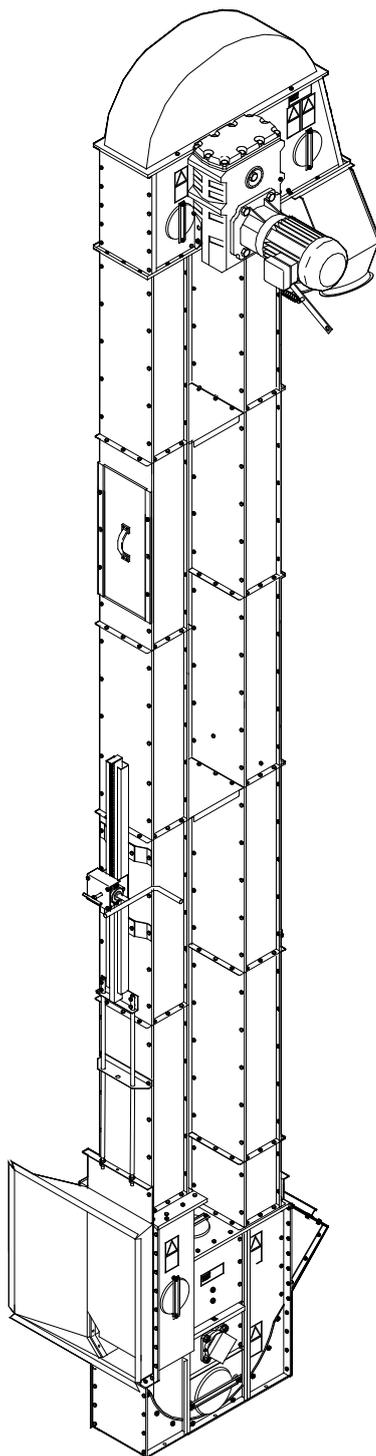


# Installation and Operating Instructions

## ANTTI E SERIES ELEVATORS

408010 (en) 03-2021



Read the Installation and Instruction Manual carefully before installing the machine and putting it into operation.

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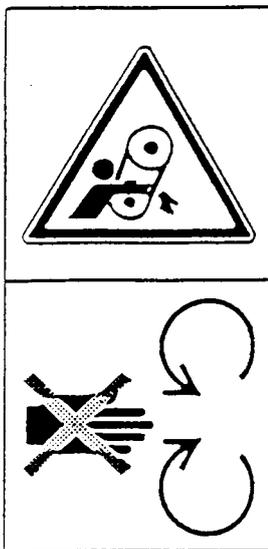
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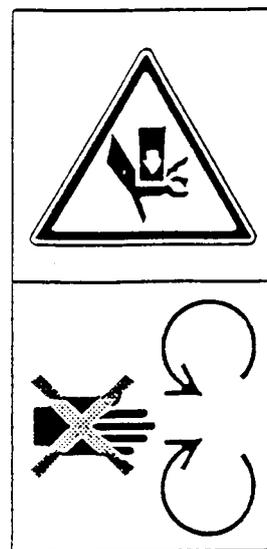
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## SAFETY

- The elevator has moving parts which cause serious injuries if touched while the machine is in operation! Never open the hatches or covers of the machine unless you have first ensured that the power supply circuit is disconnected, e.g., by removing the fuse!
- The following warning signs are affixed to the elevator:

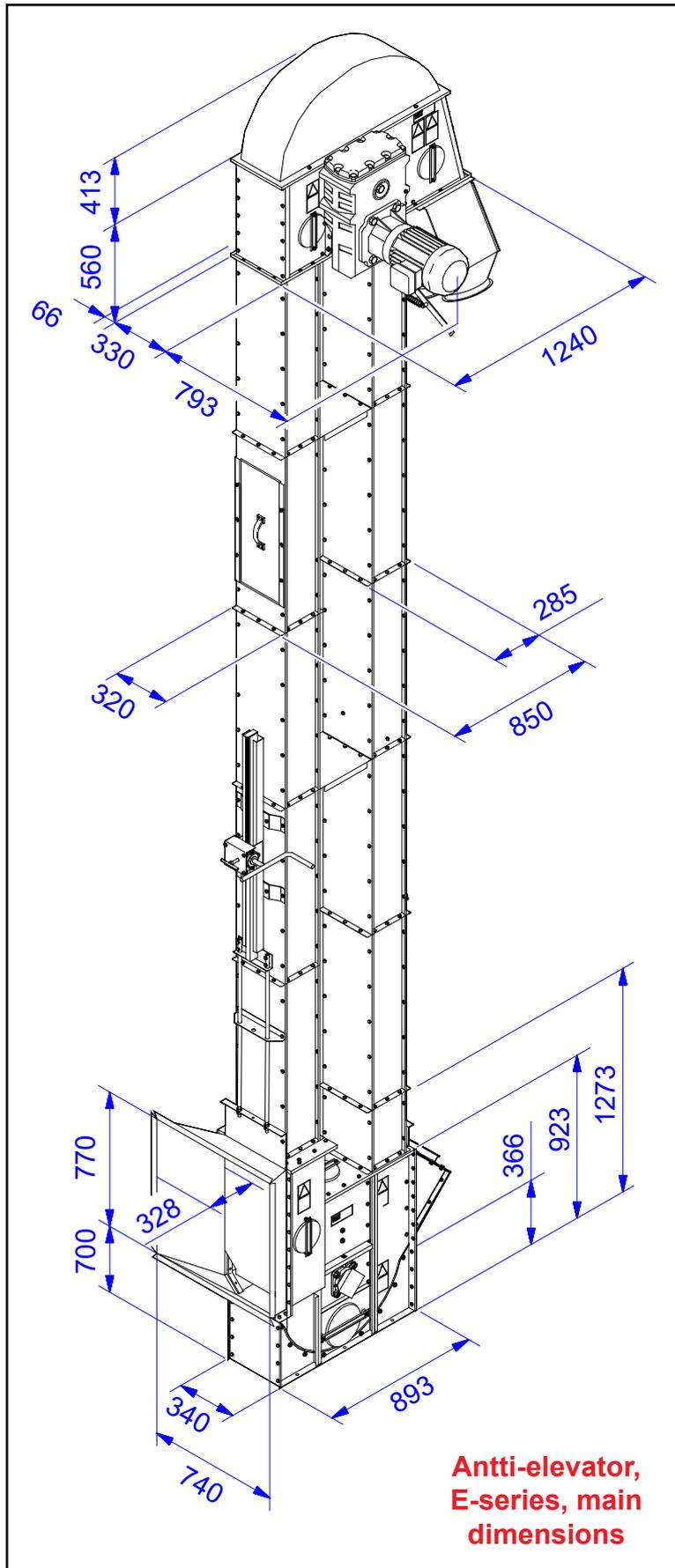


Never open the belt cover while the machine is in operation - risk of injury to hand and arm!



Never open the hatch while the machine is in operation - risk of injury to hands and fingers!

Special care needs to be taken when making the initial settings, as the elevator will be operated with part of the control and service hatches open at various times.  
Risk of injury!



## INTRODUCTION AND INTENDED USE OF THE MACHINE

- \* The Antti E-series farm elevator is designed for vertical transfer of grain and granular materials.
- \* Note! Farm elevators equipped with standard parts are not suitable for conveying sand or other materials that cause excessive wear. Nor are they recommended for transfer of substances exceeding 20 mm in particle size.
- \* The elevator is of bucket belt type. The buckets are installed so that they form groups. Seen from above, each group consists of 2 - 6 bottomless buckets and one bucket (the lowest) with bottom. The bucket belt is of rubber. The belt has three reinforcement plies.
- \* The frame pipes of the elevator are made of hot-galvanized steel plate with rectangular profile. The top part and the boot are the other parts of the elevator's frame structure. They are also mostly made of hot-galvanized raw material.
- \* In addition to the above components, the elevator delivery includes many other items, which are delivered separately. The installation locations for these items are described later in these Assembly Instructions. The components of any optional equipment are also delivered separately.
- \* The noise emission of a loaded elevator is 73 dB.

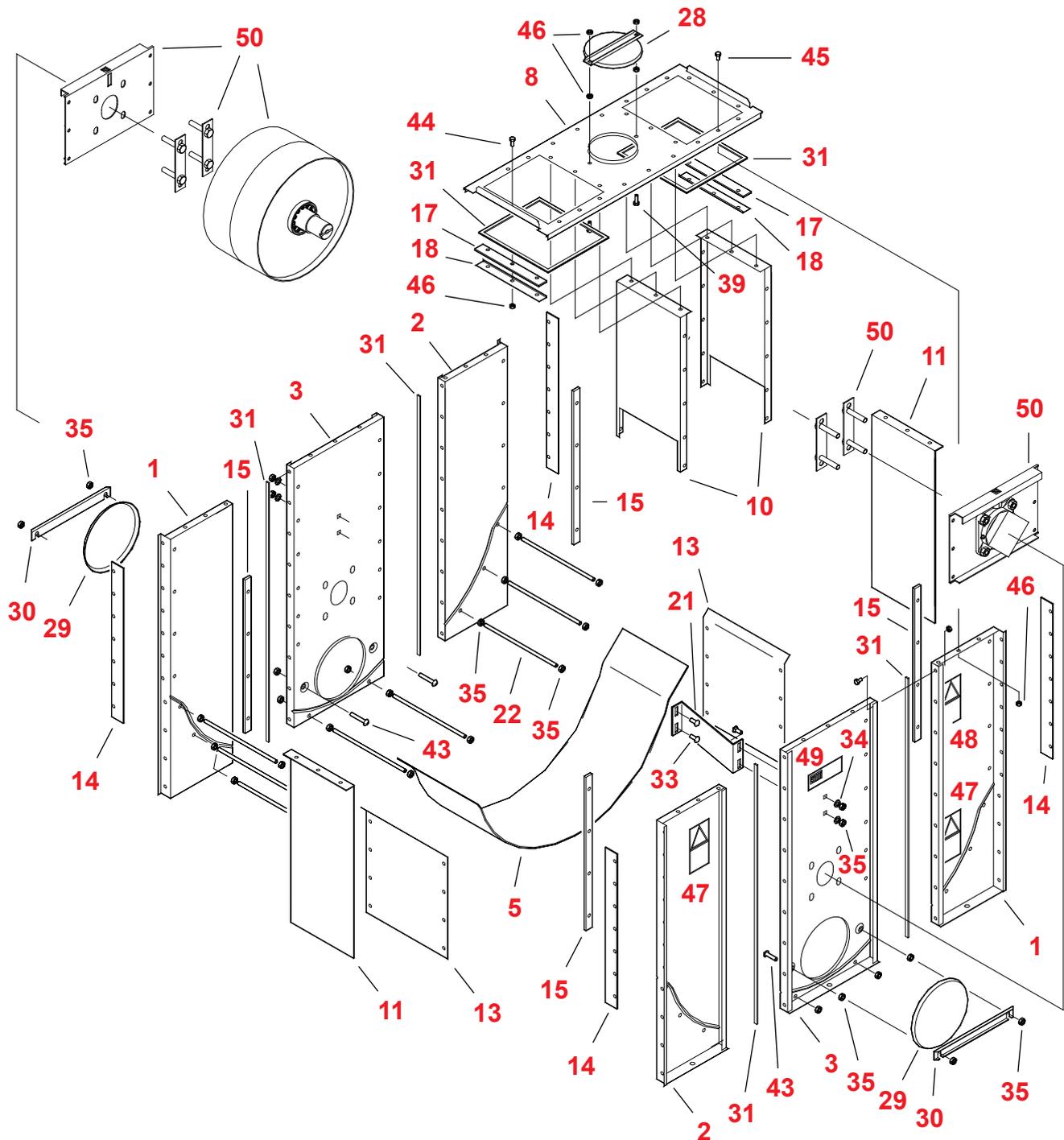




## **ANTTI-ELEVATOR, E-SERIES, PARTS DRAWINGS**



## Elevator boot - housing parts for the boot, symmetric model

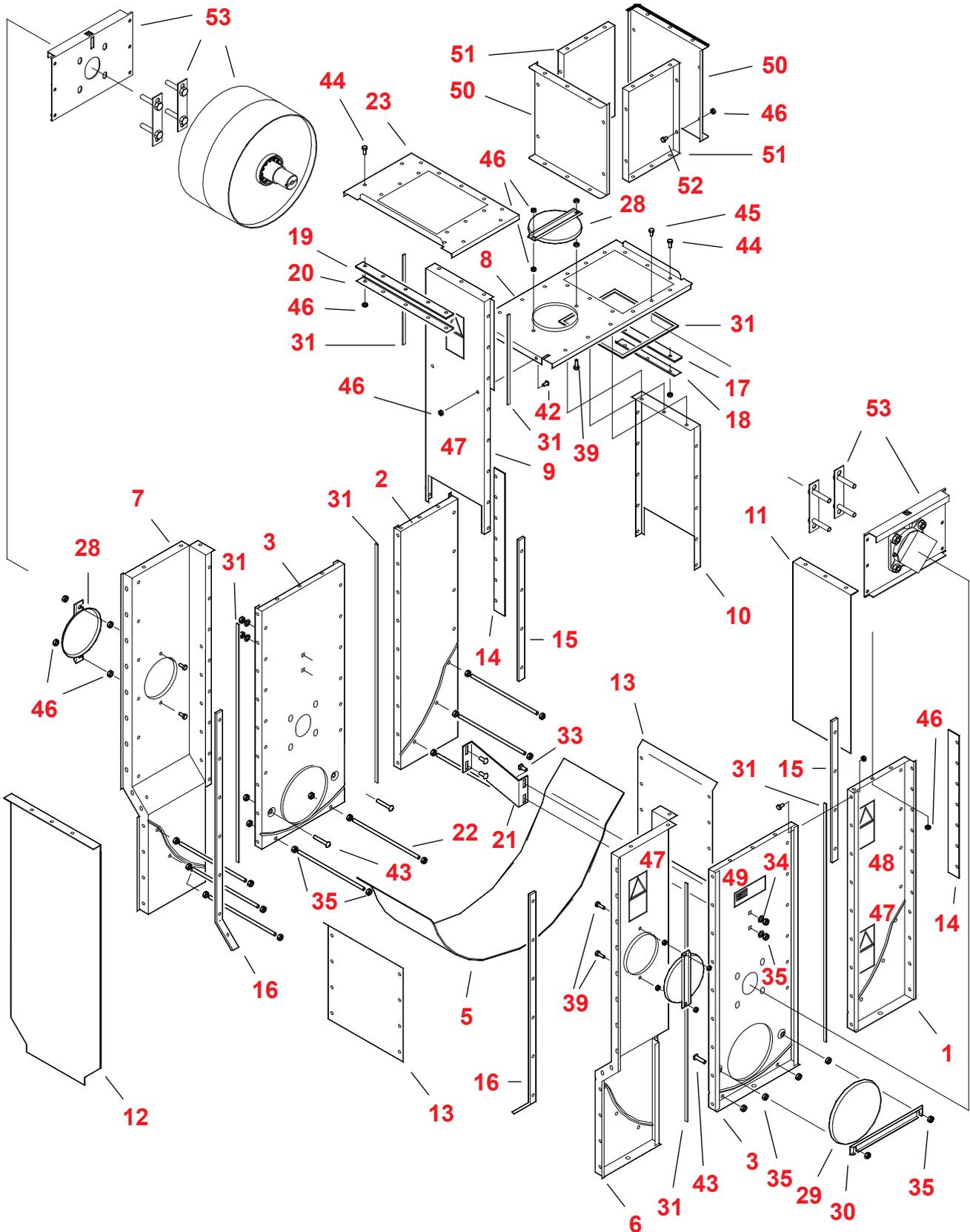




Ref.	Part	Pcs	Item	Note!
1	32477	2	Side-plate - low, right	
2	32478	2	Side-plate - low, left	
3	32479	2	Side-plate - centre part	
5	32480	1	Bottom arc	
8	32474	1	Top plate - symmetric	
10	32475	2	Intermediate plate - return side	
11	32481	2	Shutter plate - return side	
13	41884	2	End-plate	
14	41885	4	Guide strip - return side	
15	41889	4	Support strip - return side	
17	41887	2	Sealing felt - return side	
18	41886	2	Attachment strip for felt - return side	
21	41888	1	Scraper	
22	41898	8	Joining screw	M10
28		1	Control hatch with retainer D170	41560
29	400141	2	Hatch D225	
30		2	Hatch retainer	41552
31	115570	10 m	Cell rubber sealing	4x10
33	107907	4	Lock screw	M10x25
34	111560	4	Washer	M12
35	110560	44	Hexagon nut	M10
39	101830	2	Hexagon bolt	M8x25
43	104260	4	Hexagon socket bolt, ball-headed	M10x40
44	101820	6	Hexagon bolt	M8x20
45	101810	103	Hexagon screw	M8x16
46	110540	111	Hexagon nut	M8
47	117774	5	Sticker - Never open the covers while the machine is in operation	
48	117770	2	Sticker - Read the Instruction Manual	
49	117911	1	Sticker - Nameplate	
50		-	Bucket belt pulley with bearings	Incl. Parts 1-11 from page "Bucket belt, pulleys, bearings and drive"
-	<b>503487</b>	1	ELEVATOR BOOT Symmetric model, assembly	Incl. Parts 1-50



## Elevator boot - housing parts for the boot, elevated model



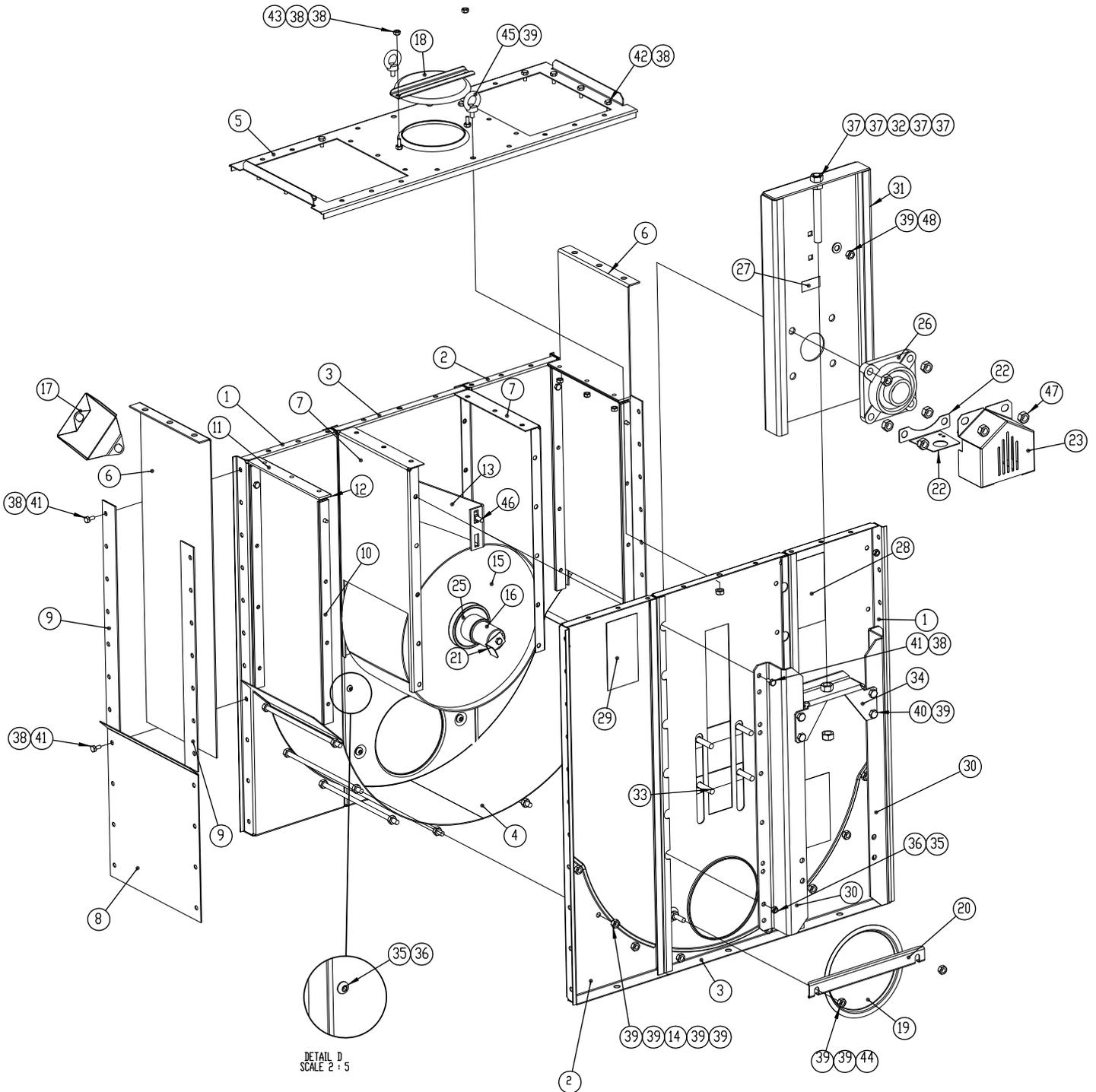


Ref.	Part	Pcs	Item	Note!
1	32477	1	Side-plate - low, right	
2	32478	1	Side-plate - low, left	
3	32479	2	Side-plate - centre part	
5	32480	1	Bottom arc	
6	22387	1	Side-plate - elevated, right	
7	22388	1	Side-plate - elevated, left	
8	32489	1	Top plate - return side	
9	32496	1	Intermediate plate - ascending side	
10	32475	1	Intermediate plate - return side	
11	32481	1	Shutter plate - return side	
12	32495	1	Shutter plate - ascending side	
13	41884	2	End-plate	
14	41885	2	Guide strip - return side	
15	41889	2	Support strip - return side	
16	41899	2	Supports strip - ascending side	
17	41887	1	Sealing felt - return side	
18	41886	1	Attachment strip for felt - return side	
19	41901	1	Sealing felt - ascending side	
20	41900	1	Attachment strip for felt - ascending side	
21	41888	1	Scraper	
22	41898	8	Joining screw	M10
23	32494	1	Top plate - ascending side	
28		3	Control hatch with retainer D170	41560
29	400141	2	Hatch D225	
30		2	Hatch retainer	41552
31	115570	10 m	Cell rubber sealing	4x10
33	107907	4	Lock screw	M10x25
34	111560	4	Washer	M12
35	110560	44	Hexagon nut	M10
39	101830	6	Hexagon bolt	M8x25
42	104261	2	Hexagon socket bolt, ball-headed	M8x16
43	104260	4	Hexagon socket bolt, ball-headed	M10x40
44	101820	8	Hexagon bolt	M8x20
45	101810	139	Hexagon bolt	M8x16
46	110540	163	Hexagon nut	M8
47	117774	5	Sticker - Never open the covers while the machine is in operation	
48	117770	2	Sticker - Read the Instruction Manual	
49	117911	1	Sticker - Nameplate	
50	32529	2	Top plate L = 0,35 m	
51	32532	2	Side-plate L = 0,35 m	
52	101800	8	Hexagon bolt	M8x12
53		-	Bucket belt pulley with bearings	Incl. Parts 1-11 from page "Bucket belt of the elevator, pulleys, bearings and drive"
-	<b>503485</b>	1	ELEVATOR BOOT Elevated model, assembly	Incl. Parts 1-53



# Elevator, E-series

## Elevator boot - adjustable boot



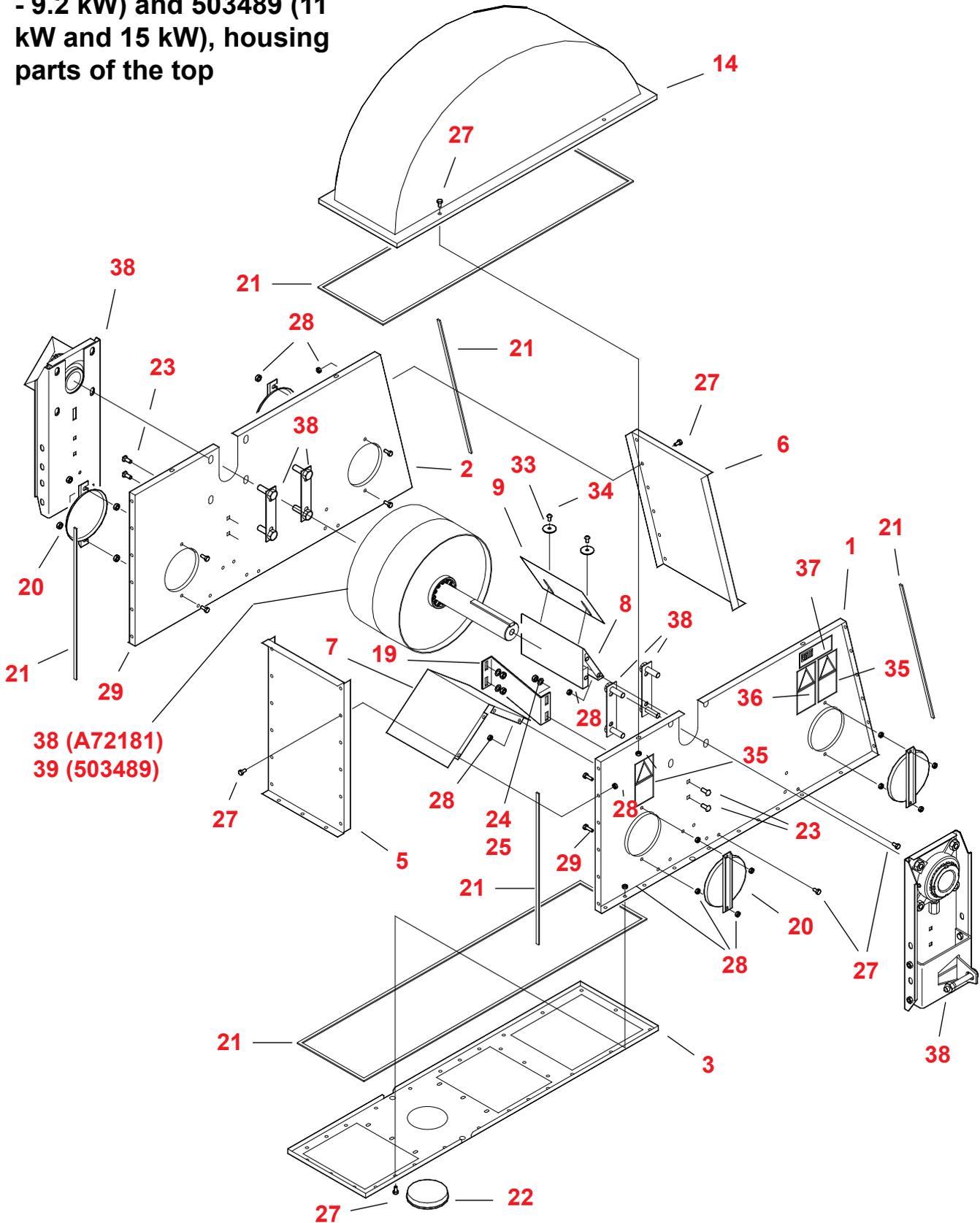


# Elevator, E-series

Ref	Item ID	Name	Pcs
1	32477		2
2	32478		2
3	A72209		2
4	32480		1
5	32474		1
6	32481		2
7	A72241		2
8	41884		2
9	41885		4
10	41889		8
11	41887		2
12	41886		2
13	41888		1
14	41898		8
15	32487		1
16	32483		1
17	31907		1
18	41560		1
19	400141		2
20	41552		2
21	42376		1
22+23	A76199, A76170		1+1
24	115570		10
25	314016	TENSION SLEEVE 60X 90 BONFIX 2000	2
26	116521	FLANGE MOUNTED BEARING UCF 210 (FY50TF)	2
27	117911		1
28	117770		2
29	117774		4
30	A72219		4
31	A72220		2
32	A72222		2
33	41917		4
34	A72264		2
35	104266	HEXAGON SOCKET BOLT, BALL-HEADED 8X20AM ISO 7380	4
36	110790	NYLOC NUT ZN M8 DIN 985	4
37	110585	NUT M16 DIN934	8
38	110540	NUT M8 DIN 934	148
39	110560	NUT M10 DIN 934	54
40	102200	HEXAGON BOLT ZN 10X20 DIN933	8
41	101810	HEXAGON BOLT ZN 8X16 DIN933	139
42	101820	HEXAGON BOLT ZN 8X20 DIN933	6
43	101830	HEXAGON BOLT ZN 8X25 DIN933	2
44	104260	HEXAGON SOCKET BOLT, BALL-HEADED 10X40 AM ISO 7380	4
45	107807	EYE BOLT M10X18 DIN580	2
46	107907	LOCK SCREW ZN M10X25 DIN603 8.8	4
47	110580	NUT M14 DIN934	12
48	111560	WASHER ZN M12 ZN DIN 125	4



Elevator top A72181 (3 kW - 9.2 kW) and 503489 (11 kW and 15 kW), housing parts of the top

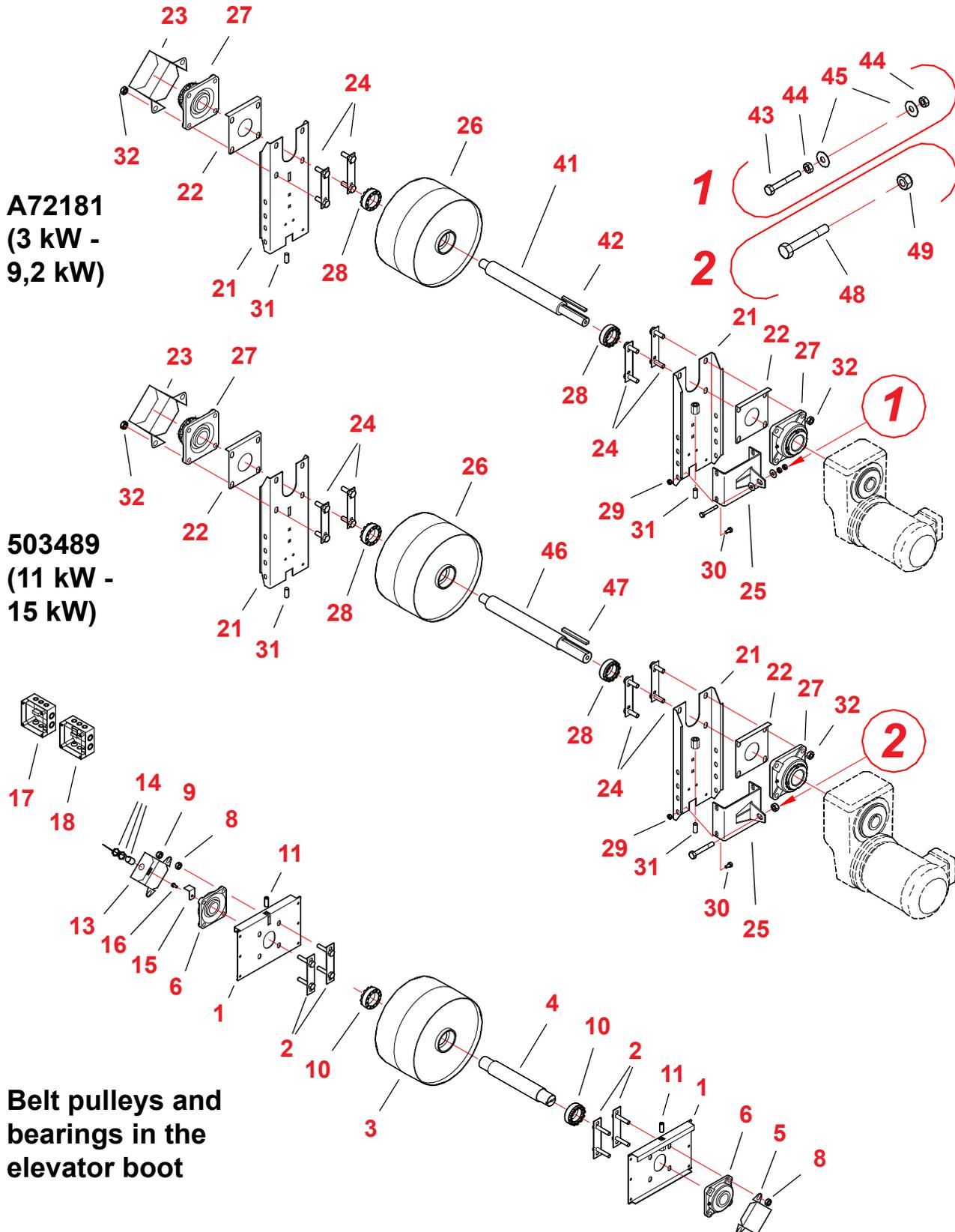




Ref.	Part	Pcs	Item	Note!
1	32497	1	Side-plate - right	
2	32498	1	Side-plate - left	
3	32502	1	Bottom plate	
5	32499	1	End-plate - ascending side	
6	32500	1	End-plate - return side	
7	32503	1	Intermediate plate	
8	32504	1	Intermediate plate - adjustable	
9	41913	1	Adjustment part of the intermediate plate	
14	32525	1	Cover	
19	41888	1	Scraper	
20		4	Control hatch with retainer D170	41560
21	115570	10 m	Cell rubber sealing	4x10
22	116092	1	Plastic plug	
23	107907	4	Lock screw	M10x25
24	111560	4	Washer	M12
25	110560	4	Hexagon nut	M10
27	101810	72	Hexagon bolt	M8x16
28	110540	88	Hexagon nut	M8
29	101830	8	Hexagon bolt	M8x25
33	400122	2	Washer	D40/9
34	104261	2	Hexagon socket bolt, ball-headed	M8x16
35	117774	4	Sticker - Never open the covers while the machine is in operation	
36	117770	2	Sticker - Read the Instruction Manual	
37	117911	1	Sticker - Nameplate	
<b>38</b>		-	<b>Bucket belt pulley with bearings Nord 3282</b>	<b>Incl. parts 21-32, 41-45 "Bucket belt of the elevator, pulleys, bearings and drive" from next page</b>
<b>39</b>		-	<b>Bucket belt pulley with bearings Nord 4282</b>	<b>Incl. parts 21-32, 46-49 "Bucket belt of the elevator, pulleys, bearings and drive" from next page</b>
-	<b>A72181</b>	<b>1</b>	<b>ELEVATOR TOP For Nord 3282 gear motor, (Nord 3282) assembly</b>	<b>Incl. Parts 1-38</b>
-	<b>503489</b>	<b>1</b>	<b>ELEVATOR TOP For Nord 4282 gear motor, (Nord 4282) assembly</b>	<b>Incl. Parts 1-37, 39</b>



## Belt pulleys and bearings in the elevator top A72181 (3 kW - 9,2 kW) and 503489 (11 kW and 15 kW)





Ref.	Part	Pcs	Item	Note!
1	32476	2	Stiffening plate, elevator boot	
2	41917	4	Counter-part for bearing UFC210	
3	32487	1	Bucket belt pulley D400	
4	32483	1	Shaft in the boot D60/50	
5	400920	1	Shaft end cover, elevator boot	
6	116521	2	Flange-mounted bearing UFC210 D50	
8	110580	8	Hexagon nut	M14
9	110814	4	Nyloc nut	M14
10	314016	2	Tension sleeve	60x90
11	105560	2	Stop screw	M16x40
13	33179	1	Casing, for inductive underspeed guard	
14	511512	1	Inductive sensor	80 r.p.m.
15	42376	1	Claw-plate	
16	101810	1	Hexagon bolt	M8x16
17	511511	1	Relay box	230V
18	511513	1	Relay box	24VDC
21	32501	2	Stiffening plate, elevator top	
22	41914	2	Cover plate for the hole	
23	400900	1	Shaft end cover, elevator top	
24	41916	4	Counter-part for bearing UKF 213	
25	32505	1	Torque arm	
26	32487	1	Bucket belt pulley D400	
27	116530	2	Flange-mounted bearing UKF213 + H213 D60	
28	314016	2	Tension sleeve	60x90
29	110560	4	Hexagon nut	M10
30	102200	4	Hexagon bolt	M10x20
31	105560	2	Stop screw	M16x40
32	110585	8	Hexagon nut	M16
<b>41A72182</b>		<b>1</b>	<b>Shaft in the top Ø 40 mm</b>	<b>For Nord SK3282 gear</b>
<b>42</b>	<b>A70771</b>	<b>1</b>	<b>Rectangular key</b>	<b>8x12, Nord SK3282</b>
<b>43</b>	<b>102630</b>	<b>1</b>	<b>Hexagon bolt</b>	<b>M12x80, Nord SK3282</b>
<b>44</b>	<b>110570</b>	<b>2</b>	<b>Hexagon nut</b>	<b>M12, Nord SK3282</b>
<b>45</b>	<b>111566</b>	<b>2</b>	<b>Fender washer</b>	<b>M12, Nord SK3282</b>
<b>46</b>	<b>32488</b>	<b>1</b>	<b>Shaft in the top Ø 50 mm</b>	<b>For Nord SK4282 gear</b>
<b>47</b>	<b>41959</b>	<b>1</b>	<b>Rectangular key</b>	<b>9x14, Nord SK4282</b>
<b>48</b>	<b>103045</b>	<b>1</b>	<b>Hexagon bolt</b>	<b>M16x110, Nord SK4282</b>
<b>49</b>	<b>110812</b>	<b>1</b>	<b>Nyloc nut</b>	<b>M16, Nord SK4282</b>





Ref.	Part	Pcs	Item	Note!
<b>Optional components:</b>				
7	32482	1	Socket UFC210, underspeed guard 110 r.p.m.	Applies to earlier production only
12	511520	1	Underspeed guard 110 r.p.m.	Applies to earlier production only
<b>Bucket belt:</b>				
31	510575	/m	Bucket belt, perforated	B 200 100/75
32	300695	*)	Elevator bucket, with bottom	GB 180x140
33	300696	**)	Elevator bucket, bottomless	GB 180x140
34	110040	2	Belt screw (pcs. / part 67 and 68)	M8x22
35	110790	2	Nyloc nut (pcs / part 67 and 68)	M8
36	A70217	1 (2)	Joining kit for belt, incl. nuts and bolts	
37	503630	1	Joining tool	
*) <b>E120 ... E100 1,9 pcs./metre of belt, E80 ... E40 2,22 pcs./metre of belt</b>				
**) <b>E120 11,43 pcs./metre of belt, E100 9,52 pcs./metre of belt, E80 6,67 pcs./metre of belt, E60 4,44 pcs./metre of belt, E40 2,22 pcs./metre of belt</b>				
<b>Gear motor:</b>				
61	304305	1	Gear motor Nord SK 3282AGB-100L/40 <b>E40: -&gt; 15,7 m</b>	3,0 kW-144 r.p.m.
62	304306	1	Gear motor Nord SK 3282AGB-112M/4 <b>E40: 16,2-20,7 m, E60: -&gt; 14.7 m</b>	4.0 kW-147 r.p.m.
63	304307	1	Gear motor Nord SK 3282AGB-132SM/4 <b>E40: 21,2-20,7 m, E60: -&gt; 19,7 m, E80: -&gt; 14,7 m, E100: -&gt; 11.7 m</b>	5,5 kW-148 r.p.m.
64	304308	1	Gear motor Nord SK 3282AGB-132M/4 <b>E40: 27,2-35,2 m, E60: 20,2-26,7 m, E80: 15,2-19,7 m, E100: 12.2-16,7 m, E120: -&gt; 13.7 m</b>	7,5 kW-147 r.p.m.
65	304309	1	Gear motor Nord SK 3282AGB-132M/40 <b>E60: 27.7-32,7 m, E80: 20.2-24,7 m, E100: 17.2-19,7 m, E120: 14.2 - 16.7 m</b>	9.2 kW-148 r.p.m.
66	304302	1	Gear motor Nord SK 4282AGB-160M/4 <b>E60: 33.2-35,2 m, E80: 25.2-29,7 m, E100: 20.2-23,7 m, E120: 17.2 - 19.7 m</b>	11 kW-135 r.p.m.
67	304303	1	Gear motor Nord SK 4282AGB-160L/4 <b>E80: 30,2-35,2 m, E100: 24.2-35,2 m, E120: 20.2 - 26.7 m</b>	15 kW-135 r.p.m.

**Additional equipment: Nord 3282 3.0 ... 9.2 kW**

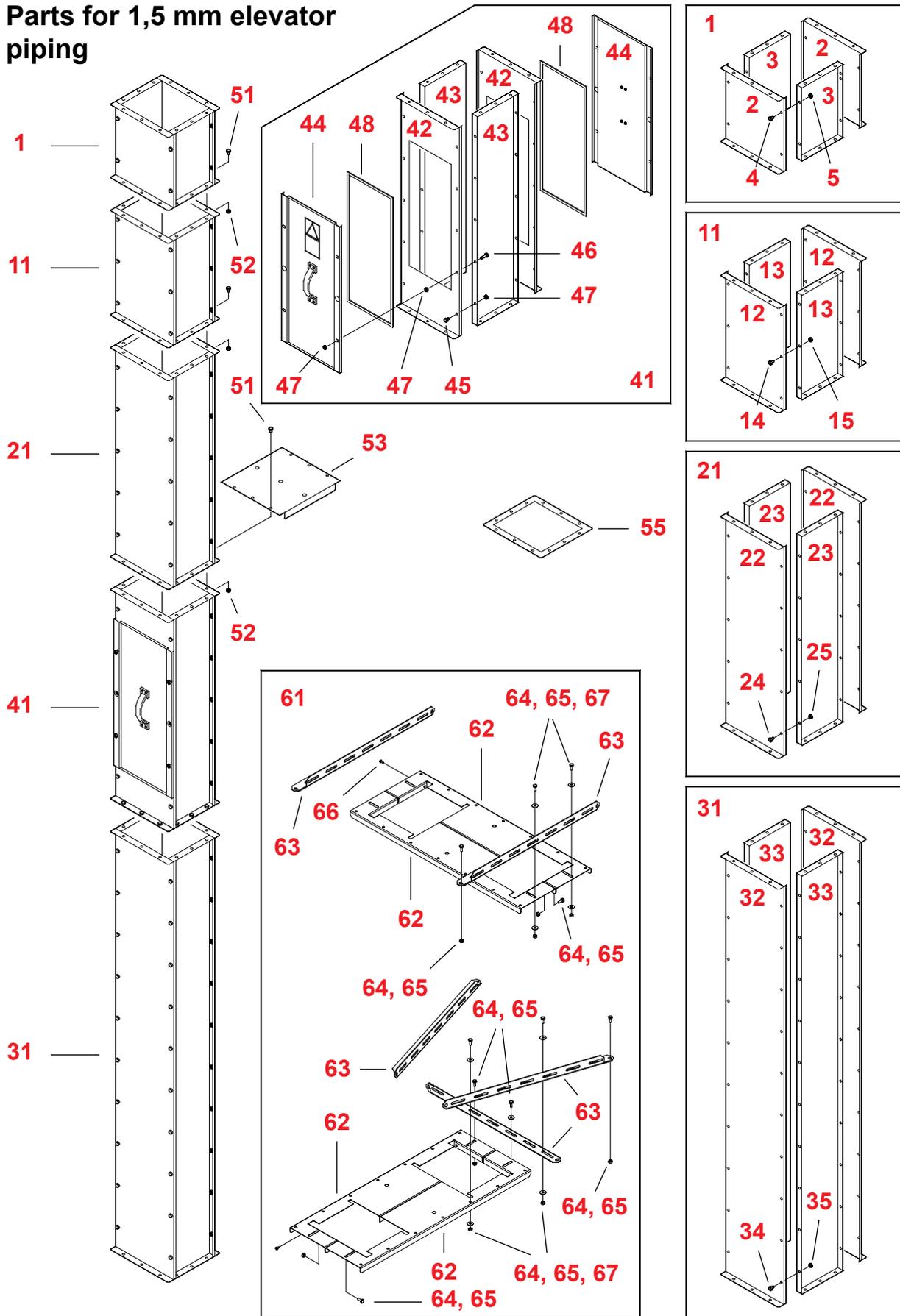
-	<b>505910</b>	1	Back rotation stop (\$ 81 - 85)
81	316001	1	Back rotation stop
82	33180	1	Torque arm
83	400342	1	Washer, D52/13
84	102200	1	Hexagon bolt M10x20
85	42398	1	Rectangular key, 10,8

**Nord 4282 11 ... 15 kW**

-	<b>505920</b>	1	Back rotation stop (\$ 91 - 95)
91	316005	1	Back rotation stop
92	A72247	1	Torque arm
93	400340	1	Washer, D52/17
94	102900	1	Hexagon bolt M16x30
95	A72246	1	Rectangular key, 14x9



## Parts for 1,5 mm elevator piping





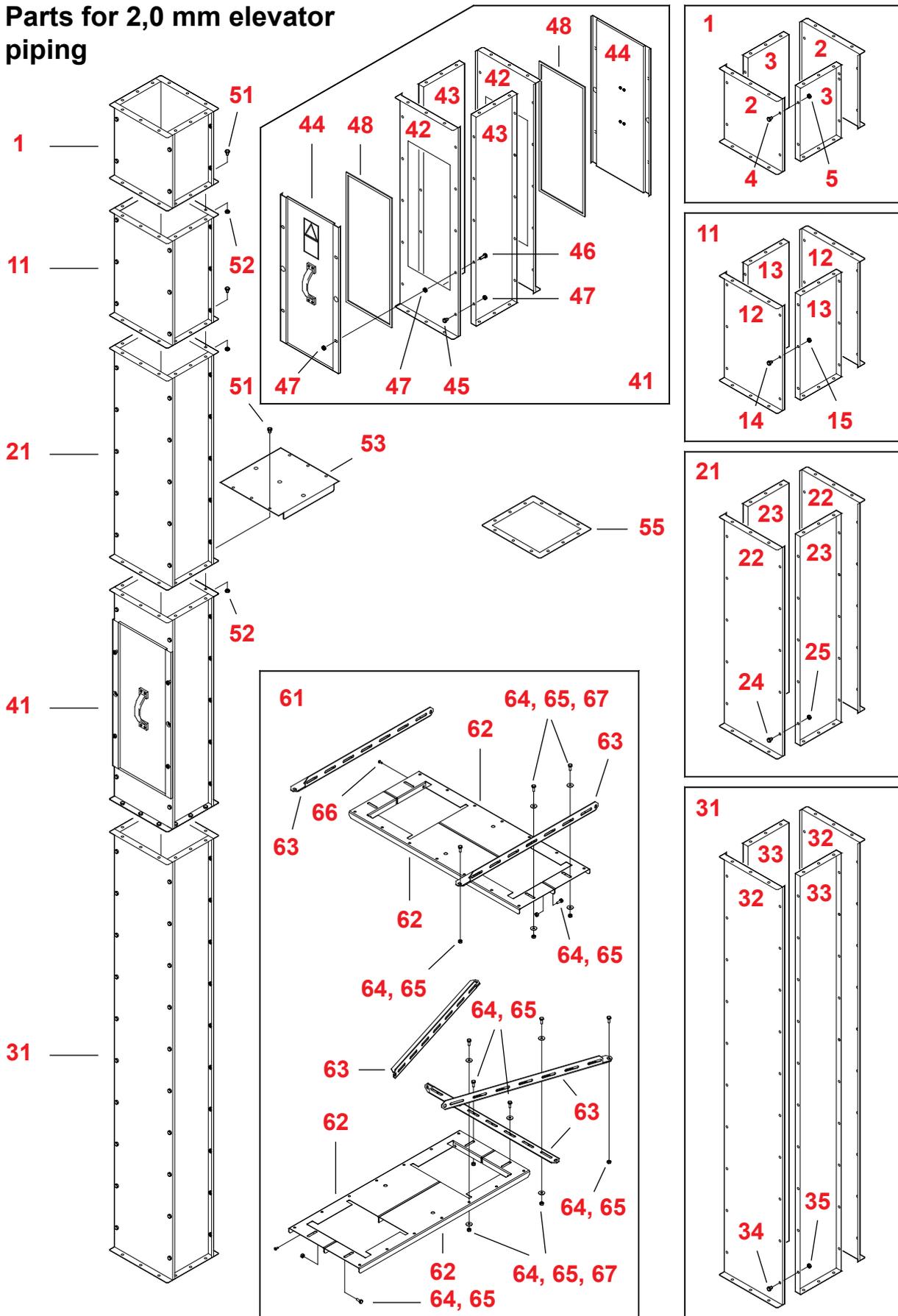
## Max. height of the piping 25 m

Ref.	Part	Pcs	Item	Note!
1	<b>A72040</b>	*)	ELEV. PIPE E L 350 MM, S 2.0 MM	Incl. Parts 2-5
2	A72041	2	TOP PLATE E L 350 MM, S 2.0 MM	
3	A72042	2	SIDE-PLATE E L 350 MM, S 2.0 MM	
4	101800	8	BOLT 6K ZN 8.8 AM DIN933	M8X12
5	110540	8	NUT ZN 8 DIN934	M8
11	<b>A72043</b>	*)	ELEV. PIPE E L 500 MM, S 2.0 MM	Incl. Parts 12-15
12	A72044	2	TOP PLATE E L 500 MM, S 2.0 MM	
13	A72045	2	SIDE-PLATE E L 500 MM, S 2.0 MM	
14	101800	12	BOLT 6K ZN 8.8 AM DIN933	M8X12
15	110540	12	NUT ZN 8 DIN934	M8
21	<b>A72046</b>	*)	ELEV. PIPE E L 1000 MM, S 2.0 MM	Incl. Parts 22-25
22	A72047	2	TOP PLATE E L 1000 MM, S 2.0 MM	
23	A72048	2	SIDE-PLATE E L 1000 MM, S 2.0 MM	
24	101800	20	BOLT 6K ZN 8.8 AM DIN933	M8X12
25	110540	20	NUT ZN 8 DIN934	M8
31	<b>32656</b>	*)	ELEV. PIPE E L 2000 MM, S 1,5 MM	Incl. Parts 32-35
32	22400	2	TOP PLATE E L 2000 MM, S 1,5 MM	
33	22401	2	SIDE-PLATE E L 2000 MM, S 1,5 MM	
34	101800	40	BOLT 6K ZN 8.8 AM DIN933	M8X12
35	110540	40	NUT ZN 8 DIN934	M8
41	<b>A72053</b>	1	PIPE WITH HOLES FOR THE ELEV. E L 1000 MM, S 2,0 MM	Incl. Parts 42-48
42	A72052	2	OPENING IN THE TOP PLATE E L 1000 MM, S 2.0 MM	
43	A72048	2	SIDE-PLATE E L 1,000 MM, S 2.0 MM	
44	32602	2	ELEV PIPE HOLE E S 1,5 MM	
45	101800	12	BOLT 6K ZN 8.8 AM DIN933	M8X12
46	101830	8	BOLT 6K ZN 8.8 AM DIN933	M8X25
47	110540	28	NUT ZN 8 DIN934	M8
48	115571	4 m	CELL PLASTIC TAPE INSEAL	4X10
51	101800	*)	BOLT 6K ZN 8.8 AM DIN933	M8X12
52	110540	*)	NUT ZN 8 DIN934	M8
53	32533	*)	ELEV INTERM. PL E	1 pc./2 m
55	41924	*)	ELEV PIPE EQUALLING FLANGE E S 2,0 MM	
61	<b>32535</b>	1	ELEVATOR SUPPORT ON THE DRYER (accessory)	Incl. Parts 62-67
62	32534	2	SUPPORT PLATE	
63A71383		3	SUPPORT ROD	
64	101820	14	BOLT 6K ZN 8.8 AM DIN933	M8X20
65	110540	14	NUT ZN 8 DIN934	M8
66	107720	4	SELF-TAPPING SCREW	4,8X13
67	111532	16	FENDER WASHER	M8

\*) = Quantity as required



## Parts for 2,0 mm elevator piping





## Height of the elevator exceeds 25 m

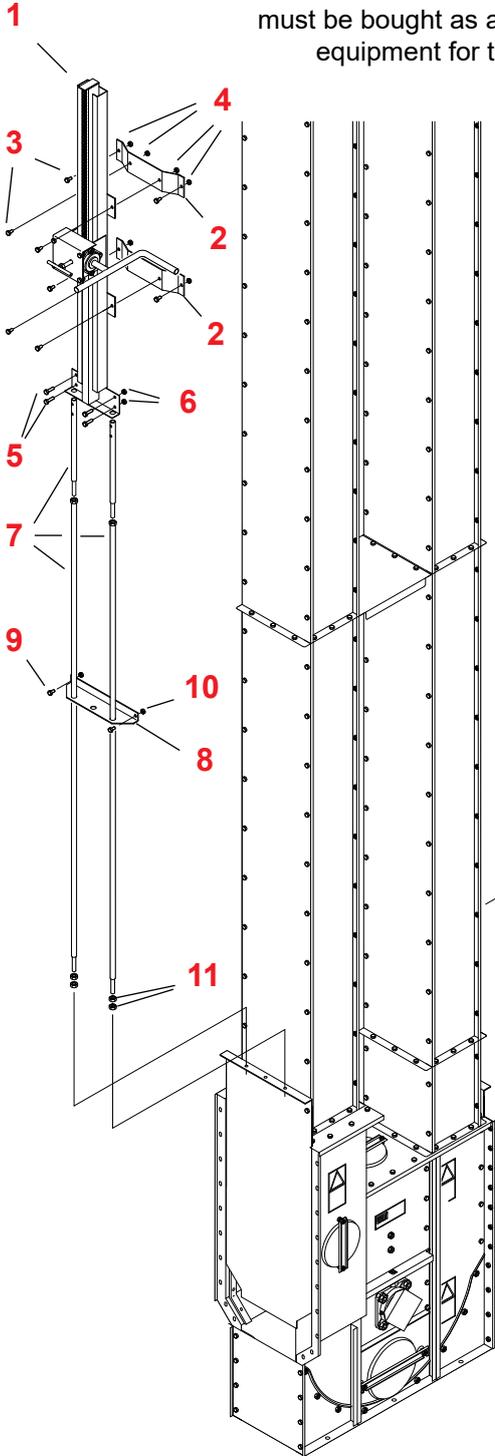
Ref.	Part	Pcs	Item	Note!
1	<b>A72040</b>	*)	ELEV. PIPE E L 350 MM, S 2.0 MM	Incl. Parts 2-5
2	A72041	2	TOP PLATE E L 350 MM, S 2.0 MM	
3	A72042	2	SIDE-PLATE E L 350 MM, S 2.0 MM	
4	101800	8	BOLT 6K ZN 8.8 AM DIN933	M8X12
5	110540	8	NUT ZN 8 DIN934	M8
11	<b>A72043</b>	*)	ELEV. PIPE E L 500 MM, S 2,0 MM	Incl. Parts 12-15
12	A72044	2	TOP PLATE E L 500 MM, S 2.0 MM	
13	A72045	2	SIDE-PLATE E L 500 MM, S 2.0 MM	
14	101800	12	BOLT 6K ZN 8.8 AM DIN933	M8X12
15	110540	12	NUT ZN 8 DIN934	M8
21	<b>A72046</b>	*)	ELEV. PIPE E L 1000 MM, S 2,0 MM	Incl. Parts 22-25
22	A72047	2	TOP PLATE E L 1,000 MM, S 2.0 MM	
23	A72048	2	SIDE-PLATE E L 1,000 MM, S 2.0 MM	
24	101800	20	BOLT 6K ZN 8.8 AM DIN933	M8X12
25	110540	20	NUT ZN 8 DIN934	M8
31	<b>A72049</b>	*)	ELEV. PIPE E L 2000 MM, S 2,0 MM	Incl. Parts 32-35
32	A72050	2	TOP PLATE E L 2000 MM, S 2.0 MM	
33	A72051	2	SIDE-PLATE E L 2,000 MM, S 2.0 MM	
34	101800	40	BOLT 6K ZN 8.8 AM DIN933	M8X12
35	110540	40	NUT ZN 8 DIN934	M8
41	<b>A72053</b>	1	PIPE WITH HOLES FOR THE ELEV. E L 1000 MM, S 2,0 MM	Incl. Parts 42-48
42	A72052	2	OPENING IN THE TOP PLATE E L 1000 MM, S 2.0 MM	
43	A72048	2	SIDE-PLATE E L 1,000 MM, S 2.0 MM	
44	32602	2	ELEV PIPE HOLE E S 1,5 MM	
45	101800	12	BOLT 6K ZN 8.8 AM DIN933	M8X12
46	101830	8	BOLT 6K ZN 8.8 AM DIN933	M8X25
47	110540	28	NUT ZN 8 DIN934	M8
48	115571	4 m	CELL PLASTIC TAPE INSEAL	4X10
51	101800	*)	BOLT 6K ZN 8.8 AM DIN933	M8X12
52	110540	*)	NUT ZN 8 DIN934	M8
53	32533	*)	ELEV INTERM. PL E	1 pc./2 m
55	41924	*)	ELEV PIPE EQUALLING FLANGE E S 2,0 MM	
61	<b>32535</b>	1	ELEVATOR SUPPORT ON THE DRYER (accessory)	Incl. Parts 62-67
62	32534	2	SUPPORT PLATE	
63	A71383	3	SUPPORT ROD	
64	101820	14	BOLT 6K ZN 8.8 AM DIN933	M8X20
65	110540	14	NUT ZN 8 DIN934	M8
66	107720	4	SELF-TAPPING SCREW	4,8X13
67	111532	16	FENDER WASHER	M8

\*) = Quantity as required



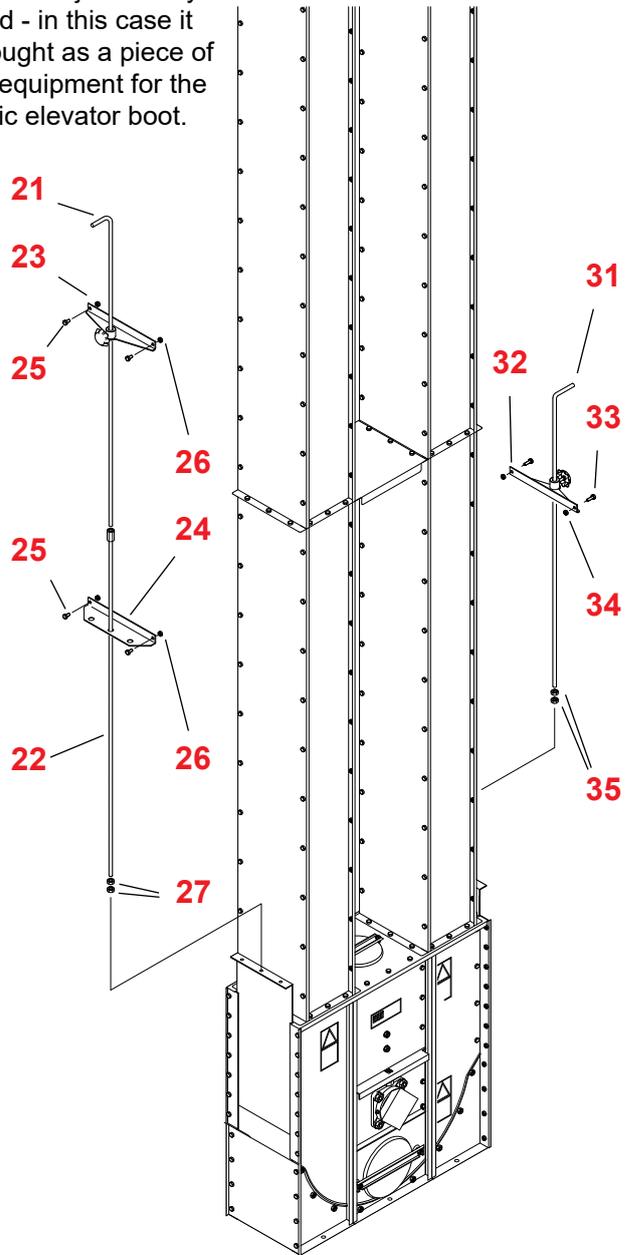
## Adjustment parts for the shutter plates

As required, the rack adjuster can be installed on both sides - in this case it must be bought as a piece of additional equipment for the return side.



Elevated boot  
ascending side      return side

Also the rack adjuster may be applied - in this case it must be bought as a piece of additional equipment for the symmetric elevator boot.



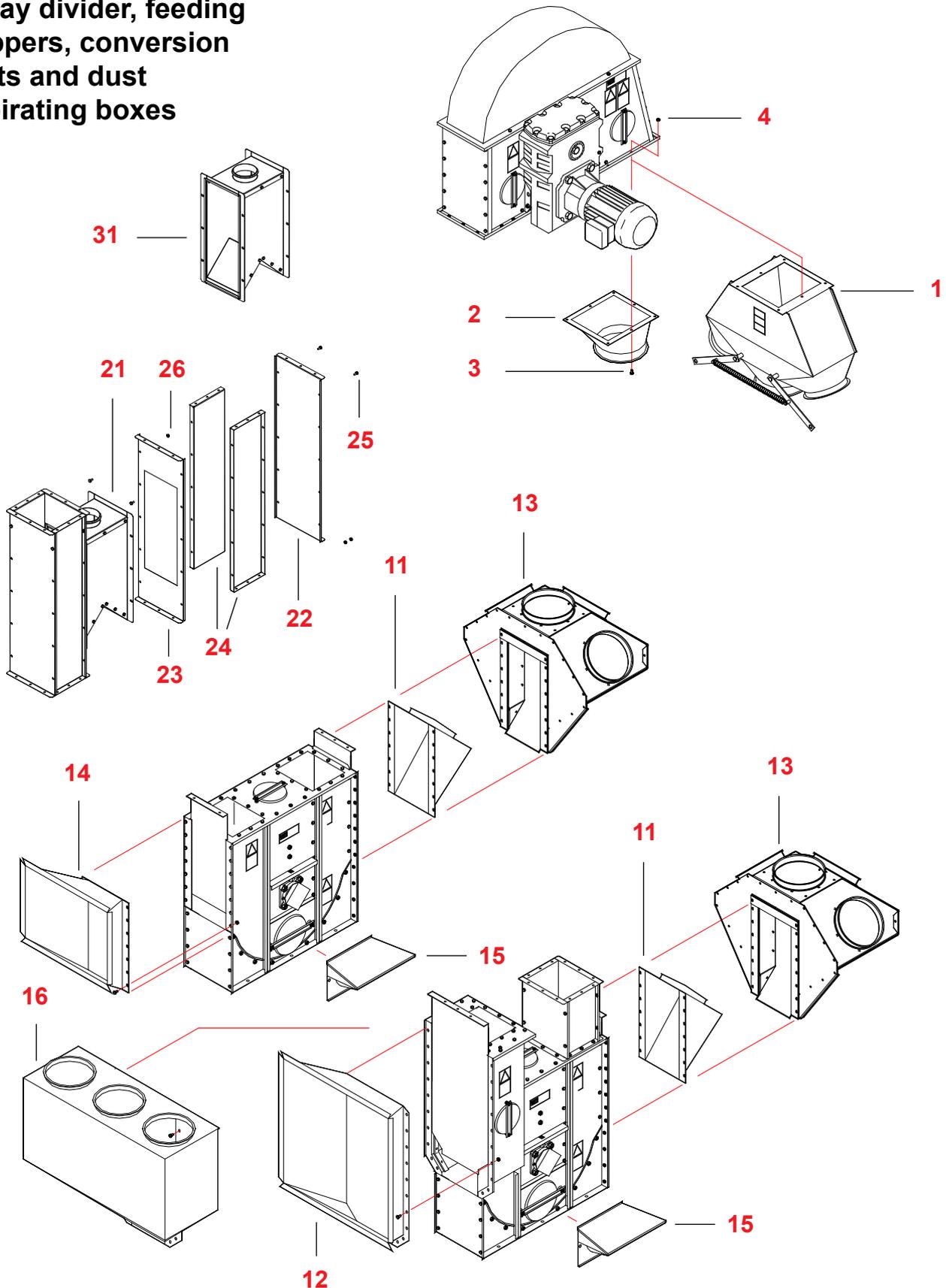
Symmetric boot  
ascending side      return side



Ref.	Part	Pcs	Item	Note!
Rack adjuster - elevated boot, ascending side				
1	510071	1	Rack adjuster	
2	41969	2	Bracket	
3	101805	8	Hexagon bolt	M8x16
4	110540	8	Hexagon nut	M8
5	101849	4	Hexagon bolt	M8x30
6	111501	4	Hexagon nut	M8
7	503513	2	Shutter plate rod	
8	41966	1	Guide	
9	101805	2	Hexagon bolt	M8x16
10	110540	2	Hexagon nut	M8
11	111502	4	Hexagon nut	M12
Adjustment rod - symmetric boot, ascending side				
21	A73947	1	Shutter plate handle - return side	L = 1400 mm
22	A73949	1	Shutter plate rod	L=1495 mm
23	41967	1	Locking device	
24	41966	1	Guide	
25	101805	4	Hexagon bolt	M816
26	110540	4	Hexagon nut	M8
27	111502	2	Hexagon nut	M12
Adjustment rod - both boot types, return side				
31	A73947	1	Shutter plate handle - return side	L = 1400 mm
32	41967	1	Locking device	
33	101805	2	Hexagon bolt	M8x16
34	110540	2	Hexagon nut	M8
35	111502	2	Hexagon nut	M12



3-way divider, feeding  
hoppers, conversion  
parts and dust  
aspirating boxes





Ref.	Part	Pcs	Item	Note!
1	32616	1	3-way divider	
2	32526	1	Conversion part - top end (additional equipment)	250 mm
3	101805	6	Hexagon bolt	M8x16
4	110540	6	Hexagon nut	M8
11	A71986	1 (2)	Conversion part - boot	1 x D 250 mm
12	A71669	1	Intake spout - elevated boot	
13	A71971	1	Feeding hopper (additional equipment)	4 x D 250 mm
14	1941	1	Intake spout - symmetric boot	
15	503641	1	Intake spout on the side (additional equipment)	
16	1999	1	Front intake spout (additional equipment)	3 x D 250 mm
21	A70224	1	Dust aspirating box for E-elevator	L= 1000
22	32528	2	Elevator pipe, top cover	L= 1000
23	32603	2	Elevator pipe, top cover with opening	L= 1000
24	32530	4	Elevator pipe, side-plate	L= 1000
25	101810	46	Hexagon bolt	M8x16
26	110540	46	Hexagon nut	M8
-	505410	1	Dust aspirating box for E-elevator, assembly Incl. parts 21-26	
31	A70224	1	Dust aspirating box for E-elevator	



## ASSEMBLING THE ELEVATOR

The installation of the elevator requires precision. The work must be carried out on different levels at various elevations. Therefore, in addition to installation skills, the work requires proper scaffolding and observation of safety issues.

All electrical installations must be carried out by an authorised electrician!

### Definitions of the elevator parts

The definitions given in the chapter "Main parts of Antti E-Series elevator" are used in the following Installation Instructions.

### Elevator Boot

Begin the installation of the E-series elevator by putting the elevator boot in place, as instructed in the installation plan. The boot of the elevated model has an expanded feeding opening and a big shutter plate on the ascending side. In the boot of the symmetric model the feeding openings and shutter plates are the same size on both sides.

The elevator boot must be installed on an even and level floor surface in a manner that the weight of the elevator is distributed evenly across the entire length of the elevator's underside.

- \* If the surface is not even it should be levelled by secondary casting, using steel plates or any other appropriate means.

### Elevated boot

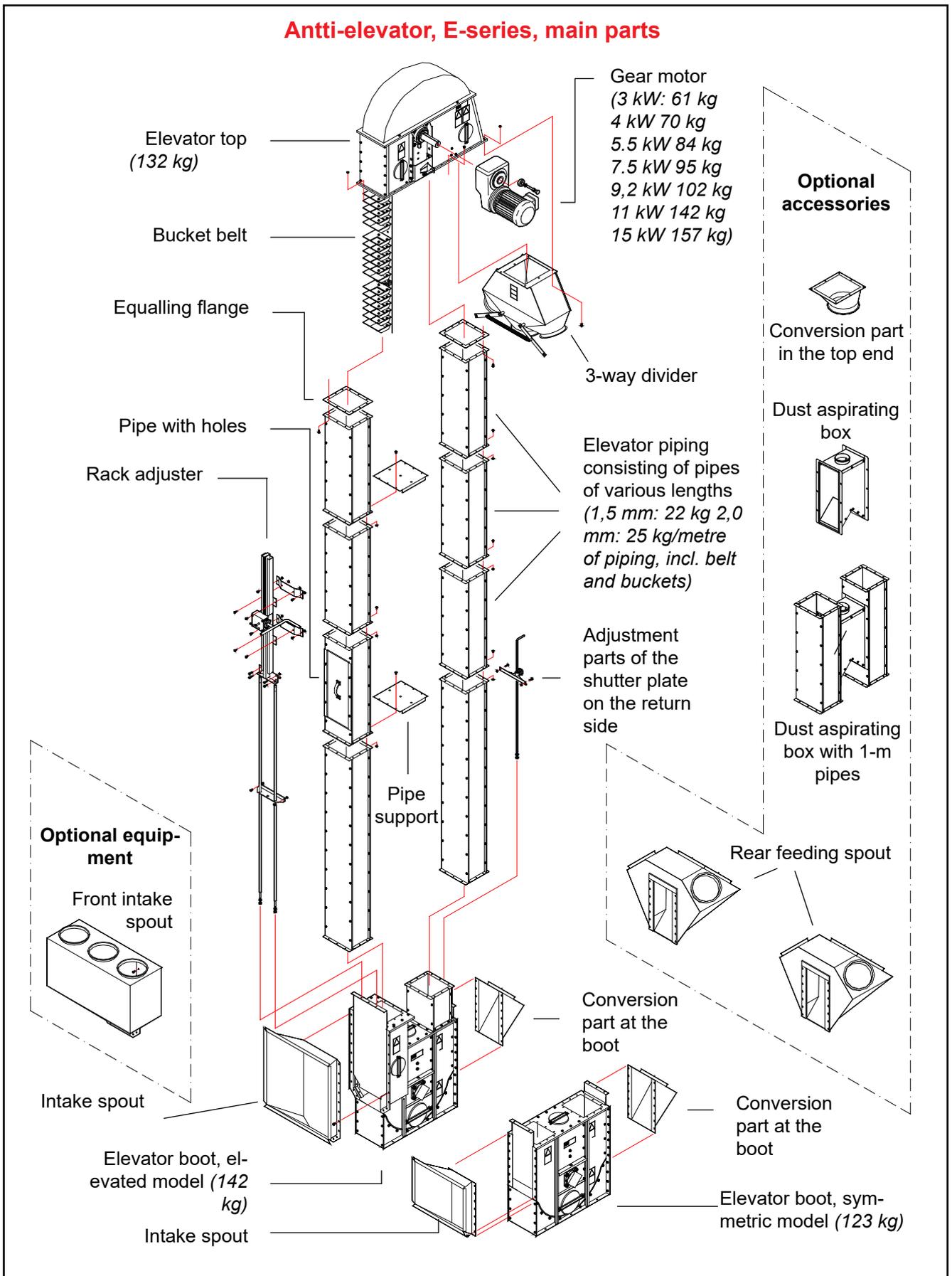
The elevator boot does not necessarily need to be fastened to this even base. However, it must be fastened to the filling hopper, which is built separately (see drawing. "Intake spout").

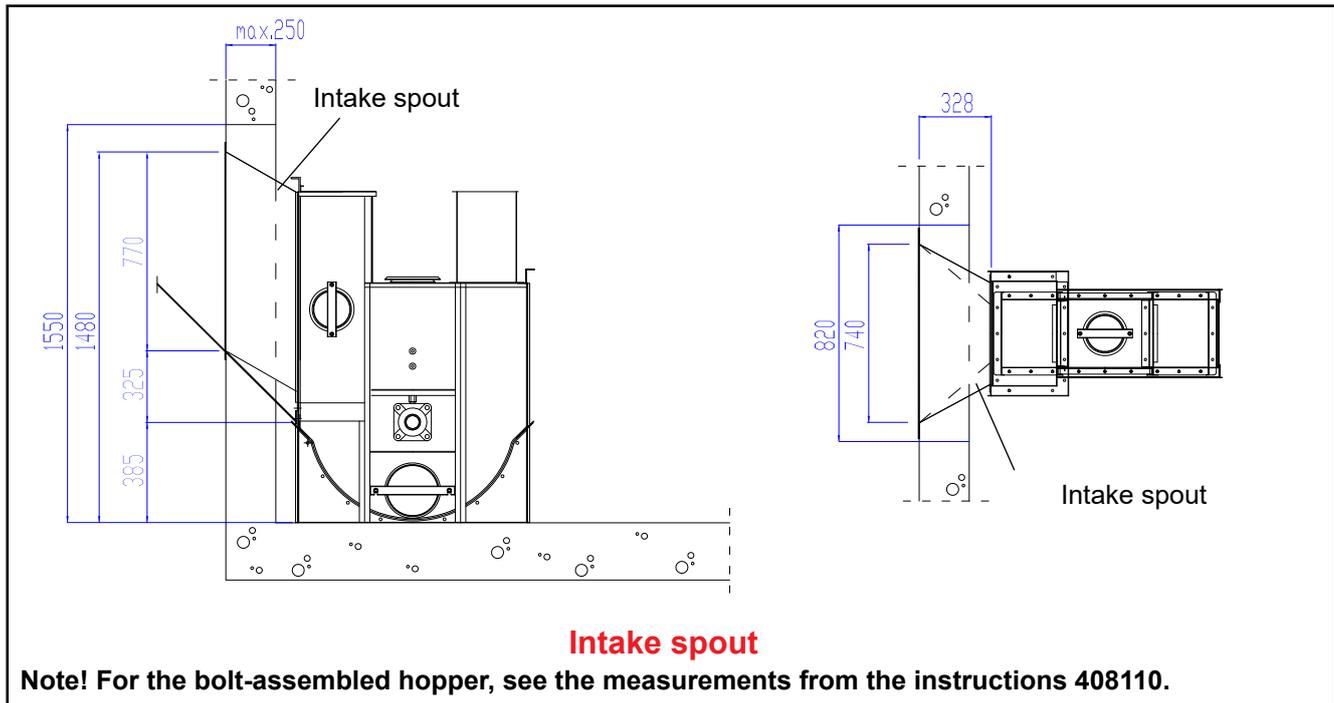
- \* When using the bolt-assembled hopper, see the dimensions from the instructions 408110.

**Note!** Before attaching the intake spout, ensure that all sides of the elevator boot are absolutely vertical. Any obliquity has to be corrected by placing steel plates under the base of the elevator boot. If the elevator boot is not upright, it will be difficult to make the operation of the elevator smooth and noiseless.



## Antti-elevator, E-series, main parts





The opening in the concrete foundation for connecting the elevator is 820mm wide and 1550mm high, measured from the floor surface.

Always attach the intake spout of the hopper first to the elevator boot, and after that, shift the boot to its correct position. The intake spout shall be attached to the concrete structure using the upper and side cover plates, included in the delivery.

Put the shutter plates in place on both feed openings and check that the plates can be moved unobstructed in their grooves.

## Frame pipes of the elevator

The frame pipes are manufactured in the following lengths: 0,35 m, 0,5 m, 1 m and 2 m.

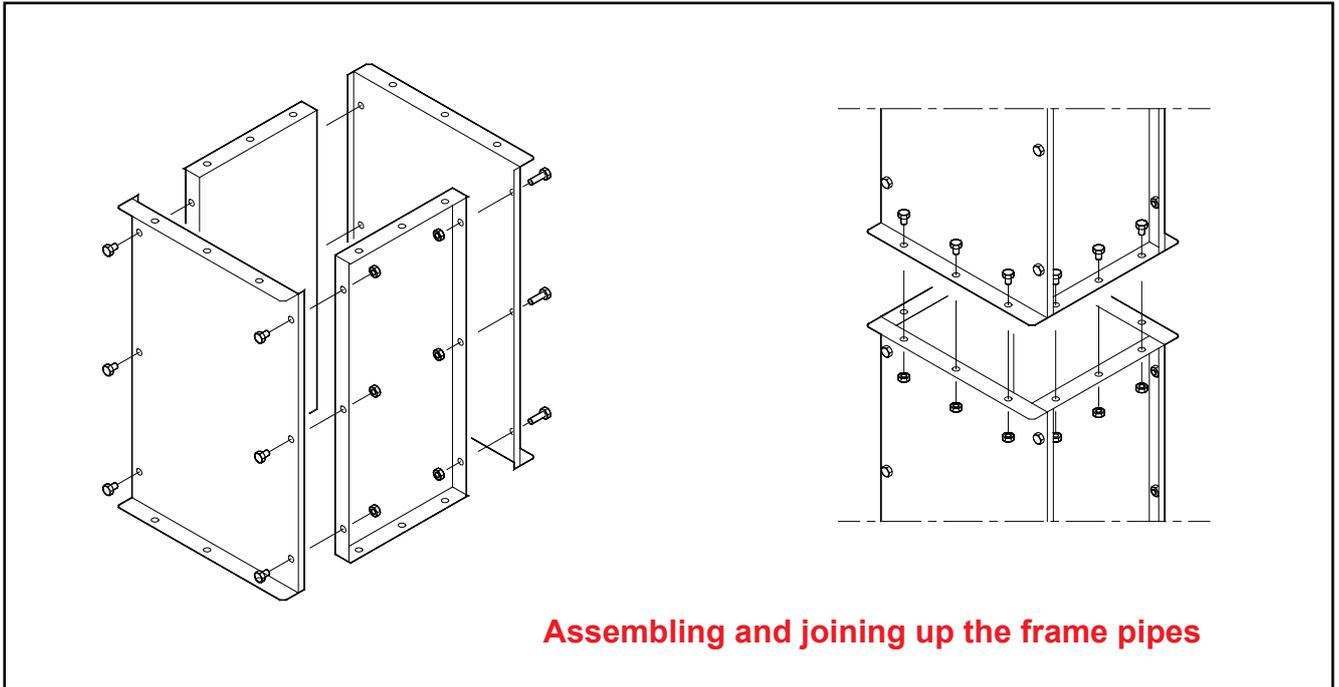
### Assembly of the pipes

If the elevator pipes are delivered in parts, they must be assembled before installation. The sheet metal parts are packed in wooden frames, each frame containing the parts for two pipes of equal length.

Check the correct position of the pipes with respect to one another in the drawing "Assembling and joining up the frame pipes".

The number of M8x12 hexagon nuts and bolts required for one pipe is: 8 pcs for a pipe 0,35 m in length, 12 pcs for a pipe of 0,5 m, 20 pcs for a pipe of 1 m and 40 pcs for a pipe of 2 m.

Check the position of the sheet metal parts of the pipes with respect to one another so that the end flange of the pipe is straight before final tightening of the bolts.



#### *Elevator with elevated boot*

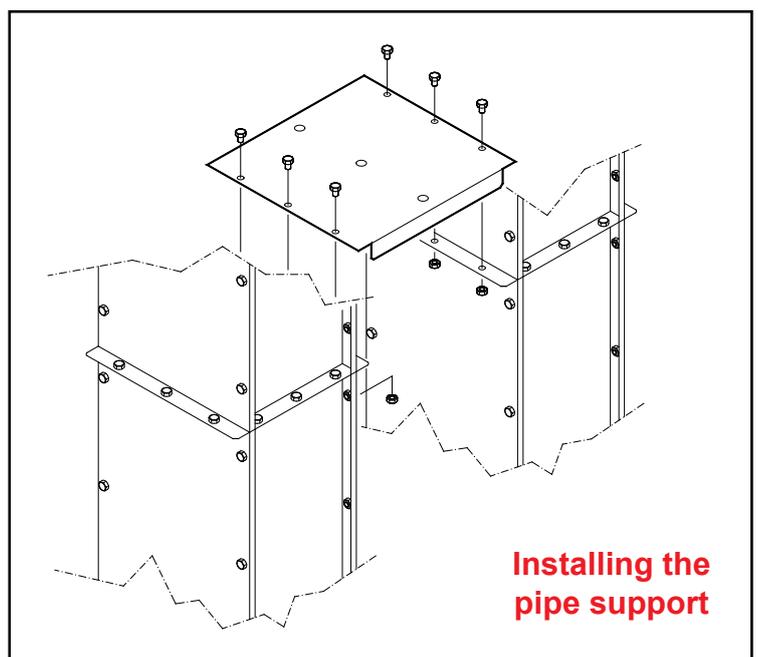
Fix at first a frame pipe 0,35 m in length on the return side of the elevator boot.

#### *All elevators*

Attach the 2-m long frame pipes to the cover plate of the elevator boot on the ascending and return sides (on elevators with symmetric boot), or a 2 m long pipe to the ascending side and a 0,35 m long pipe for extension of the frame pipe on the return side (elevators with elevated boot). Use hexagon nuts and bolts M8x12 for attachment (required number for each joint is 12 pcs.). See drawing "Assembling and joining up the frame pipes".

#### **Installing the pipe supports**

Place solid intermediate plates between the pipelines at intervals of 2-3 metres. See drawing "Installing the pipe support".



Continue the assembly of the pipelines in a manner that the side-by-side pipes always are of equal length.

Fix the pipe with holes (1 m in length) on the ascending side, and an ordinary frame pipe of 1 metre in length next to it on the return side, to a position providing easy access for set-up and service work.

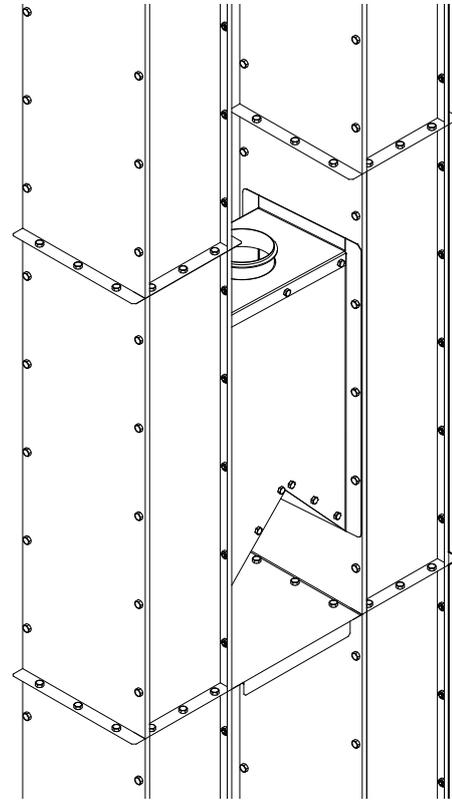
## Dust aspirating box

Choose location for the dust aspirating box, placing it about 2/3 of the height of the piping measured from the bottom.

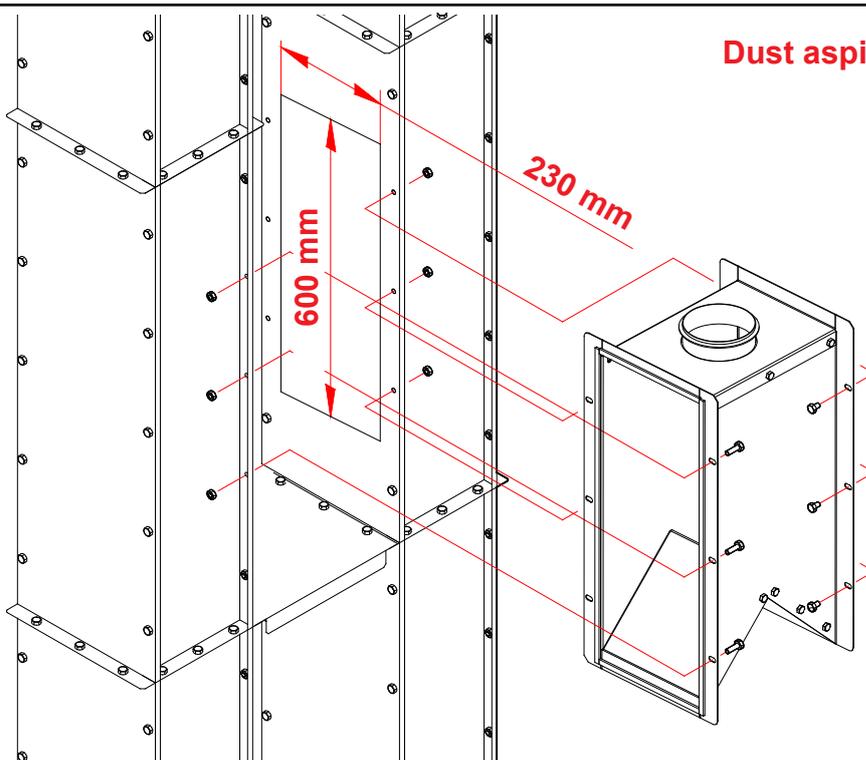
Install the dust aspirating box in the piping using the 1-m long pipes as any ordinary pair of 1-m long pipes.

For installation of the dust aspirating box, you need to cut first an opening of 230 mm x 600 mm on the inner sides of both pipes. Fix the box using the existing bolts in the elevator pipes. The flanges of the box are ready equipped with gaskets.

## Dust aspirating box with 1-m pipes



## Dust aspirating box without pipes



### Operating the shutter plates

#### *All elevators, return side*

The shutter plate on the return side is fitted with a short handle (1400 mm). Install the locking device for the handle in the frame pipe on the return side for locking the shutter plate into position.

Fix the locking device in a position where the upper end of the handle comes close to the locking device, but does not restrict shutting of the plate even if the shutter plate were completely closed. Use two M8x16 bolts and nuts for attachment. See drawings "Actuators of the shutter plates, elevated boot" and "Actuators of the shutter plates, symmetric boot".

#### *Elevator with elevated boot - ascending side*

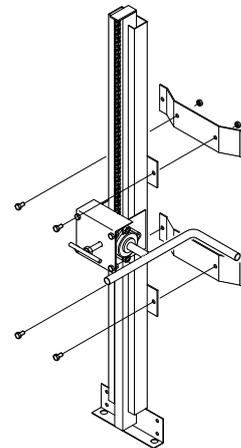
It pays to install the rack adjuster in the elevator in connection with the installation of the frame pipes.

Attach the rack adjuster first to its brackets using M18x16 bolts and nuts, and after that, attach the entire assembly to the side of the ascending pipe using four M8x16 screws and nuts after having removed first the four screws from the pipe at the corresponding location.

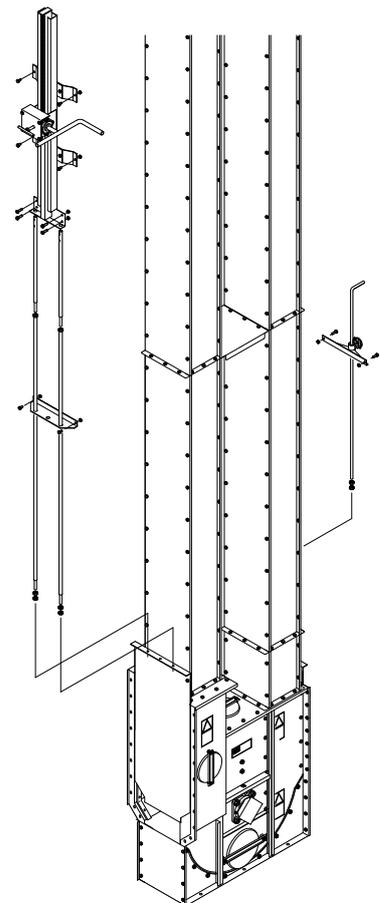
Select the location for the rack adjuster taking into account its easy operation from above the discharge hopper.

Attach the guide for the shutter plate rods to the side of the ascending pipe replacing two of the bolts in the pipe with nuts and bolts M8x16.

### Rack adjuster brackets



Ascending side Return side



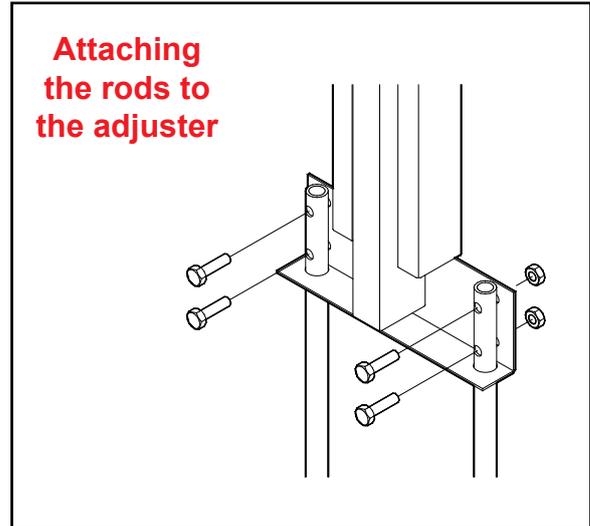
Actuators of the shutter plates,  
elevated boot



Shorten (or lengthen) the shutter plate rods to a suitable length. Drill horizontal holes (D 9-mm) in the upper ends of the rods. The attachment holes for the lifting bar at the lower end of the rack adjuster can be used as jigs during drilling (also see the drawing "Attaching the rods to the adjuster").

Fix the shutter plate rods in place. Thread the threaded lower end of the rod into the holes at the top edge of the shutter plate and tighten it on both sides using M10 nuts.

Fix the upper ends of the rods on the lifting rod of the rack adjuster using M8x30 bolts and nuts.



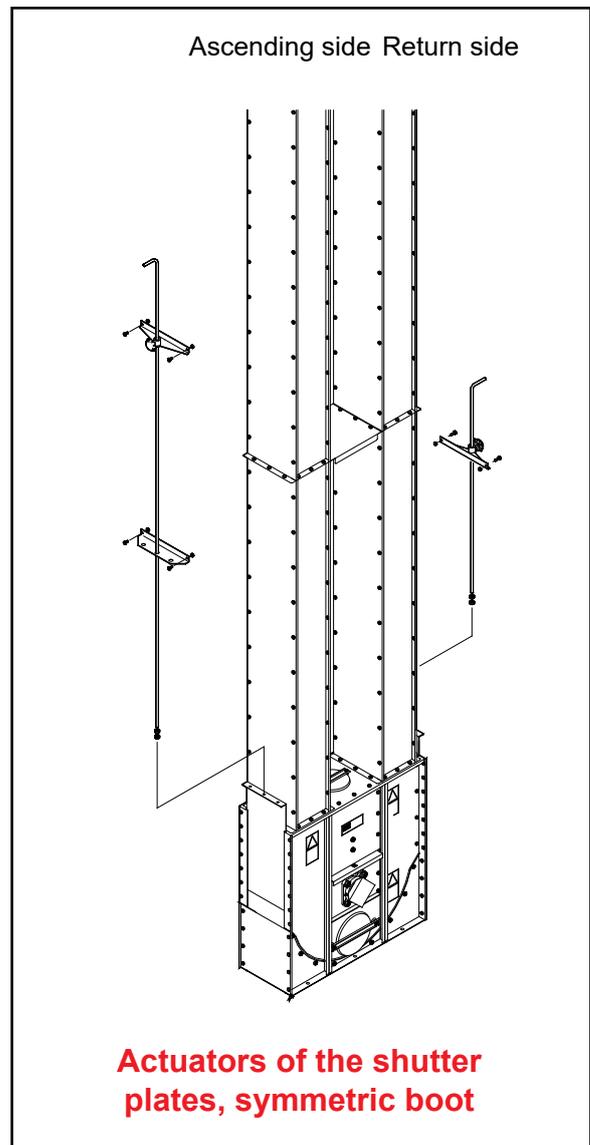
### *Elevator with symmetric boot - ascending side*

Install long shutter plate rod (1400+1495 mm) on the ascending side. Install the locking device for the handle in the frame pipe on the ascending side for locking the shutter plate into position.

Fix the locking device in a position where the upper end of the handle comes close to the locking device, but does not restrict shutting of the plate even if the shutter plate were completely closed. Use two M8x16 bolts and nuts for attachment removing first two screws from corresponding location in the pipe.

Attach the guide for the shutter plate rod to the side of the ascending pipe, approximately in the middle of the rod using two M8x16 bolts and nuts removing first two screws from corresponding location in the pipe.

See drawing "Actuators of the shutter plates, symmetric boot".



### **Evening out the height difference of the pipes**

Level the top flanges of the frame pipes (+/-2,0 mm) before installing the top end. To offset any difference in height, 4 pcs of 2 mm thick shims are delivered with the dryer. Place a sufficient number of shims on top of the lower pipe before installing the top end of the elevator.

## Elevator top

The elevator top is heavy, 132 kg without the gear motor. Use a hoist for lifting.

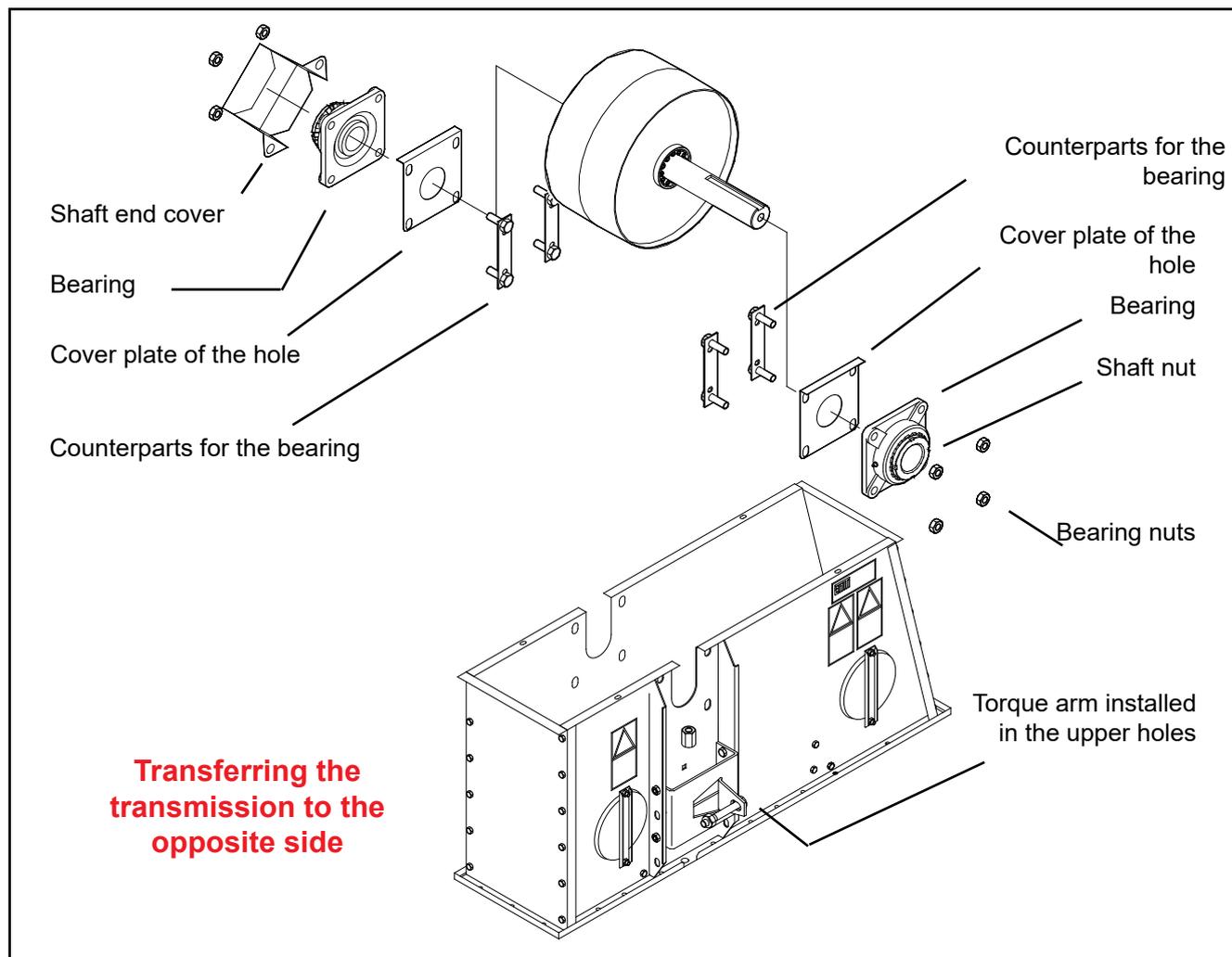
### Transferring the transmission to the opposite side, if necessary

Sometimes the space is limited and the transmission must be transferred to the opposite side of the elevator top. This can be achieved by detaching the bearings of the bucket belt pulley shaft. See drawing "Transferring the transmission to the opposite side".

Remove the cover of the elevator top. Bend the locking clips of the shaft nuts from their grooves and loosen the shaft nuts which clamp the bearings to the shaft using a spanner wrench. Remove the bearing nuts and the shaft end cover. Remove the counterparts for the bearings from the inside. Pull out the bearings and the cover plates for the shaft holes on the outside from the shaft.

Lift up the shaft with the bucket belt pulley and turn the longer end of the shaft to the other side of the elevator top.

Put the cover plates for the shaft hole and the bearings back onto the shaft. Thread the counterparts for the bearings from inside through the side plates at the elevator top into the bearing holes. Fix the shaft end cover and the bearing nuts. Tighten the nuts initially. Wrench the nuts to their final tightness after having installed the bucket belt





and carried out the height adjustment of the bearings.

Place the bucket belt pulley exactly in the middle with respect to the sides of the top end before tightening the shaft nuts. After tightening with a wrench spanner, lock the shaft nuts using the locking clips.

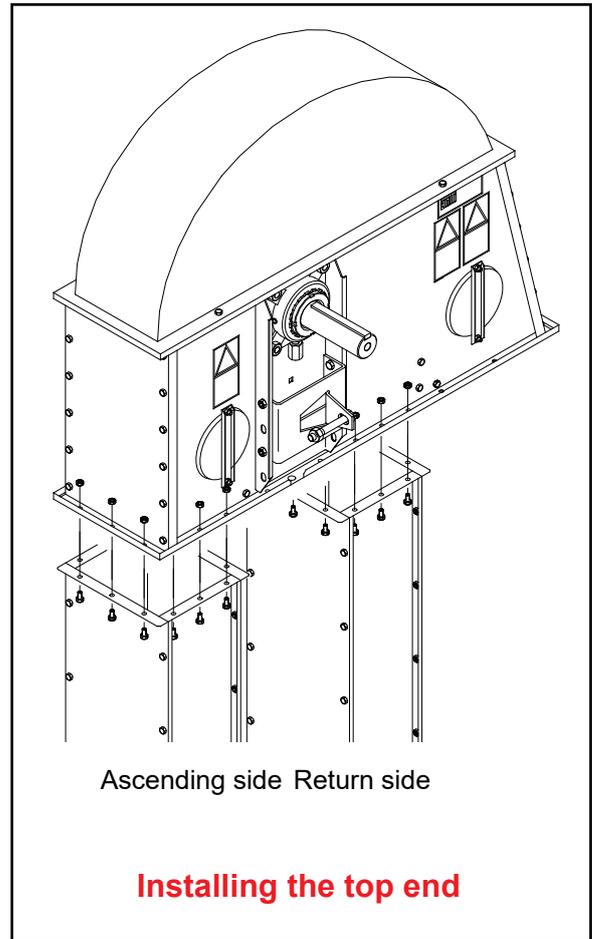
Transfer the torque arm for the gear motor to the upper holes on the same side as the shaft of the bucket belt pulley. Do not attach the top end cover until the bearings have been adjusted. Before this make sure that the bucket belt is running in the middle of the pulley. To control this, run the motor and carry out the fine adjustment using the hexagon socket adjustment screws under the bearing.

### Attaching the top end to the frame pipes

Remove those of the attachment bolts for the bottom plate of the elevator top, which are also used for attachment of the upper flanges of the frame pipes to the bottom plate. See drawing "Installing the top end".

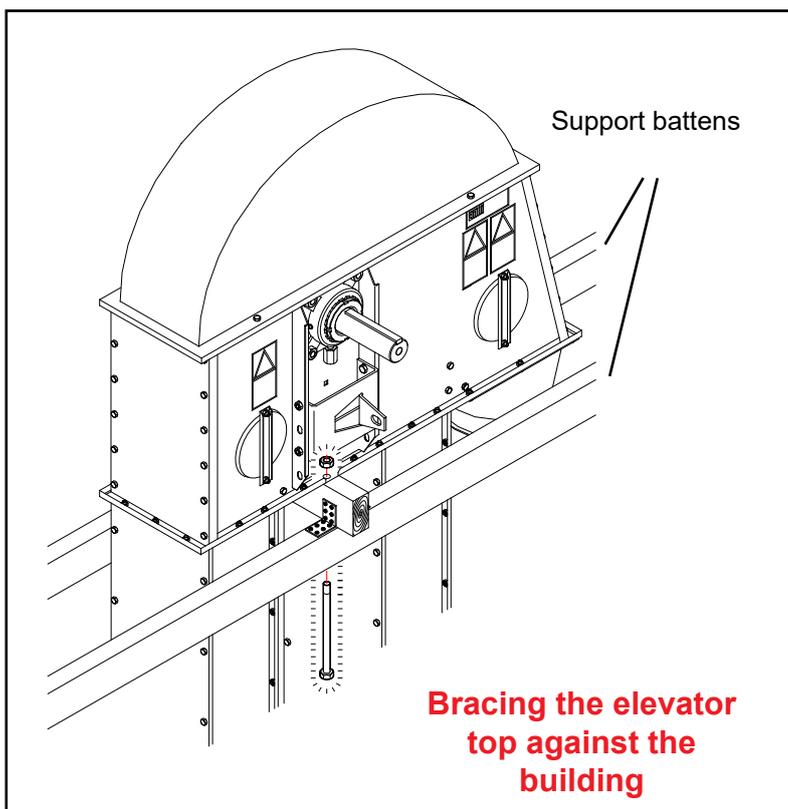
When lowering the elevator top onto the flanges of the frame pipes, direct it in place using suitable steel pins as guides. Doing so helps to align the holes in the flanges and the holes in the bottom plate of the top end.

Put back in place and tighten the hexagon bolts and nuts which you recently removed. Note that you need to put your hand through the Ø121 mm hole in the bottom plate for putting the innermost bolts back in place. Six of the bolts must be installed this way.



## Checking the upright position and attachment of the elevator structure

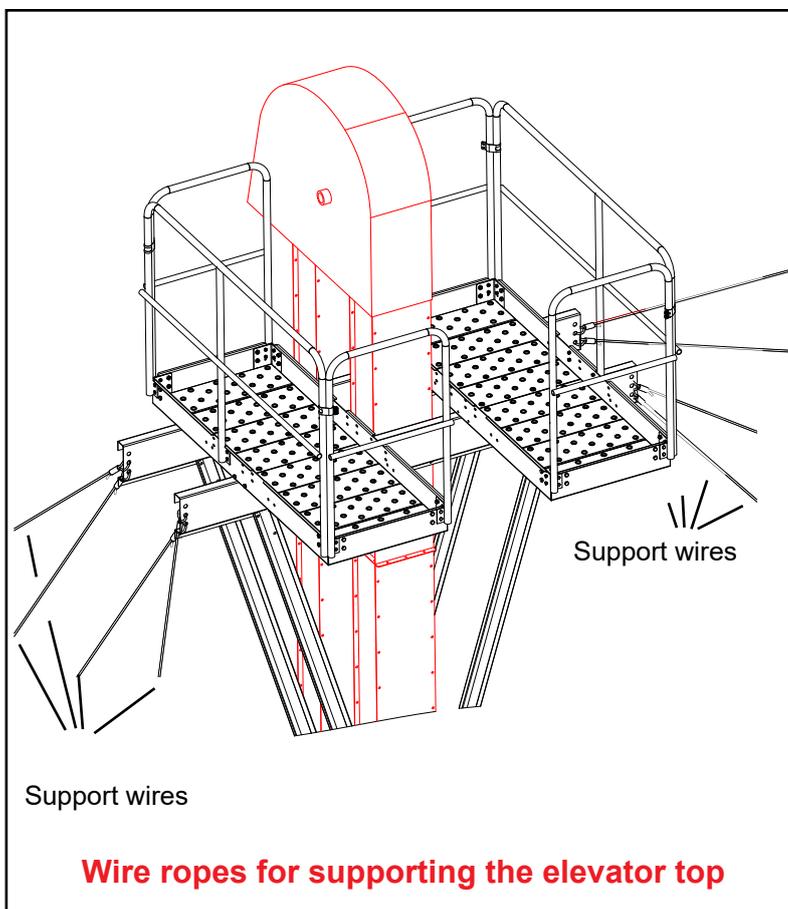
Prop up the top end of the elevator by placing support battens (e.g. a 50 mm x 100 mm) under it and at the sides. The bottom flanges of the elevator top are provided with attachment holes for the battens. Fasten the beam by these holes using M16 nuts and bolts. See drawing "Bracing the elevator top inside the building".



If the elevator cannot be braced against the structures of the building as described above, it can be tied to the building or, if installed out of doors, to the ground using wire ropes. In every case the elevator top must be braced so firmly that the heavy gear motor cannot bend it.

Bring the elevator to an upright position using a plumb line as an aid.

Tighten the supporting structures **once the elevator stands upright.**

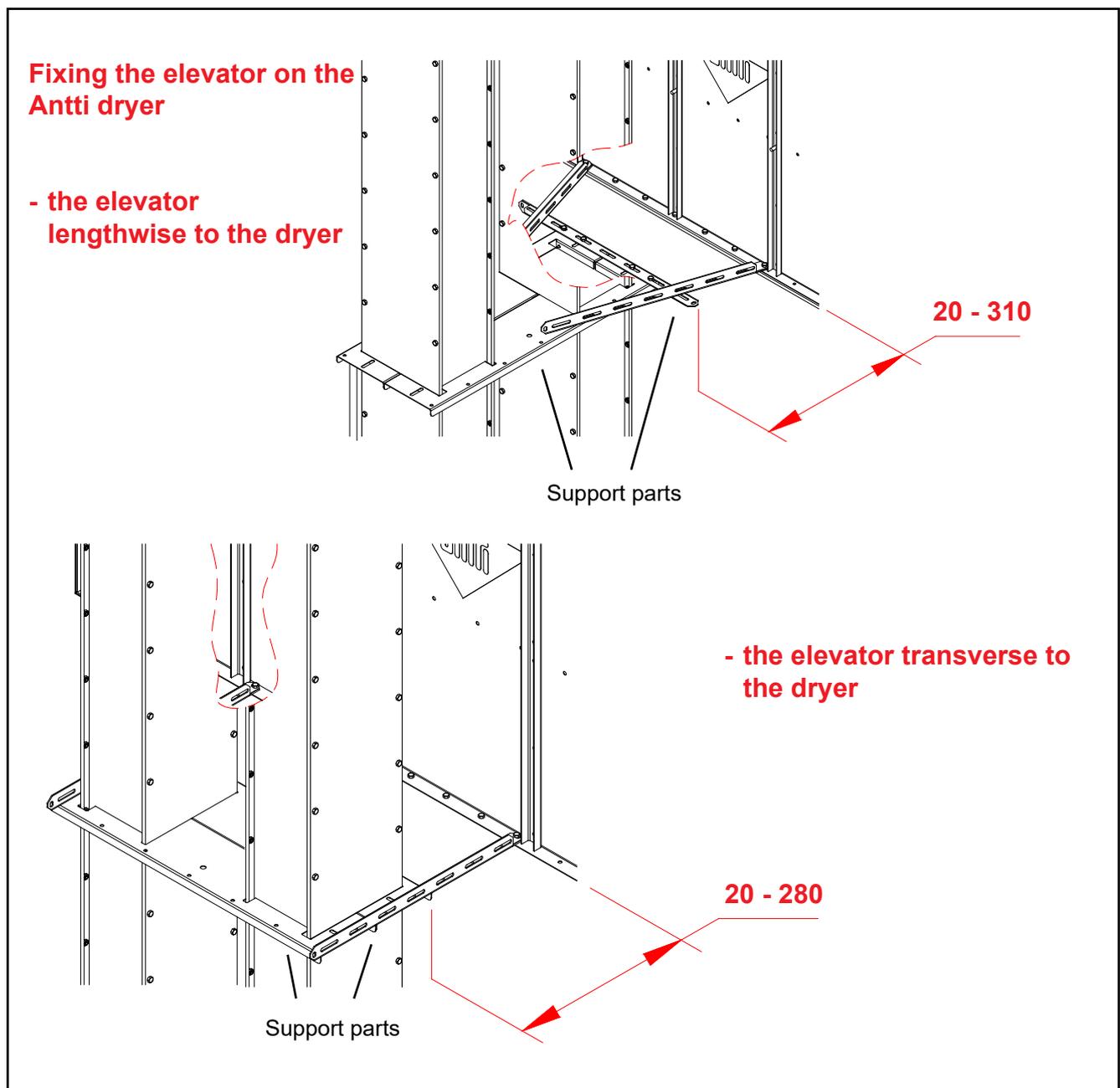




If the elevator is long, brace it also in the middle (at intervals of 5 - 6 metres).

ANTTI-TEOLLISUUS also delivers supports (32535) made of sheet metal for fixing the frame piping of the elevator on the ANTTI dryer (see drawing "Fixing the elevator on the Antti dryer").

If the installation location does not enable the method described above to be applied, you can brace the elevator also in some other way.

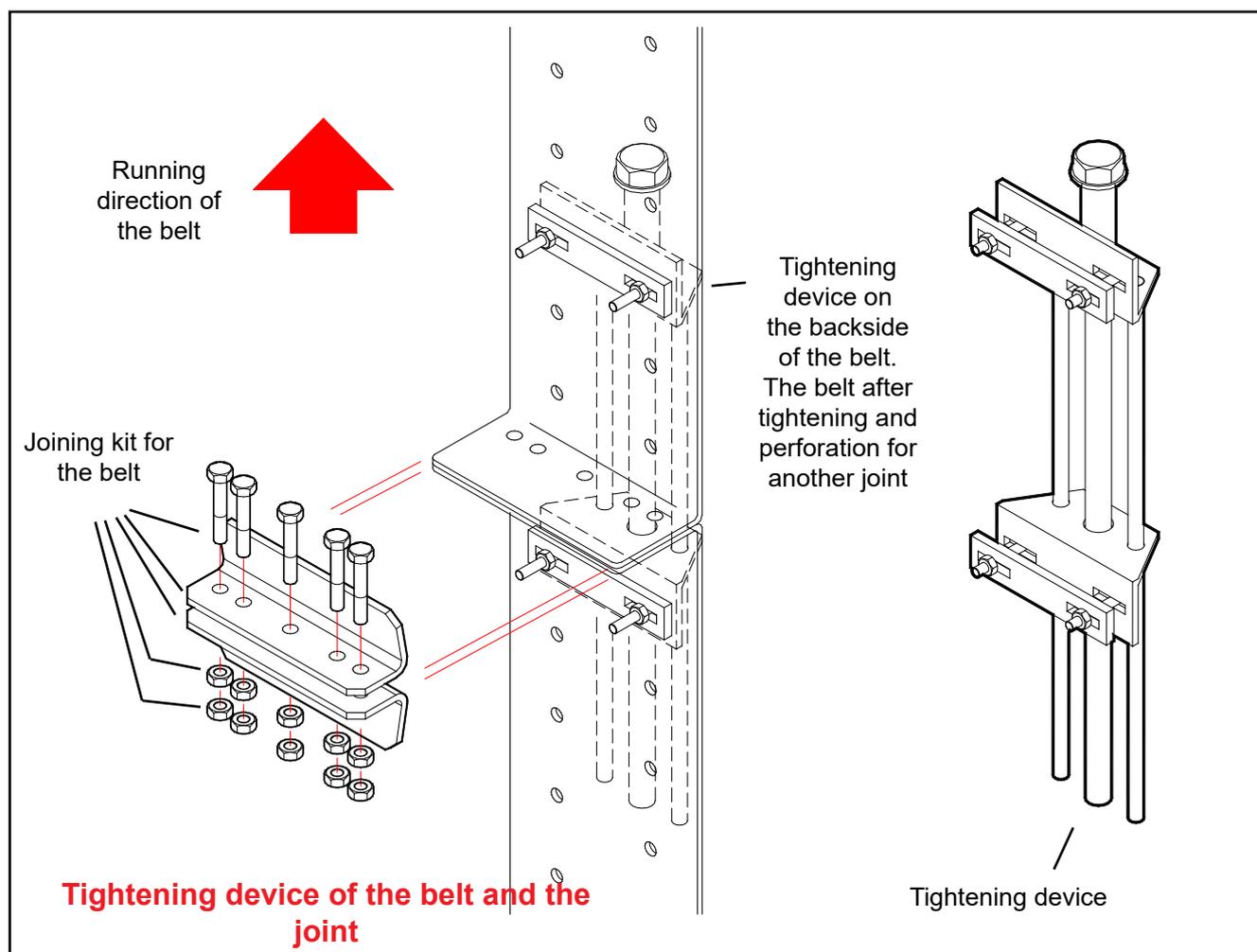


## Bucket belt and buckets

### Threading, tightening and joining the belt

**NOTE!** If the elevator belt is delivered in two parts, the delivery also includes two joining kits. Join first the belt parts together in accordance with the joining instructions below using one of the joining kits.

Lower the belt from above to both sides of the upper pulley in a manner that the side of the belt with thinner rubber layer (with respect to the reinforcement fabric) comes against the pulley. Pull the other end of the belt using a rope under the lower pulley to the opening in the pipe with plates. Fix the device for joining the belt included in the delivery to the belt screw holes on the backside of the belt. See drawing "Tightening device of the belt and the joint" Tighten the belt by wrenching the tightening device using a ratchet wrench. The tightness of the belt is correct when the attachment bolt holes for the buckets in the belt are slightly oval. Note, that tightening the belt too much strongly strains the elevator structure and thus shortens the service life of the machinery.





Use the joining irons for joining the belt (see drawing "Tightening device of the belt and the joint"). Cut off the excess length from the belt so that the ends form a flap between the buckets. Install the bolts of the belt joining kit with their caps pointing in the direction of rotation of the belt in a manner that the bolt caps on the ascending side come on the upper side of the joining irons and the nuts come on the underside.

After removing the joining device, shine a light into the lower opening and look through the pipe from above to ensure that the belt is not twisted.

### **Attaching the buckets**

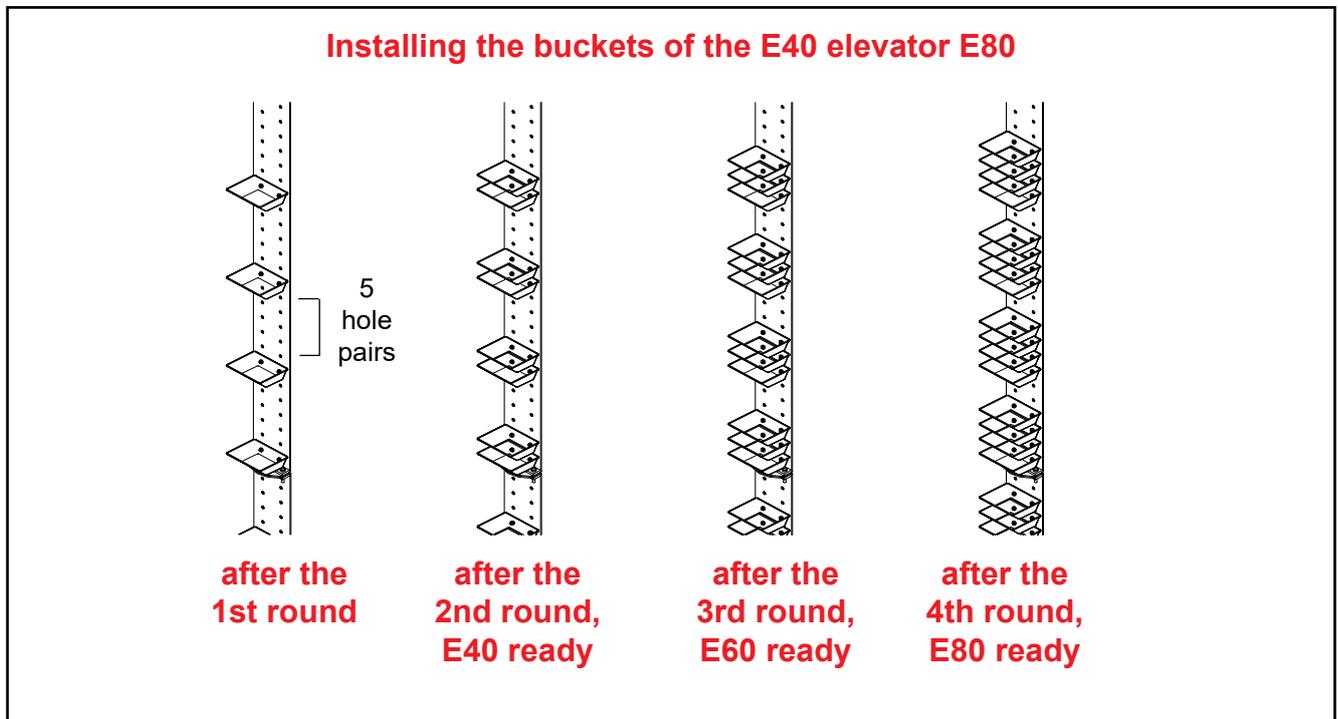
The buckets are usually attached to the belt through the hole in the pipe. M8x22 belt screws and Nyloc nuts are used for attachment. Tighten the nuts until the screw caps sink slightly into the rubber surface of the belt (i.e. the cap does not come in contact with the pulley). If it is difficult to wrench the Nyloc nuts tight at the pipe with holes (the bolts rotate), tighten the nuts initially on top of the upper pulley and wrench them to their final tightness at the pipe with holes.

### **Retightening of the bucket belt**

As required, the bucket belt shall be retightened by shortening the belt. The tightening device shall be used for retightening.

If the elevator is equipped with an adjustable boot (A72210), retightening can be carried out by means of the adjustment screws at the boot.

Check the alignment of the belt pulleys and the scrapers after retightening.



## Elevators E40-E80

Install the buckets of the elevator with and without bottom in groups that span six attachment hole pairs of the bucket. Each group consists of the lowest bucket with bottom and of one to three buckets without bottom installed above it (E40 - 1 pc., E60 - 2 pcs., E80 - 3 pcs.). Leave one or several hole pairs unused above the bottomless buckets and below the next bucket with bottom.

If the last bucket group cannot be completed, because of the length of the belt, make sure one attachment hole pair is left unused below the next bucket with bottom by leaving out required number of bottomless buckets.

On the first installation round install buckets with bottom only. Install a bucket with bottom in every 6th pair of holes (see drawing: "Installing buckets in the E40-E80, after the 1st round"). On the second round install a bottomless bucket above each bucket with bottom. Repeat the installation rounds 2-4 times until there are from one (on E40) to three (on E80) bottomless buckets above each bucket with bottom. You can calculate the required amount of buckets if you know the total height of your elevator.

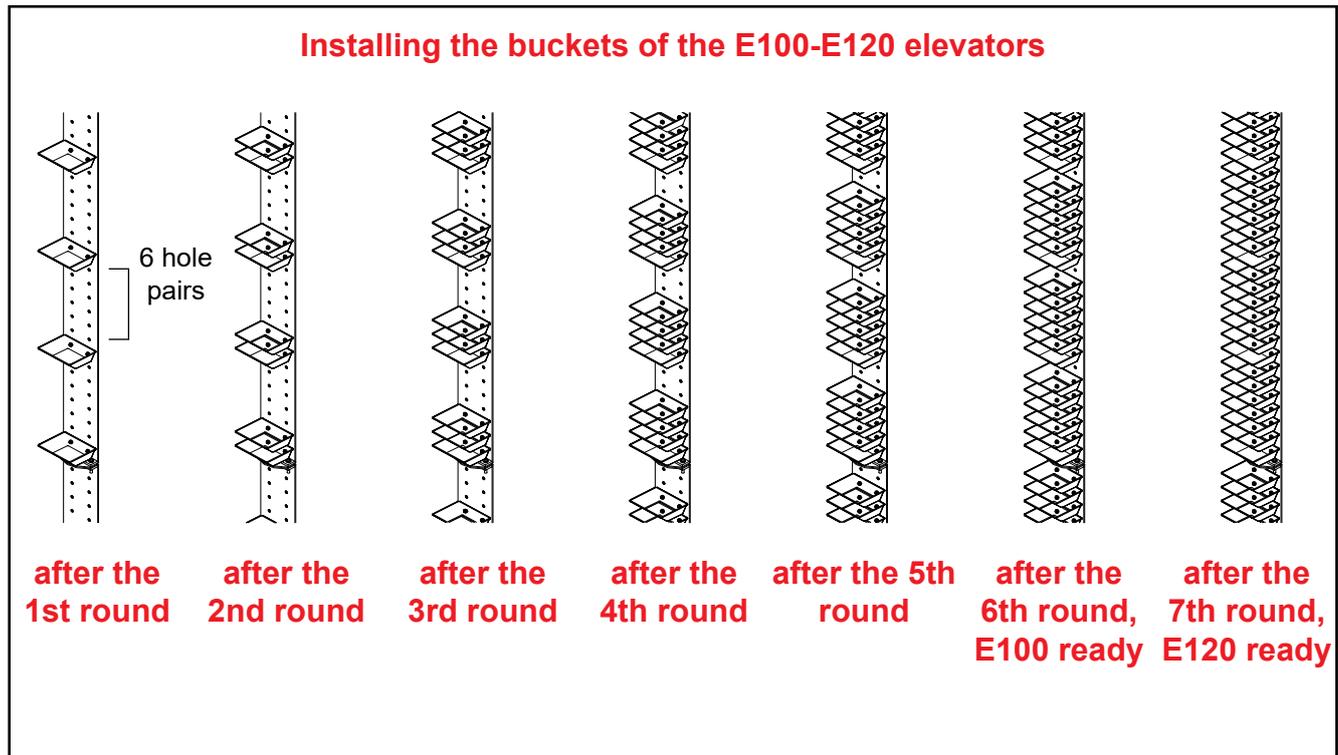
Required number of buckets with bottom is 2,22 pcs./metre of belt.

The number of bottomless buckets is 6,67 pcs./metre of belt on E80, 4,44 pcs./metre of belt on E60, 2,22 pcs./metre of belt on E40.



## Elevators E100 ... E120

Install the buckets of the elevator with and without bottom in groups that span seven attachment hole pairs of the bucket. Each group consists of the lowest bucket with bottom and of five (E100) to six (E120) buckets without bottom installed above it. If the number of bottomless buckets is five, leave a pair of holes empty above the bottomless buckets below the next bucket with bottom.



If the last bucket group cannot be completed, because of the length of the belt, make sure one attachment hole pair is left unused below the next bucket with bottom by leaving out required number of bottomless buckets.

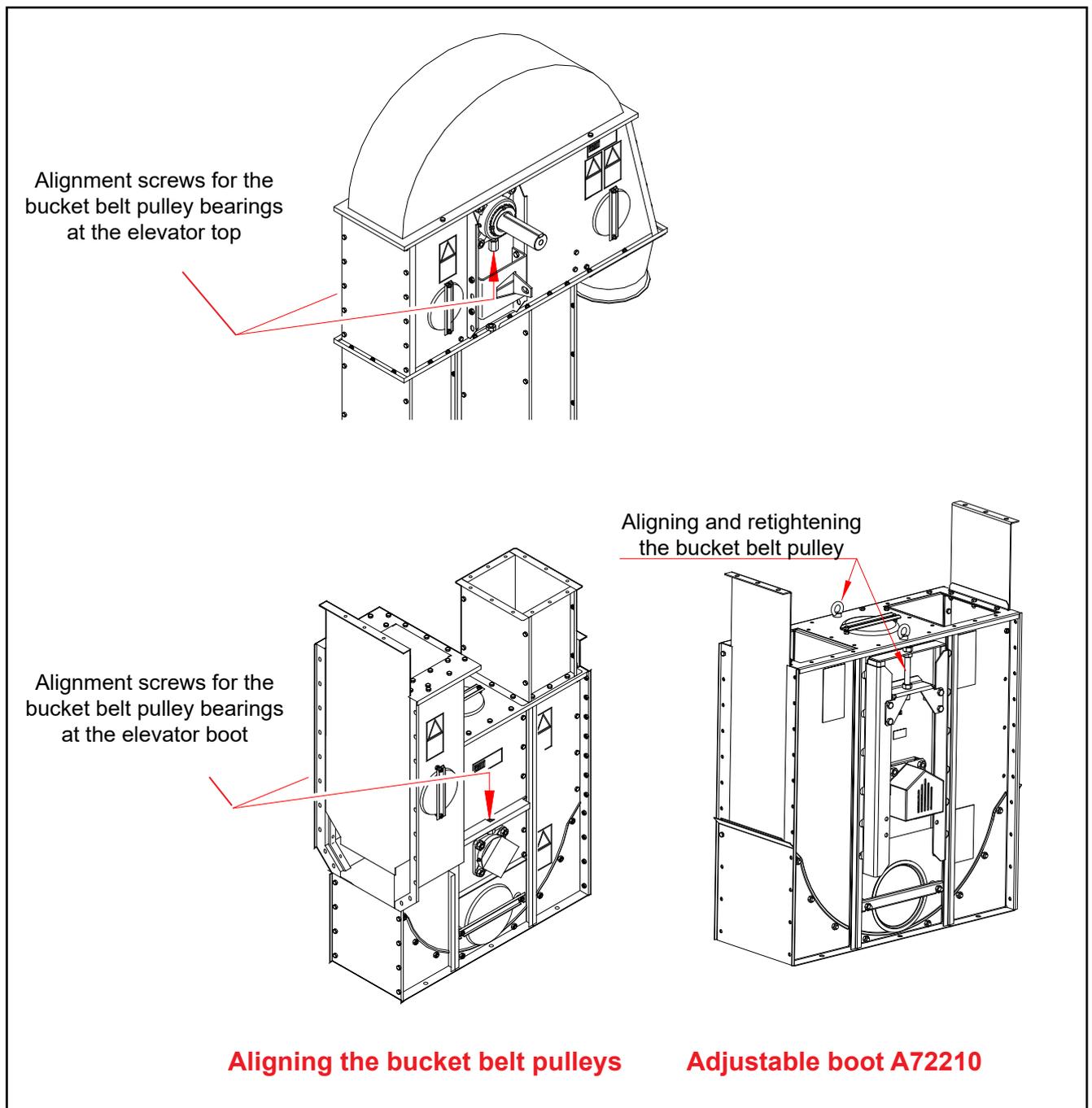
On the first installation round install buckets with bottom only. Install a bucket with bottom in every 7th pair of holes (see drawing: "Installing buckets in the E100-E120, after the 1st round"). On the second round install a bottomless bucket above each bucket with bottom. Repeat the installation rounds 6-7 times until there are from five (E100) to six (E120) bottomless buckets above each bucket with bottom. You can calculate the required amount of buckets if you know the total height of your elevator.

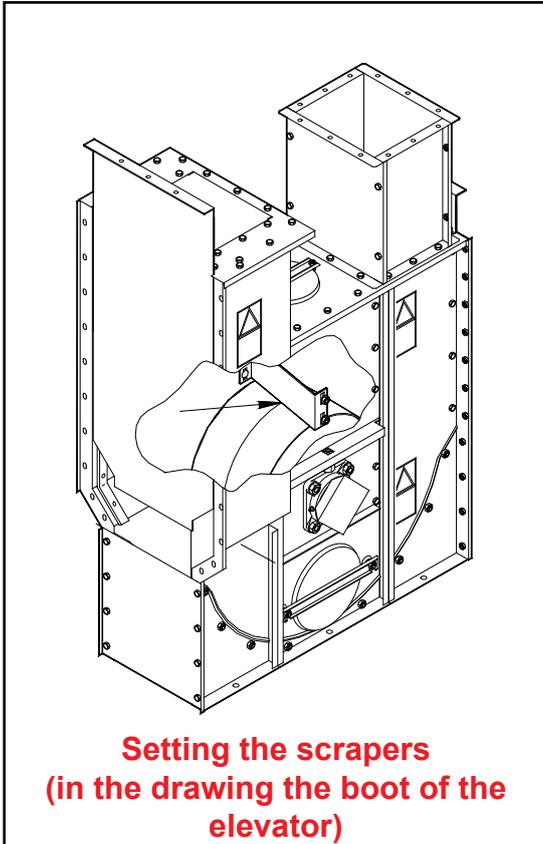
Required number of buckets with bottom is 1.9 pcs./metre of belt.

The number of bottomless buckets is 11,43 pcs./metre of belt on E120, 9,52 pcs./metre of belt on E100.

## Aligning the bucket belt pulleys

Once the installation of the buckets is completed, check that the belt remains at the centre of the pulleys during the test rounds both at the top and the boot ends of the elevator. If the sides of top and boot ends of the elevator are exactly vertical, but the belt is running at the side of the pulley, loosen the attachment bolts of the bucket belt pulley bearings and adjust the position of the pulley using a hexagon socket key so that the belt shifts to the centre of the pulley. See drawing "Aligning the bucket belt pulleys".



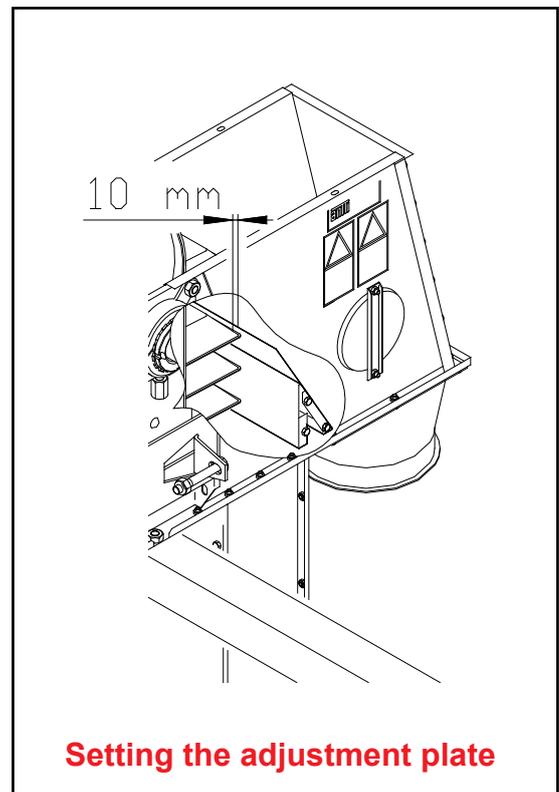


### Setting the scrapers

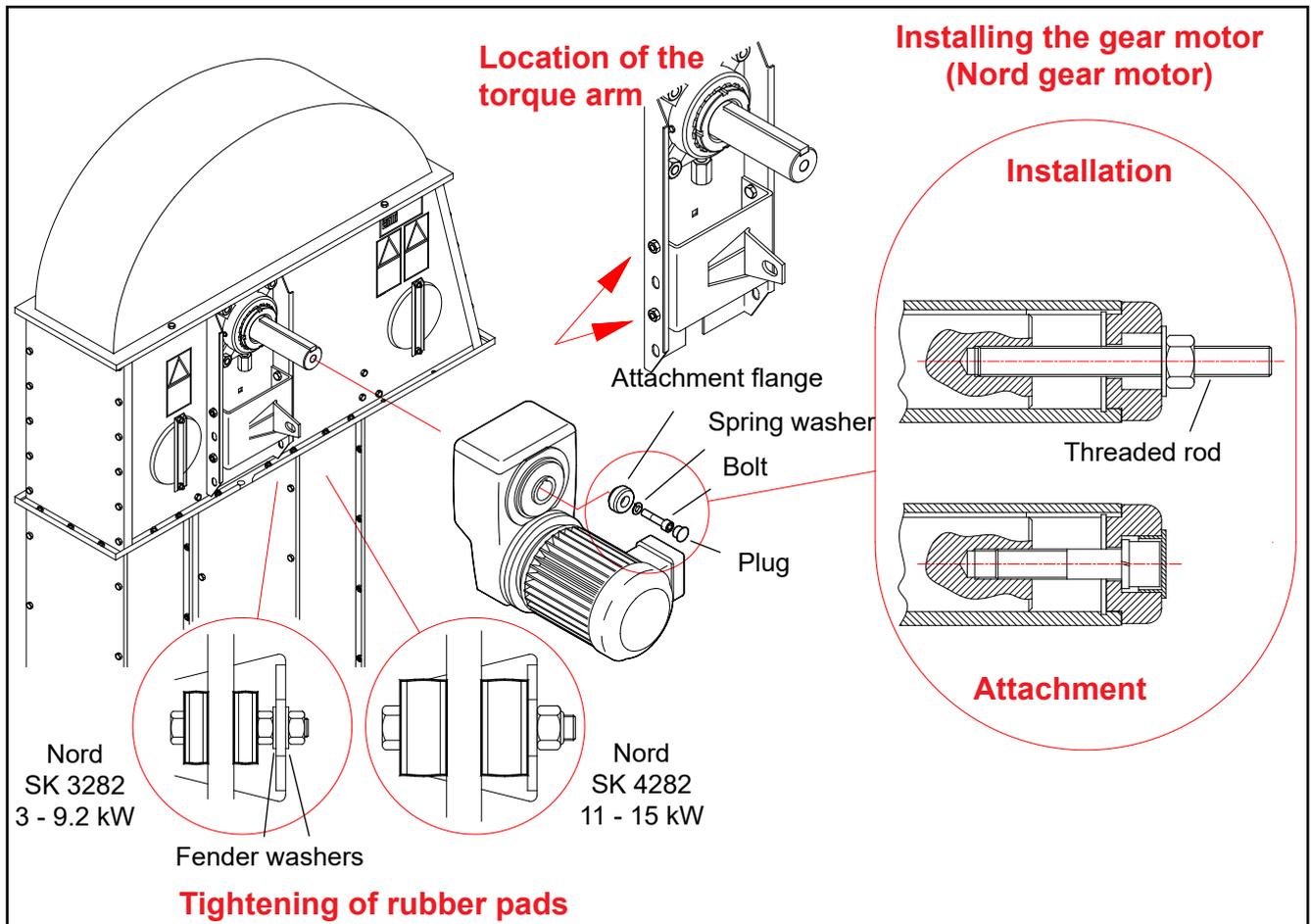
Adjust the scraper which rubs the surface of both bucket belt pulleys as close to the surface of the belt pulley as possible without causing any extra noise (see drawing "Setting the scrapers").

### Setting the adjustment plate

Adjust the adjustment plate above the divider to a position where the buckets pass it at a distance of 10 mm (see drawing "Setting the adjustment plate").



## Installing the gear motor - Nord gear motor (standard configuration)



Lift the gear motor of the elevator level with the elevator top. Use a hoist for lifting as the gear motor, depending on its size, weighs 61 kg (3,0 kW), 70 kg (4,0 kW), 84 kg (5,5 kW), 95 kg (7,5 kW), 102 kg (9,2 kW), 142 kg (11 kW) tai 157 kg (15 kW). Lift the gear by the eye-bolts provided.

Check that the gear motor's torque arm is in position in the upper holes of the stiffener. See drawing "Installing the gear motor".

Clean the protruding part of the shaft in the top end of the elevator and place a key in the groove of the shaft.

Check the oil level in the gear motor through the control opening below the shaft (on the opposite side to the motor). When the gear motor is in the operating position, the oil surface must be level with the lower edge of the opening. See point "SERVICE"

Support the gear motor using a hoist and push it onto the shaft with the key on the shaft pointing towards the groove in the gear. You can use a M16 threaded rod, a large washer and a nut as aid while pushing the gear motor into position.. If the elevator shaft feels too tight for the sleeve shaft of the gear motor, check the alignment of the gear-head motor with respect to the shaft; do not hit (risk of bearing damage!). See the detail "Installation" in the drawing.



# Elevator, E-series

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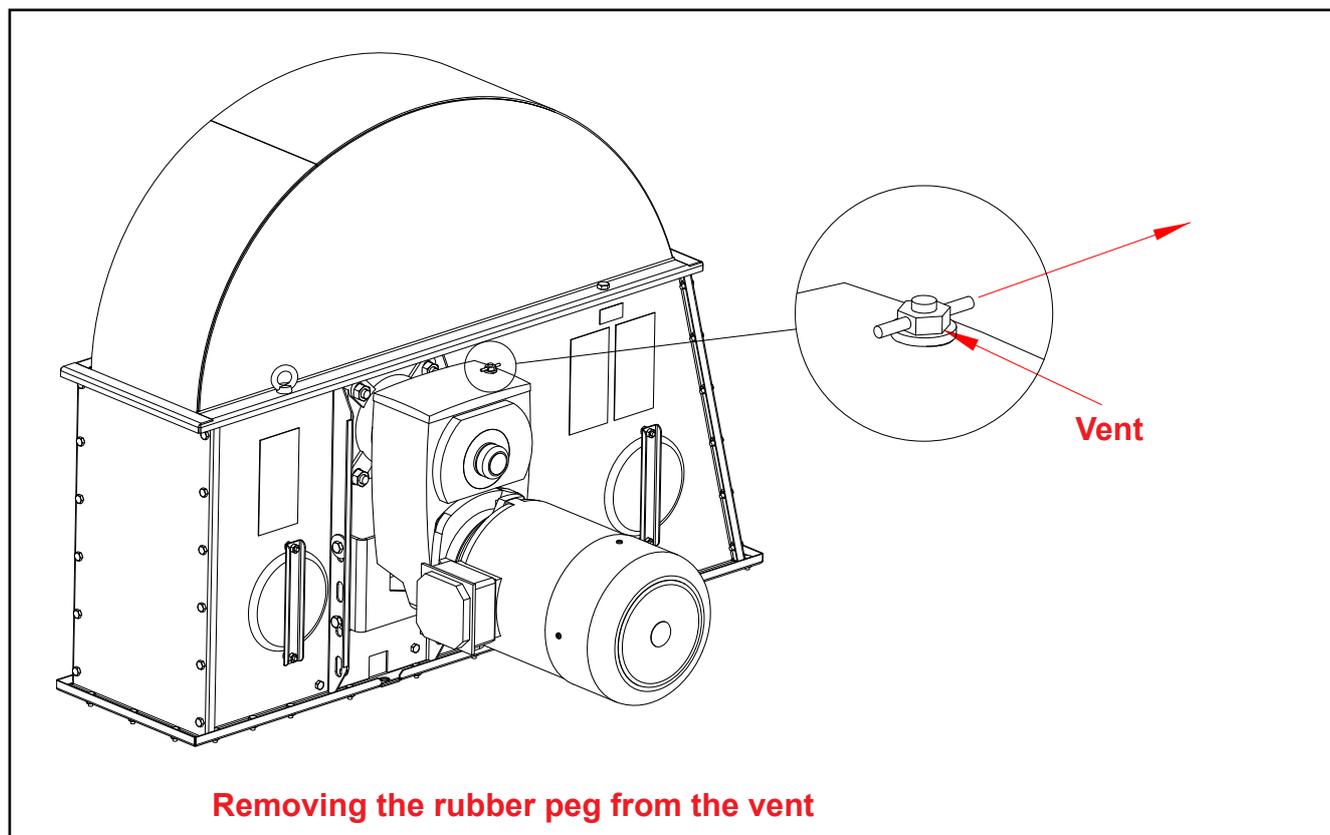
Press the gear motor into position and secure its attachment by installing the attachment kit delivered with the gear in the threaded bore of the shaft. The kit comprises an attachment flange, a spring washer, a hexagon socket bolt and a protective plug. The size of the bolt is M16x70. See the detail "Attachment" in the drawing. Tighten the bolt carefully.

Install simultaneously the rubber pads for the torque arm support on both sides of the gear housing bracket and fix the gear motor on the torque arm.

Attach the gear motors 3,0-9,2 kW by putting a hexagon bolt M12x80 into the hole in the rubber pad and tightening the nut so that the rubber pads are properly pressed against the bracket of the gear (see the point "Tightening the rubber pads, Nord SK 3282 3 - 9.2 kW"). Place M12 fender washers on both sides of the torque arm bracket. Finally, fasten the pad to the torque arm using another similar nut.

Attach the gear motors 11-15 kW by putting a hexagon bolt M16x110 into the hole in the torque arm and tightening the Nyloc nut so that the rubber pads are properly pressed against the bracket of the gear (see the point "Tightening the rubber pads, Nord SK 4282 11 - 15 kW").

Remove the rubber peg from the vent. (prevents spilling of the oil from the vent during transportation).





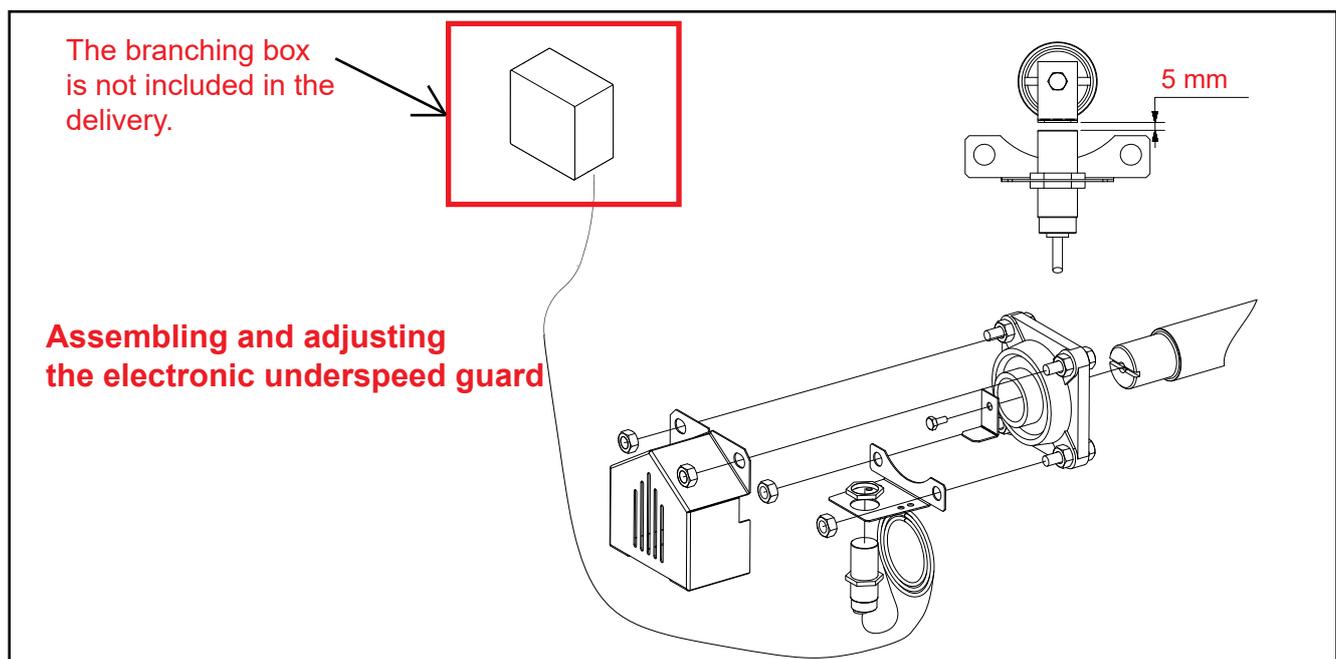
## Electronic underspeed guard DI 0105

03/2018 -->

Install the underspeed guard in the elevator boot on the side where the possible side intake spout is used less frequently.

The installation proceeds as follows (fig "Assembling and adjusting the electronic underspeed guard"):

- \* Remove the shaft end cover from the device (if installed).
- \* Attach the claw plate using an M8x16 hexagon screw to the threaded hole in the shaft at the elevator boot.
- \* Install the sensor in the attachment plate, as shown in the drawing.
- \* Adjust the perpendicular distance from the sensor to the claw-plate to 5 mm. Tighten the nuts.
- \* Put the shaft end cover in place.
- \* Connections according to the diagrams (see next page). If the delivery includes a control centre, follow the wiring diagrams delivered with it.



## Electronic underspeed guard without a relay box (03/2018-->)

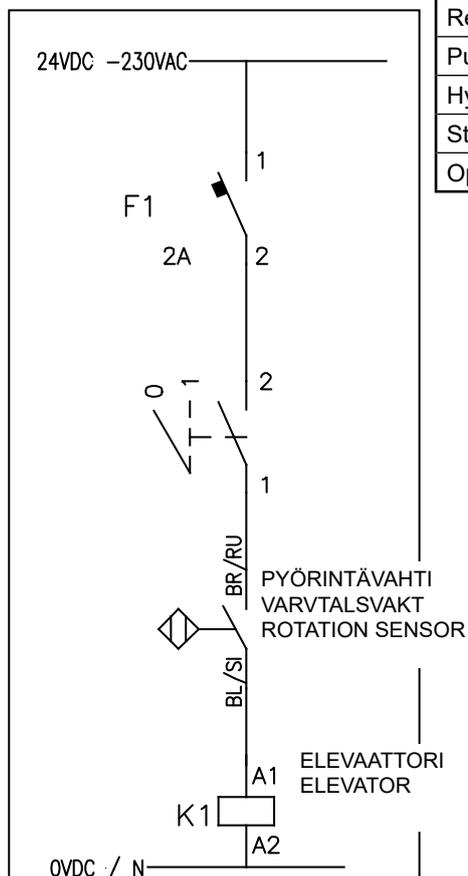
### Operation

When the elevator is started, it must reach its normal running speed in 8 seconds, i.e. the revolutions of the lower pulley must rise to at least 110 rpm. (this is factory setting, the setting of the potentiometer has no influence.) If the normal running speed will not be reached in 8 seconds, the elevator stops.

The two yellow LEDs, at the end of the sensor, are always continually illuminated when the output from the sensor is active, i.e. during the startup phase, and after that, if the running speed is sufficiently high.

For restart the operating switch must be brought momentarily to the position "0". Note! Remove possible congestion or any other cause of malfunction before the restart. Repeated restarts may break the soft start unit of the elevator.

If the delivery includes a control centre, follow the wiring diagrams delivered with it.



Operating voltage	20VDC...250VAC
Operating principle	Closing
Continuous max. current	100mA DC/250mA AC
Current at minimum load	6mA
Required pre-fusing	2A fast
Pulses/min.	110
Hysteresis	10%
Start delay	8 sec.
Operating distance	5mm

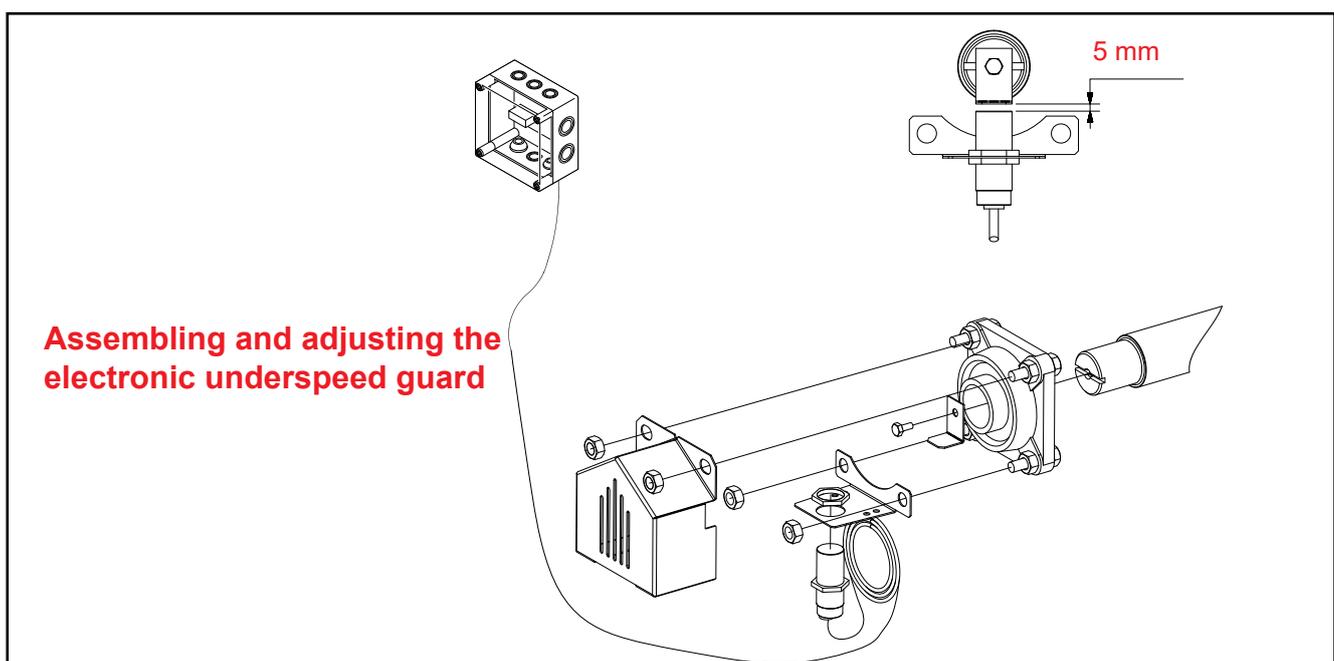
**Electronic underspeed guard DRU-11 10/2002 - 2/2018**

Install the underspeed guard in the elevator boot on the side where the possible side intake spout is used less frequently.

The relay box for 230 V supply voltage is standard equipment in Finland.  
The relay box for 24 V supply voltage is standard equipment in Sweden.

The assembly proceeds as follows (fig. "Assembling and adjusting the electronic underspeed guard):

- \* Remove the shaft end cover from the device (if installed)
- \* Attach the claw-plate using an M8x16 hexagon bolt to the threaded hole in the shaft at the elevator boot.
- \* Install the sensor in the attachment plate, as shown in the drawing.
- \* Adjust the perpendicular distance from the sensor to the claw-plate to 5 mm. Tighten the nuts.
- \* Put the shaft end cover in place.
- \* Attach the relay box for the electronic underspeed guard either to the midmost side-plate of the elevator boot above the shaft end cover or to the dryer building structure within limits set by the length of the cable (do not extend the cable).
- \* Connections according to the diagrams (see next page). Also refer to the wiring diagram for the control centre of the dryer.



220~V

50-160 Pulse/mim

NAMUR INAT 180B

+BR -BL

Colours of the conductors:

BL = blue  
BR = brown

### Operation

As the elevator is started, the relay "R" is active for nine seconds before the K1 is activated. The elevator must start during this period. Simultaneously, the sensor generates pulses, which make the relay "R" remain active. If the elevator is not running, generation of pulses stops. After this both relays "R" and K1 will be deactivated and the elevator stops. If the underspeed guard has stopped the elevator, you can restart it by turning the operating switch into position "0".

### Signal lights in the relay box

Power ON	O	The LED is illuminated if the supply voltage is connected to the relay box
Pulse Input	O	The LED flashes if the sensor is generating pulses
Run OK	O	The LED is illuminated if the pulse rate generated by the sensor is correct.
I.time ON	O	The LED is illuminated for 9 seconds during the start-up delay. The light goes out as soon as the system is switched to Run OK mode.

**Wiring diagram for the electronic underspeed guard (220V)**

24V AC/DC

50-160 Pulse/mim

NAMUR INAT 180B

+BR -BL

Colours of the conductors:

BL = blue  
BR = brown

### Operation

As the elevator is started, the relay "R" is active for nine seconds before the K1 is activated. The elevator must start during this period. Simultaneously, the sensor generates pulses, which make the relay "R" remain active. If the elevator is not running, generation of pulses stops. After this both relays "R" and K1 will be deactivated and the elevator stops. If the underspeed guard has stopped the elevator, you can restart it by turning the operating switch into position "0".

### Signal lights in the relay box

Power ON	O	The LED is illuminated if the supply voltage is connected to the relay box
Pulse Input	O	The LED flashes if the sensor is generating pulses
Run OK	O	The LED is illuminated if the pulse rate generated by the sensor is correct.
I.time ON	O	The LED is illuminated for 9 seconds during the start-up delay. The light goes out as soon as the system is switched to Run OK mode.

**Wiring diagram for the electronic underspeed guard (24V)**

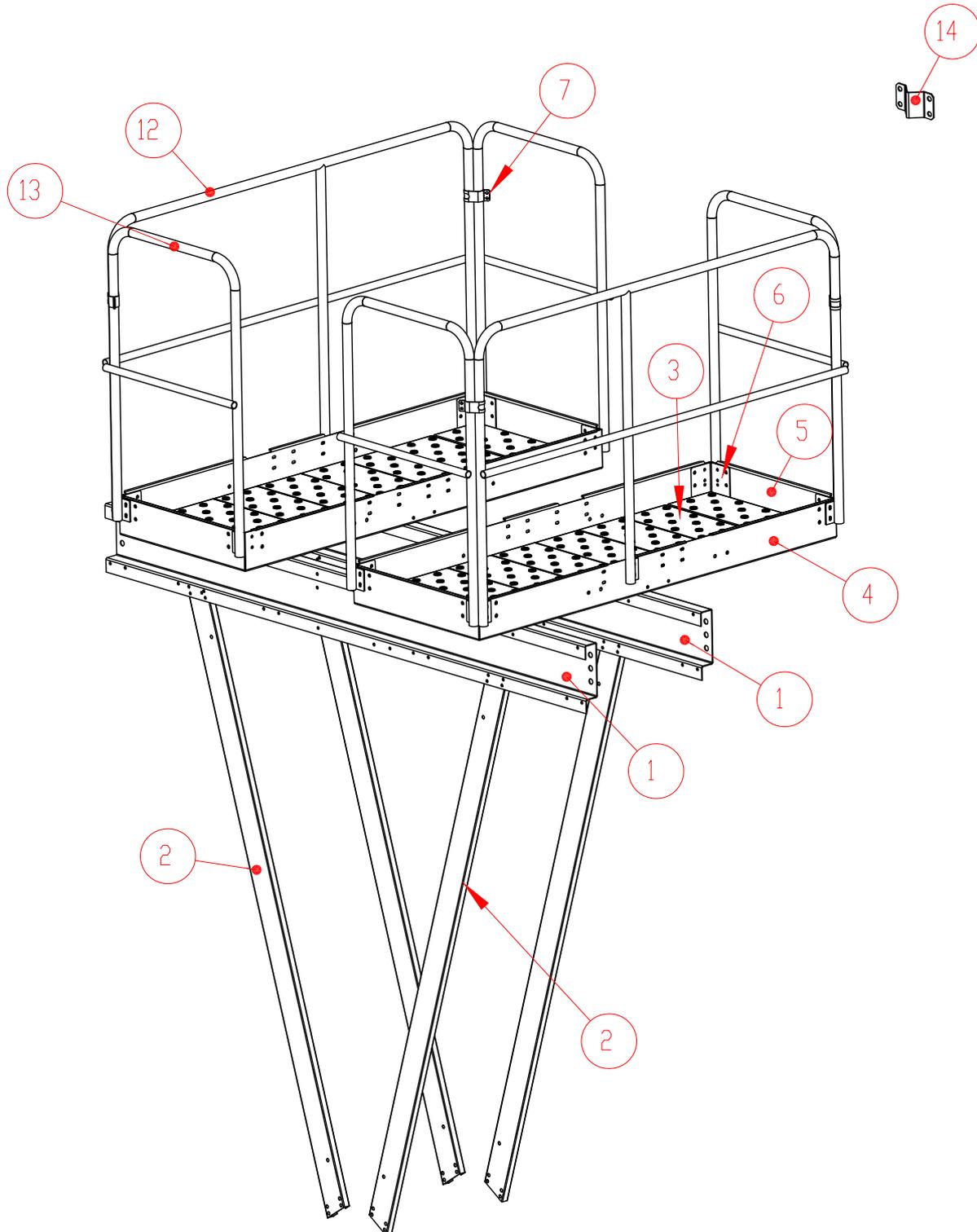




## **ANTTI-ELEVATOR, E-SERIES, PARTS DRAWINGS OF ADDITIONAL EQUIPMENT**



**2-sided service platform (33355), spare parts drawing**





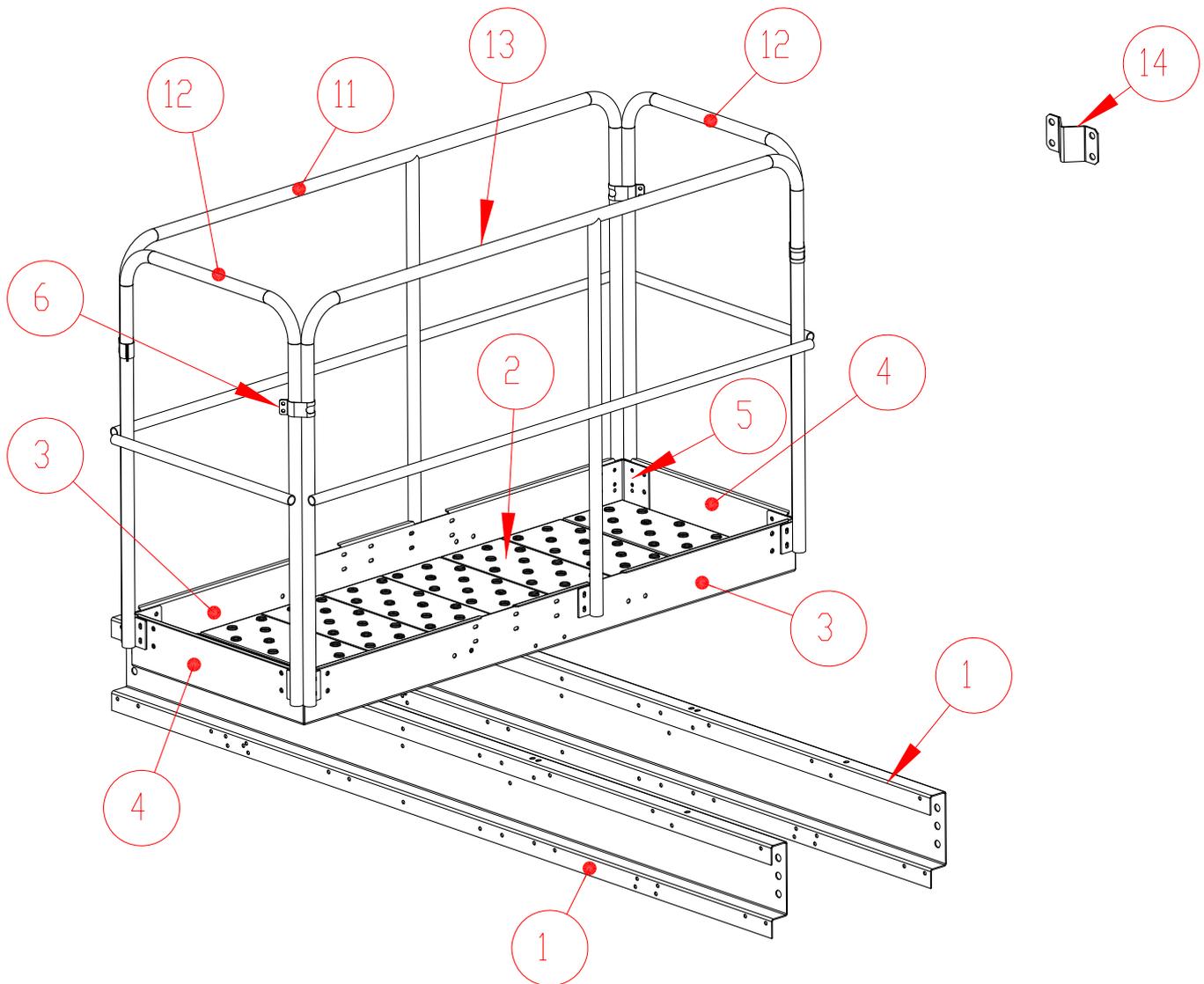
## Additional equipment Elevator, E-series

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Part	Part no	Denomination	Pcs	Weight
1	A76325	CLADDING BED E L2500 M19	2	23.6
2	33339	MEGA CLADDING, CROSS-BRACE, SERVICE PLATFORM FOR ELEVATOR	4	5.48
3	A71545	ELEV PLATFORM ELEMENT 215 X 635 X 35	16	2.35
4	A76217	ELEV SERVICE PLATFORM BASEBOARD L1744 M19	4	8.55
5	A76218	ELEV SERVICE PLATFORM BASEBOARD L649 M19	4	3.15
6	A76219	ELEV SERVICE PLATFORM CORNER PLATE M19	8	0.61
7	A76216	RAILING FASTENING PART M19	4	0.09
8	102200	BOLT HEX ZN 8.8 10X20 DIN933	103	0.02
9	110560	NUT M10 ZN 8 DIN 934	108	0.01
10	101820	BOLT HEX ZN 8.8 8X20 DIN933	57	0.01
11	110540	NUT M8 ZN 8 DIN 934	57	0.01
12	A76206	RAILING ELEMENTS L 1773 A M19	2	12.46
13	A76208	RAILING ELEMENTS L 671 M19	4	6.49
14	A76242	RAILING FASTENING PART M19	8	0.08



**1-sided service platform (33356), spare parts drawing**





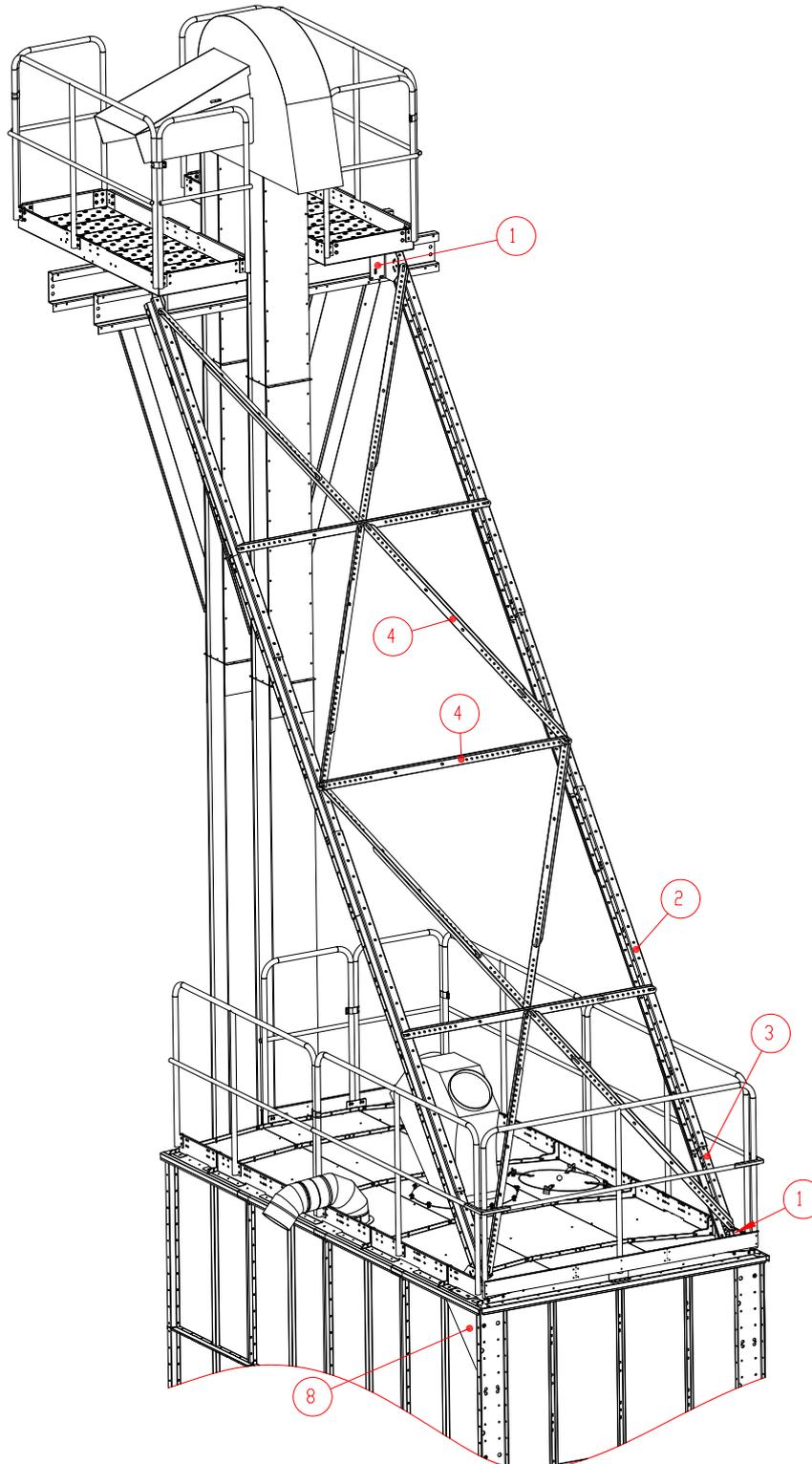
## Additional equipment Elevator, E-series

---

Part	Part no.	Denomination	Pcs	Weight
1	A76325	CLADDING BED E L2500 M19	2	23.6
2	A71545	ELEV PLATFORM ELEMENT 215 X 635 X 35	8	2.35
3	A76217	ELEV SERVICE PLATFORM BASEBOARD L1744 M19	2	8.55
4	A76218	ELEV SERVICE PLATFORM BASEBOARD L649 M19	2	3.15
5	A76219	ELEV SERVICE PLATFORM CORNER PLATE M19	4	0.61
6	A76216	RAILING FASTENING PART M19	4	0.09
7	102200	BOLT HEX ZN 8.8 10X20 DIN933	43	0.02
8	110560	NUT M10 ZN 8 DIN 934	45	0.01
9	101820	BOLT HEX ZN 8.8 8X20 DIN933	48	0.01
10	110540	NUT M8 ZN 8 DIN 934	48	0
11	A76206	RAILING ELEMENTS L 1773 A M19	1	12.46
12	A76208	RAILING ELEMENTS L 671 M19	2	6.49
13	A76207	RAILING ELEMENTS L 1773 B M19	1	12.46
14	A76242	RAILING FASTENING PART M19	16	0.08



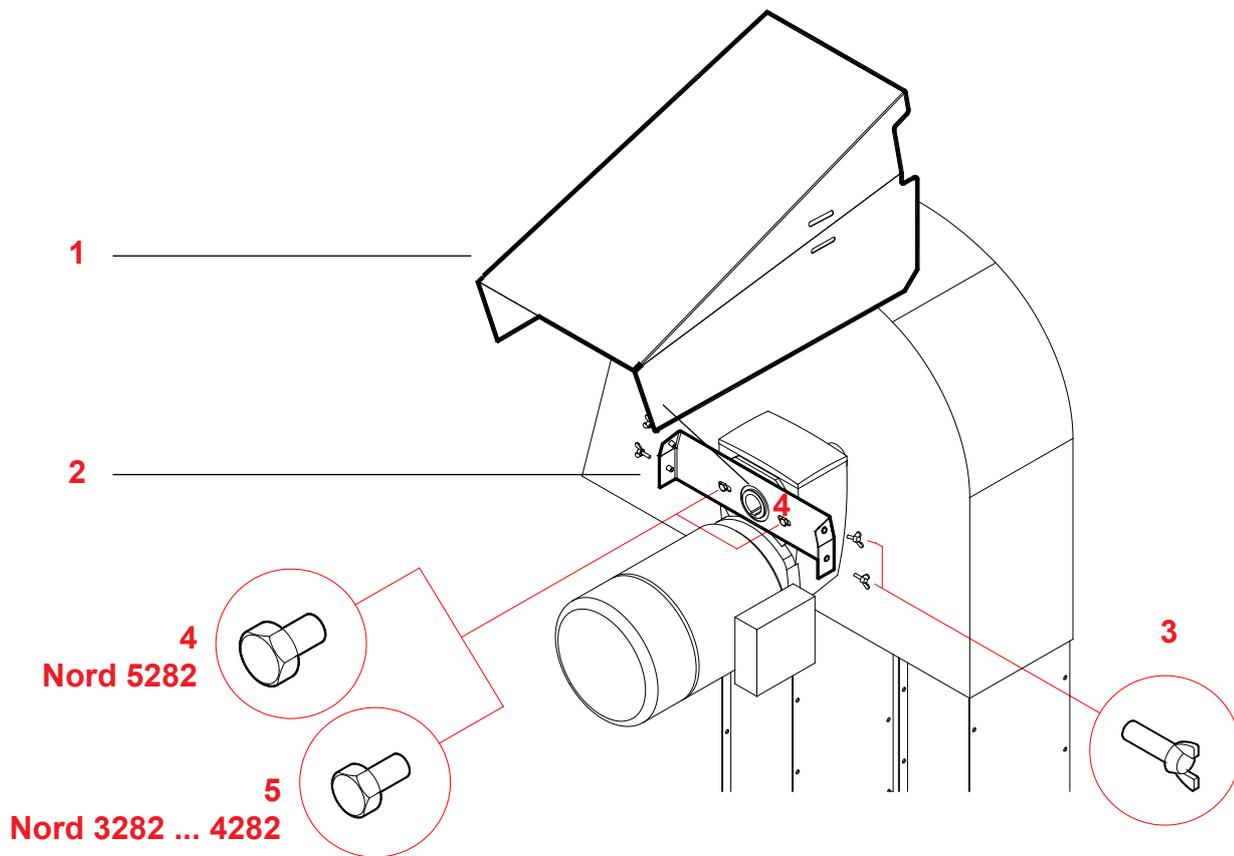
## Elevator support (A71950P), spare parts





20080101

Ref.	Part no.	Denomination	Pcs	Dwg. No.	Weight
1	A71918	Elevator support, cover, upper bracket, E-model WM06	4	A71918-A	1.76
2	A71919	Cladding Z-beam L = 2500 WM06	6	A71919-0	14.79
3	A71916	Cladding Z-beam L = 1250 WM06	2	A71916-0	7.38
4	A71917	Elevator support, cover, cross support, E-model WM06	22	A71917-0	1.81
5	111550	Washer ZN M10 DIN125	220		
6	102210	Hexagon bolt ZN M10x25 DIN933	110		0.02
7	110560	Hexagon nut M10 DIN934	110		0.01
8	A75382	Elevator support corner reinforcement	2	A75382	2.75

**Rain cover for elevator (33332), spare parts**

20080101

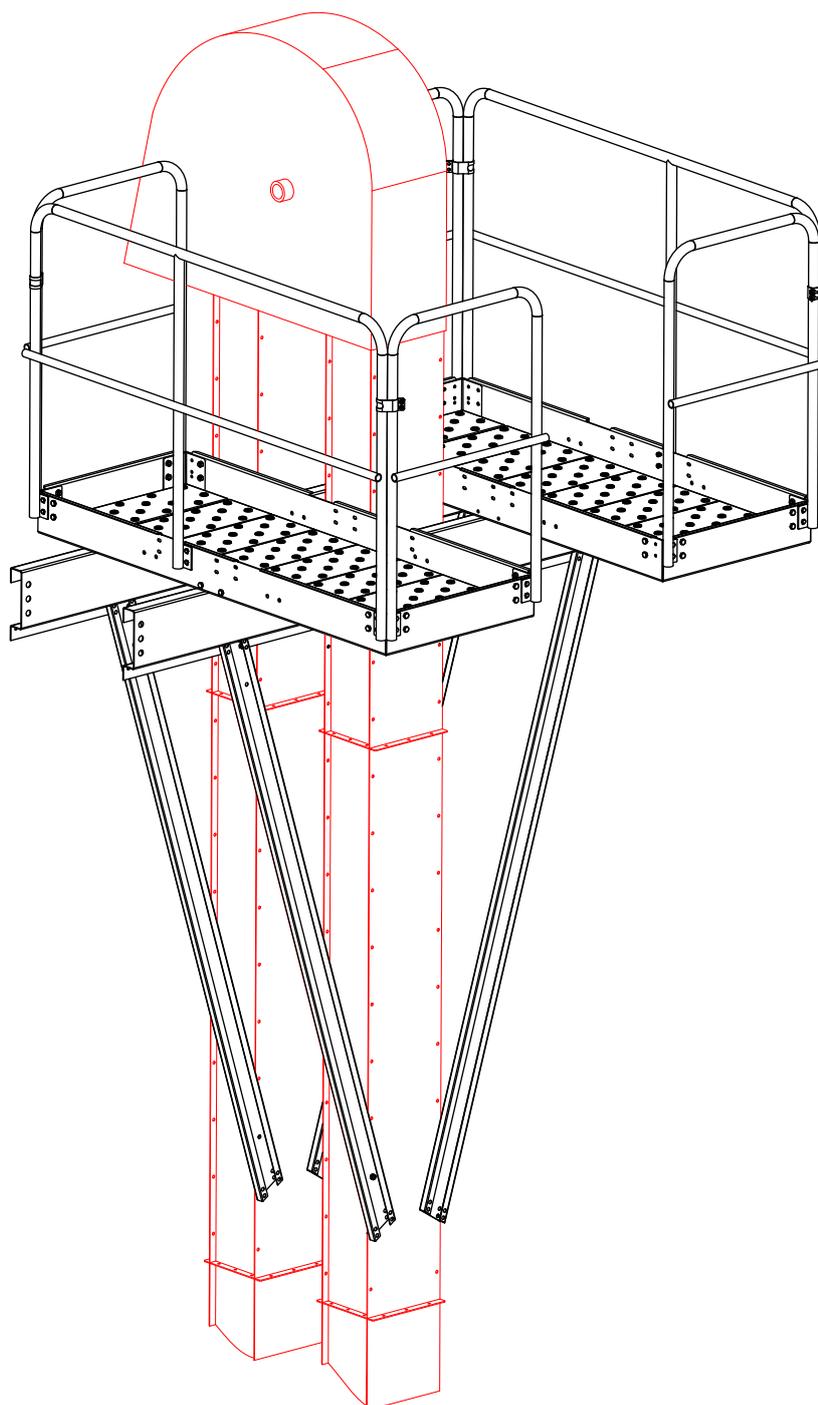
Ref.	Part no.	Denomination	Pcs	Dwg. No.	Weight
1	32964	Rain cover for E-model elevator, Nord 3282 5282	1	32964-A	12.43
2	32963	Rain cover bracket for E-model elevator, Nord 3282 ... 5282	1	32963-B	1.78
3	111303	Wing nut ZN M8x25 AM DIN316	4		0.03
4	102499	Hexagon bolt ZN M12x20 DIN933, Nord 5282	2		0.03
5	102200	Hexagon bolt ZN M10x20 DIN933, Nord 3282 and 4282	2		0.02



## INSTALLING ADDITIONAL EQUIPMENT OF THE ELEVATOR

### 2-sided service platform (33355)

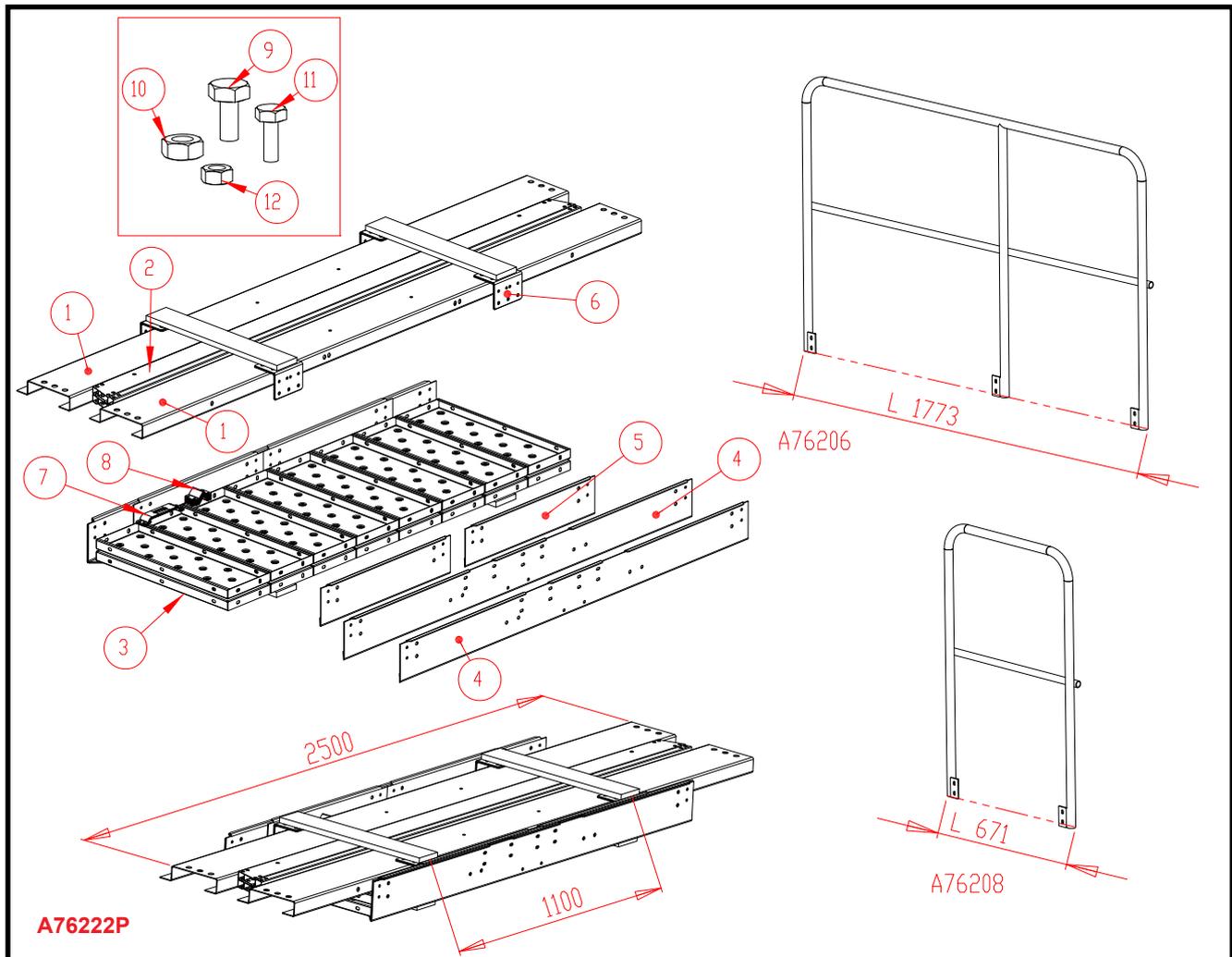
Service platform installed on the top of the elevator on the dryer with one elevator.



## Structure of the 2-sided service platform (33355)

Parts of a 2-sided service platform(for a dryer with one elevator).

Package A76222P + 2pcs railing elements A76206 + 4pcs railing elements A76208



Part	Part no.	Denomination	Pcs.	Weight
1	A76325	FRAME BEAM, SERVICE PLATFORM FOR ELEVATOR L2500 M19	2	23.6
2	33339	MEGA CLADDING, CROSS-BRACE, SERVICE PLATFORM FOR ELEVATOR	4	5.48
3	A71545	ELEV PLATFORM ELEMENT 215 X 635 X 35	16	2.35
4	A76217	ELEV SERVICE PLATFORM BASEBOARD L1744 M19	4	8.55
5	A76218	ELEV SERVICE PLATFORM BASEBOARD L649 M19	4	3.15
6	A76219	ELEV SERVICE PLATFORM CORNER PLATE M19	8	0.61
7	A76216	RAILING FASTENING PART M19	4	0.09
8	A76242	RAILING FASTENING PART M19	8	0.08
9	102200	BOLT HEX ZN 8.8 10X20 DIN933	103	0.02
10	110560	NUT M10 ZN 8 DIN 934	108	0.01
11	101820	BOLT HEX ZN 8.8 8X20 DIN933	57	0.01
12	110540	NUT M8 ZN 8 DIN 934	57	0.01

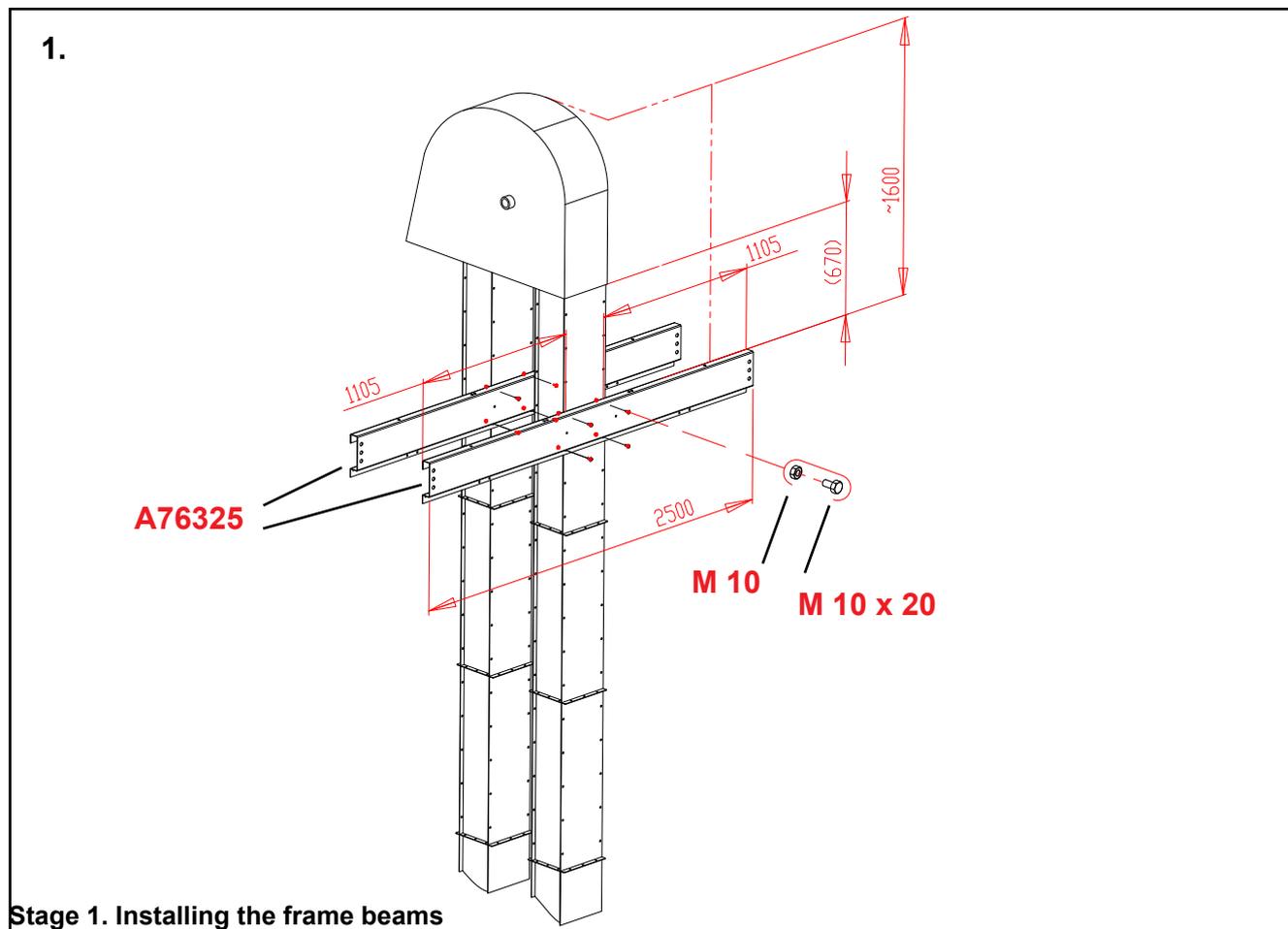


## Installing 2-sided service platform (33355)

### 2-SIDED SERVICE PLATFORM, DRYER WITH ONE ELEVATOR

The top of the elevator can be about 7 metres above the top cover of the dryer and, therefore it can sway slightly during installation. Because the gear motor of the elevator is heavy, it is advisable to install it last, when the platforms and supports are already in place.

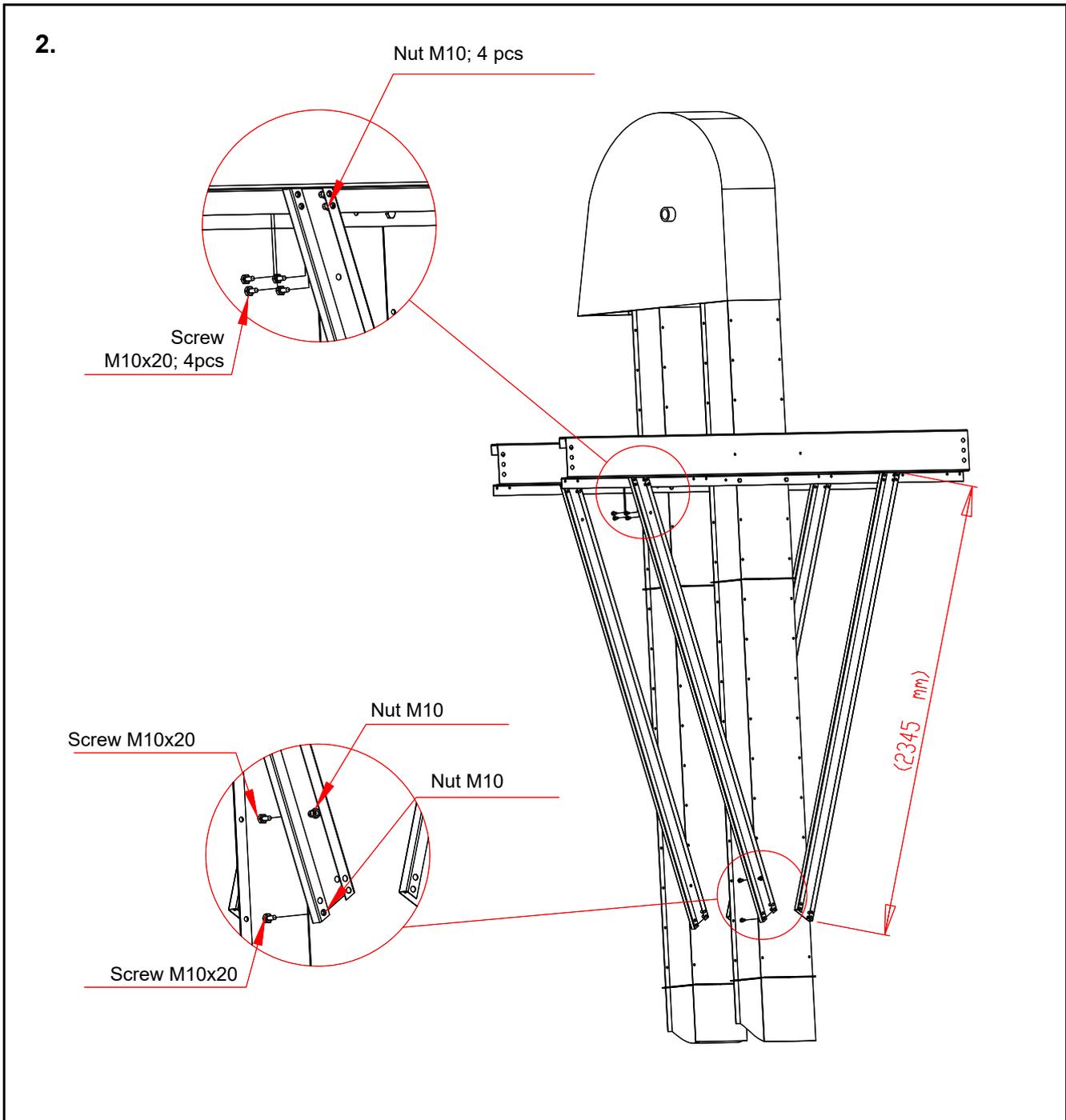
It is possible to assemble the platform on the ground and lift it into place ready-assembled. Next instructions deal with assembly and installation works up in the elevator.



The service platform shall be installed at a distance of about 1,6 m below the top of the elevator.

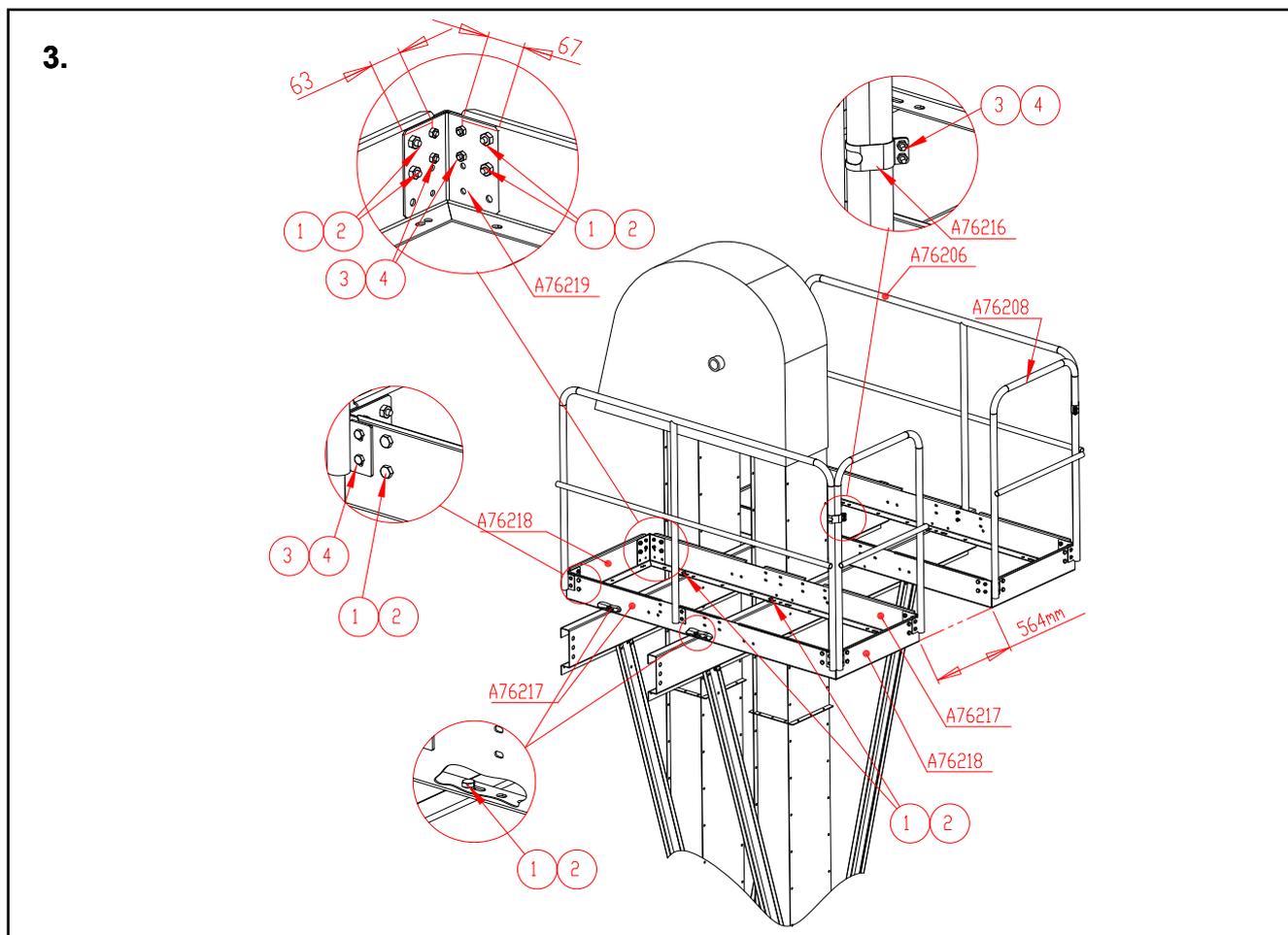
#### 1. Start the work by installing the frame beams (A76325).

Place the service platforms onto the beams.



## Stage 2. Installing the cross-braces

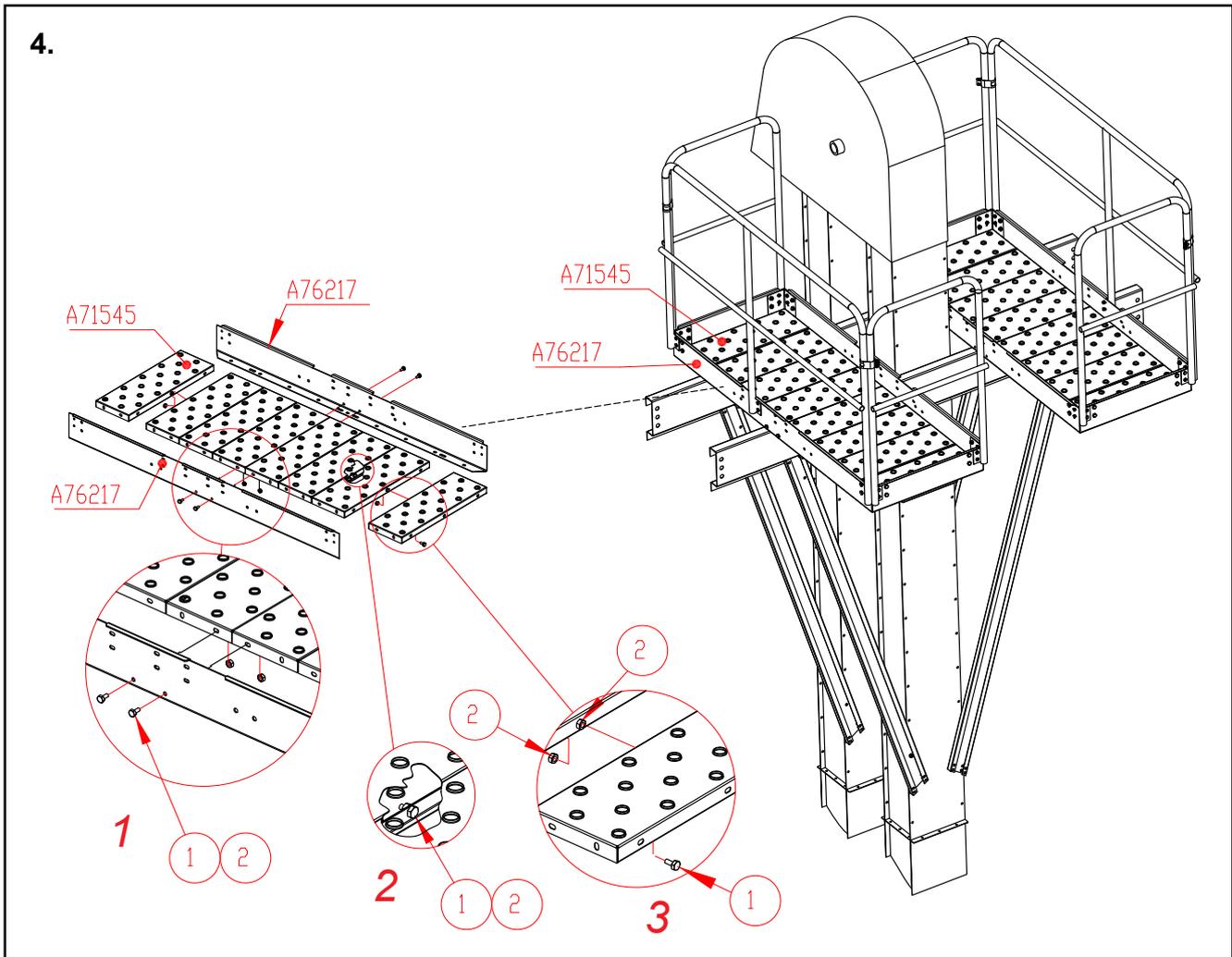
1. Install the cross-braces (33339) after the frame beams.



Part	Part no.	Denomination
1	102200	BOLT HEX ZN 8.8 10X20 DIN933
2	110560	NUT M10 ZN 8 DIN 934
3	101820	BOLT HEX ZN 8.8 8X20 DIN933
4	110540	NUT M8 ZN 8 DIN 934

### Stage 3. Installing the baseboards, corner pieces and railings

- **Install the longer baseboards A76217 on top of the frame beams.**  
Attach them to the frame beam using M10x20 bolts+nuts (2 pcs/baseboard)
- **Attach the corner pieces (A76219) and the end beams (A76218) to the lengthwise beams.**  
Note! The corner piece must be installed in the right way (see the measures in the detail drawing 1).
- **Adjust the distance between the platforms to 564mm (measured from the bottom of the platform).**
- **Also see the page 72 for additional information about the positioning of the platforms.**
- **Tighten the attachment bolts of the baseboards and the corner pieces.**
- **Install the railings as shown in the drawing.**  
Also see the drawing on the next page, in which all the railings have been installed in their final positions.



Part	Part no.	Denomination
1	102200	BOLT HEX ZN 8.8 10X20 DIN933
2	110560	NUT M10 ZN 8 DIN 934

#### Stage 4. Installing the platform elements

- **Join the platform elements (A71545) together.**

The platform elements shall be placed one by one into their final positions before joining them together.

Join the platform elements together by the bolt hole rows in the centre of their longer sides, using M10x20 bolts and M10 nuts. (See detail drawing 2).

The platform elements nearest to the side shall be installed so that one of the M10 nuts comes between the elements. (See detail drawing 3).

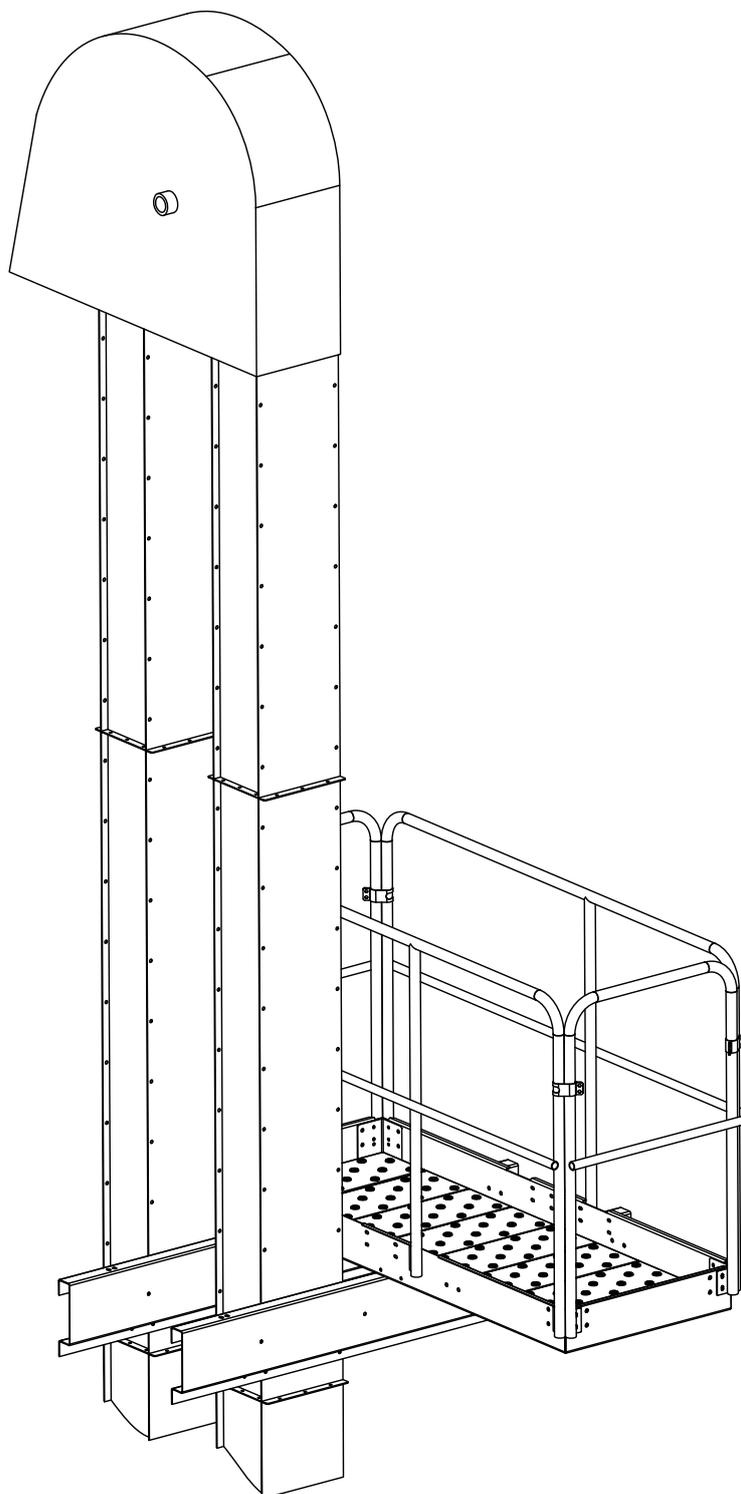
- **Fix the ready-assembled platforms by the ends of the midmost platform elements in the holes in the centre of the lengthwise beam.**

(See detail drawing 1).



## 1-sided service platform (33356)

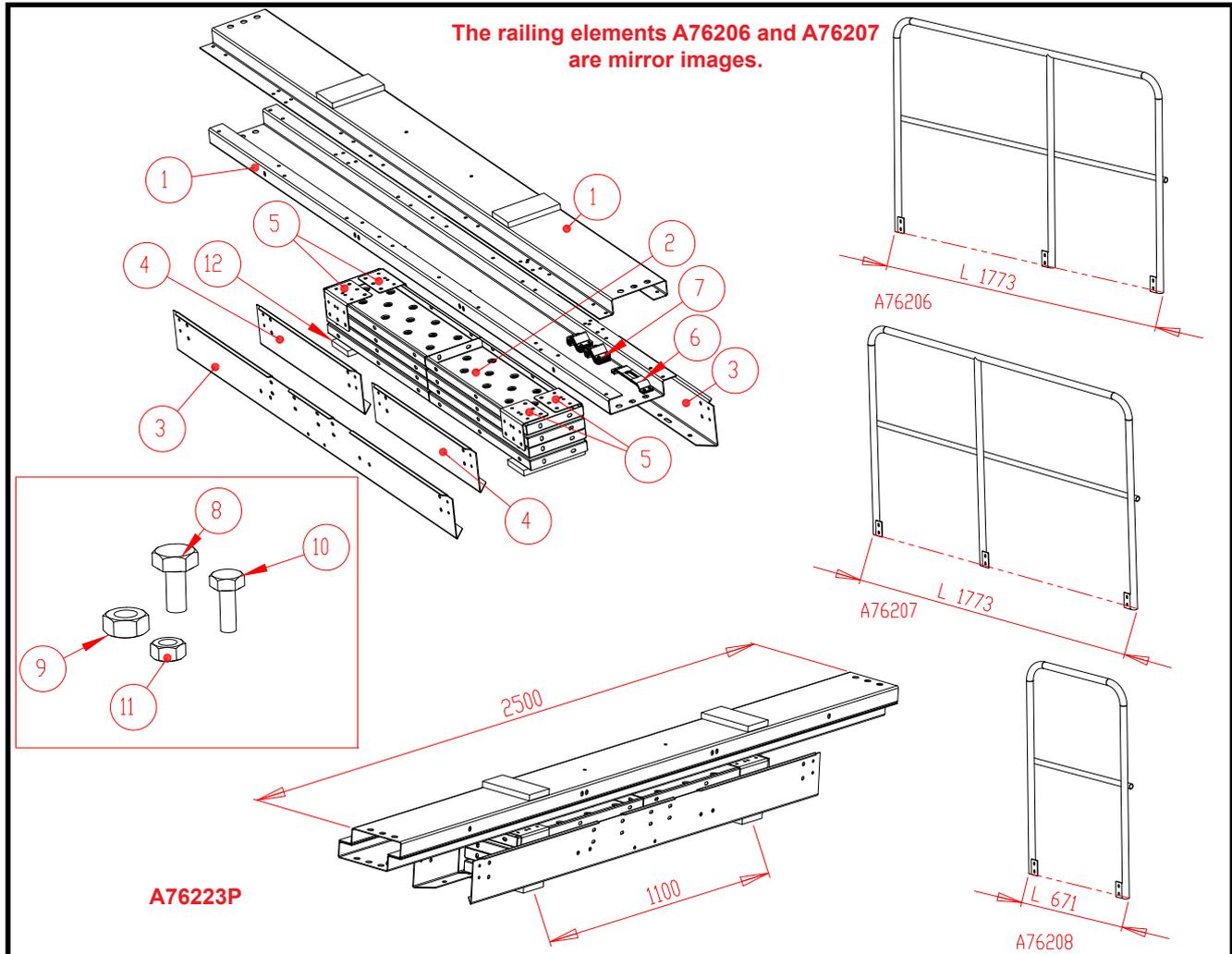
The service platform installed at the side of the elevator (level with the top cover of the dryer).



## Structure of the 1-sided service platform (33356)

### Parts of a 1-sided service platform (dryer with one or two elevators)

Package A76223P + 1pcs railing elements A76206 + 1pcs railing elements A76207 + 2pcs railing elements A76208



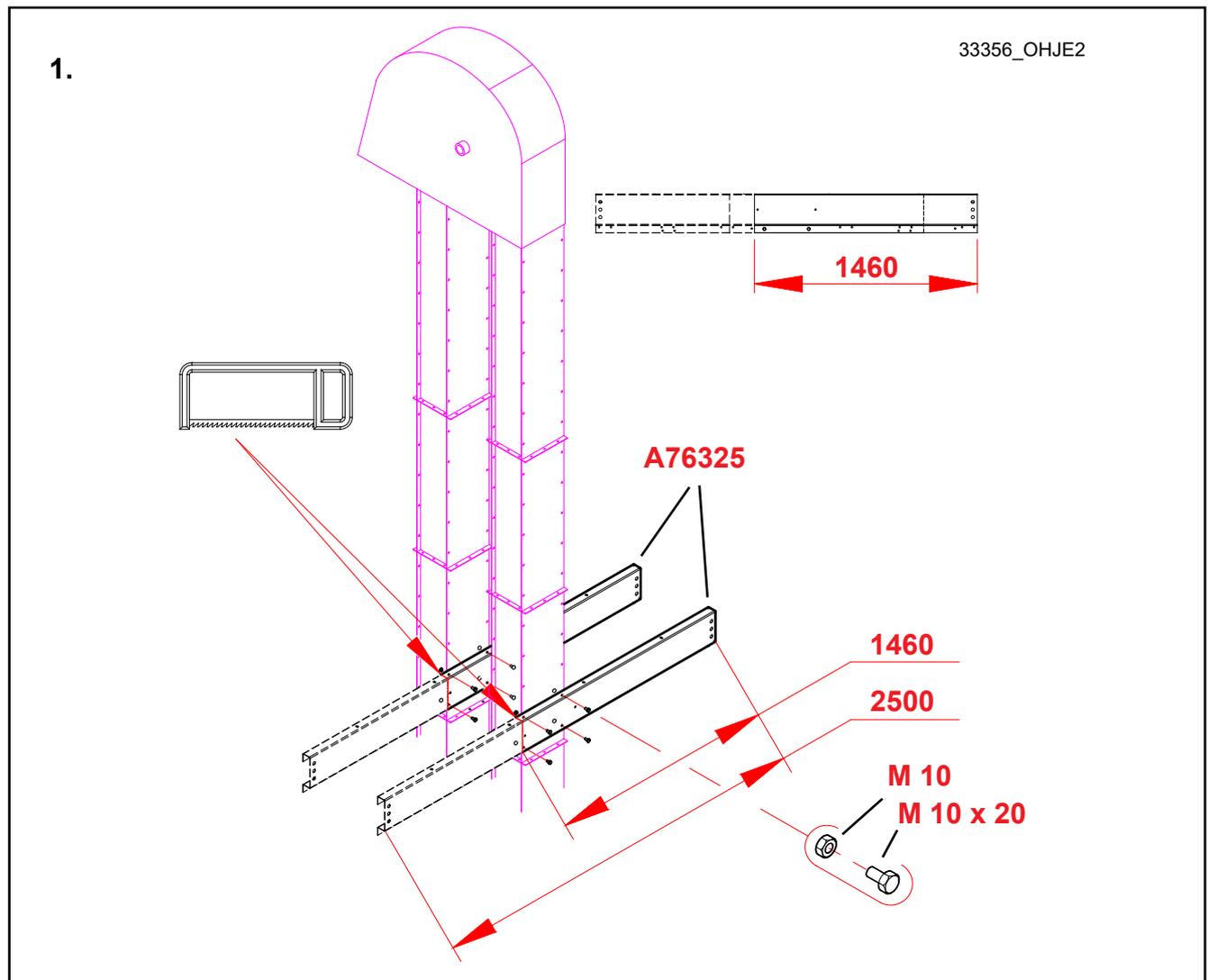
Part	Part no.	Denomination	Pcs.	Weight
1	A76325	FRAME BEAM, SERVICE PLATFORM FOR ELEVATOR L2500 M19	2	23.6
2	A71545	ELEV PLATFORM ELEMENT 215 X 635 X 35	8	2.35
3	A76217	ELEV SERVICE PLATFORM BASEBOARD L1744 M19	2	8.55
4	A76218	ELEV SERVICE PLATFORM BASEBOARD L649 M19	2	3.15
5	A76219	ELEV SERVICE PLATFORM CORNER PLATE M19	4	0.61
6	A76216	RAILING FASTENING PART M19	4	0.09
7	A76242	ATTACHMENT PLATE TO RAILING M19	16	0.08
8	102200	BOLT HEX ZN 8.8 10X20 DIN933	43	0.02
9	110560	NUT M10 ZN 8 DIN 934	45	0.01
10	101820	BOLT HEX ZN 8.8 8X20 DIN933	48	0.01
11	110540	NUT M8 ZN 8 DIN 934	48	0.01

### 1-sided service platform; Contents of the beam and plate part package (A76223P)

## Installing 1-sided service platform (33356)

### 1-SIDED SERVICE PLATFORM, DRYER WITH ONE OR TWO ELEVATORS

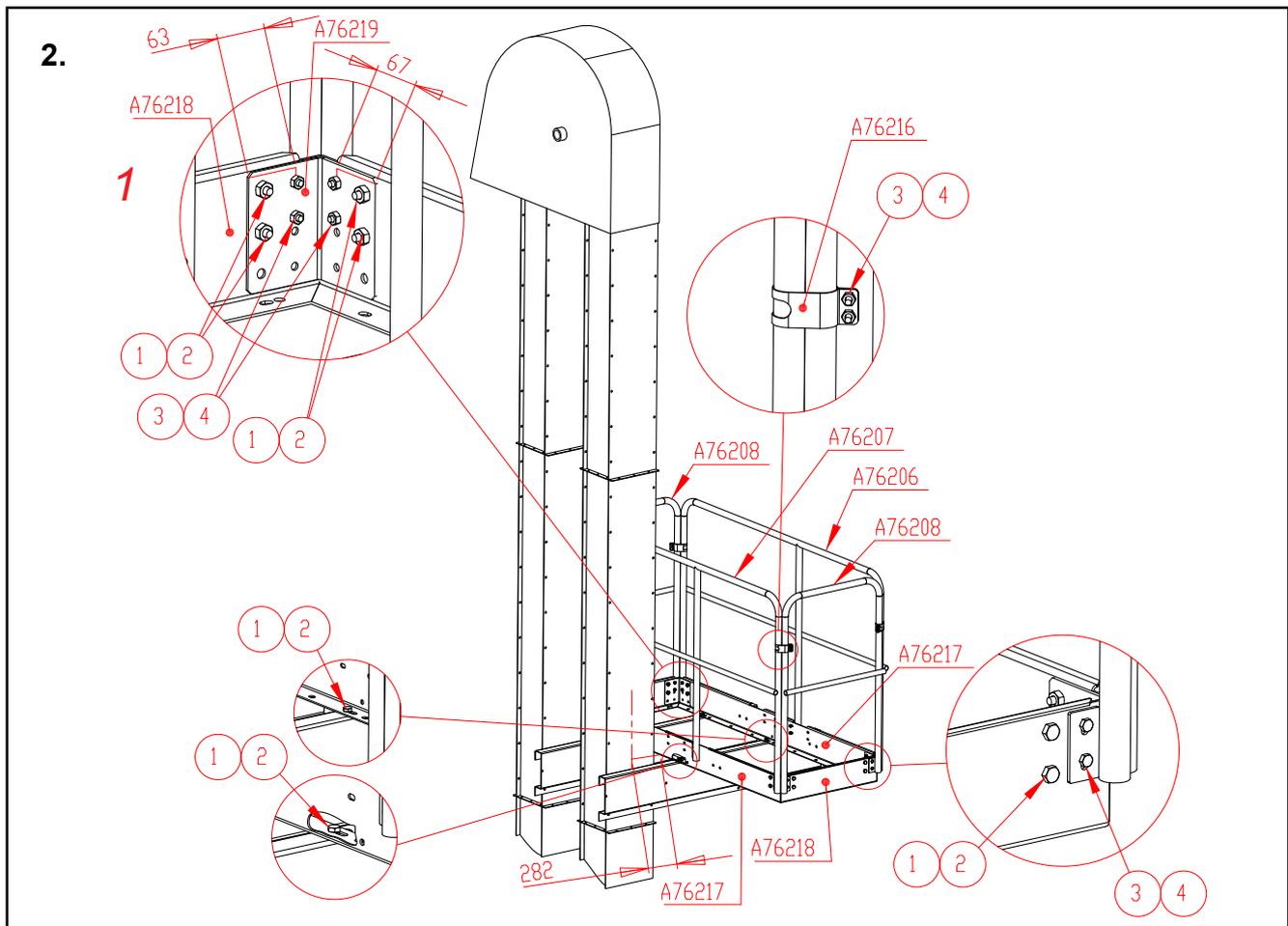
It is possible to assemble the platform on the ground and lift it into place ready-assembled. Next instructions deal with assembly and installation works up in the elevator.



#### Stage 1. Installing the frame beams

*The 1-sided service platform is attached level with the top cover of the dryer.*

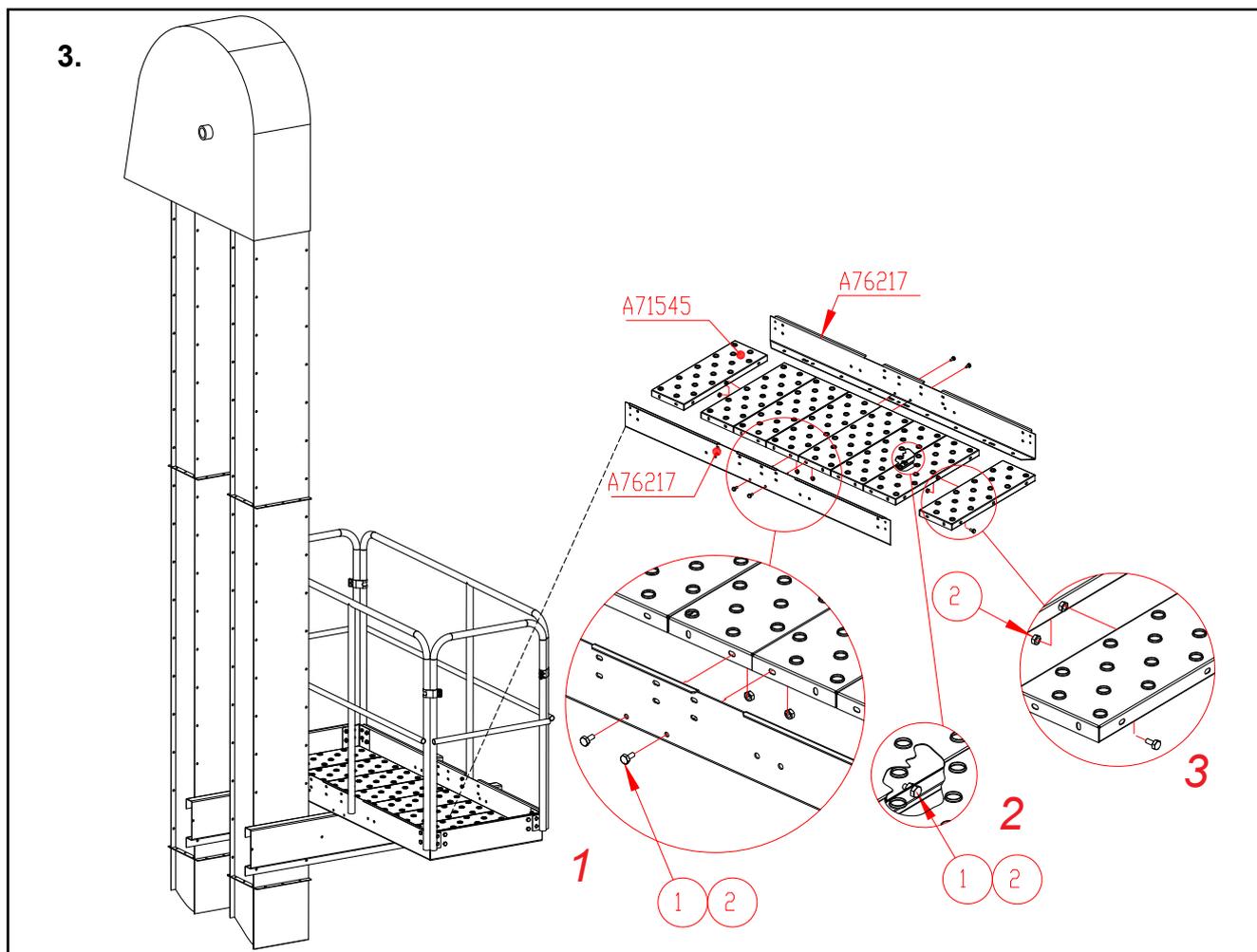
- 1. Because there is only one service platform, a part of the frame beams (A76325) can be cut off.**  
The length of the beam after the cutting is 1460 mm (see drawing).
- 2. Start the work by installing the frame beams (A76325).**  
The service platform is placed on top of them.



Part	Part no.	Denomination
1	102200	BOLT HEX ZN 8.8 10X20 DIN933
2	110560	NUT M10 ZN 8 DIN 934
3	101820	BOLT HEX ZN 8.8 8X20 DIN933
4	110540	NUT M8 ZN 8 DIN 934

## Stage 2. Installing the baseboards, corner pieces and railings

- **Install the longer baseboards A76217 on top of the frame beams.**  
Attach them to the frame beam using M10x20 bolts+nuts (2 pcs/baseboard).
- **Attach the corner pieces (A76219) and the end beams (A76218) to the lengthwise beams.**  
Note! The corner piece must be installed in the right way (see the measures in the detail drawing 1).
- **Adjust the distance from the platform's lower surface to the centre line of the elevator pipe to 282mm (see the drawing).**
- **Also see the page 72 for additional information about the positioning of the platforms.**
- **Tighten the attachment bolts of the baseboards and the corner pieces.**
- **Install the railings using bolt joints as shown in the drawing.**  
Note! All of the railings will not necessarily be installed. Whether the railings will be needed or not is determined by the purpose of use and the installation location of the platform, see the pages 72, 90, 93.



Part	Part no.	Denomination
1	102200	BOLT HEX ZN 8.8 10X20 DIN933
2	110560	NUT M10 ZN 8 DIN 934

### Stage 3. Installing the platform elements

**- Join the platform elements (A71545) together.**

The platform elements shall be placed one by one into their final positions before joining them together.

Join the platform elements together by the bolt hole rows in the centre of their longer sides, using M10x20 bolts and M10 nuts. (See detail drawing 2).

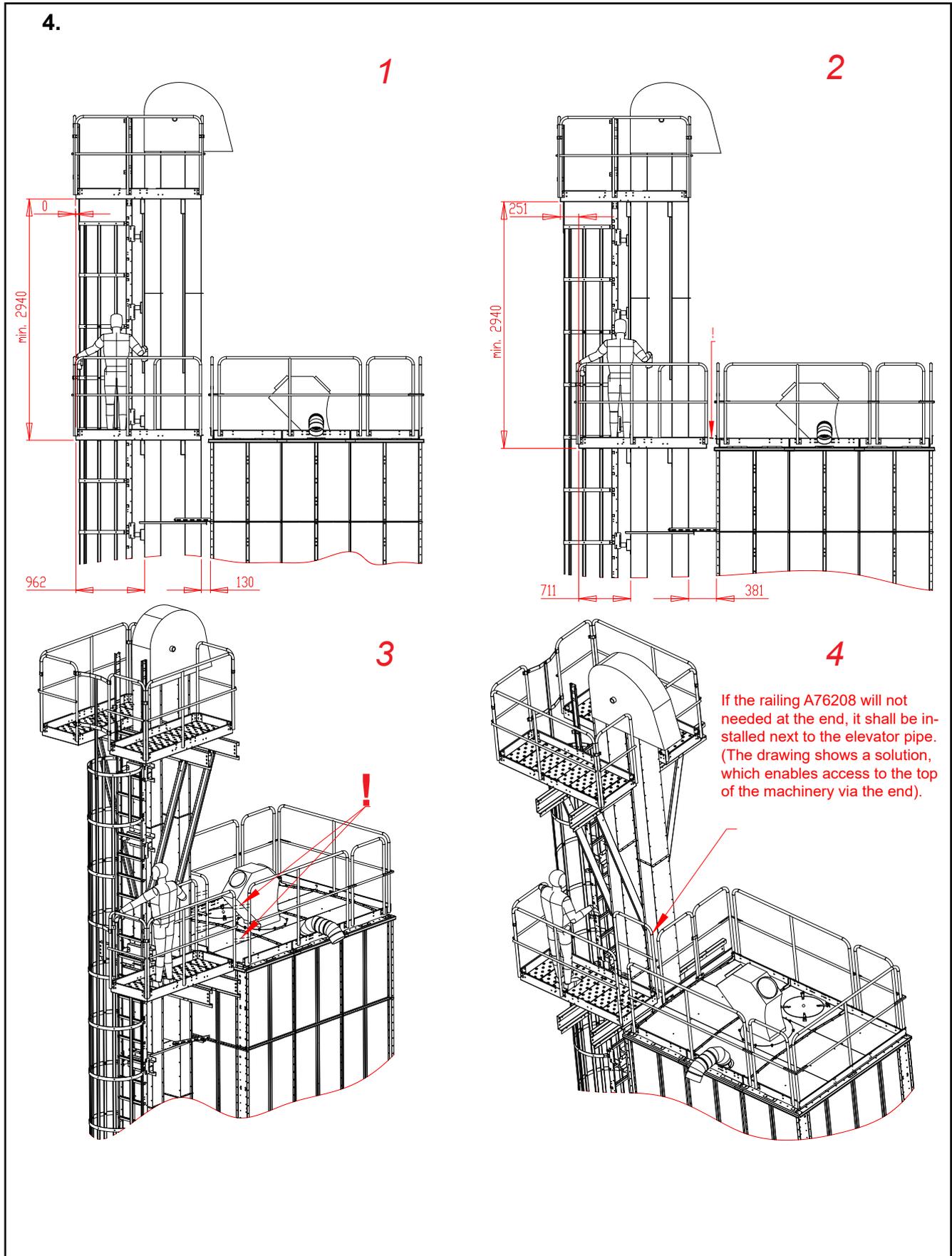
The platform elements nearest to the side shall be installed so that one of the M10 nuts comes between the elements. (See detail drawing 3).

**- Fix the ready-assembled platforms by the ends of the midmost platform elements in the holes in the centre of the lengthwise beam.**

(See detail drawing 1).



# Elevator, E-series





## Locating the 1-sided service platform (dimension drawing)

### **Elevator close to the dryer (drawing 1)**

The upper and the lower service platforms one above the other at the side of the elevator (in the drawing the dimension is 0)

The perpendicular distance from the corner of the platform to the elevator shall be 962 mm.

Distance between the elevator pipe and the dryer 130 mm (the shortest possible distance with the elevator support 32535).

### **The distance between the elevator and the dryer long (drawing 2 )**

Lower service platform transferred 251 mm towards the elevator (already-drilled holes in the lengthwise beams of the platform)

The perpendicular distance from the corner of the platform to the elevator shall be 711 mm.

Distance between the elevator pipe and the dryer 381 mm (the longest possible distance with the elevator support 32535).

As required, install a suitable steel plate to cover the space between the 1-sided service platform and the top cover of the dryer.

See the point, marked with exclamation mark, in the drawing 2. Attach the plate to the end beam of the service platform, if the space is wider than 50 mm.

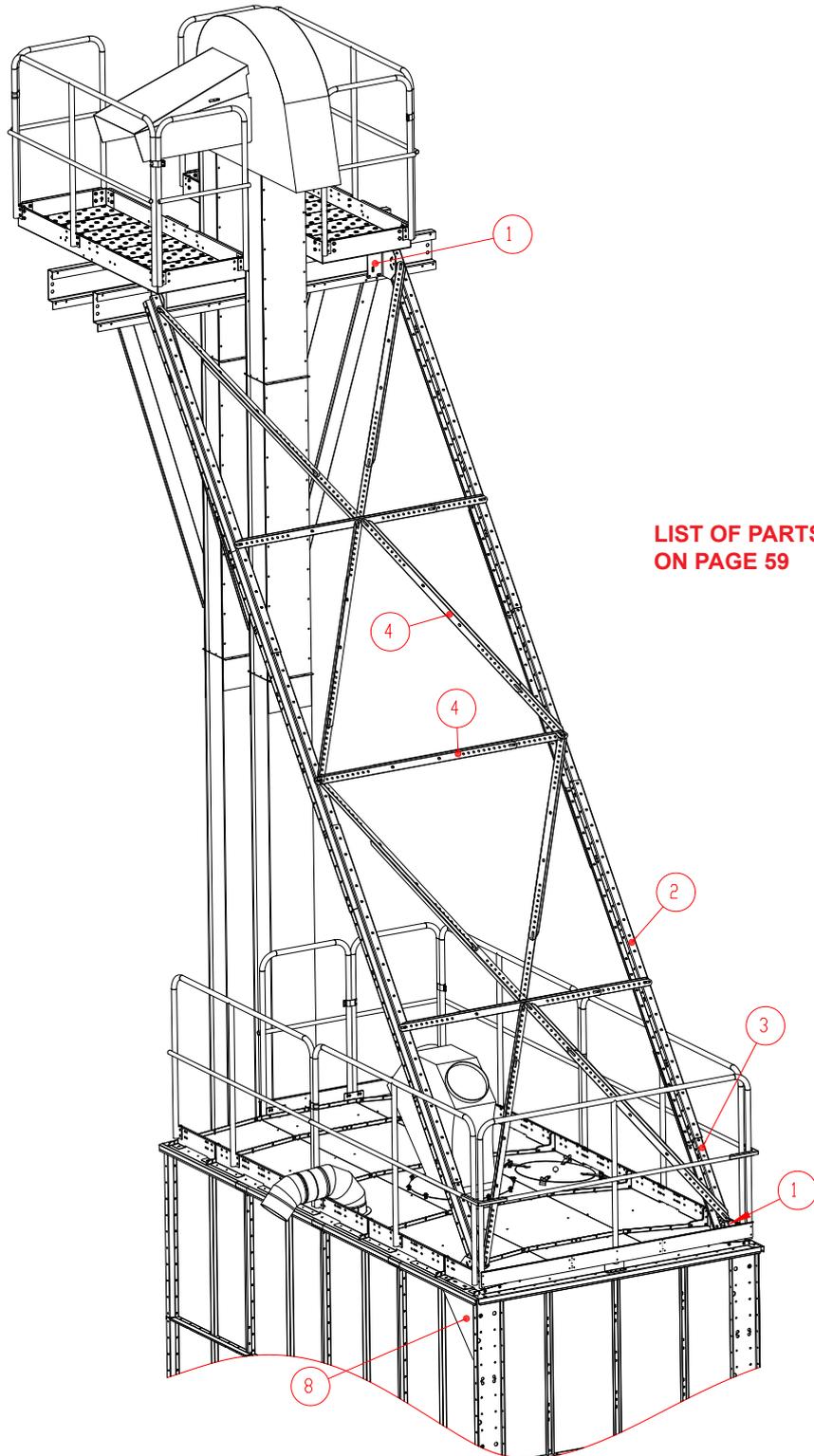
Join up the the railings for the top of the machinery and the 1-sided service platform by using, for example, the excess back-arc parts for the ladder. The delivery of the 1-sided service platform includes fasteners (A76242) for joining the guide parts to the railing pipes.

*See the point, marked with exclamation mark, in the drawing 3. The guide-rails must always be installed – even if the gap is small – because only joining the railings together will make the structure sufficiently sturdy.*



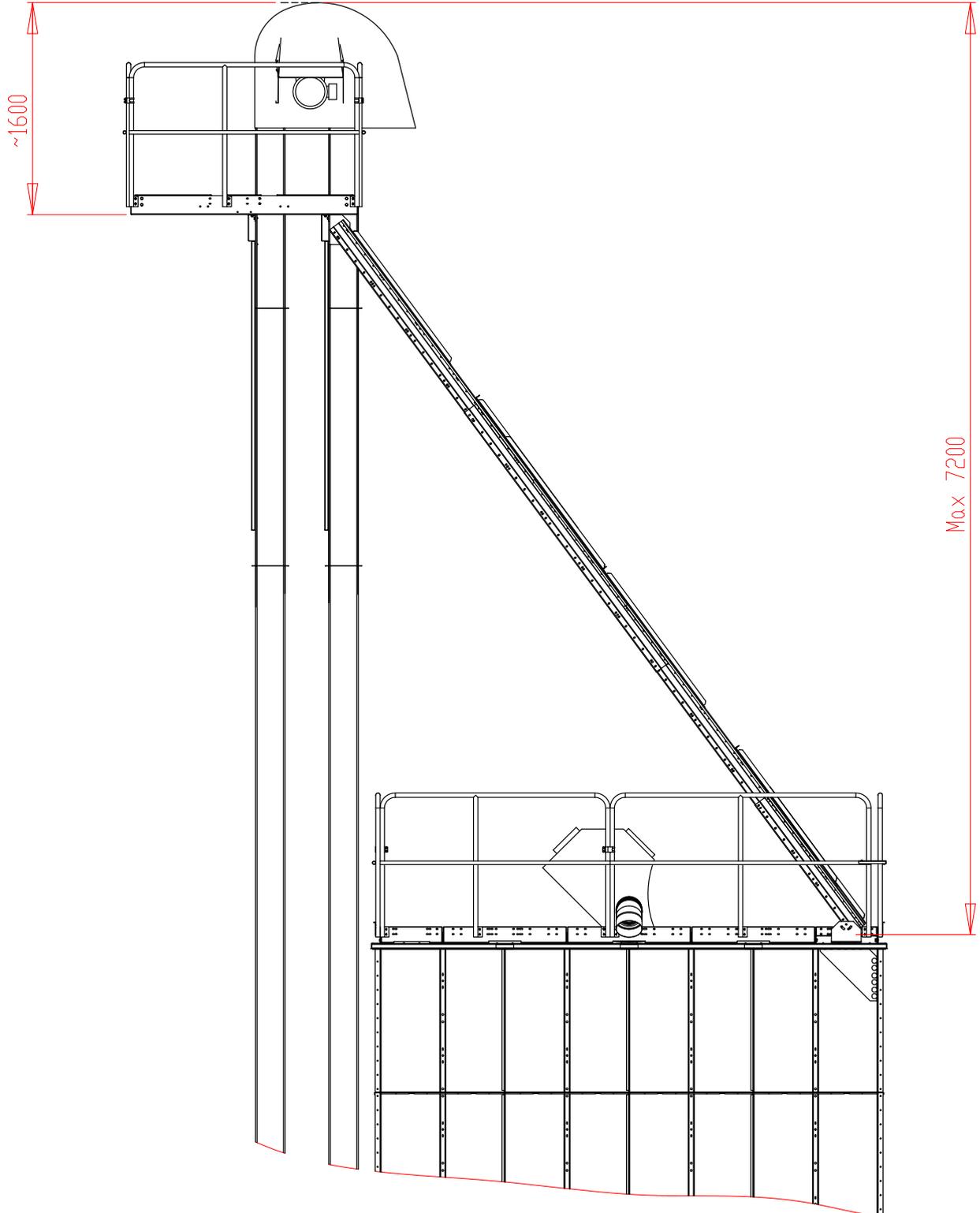
## Elevator support (A71950P)

Supporting the elevator by its 2-sided service platform on the top cover of the dryer.





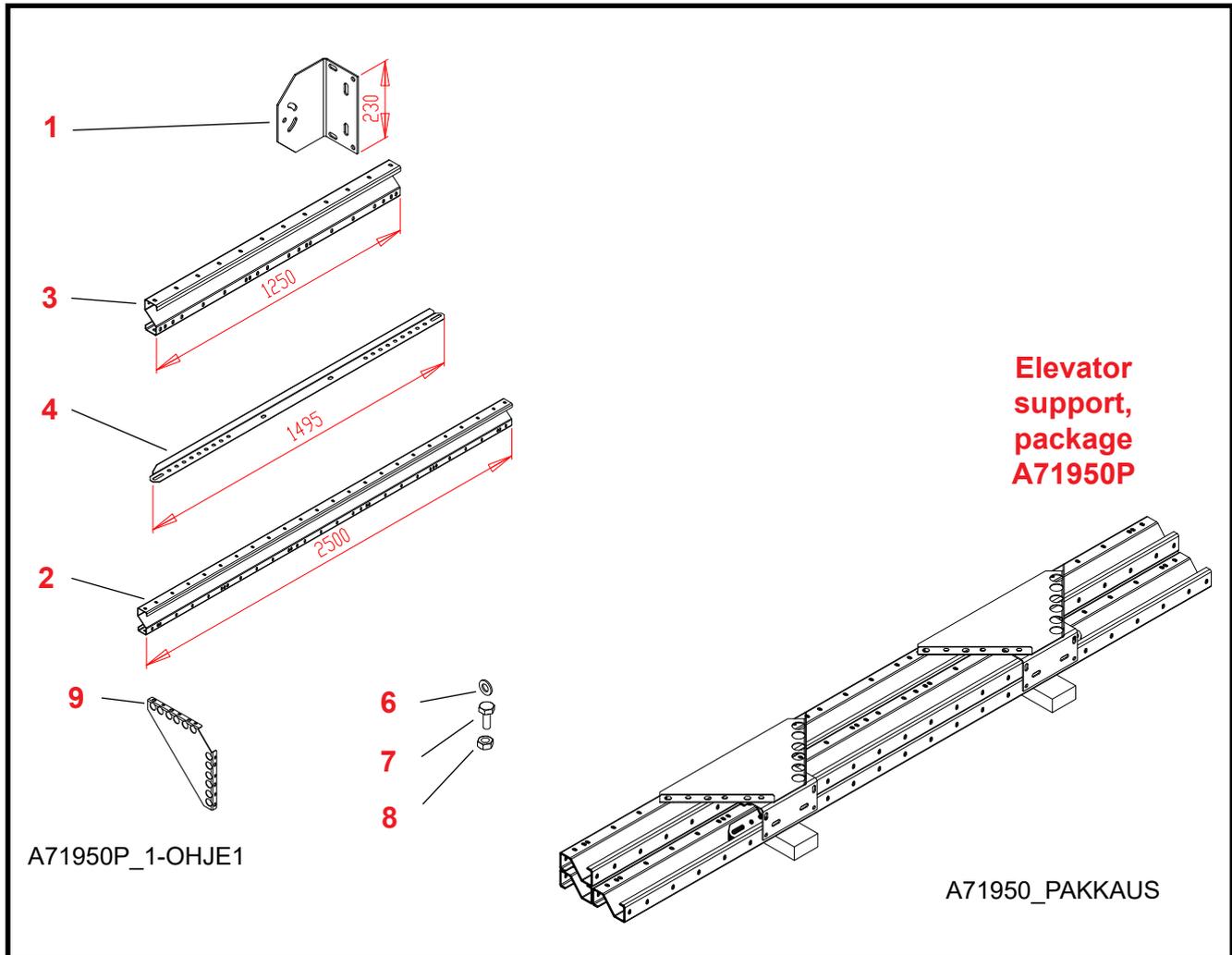
## Dimension drawing for the elevator support (A71950P)





## Structure of the elevator support (A71950P)

Parts of the elevator support (dryer with one or two elevators)



20080101

Ref.	Part no.	Denomination	Pcs	Dwg. No.	Weight
1	A71918	Elevator support, cover, upper bracket, E-model WM06	4	A71918-A	1.76
2	A71919	Cladding Z-beam L = 2500 WM06	6	A71919-0	14.79
3	A71916	Cladding Z-beam L = 1250 WM06	2	A71916-0	7.38
4	A71917	Elevator support, cover, cross support, E-model WM06	22	A71917-0	1.81
5	315440	Batten, L = 380 50x100			
6	111550	Washer ZN M10 DIN125	220		
7	102210	Hexagon bolt ZN M10x25 DIN933	110		0.02
8	110560	Hexagon nut M10 DIN934	110		0.01
9	A75382	Elevator support corner reinforcement	2		2.75



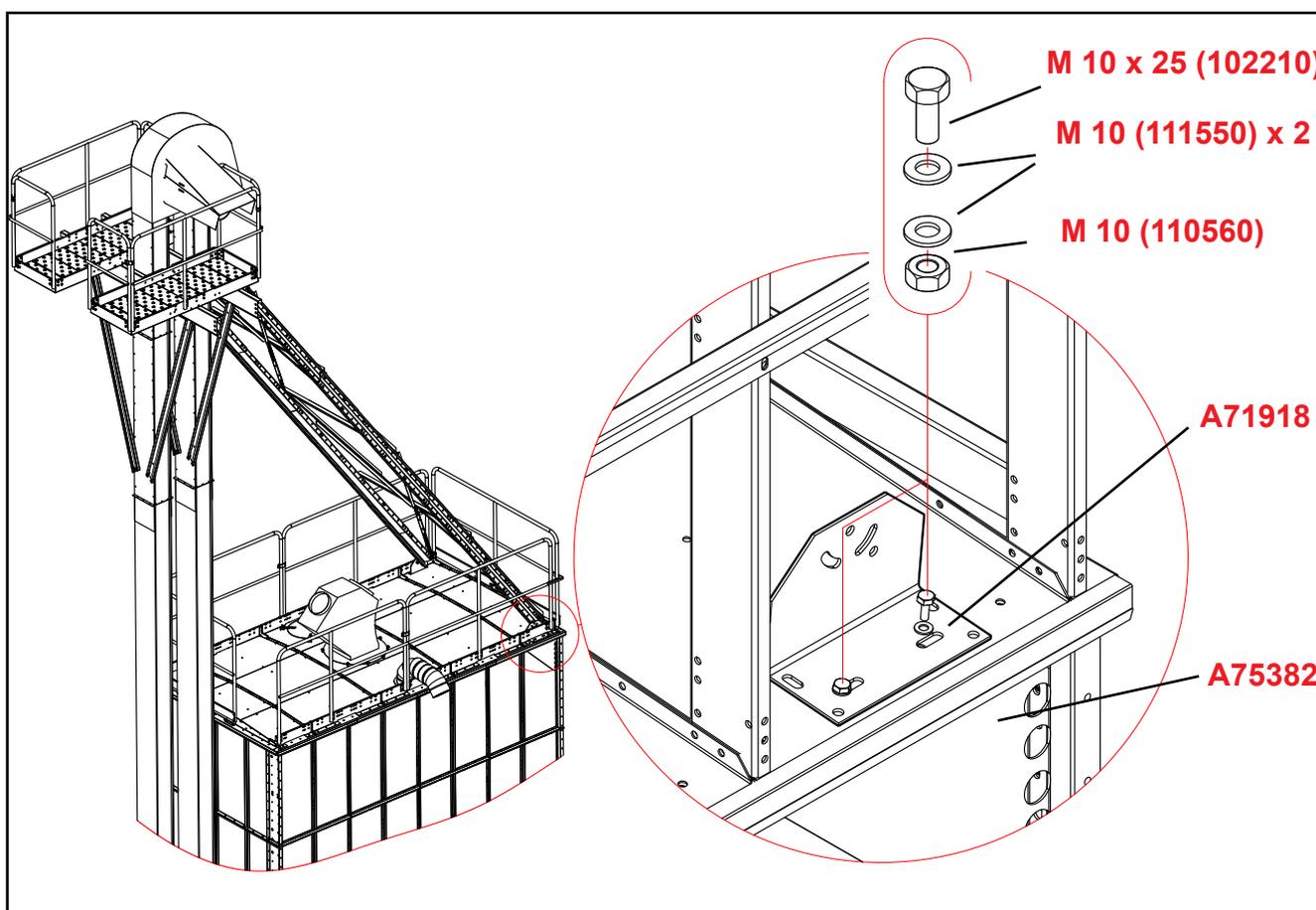
## Installing the elevator support (A71950P)

### DRYER WITH ONE ELEVATOR

Position the cross-braces for the cladding from the frame beam (33338) of the 2-sided service platform to the top cover of the dryer.

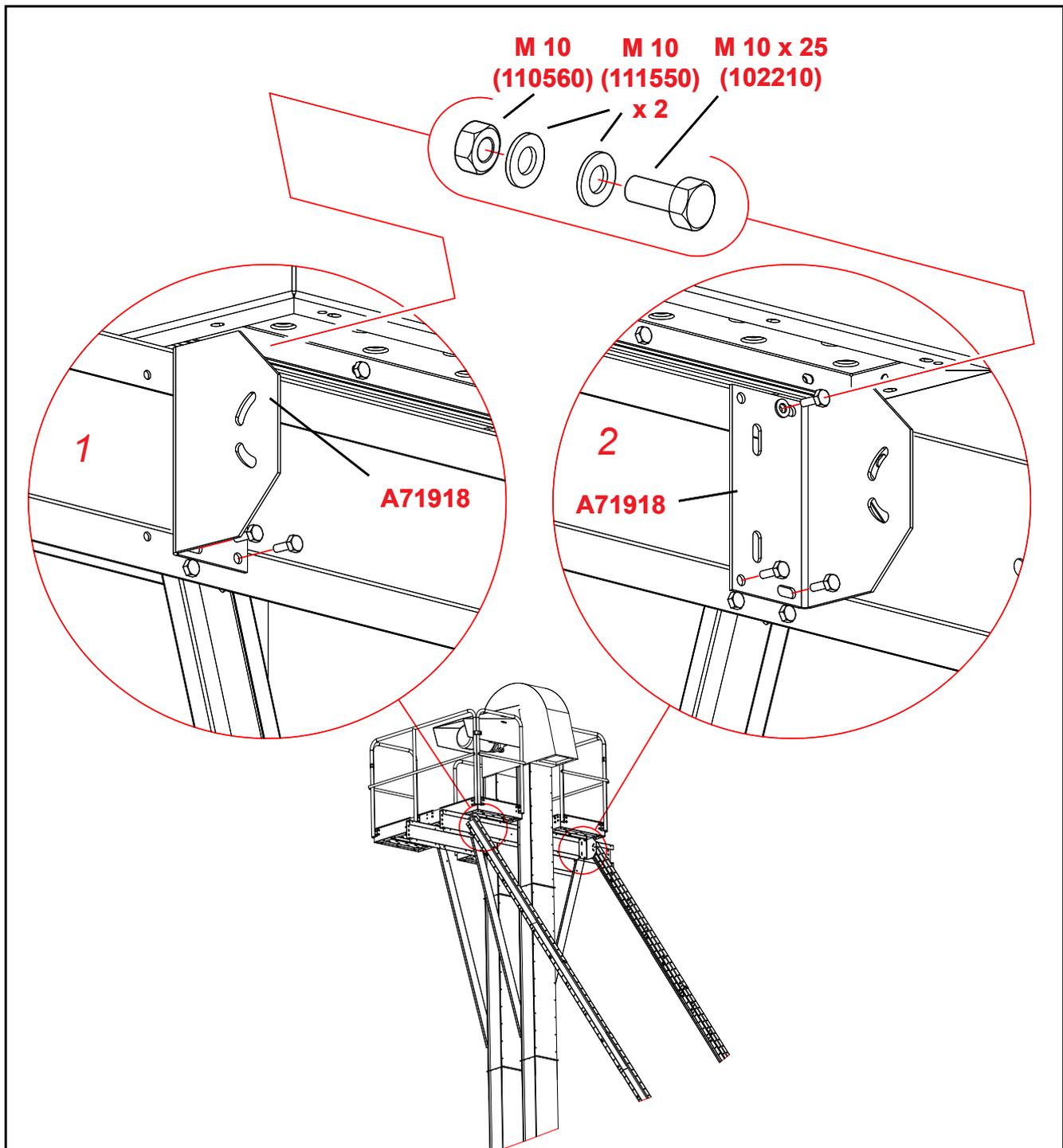
The length of the cross-braces is sufficient for installation of an elevator that extends approx. 7,2 m above the top cover of the dryer, measured from the top cover to the top of the elevator. This requires that the frame beam (33338) is installed about 1,6 metres below the top of the elevator.

In all installations, use M10x25 bolts, M10 nuts and, on both sides of plates to be attached, M10 washers.



### Stage 1. Installing the lower brackets for the cross-brace

1. **Attach the brackets for the cross-brace (A71918) to the cover with their angle pointing inward.**  
Install the brackets so that the cross-braces will be located inside the handrail of the dryer.  
Use two M10x25 bolts, washers and nuts for attachment (see drawing).  
Do not tighten the bolts yet at this stage.



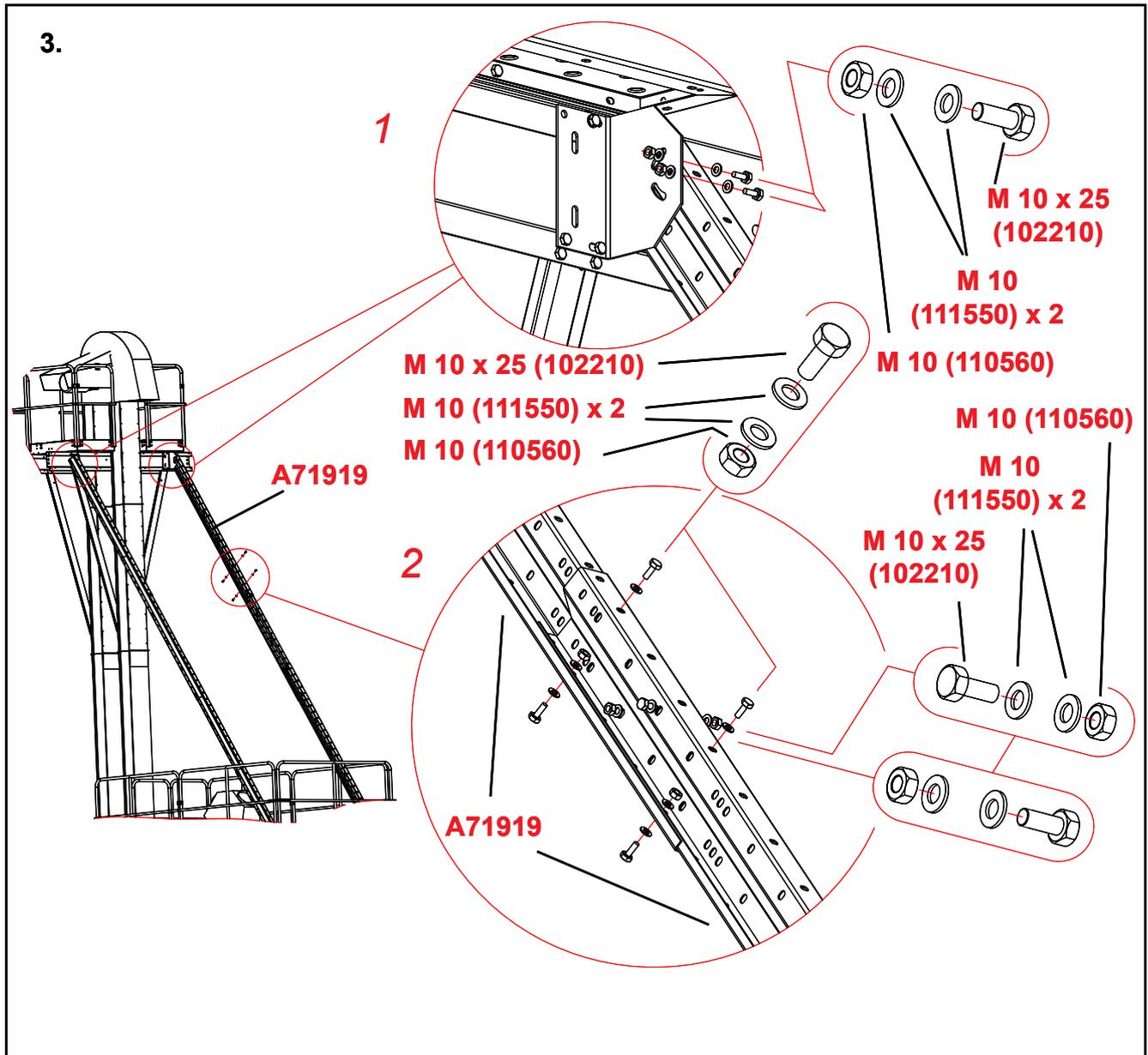
## Stage 2. Installing the upper brackets for the cross-brace

### 1. Fix the brackets for the cross-brace (A71918) up in the frame beam at the cross-braces for the service platform.

The two uppermost bolts of the cross-braces must be removed to enable the attachment of the bracket's lower edge using these same bolts.

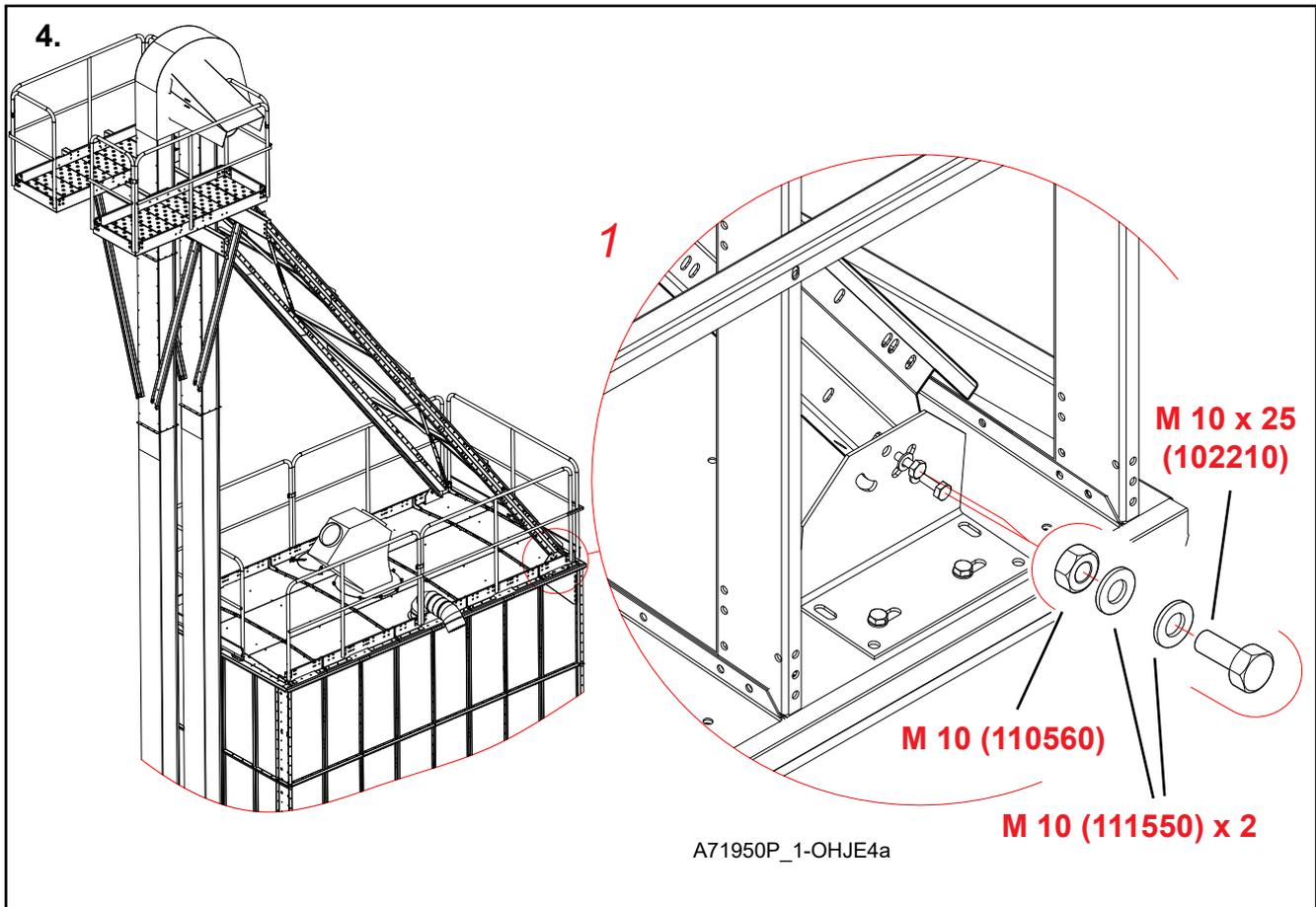
Do not forget to install also the M10x25 bolt in the upper edge of the brace.

See detail drawings 1 and 2.



### Stage 3. Assembling the cross-brace beams and their fixing in the upper brackets

- 1. Fix the upper ends of the cross-brace beams (A71919) outside the brackets.**  
Use two M10x25 bolts, washers and nuts/brace for attachment (see detail drawing 1).  
Do not tighten the bolts yet at this stage.
  - 2. Put the braces one inside the other; they fit well together in one way only.**  
The braces must overlap at minimum across four holes, seen from the thinner side.  
Fix by the side-flanges using 2 bolts and by the centre-flange using 1 bolt/side (see detail drawing 2).  
Use M10x25 bolts, washers and nuts for attachment. Do not tighten the bolts yet at this stage.
- **Install required amount of beams in accordance with the total length of the brace.**  
Leave the attachment bolts in the Z-beams loose for fine-adjustment of the length.  
Fit the lower ends of the cross-braces in the brackets on the top of the dryer at stage 1.

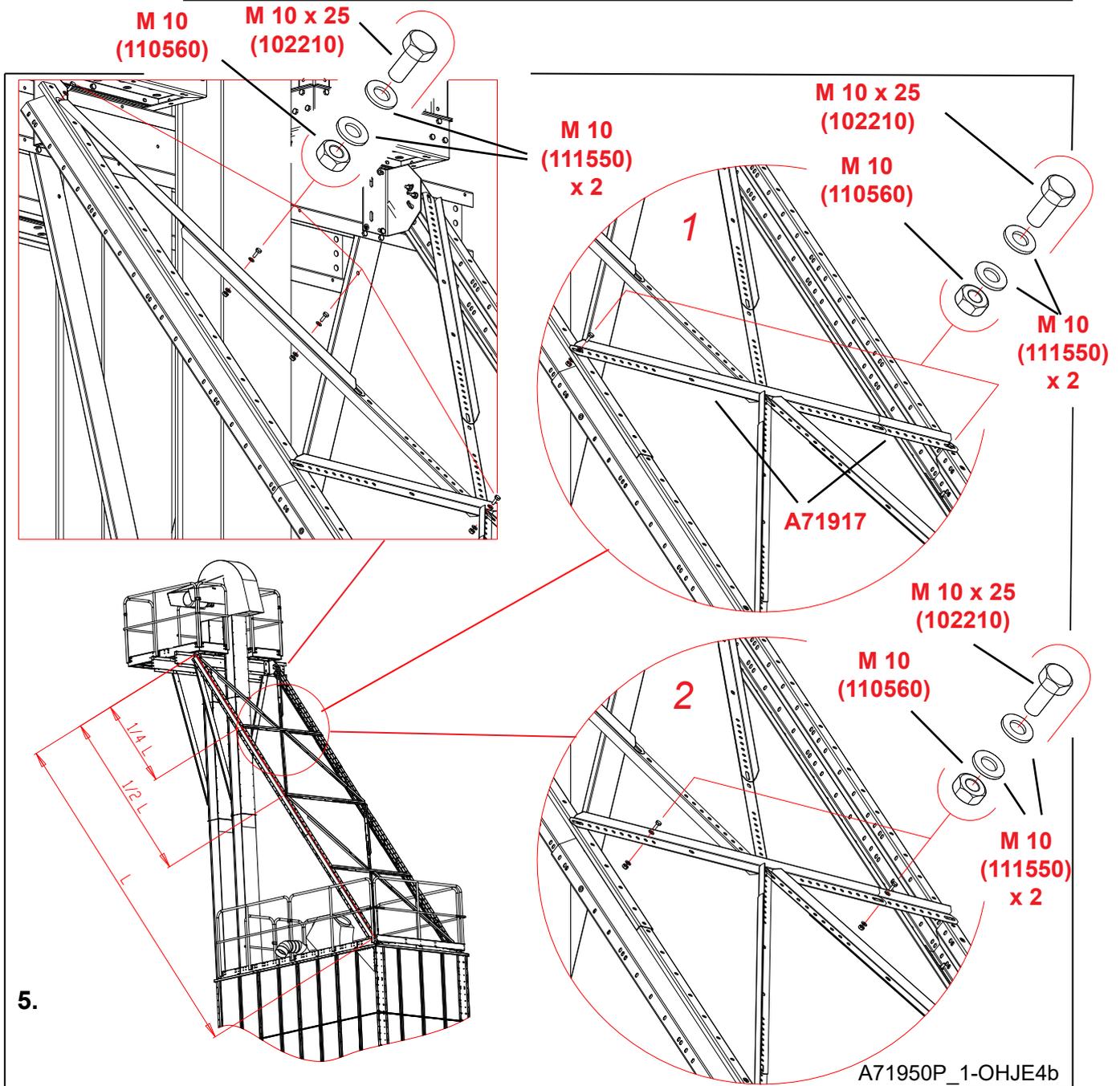


#### Stage 4. Fixing the cross-braces in the lower brackets and tightening the bolts

**1. Fix the lower ends of the cross-braces inside the brackets.**

Use two M10x25 bolts, washers and nuts/brace for attachment (see detail drawing 1).  
Do not tighten the bolts yet at this stage.

- **After having adjusted the brace to its desired length, tighten first the bolts in the cross-braces.**  
*Then the cross-brace will not sag while the attachment bolts for the braces are tightened.*
- **Tighten the bolts in the upper and lower brackets for the cross-brace beams.**



## Stage 5. Installing the cross-support and bracing on the cross-brace beams

- Place 3x cross-braces as shown in the picture, at the centre (1/2L) and the next one 1/4 from the end.
- 1. Install the cross-support halves (A71917) on the Z-beams (detail drawing 1).
- 2. Attach the cross-support halves using one M10x25 bolt, washer and nut/half.  
Attach the cross-brace bars to the bolts of the midmost cross-support.  
Do not tighten the bolts yet at this stage.
- 3. Join the cross-support halves together using two M10x25 bolts, washers and nuts.  
Tighten all the bolts in the cross-brace.
- 4. Attach the cross-brace bars using one M10x25 bolt, washer and nut.
- 5. Join up the cross-brace bars using two M10x25 bolts, washers and nuts.

Once all the cross-braces are in place, tighten all the bolts.



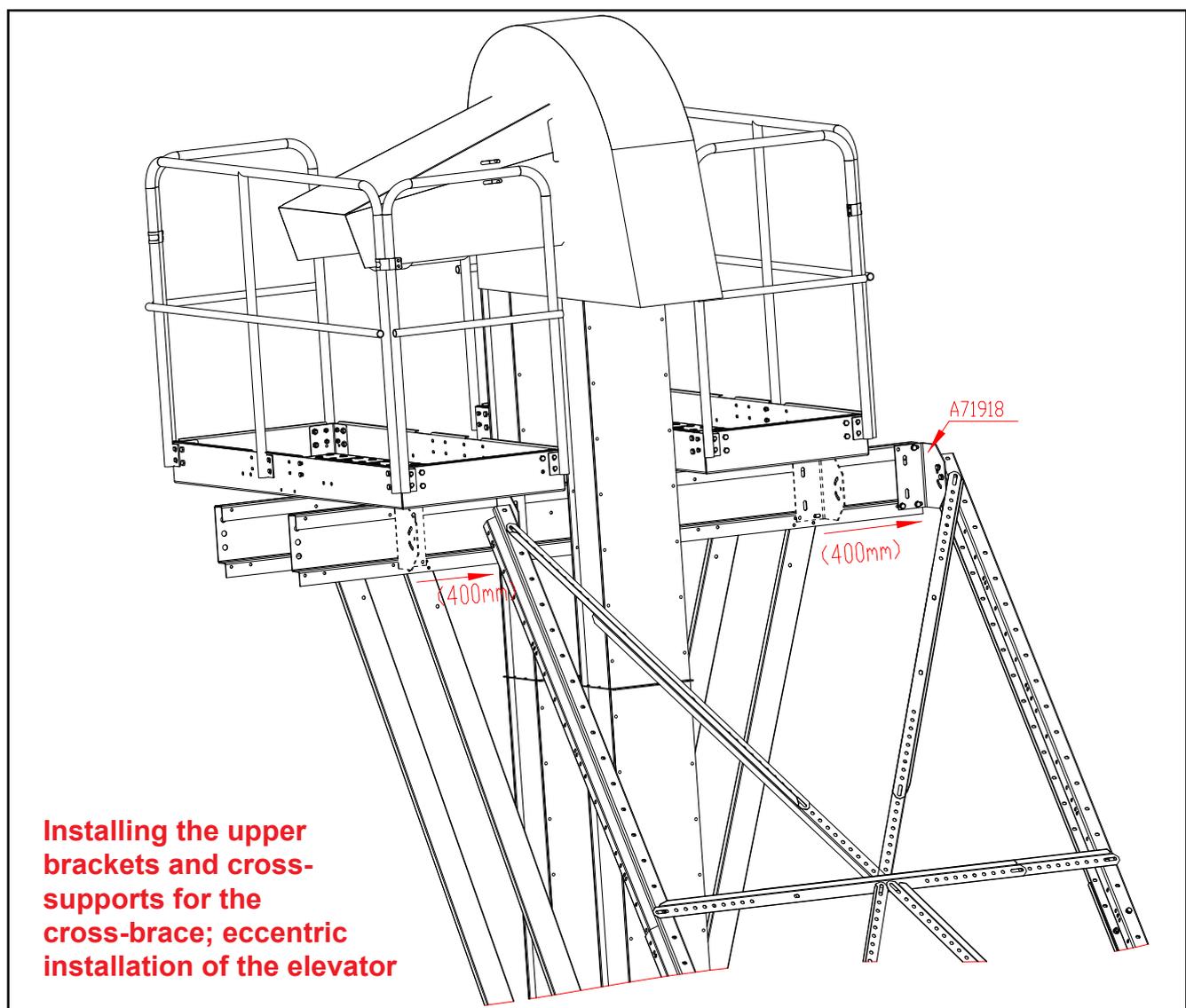
## DRYER WITH ONE ELEVATOR, ECCENTRIC INSTALLATION OF THE ELEVATOR

### Installing the upper brackets and cross-supports for the cross-brace

Using a chain conveyor requires that the elevator be transferred 400 mm to either left or right from the centre-line of the dryer. If the elevator installed at the side, it is possible to place the elevator as close to the dryer as possible and to use shorter extension legs.

Install the service platform on the elevator in accordance with the instructions above; only the location of the cross-brace brackets in the frame beam of the service platform is changed.

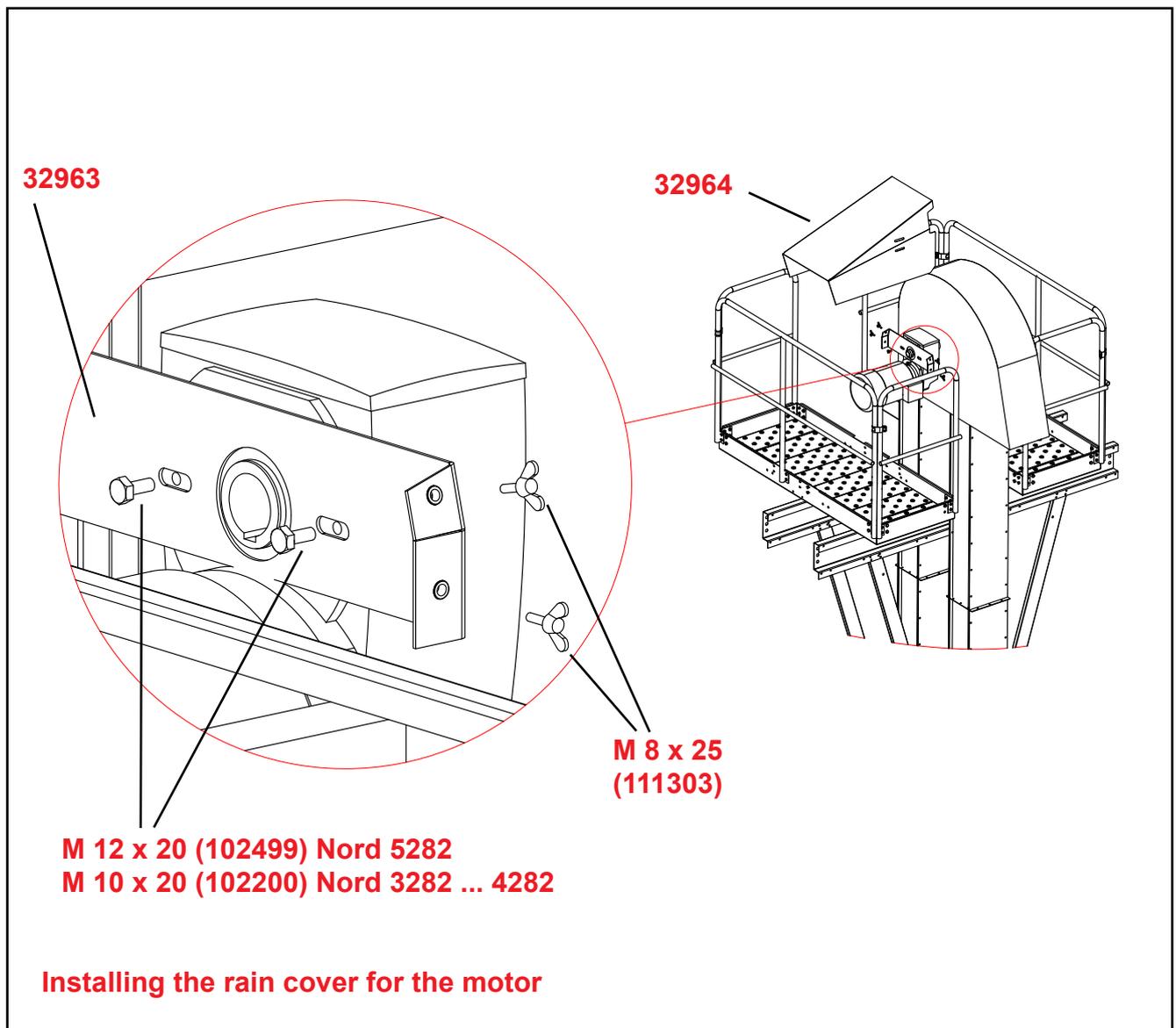
The length of the service platform's frame beam makes it possible to install the elevator with its service platform either on the right or on the left side. In this case the brackets for the cross-brace (A71918) are fixed asymmetrically in the ready-drilled holes in the frame beam of the service platform. In the drawing below the cross-brace brackets are placed in the right end of the frame beam.





## Installing the rain cover/rain covers for the motor

1. Fix the rain cover bracket (32963) to the gear housing of the gear motor.  
The bolts size in Nord 4282 gear motors is M10x20 and in Nord 5282 type it is M12x20.
2. Align the centre hole of the bracket with the shaft hole and tighten the bolts (2 pcs.), see the drawing.
3. Fix the rain cover (32964) in the bracket using wing screws.



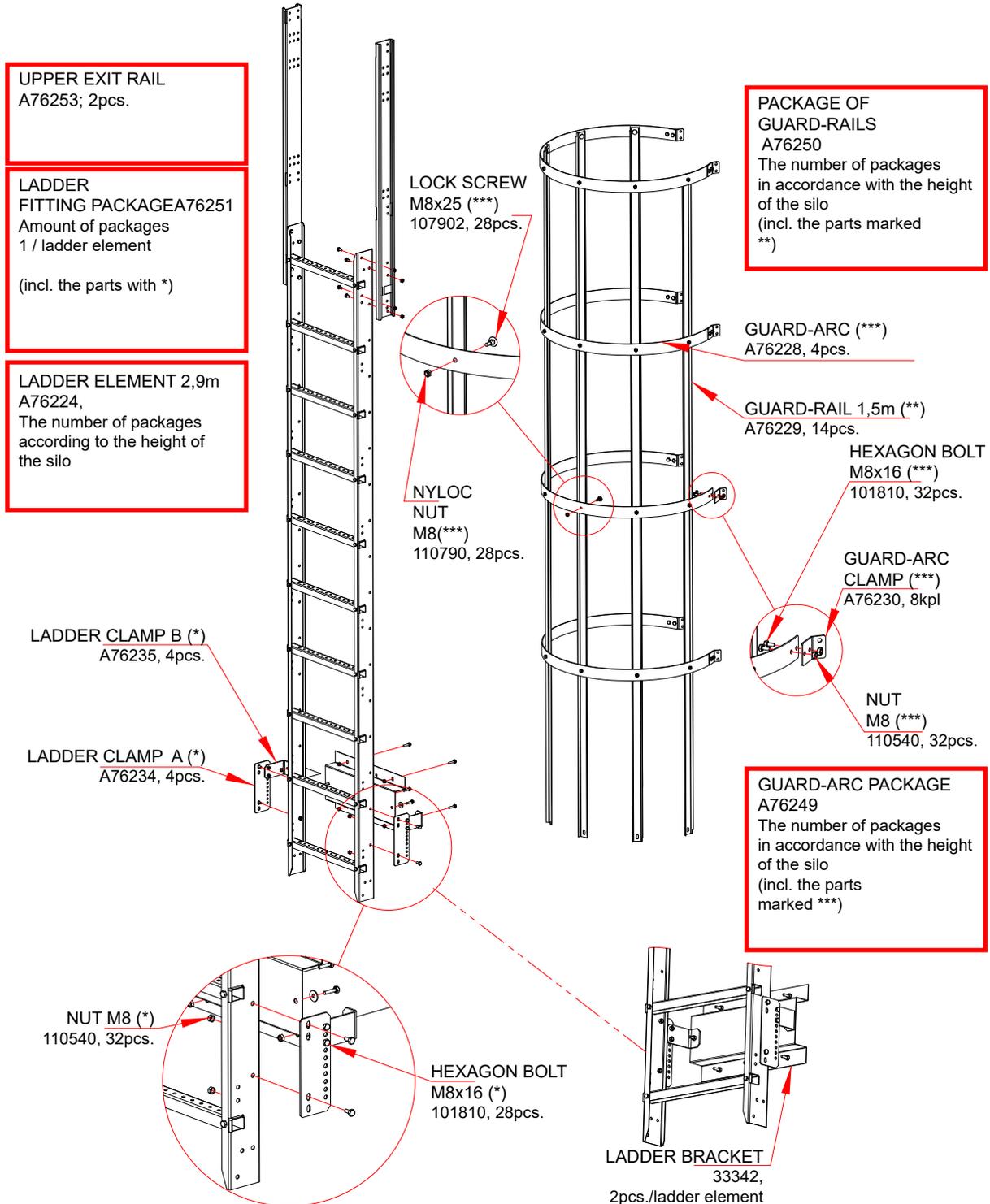


**Additional equipment** Elevator, E-series

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## Parts of ladder and guard-rails





## Installing the ladder and guard-rails

The length of the ladder elements is 2,9 m.

Start dimensioning of the ladder by placing the uppermost rung level with the upper surface of the service platform element. Cut off possible excess length from the lowermost ladder element.

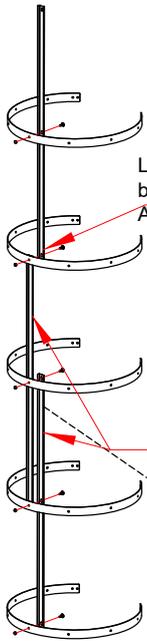
Place the uppermost ladder clamp pair below the uppermost rung. Install the ladder clamp pairs at intervals of 1,4-1,6 metres. Equalise the distance between the lower pairs of ladder clamps so that the lower edge of the ladder is well supported.



# Installing the additional equipment

# Elevator, E-series

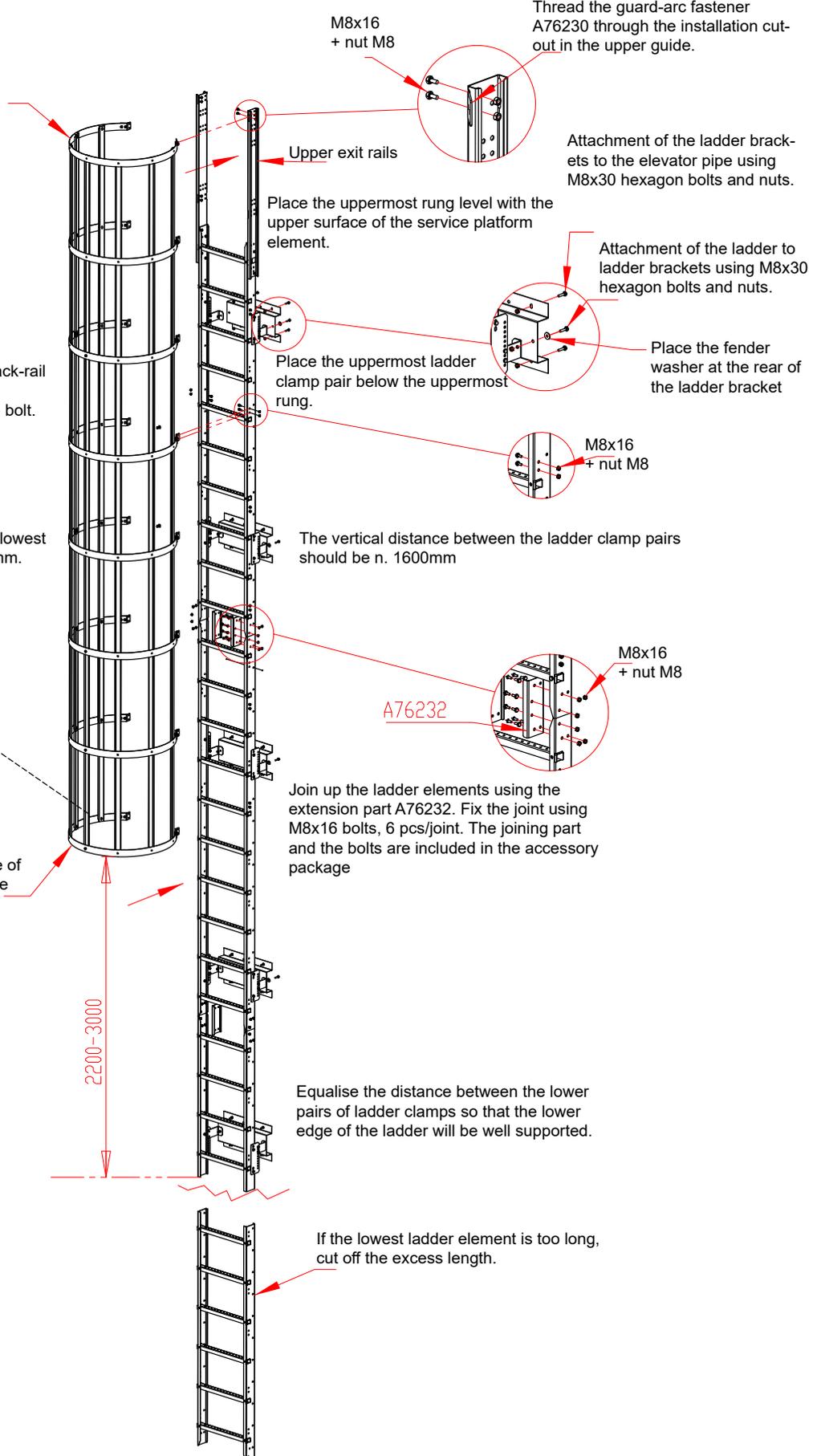
Fix the uppermost guard-arc to the upper end of the upper exit rails.

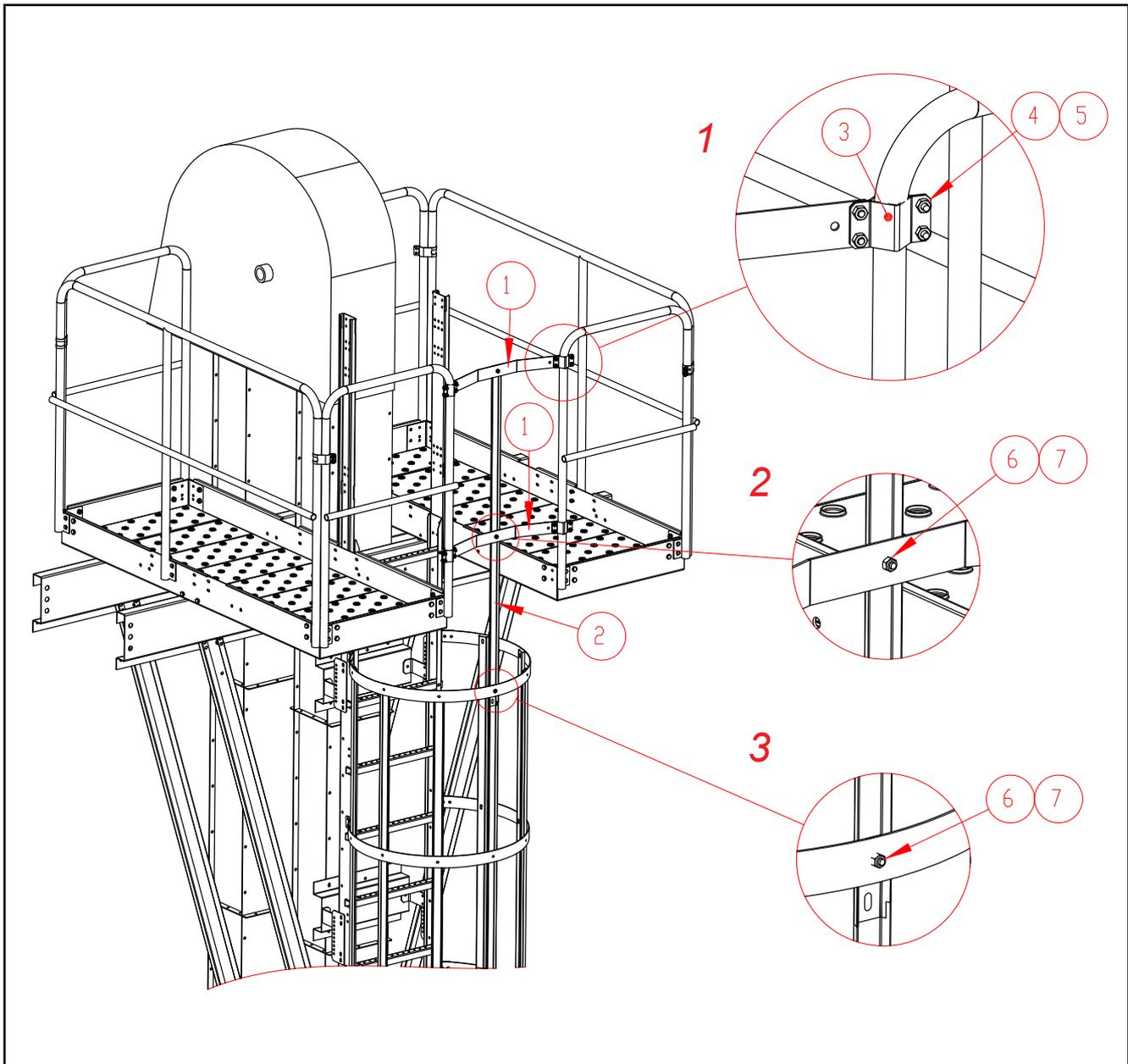


Lap over the ends of the back-rail by about 40mm. Attach the ends by just one bolt.

As required, overlap the lowest back-rails by about 765mm.

Install the lowermost guide-arc at a distance of 2.5-3 m from the lower end of the ladder Use the original holes in the guard-rails.





Part	Part no.	Denomination
1	A76228	LADDER GUARD M19
2	A76229	PAK LADDER BACK-ARC 1,5M M19
3	A76242	ATTACHMENT PLATE TO RAILING M19
4	101810	BOLT HEX ZN 8.8 8X16 DIN933
5	110540	NUT M8 ZN 8 DIN934
6	107902	LOCK SCREW ZN M 8X25 DIN603
7	110790	NUT NYLOC ZN M8 DIN 985



## **Attaching the ladder to the 2-sided service platform**

Install the guard-arcs and the back-rails of the ladder as shown in the drawing. The two uppermost guard-arcs are made by cutting one whole guard-arc in two.

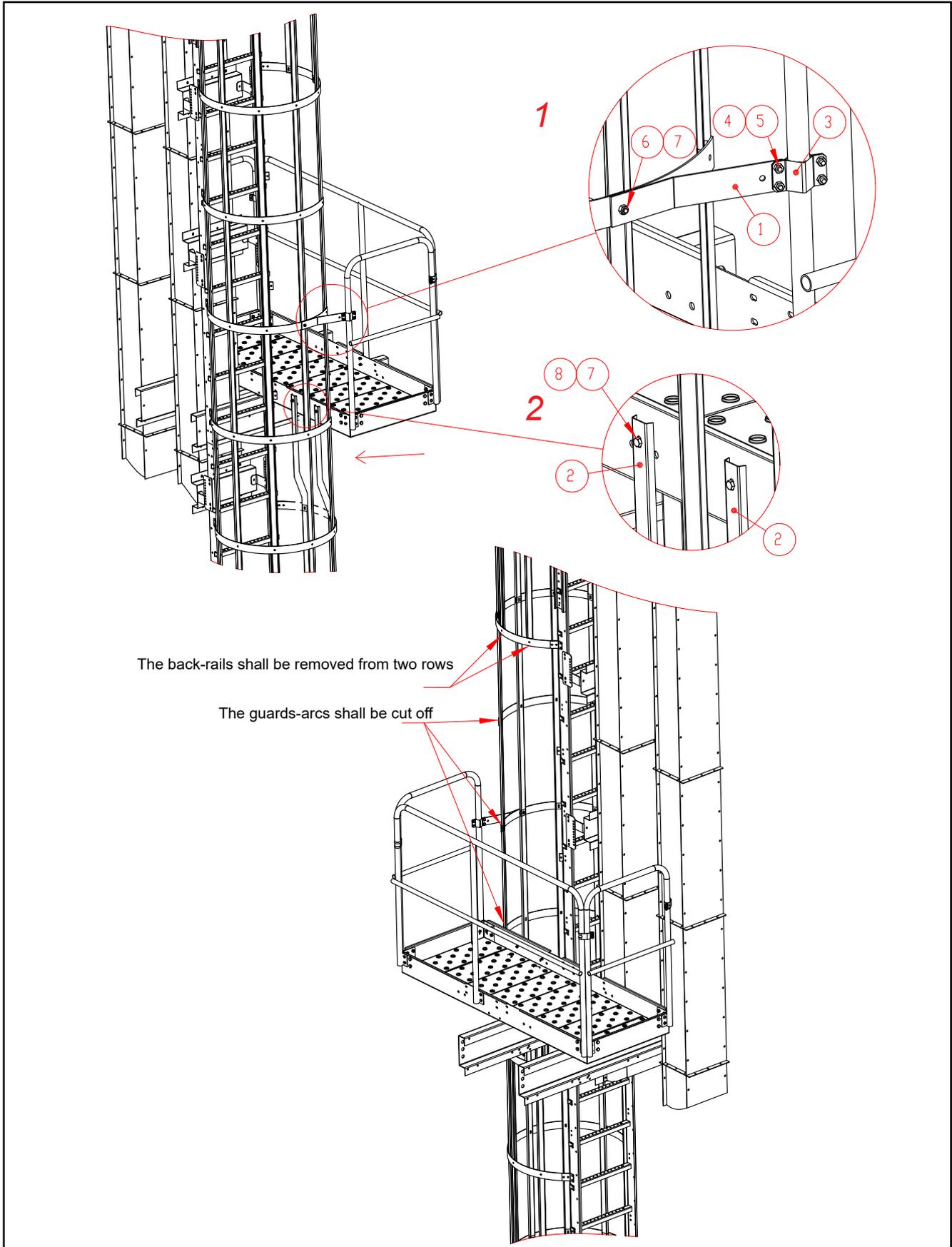
Straighten the cut-off guard-arcs as much as is necessary to enable them to be installed in place according to the drawing. More attachment holes must be drilled in the cut-off guard-arcs, if necessary. The parts for attachment to the railing (part 3) are included in the plate package for the service platform A76222P.

An attachment hole for the lower end of the uppermost back-rail must be drilled at site, as the back-rail laps more than normally over the second back-rail from the top. Mark the drilling spot and drill the hole without enlarging the hole in the second back-rail from the top to prevent the lock screw from starting to rotate, once the bolt attachment is tightened. see detail drawing 3

Contrary to the drawing, an additional guard-arc can be added and the back-rails can be cut to measure, if necessary.



# Elevator, E-series





Part	Part no.	Denomination
1	A76228	LADDER GUARD M19
2	A76229	PAK LADDER BACK-ARC 1,5M M19
3	A76242	ATTACHMENT PLATE TO RAILING M19
4	101810	BOLT HEX ZN 8.8 8X16 DIN933
5	110540	NUT M8 ZN 8 DIN934
6	107902	LOCK SCREW ZN M 8X25 DIN603
7	110790	NUT NYLOC ZN M8 DIN 985
8	101850	BOLT HEX ZN 8.8 8X30 AM DIN933

### Attaching the ladder to the 1-sided service platform

Install the guard-arcs and the back-rails of the ladder as shown in the drawing. Make the rail part(s) (part 1) from the guard-arc parts, which were left unused when making the access opening, and attach it (them) to the railing of the service platform. See detail drawing 1

1–2 sets of rail parts shall be made for attachment to the railing of the service platform. The target is to use two sets of rail parts, if only the distribution of the ladder rungs with respect to the service platform makes it possible. (In the drawing, the distribution of the ladder rungs with respect to the service platform is such that only one rail part may be attached to the railing.)

The parts for attachment to the railing (part 3) are included in the plate package for the service platform A76223P.

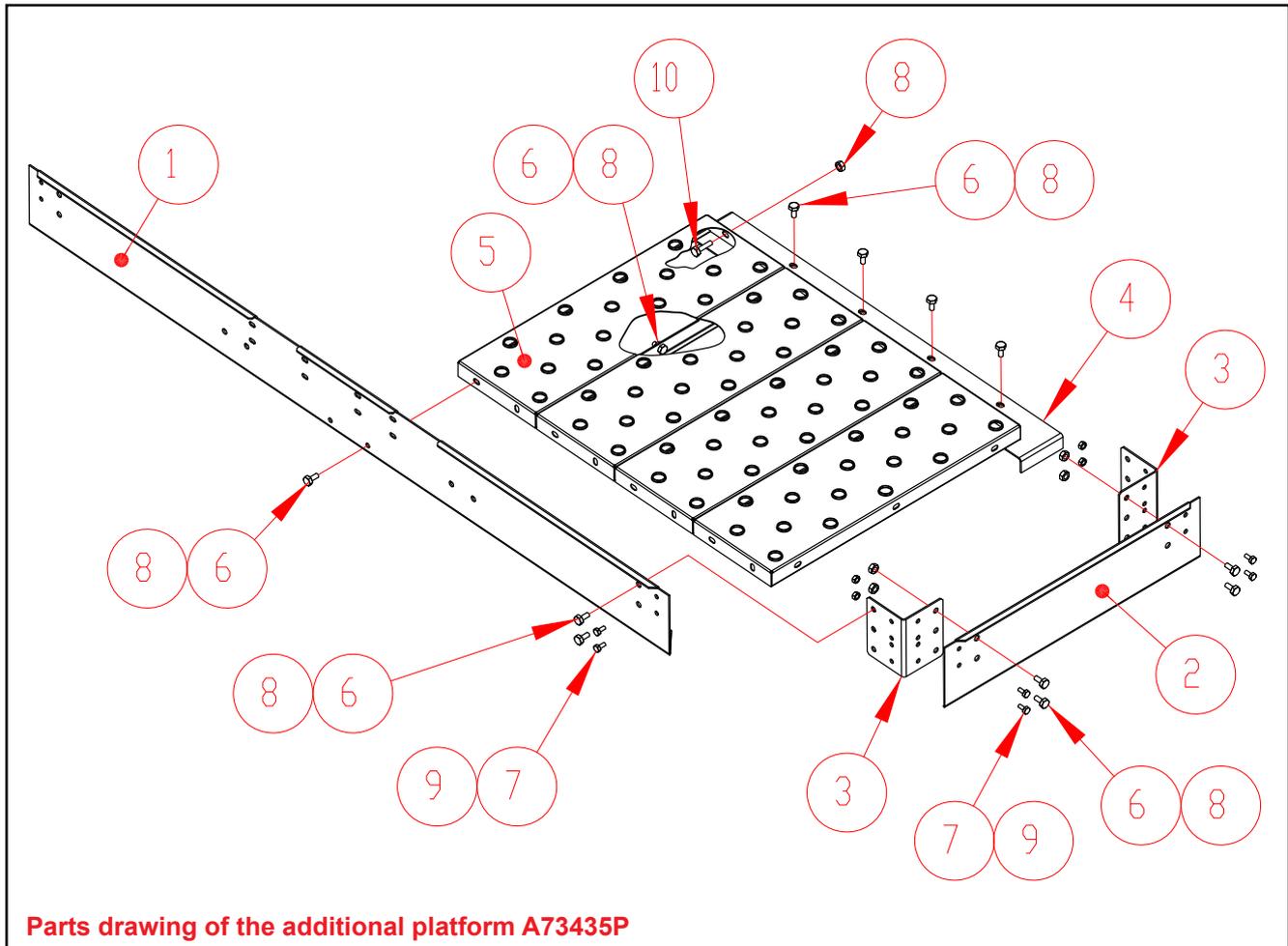
Cut two back-rails of the ladder at the 1-sided service platform to enable access from the ladder onto the platform. Attach the ends of the cut-off rails to the lengthwise beams of the service platform. Attach them by M8x30 bolts and M8 Nyloc nuts so that the bolt caps will remain above the surface of the service platform elements. In the lengthwise beam of the service platform must be drilled attachment holes for the back-rails. The back-rails must be slightly bent to make them fit in place as shown in the drawing. See detail drawing 2

Cut off the back-rails at the upper edge of the access opening, along the lower surface of the guard-arc.



## Installing an additional platform (A73435P) on the side of the one-sided service platform

The additional platform is installed on the side of the one-sided service platform. The installation can be also performed in reverse when the platform is installed on the other side of the elevator.

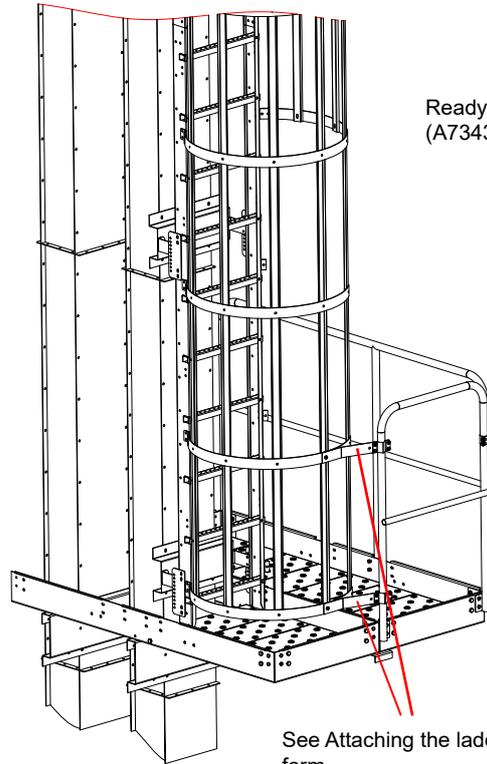


Part	Part no.	Denomination	Pcs.
1	A76217	ELEV SERVICE PLATFORM BASEBOARD L1744 M19	1
2	A76218	ELEV SERVICE PLATFORM BASEBOARD L649 M19	1
3	A76219	ELEV SERVICE PLATFORM CORNER PLATE M19	2
4	A73434	ELEV AUXILIARY PLATFORM FASTENER M11	1
5	A71545	ELEV PLATFORM ELEMENT 215 X 635 X 35	4
6	102200	BOLT HEX ZN 8.8 10X20 DIN933	18
7	101810	BOLT HEX ZN 8.8 8X16 DIN933	8
8	110560	NUT M10 ZN 8 DIN934	20
9	110540	NUT M8 ZN 8 DIN934	8
10	102230	BOLT HEX ZN 8.8 10X35 AM DIN933	2



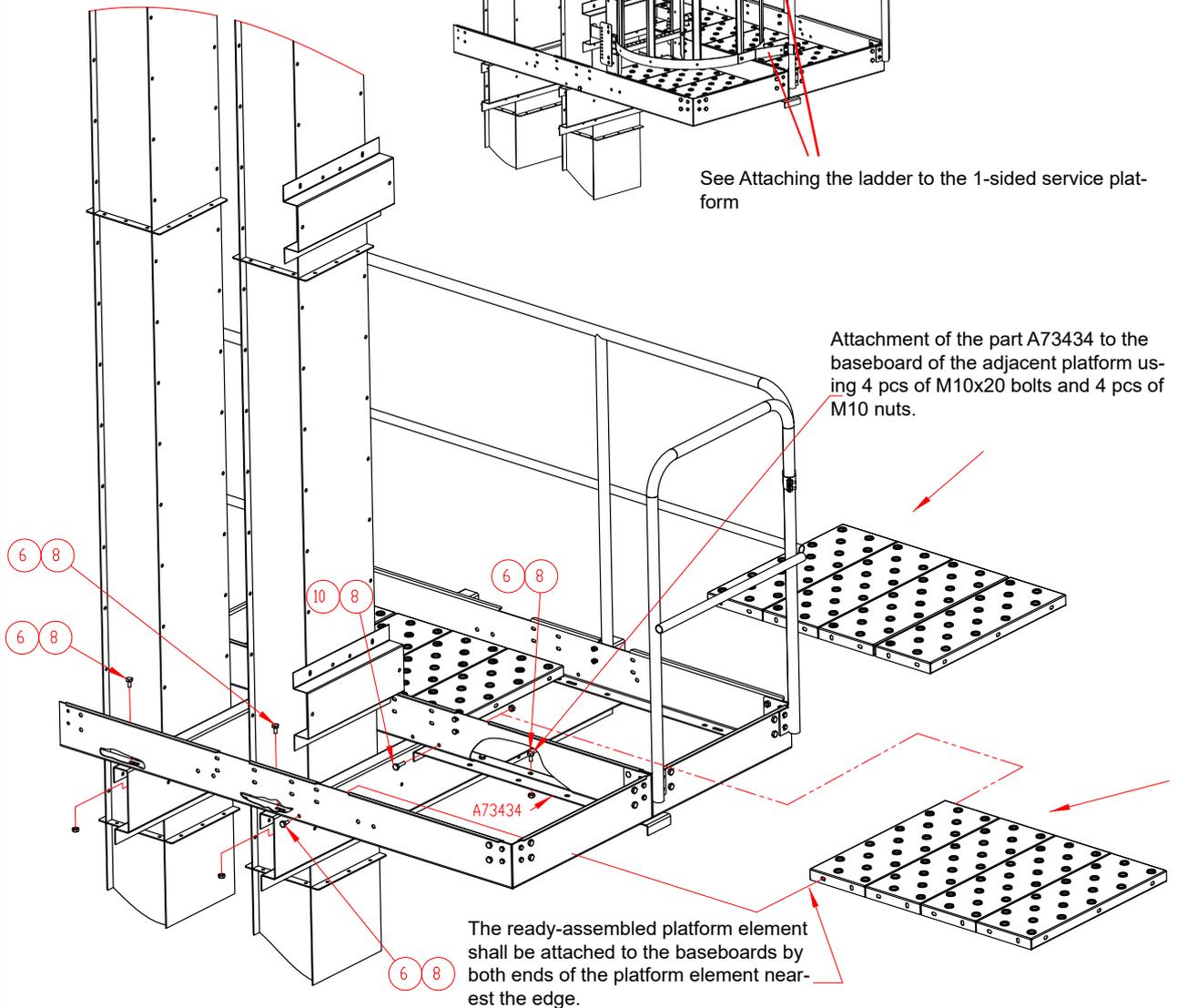
You can shorten the frame beams A76325 at their ends on the auxiliary platform side.

After cutting, the beams shall be at minimum 1,640mm long.



Ready-assembled auxiliary platform (A73435P)

See Attaching the ladder to the 1-sided service platform



### Installing an additional platform on the one-sided service platform

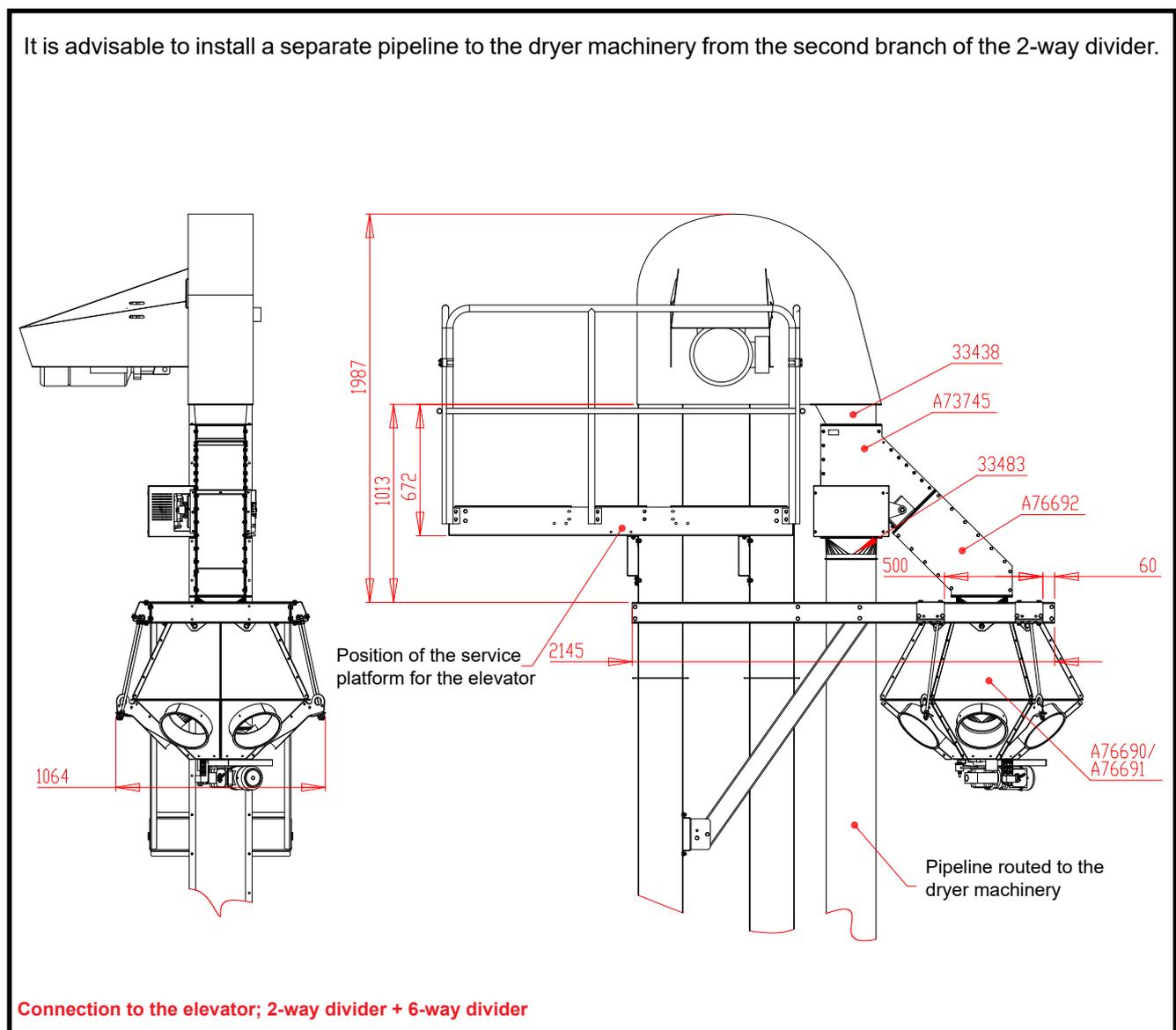


## Supporting the 6-way divider

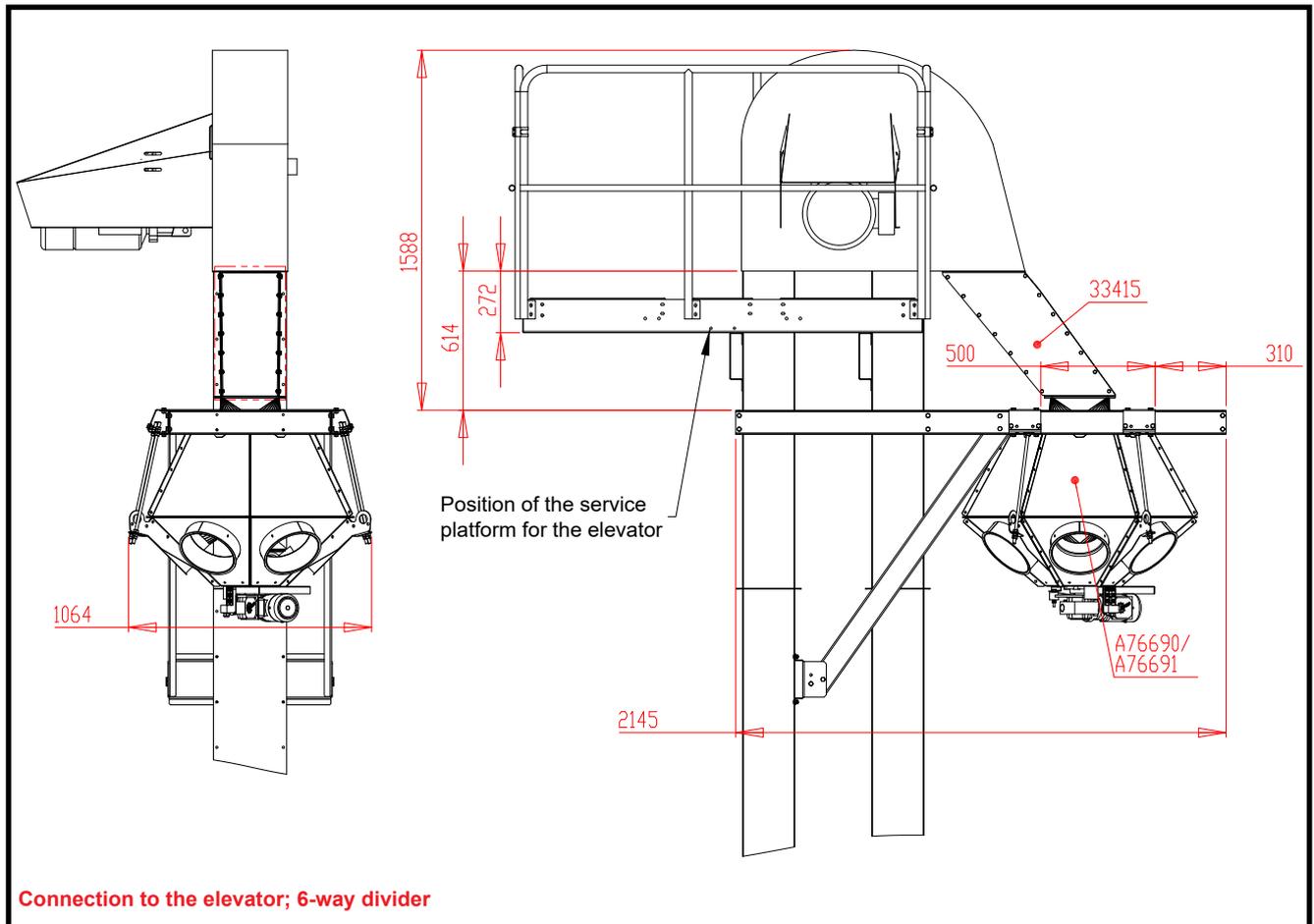
Always support the divider carefully. The 6-way divider MUST NOT be supported by the conversion part of the elevator. The pipes must not exert any load onto the divider. The pipes must be supported at their first joint.

The 6-way divider is supported on the surrounding structures by lugs on the divider's body.

Observe the position of the elevator service platform when making use of the support package A76742P for the divider.



Connection to the elevator; 2-way divider + 6-way divider

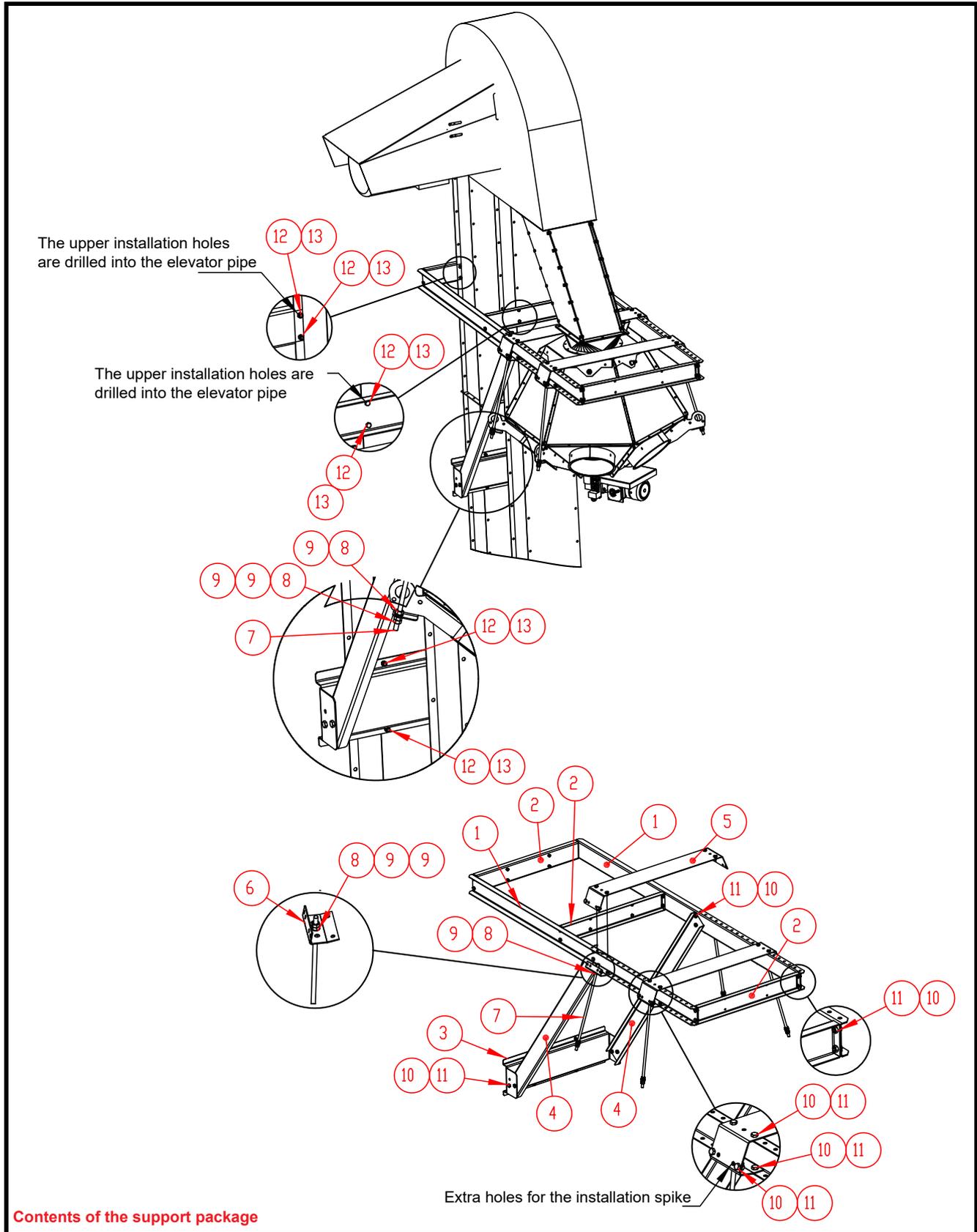


Connection to the elevator; 6-way divider

- The set A76690 includes a motor-driven 6-way divider and a support package A76742P for connection to the elevator.
- The set A76691 includes a manually-operated 6-way divider and a support package A76742P for connection to the elevator.



## Contents of the support package A76742P





Part	Item	Denomination	Pcs.
1	A76743	6-WAY DIVIDER SUPPORT BEAM A M21	2
2	A76744	6-WAY DIVIDER SUPPORT BEAM B	3
3	A76745	6-WAY DIVIDER SUPPORT BEAM C M21	1
4	A76746	6-WAY DIVIDER SUPPORT BEAM D M21	2
5	A76748	6-WAY DIVIDER SUPPORT BAND PLATE M21	2
6	A76747	6-WAY DIVIDER SUPPORT LUG M21	4
7	A76749	6-WAY DIVIDER SUPPORT ROD	4
8	111560	WASHER ZN M12 ZN DIN 125	16
9	110570	NUT M12 DIN934	24
10	102195	HEX BOLT ZN 10X16 DIN933	44
11	110560	NUT M10 DIN 934	44
12	101810	HEX BOLT ZN 8X16 DIN933	12
13	110540	NUT M8 DIN 934	12

- Check the positions of the band plates and the lugs (parts 5 and 6) also on pages 4 and 5.
- **NOTE! The support package is intended for supporting the 6-way divider only!**
- The pipes connected to the 6-way divider must not weight the 6-way divider's support structure, and hence they must be supported on other structures.



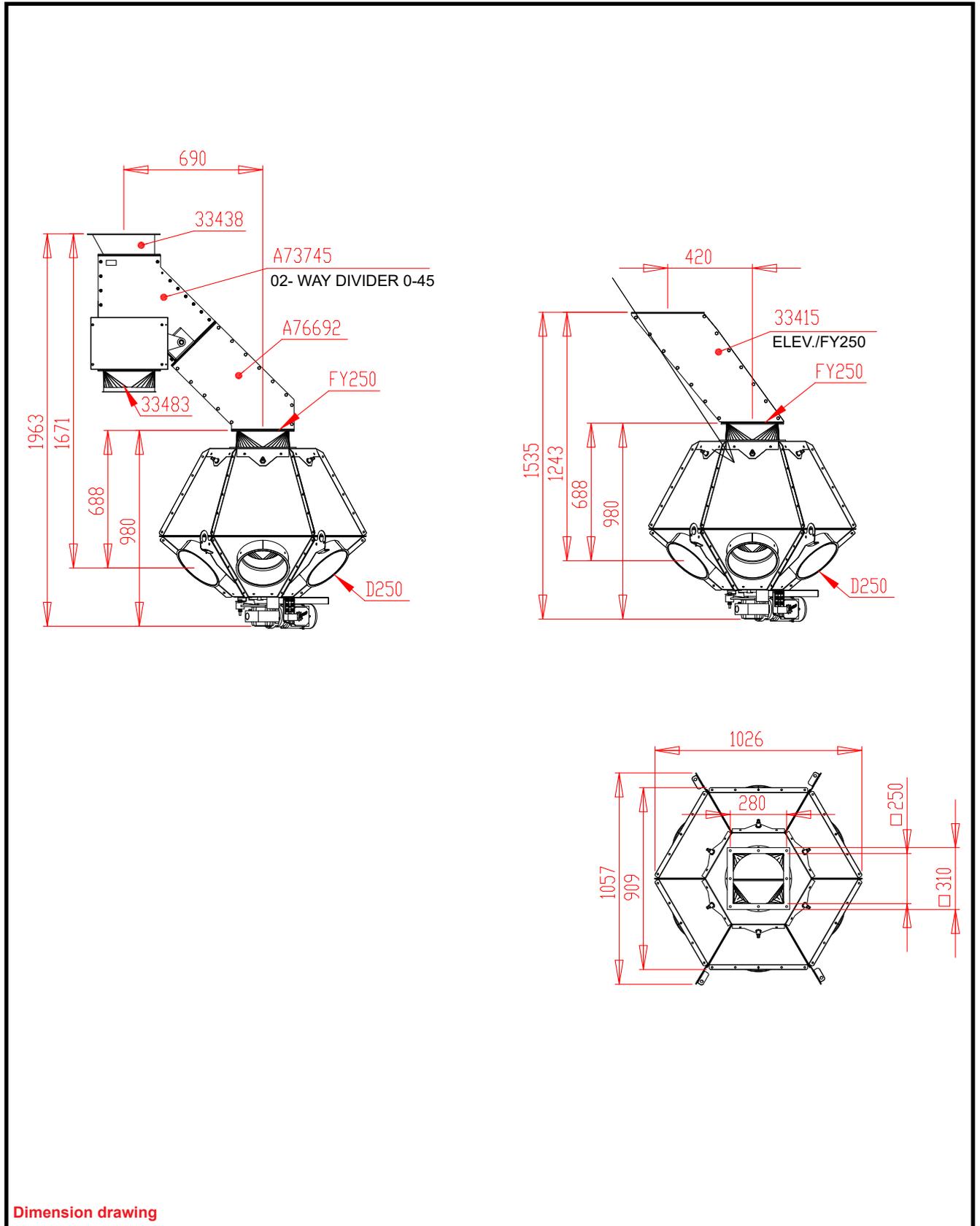
Installing the additional  
equipment

# Elevator, E-series

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## Dimension drawing of the 6-way divider





## OPERATING INSTRUCTIONS FOR THE ELEVATOR

### Initial adjustment and checking of the elevator

**Warning!** During initial set-up, the elevator must be operated also with its control and service hatches open, which requires that particular caution be exercised.  
**Risk of injury!**

We recommend carrying out the following adjustments and controls before the essential test run and start-up:

#### 1. Is the bucket belt of the elevator running in the centre of the pulleys and the frame pipes (to ensure quiet running)

If this is not the case, then check:

- \* upright position of the frame pipes using a plumb line,
- \* upright position of the elevator boot using a spirit level,
- \* upright position of the elevator top using a spirit level

If the above-mentioned controls prove necessary, unscrew the attachment screws for the bucket pulley bearing and adjust the position of the pulley using a hexagon socket key as required to make the bucket belt run in the centre of the pulley.

#### 2. Adjusting the position of the bucket belt pulley scraper at the elevator boot

Adjust the plate to as close to the surface of the pulley as possible, however, allowing the elevator to run without making any abnormal noise. If the edge of the scraper comes in contact with the bucket belt pulley or the gap is wider than necessary, carry out the adjustment (drawing "Setting the scrapers").

#### 3. Adjusting the position of the bucket belt pulley scraper at the elevator top

Adjust the scraper in the same way as in the boot.

#### 4. Checking the position of the adjustment plate above the divider inside the elevator top

As necessary, adjust the position of the plate so that the buckets will pass the adjustment plate at a distance of 10 mm.

#### 5. Checking the bucket belt for tightness and retightening

If the bucket belt has been in place for 1 - 2 weeks after the installation, it can be retightened before the test run or first start-up, if necessary.

Attach the joining device for the belt to the rear of the belt in the rear opening in the pipe (to the screw holes of the two buckets that were removed temporarily) on both sides of the bucket belt joint. Wind the tool open until it spans 4 - 5 hole pairs. Tighten the belt using the tool. The tightness of the belt is correct when the screw holes in the belt are stretched slightly oval. If the belt is stretched to the point that making a new joint with new holes becomes possible, open the joint, cut off the excess length, drill new holes, and make a new joint by using the joining irons. Put back in place the buckets that you removed to make space for the joining device after having removed the device. Note that in the bucket groups the number of buckets without bottom may differ from the standard amount (five), but the lowermost bucket in each group must always have a bottom and an unused pair of holes must always be left below every bucket with bottom.



## 6. Checking the shutter plates

Check that the shutter plates can be moved freely over a sufficiently long distance in their grooves and that the plate closes tightly in its lowest position.

7. **Check** that there are no foreign objects inside the elevator and all its inspection and service hatches are closed.

## 8. Grain pipes

Check that the grain pipes leaving from the divider are properly fastened and the gradient is sufficient (at least 45° for wet grain, and at least 30° for dry grain).

The grain pipes of the E100 and E120 elevators must be at least 250 mm in diameter. The transfer capacity of 200 mm grain pipes is sufficient for the E40, E60 and E80 elevators.

9. **Make sure** the electric motor is connected to rotate in the right direction.

## Operating the Elevator

### Before switching on the elevator, always check that

- \* no other person is cleaning or servicing the elevator, for example, on some other floor of the building.
- \* all service and inspection hatches of the elevator are closed.
- \* the divider and the grain pipes are in their intended positions.
- \* the shutter plate is in the **closed**-position.

Switch on the elevator before opening the shutter plates. Usually the shutter plate on the ascending side of the elevator can be opened completely. The shutter plate on the return side can be opened to about half. This enables the maximum output to be achieved.

With turnip rape and dry food grain, the maximum output can usually be achieved by opening the shutter plates slightly less.

If you open the shutter plates too much, the elevator may congest and stop. If the elevator stops while operating at full capacity, it will not be able to restart. In this case, close the shutter plates and channel off excess grain from the lower opening of the elevator. The elevator can be restarted as soon as the grain flow from the lower opening has stopped.



Before changing the cereal it is often necessary to clean the elevator as thoroughly as possible. In this case carry out the checking and cleaning as follows:

- \* check that there is no grain left in the hopper seams and brush it off, if necessary
- \* keep the elevator running until the rustling of individual grains can no longer be heard from the frame pipes,
- \* stop the elevator and open the hatch at the side of the boot. Brush off the last grains from the inner floor using a brush with a handle.

**Warning! Never put your hands in the lower opening of the elevator!!**

To avoid mixing of cereals, do not change the setting of the 3-way divider before the grain flow has stopped or until it has been switched off for a while.

## SERVICING

### Annual service

- \* Clean up the cooling ribs of the motor and the air impeller.
- \* Check the condition and tightness of the bucket belt. Adjust as necessary.
- \* Check the condition and attachment of the buckets.
- \* Ensure the belt is running properly on the pulley. Check and adjust as necessary.
- \* Check the position of the bucket belt pulley scrapers. Adjust as necessary.
- \* Check and lubricate the bearings.
- \* Check the oil level in the gear motor. Disconnect the gear motor from the torque arm and the elevator shaft for oil level control and shift the gear motor supported by a hoist outward on the elevator shaft as much as is necessary to open the oil control plug using a hexagon socket key (6 mm) and to check the oil level. Note, that the gear motor must remain parallel with the shaft. Top up recommended oil, if necessary. Put the plugs in place. Fasten the gear motor back in place
- \* Change the oil at least every two years.



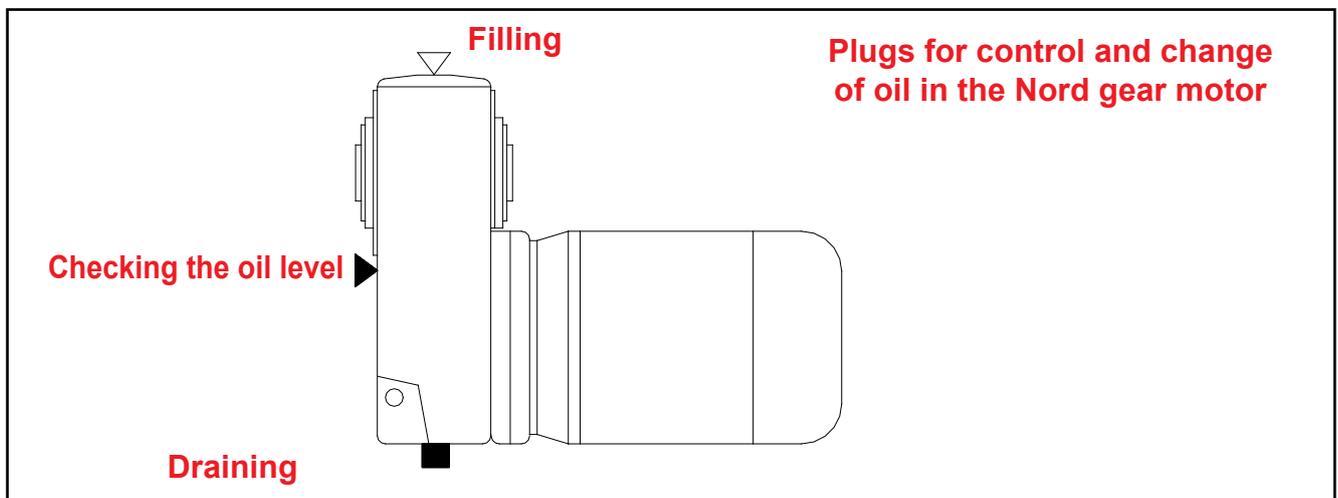
**Oil volume in the gearbox:**

Gear SK3282 3.3 litres (The gearbox is used in 3.0 kW; 4.0 kW; 5.5 kW; 7.5 kW; 9.2 kW gear motors)

Gear SK4282 4,4 litres (The gearbox is used in 11,0 kW; 15 kW gear motors)

**Recommended oil types for gear motors are:**

DIN (ISO)/ ambient temperature	BP	CASTROL	FUCHS	KÜBER LUBRICATION	MOBIL	SHELL
ISO VG 220 -10...40°C	Energol GR-XP 220	Alpha EP 220	RENOLIN CLP 220	Klüberoil GEM 1-220 N	Mobilgear 600 XP 220	Omala S2 G 220
ISO VG 220 -10...40°C		Alpha SP 220	RENOLIN CLP 220 Plus			
ISO VG 220 -10...40°C		Optigear BM 220				
ISO VG 220 -10...40°C		Tribol 1100/220				



## GUARANTEE

The guarantee period for Antti elevators is one (1) operating season. The guarantee covers defects in material and workmanship. Separate guarantee terms issued by the respective importer apply to the electric motors.

A prerequisite for validity of the guarantee is that the instructions, given by the manufacturer, and the valid regulations are followed during the installation, operation and maintenance work of the elevator.

A prerequisite for validity of the product guarantee is that the control system and the components used are approved by Antti-Teollisuus.

All matters related to the guarantee shall be agreed upon with the manufacturer before any action is taken.



## MALFUNCTIONS DURING OPERATION

### Possible malfunctions in the elevator

Symptoms	Possible cause	Remedy
Elevator does not start		
	Selector switch in electric centre is in position 0	Turn the selector switch to running-position.
	Fuse/motor guard has tripped.	Change or reset the fuse/motor guard.
	Position of the underspeed guard sensor has changed-	Adjust the distance between the sensor and the claw-plate to 5 mm.
Elevator runs for a while and then stops		
	Position of the underspeed guard sensor has changed.	Adjust the distance between the sensor and the claw-plate to 5 mm.
	Underspeed guard relay in the electric centre has failed.	Let an authorised electrician check the adjustment of the potentiometer or change the relay.
	Underspeed guard rotates too slowly, because the bucket belt is too slack.	Tighten the bucket belt by shortening.
	Rotation speed of the gearmotor too low.	Gear motor damaged.
Elevator stops prematurely		
	Bucket belt is too slack (underspeed guard trips as a result of too low speed).	Tighten the bucket belt by shortening.
	Feeding rate is too high, protection switch for the engine has tripped.	Elevator has to be emptied (see Operating Instructions), reset the protection switch and readjust the feeding rate.
	Divider or pipe system is blocked (presence of foreign objects or inclination or diameter of the pipes too small).	Remove the cause for congestion.



Symptoms	Possible cause	Remedy
Capacity of the elevator too low		
	Divider or pipe system is blocked (presence of foreign objects or inclination or diameter of the pipes too small)	Remove the cause for congestion
	Distance between the adjustment plate and the buckets in the top end too big	Adjust the distance from the adjustment plate to the buckets to 10 mm
	Incorrect electric connections of the motor Incorrect Y/D – connection	Assign an electrician to check the connections
	Access of grain into the elevator obstructed	Eliminate too tight or too gentle spots
Elevator buckets make noise at the boot		
	Bucket belt is slack	Tighten the bucket belt by shortening.
	Elevator boot is not upright; the bucket belt does not run in the middle of the pulley	Check that the boot stands exactly upright and adjust the bucket belt to run in the middle of the pulley. No deposits of dirt are allowed on the pulley. Adjustment of the scraper for the pulley must be correct.
	Possible bearing damage	Replace the bearings for the bucket pulley shaft at the boot
	Bucket belt is damaged (resulting from foreign objects, rodents or a broken bucket)	Replace the damaged bucket or belt



Symptoms	Possible cause	Remedy
Buckets make noise in the top end		
	Bucket belt is slack	Tighten the bucket belt by shortening.
	Elevator boot is not upright; the bucket belt does not run in the middle of the pulley	Check that the boot stands exactly upright and adjust the bucket belt to run in the middle of the pulley. No deposits of dirt are allowed on the pulley. Adjustment of the scraper for the pulley must be correct.
	Possible bearing damage	Replace the bearings for the bucket pulley shaft at the boot
	Bucket belt is damaged (resulting from foreign objects, rodents or a broken bucket)	Replace the damaged bucket or belt
	Adjustment plate too close to the buckets.	Adjust the distance from the adjustment plate to the buckets to 10 mm.
Elevator buckets make noise inside the frame pipes		
	Frame pipes are in an oblique position	Using a plumb line, check that the entire elevator with frame pipes stands upright and straighten them as necessary
Bearings make abnormal noise		
	Bearing damaged	Replace bearing
	Inner race of the bearing rotates on the shaft	Tighten the stop screws. If it does not help, replace both the bearing pair and the shaft
Elevator is congested or jams, the motor does not stop and the bucket belt slips.		
	Underspeed guard has failed.	Assign an electrician to check the operation of the underspeed guard; repair as necessary.



## EU Declaration of Conformity

**ANTTI-TEOLLISUUS OY**  
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declares that

**ANTTI E-series elevator**

conforms with the provisions of the following directives:

- Machine Directive 2006/42/EY

**Kuusjoki 03.01.2020**

**Kalle Isotalo**  
Managing Director