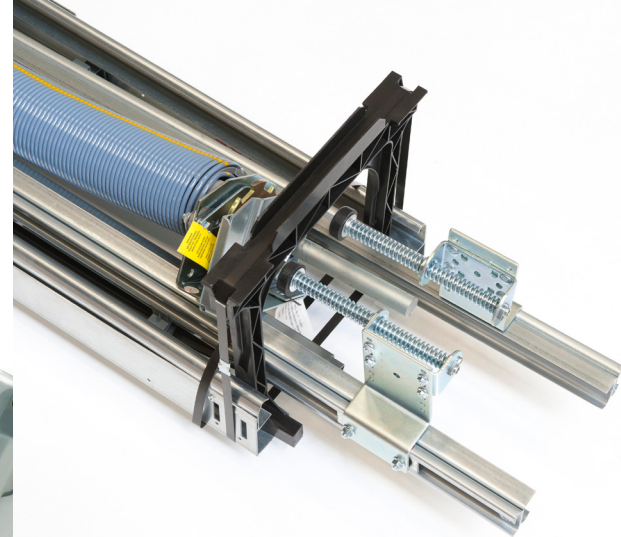


PRODUCTION MANUAL

ISC RAILSETS 2" NL/HL/LHR-0-45° & VL

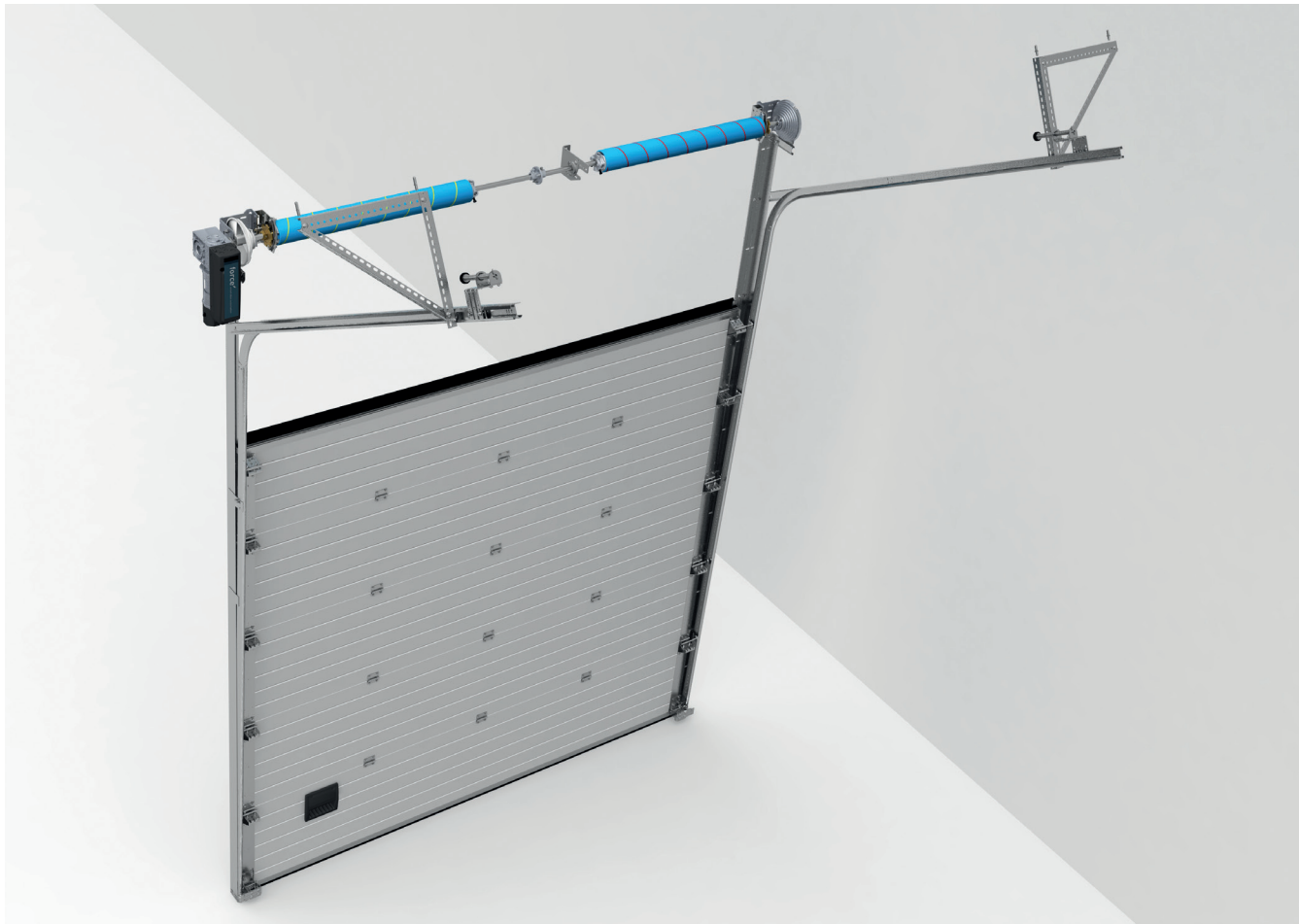




INTRODUCTION

This technical handbook is a tool to assist you with understanding all the technical features, dimensions and application of the FlexiForce ISC hardware system for industrial doors. For customers that either produce hardware sets in their own door production. But also for customers that outsource the hardware set production to their nearest FlexiForce subsidiary. In this booklet you will find a description of our set-up for complete hardware sets. The different available lift systems, possibilities and built-in situations.

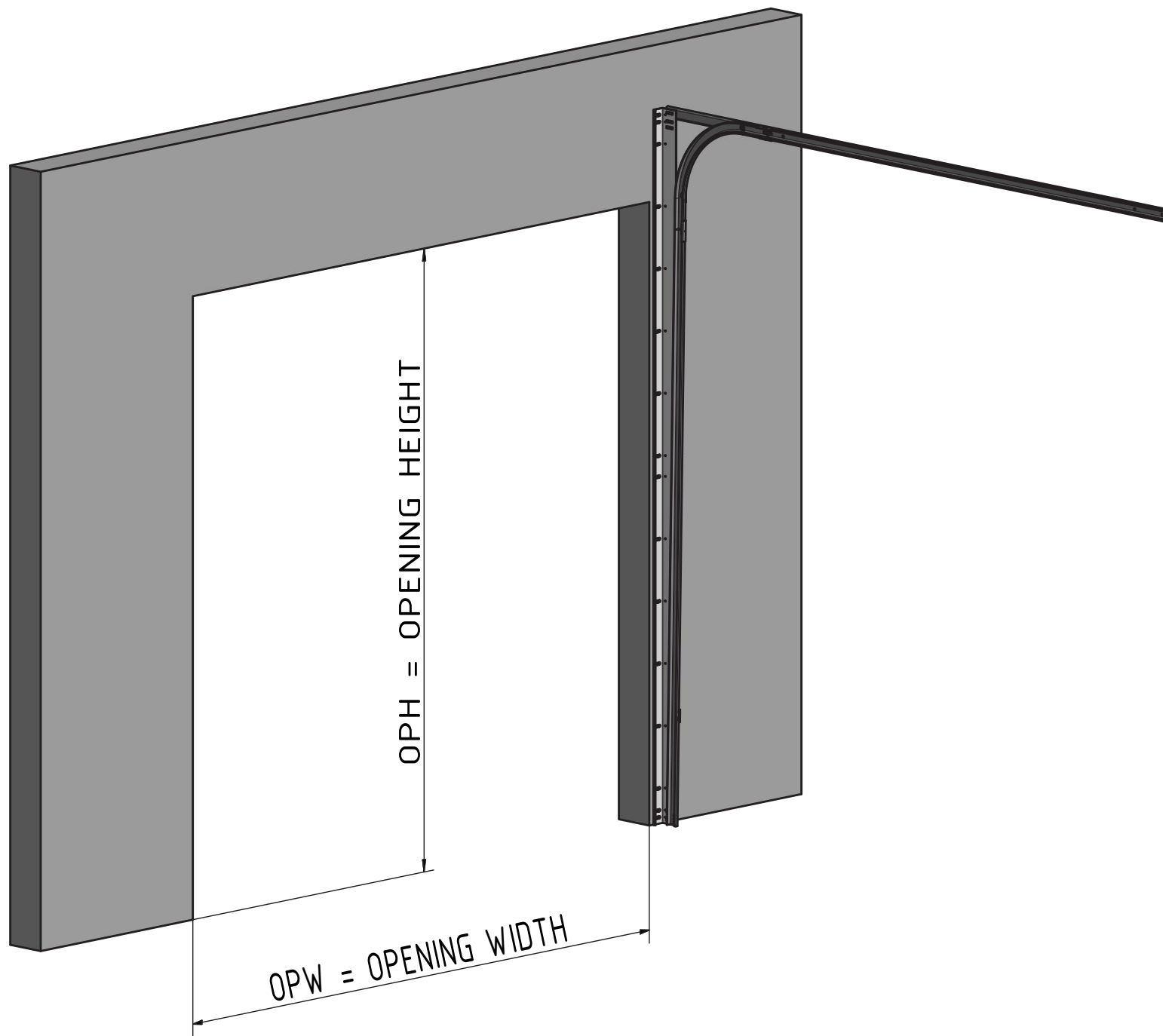
For actual pricing and ordering information, we refer to our separate price list for ISC industrial hardware sets. If you have any questions, please do not hesitate to contact our sales team for assistance or find more details on:
www.flexiforce.com

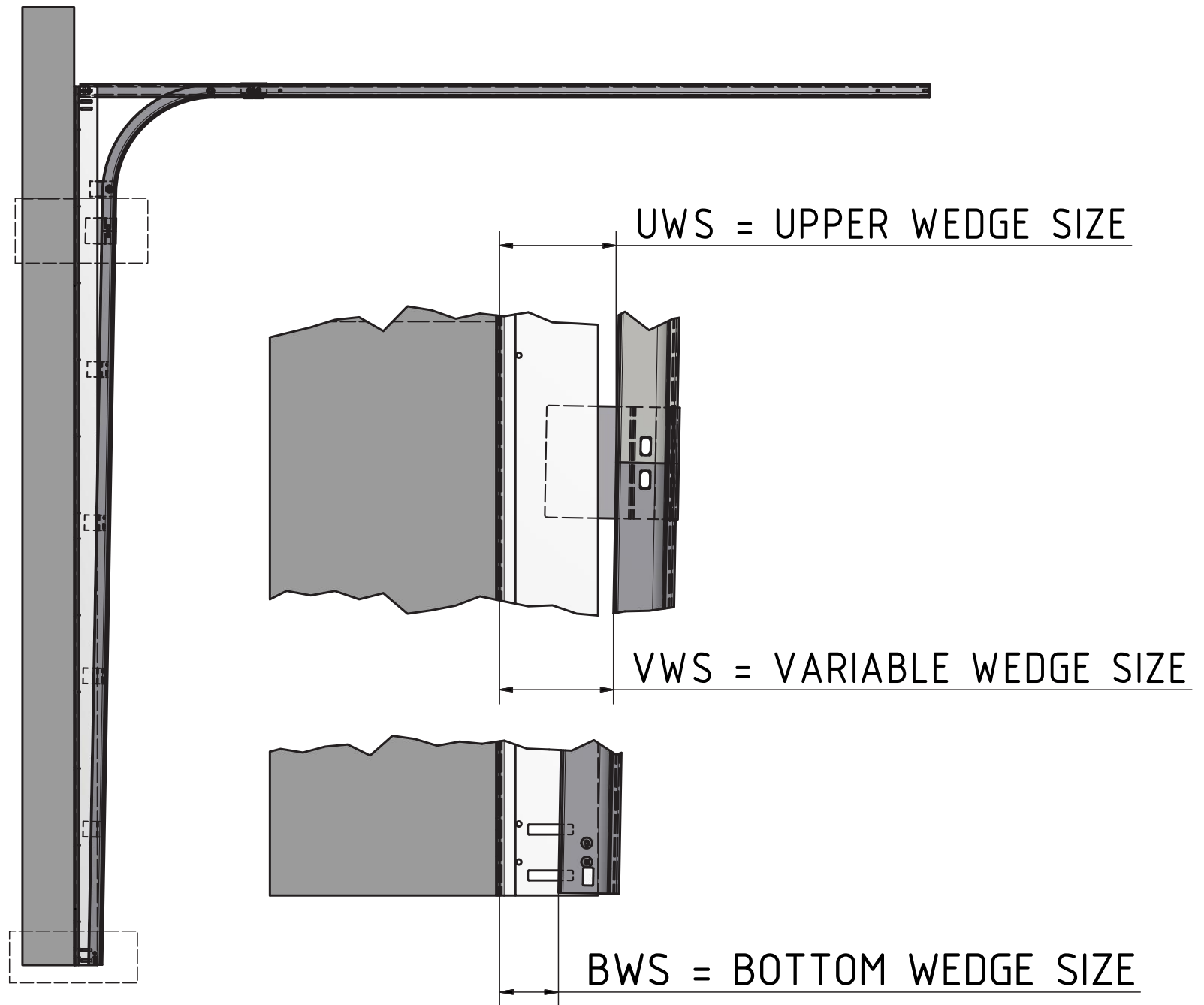


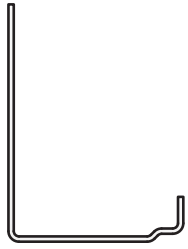
 Production manual

ISC Railsets 2"

NL/HL/LHR-0-45° & VL







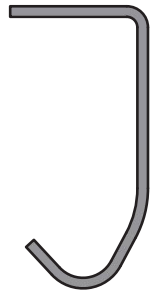
9VL-B....



870F90, 870F150



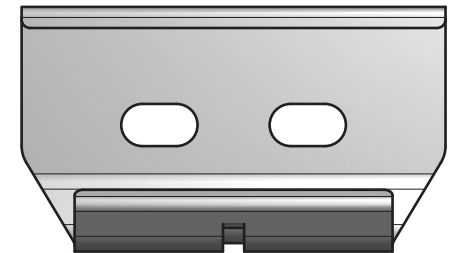
2G380....



2V-A....



870V, 870VRM, 870VRL



870CH



215C-B....



808W, 810W, 813W, 815W



ISC NL/HL-0-45°

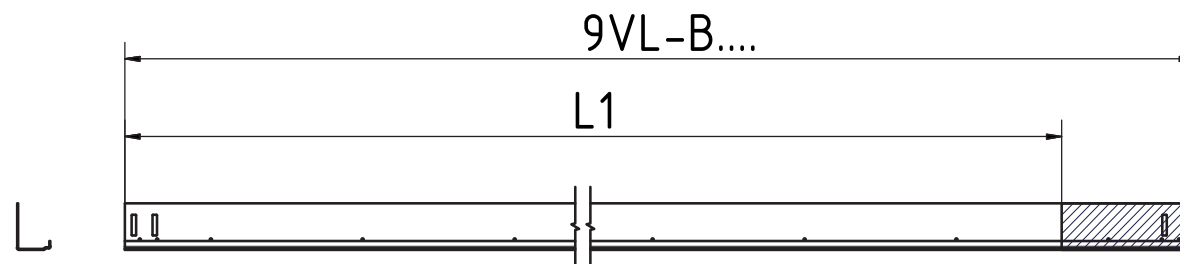
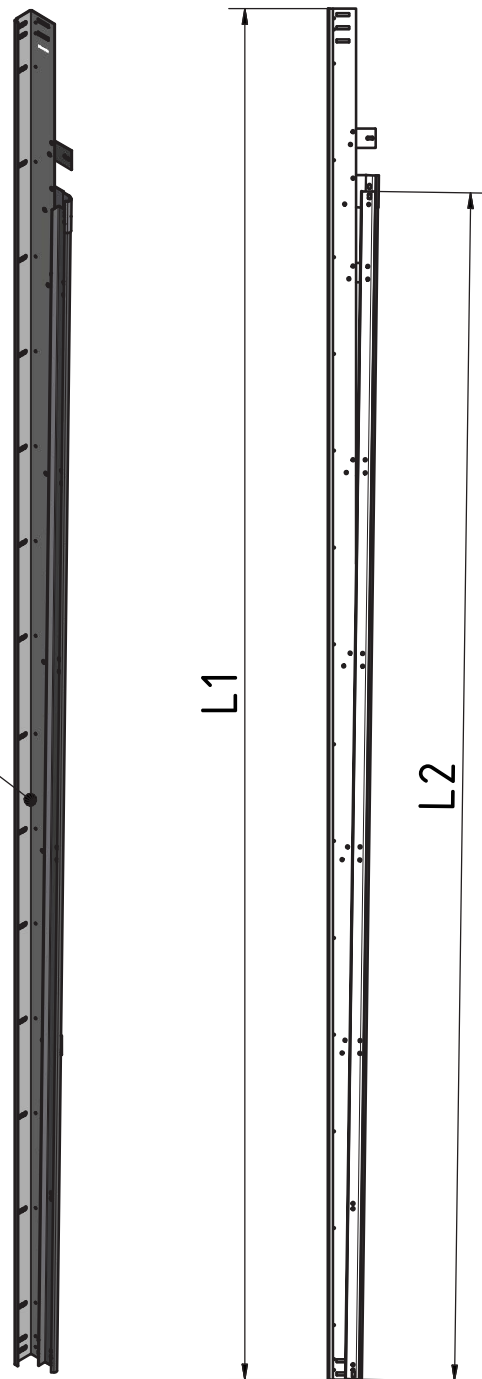
1 piece vertical

NL/HL - 0°-45°	L1	L2	Curve	L3	L4
1 piece vertical	OPH + HL + CL1	OPH + HL - CL2	See table	OPH - HL + $((\alpha/5)*35)$ + CL3	OPH - HL + UWS + $((\alpha/5)*35)$ + CL3 + CL4

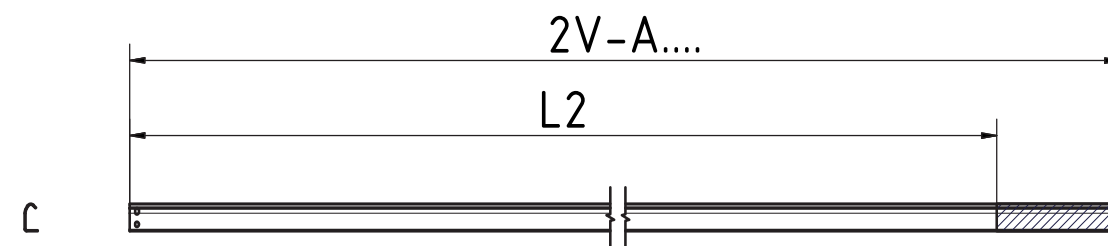
α	CL1	CL2	Art. Code	CL3	CL4
0°	40	528	2G380A0	10	571
5°	40	528 - 30	2G380A5	10	571 - 35
10°	40	528 - 70	2G380A10	10	571 - 70
15°	40	528	2G380A15	10	571 - 100
20°	40	528	2G380A20	10	571 - 125
25°	40	528	2G380A25	10	571 - 150
30°	40	528	2G380A30	10	571 - 170
35°	40	528	2G380A35	10	571 - 190
40°	40	528	2G380A40	10	571 - 205
45°	40	528	2G380A45	10	571 - 220

CL1, CL2...etc, is correction dimension in Formula for L1, L2...etc.

Vert. Track



$$L1 = OPH + HL + CL1$$



$$L2 = OPH + HL - CL2$$

Left and right version, right handed version drawn

BWS = Panel thickness+13

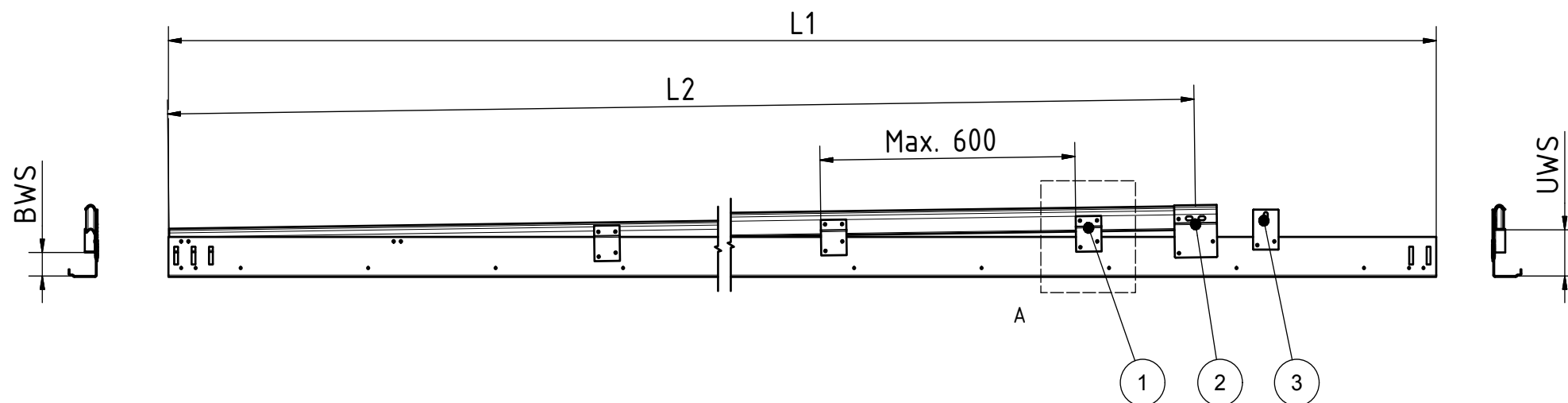
UWS = PT<60 = 104

UWS = PT>59 = 124

1 = 808W-818W range

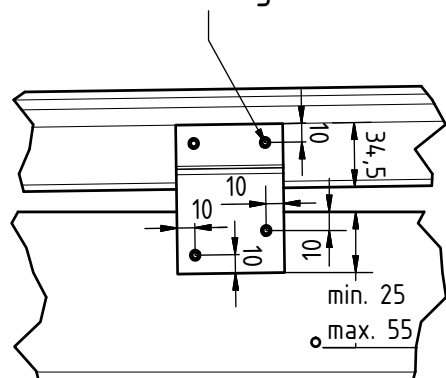
2 = 870V... range

3 = 870F... range



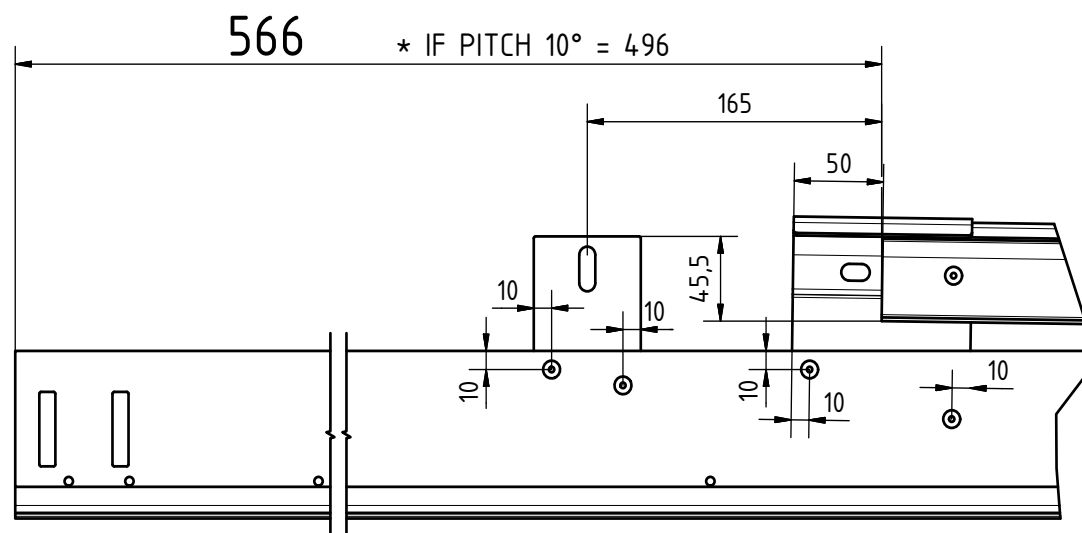
A connection every 600mm

- * a single rivet
- * a track connection plate
- * Min. shear strength of 6000N

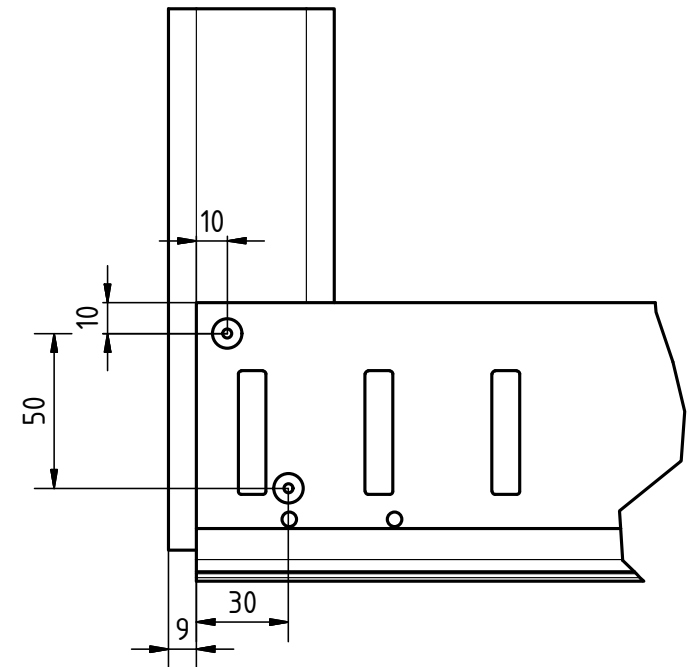
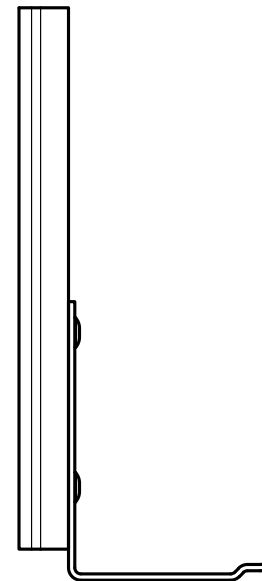
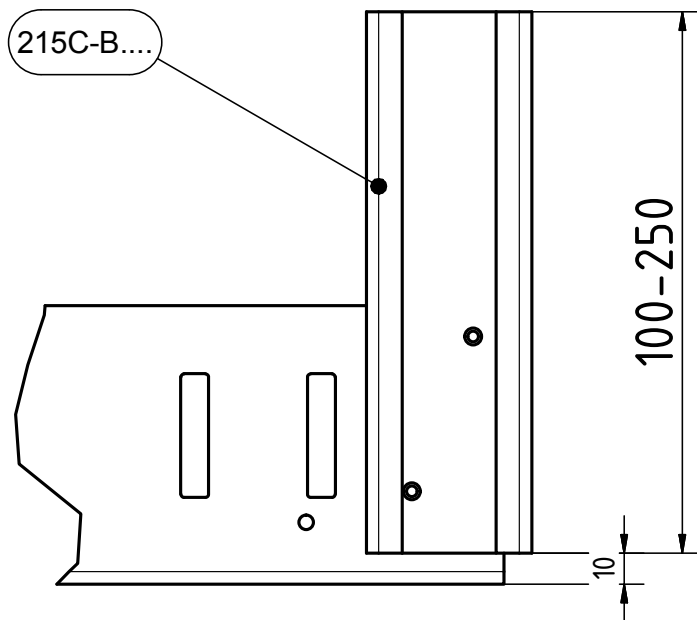
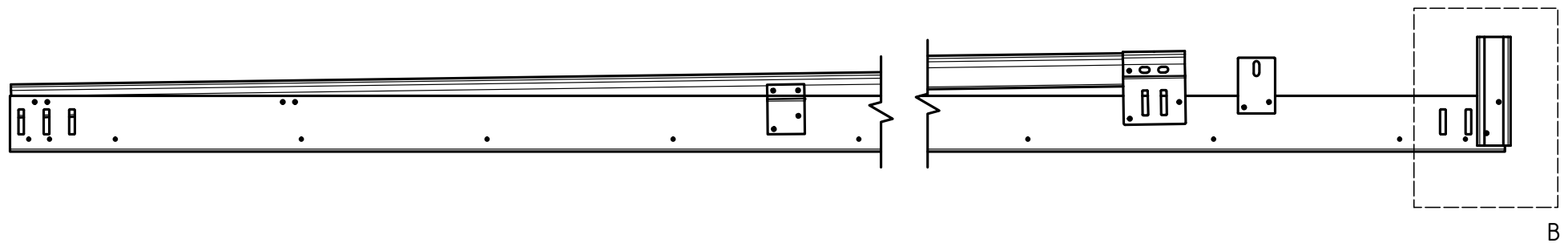


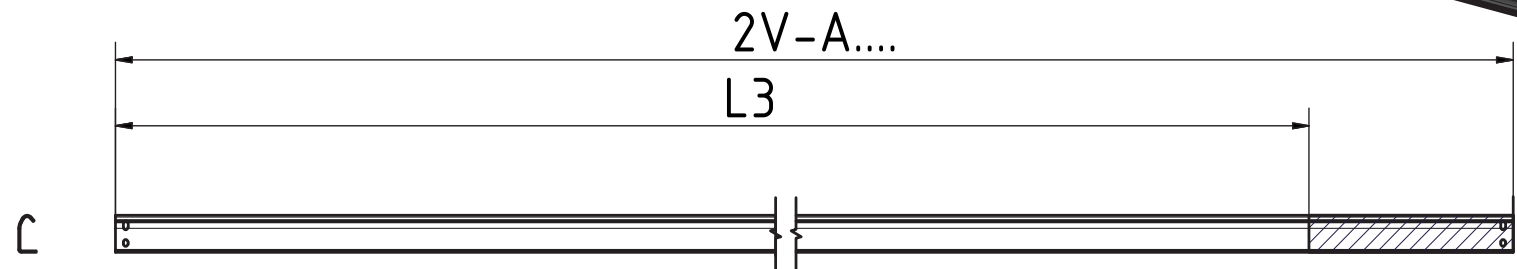
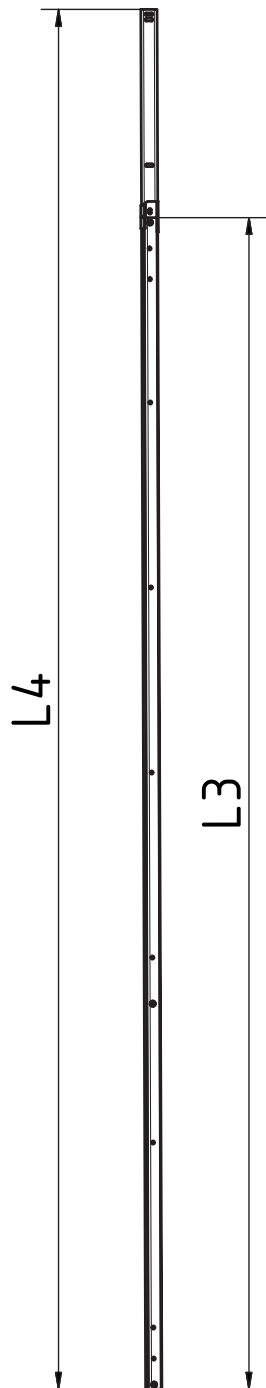
* IF PITCH 5° = 536

* IF PITCH 10° = 496

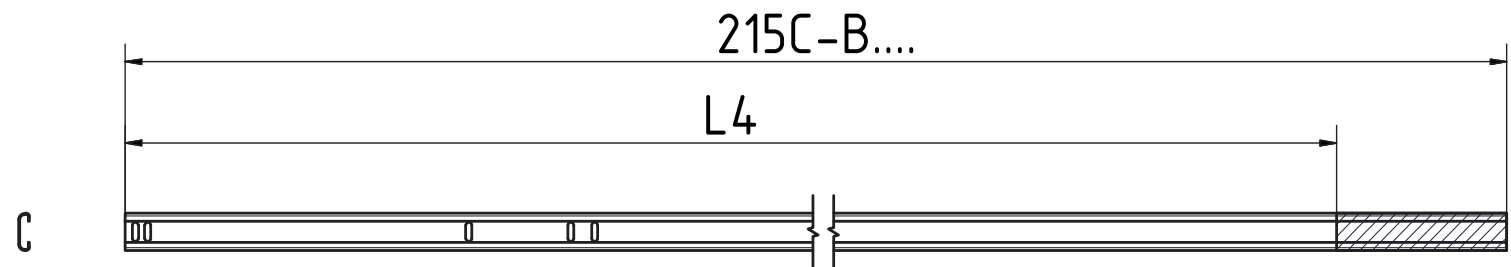


IF PITCH 15°-45°

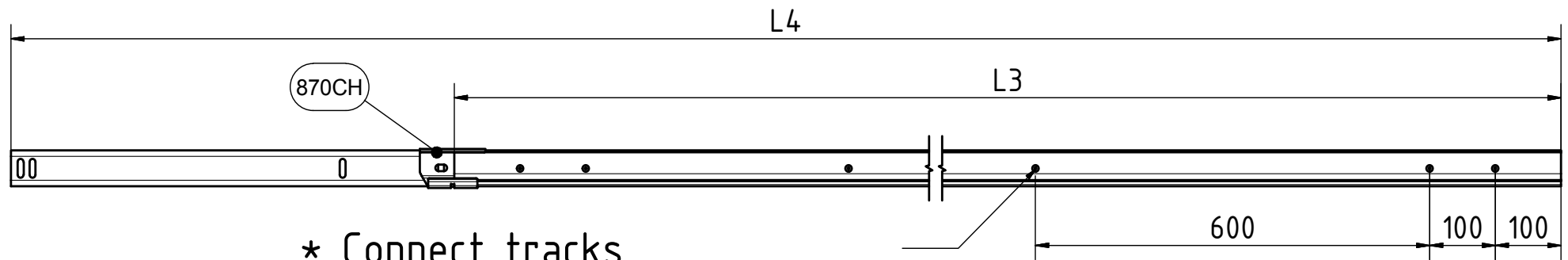




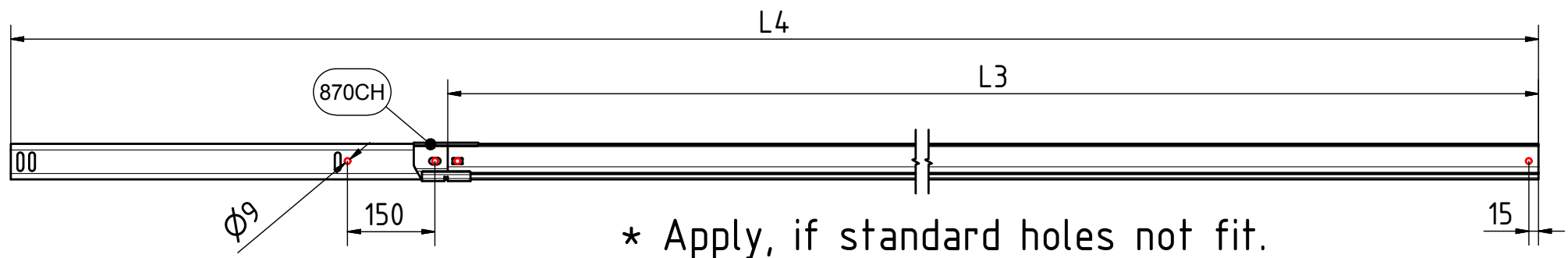
$$L3 = OPH - HL + ((\alpha/5)*35) + CL3$$



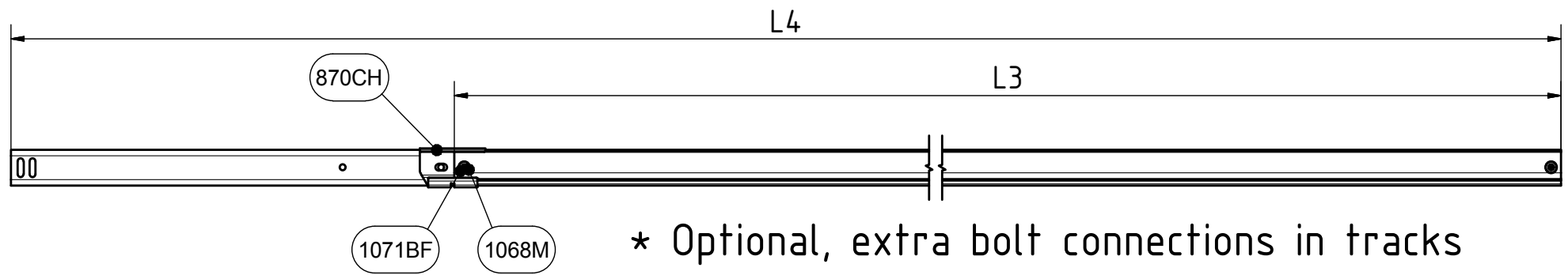
$$L4 = OPH - HL + UWS + ((\alpha/5)*35) + CL3 + CL4$$



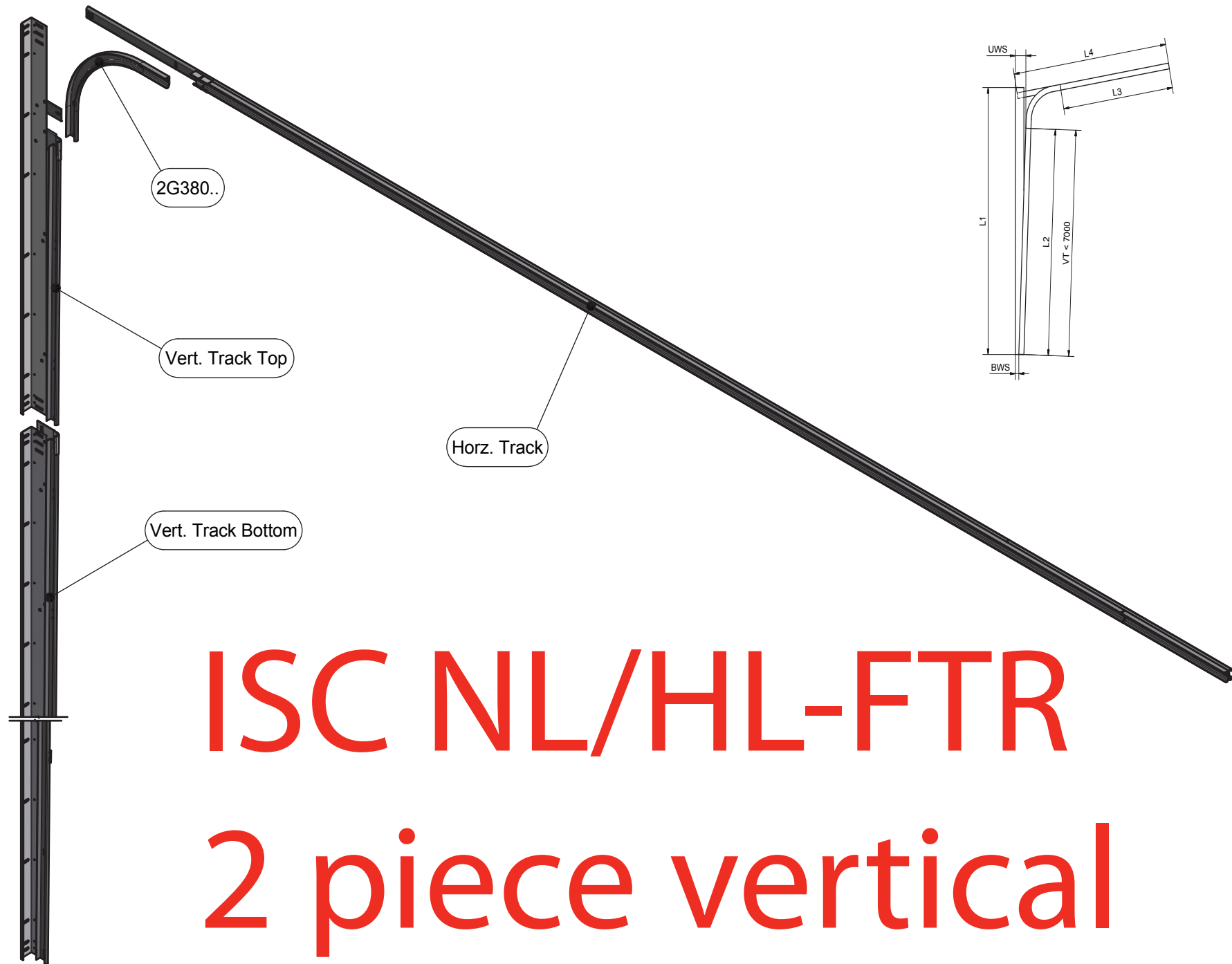
- * Connect tracks
- * Min. shear strength of 6000N



- * Apply, if standard holes not fit.



- * Optional, extra bolt connections in tracks



ISC NL/HL-FTR

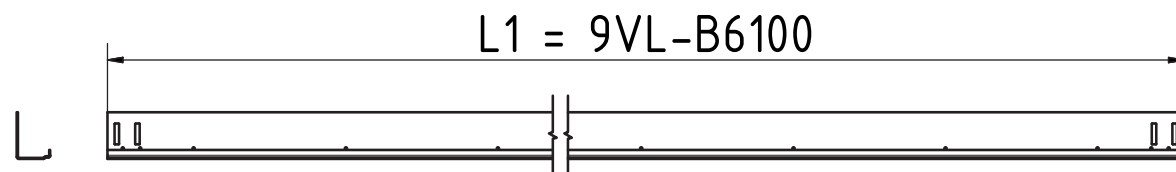
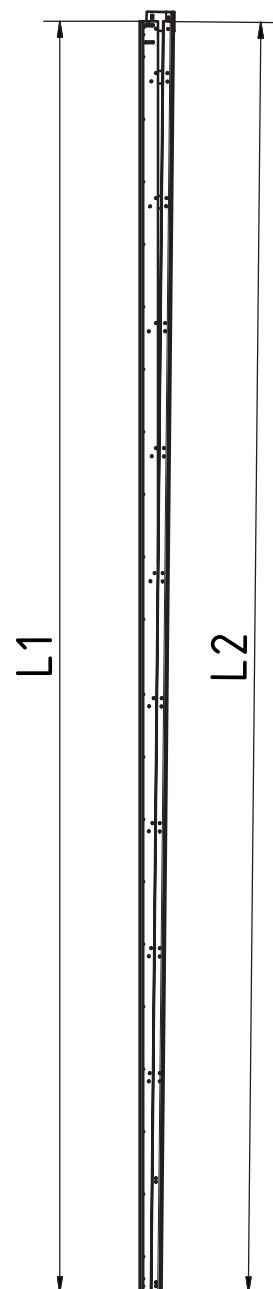
2 piece vertical

NL/HL - 0°-45°	L1	L2	Curve	L3	L4	L5	L6
2 piece vertical	CL1	CL2	See table	OPH - HL + (($\alpha/5$)*35) + CL3	OPH - HL + UWS + (($\alpha/5$)*35) + CL3 + CL4	OPH + HL - CL5	OPH + HL - CL5 - CL6

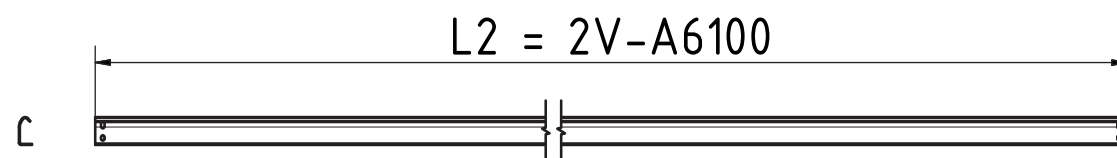
α	CL1	CL2	Art. Code	CL3	CL4	CL5	CL6
0°	6100	6098	2G380A0	10	571	6060	566
5°	6100	6098	2G380A5	10	571 - 35	6060	566 - 30
10°	6100	6098	2G380A10	10	571 - 70	6060	566 - 70
15°	6100	6098	2G380A15	10	571 - 100	6060	566
20°	6100	6098	2G380A20	10	571 - 125	6060	566
25°	6100	6098	2G380A25	10	571 - 150	6060	566
30°	6100	6098	2G380A30	10	571 - 170	6060	566
35°	6100	6098	2G380A35	10	571 - 190	6060	566
40°	6100	6098	2G380A40	10	571 - 205	6060	566
45°	6100	6098	2G380A45	10	571 - 220	6060	566

CL1, CL2...etc, is correction dimension in Formula for L1, L2...etc.

Vert. Track Bottom



$$L1 = CL1$$



$$L2 = CL2$$

Left and right version, right handed version drawn

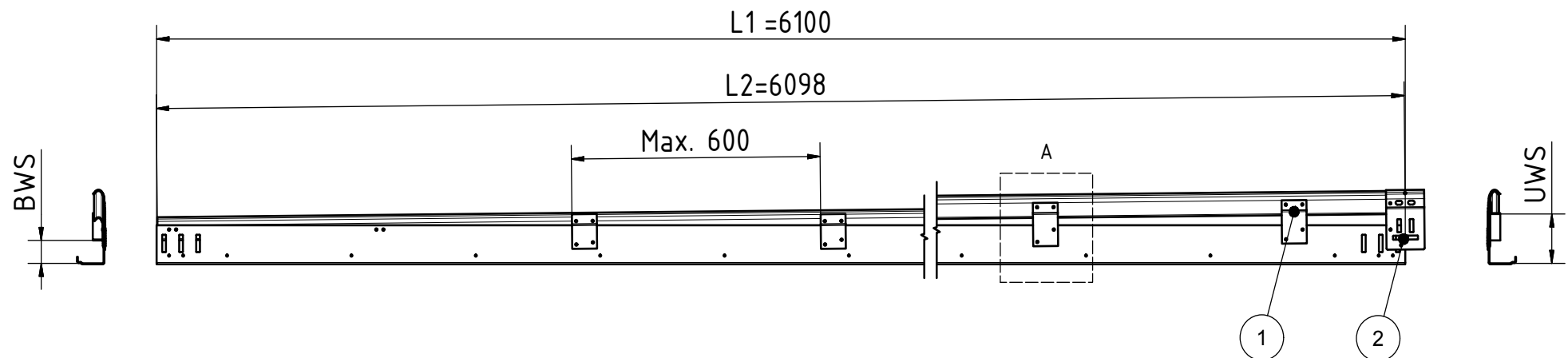
BWS = Panel thickness+13

UWS = PT<60 = 114

UWS = PT>59 = 134

1 = 808W-818W range

2 = 870V... range

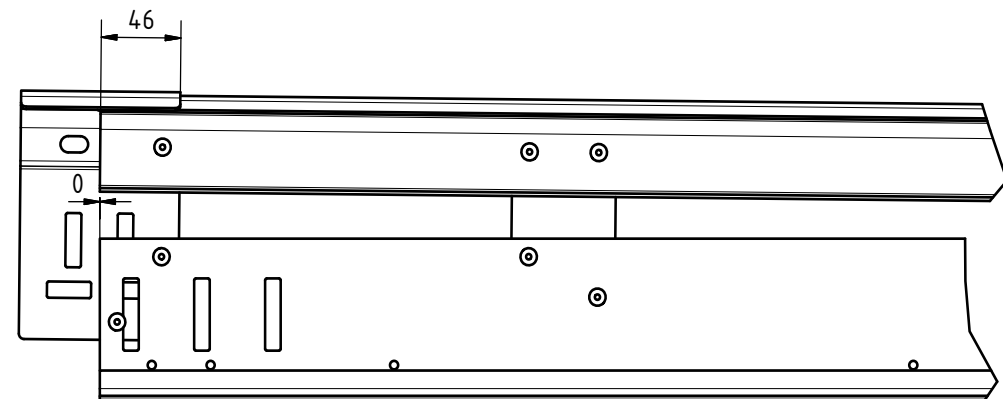
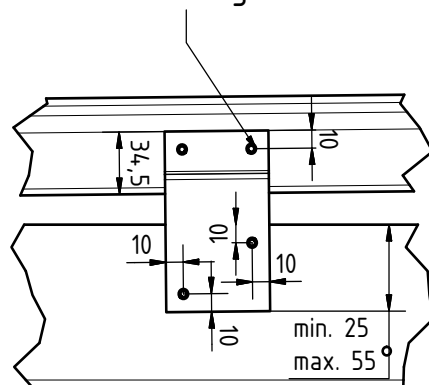


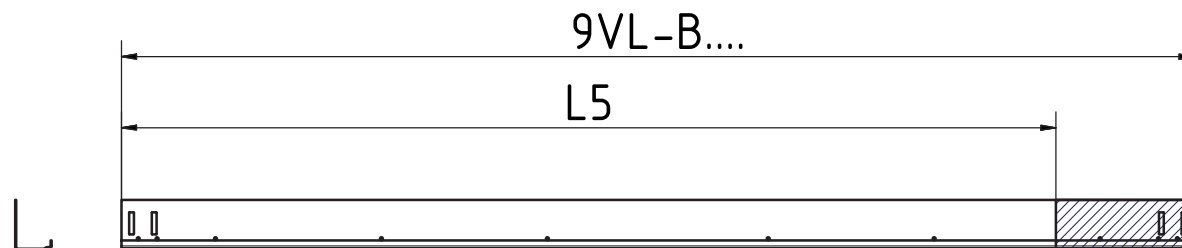
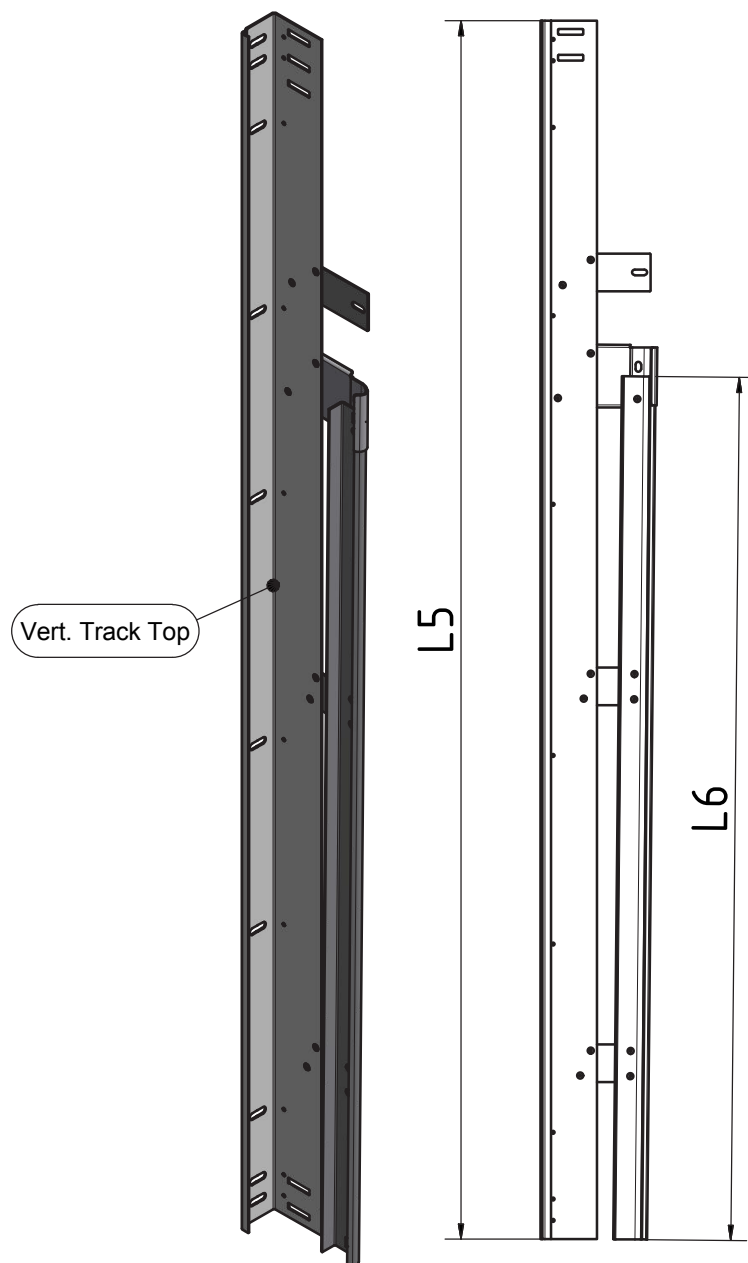
A connection every 600mm

* a single rivet

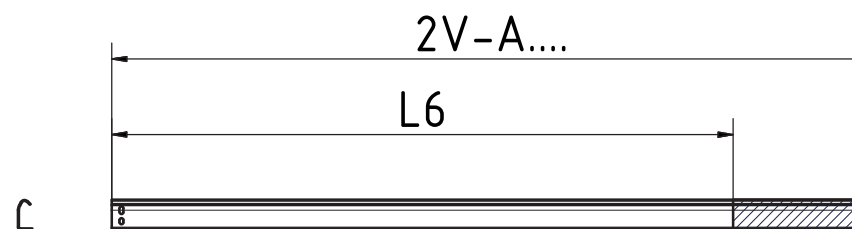
* a track connection plate

* Min. shear strength of 6000N





$$L5 = OPH + HL - CL5$$

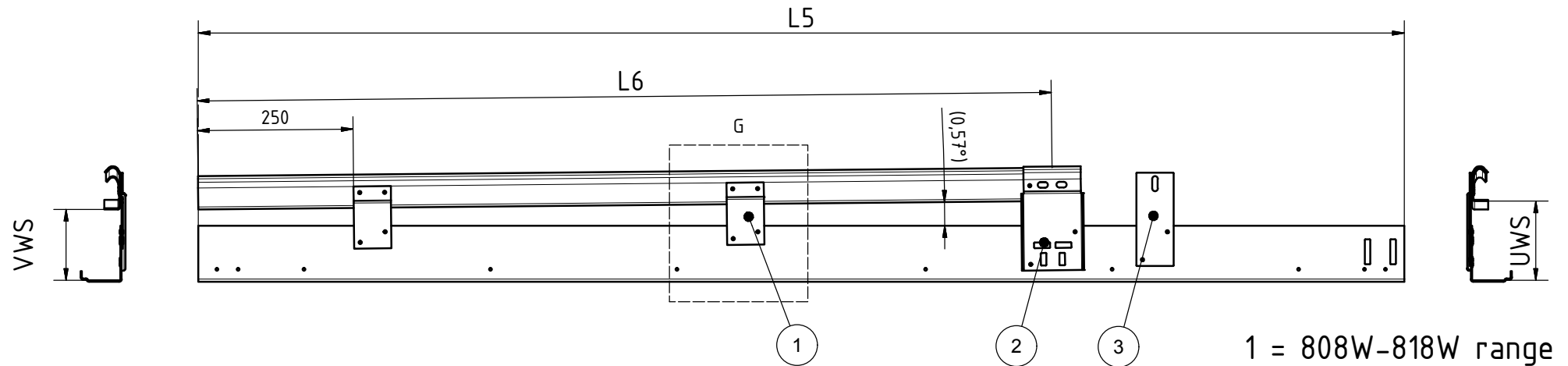


$$L6 = OPH + HL - CL5 - CL6$$

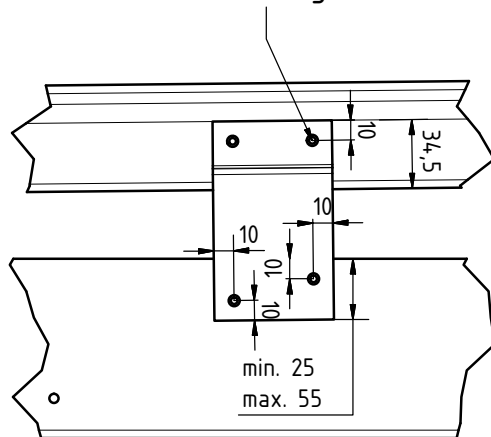
Left and right version, right handed version drawn

$$VWS = PT_{>59} = 134$$

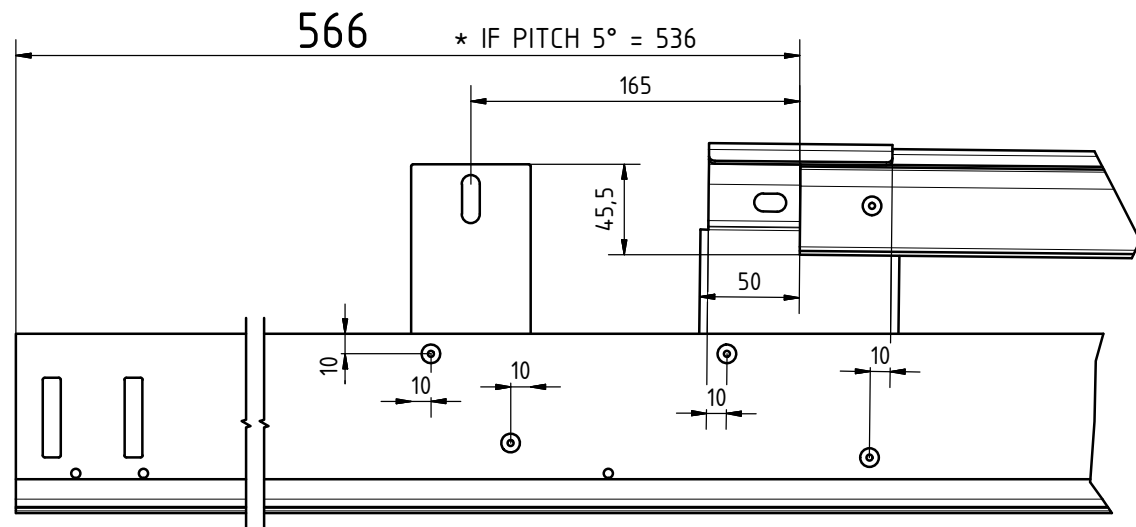
$$UWS = VWS + (L6/100)$$



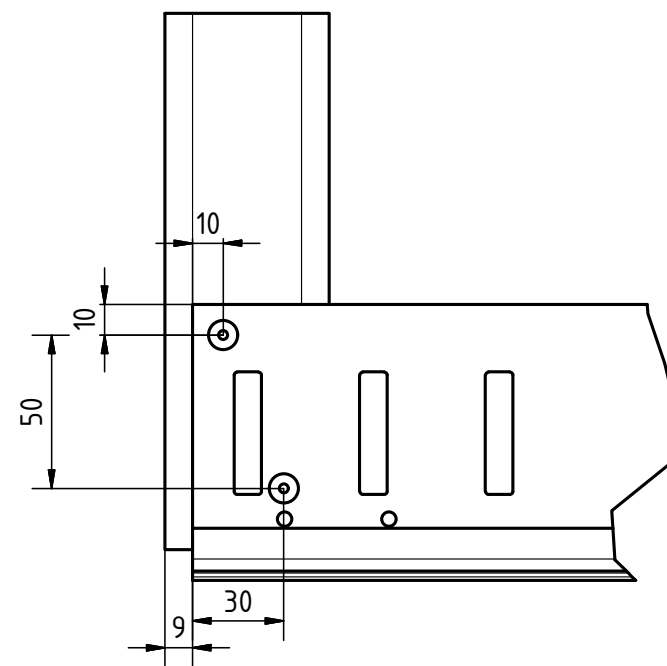
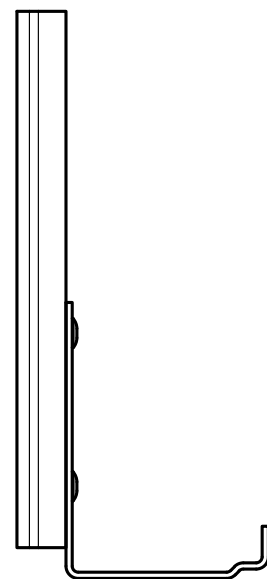
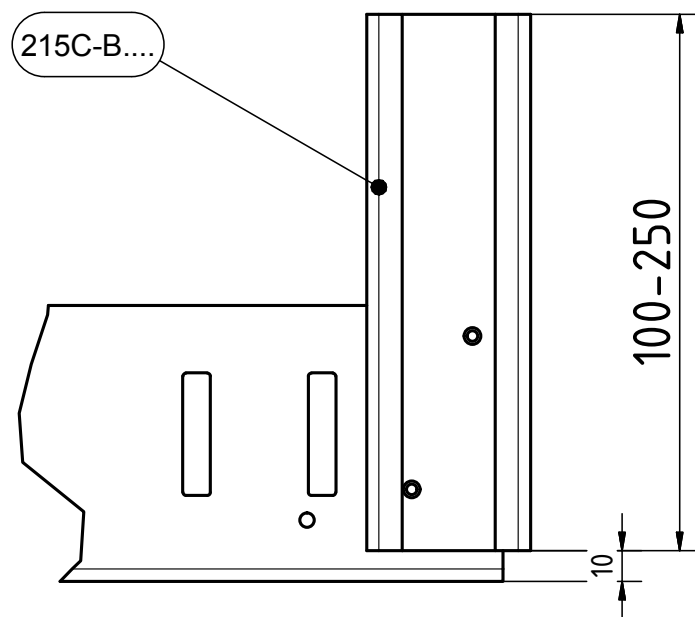
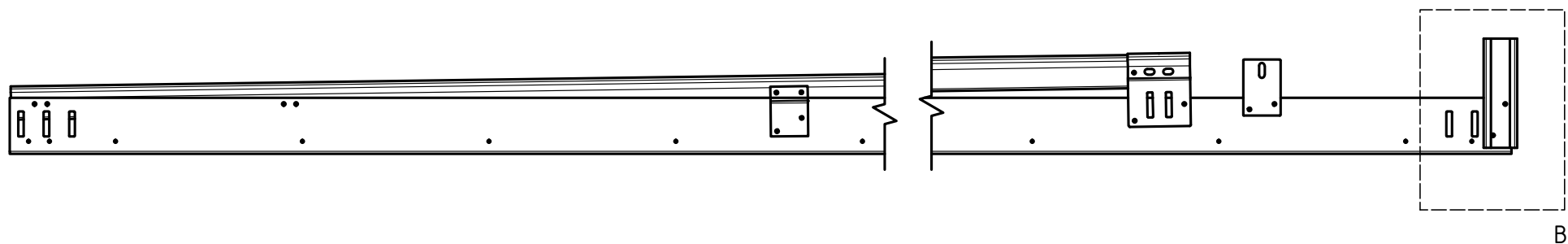
- A connection every 600mm
- * a track connection plate
- * Min. shear strength of 6000N

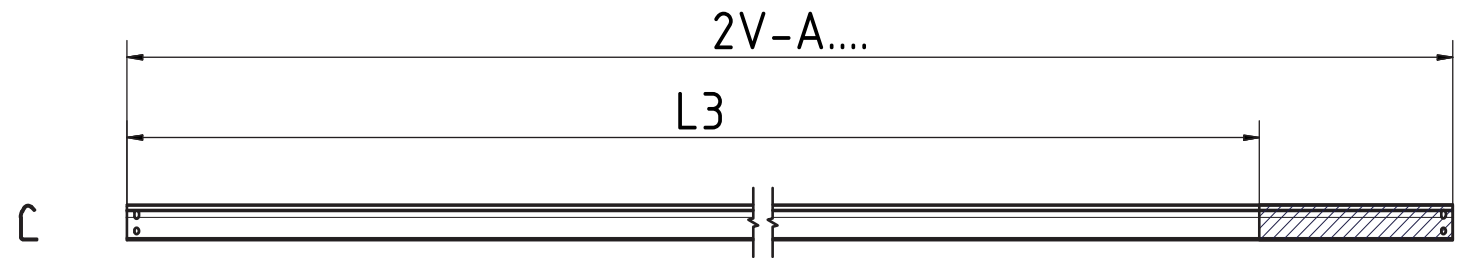
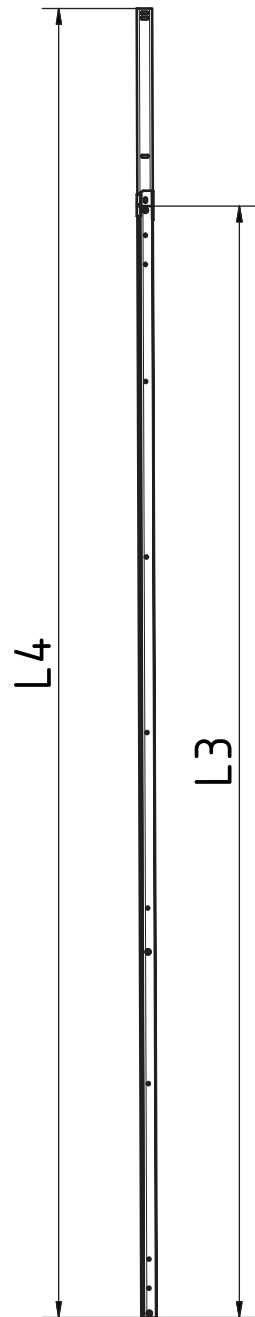


* IF PITCH 5° = 536

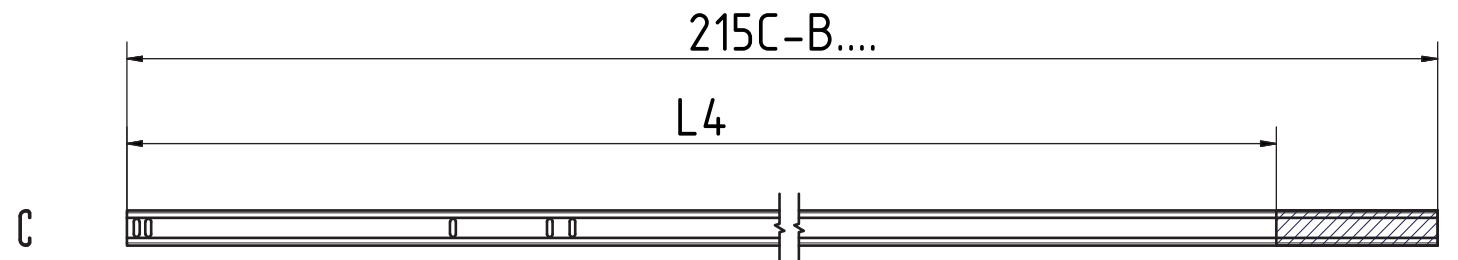


IF PITCH 15°-45°



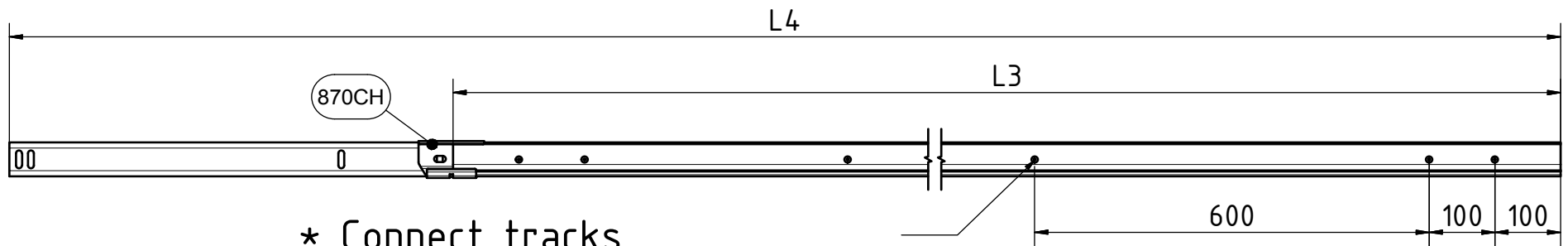


$$L3 = OPH - HL + ((\alpha/5)*35) + CL3$$

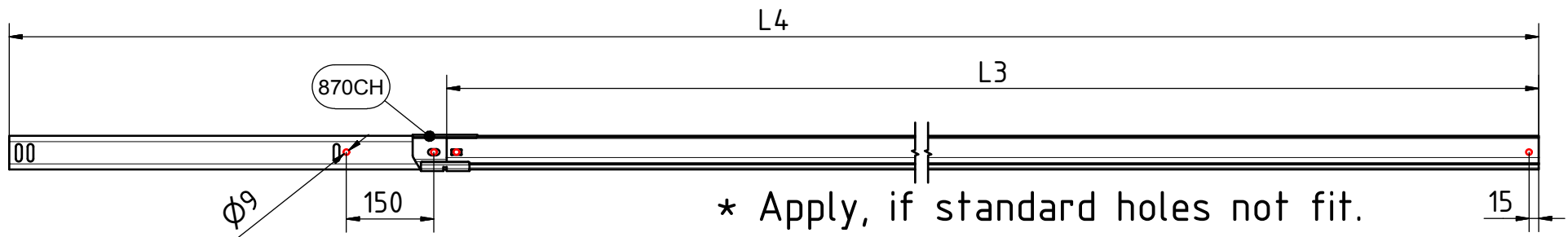


$$L4 = OPH - HL + UWS + ((\alpha/5)*35) + CL3 + CL4$$

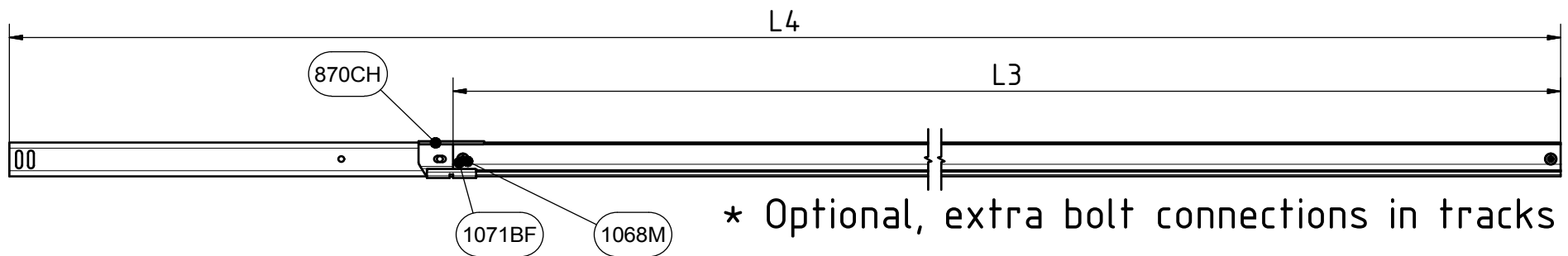
Left and right version, right handed version drawn



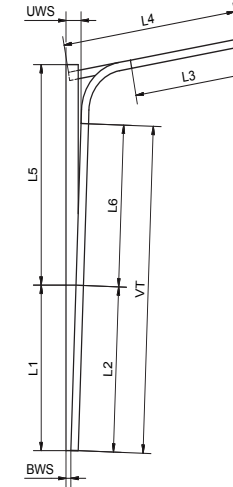
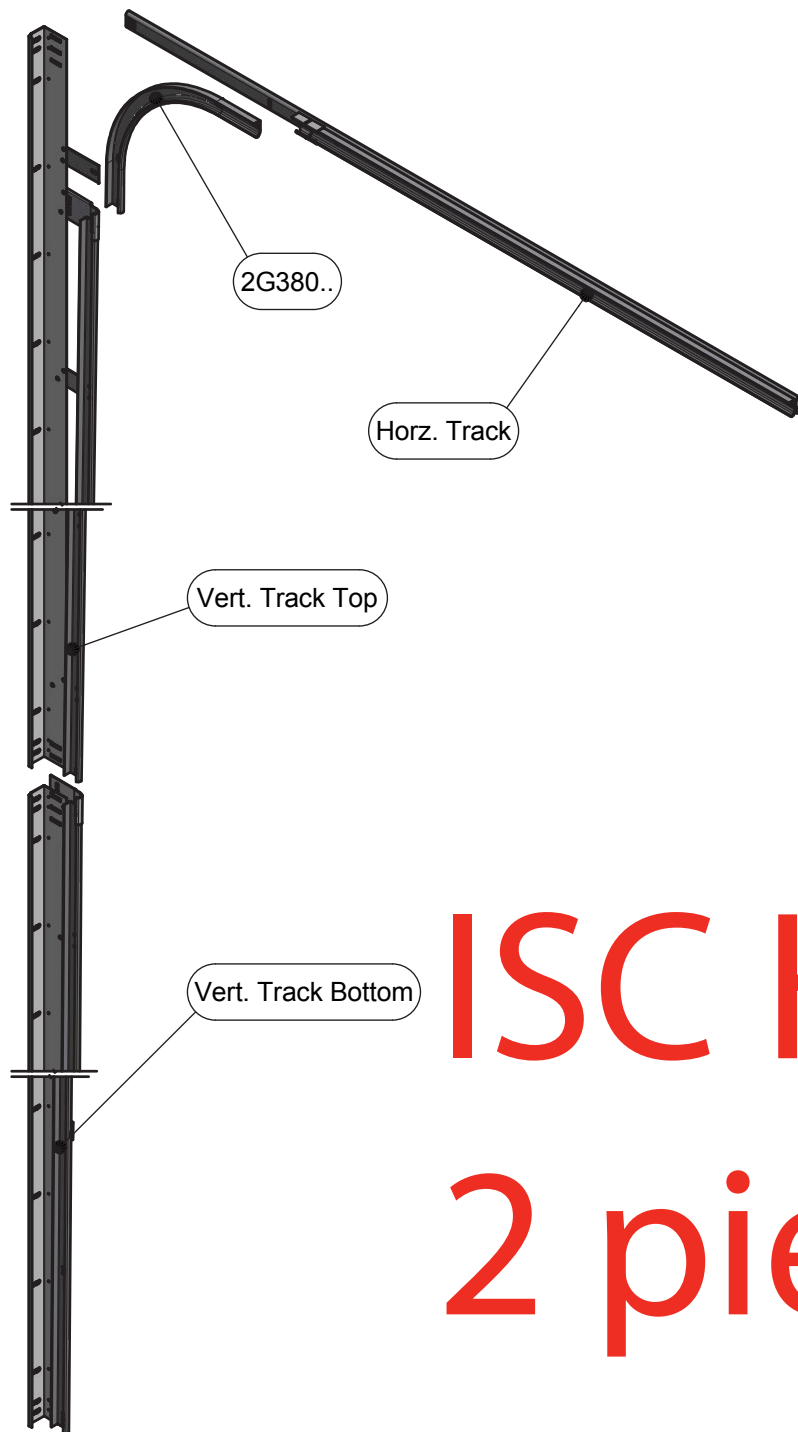
- * Connect tracks
- * Min. shear strength of 6000N



- * Apply, if standard holes not fit.



- * Optional, extra bolt connections in tracks



ISC HL-0-45° HL164

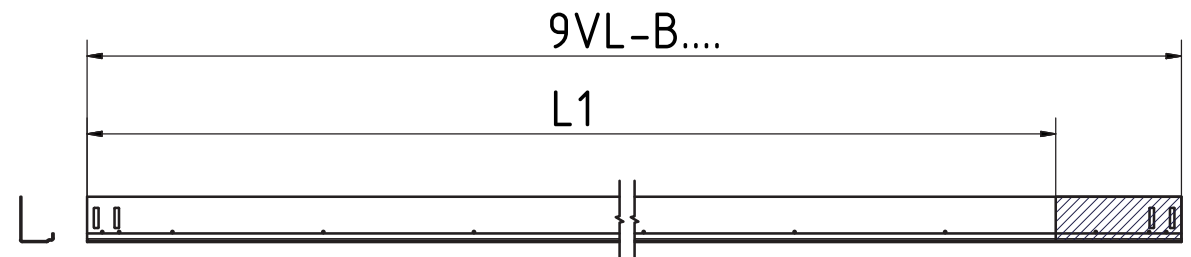
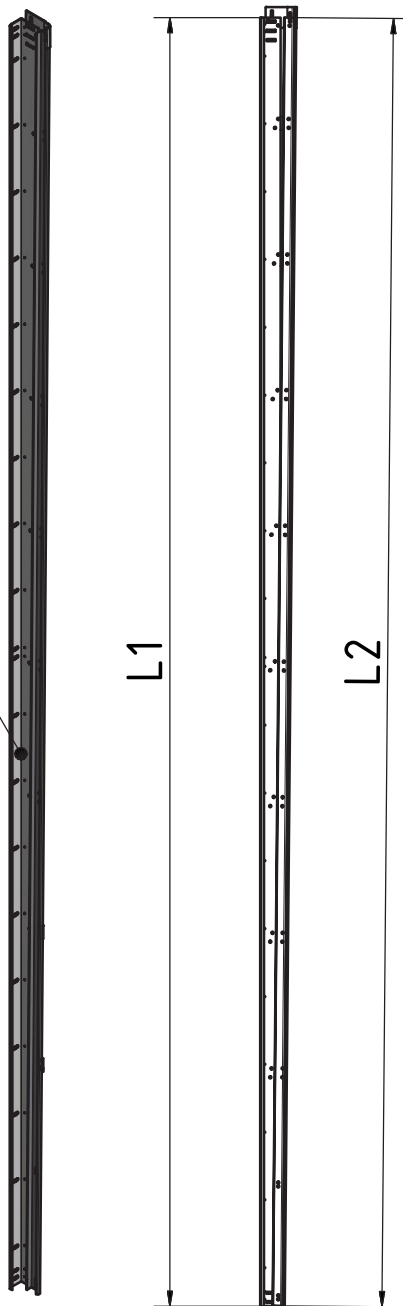
2 piece vertical

HLB - 0°-45°	L1	L2	Curve	L3	L4	L5	L6
2 piece vert. FFHL164	OPH - CL1	OPH - CL2	See table	OPH - HL + $((\alpha/5)*35)$ + CL3	OPH - HL + UWS + $((\alpha/5)*35)$ + CL3 + CL4	HL + CL1 + CL5	HL + CL2 - CL6

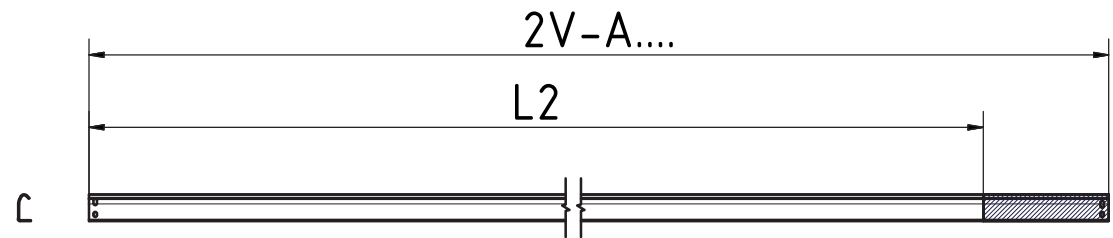
α	CL1	CL2	Art. Code	CL3	CL4	CL5	CL6
0°	300	302	2G380A0	10	571	40	528
5°	300	302	2G380A5	10	571 - 35	40	528 - 30
10°	300	302	2G380A10	10	571 - 70	40	528 - 70
15°	300	302	2G380A15	10	571 - 100	40	528
20°	300	302	2G380A20	10	571 - 125	40	528
25°	300	302	2G380A25	10	571 - 150	40	528
30°	300	302	2G380A30	10	571 - 170	40	528
35°	300	302	2G380A35	10	571 - 190	40	528
40°	300	302	2G380A40	10	571 - 205	40	528
45°	300	302	2G380A45	10	571 - 220	40	528

CL1, CL2...etc, is correction dimension in Formula for L1, L2...etc.

Vert. Track Bottom



$$L1 = OPH - CL1$$

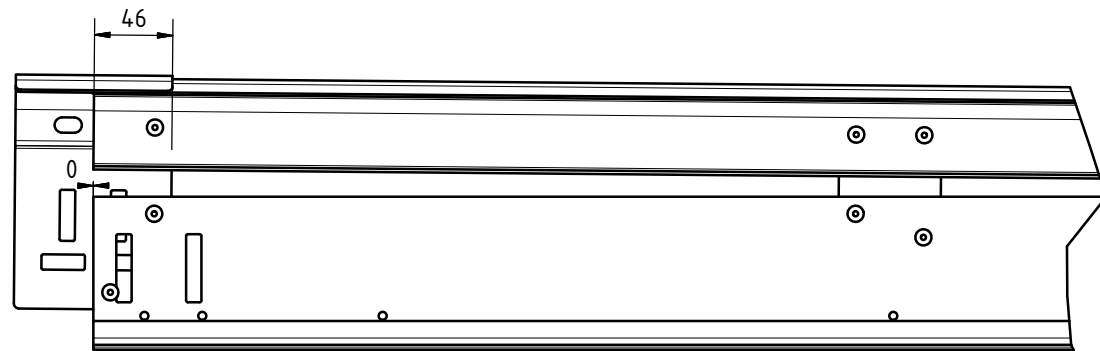
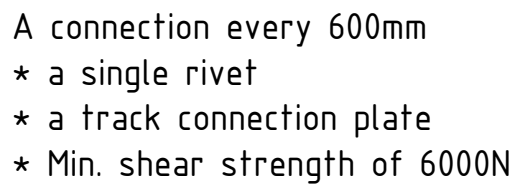


$$L2 = OPH - CL2$$

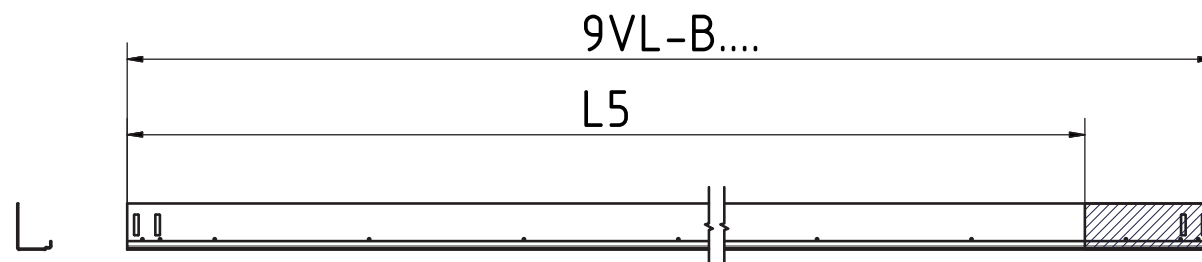
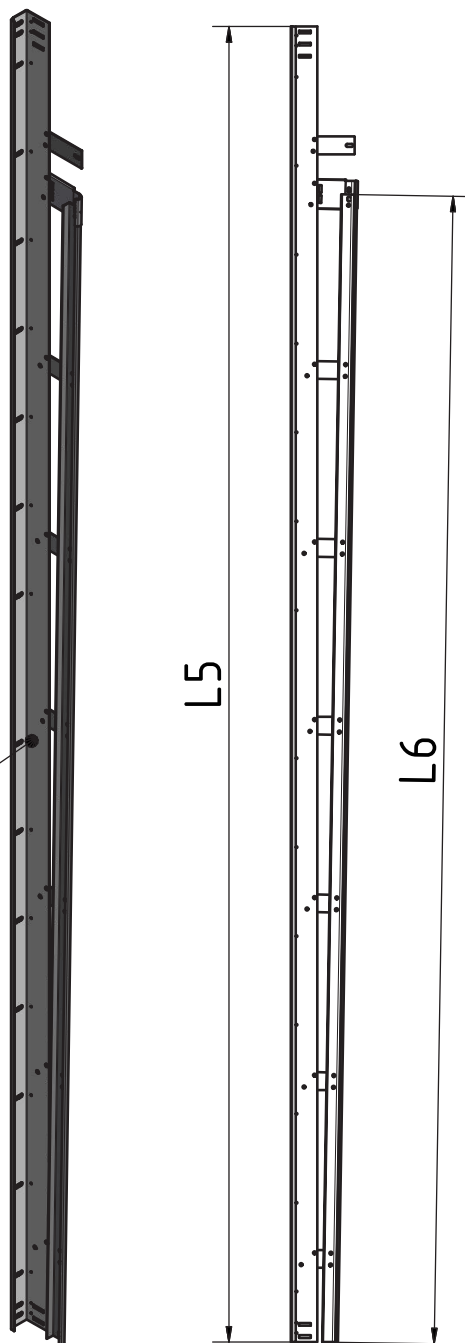
Left and right version, right handed version drawn

UWS = PT>59 = 124

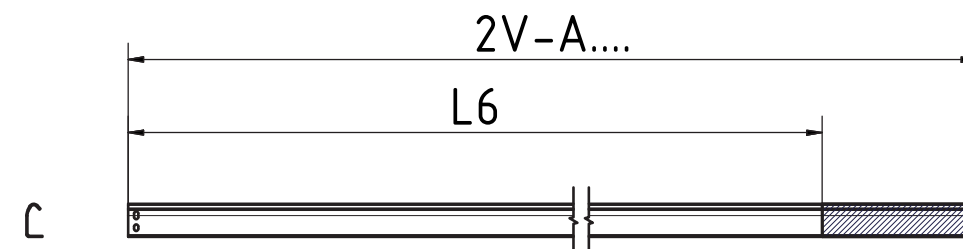
2 = 870V... range



Vert. Track Top



$$L5 = HL + CL1 - CL5$$



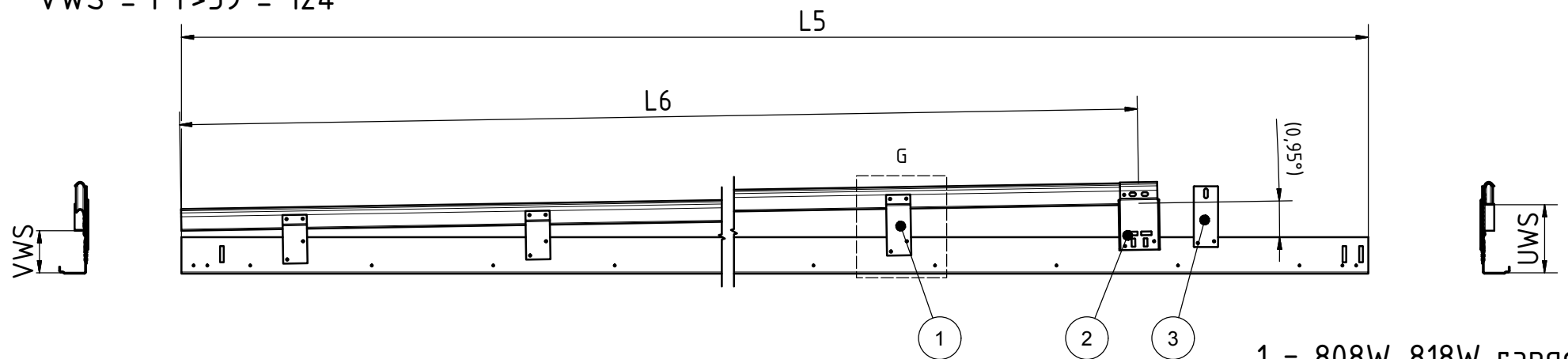
$$L6 = HL + CL2 - CL6$$

Left and right version, right handed version drawn

$$VWS = PT < 60 = 104$$

$$VWS = PT > 59 = 124$$

$$UWS = VWS + (L6/60)$$



1 = 808W-818W range

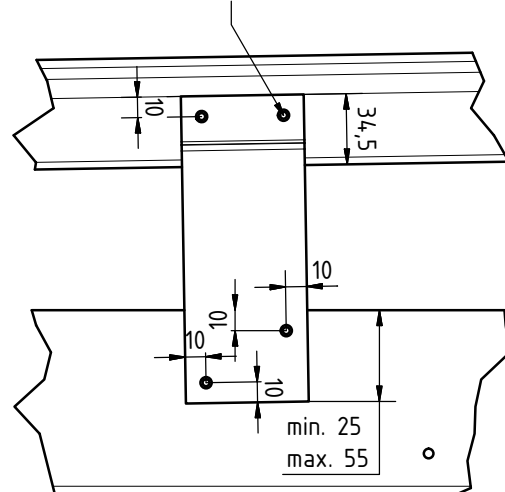
2 = 870V... range

3 = 870F... range

A connection every 600mm

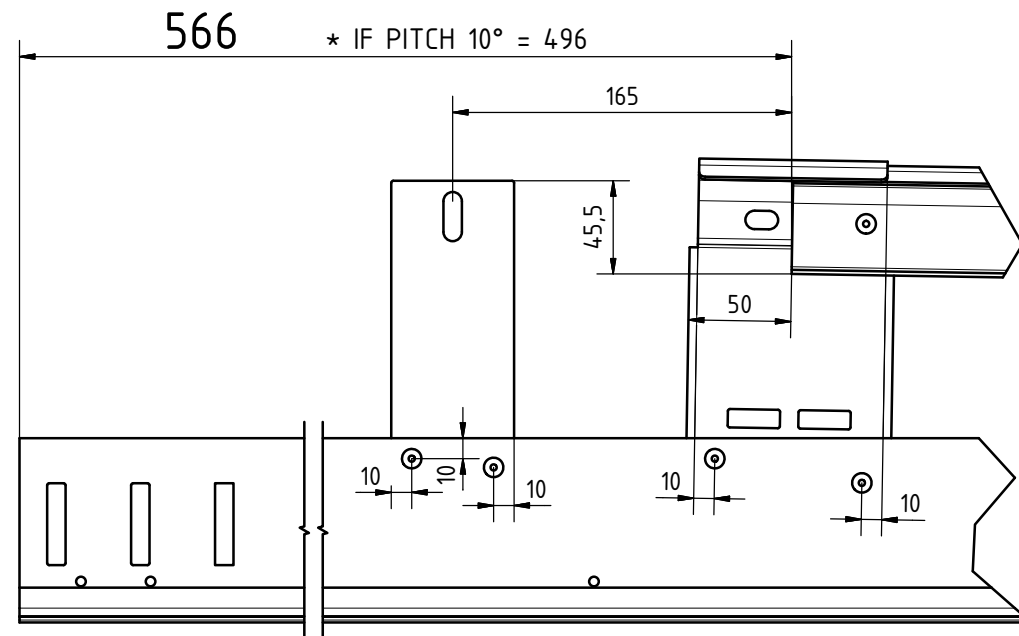
* a track connection plate

* Min. shear strength of 6000N

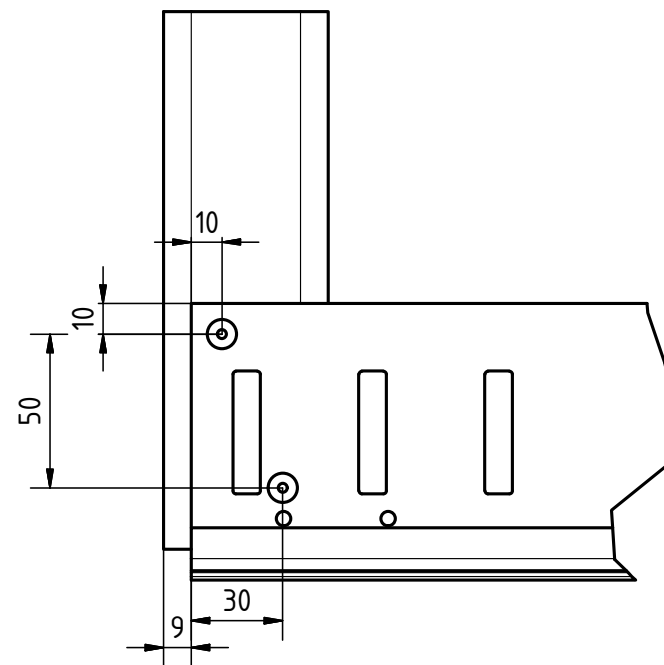
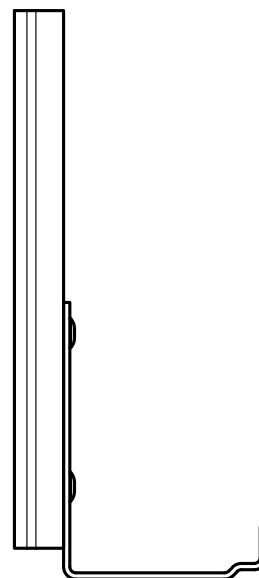
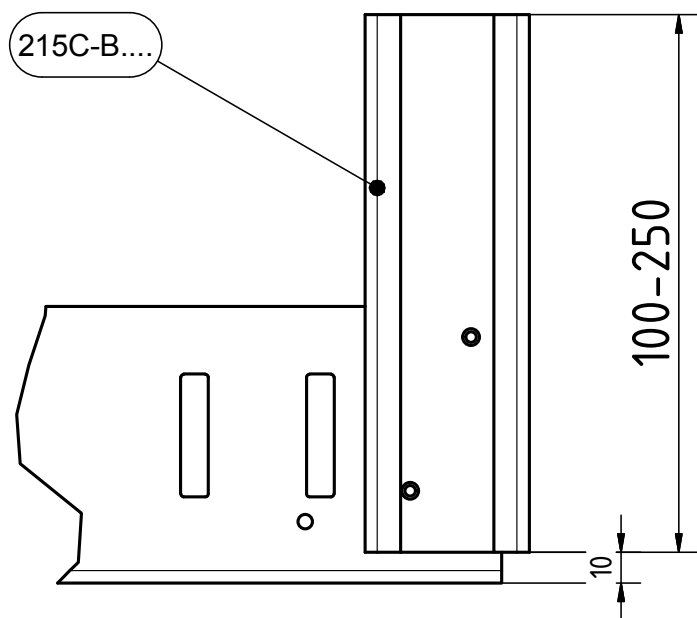
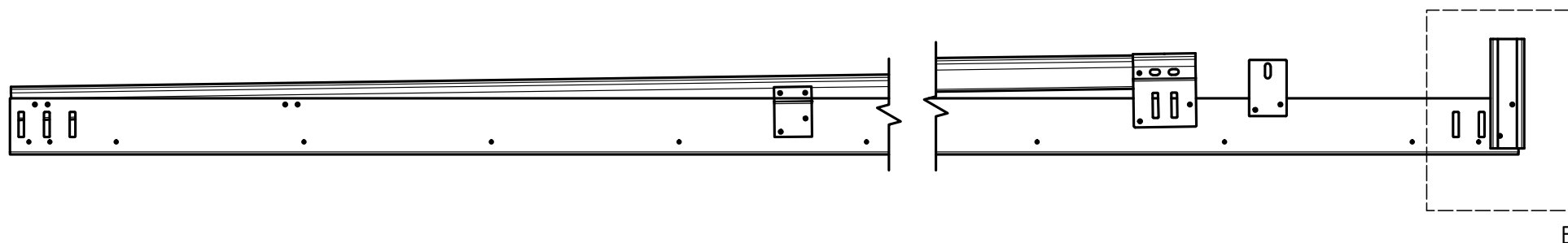


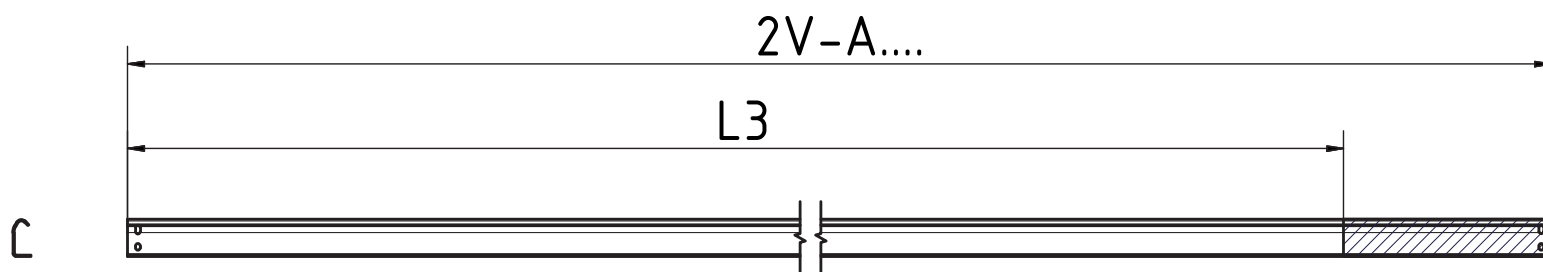
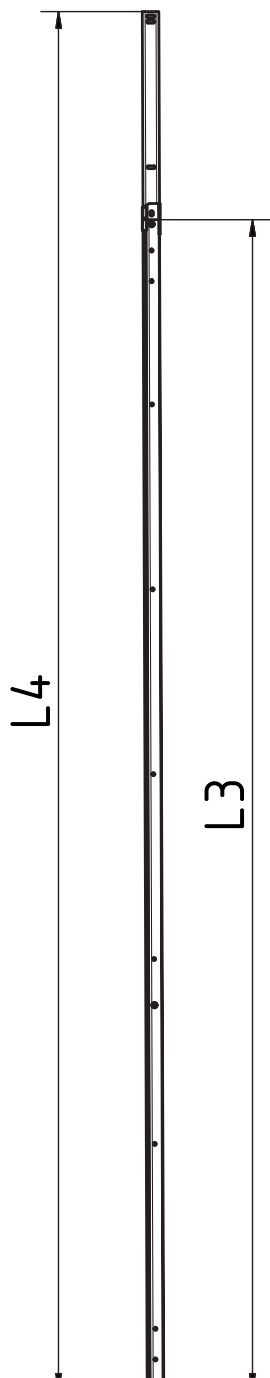
* IF PITCH 5° = 536

* IF PITCH 10° = 496

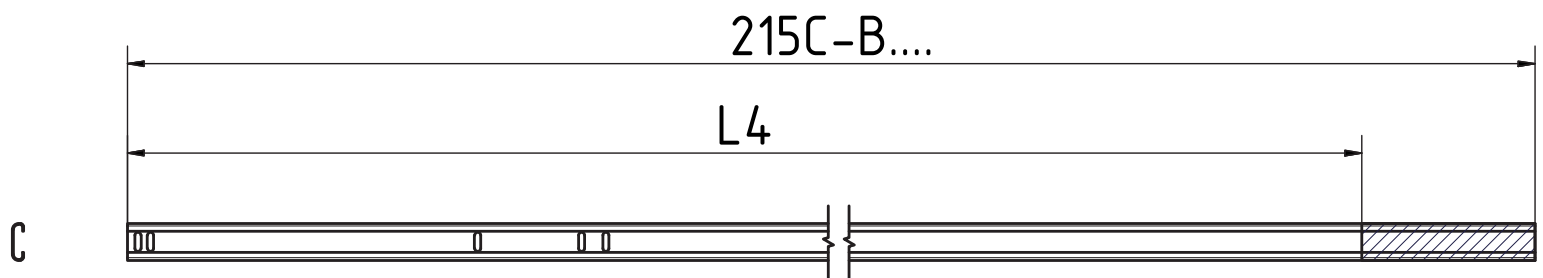


IF PITCH 15°-45°

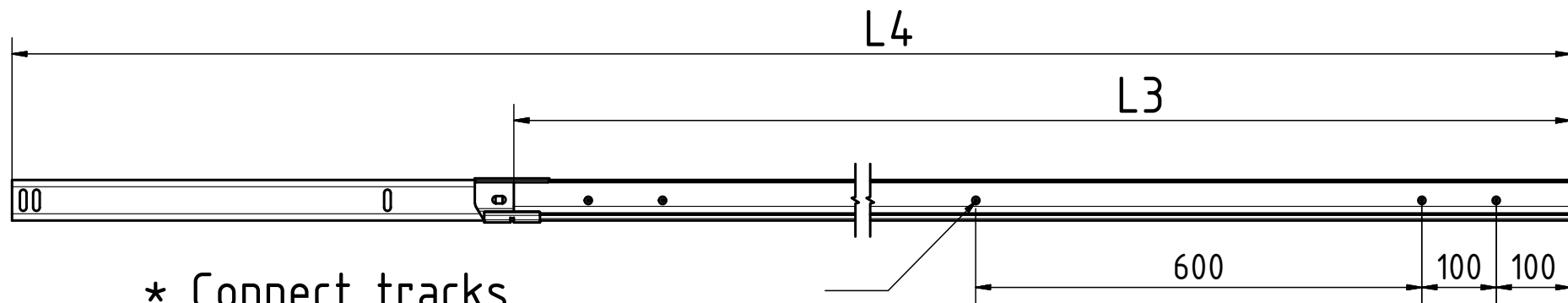




$$L3 = OPH - HL + ((\alpha/5)*35) + CL3$$

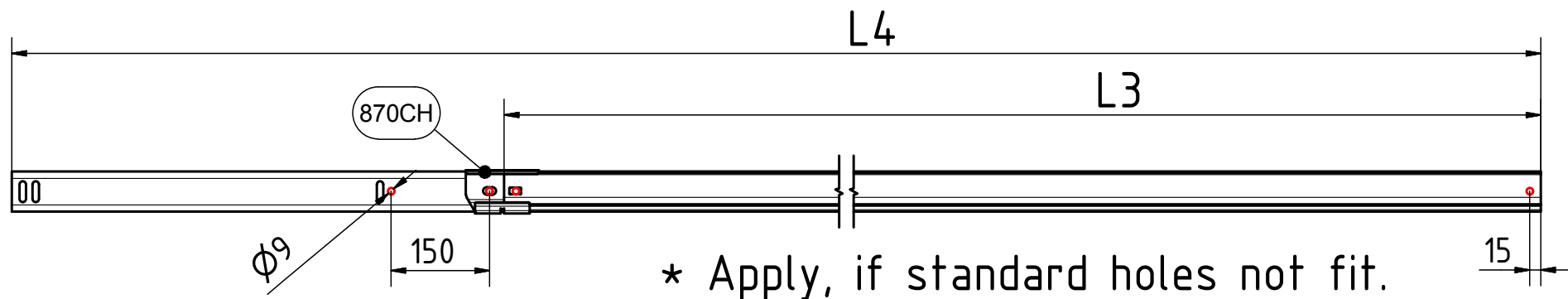


$$L4 = OPH - HL + UWS + ((\alpha/5)*35) + CL3 + CL4$$



* Connect tracks

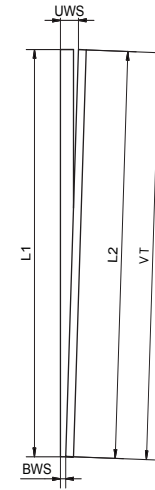
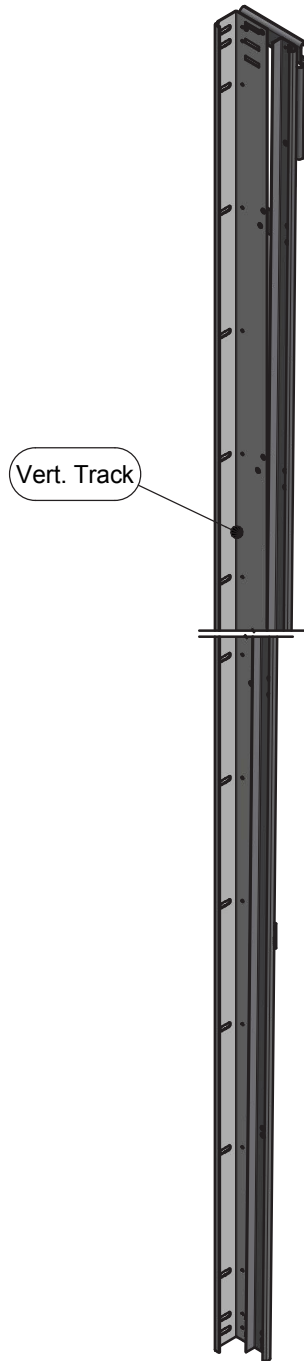
* Min. shear strength of 6000N



* Apply, if standard holes not fit.



* Optional, extra bolt connections in tracks



ISC -VL

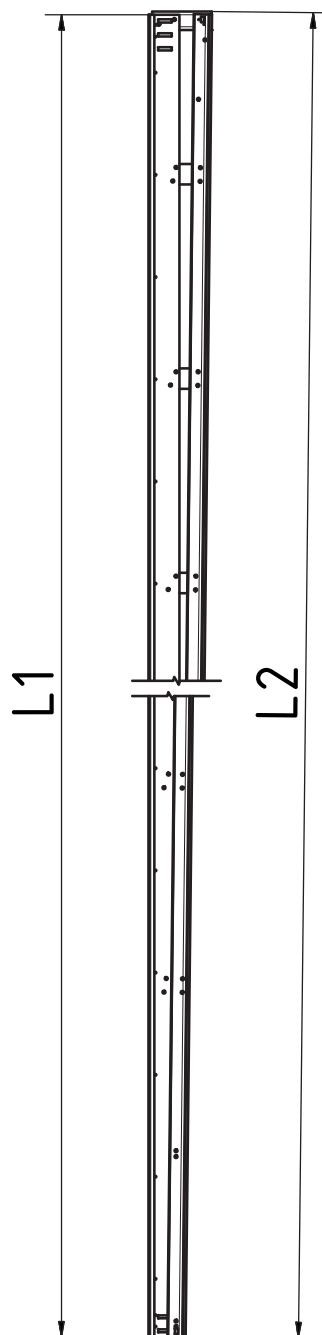
1 piece vertical

VL	L1	L2
1 piece vertical	$OPH*2$ + CL1	$OPH*2$ + CL2

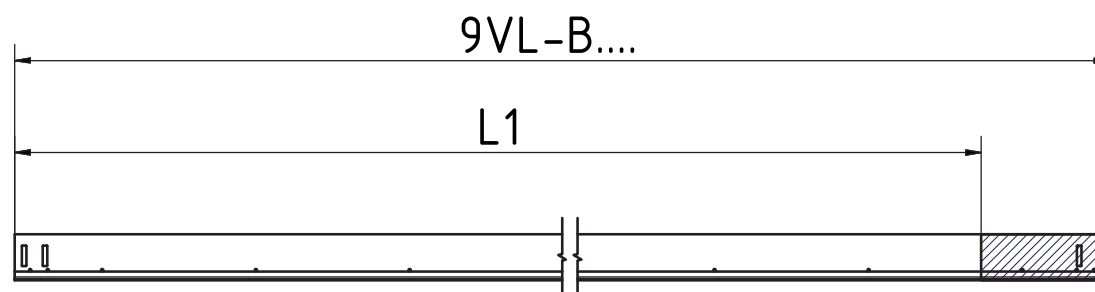
Drum	CL1	CL2
FFVL11	300	300

CL1, CL2, is correction dimension in Formula for L1, L2.

Vert. Track

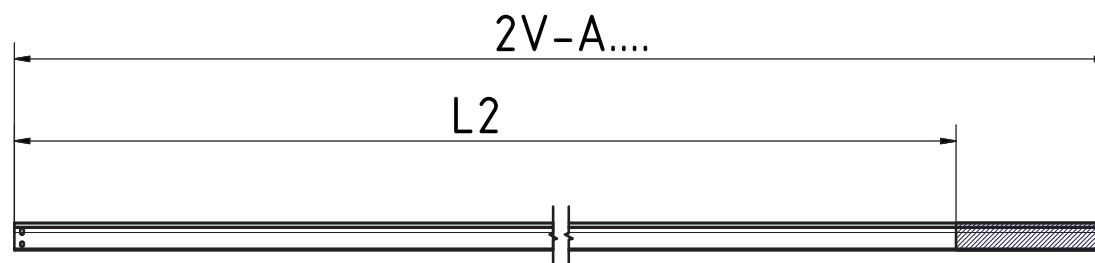


L



$$L1 = (OPH*2) + CL1$$

C

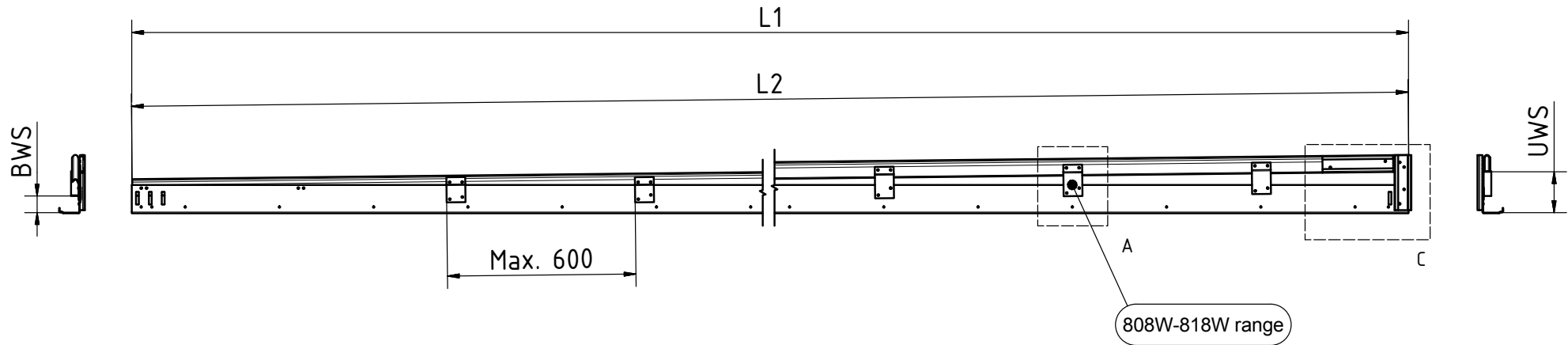


$$L2 = (OPH*2) + CL2$$

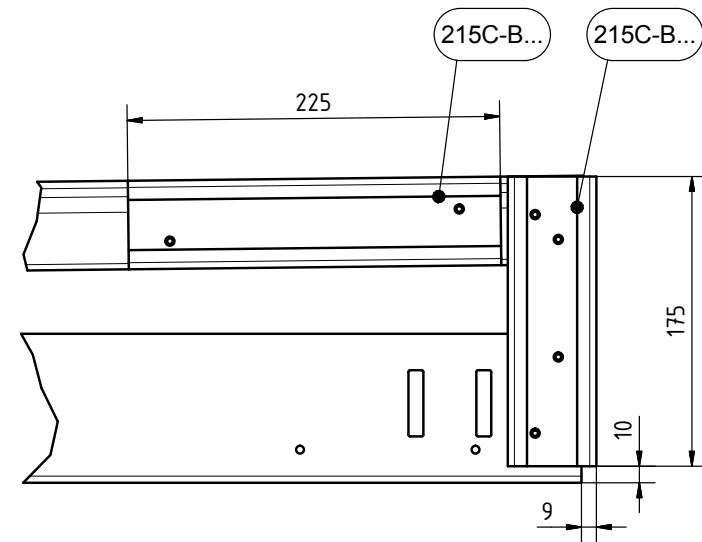
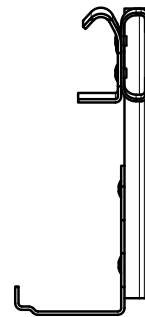
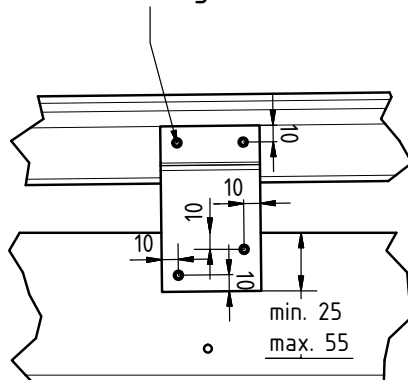
Left and right version, right handed version drawn

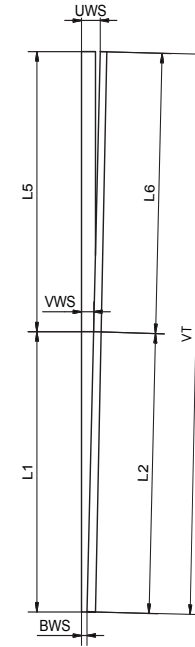
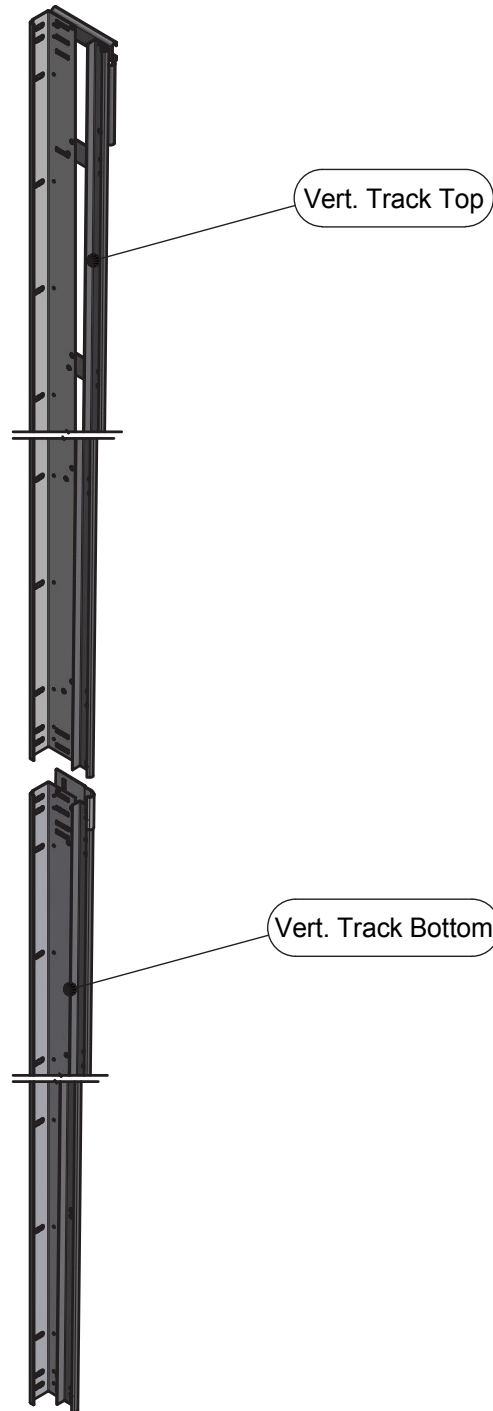
BWS = Panel thickness+13

UWS = 130



- A connection every 600mm
- * a single rivet
- * a track connection plate
- * Min. shear strength of 6000N





ISC -VL

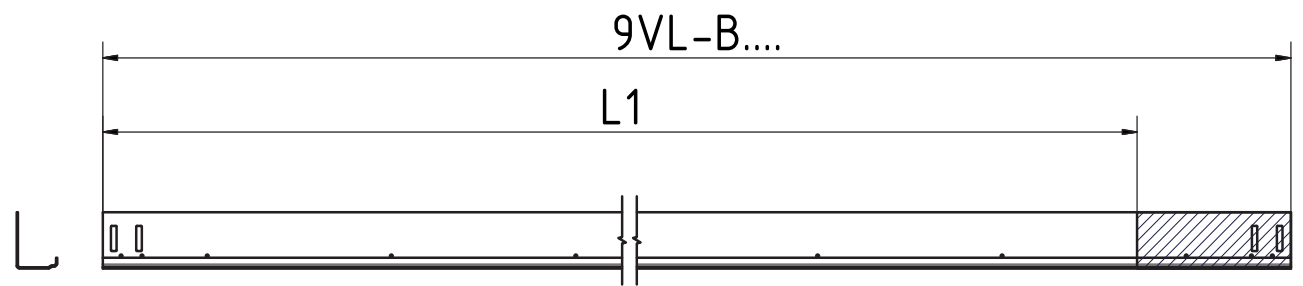
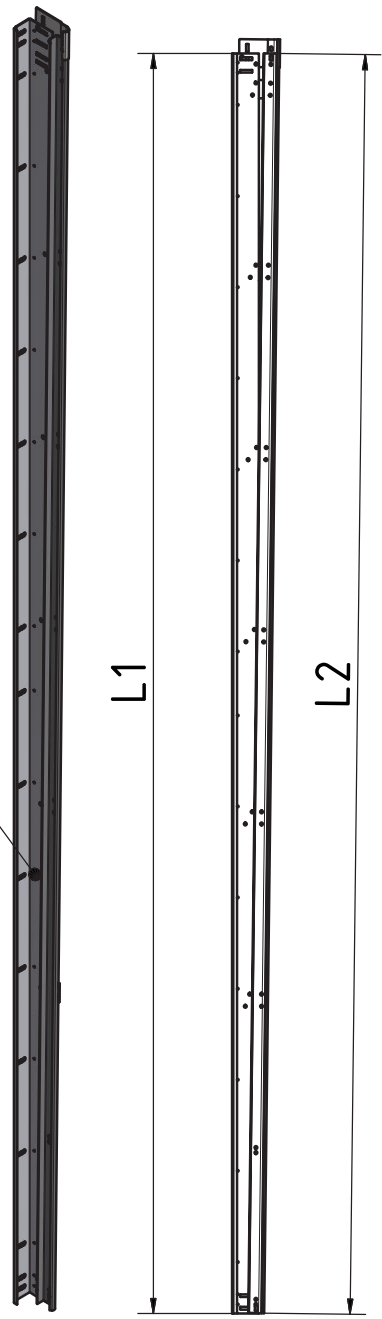
2 piece vertical

VL	L1	L2	L5	L6
2 piece vertical	OPH + CL1	OPH + CL2	OPH + CL5	OPH + CL6

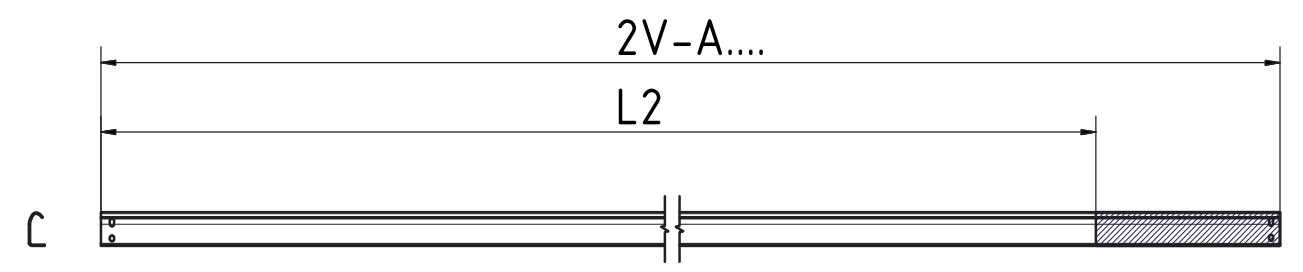
Drum	CL1	CL2	CL5	CL6
FFVL18	150	148	150	148

CL1, CL2...etc, is correction dimension in Formula for L1, L2...etc.

Vert. Track Bottom



$$L1 = OPH + CL1$$



$$L2 = OPH + CL2$$

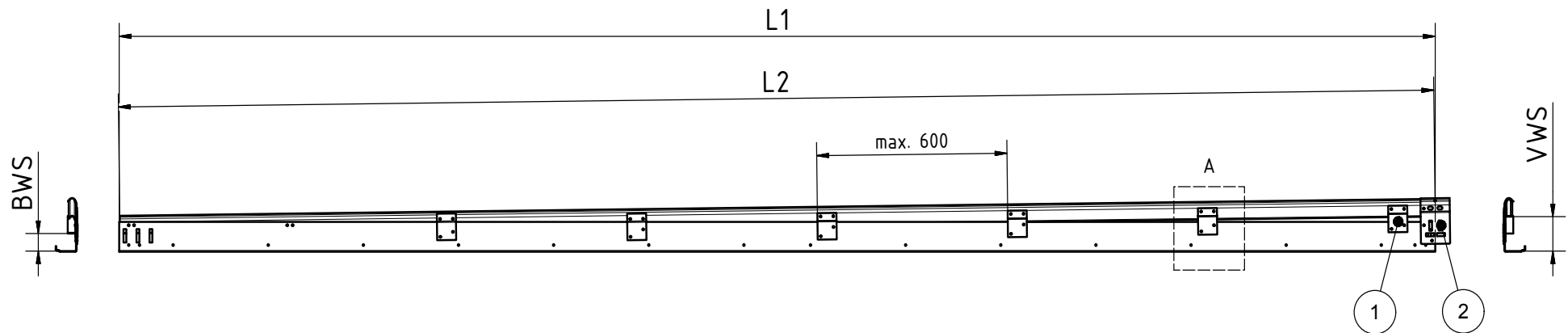
Left and right version, right handed version drawn

BWS = Panel thickness+13

UWS = BWS+UWS/2

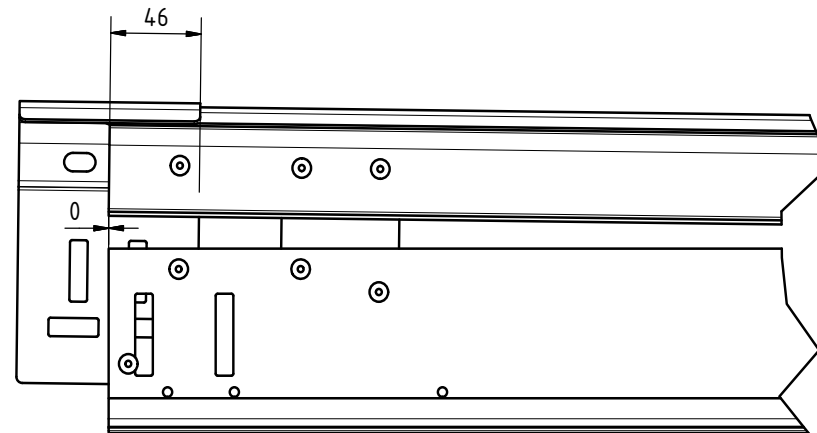
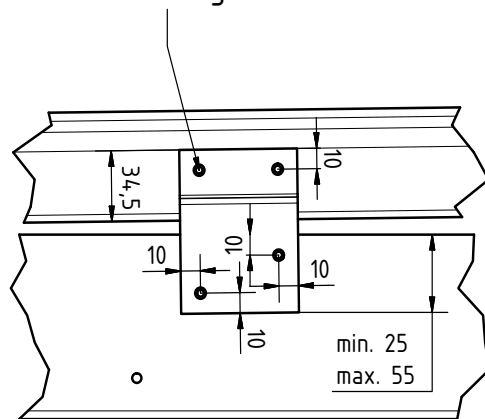
1 = 808W-818W range

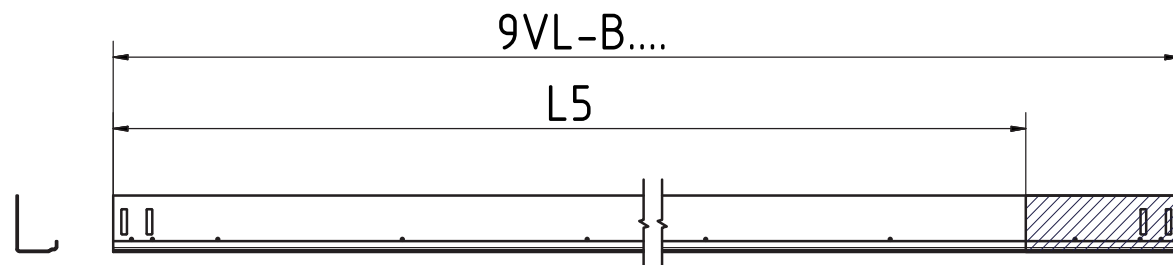
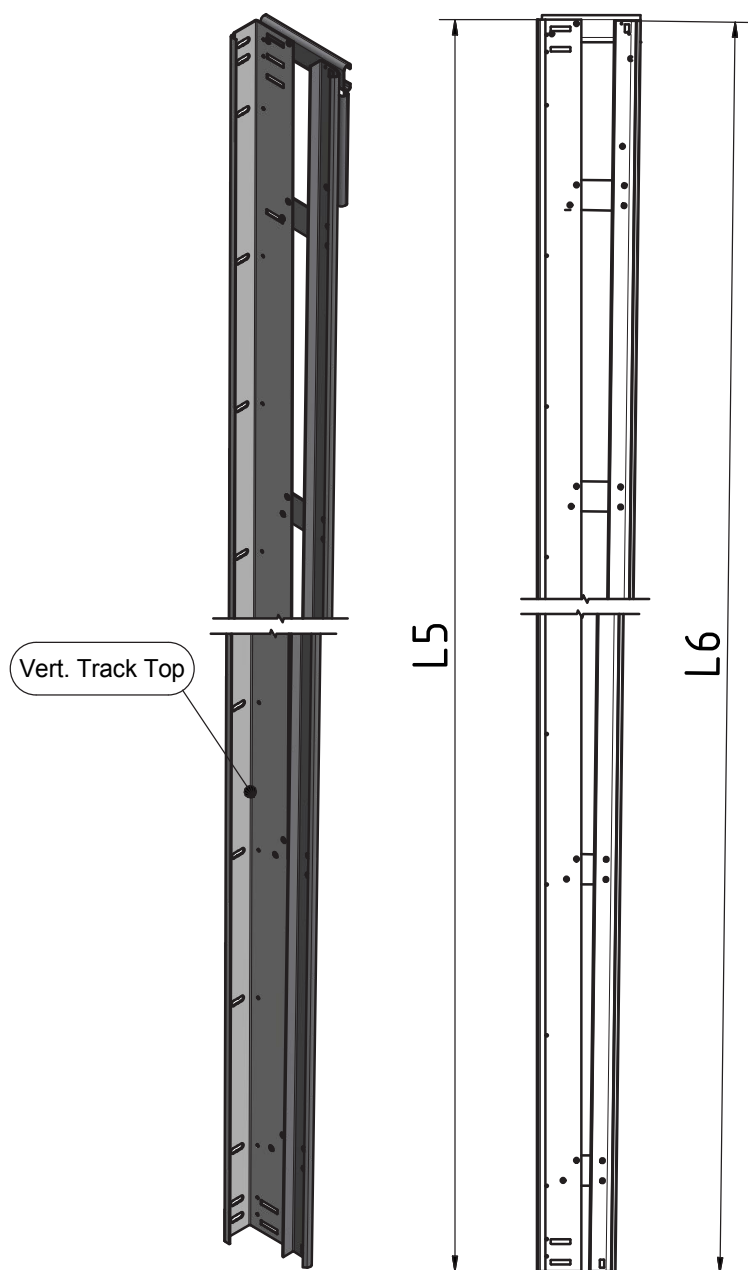
2 = 870V... range



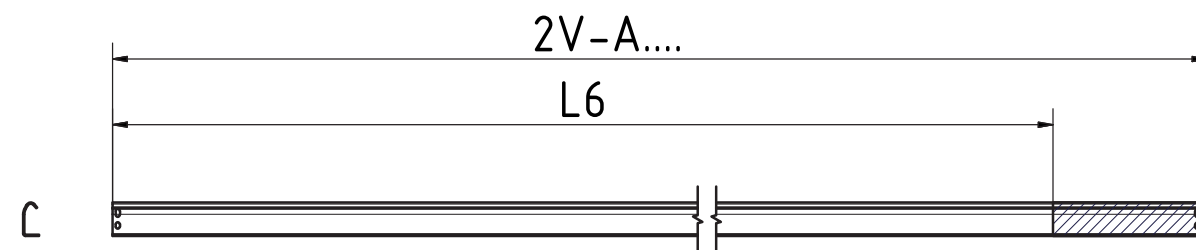
A connection every 600mm

- * a single rivet
- * a track connection plate
- * Min. shear strength of 6000N





$$L5 = OPH + CL5$$

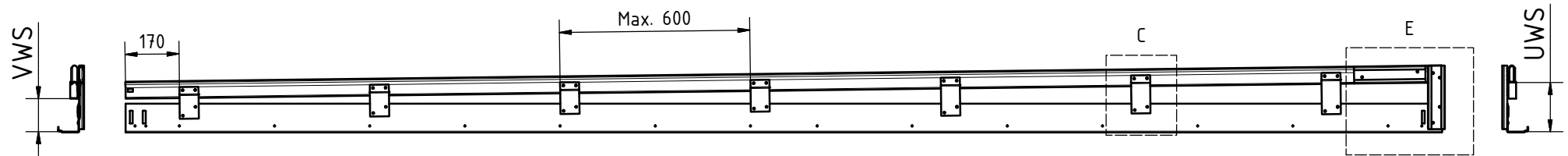


$$L6 = OPH + CL6$$

Left and right version, right handed version drawn

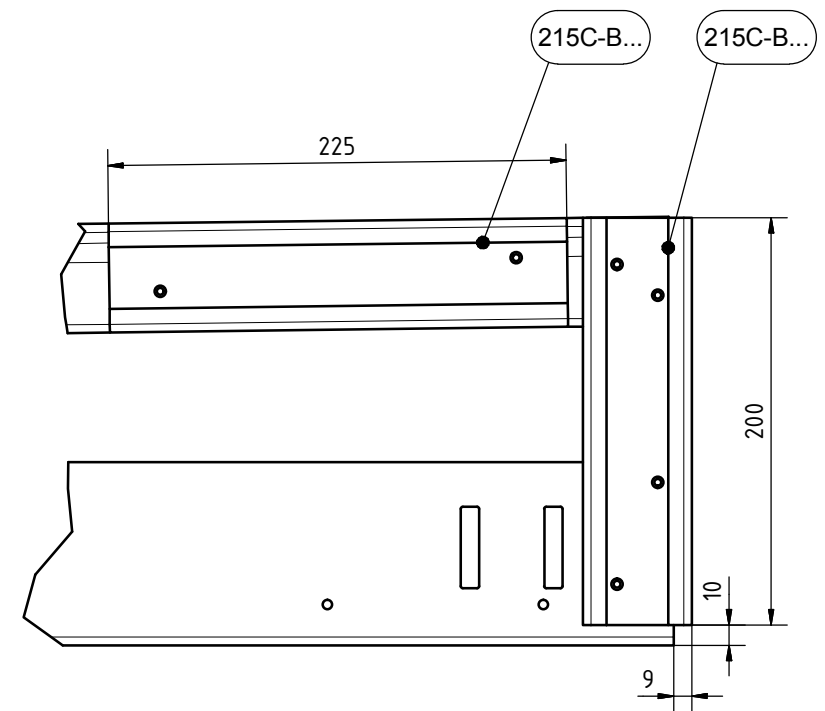
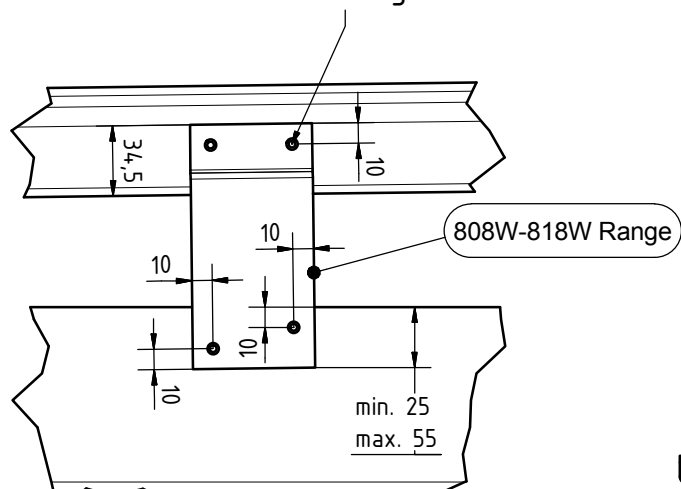
$$VWS = BWS + UWS / 2$$

$$UWS = 155$$



A connection every 600mm

- * a single rivet
- * a track connection plate
- * Min. shear strength of 6000N





ISC LHR-0-40°

1 piece vertical

LHR - 0°- 40°	L1	L2	Curve	L3	L4
1 piece vert.	OPH + CL1	OPH - CL2	See table	OPH + ((α /5)*35) + CL3	OPH + UWS + ((α /5)*35) + CL3 + CL4

α	CL1	CL2	Art. Code	CL3	CL4
0°	80	452	2G380A0	200	571
5°	80	452	2G380A5	200	571 - 35
10°	80	452	2G380A10	200	571 - 70
15°	80	452 - 30	2G380A15	200	571 - 100
20°	80	452 - 70	2G380A20	200	571 - 125
25°	80	452 - 70	2G380A25	200	571 - 150
30°	80	452 - 92	2G380A30	200	571 - 170
35°	80	452 - 100	2G380A35	200	571 - 190
40°	80	452 - 100	2G380A40	200	571 - 205

CL1, CL2...etc, is correction dimension in Formula for L1, L2...etc.

Vert. Track

L1

L2

9VL-B....

L1

$$L1 = OPH + CL1$$

2V-A....

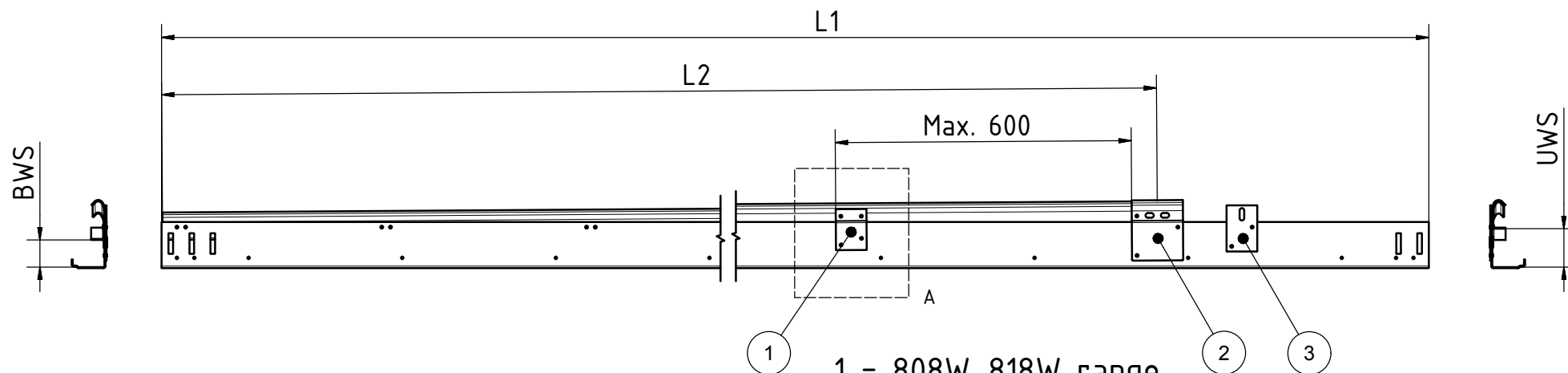
L2

$$L2 = OPH - CL2$$

Left and right version, right handed version drawn

$$BWS = \text{Panel thickness} + 13$$

$$UWS = 94$$



1 = 808W-818W range

2 = 870V... range

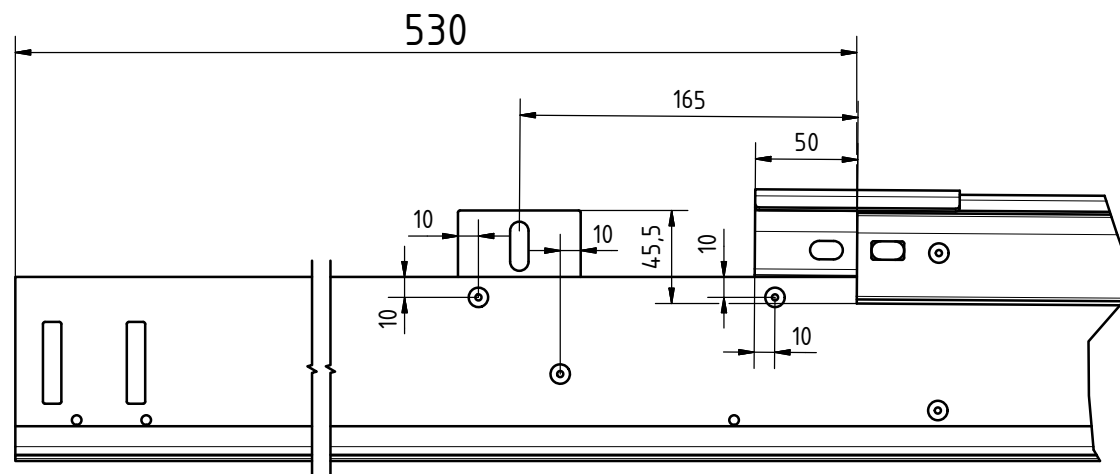
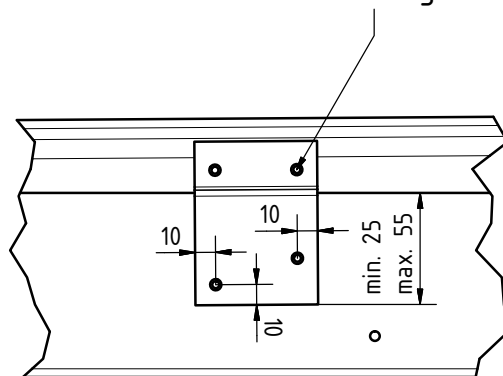
3 = 870F... range

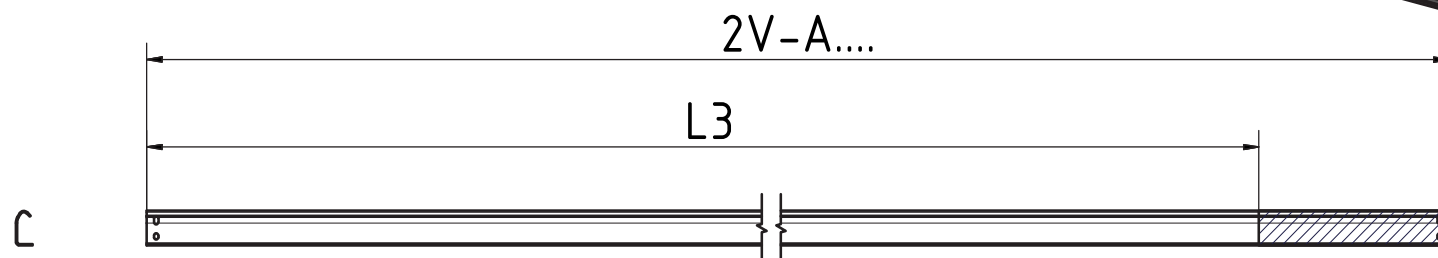
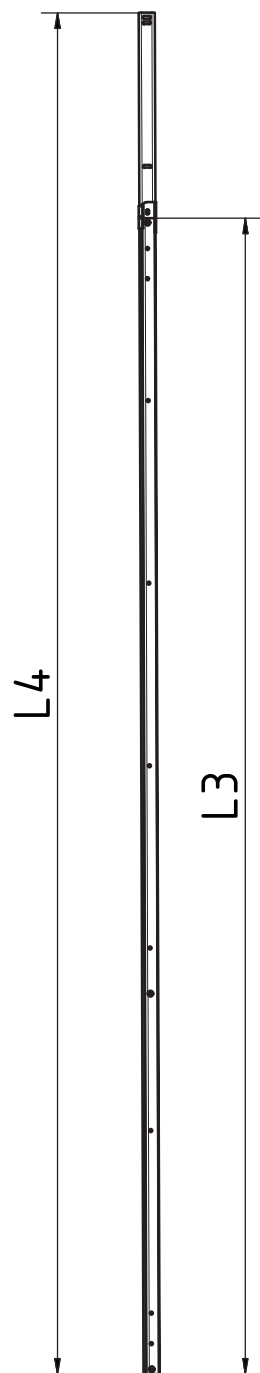
A connection every 600mm

* a single rivet

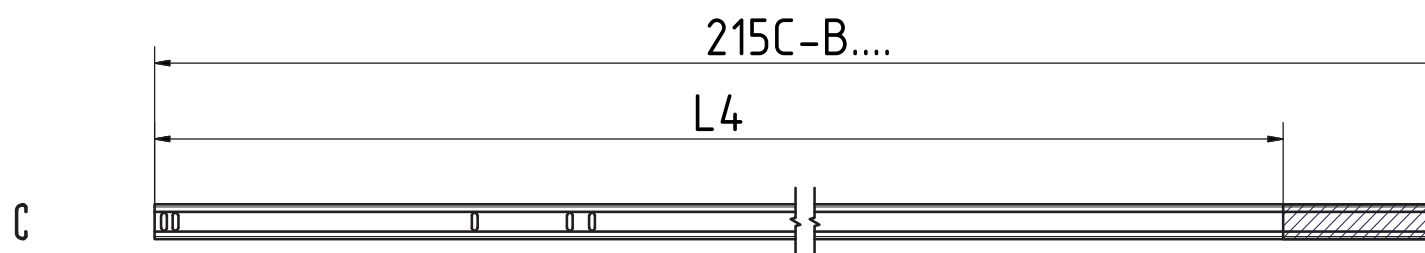
* a track connection plate

* Min. shear strength of 6000N



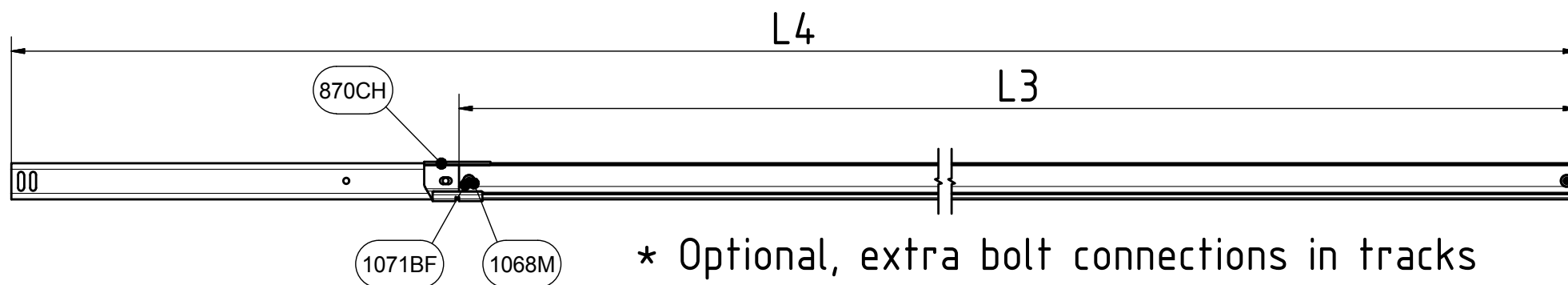
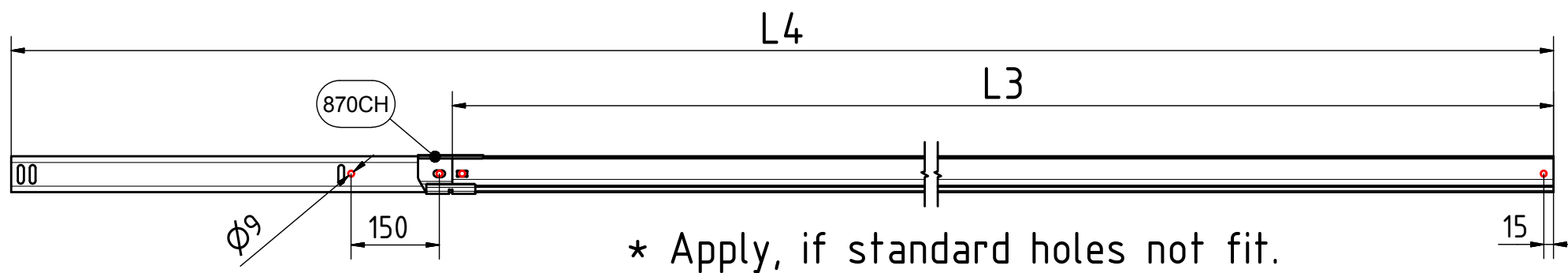
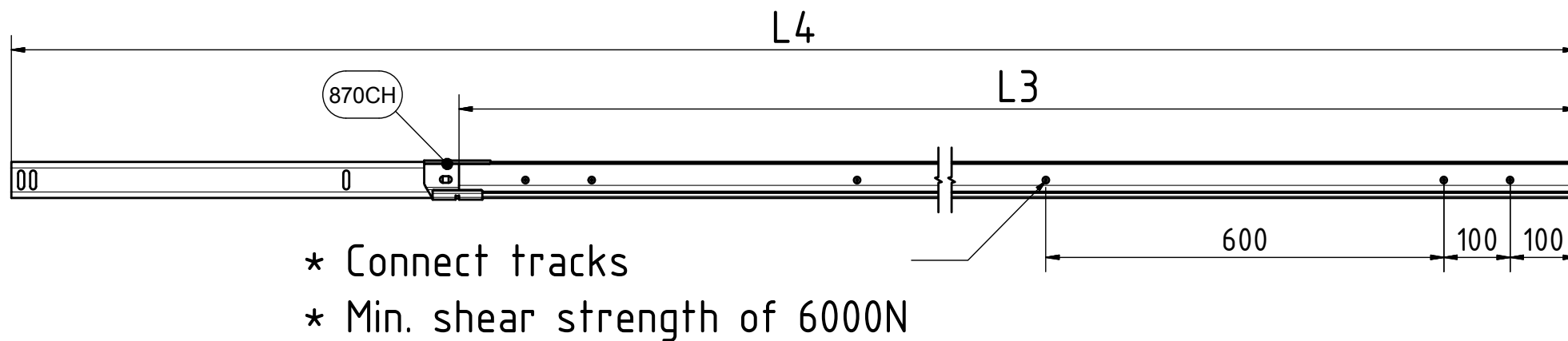


$$L3 = OPH + ((\alpha/5)*35) + CL3$$



$$L4 = OPH + UWS + ((\alpha/5)*35) + CL3 + CL4$$

Left and right version, right handed version drawn



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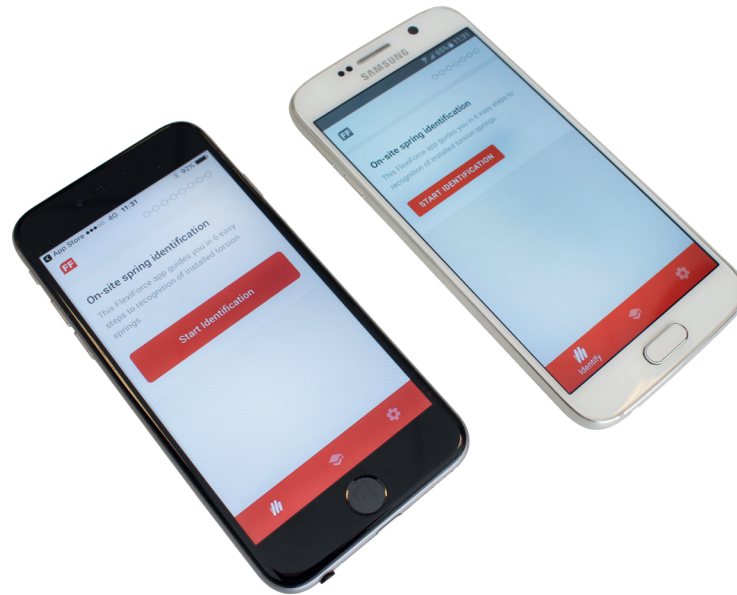
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