2

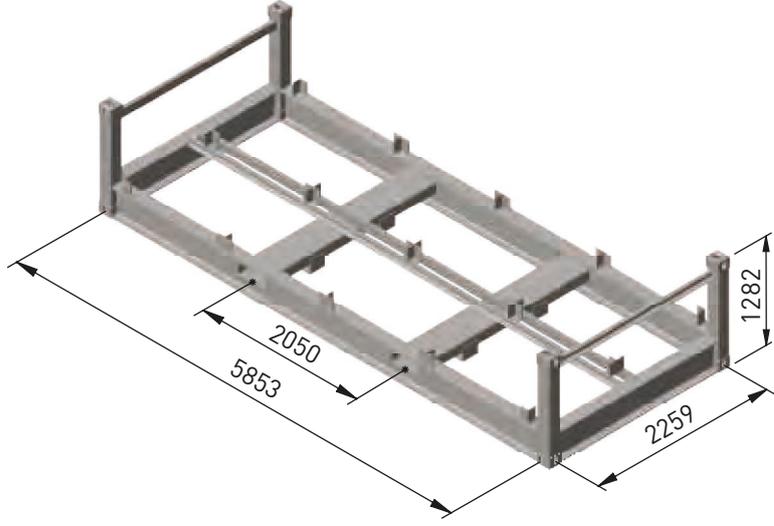
Bin

REF.	WEIGHT (kg)	CAPACITY (t)	USE WITH
Z-8/2	106	2,0	Z-8/20



Z-8/20

20' Flat rack



SPECIFICATIONS

- Capacity: 8 bins Z-8/2
- Weight: 2100kg
- Max. gross weight: 24t

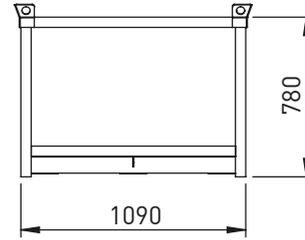
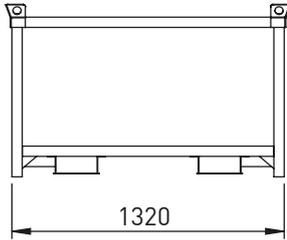
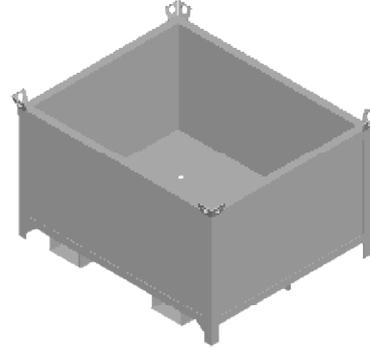


Flat Racks

Z-8/3

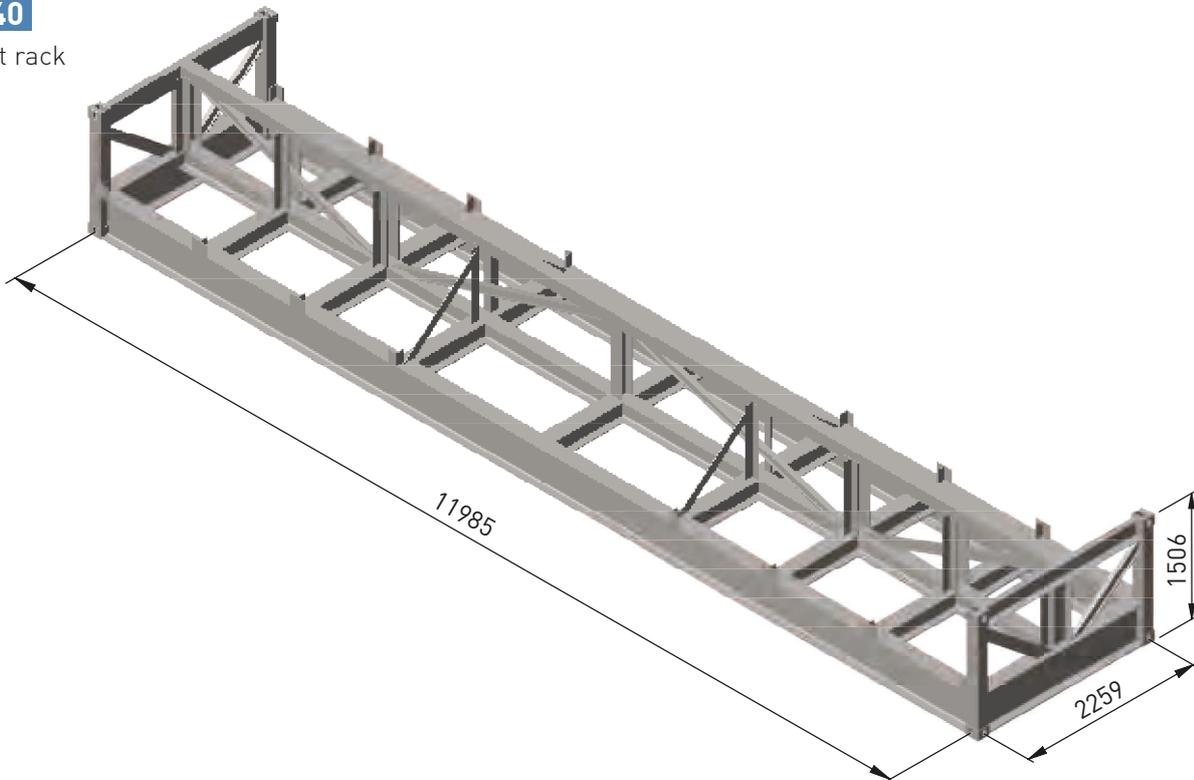
Bin

REF.	A (mm)	CAPACITY (t)	USE WITH
Z-8/3	1090	2,0	Z-8/40



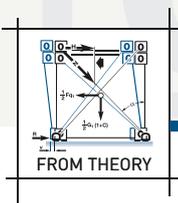
Z-8/40

40' flat rack



SPECIFICATIONS

- Capacity: 12 bins Z-8/3
- Weight: 4300kg
- Max. gross weight: 28t



High Tensile Turnbuckles

Instructions for use

IMPORTANT

Turnbuckles must be used for straight or in-line pulling only. Special attention should be paid to prevent overloading.

While tensioning, the forces on the turnbuckle must not be such that any deformation occurs. In case of deformation, the tension should be decreased immediately and deformed parts should be replaced. Should extreme circumstances or shock loading be applicable this must be taken into account when selecting the correct products to be used for the application.

Closed body rigging screws and commercial open body rigging screws are used for tensioning wires and ropes for minor loads (i.e. rope railings). The WLL values are only indicative, and these products are not suitable for bearing constructions.

For the rigging of wires, ropes, rods etc., Green Pin® turnbuckles and turnbuckles according to DIN 1480 with forged eyes or with welding ends are to be used.

The Working Load Limit (WLL) should be applied in a straight pull only and overloading is not permitted. Nor should side loads be applied, as the products have not been designed for this purpose.

It is required that the products are regularly inspected and that the inspection should take place in accordance with the safety standards given in the country of use. This is required because the products in use may be affected by wear, misuse, overloading etc. with a consequence of deformation and alteration of the steel structure.

Safe use of turnbuckles

Turnbuckles should be inspected before use to insure that:

- the threads of the body and the end fittings are of the same type;
- the threads of the body and the end fittings are undamaged

Furthermore, it must be ensured that the end fittings are correctly screwed into the body. Always use the locking nuts supplied to prevent the turnbuckles from unscrewing.

Never replace an end fitting, other than the one designed for the purpose, as it may not be suitable for the loads imposed.



TO PRACTICE

High Tensile Steel Turnbuckles

In accordance with ASTM F 1145-92 (EX FF-T-791B)

Material: Drop forged high tensile steel SAE 1035 or 1045
 Safety Factor: MBL = 5 x WLL
 Finishing: Hot dipped galvanized

IMPORTANT: This material should NEVER be used for lifting.



T 1



T 2



T 3



T 4

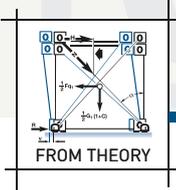


T 5

THREAD Ø X TAKE-UP		WLL T 3, 4, 5	WLL T 1, 2	L CLOSED	WEIGHT T 1	WEIGHT T 2	WEIGHT T 3	WEIGHT T 4	WEIGHT T 5
(inch)	(mm)	(kg)	(kg)	(mm)	(kg)	(kg)	(kg)	(kg)	(kg)
3/8 x 6	9,53 x 152	540	450	302	0,36	0,47	0,47	0,51	0,57
1/2 x 6	12,7 x 152	1000	680	338	0,62	0,82	0,84	0,89	0,96
1/2 x 9	12,7 x 229	1000	680	414	0,85	1,06	1,05	1,1	1,18
1/2 x 12	12,7 x 305	1000	680	490	1,04	1,28	1,26	1,31	1,5
5/8 x 6	15,9 x 152	1590	1020	394	0,98	1,31	1,35	1,58	1,84
5/8 x 9	15,9 x 229	1590	1020	470	1,18	1,56	1,6	1,84	2,12
5/8 x 12	15,9 x 305	1590	1020	546	1,71	1,71	1,92	2,22	2,56
3/4 x 6	19,1 x 152	2360	1360	432	1,53	2,04	2,03	2,34	2,68
3/4 x 9	19,1 x 229	2360	1360	508	1,88	4,49	2,49	2,72	3,03
3/4 x 12	19,1 x 305	2360	1360	584	2,3	2,3	2,65	2,95	3,29
3/4 x 18	19,1 x 457	2360	1360	737	2,85	2,85	3,06	3,3	3,65
7/8 x 12	22,2 x 305	3270	1810	618	3,33	3,33	3,98	4,35	4,9
7/8 x 18	22,2 x 457	3270	1810	772	4,24	4,24	5,12	5,46	5,95
1 x 6	25,4 x 152	4540	2270	524	3,87	3,87	4,35	4,66	5,21
1 x 12	25,4 x 305	4540	2270	676	5,09	5,09	5,92	6,35	6,96
1 x 18	25,4 x 457	4540	2270	829	6	6	7,17	7,98	8,95
1 x 24	25,4 x 610	4540	2270	980	7,52	7,52	7,52	7,39	7,85
1 1/4 x 12	31,8 x 305	6900	2950	753	8,12	8,12	9,8	10,92	11,9
1 1/4 x 18	31,8 x 457	6900	2950	905	10,4	10,4	11,31	11	14
1 1/4 x 24	31,8 x 610	6900	2950	1058	12,1	12,1	12,1	12,9	13
1 1/2 x 12	38,1 x 305	9710	3400	804	12,7	12,7	14,2	13,1	16,9
1 1/2 x 18	38,1 x 457	9710	3400	956	15,1	15,1	16,5	14,7	18,7
1 1/2 x 24	38,1 x 610	9710	3400	1109	17,1	17,1	17,1	17,8	18,4
1 3/4 x 18	44,5 x 457	12700	-	1049	-	-	23,1	22,3	25
1 3/4 x 24	44,5 x 610	12700	-	1201	-	-	26,3	27,5	28,7
2 x 24	51 x 610	16780	-	1295	-	-	40,7	42,9	45,4
2 1/2 x 24	63,5 x 610	27220	-	1476	-	-	64	68	73
2 3/4 x 24	70,1 x 610	34020	-	1560	-	-	88	91	98

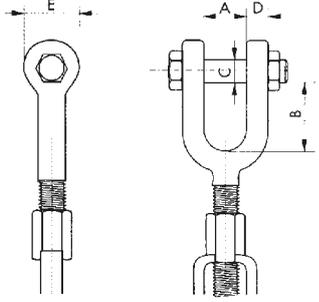
All the turnbuckles are provided with locking nuts.

T5 is supplied with pins for sizes 3/4" up to and including 2 3/4" (locking nuts on request).



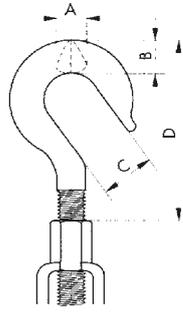
High Tensile Steel Turnbuckle Terminations

Clevis



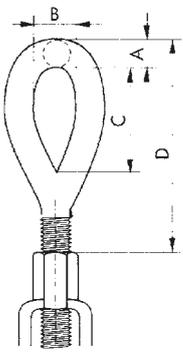
Ø THREAD		WLL (kg)	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
(inch)	(mm)						
3/8	9,53	540	13	22	8	8	21
1/2	12,7	1000	16	26	9,5	10	25
5/8	15,9	1590	18	33	13	13	33
3/4	19,1	2360	23	38	15,5	16	41
7/8	22,2	3270	27	44	19	18	48
1	25,4	4540	30	52	22	20	54
1 1/4	31,8	6900	44	73	29	25	67
1 1/2	38,1	9710	52	70	35	27	80
1 3/4	44,5	12700	59	85	41	33	90
2	51	16780	64	93	51	39	108
2 1/2	63,5	27220	75	114	57	38	143
2 3/4	70	34020	89	110	70	42	156

Hook



Ø THREAD		WLL (kg)	A (mm)	B (mm)	C (mm)	D (mm)
(inch)	(mm)					
3/8	9,53	450	10	15	14	58
1/2	12,7	680	13	19	17	72
5/8	15,9	1020	16	23	22	90
3/4	19,1	1360	20	27	25	98
7/8	22,2	1810	23	30	29	126
1	25,4	2270	25	35	32	144
1 1/4	31,8	2270	28	37	39	175
1 1/2	38,1	3400	33	44	47	212

Eye



Ø THREAD		WLL (kg)	A (mm)	B (mm)	C (mm)	D (mm)
(inch)	(mm)					
3/8	9,53	540	9	13	28	65
1/2	12,7	1000	12	18	36	80
5/8	15,9	1590	14	21	43	98
3/4	19,1	2360	17	25	53	113
7/8	22,2	3270	20	31	59	118
1	25,4	4540	22	36	74	155
1 1/4	31,8	6900	29	45	88	197
1 1/2	38,1	9710	32	54	105	215
1 3/4	44,5	12700	38	60	119	254
2	51	16780	45	69	146	308
2 1/2	63,5	27220	51	79	165	344
2 3/4	70	34020	57	83	178	381

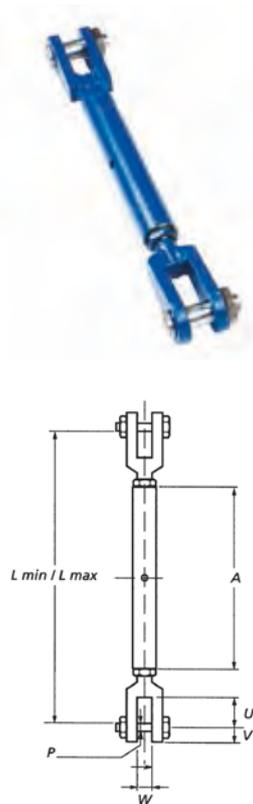


TO PRACTICE

Heavy Duty Turnbuckles With Trapezium Thread

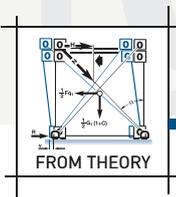
IMPORTANT: Turnbuckles should NEVER be used for lifting.

Jaw/Jaw



WLL (t)	LENGTH CLOSED (mm)	LENGTH OPEN (mm)	JAW OPENING (mm)	Ø PIN (mm)	WEIGHT (kg)
1	354	522	19	16	2
1,6	384	572	23	20	3
2	412	612	26	22	4
2,5	506	712	30	24	6
3,1	537	765	32	27	8
4	569	810	35	30	10
5	610	850	40	36	15
6,3	691	954	45	39	21
8	742	1038	50	45	31
10	793	1102	60	48	40
12,6	862	1202	65	52	52
16	926	1280	70	60	69
20	1010	1392	75	68	85
25	1084	1488	80	72	98
31,5	1170	1600	90	80	141
40	1280	1775	100	90	176
50	1390	1940	110	100	240
63	1525	2130	120	110	340
80	1655	2315	140	125	420
100	1750	2465	156	140	510
125	1880	2650	176	160	600
160	2090	2970	200	180	690

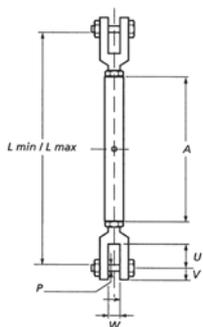




M Turnbuckles

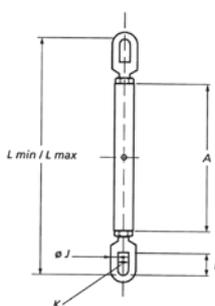
IMPORTANT: Turnbuckles should NEVER be used for lifting.

Jaw/Jaw



WLL (t)	MBL (t)	THREAD	L min (mm)	L max (mm)	TAKE UP (mm)	DIMENSIONS (mm)					WEIGHT (kg)
						A	P	U	V	W	
0,3	1,5	M 8	203	305	102	127	6	21	9	9	0,2
0,5	2,5	M10	245	355	110	160	8	21	9	11	0,3
0,7	3,5	M12	345	525	180	230	10	35	13	19	0,8
1,2	6	M16	395	565	170	230	12	50	16	21	1,4
1,5	7,5	M20	395	555	160	230	16	46	18	21	2,2
2,2	11	M22	476	702	226	305	20	60	20	25	3,5
3,2	16	M24	580	860	280	360	22	63	24	30	4,1
3,8	19	M27	600	870	270	356	22	63	24	31	4,5
5	25	M33	650	930	280	385	24	74	30	38	6,4
6,3	31,5	M36	680	910	230	385	30	85	30	48	11
7	35	M39	670	949	279	407	34	90	32	47	11
8,5	42,5	M45	780	1020	240	410	35	120	43	50	19
10	55	M48	743	977	234	407	43	121	46	51	22
12,6	63	M56	862	1202	340	500	52	122	60	65	39
16	80	M64	925	1280	355	540	60	130	65	70	48

Oval Eye / Oval Eye



WLL (r)	MBL (r)	THREAD	L min (mm)	L max (mm)	TAKE UP (mm)	DIMENSIONS (mm)				WEIGHT (kg)
						A	J	K	L	
0,3	1,5	M 8	203	305	102	127	8	9	20	0,3
0,5	2,5	M10	235	349	114	152	8	11	25	0,4
0,7	3,5	M12	330	530	200	229	11	14	36	0,9
1,2	6	M16	377	560	183	229	14	18	40	1,2
1,5	7,5	M20	410	565	155	229	17	25	55	2
2,2	11	M22	486	730	244	305	17	25	55	3,1
3,2	16	M24	556	856	300	356	20	26	57	3,9
3,8	19	M27	576	856	280	356	20	26	57	4,8
5	25	M33	640	920	280	381	25	34	64	6,8
6,3	31,5	M36	650	920	270	381	27	38	75	9
7	35	M39	687	970	283	407	27	38	75	10
8,5	42,5	M45	720	1020	300	407	30	40	85	14
10	50	M48	770	1020	280	407	37	44	92	18

SPECIFICATIONS

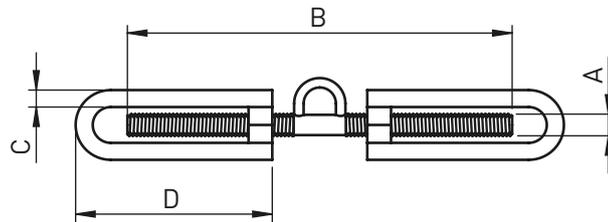
- Standard hot dip galvanized
- Factory supplied with locking nuts
- Bolt secured with nut and split pin
- Straight or in-line pull only



Wire Lashing

S-01

Hamburger turnbuckle



TYPE	MBL (t)	THREAD Ø (mm) A	THREAD LENGTH (mm) B	BOW Ø (mm) C	BOW LENGTH (mm) D	WEIGHT (kg)
S-01/24/400	13	24	400	16	210	2,8
S-01/24/500	13	24	500	16	260	3,8
S-01/27/400	18	27	400	18	210	4,4
S-01/27/500	18	27	500	18	260	5,5
S-01/30/400	20	30	400	20	210	5
S-01/30/500	20	30	500	20	260	6,3
S-01/36/400	21	36	400	20	210	7
S-01/36/500	21	36	500	20	260	8,8

Lashing wire

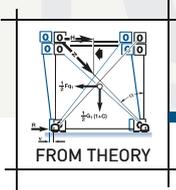


CONSTRUCTION	Ø (mm)	MBL (kN)	WEIGHT (kg/100m)
6 x 12 + FC	8	20	14
6 x 19 + FC	10	29	22
6 x 19 + FC	12	46	28
6 x 19 + FC	14	59	43
6 x 19 + FC	16	165	87
6 x 19 + FC	18	206	108
6 x 19 + FC	20	251	132
6 x 19 + FC	22	308	162

Lashing fibre rope

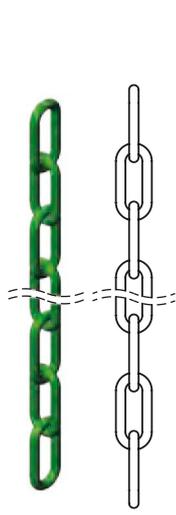


Ø (mm)	MBL (kN)	WEIGHT (kg/100m)
8	9,41	4
10	13,97	8,6
12	19,9	11,5

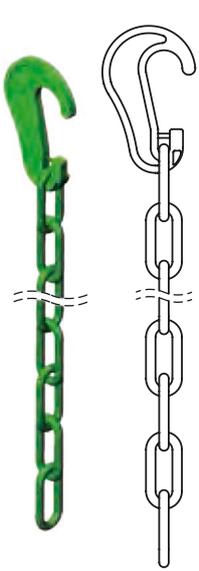


Lashing Chains

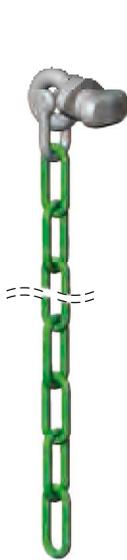
LC-00



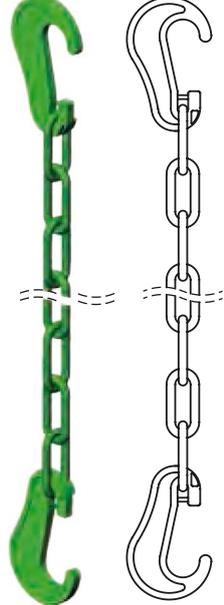
LC-01



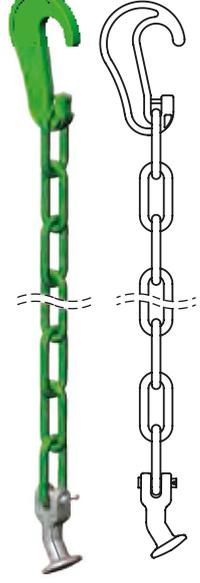
LC-03



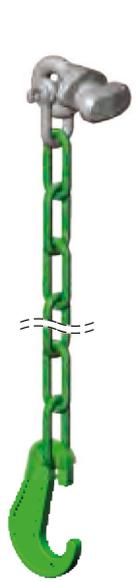
LC-11



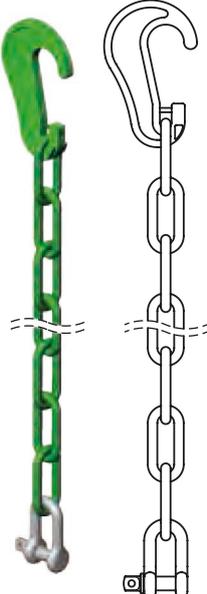
LC-12



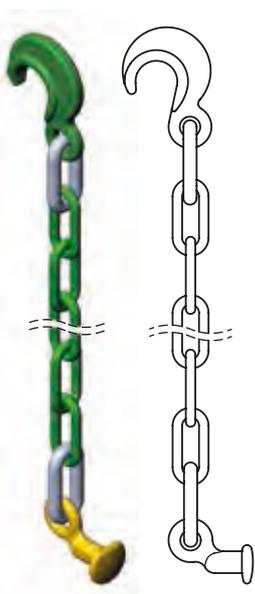
LC-13



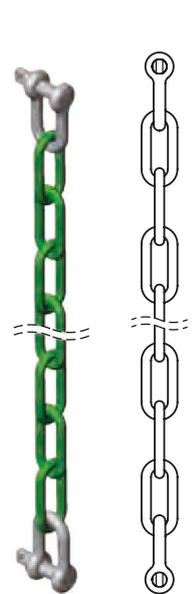
LC-14



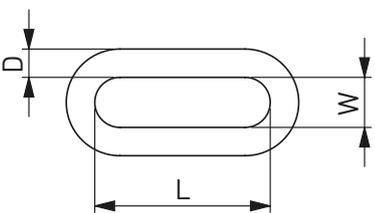
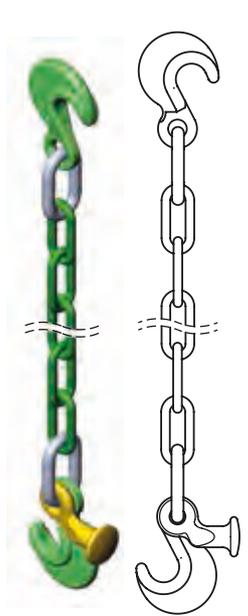
LC-112



LC-44



LC-112A



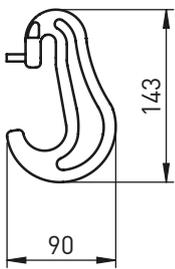
DIAMETER (mm)	LENGTH (mm)	WIDTH (mm)	WEIGHT (kg)	(MSL) MAX. SEC. LOAD (kN)	(MBL) MIN. BREAK. LOAD (kN)
9	56	15	1,45	50	100
11	65	18	2,2	63	125
13	80	23	3	100	200



Hooks

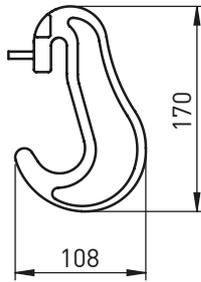
H-12/9

Hook for 9mm lashing



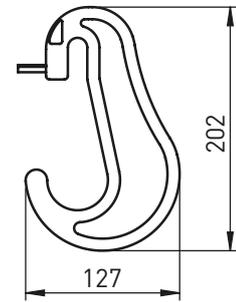
H-12/11

Hook for 11mm lashing



H-12/13

Hook for 13mm lashing



SPECIFICATIONS

(MSL) Max. securing load: tension 50kN
(MBL) Min. breaking load: tension 100kN

SPECIFICATIONS

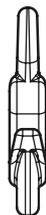
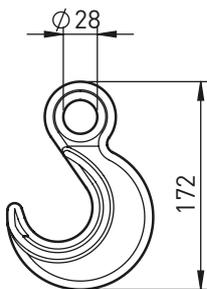
(MSL) Max. securing load: tension 75kN
(MBL) Min. breaking load: tension 150kN

SPECIFICATIONS

(MSL) Max. securing load: tension 100kN
(MBL) Min. breaking load: tension 200kN

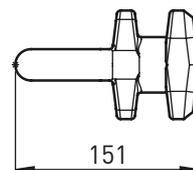
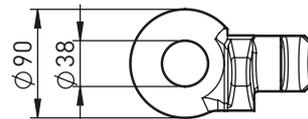
H-10

Eye hook



H-30

Securing pad

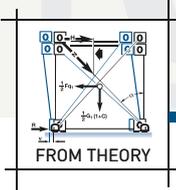


SPECIFICATIONS

(MSL) Max. securing load: tension 100kN
(MBL) Min. breaking load: tension 200kN

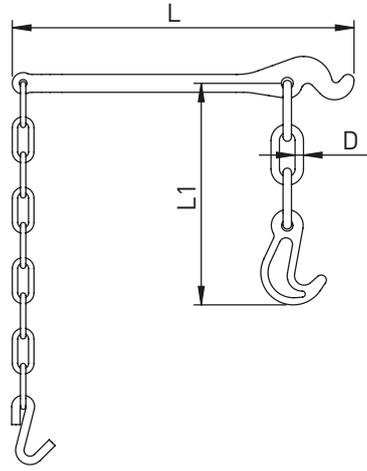
SPECIFICATIONS

(MSL) Max. securing load: tension 120kN
(MBL) Min. breaking load: tension 240kN



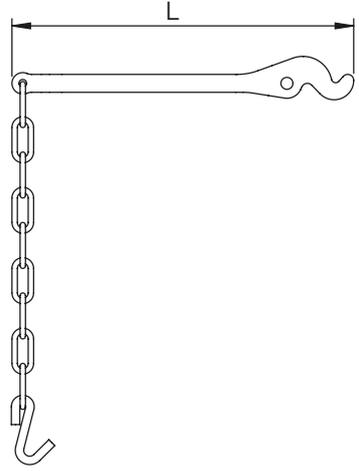
Chain Tension Levers

WITH FLAT HOOK FOR SHORTENING



REF.	Ø (mm)	L (mm)	L1 (mm)	D (mm)	MSL (kN)	MBL (kN)	COLOR
S-510	9	575	275	11	50	100	Yellow
S-530	11	590	335	12	75	150	Blue
S-550	13	570	370	14	100	200	Green

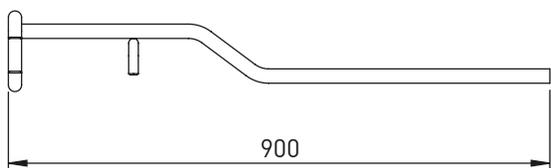
WITHOUT FLAT HOOK FOR SHORTENING



REF.	Ø (mm)	L (mm)	MSL (kN)	MBL (kN)	COLOR
S-540	11	590	75	150	Blue
S-560	13	570	100	200	Green

S-92B

Lever extension



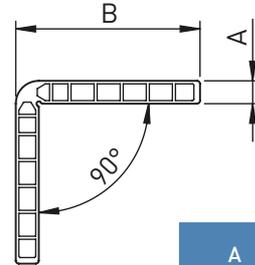
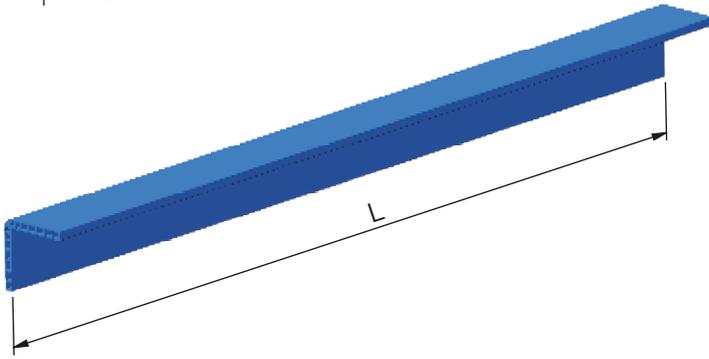


TO PRACTICE

Cargo Accessories

Z-1

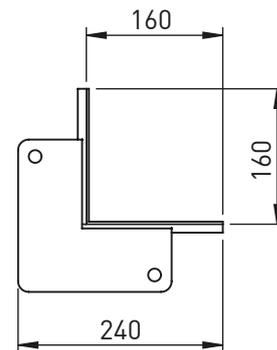
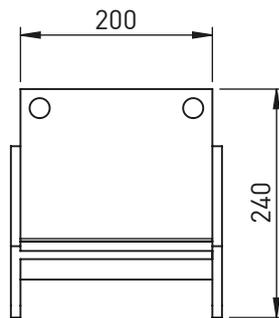
Corner protection



A (mm)	B (mm)
15	120
19	190

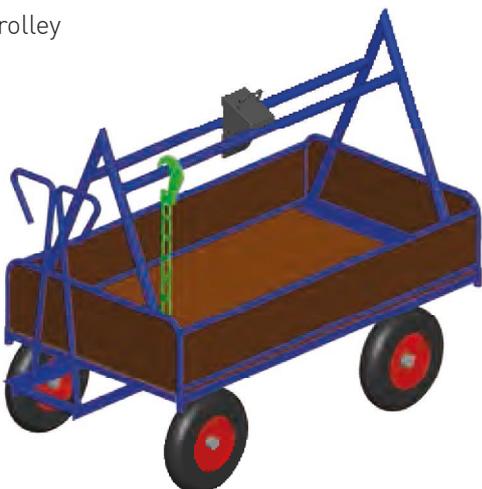
Z-2A

Heavy duty corner protection



Z-27

Transport trolley



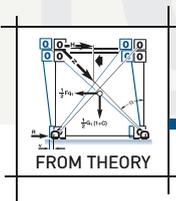
Z-23

Traffic cone



SPECIFICATION

Capacity: 1t



Cargo Accessories

Z-25

Dunnage wood



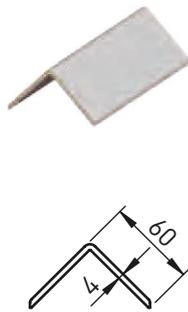
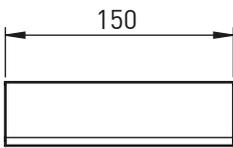
Z-12

Tarpaulin for bins



Z-1A

Cardboard corner protector



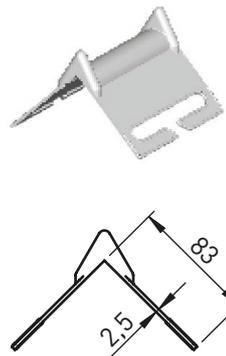
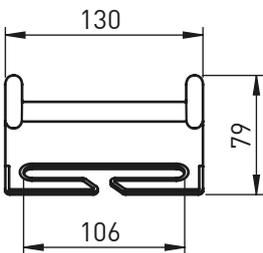
Z-10

Anti-skid mats



Z-1B

Plastic corner protector



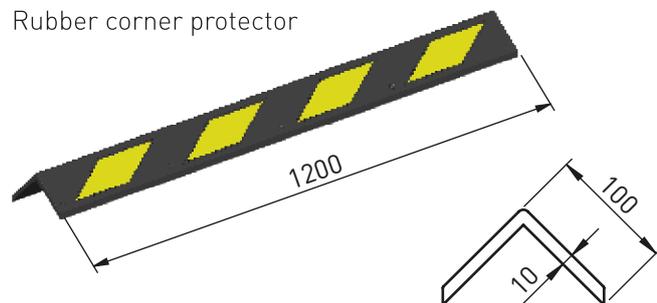
Z-6

Stepladder



Z-1R

Rubber corner protector

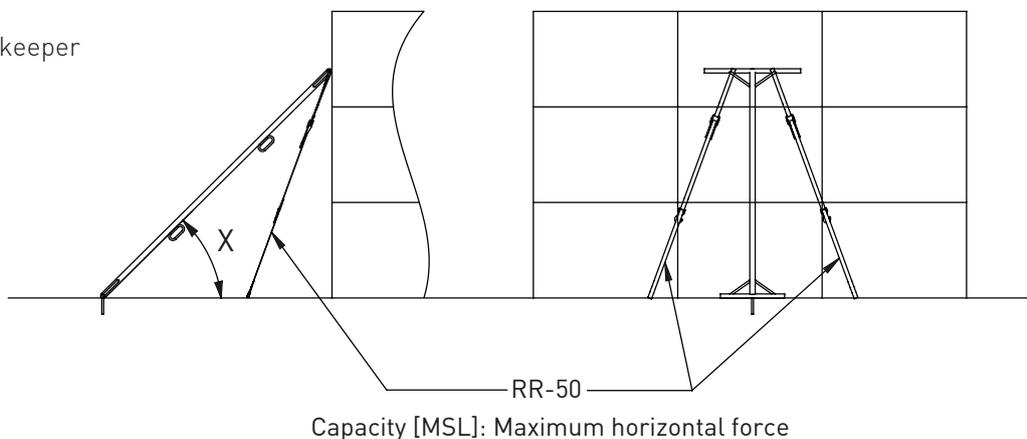




Reefer Keeper

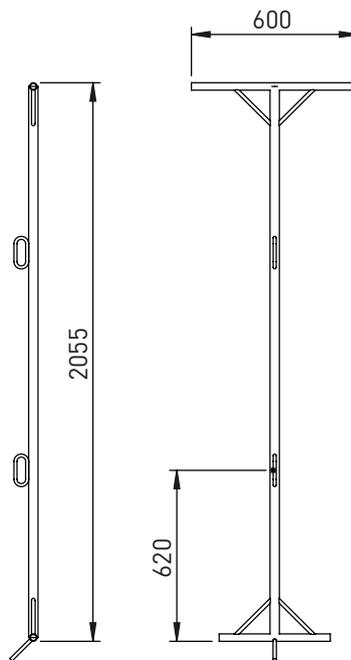
Z-13

Reefer keeper

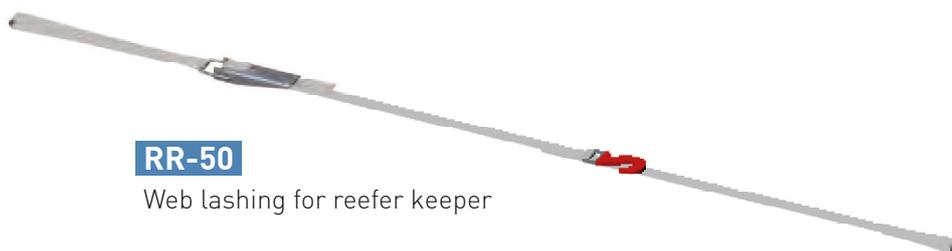


Capacity [MSL]: Maximum horizontal force

ANGLE X	ONE LASHING (kg)	TWO LASHINGS (kg)
30°	1090	1090
45°	750	1340
60°	430	870



■ ADDITIONAL MATERIALS FOR SECURING PALLETIZED CARGO



RR-50

Web lashing for reefer keeper



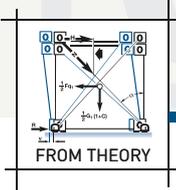
H-9A

T-hook for grating



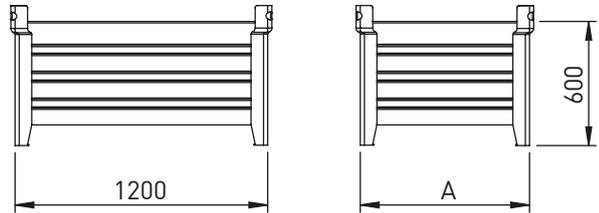
H-9C

Hook for grating



Bins

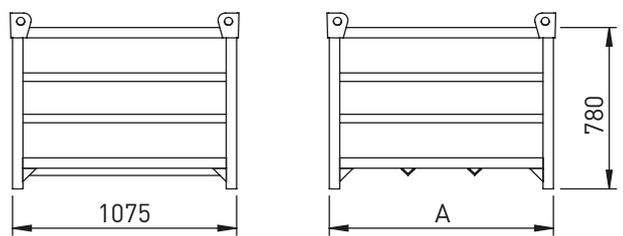
Z-8/1



REF.	A (mm)	WEIGHT (kg)	CAPACITY (t)
Z-8/1	800	71	1,5

Z-8/4

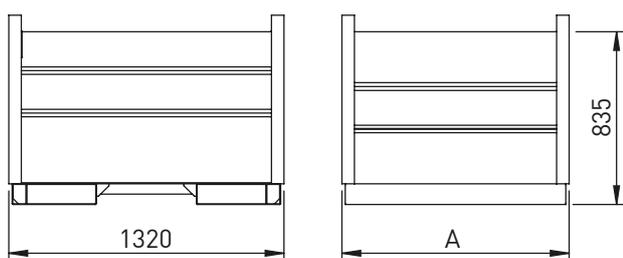
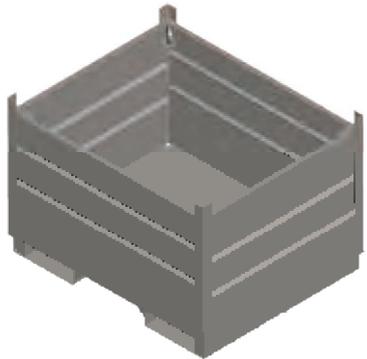
Bin for flat rack



REF.	A (mm)	WEIGHT (kg)	CAPACITY (t)
Z-8/4	1075	100	2,0

Z-8/6

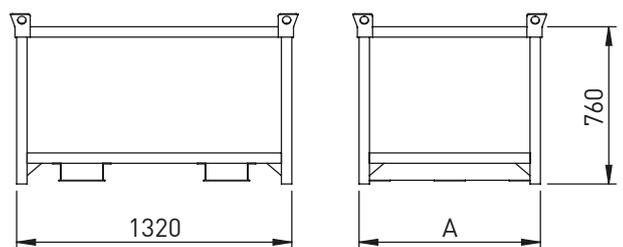
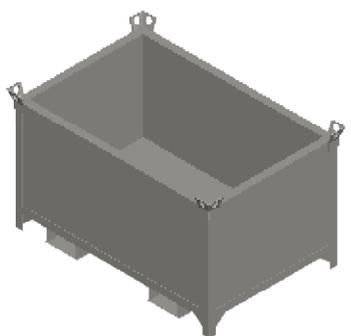
Bin for flat rack



REF.	A (mm)	WEIGHT (kg)	CAPACITY (t)
Z-8/6	1090	180	2,0

Z-8/7

Bin for flat rack



REF.	A (mm)	WEIGHT (kg)	CAPACITY (t)
Z-8/7	870	120	2,0

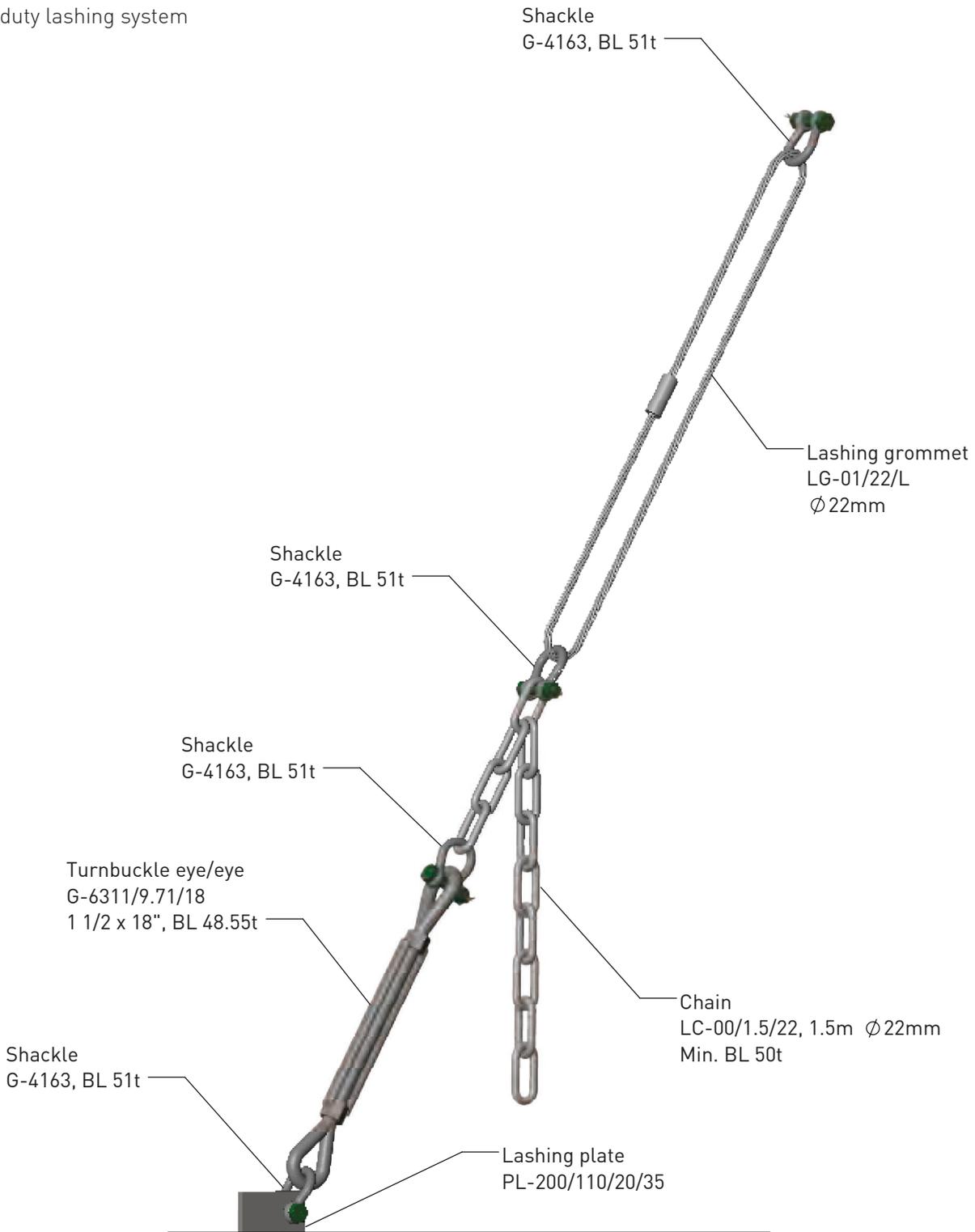


TO PRACTICE

Heavy Duty Lashing

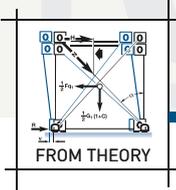
Z-80

Heavy duty lashing system



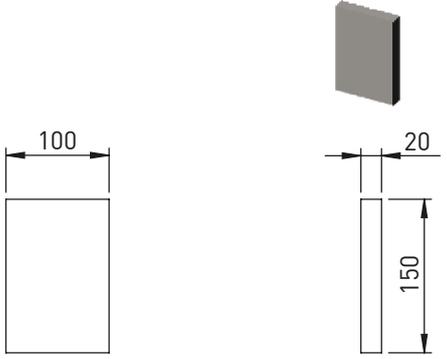
SPECIFICATIONS

(MSL) Max. securing load: 10t
Safety factor: 4

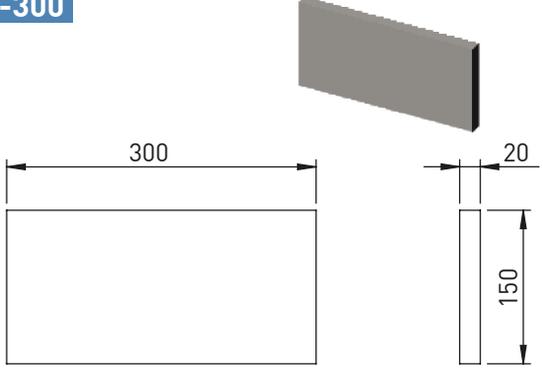


Stopper Plates

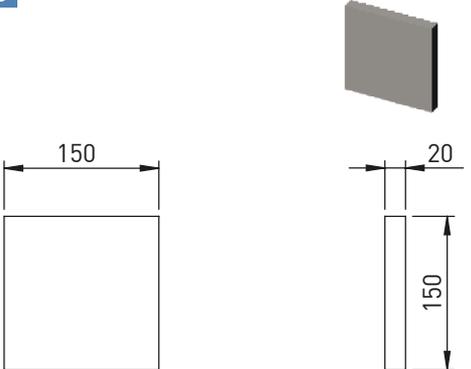
PL-100



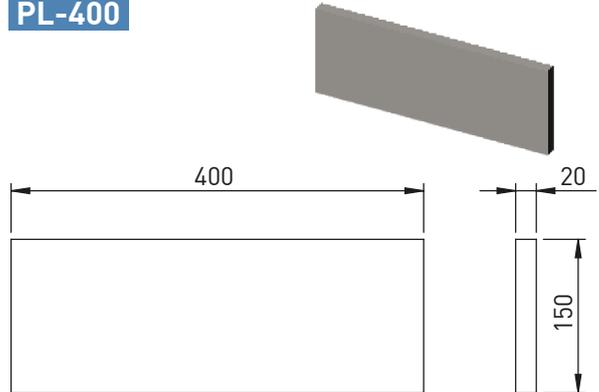
PL-300



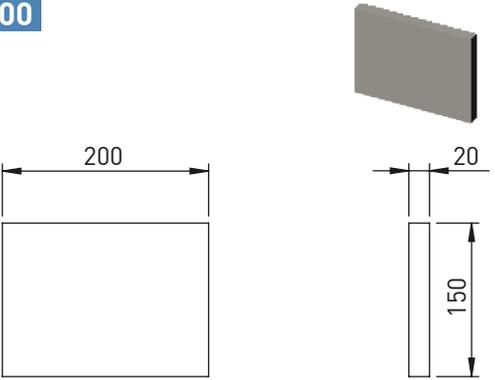
PL-150



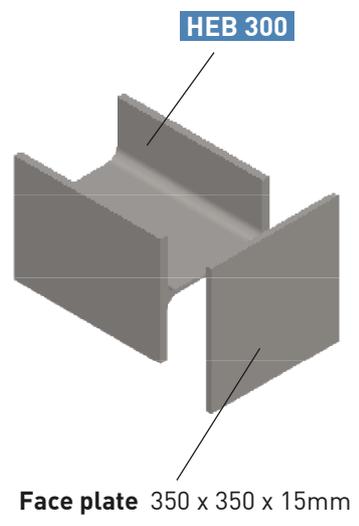
PL-400



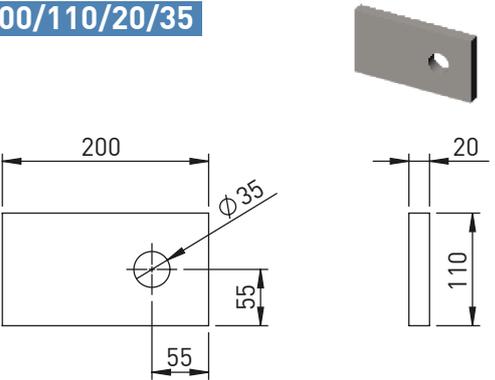
PL-200



STOPPER BEAM



PL-200/110/20/35



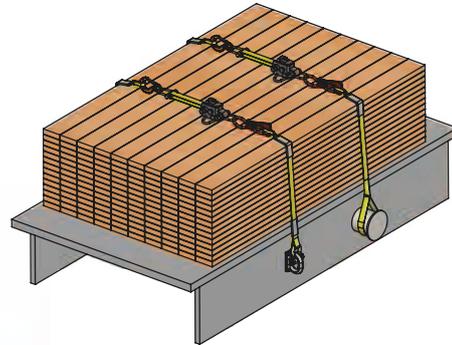


TO PRACTICE

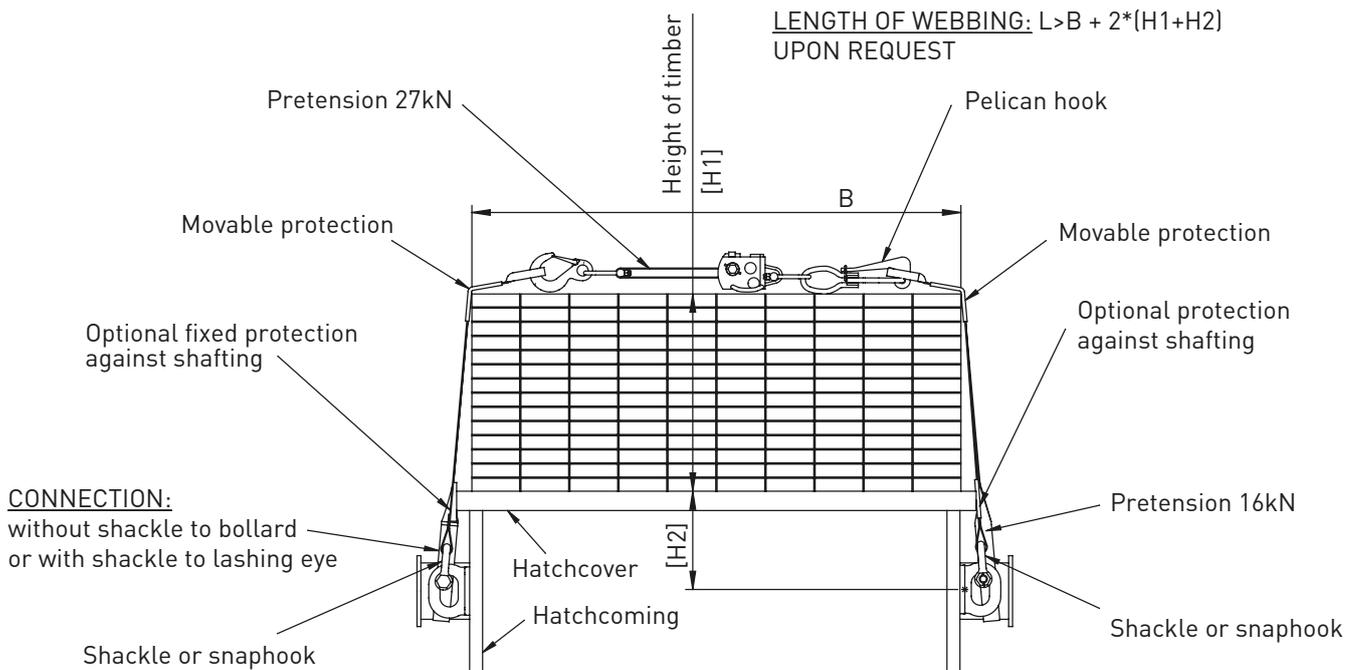
Complete Lashing System

Z-7

Timber lashing system

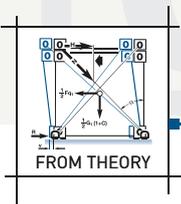


LENGTH OF WEBBING: $L > B + 2 * (H1 + H2)$
UPON REQUEST



SPECIFICATION

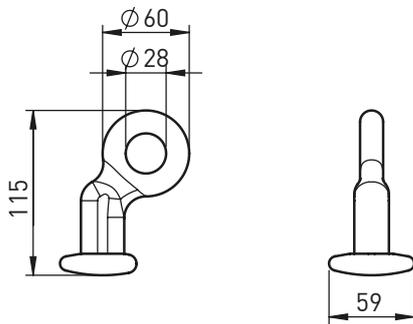
(MSL) Max. securing load: 133kN



Hooks

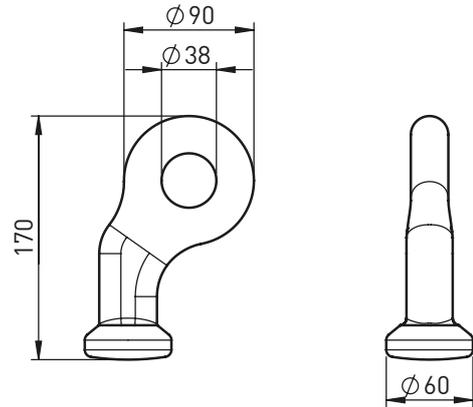
H-20

Elephant foot with eye



H-20/50

Elephant foot with eye



■ SPECIFICATION

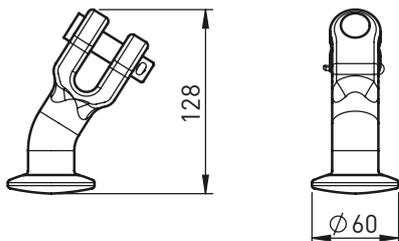
(MSL) Max. securing load: tension 100kN
(MBL) Min. breaking load: tension 200kN

■ SPECIFICATION

(MSL) Max. securing load: tension 245kN
(MBL) Min. breaking load: tension 490kN

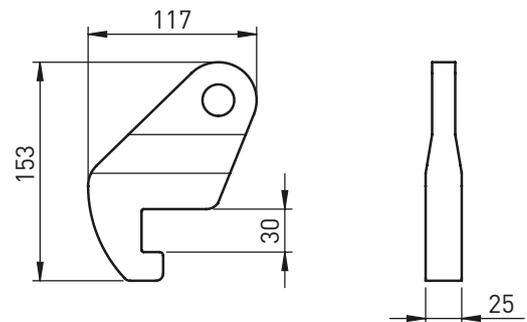
H-21

Elephant foot with jaw



H-43

Hook for ISO-hole



■ SPECIFICATION

(MSL) Max. securing load: tension 100kN
(MBL) Min. breaking load: tension 200kN

■ SPECIFICATION

(MSL) Max. securing load: tension 100kN
(MBL) Min. breaking load: tension 200kN

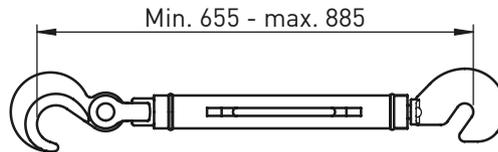


TO PRACTICE

Chain Spanners - Turnbuckles

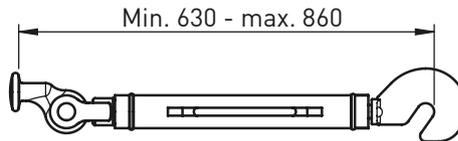
S-21A

Chain turnbuckle:
hook - hook



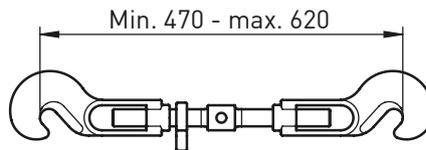
S-23

Chain turnbuckle:
elephant foot - hook



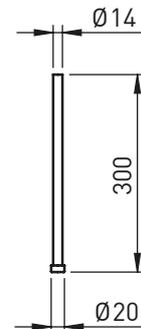
S-24

Chain turnbuckle:
hook - hook



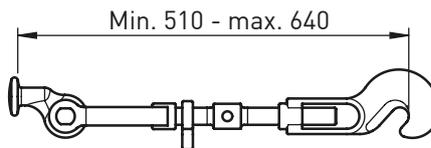
S-96

Spanner for S-312/50
S-24
S-25



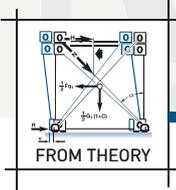
S-25

Chain turnbuckle:
elephant foot - hook



SPECIFICATION

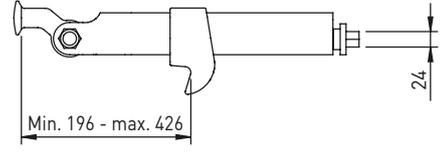
(MSL) Max. securing load: tension 100kN
(MBL) Min. breaking load: tension 200kN



Chain Spanners - Speedkings

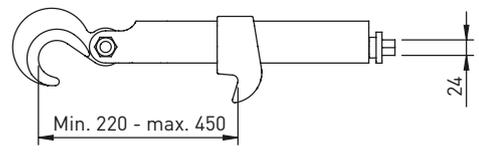
S-42

Speedking with elephant foot



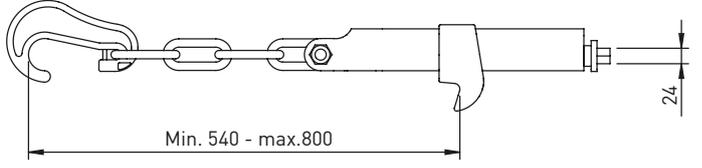
S-44

Speedking with hook



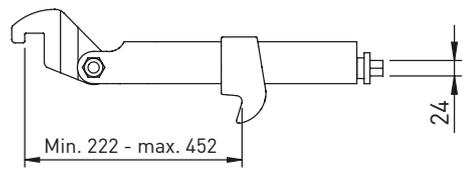
S-45

Speedking with chain and hook



S-46

Speedking with ISO hook



PNEUMATIC TOOLS FOR SPEEDKINGS



S-98A

S-98

S-98D

S-98B

S-98C

SPECIFICATION

(MSL) Max. securing load: tension 100kN
 (MBL) Min. breaking load: tension 200kN



TO PRACTICE

Lashing Straps

RR-33/3/50

Hook-hook trailer lashing with ratchet



SPECIFICATIONS

(MBL) Min. breaking load: 12t
Length: 3m

RR-33/3/75

Hook-hook (swivel) trailer lashing with ratchet



SPECIFICATIONS

(MBL) Min. breaking load: 20t
Length: 3m

RR-34/3/50

Hook-elephant foot trailer lashing with ratchet



SPECIFICATIONS

(MBL) Min. breaking load: 12t
Length: 3m

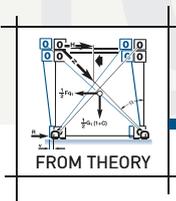
RR-34/3/75

Hook (swivel)-elephant foot trailer lashing with ratchet



SPECIFICATIONS

(MBL) Min. breaking load: 20t
Length: 3m



Lashing Straps

RR-35

Hook-hook trailer lashing with 28mm nut winch



SPECIFICATIONS

(MBL) Min. breaking load: 20t
Length upon request

S-93

28mm nut winch handle, to be used with RR-35 or RR-36



RR-36

Hook-elephant foot trailer lashing with 28mm nut winch

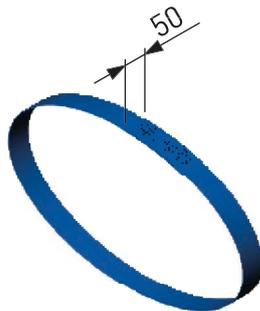


SPECIFICATIONS

(MBL) Min. breaking load: 20t
Length upon request

RR-38/3/50

Truck loop

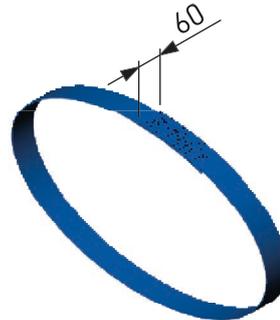


SPECIFICATIONS

Circumference: 3000mm
(MBL) Min. breaking load: 9t

RR-38/3/60

Truck loop



SPECIFICATIONS

Circumference: 3000mm
(MBL) Min. breaking load: 15t

RR-40

Car loop



SPECIFICATIONS

Circumference: 1000mm
(MBL) Min. breaking load: 2,5t

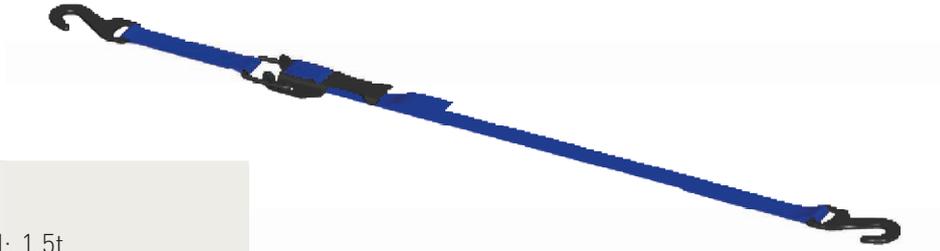


TO PRACTICE

Car Lashing Straps

RR-31

Car lashing



SPECIFICATIONS

(MBL) Min. breaking load: 1,5t
Max. working length: 2m

RR-31A and RR-31A/20

Car lashing with loop



SPECIFICATIONS

(MBL) Min. breaking load RR-31A: 1,5t
(MBL) Min. breaking load RR-31A/20: 2t
Max. working length: 2m

RR-31C/20

Car lashing with loop

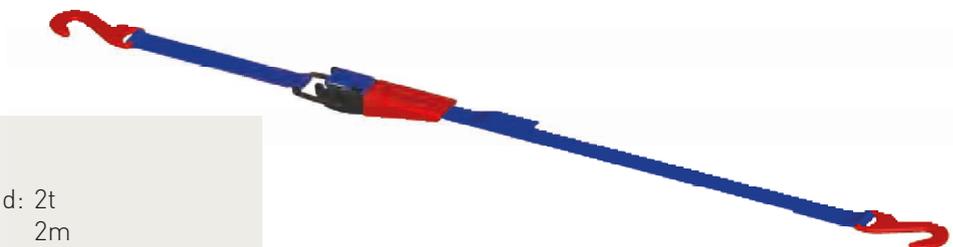


SPECIFICATIONS

(MBL) Min. breaking load: 2t
Max. working length: 2m

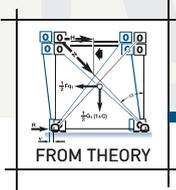
RR-31D

Car lashing



SPECIFICATIONS

(MBL) Min. breaking load: 2t
Max. working length: 2m



Vehicle Lashing Straps

RR-32/L/50

Cargo lashing with ratchet



SPECIFICATIONS

(MBL) Min. breaking load: 5t
Length: 3m/5m/9m

RR-32/L/75

Cargo lashing with ratchet



SPECIFICATIONS

(MBL) Min. breaking load: 10t
Length: 10m/15m/20m/25m

RR-321/L/50

Bus lashing with ratchet



SPECIFICATIONS

(MBL) Min. breaking load: 5t
Length: 5m/9m

RR-321/L/75

Bus lashing with ratchet

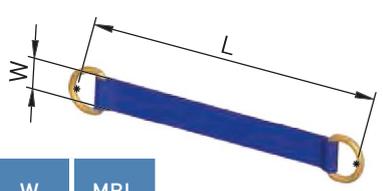


SPECIFICATIONS

(MBL) Min. breaking load: 10t
Length: 10m/15m

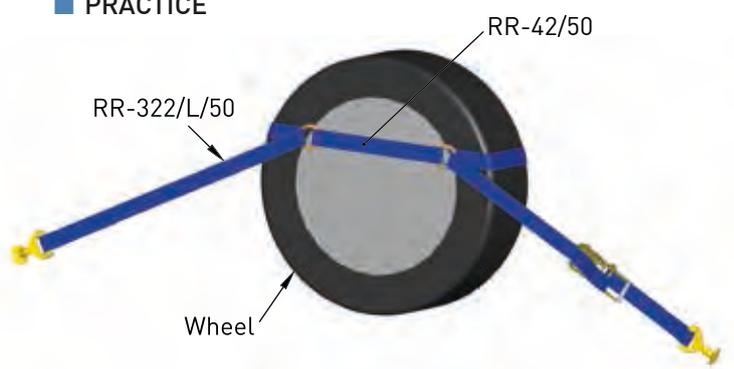
RR-42

For wheel lashing



REF.	L (mm)	W (mm)	MBL (t)
RR-42/50	520	50	5
RR-42/75	850	75	10

PRACTICE



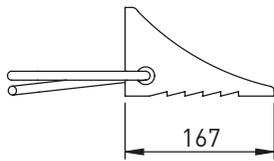
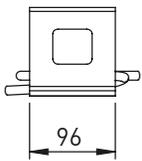


TO PRACTICE

Chocks and Jacks

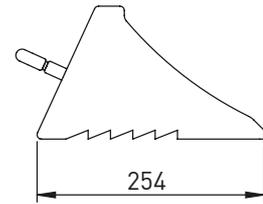
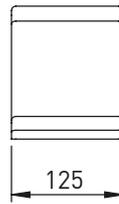
RR-01

Car chock



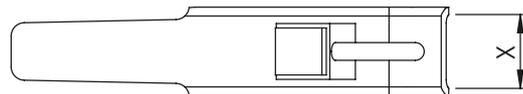
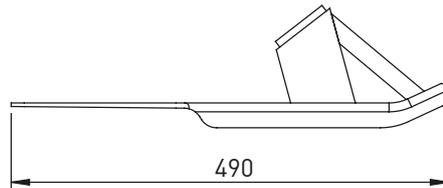
RR-02

Trailer chock



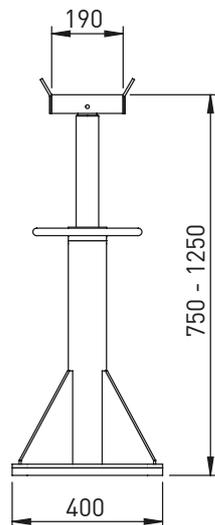
RR-03

Railway chock



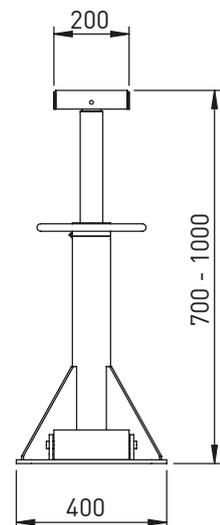
RR-11

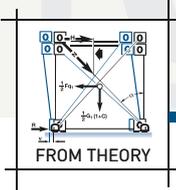
Trailer jack



RR-14

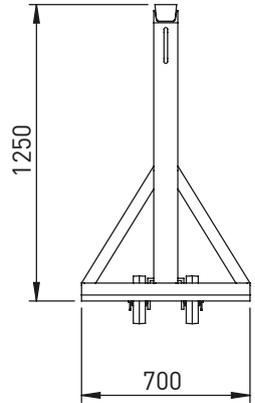
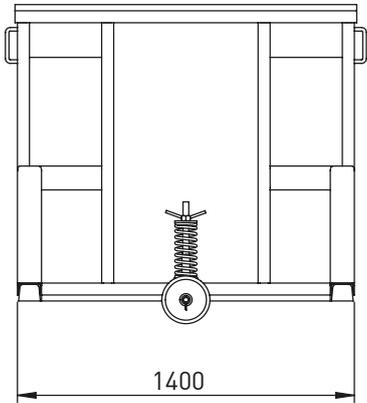
Rail car jack



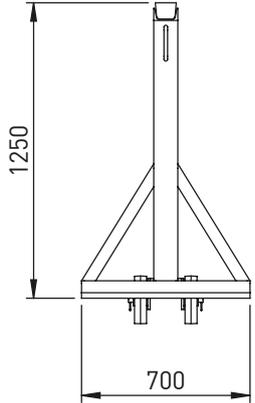
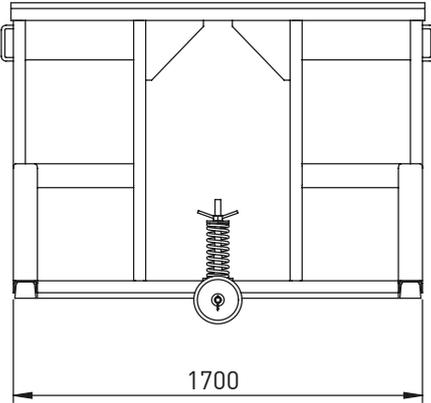


Trailer Horses

RR-21/140



RR-21/170



ALTERNATIVE PARTS

Synthetic top beam



Rubber wheels



SPARE PARTS

Wheels



Wheel assembly



SPECIFICATIONS

(MBL) Min. Breaking load: compression 1000kN
 Other types on request
 Spare: hardwood top beams, synthetic top beams, wheels and wheel assembly



DISTRIBUCIÓN • INGENIERÍA ELEVACIÓN • CEPILLERÍA INDUSTRIAL

OFICINAS CENTRALES
Marqués de Valterra, 33 Bajo. 36202 VIGO (ESPAÑA)
Telf.: +34 986 29 89 00 Fax: +34 986 29 89 04



DELEGACIÓN CENTRO
Las Rozas (MADRID)
Telf.: +34 91 636 36 77 / +34 629 15 66 06

www.pescaira.com • pescaira@pescaira.com

