

# Outdoor front end

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## REPLACEMENT PARTCATALOGUE and ASSEMBLYMANUAL



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**Attention, please note:**

The outdoor front end is only approved up to the max. load of the wheelchair.

The outdoor front end is suitable for a maximum payload of 100 kg when installed on models from other manufacturers.

**Telescopic outdoor front end for all models except Mio, Klka and Mio Move**



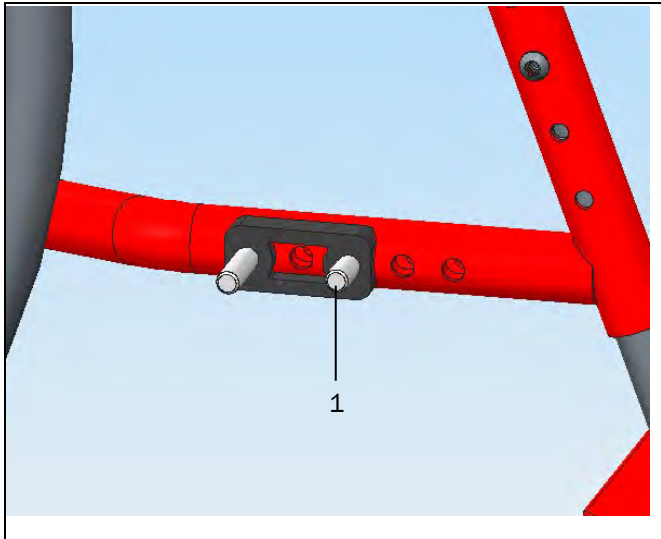
**Attention, please note:**

The outdoor front end is only approved up to the max. load of the wheelchair.

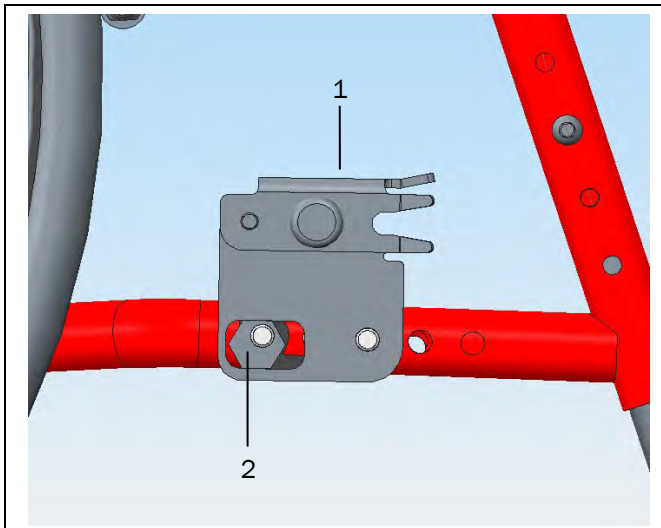
The outdoor front end is suitable for a maximum payload of 100 kg when installed on models from other manufacturers.

## 1. Assembly

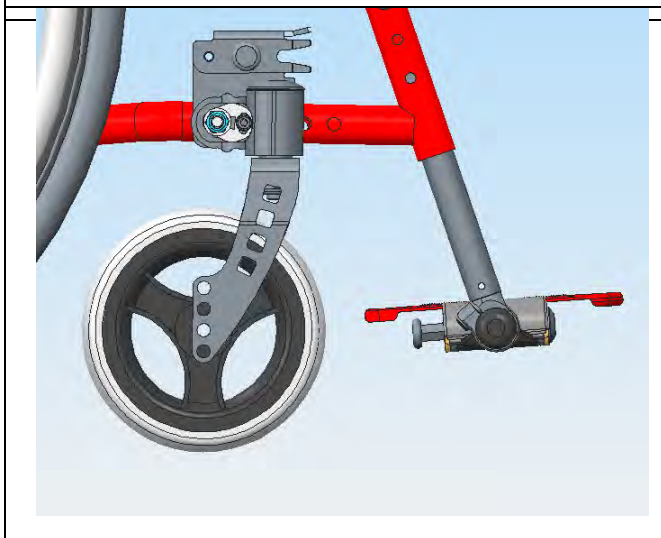
### 1.1 Adapter



Remove the screws from the caster adapter attachment and replace them with the supplied set. The shorter of the two screws supplied is mounted at the front (item 1).



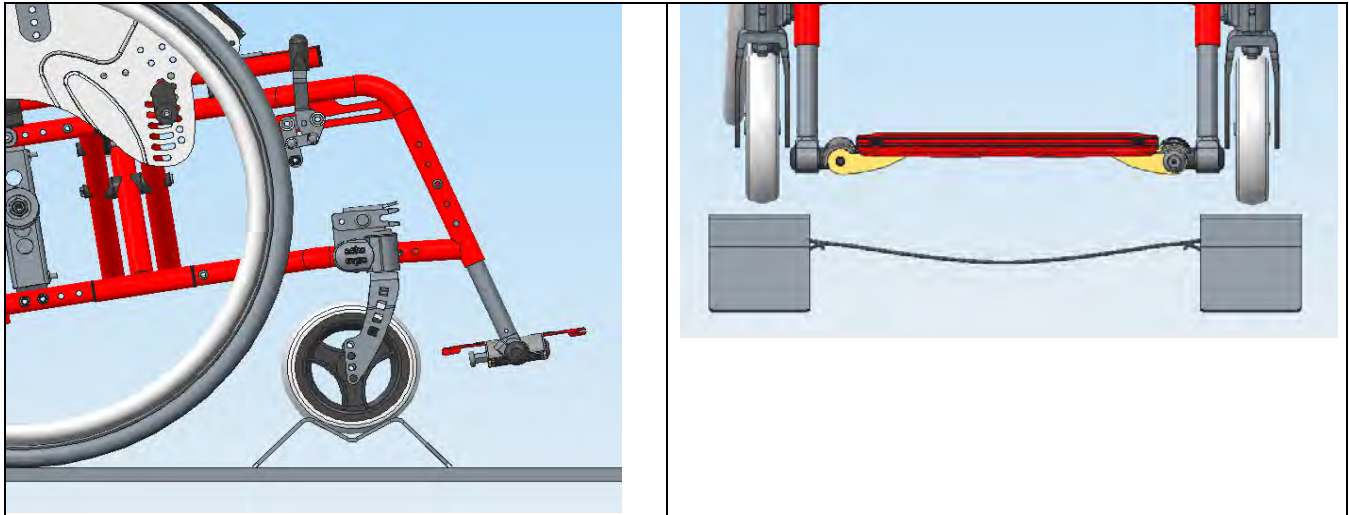
Mount the outdoor adapters (item 1) to the left and right between the half shell and the caster adapter such that the guide slot in the outdoor adapter points to the front. Position the hexagon adjustment disc (item 2) in the recess provided for it.



Align the caster adapter perpendicular to the ground.

### 1.2 Jack up aid

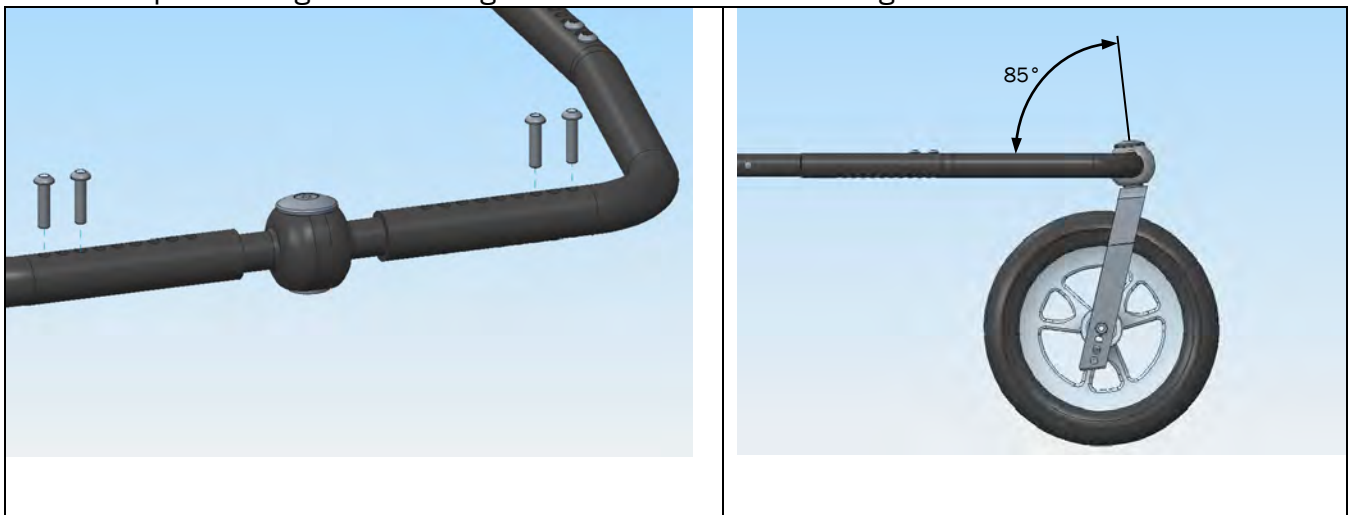
Align the swivel casters of your wheelchair so that they point straight ahead. Position the two jack up aids so that they are approximately in the middle of the swivel casters. Then tie the cord so that it is loosely tensioned in this position between the two jack up aids.



### 1.3.1 Outdoor front end (set width)

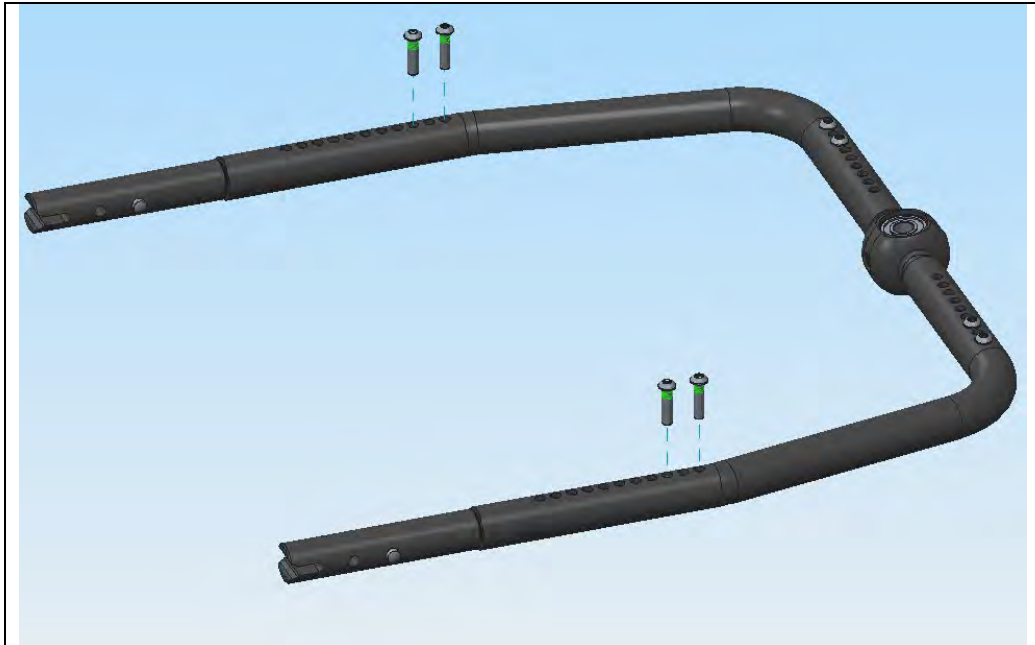
There are 3 sizes of the front end component, referred to here as size 1, size 2 and size 3. You will be automatically supplied with the right size for your wheelchair ex works. The width of the front end component may have to be adjusted to the width of your wheelchair. To do so, remove the screw fittings from the front part of the front end and set the correct width. Retighten the screw fittings firmly (tightening torque 10Nm). The exact adjustment positions and the bores to be used are described in Chapter 3 "Model overview" and cover all suitable wheelchair models.

Remove the screw fittings in the front part of the front end and set the correct width here. Ensure that the telescopic steering head bearing incl. caster is fitted at an angle of 5°.



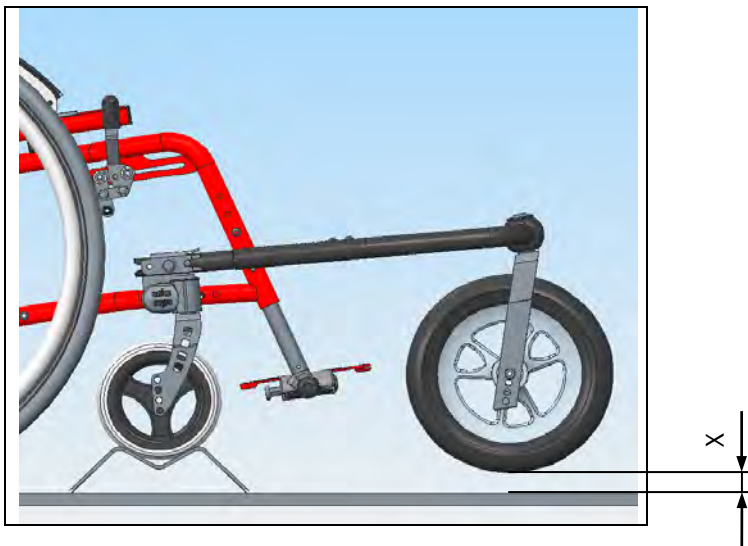
### 1.3.2 Outdoor front end (set length)

The outdoor front end can also be telescoped in length. You can adjust the front end tubes to your desired length. To do so, remove the screw fittings on the front end tubes and set the correct length. Retighten the screw fittings firmly (tightening torque 10Nm).



### 1.4 Height adjustment of the outdoor front end

Place the wheelchair on a level surface with the front end attached and the casters on the jack up aid. The front end caster should now have a distance (X) of 20 to 25mm to the ground.



The distance between the ground and the front end caster can be adjusted in two ways.

- Shifting of the front end caster in the caster fork. Retighten the screw fittings after setting firmly (tightening torque 7Nm).
- By turning the hexagon adjustment disc (the mounting angle of the outdoor adapter is changed here), see page 3, item 2. Please note that the rear screw fittings of the caster adapter must be removed again here.

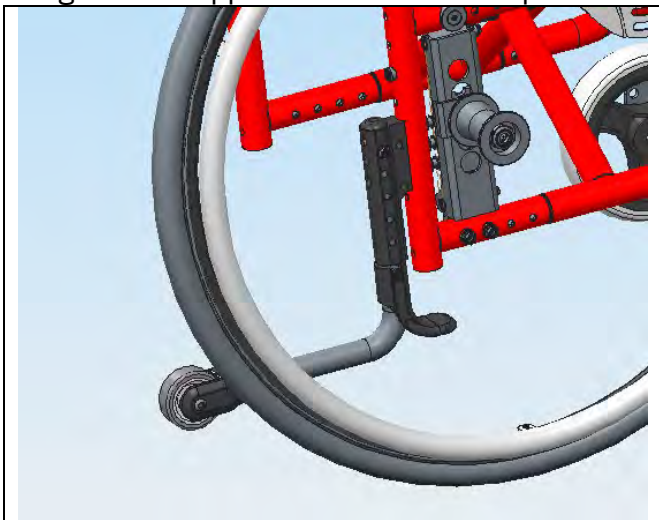
**1.5 Splash guard (optional)**

Remove the nut and washer from the caster fork. Use the splash guard instead of the washer. Then retighten the screw fittings firmly.

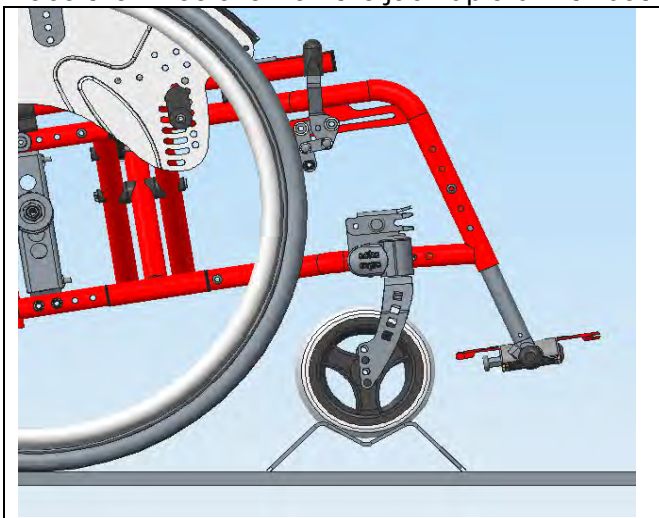


**2. Operation**

Bring the anti-tipper into its functional position

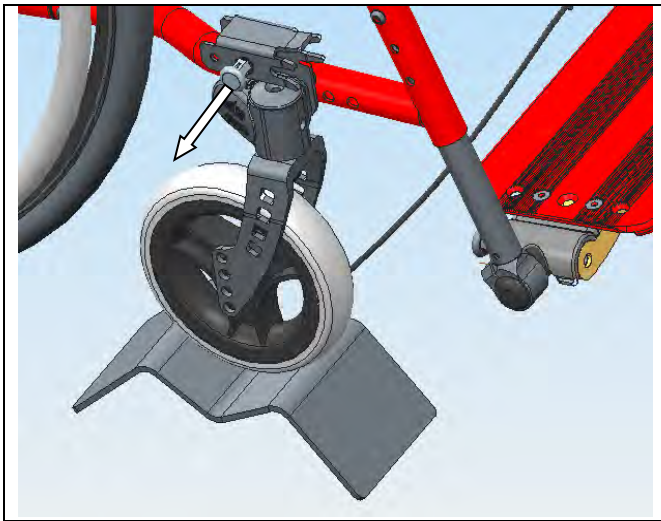


Place the wheelchair on the jack up aid with both steering casters.

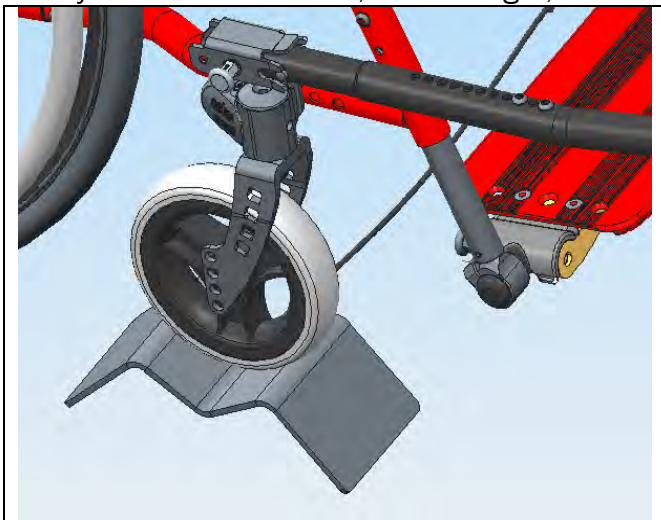


Apply the wheel lock of the wheelchair.  
Lock the latch, left and right, in the open position

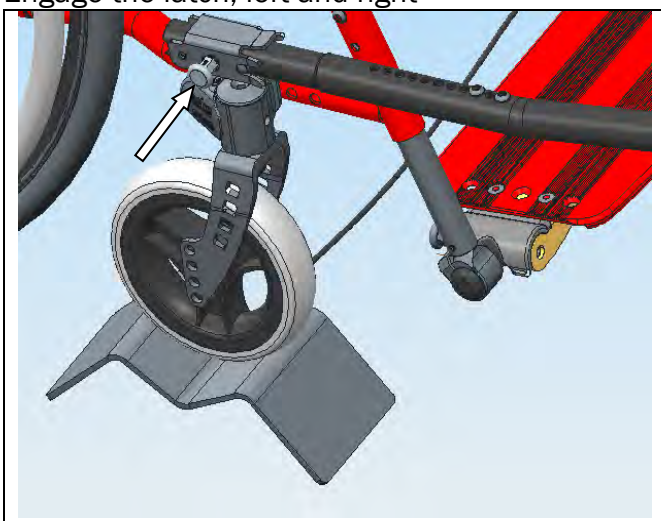




Evenly insert the front end, left and right, into the adapters up to the stop.



Engage the latch, left and right



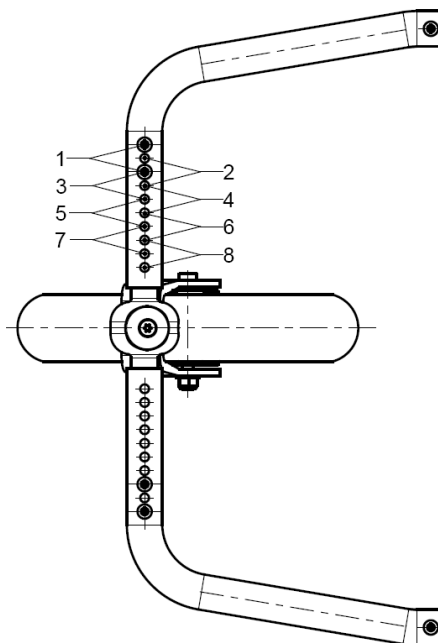
Please check that the structure is securely positioned in the intake and locked into place correctly. Release the wheel lock and lower the wheelchair from the jack up aid.

**3. Model overview / Size chart for assembly without Hemi adapter**

Model SW	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54
Jump alpha abducted	size 1 3	size 2 1	size 2 2	size 2 3	size 2 4	size 2 1	size 4 2	size 4 3								
Jump alpha straight			size 1 2	size 1 3	size 2 1	size 2 2	size 2 3	size 2 4								
Jump beta abducted				size 2 3	size 2 4	size 4 1	size 4 2	size 4 3	size 4 4	size 4 5	size 4 6	size 4 7	size 4 8	size 5 4		
Jump beta straight				size 1 3	size 2 1	size 2 2	size 2 3	size 2 4	size 4 1	size 4 2	size 4 3	size 4 4	size 4 5	size 4 6		
Vector abducted		size 2 1	size 2 2	size 2 3	size 3 4	size 4 1	size 4 2	size 4 3	size 4 4	size 4 5	size 4 6	size 5 2				
Vector straight, cro.			size 1 2	size 1 3	size 2 1	size 2 2	size 2 3	size 3 4	size 4 1	size 4 2	size 4 3	size 4 4				
Tilty Vario			size 4 2	size 4 3	size 4 4	size 4 5	size 4 6	size 5 2	size 5 3	size 5 4	size 5 5					
Loop				size 4 1		size 4 3		size 4 5		size 5 2		size 5 4		size 5 6		
Loop RS				size 4 1	size 4 2	size 4 3	size 4 4	size 4 5	size 4 6	size 5 2	size 5 3	size 5 4	size 5 5	size 5 6		

\*Trend, Trend Sport (no Hemi)

- Legend
- size 1 Front end tube small, size 1 (together with telescopic steering head bearing 205)
  - size 2 Front end tube medium, size 2 (together with telescopic steering head bearing 205)
  - size 3 Front end tube large, size 3 (together with telescopic steering head bearing 205)
  - size 4 Front end tube large, size 3 (together with telescopic steering head bearing 285)
  - size 5 Front end tube XL, size 4 (together with telescopic steering head bearing 285)
- Green (without stripes): 4cm growable  
 Yellow (horizontally striped): 2cm growable  
 Orange (diagonally striped): Wheelchair not growable or growable via side guards
- 1 – 8: Screw fitting as shown in the drawing below.



### 3.1 Model overview / Size chart for assembly with Hemi adapter

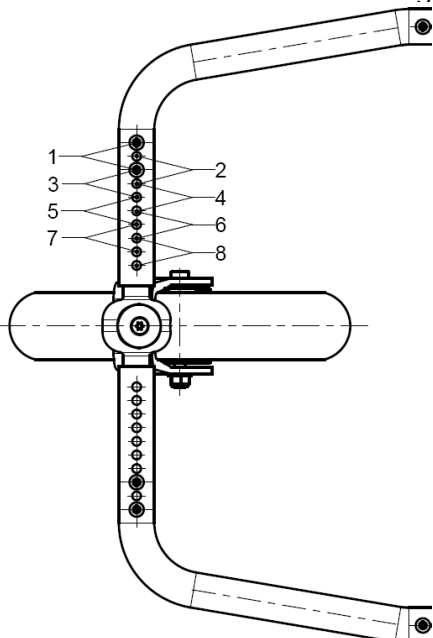
Attention: When mounting the Hemi adapter with a caster distance of 10mm, please choose a larger seat width.

Model SW	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54
Jump alpha abducted	size 2 4	size 4 1	size 4 2	size 4 3	size 4 4	size 4 5	size 4 6	size 4 7	size 4 8							
Jump alpha straight			size 2 3	size 2 4	size 4 1	size 4 2	size 4 3	size 4 4	size 4 5							
Jump beta abducted				size 4 3	size 4 4	size 4 5	size 4 6	size 4 7	size 4 8	size 5 4	size 5 5	size 5 6	size 6 3	size 6 4	size 6 5	
Jump beta straight				size 2 4	size 4 1	size 4 2	size 4 3	size 4 4	size 4 5	size 4 6	size 4 7	size 4 8	size 5 4	size 5 5	size 5 6	
Vector abducted		size 4 1	size 4 2	size 4 3	size 4 4	size 4 5	size 4 6	size 5 2	size 5 3	size 5 4	size 5 5	size 5 6	size 6 3			
Vector straight, cro.			size 2 3	size 3 4	size 4 1	size 4 2	size 4 3	size 4 4	size 4 5	size 4 6	size 5 2	size 5 3	size 5 4			
Tilty Vario			size 4 6	size 5 2	size 4 3	size 5 4	size 5 5	size 5 6	size 6 3	size 6 4	size 6 5					
Loop				size 4 5		size 5 2		size 5 4		size 5 6		size 6 4		size 6 6		
Loop RS				size 4 5	size 5 1	size 5 2	size 5 3	size 5 4	size 5 5	size 5 6	size 6 3	size 6 4	size 6 5	size 6 6	size 6 7	

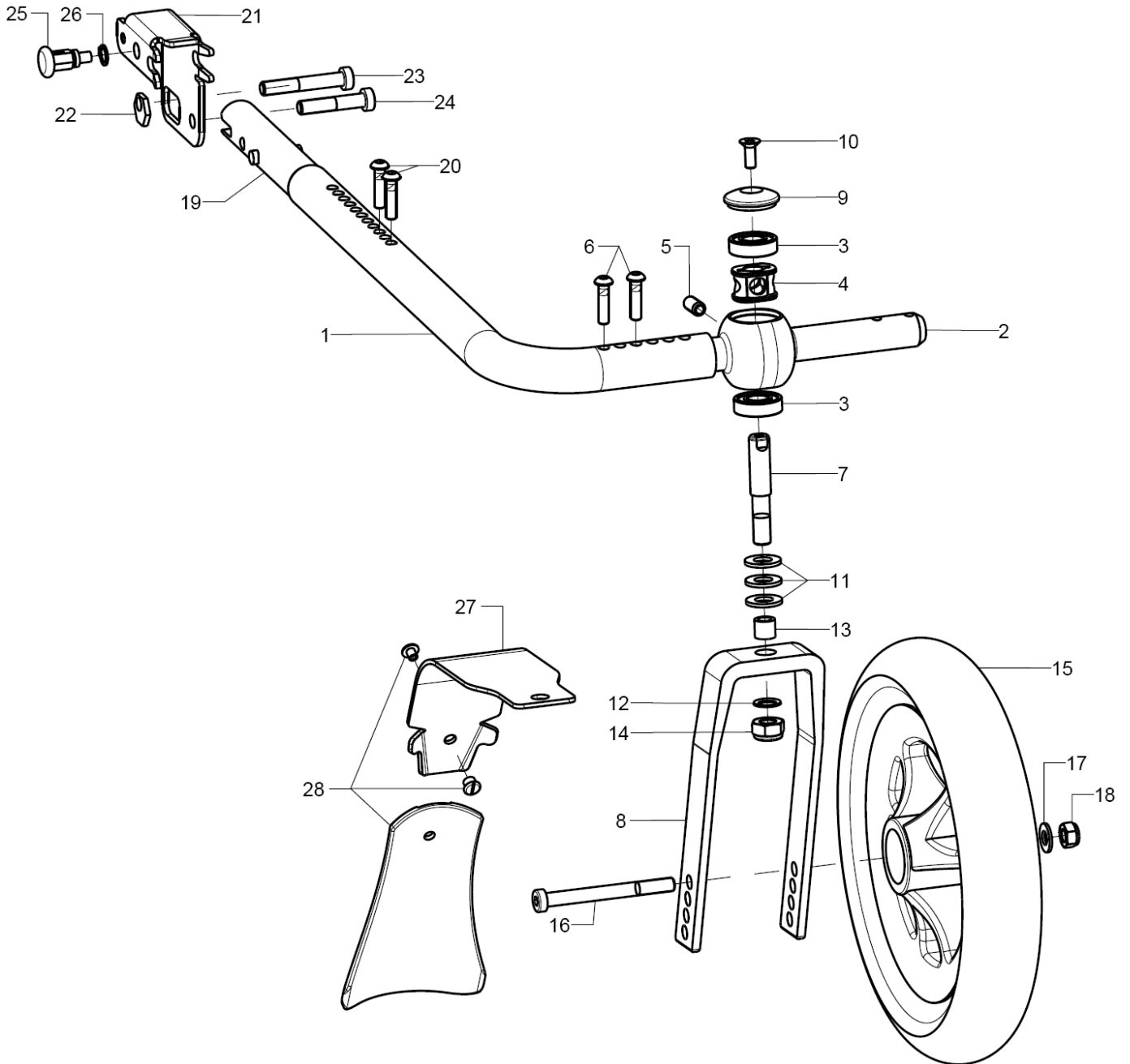
- Legend
- size 1 Front end tube small, size 1 (together with telescopic steering head bearing 205)
  - size 2 Front end tube medium, size 2 (together with telescopic steering head bearing 205)
  - size 3 Front end tube large, size 3 (together with telescopic steering head bearing 205)
  - size 4 Front end tube large, size 3 (together with telescopic steering head bearing 285)
  - size 5 Front end tube XL, size 4 (together with telescopic steering head bearing 285)
  - size 6 Front end tube XXL, size 5 (together with telescopic steering head bearing 285)

Green (without stripes): 4cm growable  
 Yellow (horizontally striped): 2cm growable  
 Orange (diagonally striped): Wheelchair not growable or growable via side guards

1 – 8: Screw fitting as shown in the drawing below.

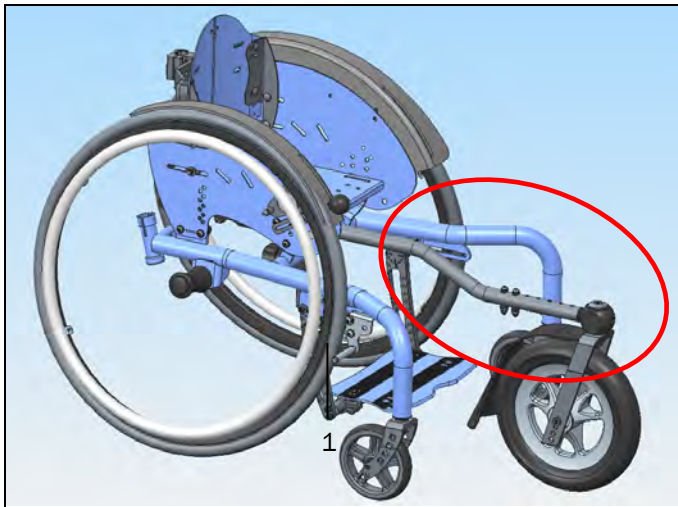


### 4. Replacement parts list

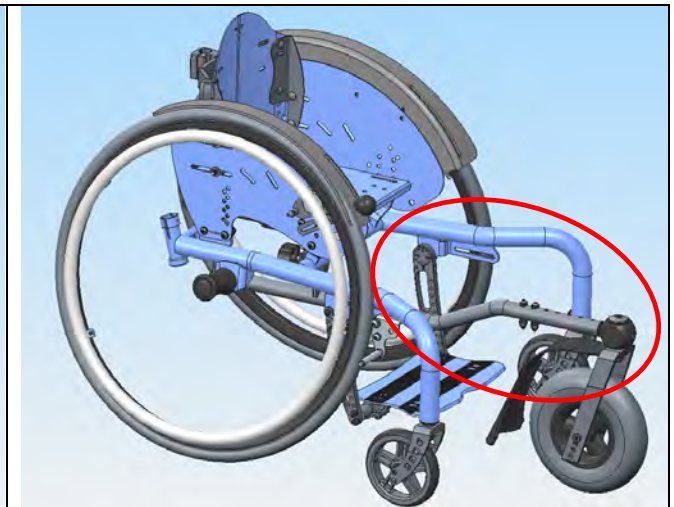


Item	M/1	Drawing No.	Type No.	Item designation	Variant
1 - 28		XXXXXXXXXXXXXXXXXX		Telescopic outdoor front end cpl.	Wheelchair model, SW, frame variant (abducted, straight), track spacer
1	2	59.95.20.07.00.00	59952007	Front end tube size 1 for outdoor front end, telescopic	Wheelchair model, SW, frame variant (abducted, straight)
altern.	2	59.95.20.08.00.00	59952008	Front end tube size 2 for outdoor front end, telescopic	Wheelchair model, SW, frame variant (abducted, straight)
altern.	2	59.95.20.09.00.00	59952009	Front end tube size 3 for outdoor front end, telescopic	Wheelchair model, SW, frame variant (abducted, straight)
altern.	2		59952010	Front end tube size 4 for outdoor front end, telescopic	Wheelchair model, SW, frame variant (abducted, straight)
2 - 6	1	59.95.20.01.40.00	59952002	Telescopic unit 205 mm incl. ball bearing, damper element, pressure spring piece and assembly screws	Wheelchair model, SW, frame variant (abducted, straight)
altern.	1	59.95.20.02.40.00	59952003	Telescopic unit 285 mm incl. ball bearing, damper element, pressure spring piece and assembly screws	Wheelchair model, SW, frame variant (abducted, straight)
3	2		200011	Deep groove ball bearing $\varnothing$ 28/12x8 6001z	
4	1	28.05.01.04.00.00		Damper element	
5	1	04.14.50.80.21.20	285103	Pressure spring piece M8x19	
6	4			Pan-head screw with hexagon socket. ISO 7380, M6x25, Tuflock	
7	1	28.50.00.03.00.10	285101	Steering axle 65 mm for track fixation	
8		28.44.01.01.00.00	2844	Caster fork 60x189, black for outdoor front end	
9 - 14	1		284499	Assembly set caster fork outdoor front end; (cover cap, Torx screw, sleeve, washers, nut)	
9-10	1	28.21.07.02.00.10	282108	Cover cap aluminium $\varnothing$ 32, black (caster/outdoor front end) incl. assembly screw M6x16 Torx)	
10	1			Countersunk screw with Torx ISO 14581 - M6x16 vz, black	
11	3(2)			Washer DIN 125 - A 10.5	2 pcs. for splash guard assembly
12	1			Securing washer S10 - FST vz	
13	1	04.31.10.14.01.01		DU bushing slotted, $\varnothing$ 10/12x10	
14	1			Hexagon nut self-locking low form DIN 985-M10	
15	1	04.52.43.10.00.10	2837	Caster $\varnothing$ 250x50, 6 spokes for outdoor front end incl. pneumatic tyres black	
16 -18	1		283799	Assembly set caster outdoor front end (cylinder screw M8x80, washer, nut)	
16	1			Cylinder screw DIN 7984 M8x80	
17	1			Washer DIN 125 - A 8.4	
18	1			Hexagon nut self-locking low form DIN 985 - M8	
19 -20	2	59.95.20.04.00.00	59952004	Telescopic adapter 268 mm, black incl. assembly screws	
20	4			Pan-head screw with hexagon socket. ISO 7380, M6x25, Tuflock	
21	1	59.95.01.01.02.10	599502	Adapter right (outdoor front end) incl. latch	
undisc losed	1	59.95.01.01.01.10	599501	Adapter left (outdoor front end) incl. latch	
	2		59950199	Assembly set adapter for outdoor front end (2 cylinder head screws for installation on frame with $\varnothing$ 24 mm)	
22	1	59.95.01.06.00.10		Adjustment disc hexagonal	
23	1			Cylinder-head screw DIN 7984 M8x...	Wheelchair, track spacer
24	1			Cylinder-head screw DIN 7984 M8x...	Wheelchair, track spacer
25 -26	1	04.14.43.60.02.00	690101	Latch $\varnothing$ 6/M10x1x31 with locking device incl. safety ring	
26	1			Safety ring 10, DIN 471	
27 -28	1	59.95.20.10.00.00	59952012	Plastic splash guard incl. holder	
27	1	59.95.20.11.01.00		Splash guard holder	
28	1	59.95.20.12.00.00	59952013	Plastic splash guard for outdoor front end	

**Outdoor front end for wheelchair model Mlo + Mlo Carbon Design 2018**



Assembly with long lower leg length (from approx. 15cm)

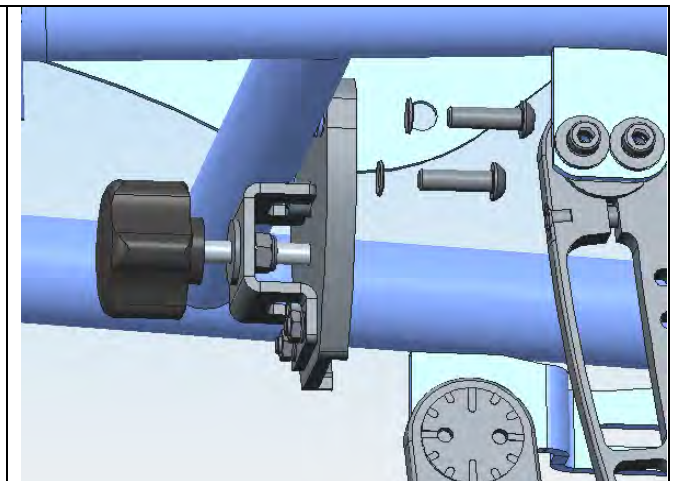
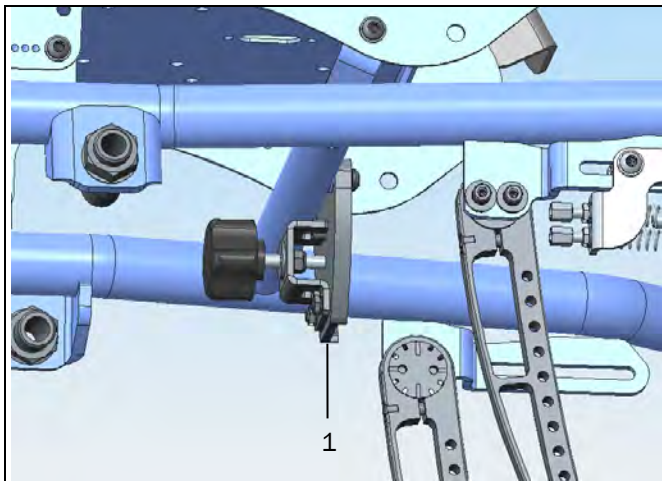


Assembly with short lower leg length (up to approx. 15cm)

**1. Assembly**

**1.1 Holding plate on the front crossbeam**

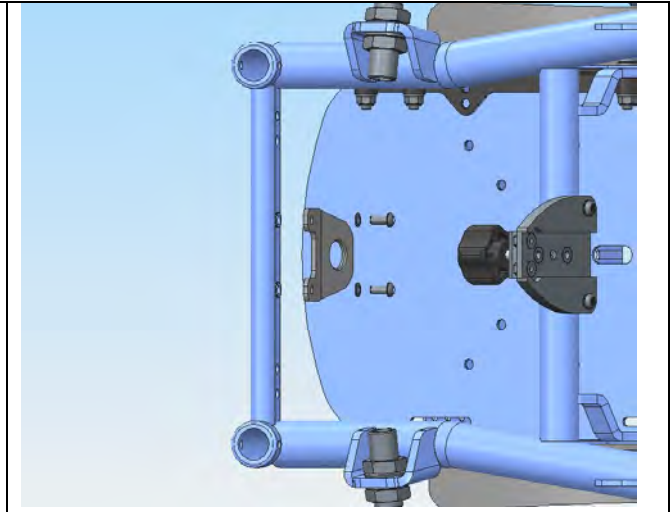
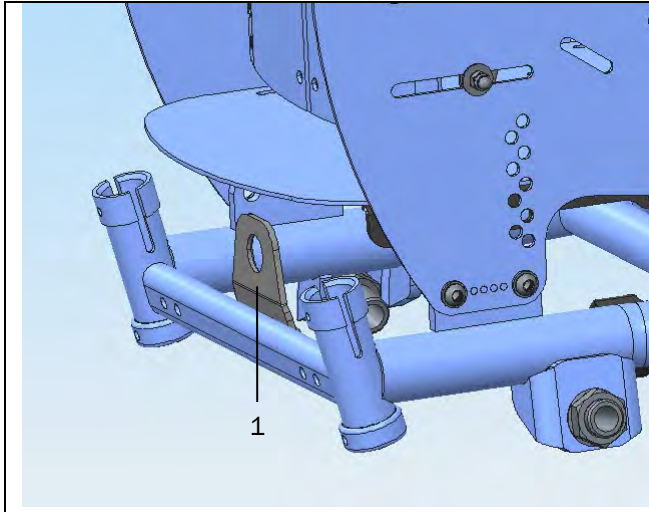
Mount the pre-assembled holding plate (item 1) to the front frame crossbeam using the screws (pan-head screw M6x20) and securing washers (Schnorr washer) supplied.



## 1.2 Rear holding plate on the rear crossbeam

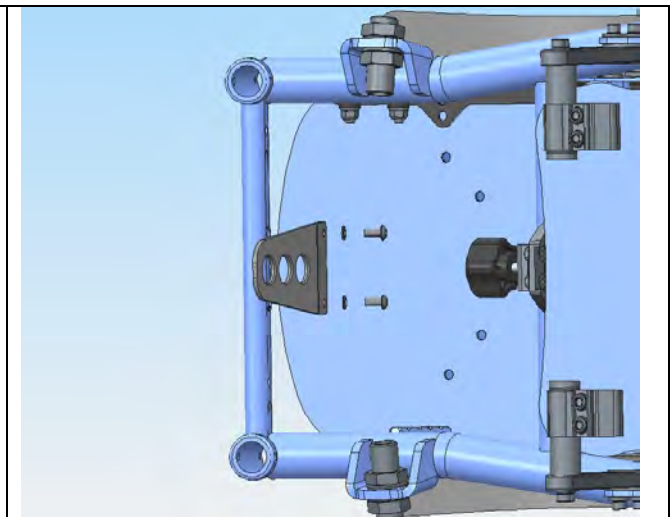
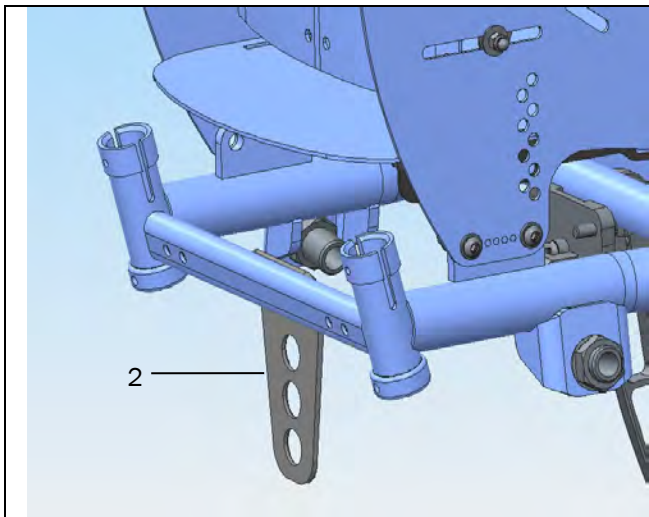
### 1.2.1 With long lower leg lengths (from approx. 15cm)

Attach the rear holding plate (item 1, one bore  $\varnothing 18\text{mm}$ ) to the rear crossbeam using the pan-head screws M5x12 and the Schnorr washers (for Mio Carbon <sup>Design 2018</sup> pan-head screw DIN7980 M6x35 + 2x washer DIN125 M6, and safety cap nut DIN986 M6).



### 1.2.2 With short lower leg lengths (up to approx. 15cm)

Attach the rear holding plate (item 2, three bores  $\varnothing 18\text{mm}$ ) to the rear crossbeam using the pan-head screws M5x12 and the Schnorr washers.

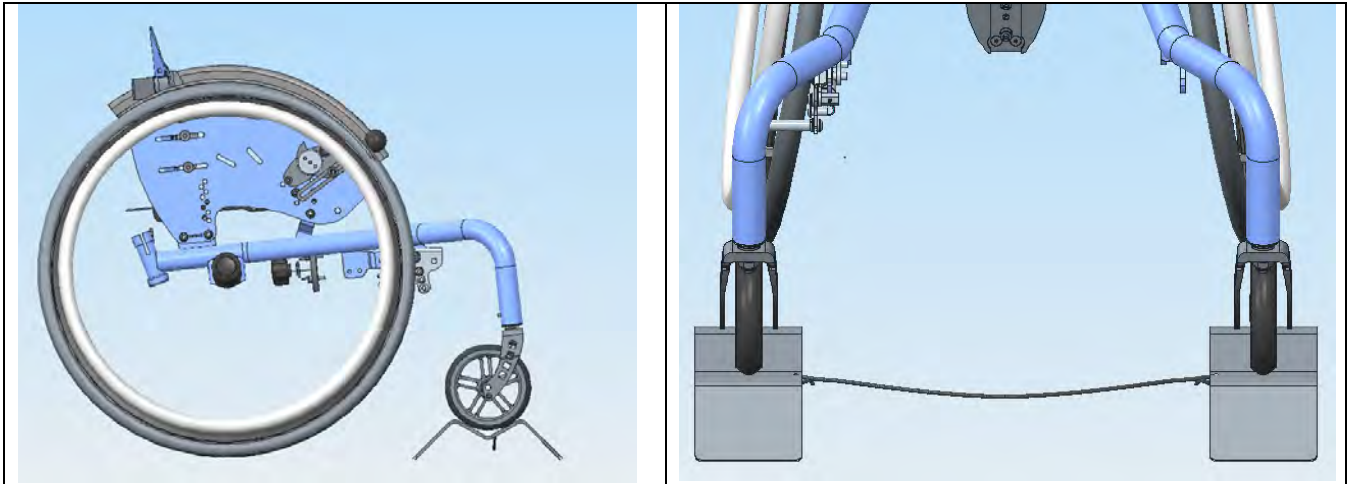


### 1.3 Jack up aid

Align the swivel casters of your wheelchair so that they point straight ahead.

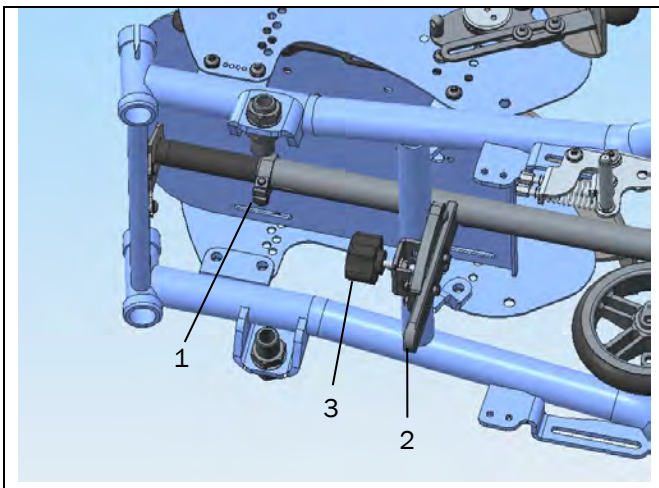
Position the jack up aid so that it is approximately in the middle of the swivel casters.

Then tie the cord so that it is loosely tensioned in this position between the two jack up aids. Apply the wheel lock of the wheelchair.



### 1.4 Assembly of the front end component

Open the clamp (item 1) of the cone tube. Insert the guiding pins of the height adjustment (item 2) into the front holding plate. Tighten the star grip (item 3) firmly. Insert the cone tube into the rear holding plate up to the stop. Close the clamp of the cone tube.



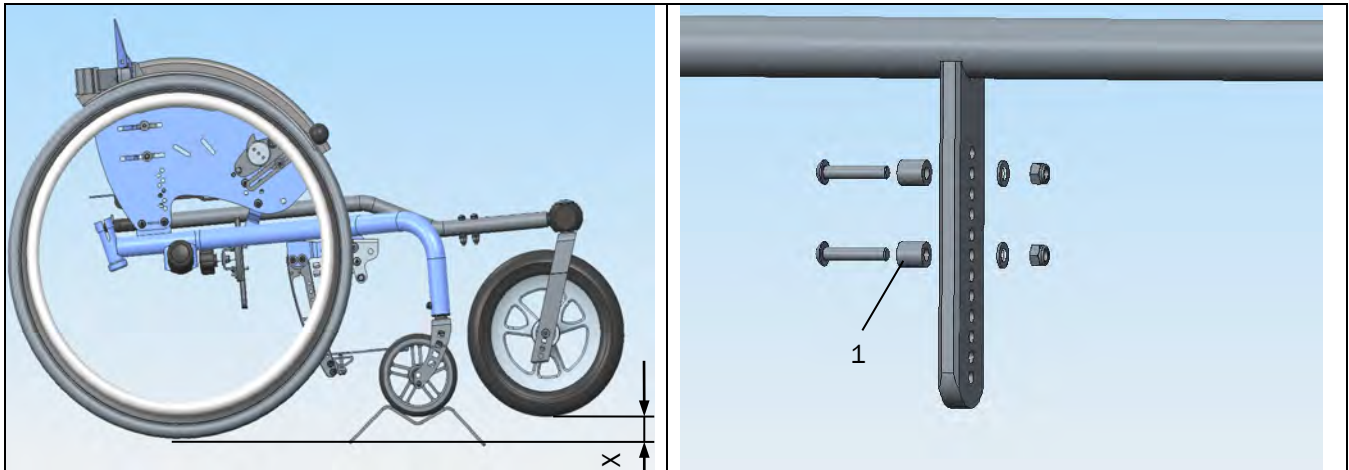


### 1.5 Height adjustment of the outdoor front end

The front end caster should now have a distance (X) of 20 to 25mm to the ground.

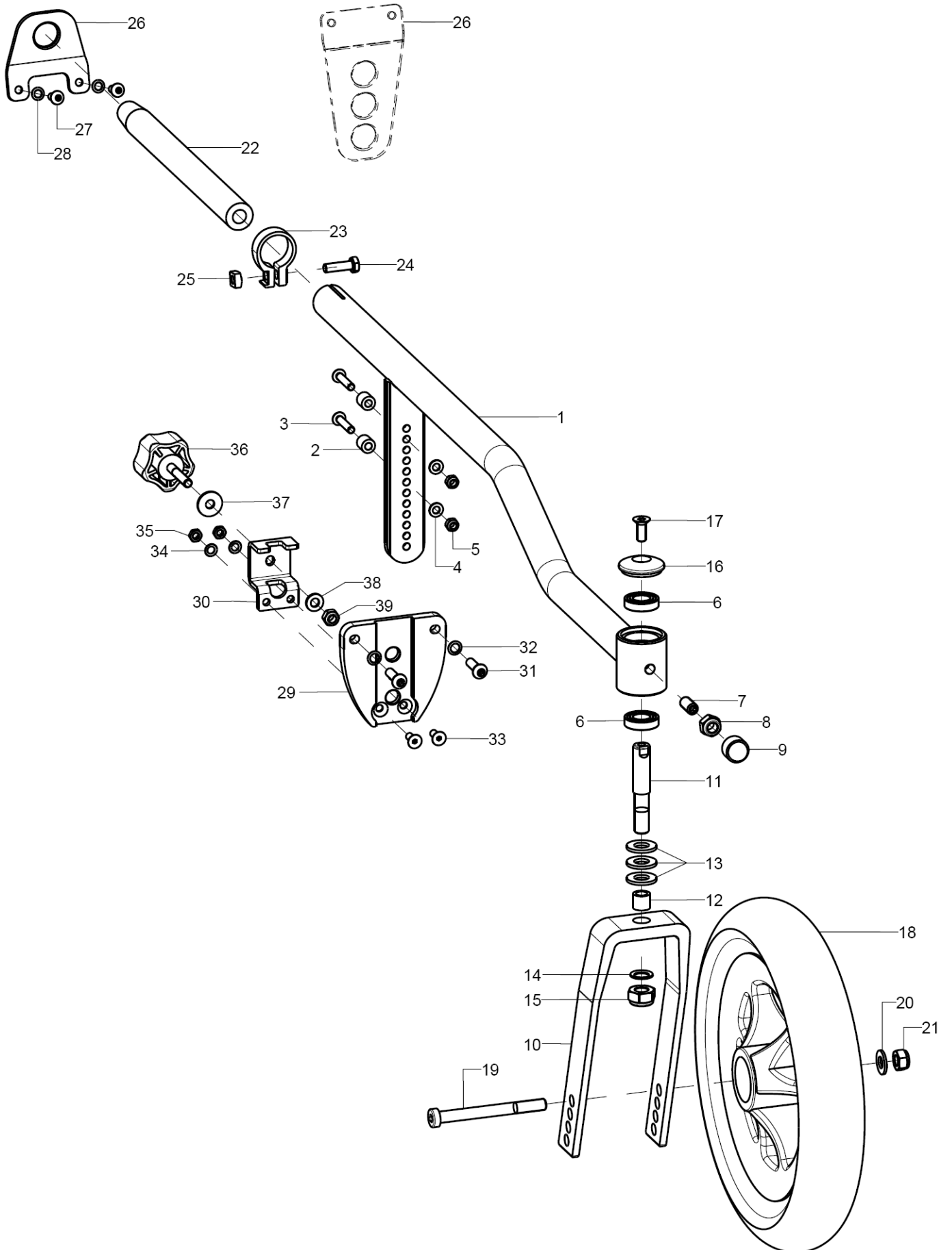
The distance between the ground and the front end caster can be adjusted in two ways.

- Shifting of the front end caster in the caster fork. Retighten the screw fittings after setting firmly (tightening torque 7Nm).
- By shifting the intake pins (item 1) in the height adjustment.



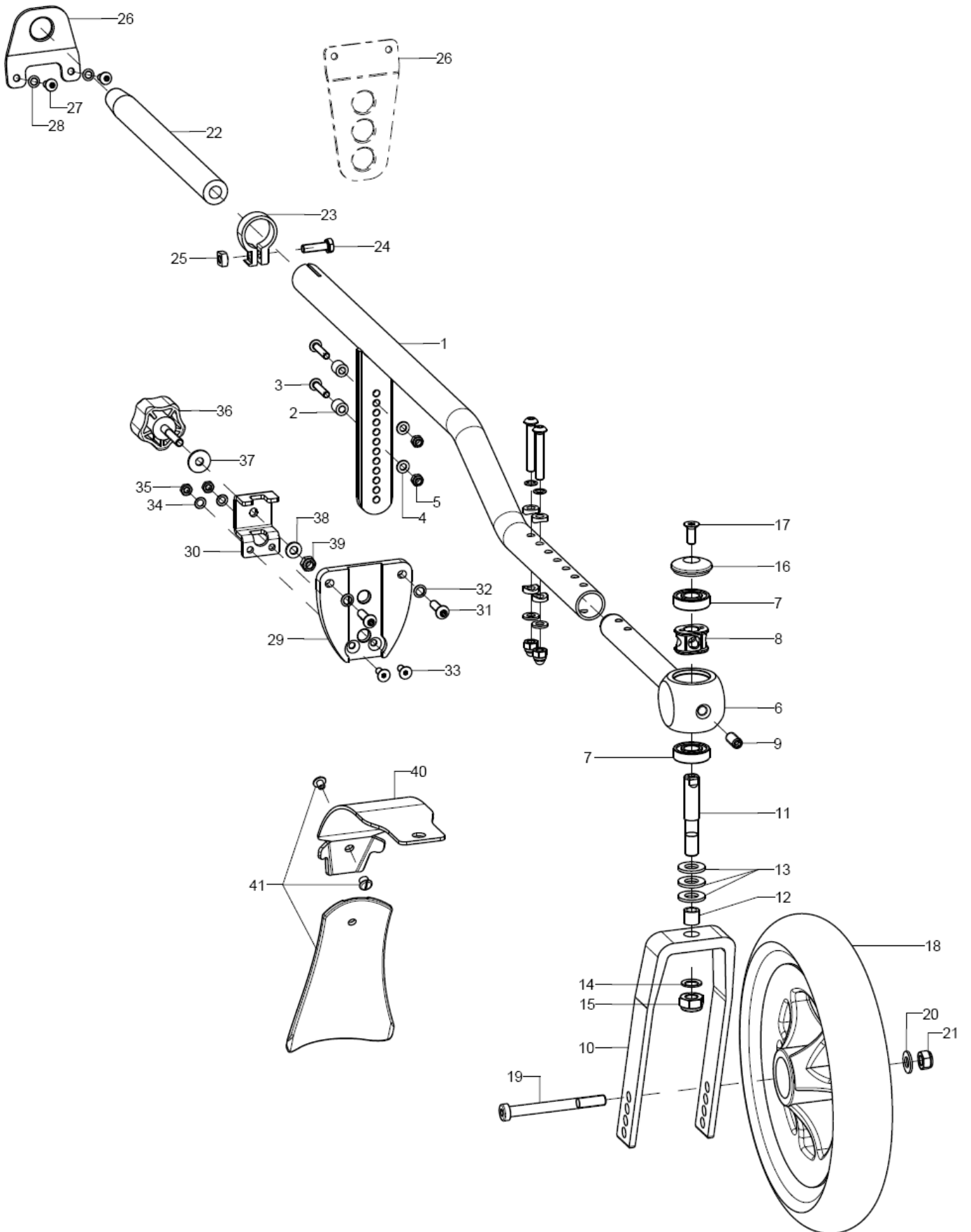
Please check that the structure is securely positioned in the intake and locked into place correctly. Release the wheel lock and lower the wheelchair from the jack up aid.

2.1 Replacement parts list Mlo (up to XX/2015)



Item	M/1	Drawing No.	Type No.	Item designation	Variant
1 - 39	1	XXXXXXXXXXXXXXXX	599517	Outdoor front end for Mio, cpl. (please specify LLL)	Lower leg length > 16 cm Lower leg length <16 cm
1 - 9	1	59.95.15.01.00.73	59957301	Front end tube black for outdoor front end, Mio incl. ball bearing, pressure spring piece and screw fitting	
2	2			Distance sleeve N0370, Ø10xM6x10	
3	2			Pan-head screw with hexagon socket ISO 7380, M5x25	
4	2			Washer DIN 125 - A 5.3	
5	2			Hexagon nut self-locking low form DIN 985 - M5	
6	2			Deep groove ball bearing ø24/12x6	
7-9	1		285103	Pressure spring piece M8x19 incl. nut and cap	
8	1			Hexagon nut self-locking low form DIN 985 - M8	
9	1			Hexagonal protective cap for SW13, black, (M8	
10	1	28.44.01.01.00.00	2844	Caster fork 60x189, black for outdoor front end	
11	1	28.50.00.03.00.10	285101	Steering axle 65 mm for track fixation	
12 -17	1		284499	Assembly set caster fork outdoor front end; (cover cap, Torx screw, sleeve, washers, nut)	
12	1	04.31.10.14.01.01		DU bushing slotted, Ø10/12x10	
13	3(2)			Washer DIN 125 - A 10.5	2 pcs. for splash guard assembly
14	1			Securing washer S10 - FST vz	
15	1			Hexagon nut self-locking low form DIN 985-M10	
16	1		282108	Adapter cap	
17	1			Countersunk screw with Torx ISO 14581 - M6x16 vz, black	
18	1	04.52.43.10.00.10	2837	Caster ø250x50, 6 spokes for outdoor front end incl. pneumatic tyres black	
19 -21	1		283799	Assembly set caster outdoor front end (cylinder screw M8x80, washer, nut)	
19	1			Cylinder screw DIN 7984 M8x80	
20	1			Washer DIN 125 - A 8.4	
21	1			Hexagon nut self-locking low form DIN 985 - M8	
22 -25	1	59.95.15.04.00.73	59957304	Cone tube Ø20x5x230 incl. assembly accessories	
23	1	59.95.15.06.00.73		Clamp D24	
24	1			Hexagon head screw DIN 933 M6x20 - 8.8 vz	
25	1			Hexagon nut self-locking low form DIN 985 - M6	
26 -28	1	59.95.15.05.00.73	59957305	Holding plate rear short, black for OTV Mio incl. assembly material	Lower leg length from 16 cm
altern.	1	59.95.15.09.00.73	59957306	Holding plate rear long, black for OTV Mio incl. assembly material	Lower leg length <16 cm
27	2			Pan-head screw with hexagon socket ISO 7380, M5x12	
28	2			Securing washer S5 - FST vz	
29 -39	1	59.95.15.03.00.73	59957303	Holding plate front, black for OTV Mio incl. spacer with star grip and assembly material	
30	1	59.95.15.08.00.73		Spacer	
31	2			Pan-head screw with hexagon socket ISO 7380, M6x20	
32	2			Securing washer S6 - FST vz	
33	2			Countersunk screw with hexagon socket DIN 7991 M5x12 - A2	
34	2			Securing washer S5 - FST vz	
35	2			Low hexagon nut DIN 439 M5	
36	1			5 star grip ø40 - M6x35 external thread, black	
37	1			Washer DIN 9021 - 6.4 - St vz	
38	1			Washer DIN 125 - A 6.4 - PA black	
39	1			Hexagon nut self-locking low form DIN 985 - M6	

2.2 Replacement parts list Mlo (from XX/2015) + Mlo Carbon Design 2018



Item	M/1	Drawing No.	Type No.	Item designation	Variant
1 - 41	1	XXXXXXXXXXXXXXXX	599517	Telescopic outdoor front end for Mio, cpl. (please specify LLL)	Lower leg length > 16 cm Lower leg length <16 cm Mio Carbon <small>Design 2018</small>
1 - 5	1	59.95.15.01.00.73	59957302	Front end tube black for outdoor front end, Mio incl. screw fitting	
2	2			Distance sleeve N0370, Ø10xM6x10	
3	2			Pan-head screw with hexagon socket ISO 7380, M5x25	
4	2			Washer DIN 125 - A 5.3	
5	2			Hexagon nut self-locking low form DIN 985 - M5	
6-8	1	59.95.35.09.00.77	59957310	Telescopic steering head bearing pre-assembled	
7	2		200011	Deep groove ball bearing ø 28/12x8 6001z	
8	1	28.05.01.04.00.00		Damper element	
9	1		285103	Pressure spring piece M8x19	
10	1	28.44.01.01.00.00	2844	Caster fork 60x189, black for outdoor front end	
11	1	28.50.00.03.00.10	285101	Steering axle 65 mm for track fixation	
12-17	1		284499	Assembly set caster fork outdoor front end; (cover cap, Torx screw, sleeve, washers, nut)	
12	1	04.31.10.14.01.01		DU bushing slotted, Ø10/12x10	
13	3(2)			Washer DIN 125 - A 10.5	2 pcs. for splash guard assembly
14	1			Securing washer S10 - FST vz	
15	1			Hexagon nut self-locking low form DIN 985-M10	
16-17	1	28.21.07.02.00.10	282108	Cover cap aluminium ø 32, black (caster/outdoor front end) incl. assembly screw M6x16 Torx)	
17	1			Countersunk screw with Torx ISO 14581 - M6x16 vz, black	
18	1	04.52.43.10.00.10	2837	Caster ø250x50, 6 spokes for outdoor front end incl. pneumatic tyres black	
19-21	1		283799	Assembly set caster outdoor front end (cylinder screw M8x80, washer, nut)	
19	1			Cylinder screw DIN 7984 M8x80	
20	1			Washer DIN 125 - A 8.4	
21	1			Hexagon nut self-locking low form DIN 985 - M8	
22-25	1	59.95.15.04.00.73	59957304	Cone tube Ø20x5x230 incl. assembly accessories	
23	1	59.95.15.06.00.73		Clamp D24	
24	1			Hexagon head screw DIN 933 M6x20 - 8.8 vz	
25	1			Hexagon nut self-locking low form DIN 985 - M6	
26-28	1	59.95.15.05.00.73	59957305	Holding plate rear short, black for OTV Mio incl. assembly material	Lower leg length from 16 cm
altern.	1	59.95.15.09.00.73	59957306	Holding plate rear long, black for OTV Mio incl. assembly material	Lower leg length <16 cm
altern.	1	59.95.16.10.00.73	59957307	Holding plate rear, black for outdoor front end for Mio Carbon 2018	For Mio Carbon <small>Design 2018</small>
27	2			Pan-head screw with hexagon socket ISO 7380, M5x12	
28	2			Securing washer S5 - FST vz	
undisc losed	2			Pan-head screw with hexagon socket ISO 7380, M6x35	For Mio Carbon <small>Design 2018</small>
undisc losed	4			Washer DIN 125 - A 6.4	For Mio Carbon <small>Design 2018</small>
undisc losed	2			Cap nut with clamping part DIN 986 - M6	For Mio Carbon <small>Design 2018</small>
29-39	1	59.95.15.03.00.73	59957303	Holding plate front, black for OTV Mio incl. spacer with star grip and assembly material	
30	1	59.95.15.08.00.73		Spacer	
31	2			Pan-head screw with hexagon socket ISO 7380, M6x20	
32	2			Securing washer S6 - FST vz	
33	2			Countersunk screw with hexagon socket DIN 7991 M5x12 - A2	
34	2			Securing washer S5 - FST vz	
35	2			Low hexagon nut DIN 439 M5	
36	1			5 star grip ø40 - M6x35 external thread, black	

37	1			Washer DIN 9021 - 6.4 - St vz	
38	1			Washer DIN 125 - A 6.4 - PA black	
39	1			Hexagon nut self-locking low form DIN 985 - M6	
40-41	1	59.95.20.10.00.00	59952012	Plastic splash guard incl. holder	
40	1	59.95.20.11.01.00		Splash guard holder	
41	1	59.95.20.12.00.00	59952013	Plastic splash guard for outdoor front end	

**Outdoor front end for wheelchair model Mio Move from 2017**

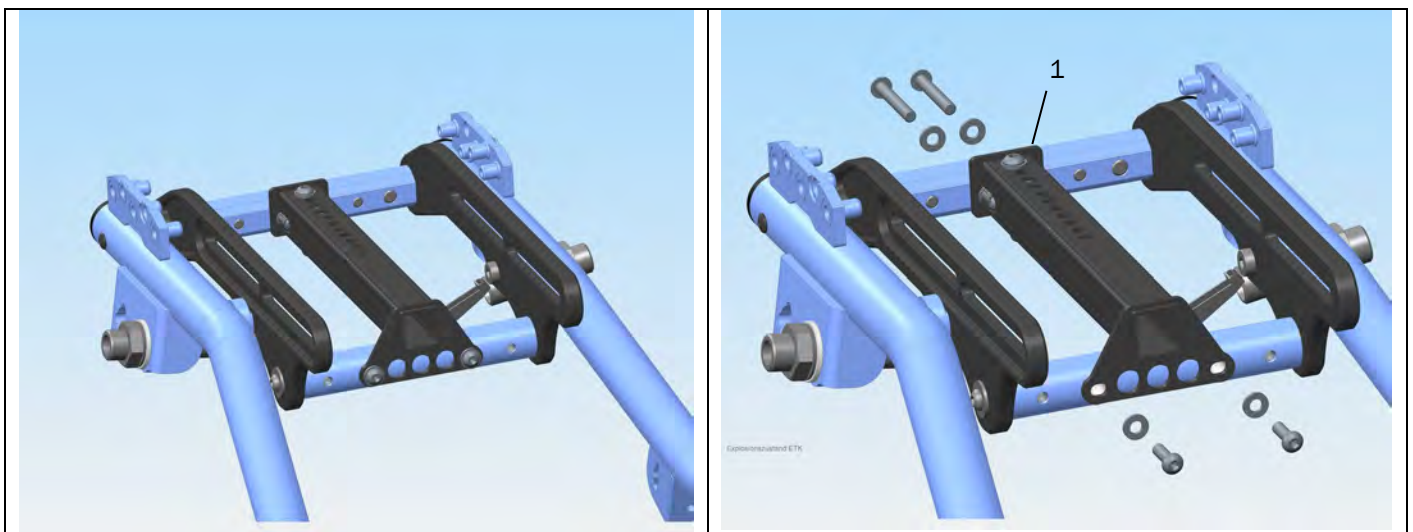


**1 Assembly**

The outdoor front end comes in 3 sizes, depending on the driving wheel size. You will be automatically supplied with the right size for your wheelchair ex works.

**1.1 Mounting the intake on the wheelchair**

Mount the intake (item 1) on the frame.

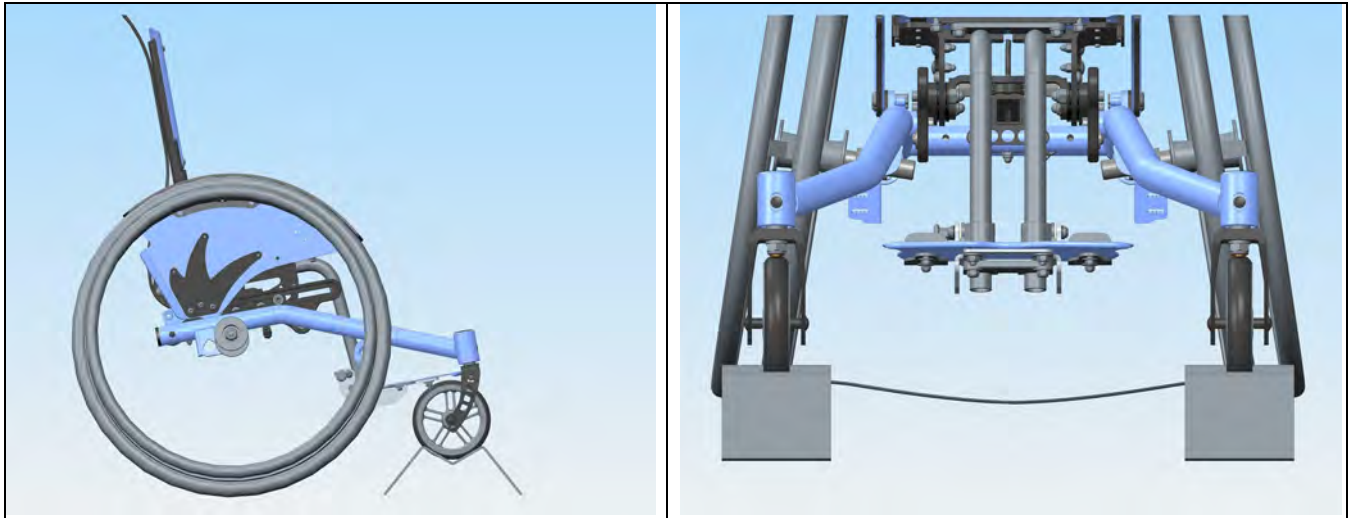


### 1.2 Jack up aid

Align the swivel casters of your wheelchair so that they point straight ahead.

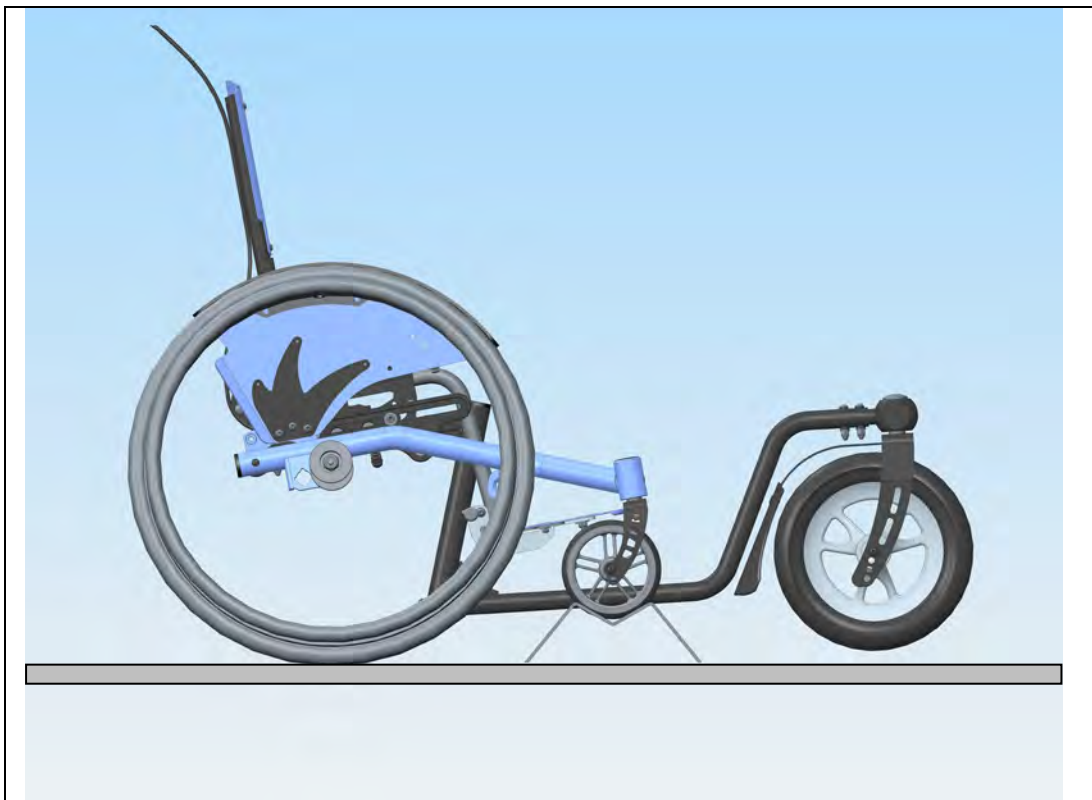
Position the two jack up aids so that they are approximately in the middle of the swivel casters.

Then tie the cord so that it is loosely tensioned in this position between the two jack up aids. Apply the wheel lock.



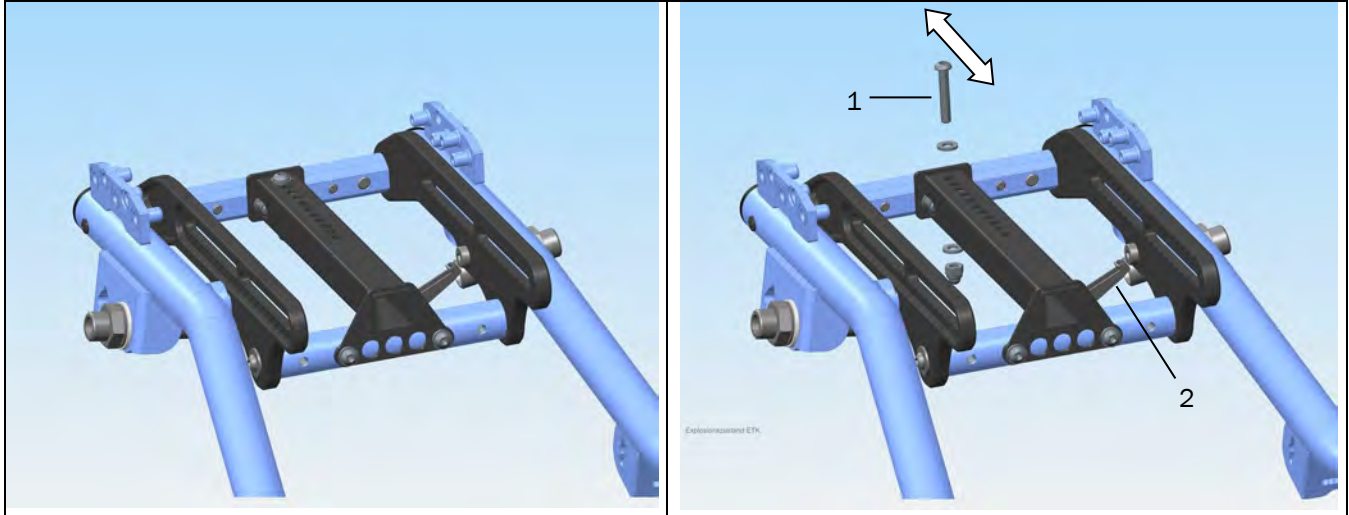
### 1.3 Insert front end component

Now insert the front end component into the intake that has already been mounted.





You are now able to adjust the insertion depth of the front end component.  
 Adjust the stop screw so that the footrest does not collide with the front end component when the seat is tilted. The stop screw can be mounted in both the vertical and the horizontal bores.  
 Tighten the clamp lever (item 2) firmly after mounting the front end component.

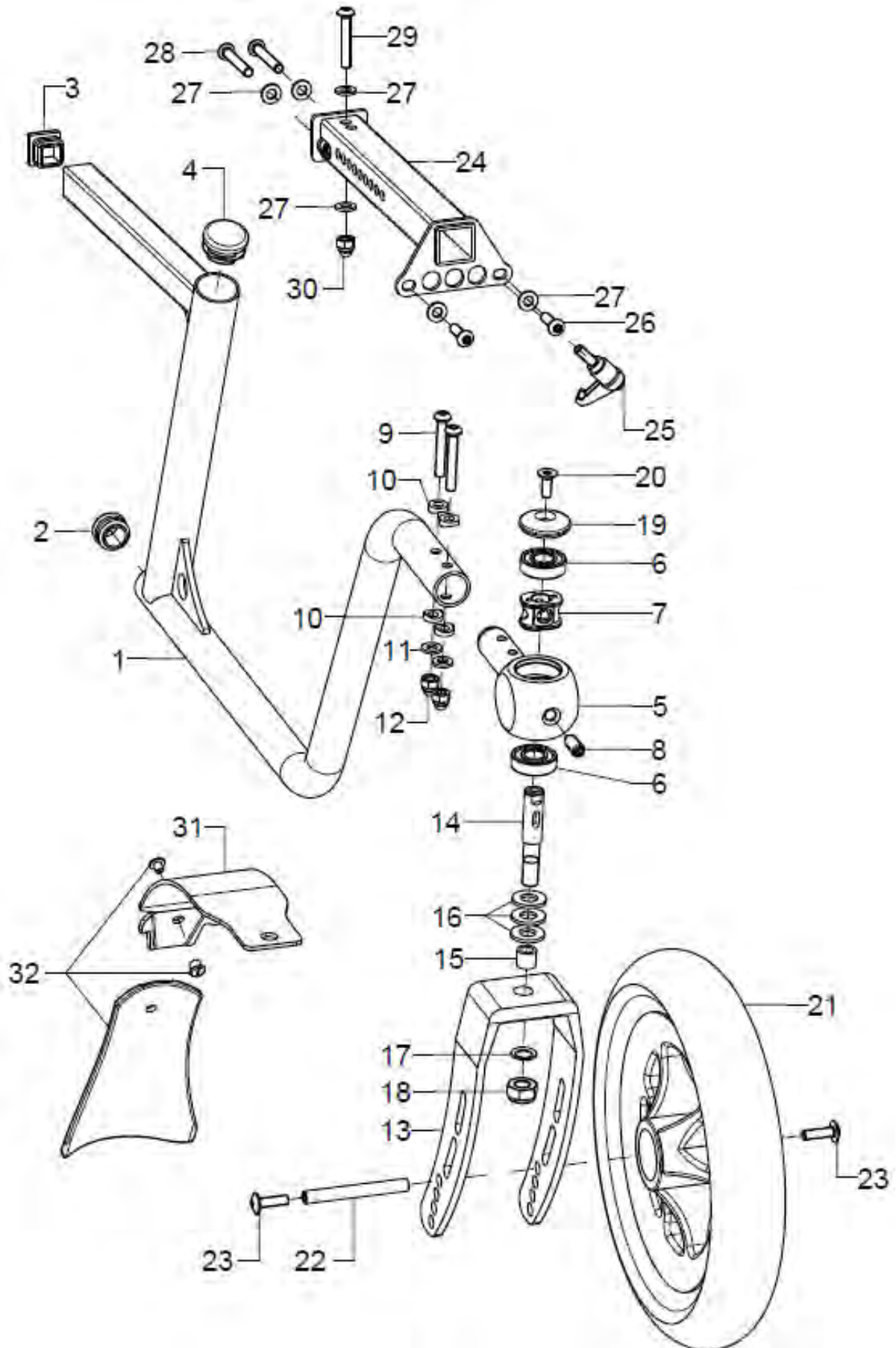


**1.4 Splash guard (optional)**

Remove the nut and washer from the caster fork. Use the splash guard instead of the washer. Then retighten the screw fittings firmly.



**2. Replacement parts list Mlo Move from 2017**



Item	M/1	Drawing No.	Type No.	Item designation	Variant
1 - 32	1	59.95.36.20.00.77	59953620	Outdoor front end for 20" wheel size cpl. (Mio Move)	
undisc losed	1	59.95.36.22.00.77	59953622	Outdoor front end for 22" wheel size cpl. (Mio Move)	
undisc losed	1	59.95.36.24.00.77	59953624	Outdoor front end for 24" wheel size cpl. (Mio Move)	
1-4	1	59.95.36.20.00.77	59953604	Front end tube bent, black for outdoor front end/OTV at 20" incl. plug and assembly material	
undisc losed	1	59.95.36.22.00.77	59953605	Front end tube bent, black for outdoor front end/OTV at 22" incl. plug and assembly material	
undisc losed	1	59.95.36.24.00.77	59953606	Front end tube bent, black for outdoor front end/OTV at 24" incl. plug and assembly material	
2	1	04.63.10.22.00.10		Plug with ribs for tube ø22x1-2, black	
3	1	04.63.11.20.00.10		Ribbed plugs 20x20	
4	1	04.63.10.28.00.10		Plug for tube 28x1-3; black	
5-12		59.95.36.03.99.77	59953603	Steering head bearing for outdoor front end/OTV with ball bearing and damper cpl.	
6	2	04.32.12.08.00.10	200011	Deep groove ball bearing Ø28/12x8 60001z	
7	1	28.05.01.04.00.00		Damper element	
8	1	04.14.50.80.21.20	285103	Pressure spring piece M8x19	
9	2	01.42.08.60.65.00		Pan-head screw with hexagon socket ISO 7380- M6x40	
10	4	35.04.16.01.00.10		Saddle washer aluminium 6	
11	2	02.61.06.41.41.20		Washer DIN 125 - A 6.4	
12	2	02.33.00.60.11.20		Cap nut with clamping part DIN 986 - M6 - 6	
13	1	28.44.01.01.00.00	2844	Caster fork 60x189, black for outdoor front end	
14-20	1		284499	Assembly set caster fork outdoor front end (Cover cap, Torx screw, sleeve, washers, nuts)	
15	1	04.31.10.14.01.01		DU bushing slotted, Ø10/12x10	
16	3(2)	02.61.10.51.81.20		Washer DIN 125 - A 10.5	2 pcs. for splash guard assembly
17	1	02.99.11.00.01.10		Securing washer S10 - FST vz	
18	1	02.32.10.00.01.20		Hexagon nut self-locking DIN 985 - M10	
19-20	1	28.21.07.02.00.10	282108	Cover cap aluminium ø 32, black (caster/outdoor front end) incl. assembly screw M6x16 Torx)	
20	1	01.66.08.52.92.20		Countersunk screw with Torx ISO 14581 - M6x16 vz, black	
21-23	1	04.52.43.10.00.10	2837	Caster ø250x50, 6 spokes for outdoor front end incl. pneumatic tyres black	
22	1	28.16.07.05.00.00		Caster sleeve 68X8XM6	
23	1	01.43.08.47.62.50		Pan-head screw ISO 7380-2 M6x20 black	
24-30	1	59.95.36.01.00.77	59953601	Square intake for outdoor front end/OTV, black 25x25mm incl. assembly material	
25	1	04.13.10.60.16.50		Clamp lever adjustable M6x16, black	
26	2	01.42.08.54.05.00		Pan-head screw with hexagon socket ISO 7380 - M6x20	
27	6	02.61.06.41.41.20		Washer DIN 125 - A 6.4	
28	2	01.42.08.60.65.00		Pan-head screw with hexagon socket ISO 7380 - M6x40	
29	1	01.42.08.59.65.00		Pan-head screw with hexagon socket ISO 7380 - M6x35	
30	1	02.33.00.60.11.20		Cap nut with clamping part DIN 986 - M6	
31-32	1		59952012	Plastic splash guard incl. holder	
31	1	59.95.20.11.01.00		Splash guard holder	
32	1	59.95.20.12.00.00	59952013	Plastic splash guard for outdoor front end	

**Outdoor front end for wheelchair model Mlo Design 2018**

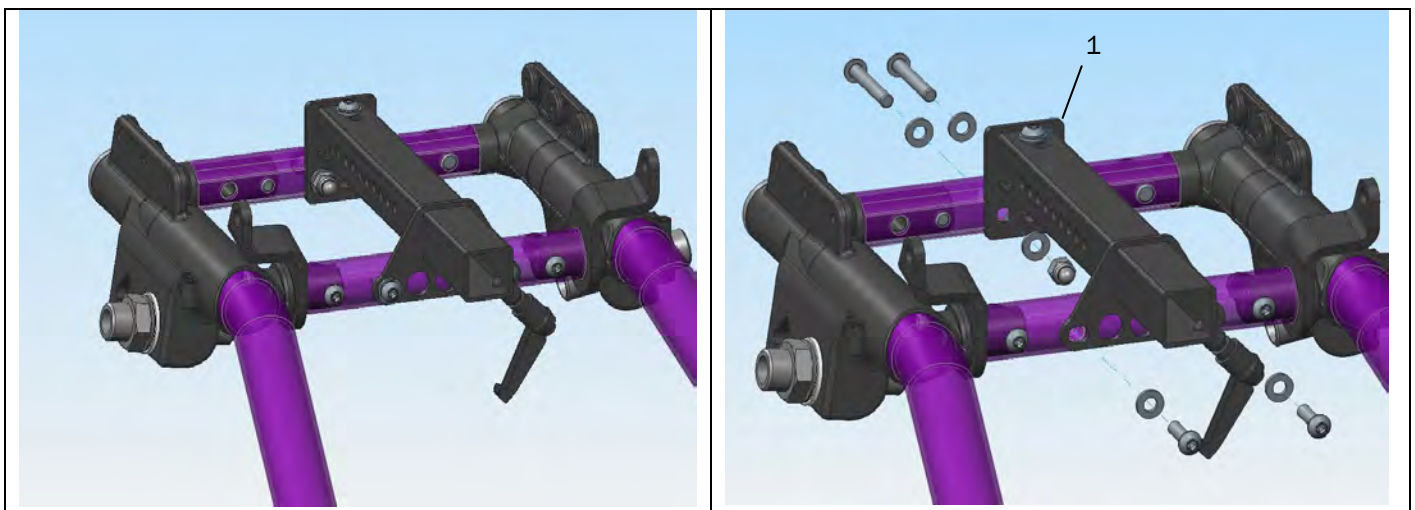


**1 Assembly**

**1.1 Mounting the intake on the wheelchair**

The intake for 20" and 22" driving wheels is assembled over the crossbeams as shown.  
 The intake for 24" driving wheels is assembled under the crossbeams.

Mount the intake (item 1) on the frame.

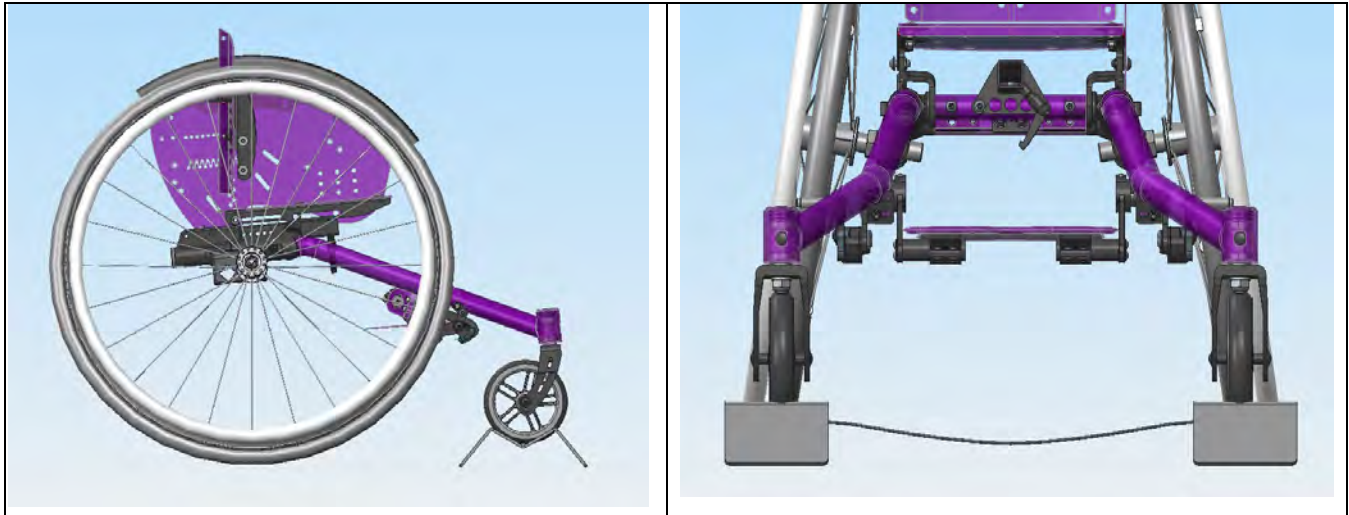


### 1.2 Jack up aid

Align the swivel casters of your wheelchair so that they point straight ahead.

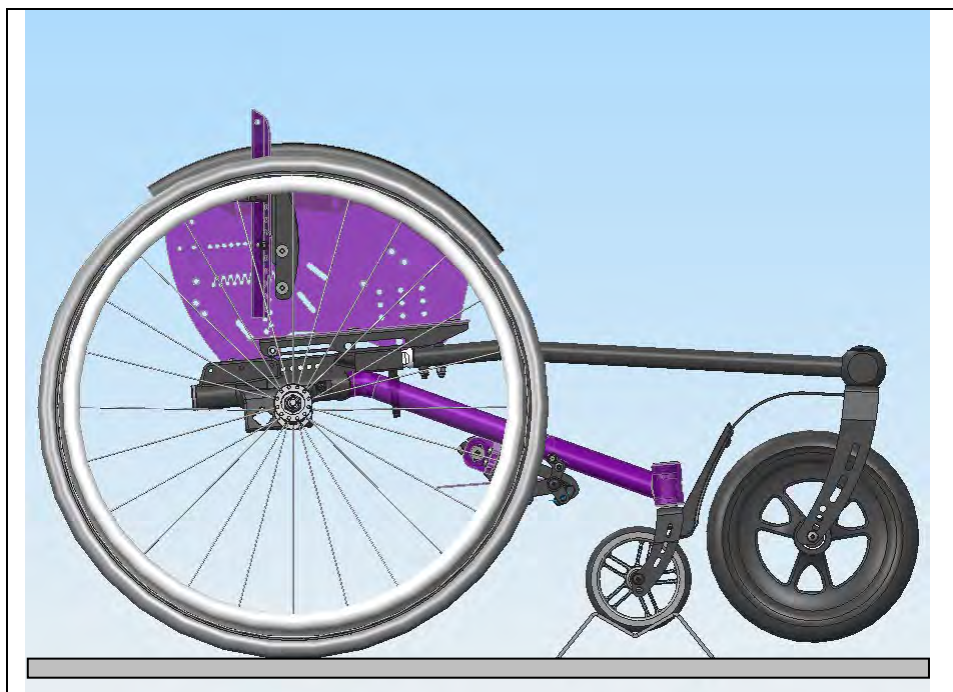
Position the two jack up aids so that they are approximately in the middle of the swivel casters.

Then tie the cord so that it is loosely tensioned in this position between the two jack up aids. Apply the wheel lock.

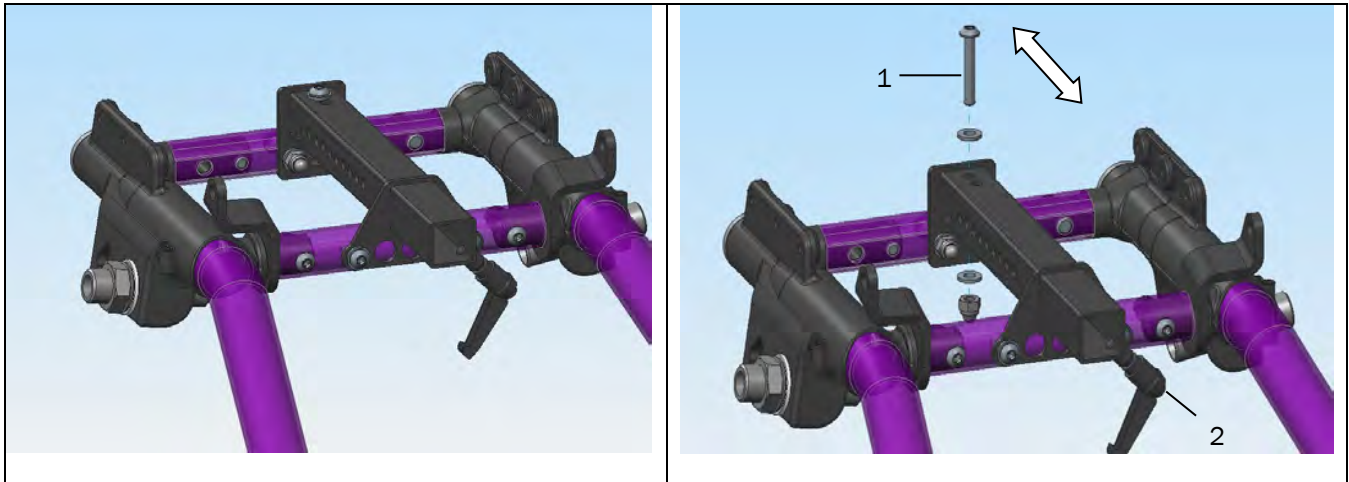


### 1.3 Insert front end component

Now insert the front end component into the intake that has already been mounted.



You are now able to adjust the insertion depth of the front end component.  
The stop screw can be mounted in both the vertical and the horizontal bores.  
Tighten the clamp lever (item 2) firmly after mounting the front end component.

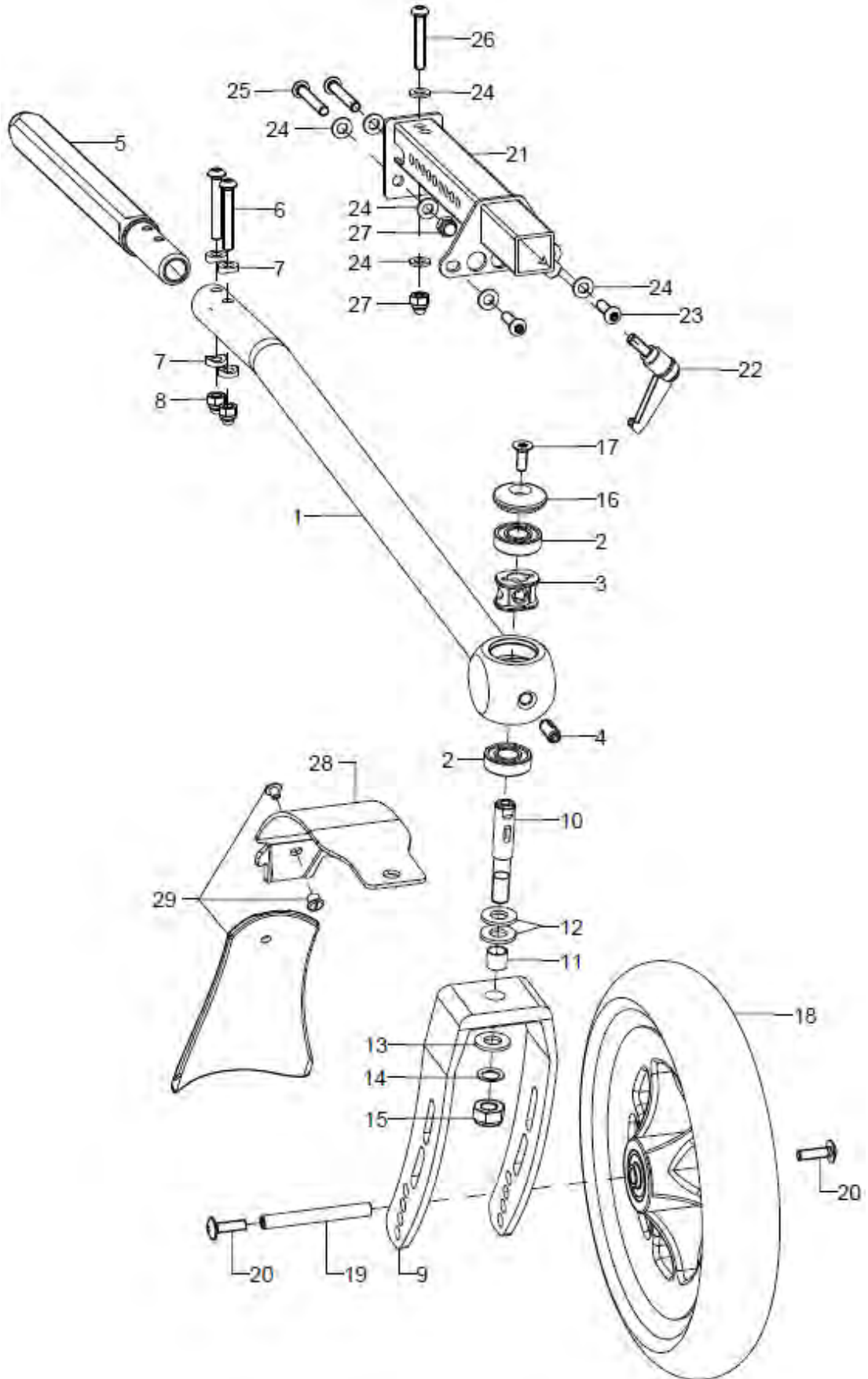


#### 1.4 Splash guard (optional)

Remove the nut and washer from the caster fork. Use the splash guard instead of the washer. Then retighten the screw fittings firmly.



### 2. Replacement parts list Mlo Design 2018



Item	M/1	Drawing No.	Type No.	Item designation	Variant
1 - 27	1		599536	Outdoor front end for Mio <sup>Design</sup> 2018	
1-4	1	59.95.36.18.00.78	59953618	Front end tube Mio <sup>Design</sup> 2018 incl. assembly material	
2	2	04.32.12.08.00.10	200011	Deep groove ball bearing Ø28/12x8 60001z	
3	1	28.05.01.04.00.00		Damper element	
4	1	04.14.50.80.21.20	285103	Pressure spring piece M8x19	
5-8	1	59.95.36.16.00.78	59953616	Mio-ODV adapter	
6	2	01.42.08.60.65.00		Pan-head screw with hexagon socket ISO 7380- M6x40	
7	4	35.04.16.01.00.10		Saddle washer aluminium 6	
8	2	02.33.00.60.11.20		Cap nut with clamping part DIN 986 - M6 - 6	
9	1	28.44.01.01.00.00	2844	Caster fork 60x189, black for outdoor front end	
10	1		285101	Steering axle 65 mm for track fixation	
11-17	1		284499	Assembly set caster fork outdoor front end (Cover cap, Torx screw, sleeve, washers, nuts)	
11	1	04.31.10.14.01.01		DU bushing slotted, Ø10/12x10	
12	2	02.61.10.51.81.20		Washer DIN 125 - A 10.5	
13	1	02.61.10.51.81.20		Washer DIN 125 - A 10.5	For assembly without splash guard
14	1	02.99.11.00.01.10		Securing washer S10 - FST vz	
15	1	02.32.10.00.01.20		Hexagon nut self-locking DIN 985 - M10	
16-17	1	28.21.07.02.00.10	282108	Cover cap aluminium ø 32, black (caster/outdoor front end) incl. assembly screw M6x16 Torx)	
17	1	01.66.08.52.92.20		Countersunk screw with Torx ISO 14581 - M6x16 vz, black	
18-20	1	04.52.43.10.00.10	2837	Caster ø250x50, 6 spokes for outdoor front end incl. pneumatic tyres black	
19	1	28.16.07.05.00.00		Caster sleeve 68X8XM6	
20	2	01.43.08.47.62.50		Pan-head screw ISO 7380-2 M6x20 black	
21-27	1	59.95.36.15.00.78	59953615	Mio-ODV intake welded	
22	1	04.13.10.60.16.50		Clamp lever adjustable M6x16, black	
23	2	01.42.08.54.05.00		Pan-head screw with hexagon socket ISO 7380 - M6x20	
24	8	02.61.06.41.41.20		Washer DIN 125 - A 6.4	
25	2	01.42.08.60.65.00		Pan-head screw with hexagon socket ISO 7380 - M6x40	
26	1	01.42.08.59.65.00		Pan-head screw with hexagon socket ISO 7380 - M6x35	
27	3	02.33.00.60.11.20		Cap nut with clamping part DIN 986 - M6	
28-29	1		59952012	Plastic splash guard incl. holder	
28	1	59.95.20.11.01.00		Splash guard holder	
29	1	59.95.20.12.00.00	59952013	Plastic splash guard for outdoor front end	



**Outdoor front end Alron****Attention, please note:**

The outdoor front end is only permitted up to the maximum load of the wheelchair.

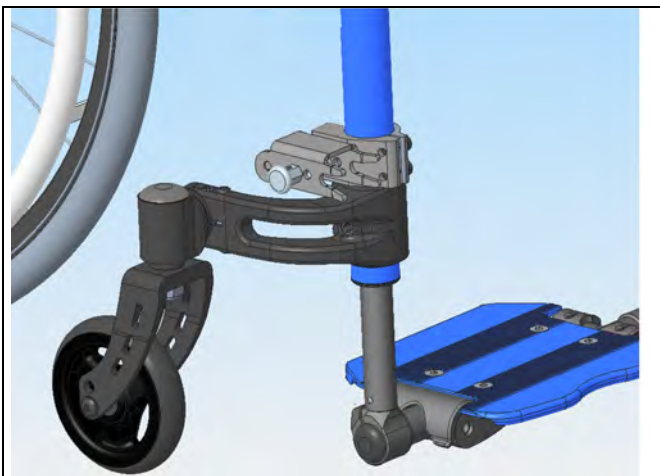
When attached to models from other manufacturers, the outdoor front end is suitable for a maximum load of 100 kg.

## 1. Assembly

### 1.1 Adapter



Mount the outdoor front end adapter to the frame as shown.

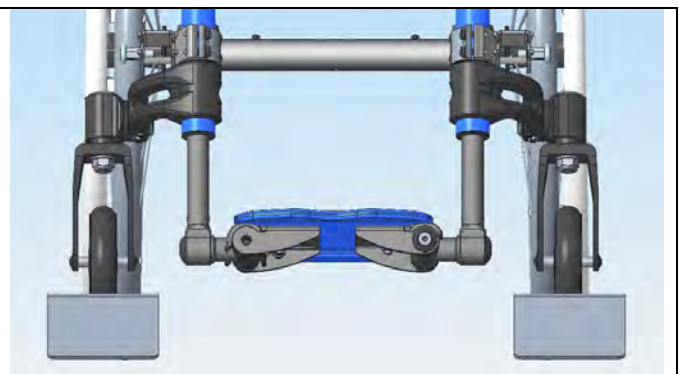


### 1.2 Jack up aid

Align the caster wheels of your wheelchair.

Position the two jack up aids so that they are approximately in the middle in front of the caster wheels.

Then tie the cord so that it is loosely tensioned in this position between the two jack up aids.

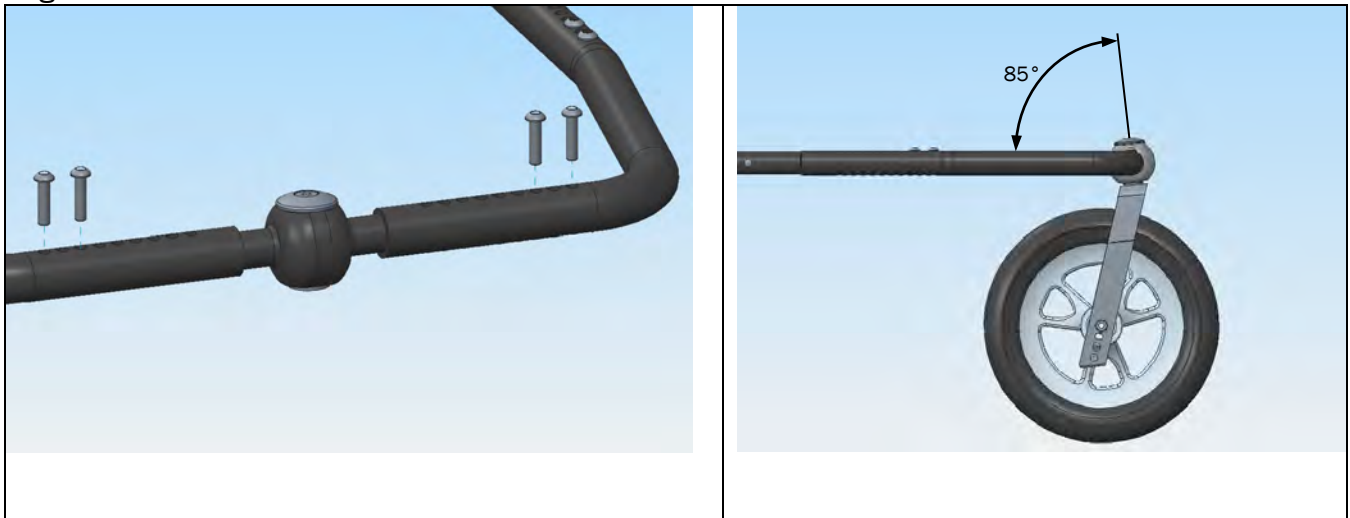


### 1.3.1 Outdoor front end (set width)

#### Outdoor stem (adjust width)

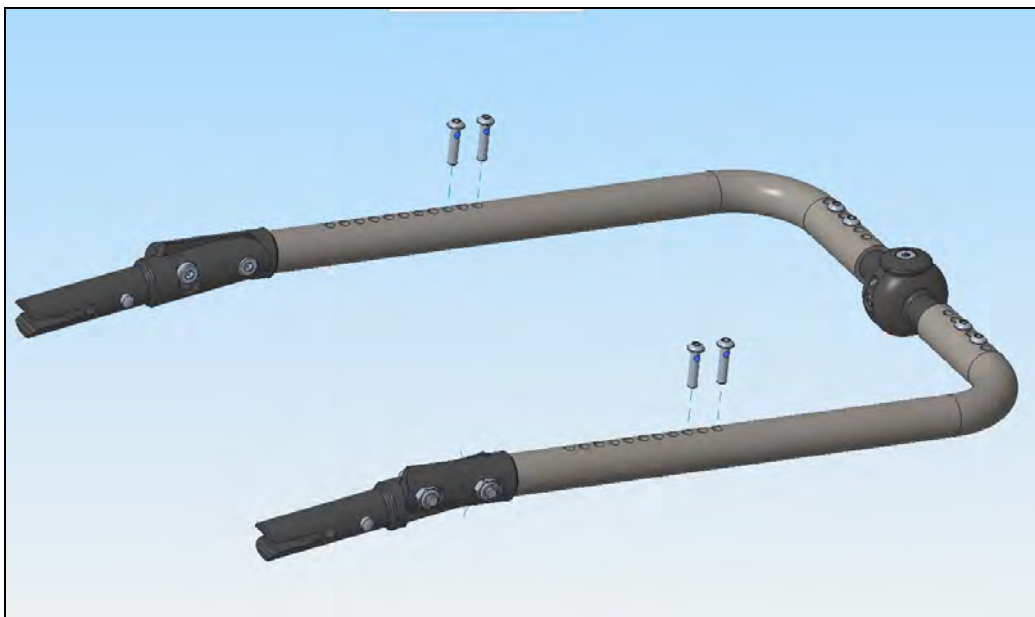
There are 5 sizes of the front compartment for this wheelchair model, named here as size 1, size 2, size 3, size 4 and size 5. You will automatically receive the right size for your wheelchair ex works. If necessary, the width of the front part must be adjusted to the width of your wheelchair. To do this, remove the screws on the front part of the front end and set the correct width. Retighten the screw connections (tightening torque 10Nm). The exact setting positions and the drillings to be used are described in chapter "3 Model overview" for all suitable wheelchair models.

To do this, remove the screw connection in the front part of the front end and set the correct width. Make sure that the telescopic steering head bearing including the caster wheel is installed at an angle of 5°.



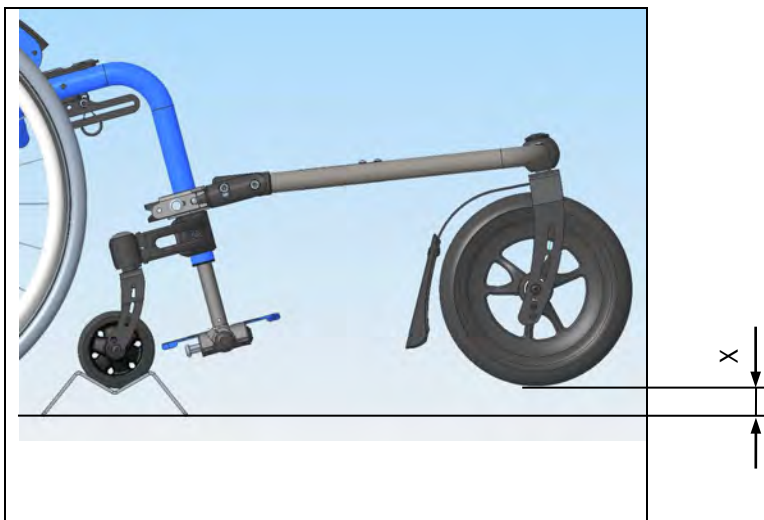
### 1.3.2 Outdoor front end (set length)

In addition, the outdoor front end is telescopic in length. You can adjust the front end tubes to your desired length. To do so, remove the screw connections on the front end tubes and set the correct length. Retighten the screw connections (tightening torque 10Nm).



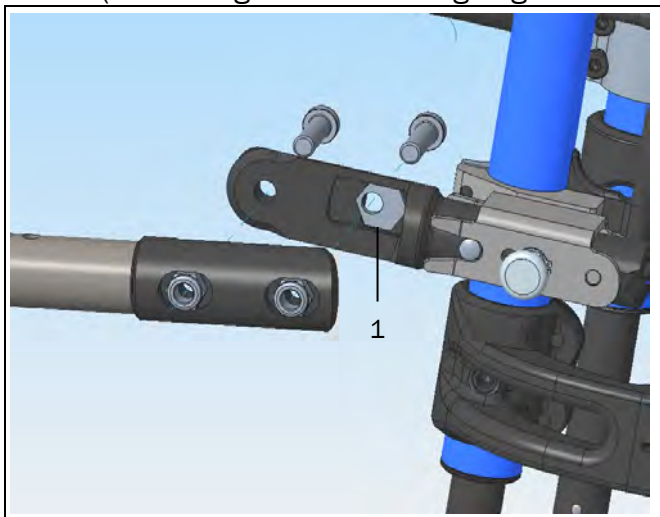
#### 1.4 Height adjustment of the outdoor front end

Place the wheelchair on a level surface with the front end attached and the caster wheels on the jacking aid. The front end caster wheel should now have a distance of 20 to 25mm to the ground (X)..



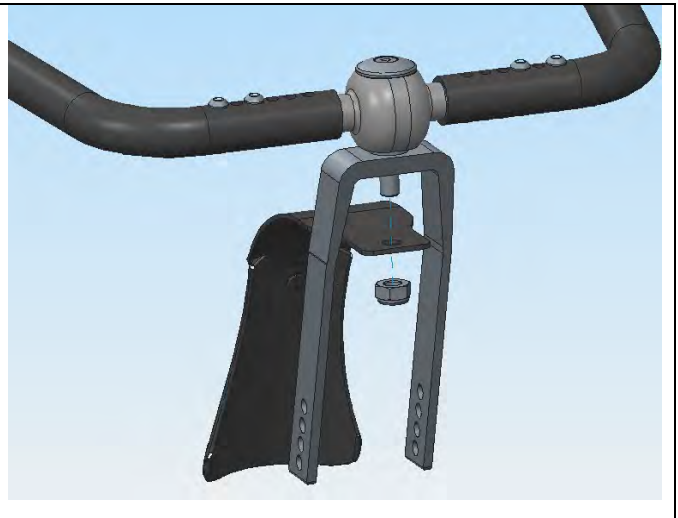
The distance between the ground and the front end caster wheel can be adjusted in two ways.

- Relocation of the front end caster in the caster fork. Tighten the screw connection again after the adjustment (tightening torque 7Nm)
- By turning the hexagonal adjustment disk (item 1) on both sides (this changes the mounting angle of the outdoor adapter).



**1.5 Splash guard (Optional)**

Remove the nut and washer from the caster fork. Use the splash guard instead of the washer. Then retighten the screw fittings firmly.



**2. Procedure**

Bring the anti-tipper into its functional position



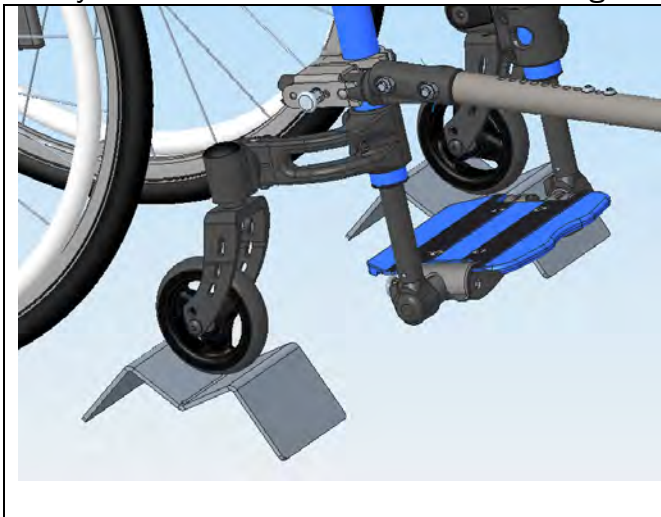
Place the wheelchair with both caster wheels on the jacking aid.



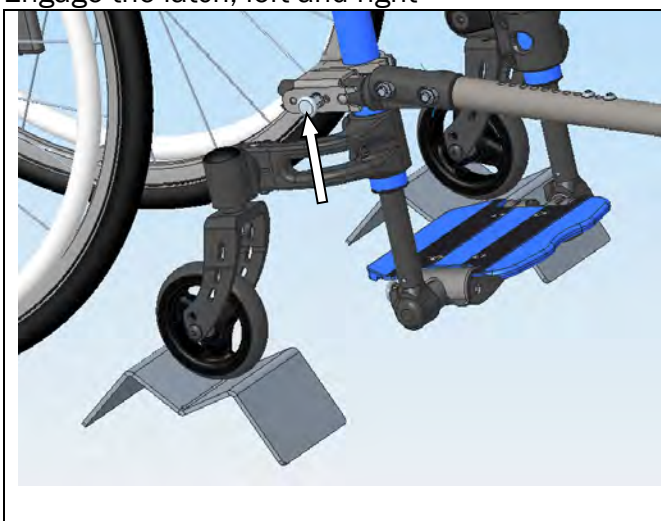
Apply the wheelchair's parking brake.  
Lock the latch on the left and right in the open position



Evenly insert the front end on the left and right into the adapters as far as it will go.



Engage the latch, left and right



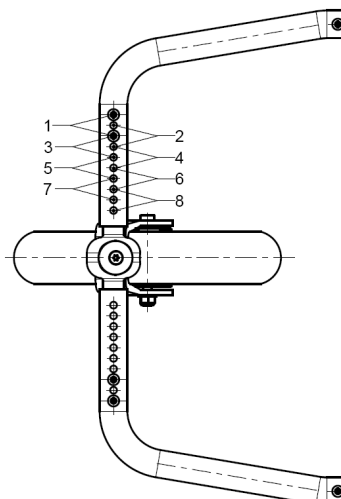
Please check that the construction is securely positioned in the holder and that it is locked into place correctly.

Release the parking brake and lower the wheelchair from the jacking device.

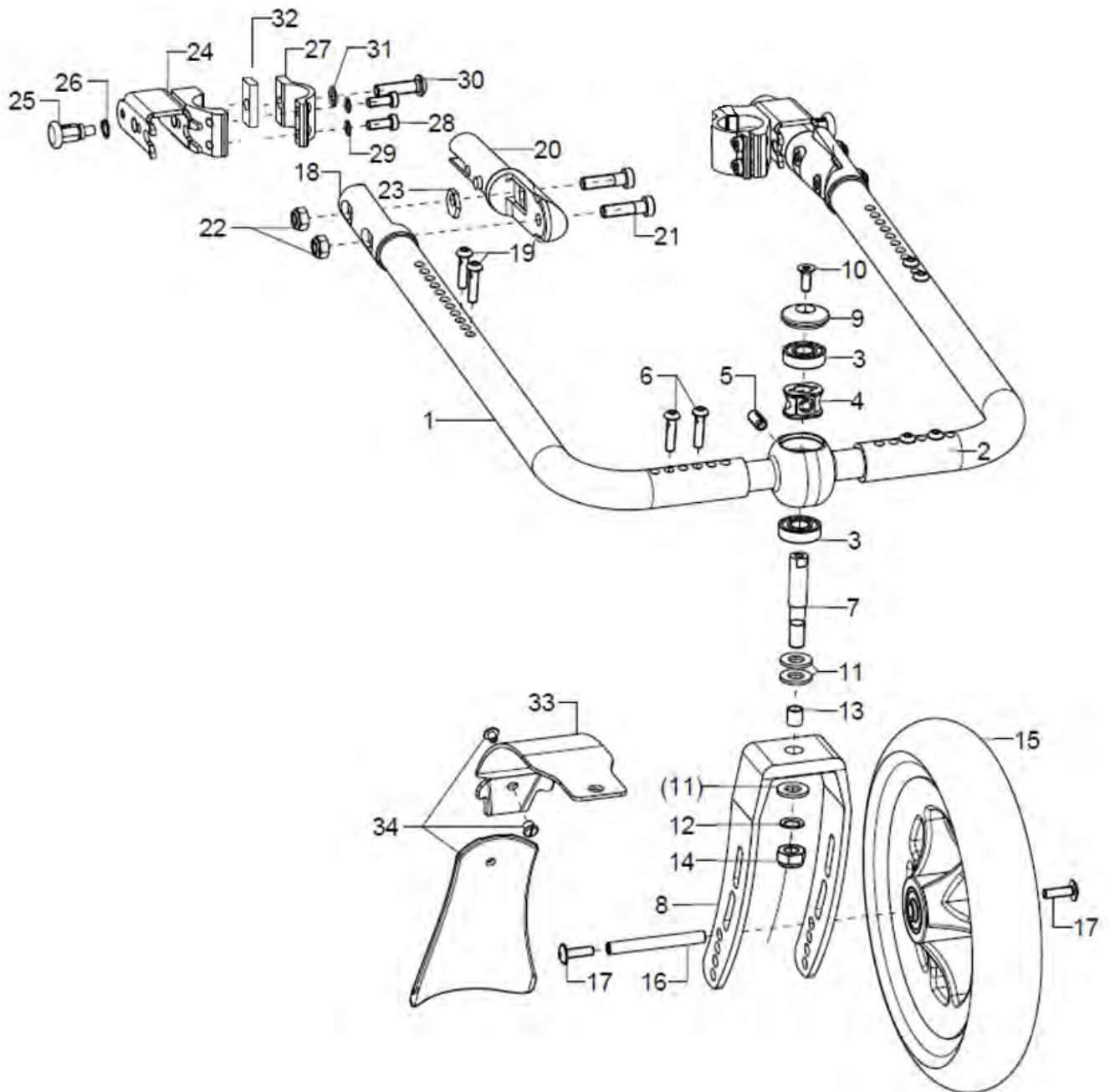
**3. Model overview / size chart for assembly without hemi adapter**

Model SW	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54
Jump alpha abdu	sz. 1 3	sz. 2 1	sz. 2 2	sz. 2 3	sz. 2 4	sz. 4 1	sz. 4 2	sz. 4 3								
Jump alpha gerade			sz. 1 2	sz. 1 3	sz. 2 1	sz. 2 2	sz. 2 3	sz. 2 4								
Jump beta abdu				sz. 2 3	sz. 2 4	sz. 4 1	sz. 4 2	sz. 4 3	sz. 4 4	sz. 4 5	sz. 4 6	sz. 4 7	sz. 4 8	sz. 5 4		
Jump beta gerade				sz. 1 3	sz. 2 1	sz. 2 2	sz. 2 3	sz. 2 4	sz. 4 1	sz. 4 2	sz. 4 3	sz. 4 4	sz. 4 5	sz. 4 6		
Vector abdu / Dynamis MV		sz. 2 1	sz. 2 2	sz. 2 3	sz. 3 4	sz. 4 1	sz. 4 2	sz. 4 3	sz. 4 4	sz. 4 5	sz. 4 6	sz. 5 2				
Vector gerade			sz. 1 2	sz. 1 3	sz. 2 1	sz. 2 2	sz. 2 3	sz. 3 4	sz. 4 1	sz. 4 2	sz. 4 3	sz. 4 4				
Tilty Vario			sz. 4 2	sz. 4 2	sz. 4 3	sz. 4 4	sz. 4 5	sz. 4 6	sz. 5 2	sz. 5 3	sz. 5 4					
Loop				sz. 4 1		sz. 4 3		sz. 4 5		sz. 5 2		sz. 5 4		sz. 5 6		
Loop RS Dynamis TSD				sz. 4 1	sz. 4 2	sz. 4 3	sz. 4 4	sz. 4 5	sz. 4 6	sz. 5 2	sz. 5 3	sz. 5 4	sz. 5 5	sz. 5 6		
Airon abdu			sz. 2 2	sz. 2 3	sz. 2 4	sz. 4 1	sz. 4 2	sz. 4 3	sz. 4 4	sz. 4 5	sz. 4 6	sz. 5 2	sz. 5 3	sz. 5 4		
Airon gerade			sz. 1 2	sz. 1 3	sz. 2 1	sz. 2 2	sz. 2 3	sz. 2 4	sz. 4 1	sz. 4 2	sz. 4 3	sz. 4 4	sz. 4 5	sz. 4 6		
Airon gekröpft					sz. 1 1	sz. 1 2	sz. 1 3	sz. 2 1	sz. 2 2	sz. 2 3	sz. 2 4	sz. 4 1	sz. 4 2	sz. 4 3		

- Legend:
- sz. 1 Front end tube small, size 1 (together with telescopic steering head bearing 205)
  - sz. 2 Front end tube medium, size 2 (together with telescopic steering head bearing 205)
  - sz. 3 Front end tube large, size 3 (together with telescopic steering head bearing 205)
  - sz. 4 Front end tube large, size 3 (together with telescopic steering head bearing 285)
  - sz. 5 Front end tube XL, size 4 (together with telescopic steering head bearing 285)
  - Green (without stripes): 4cm growable
  - Yellow (horizontally striped) 2cm growable
  - Orange (diagonally striped) wheelchair not growable or growable via side guards
  - 1 – 8: screw fitting as shown in the drawing below.



4. Spare parts list





Item.	M/1	Drawing.-No.	Type.-No.	Item description	Version
1 - 34	1		59953701	Outdoor front end, telescopic, Airon sz. 1 (front end tube size 1 + 205 mm telescopic unit)	SW, frame version (abducted, staight, tapered v-form)
1 - 34	1		59953702	Outdoor front end, telescopic, Airon sz. 2 (front end tube size 1 + 205 mm telescopic unit)	SW, frame version (abducted, staight, tapered v-form)
1 - 34	1		59953704	Outdoor front end, telescopic, Airon sz. 4 (front end tube sz.3+285 mm telescopic unit)	SW, frame version (abducted, staight, tapered v-form)
1 - 34	1		59953705	Outdoor front end, teleskopierbar, Airon Gr. 5 (front end tube sz.4+285 mm telescopic unit)	SW, frame version (abducted, staight, tapered v-form)
1	2	59.95.20.07.00.00	59952007	Front end tube sz.1 for outdoor front end, telescopic	SB, Rahmenvariante (abdu, gerade, gekröpft)
altern.	2	59.95.20.08.00.00	59952008	Front end tube sz.2 for outdoor front end, telescopic	SW, frame version (abducted, staight, tapered v-form)
altern.	2	59.95.20.09.00.00	59952009	Front end tube sz.3 for outdoor front end, telescopic	SW, frame version (abducted, staight, tapered v-form)
altern.	2	59.95.20.13.00.00	59952010	Front end tube sz.4 for outdoor front end, telescopic	SW, frame version (abducted, staight, tapered v-form)
2 - 6	1	59.95.20.01.40.00	59952002	Telescopic unit 205 mm incl. ball bearing, damper element, pressure spring piece and assembly screws	SW, frame version (abducted, staight, tapered v-form)
altern.	1	59.95.20.02.40.00	59952003	Telescopic unit 285 mm incl. ball bearing, damper element, pressure spring piece and assembly screws	SW, frame version (abducted, staight, tapered v-form)
3	2		200011	Deep groove ball bearing $\varnothing$ 28/12x8 6001z	
4	1	28.05.01.04.00.00		Damper element	
5	1	04.14.50.80.21.20	285103	Pressure spring piece M8x19	
6	4	01.43.08.56.65.01		Pan-head screw with hexagon socket. ISO 7380, M6x25, Tuflock	
7	1	28.50.00.03.00.10	285101	Steering axle 65 mm for track fixation	
8	1	28.44.01.01.00.00	2844	Caster fork 60x189, black for outdoor front end	
9 - 14	1		284499	Assembly set caster fork outdoor front end; (cover cap, Torax screw, sleeve, washers, nut)	
9-10	1	28.21.07.02.00.10	282108	Cover cap aluminium $\varnothing$ 32, black (caster/outdoor front end) incl. assembly screw M6x16 Torx)	
10	1			Countersunk screw with Torx ISO 14581 - M6x16 vz, black	
11	3(2)			Washer DIN 125 - A 10.5	2 pcs. For splash guard assembly
12	1			Securing washer S10 - FST vz	
13	1	04.31.10.14.01.01		DU bushing slotted, $\varnothing$ 10/12x10	
14	1			Hexagon nut self-locking low form DIN 985-M10	
15-17	1	04.52.43.10.00.10	2837	Caster $\varnothing$ 250x50, 6 spokes for outdoor front end incl. pneumatic tyres black	
16	1	28.16.07.05.00.00		Caster wheel sleeve 68x8xM6	
17	2	01.43.08.47.62.50		Lens flange screw ISO 7380-2 M6x20 black	
18-23	1		59953706	Telescopic angle adjustment cpl. to the right.	
18-23	1		59953707	Telescopic angle adjustment cpl. to the left.	
18	2	59.95.37.06.00.83		telescope adapter	
19	2	01.43.08.56.65.01		pan head screw with hexagon socket ISO 7380, M6x25, Tuflok	
20	1	59.95.37.05.01.83		Telescope adapter - slot on the left	
o.B.	1	59.95.37.05.02.83		Telescope adapter - slot on the rechts	
21	2			Cylinder head screw DIN 7984 M8x30	
22	2	02.32.00.80.01.20		Hex nut self-locking low form DIN 985-M8	
23	2	59.95.01.06.00.10		Adjusting disc 6-sided	
24-32	1	59.95.37.02.02.83	59953712	Adapter for 90° frame, right incl. clamp and latch	frame 90°
o.B.	1	59.95.37.02.01.83	59953711	Adapter for 90° frame, left incl. clamp and latch	frame 90°
altern.	1	59.95.37.01.02.83	59953714	Adapter for 100° frame, right incl. clamp and latch	frame 100°
o.B.	1	59.95.37.01.01.83	59953713	Adapter for 100° frame, left incl. clamp and latch	frame 100°
25-26	2	04.14.43.60.02.00	690101	Latch $\varnothing$ 6/M10x1x31 with locking device incl. safety ring	
26	1			Safety ring 10, DIN 471	
27	2	59.95.37.07.00.83		Adapter clamp half, black	
28	2	01.24.08.52.02.51		Cylinder head screw DIN 7984 M6x16 TF	
29	2			Lock washer S6 - FST vz	
30	1			lens screw with hexagon socket ISO7380, M8x30	
31	1			Lock washer S8 - FST vz	
32	2	59.95.37.09.00.83		stopper	
o.B.	2	58.50.83.09.00.83		Insert for Airon outdoor front end	Without transport brackets
33-34	2	59.95.20.10.00.00	59952012	Plastic splash guard incl. holder	With transport brackets
33	1	59.95.20.11.01.00		Splash guard holder	
34	1	59.95.20.12.00.00	59952013	Plastic splash guard for outdoor front end	



Notes



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