

Ferrel

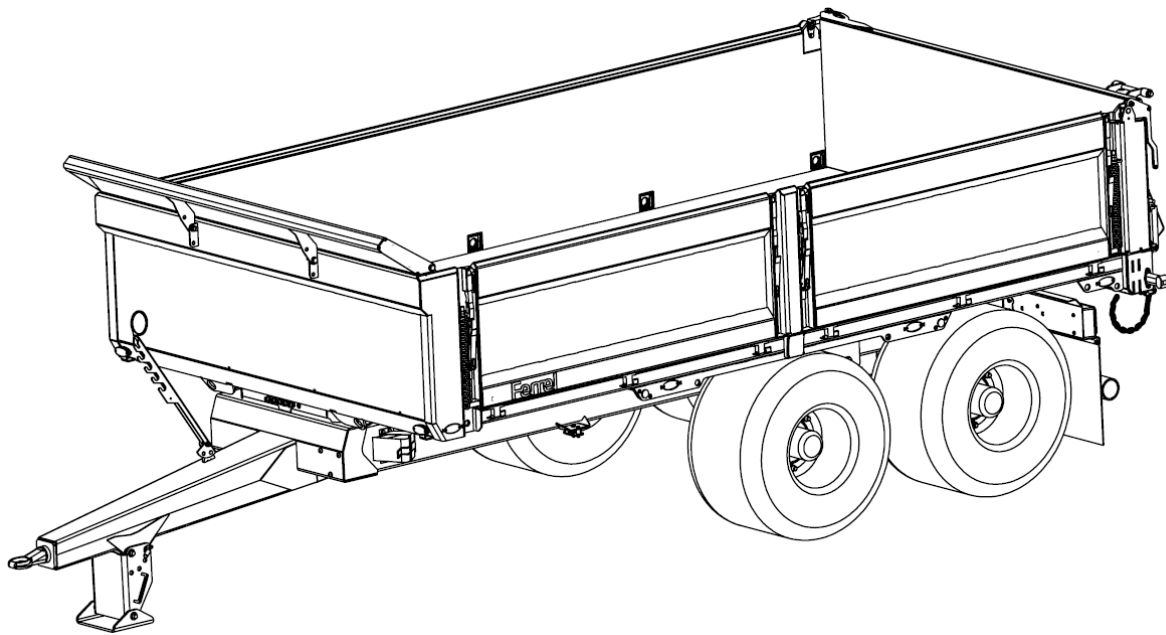
Dumper Trailer

With spreader tailgate (D) (DU)

User manual

Appendix 1

Spare parts and components



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1. SECTIONS AND DETAILS

1. Components for 135 D/ DU

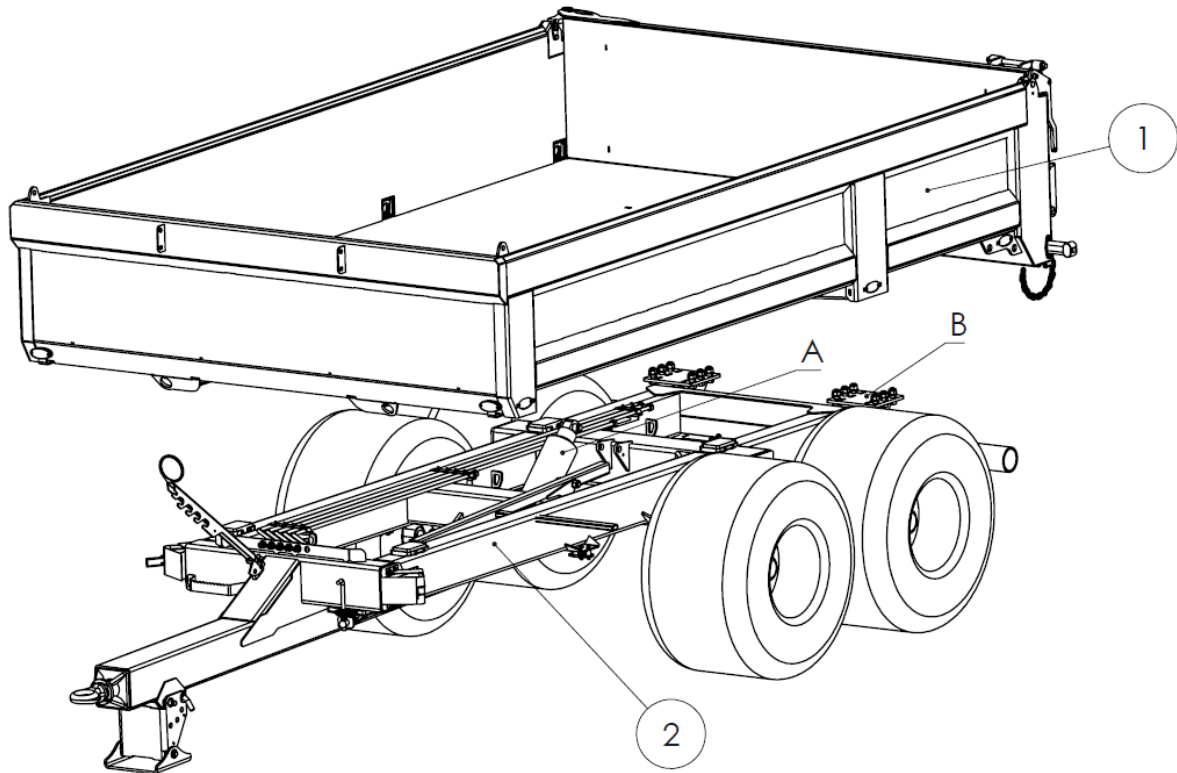
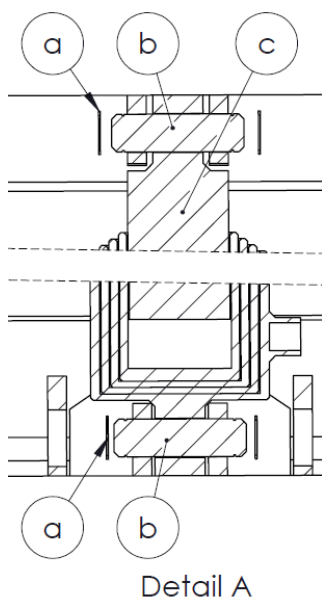


Figure 10. - Main assembly

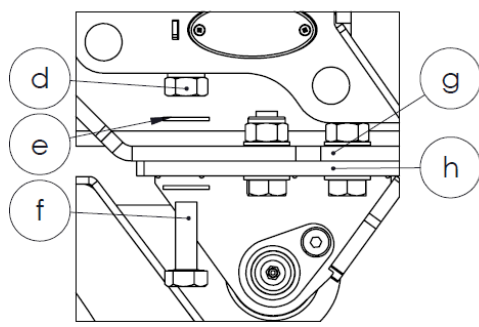
Model	Box "1"	Frame "2"	Tilting cylinder
105D	105D.02.00.00	105R.01.00.00	1x NAS5
105DU	105D.03.00.00	105R.01.00.00	1x NAS5
135D	135D.02.00.00	135R.01.00.00	1x NAT6
135DU	135D.03.00.00	135R.01.00.00	1x NAT6

Table 6. Components of main assembly



Main assembly fastening

- a - Retaining ring DIN 471 D30 (4psc)
- b - Pin ST0013 D30 L80 (2psc)
- c - Tilting cylinder (1psc)



- d – Nut DIN 985 M20 (12psc)
- e – Washer DIN 125 M20 (24psc)
- f – Bolt DIN 933 M20x55 (12psc)
- g – Box
- h - Frame

DETAIL B

Figure 11. – Components for main assembly fastening

2. Spare parts of frame 105R

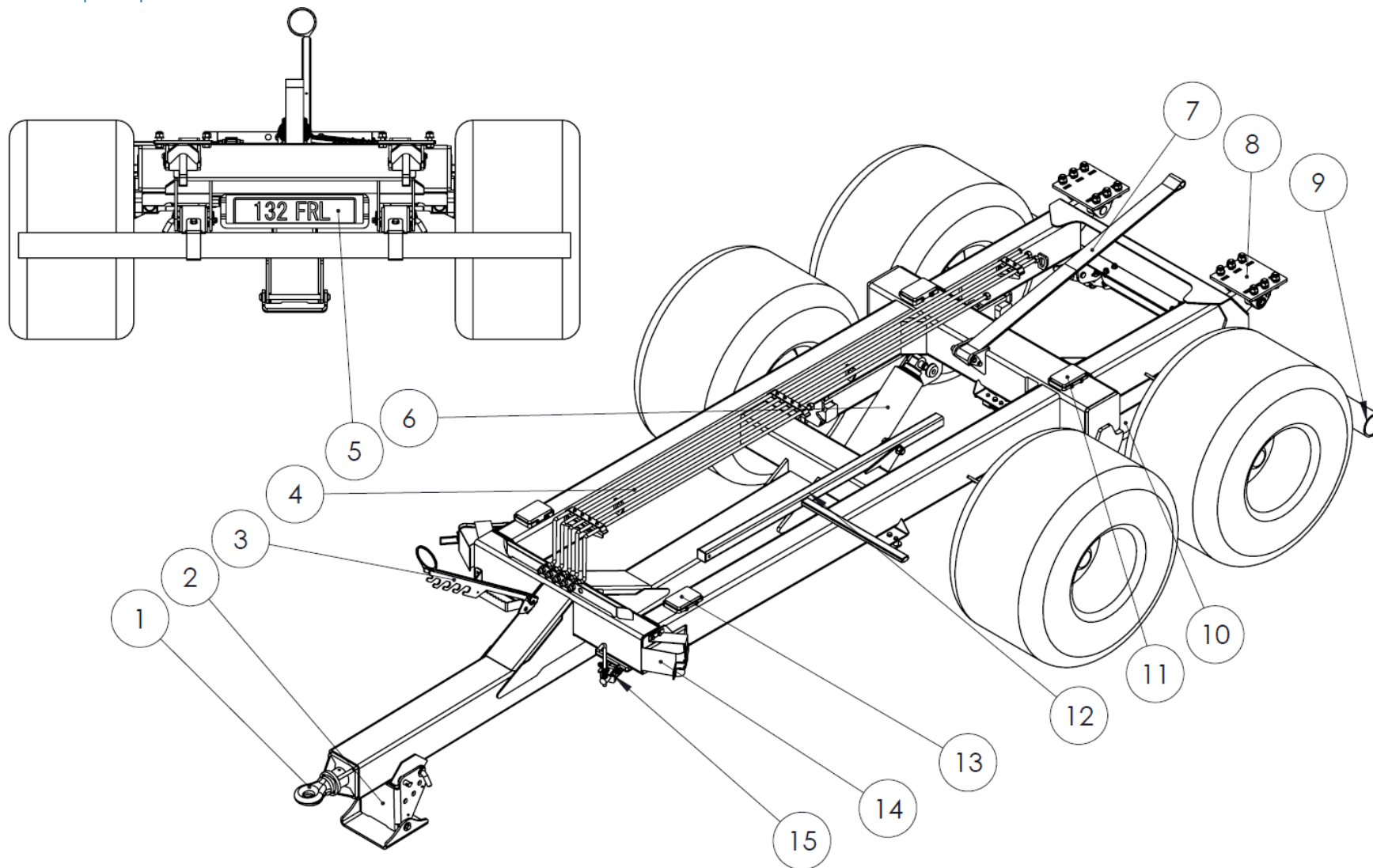
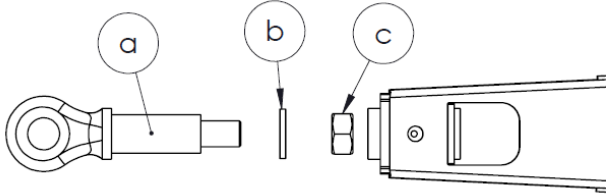
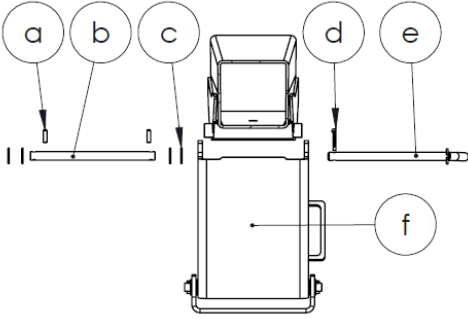
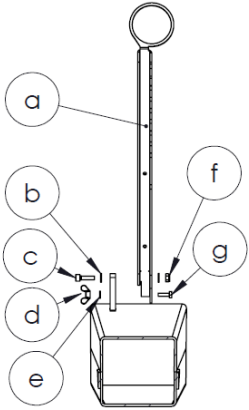
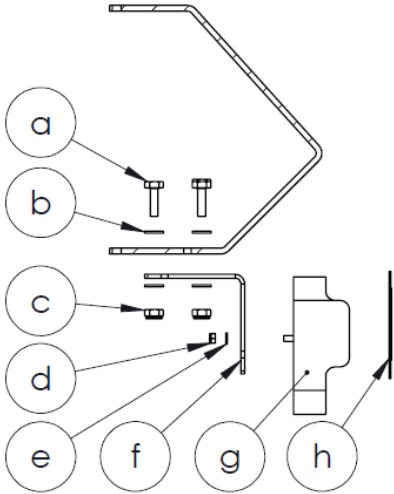
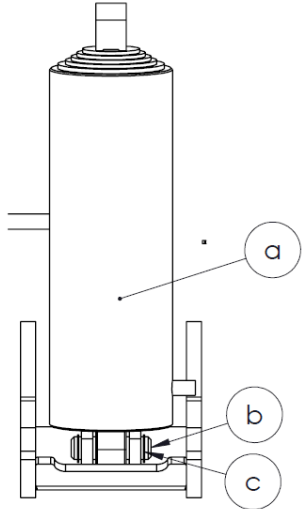
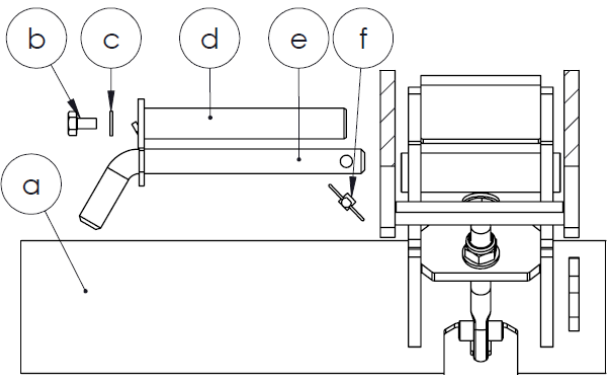
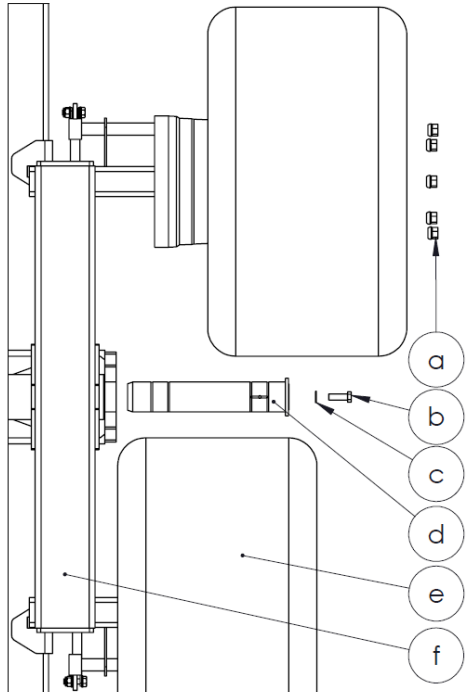


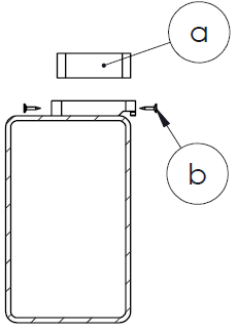
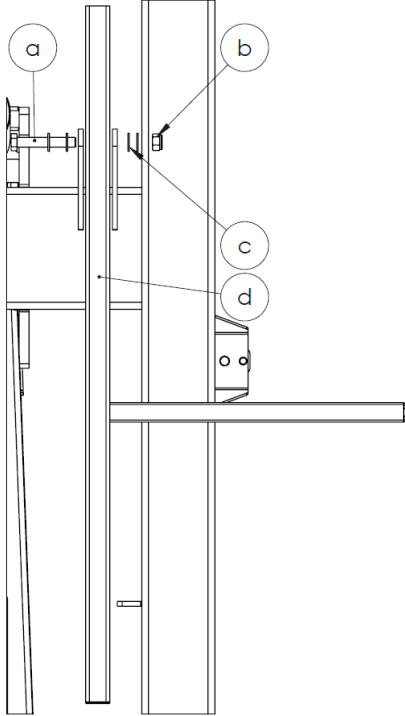
Figure 12. – Spare parts of frame 105R

Pos.	QTY	Part name	Part No	Assembly drawing	Components
1	1	Towing eye	HS17T-02		<ul style="list-style-type: none"> a. Towing eye – HS17T-02 (1psc) b. Washer – HS17T-04 (1psc) c. Nut – DIN 24032 M42 (1psc)
2	1	Parking stand	135R.07.01.00		<ul style="list-style-type: none"> a. Spring pin d8 L30 (2psc) b. ST0012; D20_L300_2xd8_EL (1psc) c. Washer M20 (4psc) d. Splint pin DIN 11023 D4,5 (1psc) e. ST0001.00; D20 L265 (1psc) f. 105R.14.01.00 (1psc)
3	1	Pipe holder	ST0018		<ul style="list-style-type: none"> a. ST0018 (1psc) b. Washer DIN 125 M12 (2psc) c. Bolt DIN 912 M12x40 (1psc) d. Wing nut DIN 315 M10 (1psc) e. Washer DIN 125 M10 (1psc) f. Nut DIN 985 M12 (1psc) g. Bolt DIN 933 M10x30 (1psc)

4	1	Hydraulics		See section "Hydraulics"	
5	1	Number plate	ST0016	 <p>The diagram illustrates the assembly of the number plate (ST0016). It shows a top-down view of the plate with callouts a through h pointing to various components. Callout 'a' points to a bolt, 'b' to a washer, 'c' to a nut, 'd' to another nut, 'e' to a washer, 'f' to the ST0016 plate itself, 'g' to a registration plate holder, and 'h' to a registration plate. The registration plate holder is shown in two variants: g1 (without light) and g2 (with light).</p>	<ul style="list-style-type: none"> a. Bolt DIN 933 M10x30 (4psc) b. Washer DIN 125 M10 (8psc) c. Nut DIN 985 M10 (4psc) d. Nut DIN 985 M6 (2psc) e. Washer DIN 125 M6 (2psc) f. ST0016 (1psc) g. Registration plate holder (1psc) <ul style="list-style-type: none"> g1. RP1 (without light) g2. RP2 (with light) a. Registration plate (not supplied by Ferrel AS)
6	1	Tilting cylinder	NAS5	 <p>The diagram shows the assembly of the tilting cylinder (NAS5). It is a vertical cross-section of the cylinder with callouts a, b, and c. Callout 'a' points to the main body of the cylinder, 'b' points to a retaining ring at the base, and 'c' points to a component within the base assembly.</p>	<ul style="list-style-type: none"> b. NAS5 (1psc) c. ST0013 D30 L85 (1psc) d. Retaining ring DIN 471 D30 (2psc)

7	1	Tilting limiter	OT0024_13D		<ul style="list-style-type: none"> a. OT0024_13D (1psc) b. ST.0003.00 25x125 (1psc) c. Washer DIN 125 M10 (1psc) d. Bolt DIN 933 M10x20 (1psc)
8	2	Tilt flange	FE00.02.00		<ul style="list-style-type: none"> a. Nut CRN 35x1,5 (1psc) b. Collar ST0024.4 TS-35,5-40,5-50 (1psc) c. Frame 135R d. Box 135DH e. Bolt DIN 933 M20x55 (6psc) f. Washer DIN 6916 VH300 M20 (12psc) g. FE00.02.00 (1psc) h. Nut DIN 985 M20 (6psc) i. Pin ST0024.01 TLK 40-150 (1psc) j. Heel ST0024.01 TLK40 (1psc) k. Washer DIN 125 M10 (1psc) l. Bolt Din 933 M10x16 (1psc) m. Grease nipple DIN 71412 M10x1 (1psc) n. Stopper collar DIN7993 A D40 (1psc) o. Collar ST0024.03 TLKV-40 (1psc)

<p>9</p>	<p>1</p>	<p>Rear guard</p>	<p>FE00.07.00</p>	 <p>The drawing shows a side view of a rear guard assembly. Callout 'a' points to the main guard body. Callouts 'b' through 'f' point to various fasteners and components: 'b' is a bolt, 'c' is a washer, 'd' is a long shaft, 'e' is a shorter shaft, and 'f' is a splint pin.</p>	<ul style="list-style-type: none"> a. FE00.07.00 (1psc) b. Bolt DIN 933 M10x16 (2psc) c. Washer DIN 125 M10 (2psc) d. ST.0003.00 25x165 (2psc) e. ST0001.00 D20x160 (2psc) f. Splint pin DIN 11023 D4,5 (1psc)
<p>10</p>	<p>1+1 R+L</p>	<p>Bogie axle</p>	<p>105R.09.01.00</p>	 <p>The drawing shows a side view of a bogie axle assembly. Callout 'a' points to the axle housing. Callouts 'b' through 'f' point to various components: 'b' is a bolt, 'c' is a washer, 'd' is a long shaft, 'e' is a wheel with rim, and 'f' is a brake assembly.</p>	<ul style="list-style-type: none"> a. Wheel nut DIN 74361 M20 (2x8 psc) b. Bolt DIN 933 M16x50 (1psc) c. Washer DIN 125 M16 (1psc) d. ST0022.00 D60x320 (1psc) e. Wheel with rim (2psc) <ul style="list-style-type: none"> e1. W1 – 400/60 -15,5" e2. W2 – 500/50 R17" f. 105R.09.00.00 (1psc) <ul style="list-style-type: none"> f1. H0 – no brakes f2. H1 – 1 hydraulic brake (L/R) f3. H2 – 2 hydraulic brakes f4. P1 – 1 Pneumatic brake f5. P2 - 2 Pneumatic brake f6. HP - 1 hydraulic + 1 Pneumatic brake

11	2	Plastic cushion 2	OT00011		<ul style="list-style-type: none"> a. OT00011 140x90x25 (1psc) b. Screw D3 L20 (4psc)
12	1	Rear guard	FE00.07.00		<ul style="list-style-type: none"> a. Bolt DIN 933 M20 x120 (1psc) b. Nut DIN 985 M20 (1psc) c. Washer DIN 125 M20 (4psc) d. FE00.07.00 (1psc)

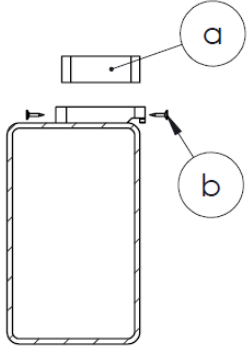
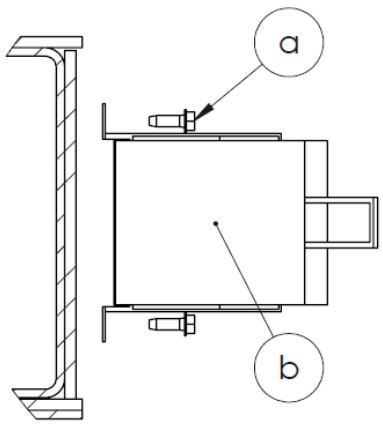
13	2	Plastic cushion 1	OT00011		<ul style="list-style-type: none"> a. OT00011 140x90x30 (1psc) b. Screw D3 L20 (4psc)
14	2	Chocks	OT0008.02		<ul style="list-style-type: none"> a. Bolt DIN 7500 D8x20 (4psc) b. OT0008.01
15	1	Handbrake	FE00.06.00.00	See section "Handbake"	

Table 7. - Spare parts of frame 105R

3. Spare parts of frame 135R

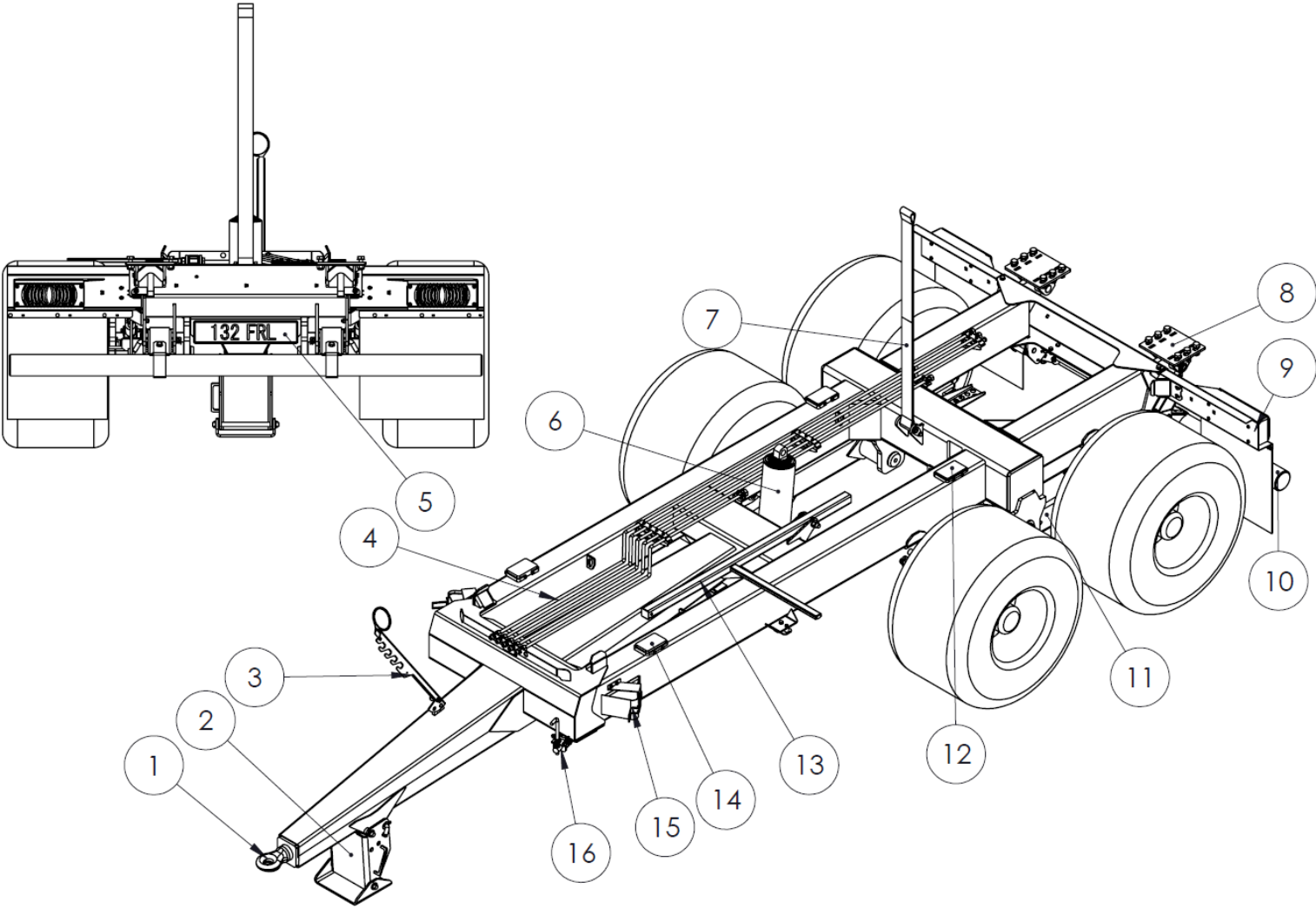
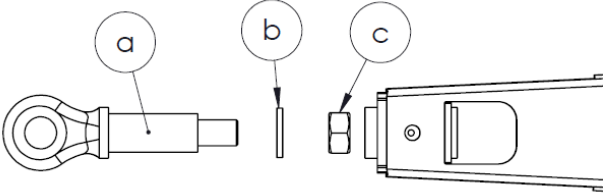
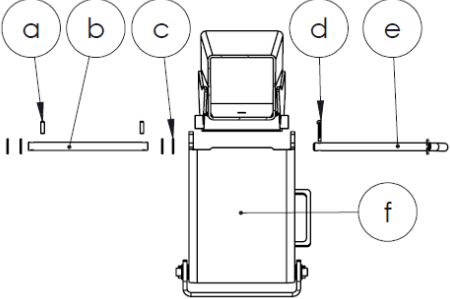
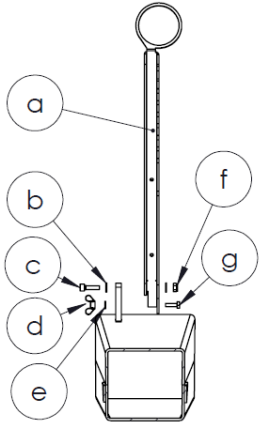
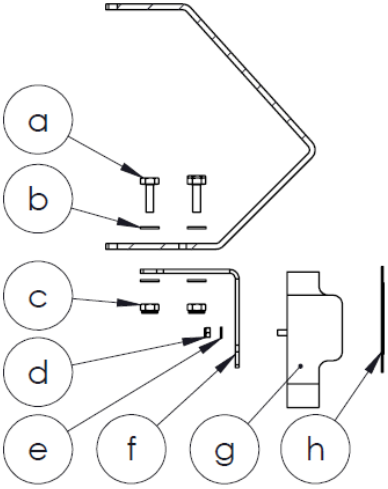
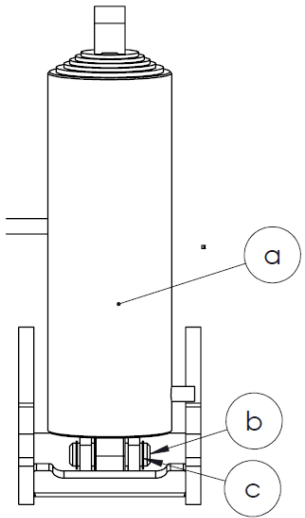
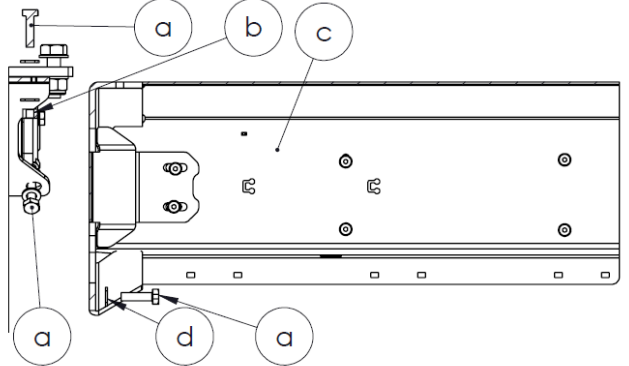
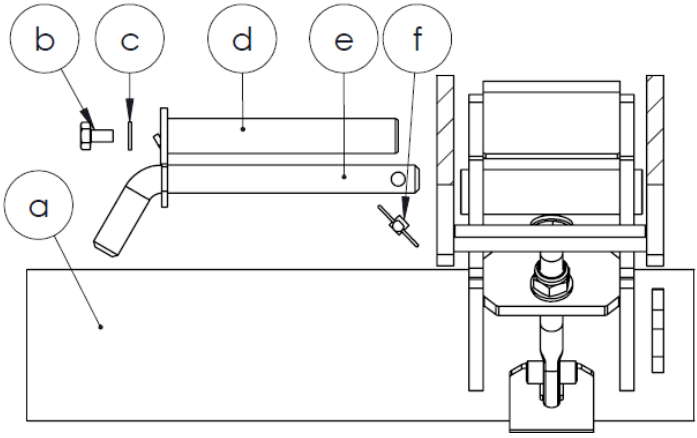


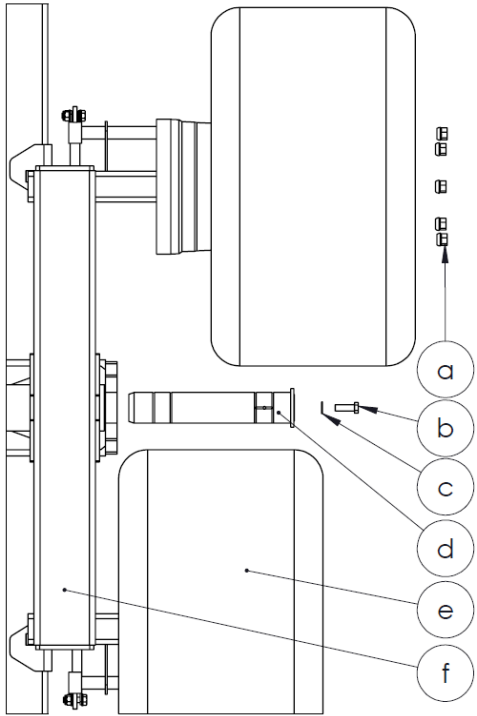
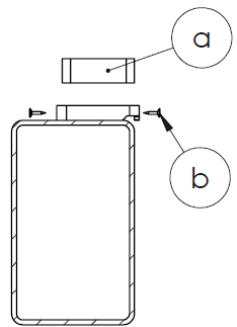
Figure 13. – Spare parts of frame 135R

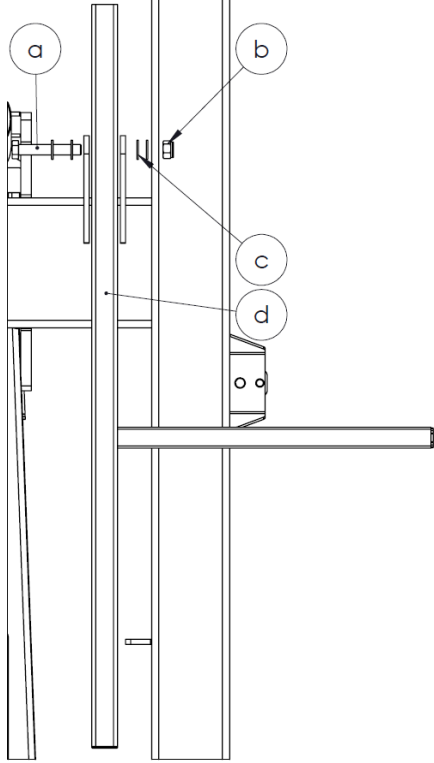
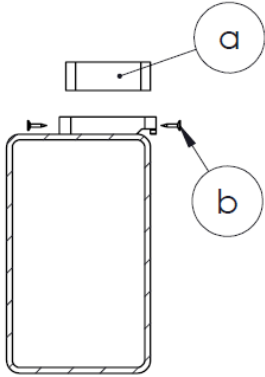
Pos.	QTY	Part name	Part No	Assembly drawing	Components
1	1	Towing eye	HS17T-02		<ul style="list-style-type: none"> d. Towing eye – HS17T-02 (1psc) e. Washer – HS17T-04 (1psc) f. Nut – DIN 24032 M42 (1psc)
2	1	Parking stand	135R.07.01.00		<ul style="list-style-type: none"> g. Spring pin d8 L30 (2psc) h. ST0012; D20_L330_2xd8_EL (1psc) i. Washer M20 (4psc) j. Splint pin DIN 11023 D4,5 (1psc) k. ST0001.00; D20 L265 (1psc) l. 135R.07.01.00 (1psc)
3	1	Pipe holder	ST0018		<ul style="list-style-type: none"> h. ST0018 (1psc) i. Washer DIN 125 M12 (2psc) j. Bolt DIN 912 M12x40 (1psc) k. Wing nut DIN 315 M10 (1psc) l. Washer DIN 125 M10 (1psc) m. Nut DIN 985 M12 (1psc) n. Bolt DIN 933 M10x30 (1psc)

4	1	Hydraulics		See section "Hydraulics"	
5	1	Number plate	ST0016	 <p>The diagram illustrates the assembly of the number plate (ST0016). It shows a perspective view of the plate with callouts a through h pointing to various components. Callouts a and b point to bolts and washers on the top edge. Callouts c and d point to nuts on the bottom edge. Callouts e, f, g, and h point to the registration plate holder, registration plate holder (RP1), registration plate holder (RP2), and registration plate, respectively.</p>	<ul style="list-style-type: none"> h. Bolt DIN 933 M10x30 (4psc) i. Washer DIN 125 M10 (8psc) j. Nut DIN 985 M10 (4psc) k. Nut DIN 985 M6 (2psc) l. Washer DIN 125 M6 (2psc) m. ST0016 (1psc) n. Registration plate holder (1psc) <ul style="list-style-type: none"> g1. RP1 (without light) g2. RP2 (with light) e. Registration plate (not supplied by Ferrel AS)
6	1	Tilting cylinder	NAT6	 <p>The diagram illustrates the assembly of the tilting cylinder (NAT6). It shows a perspective view of the cylinder with callouts a through c pointing to various components. Callout a points to the top of the cylinder. Callouts b and c point to the retaining ring and the retaining ring (DIN 471 D30), respectively.</p>	<ul style="list-style-type: none"> f. NAT6 (1psc) g. ST0013 D30 L85 (1psc) h. Retaining ring DIN 471 D30 (2psc)

7	1	Tilting limiter	OT0024_13D		<ul style="list-style-type: none"> e. OT0024_13D (1psc) f. ST.0003.00 25x125 (1psc) g. Washer DIN 125 M10 (1psc) h. Bolt DIN 933 M10x20 (1psc)
8	2	Tilt flange	FE00.02.00		<ul style="list-style-type: none"> a. Nut CRN 35x1,5 (1psc) b. Collar ST0024.4 TS-35,5-40,5-50 (1psc) c. Frame 135R d. Box 135DH e. Bolt DIN 933 M20x55 (6psc) f. Washer DIN 6916 VH300 M20 (12psc) g. FE00.02.00 (1psc) h. Nut DIN 985 M20 (6psc) i. Pin ST0024.01 TLK 40-150 (1psc) j. Heel ST0024.01 TLK40 (1psc) k. Washer DIN 125 M10 (1psc) l. Bolt Din 933 M10x16 (1psc) m. Grease nipple DIN 71412 M10x1 (1psc) n. Stopper collar DIN7993 A D40 (1psc) o. Collar ST0024.03 TLKV-40 (1psc)

<p>9</p>	<p>1+1 R+L</p>	<p>Rear light flange</p>	<p>FE00.04.01.00</p>		<ul style="list-style-type: none"> a. Bolt DIN 933 M12x40 (3psc) b. Nut DIN 985 M12 (2psc) c. FE00.04.01.00 (1 right hand + 1 left hand) d. Washer DIN 125 M12 (5psc)
<p>10</p>	<p>1</p>	<p>Rear guard</p>	<p>FE00.07.00</p>		<ul style="list-style-type: none"> g. FE00.07.00 (1psc) h. Bolt DIN 933 M10x16 (2psc) i. Washer DIN 125 M10 (2psc) j. ST.0003.00 25x165 (2psc) k. ST0001.00 D20x160 (2psc) l. Splint pin DIN 11023 D4,5 (1psc)

<p>11</p>	<p>1+1 R+L</p>	<p>Bogie axle</p>	<p>135R.09.01.00</p>		<ul style="list-style-type: none"> g. Wheel nut DIN 74361 M20 (2x8 psc) h. Bolt DIN 933 M16x50 (1psc) i. Washer DIN 125 M16 (1psc) j. ST0022.00 D80x415 (1psc) k. Wheel with rim (2psc) <ul style="list-style-type: none"> e1. W2 – 500/50 R17'' e2. W3 – 560/45 R22,5'' l. 135R.09.00.00 (1psc) <ul style="list-style-type: none"> f1. H0 – no brakes f2. H1 – 1 hydraulic brake (L/R) f3. H2 – 2 hydraulic brakes f4. P1 – 1 Pneumatic brake f5. P2 - 2 Pneumatic brake f6. HP - 1 hydraulic + 1 Pneumatic brake
<p>12</p>	<p>2</p>	<p>Plastic cushion 2</p>	<p>OT00011</p>		<ul style="list-style-type: none"> c. OT00011 140x90x25 (1psc) d. Screw D3 L20 (4psc)

<p>13</p>	<p>1</p>	<p>Rear guard</p>	<p>FE00.07.00</p>		<ul style="list-style-type: none"> e. Bolt DIN 933 M20 x120 (1psc) f. Nut DIN 985 M20 (1psc) g. Washer DIN 125 M20 (4psc) h. FE00.07.00 (1psc)
<p>14</p>	<p>2</p>	<p>Plastic cushion 1</p>	<p>OT00011</p>		<ul style="list-style-type: none"> c. OT00011 140x90x30 (1psc) d. Screw D3 L20 (4psc)

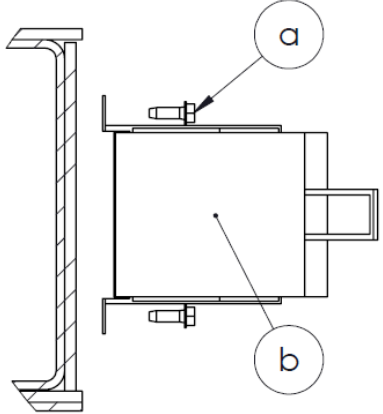
15	2	Chocks	OT0008.02		<p>c. Bolt DIN 7500 D8x20 (4psc) d. OT0008.01</p>
16	1	Handbrake	FE00.06.00.00	See section "Handbake"	

Table 8. - Spare parts of frame 135R

4. Spare parts of parking stand

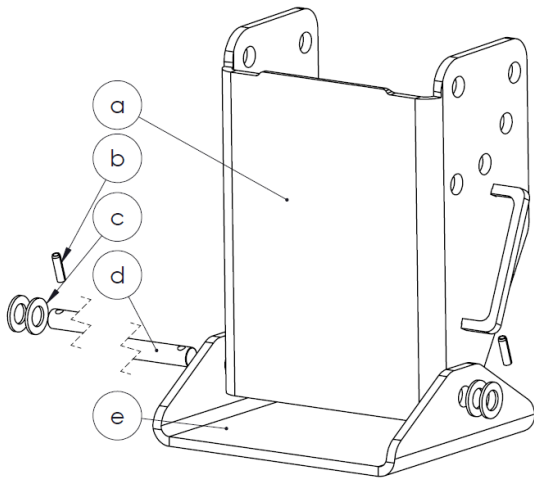


Figure 14. – Spare parts of parking stand

Pos.	QTY	Part name	Part No 105R	Part No 135R	Description
a	1	Stand frame	105R.14.01.01	135R.07.01.00	
b	2	Splint pin	DIN 11023	DIN 11023	D4,5
c	4	Washer	DIN 125	DIN 125	M20
d	1	Round pin w. Cross hole	ST0012	ST0012	D20_L300_2xd8_EL
e	1	Stand heel	105R.07.01.02	135R.07.01.02	

Table 9. - Spare parts of parking stand

5. Spare parts of rear guard

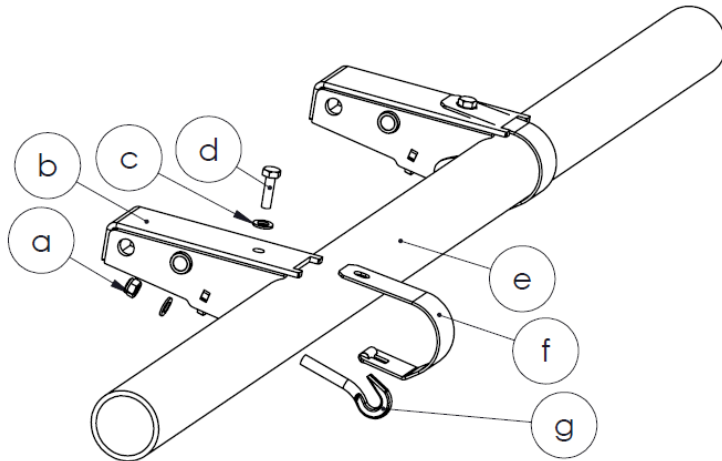


Figure 15. Spare parts of rear guard

Pos.	QTY	Part name	Part No	Description
a	4	Nut	DIN 985	M16
b	2	Frame for rear guard	FE00.07.01.00	
c	4	Washer	DIN 125	M16
d	2	Bolt	DIN 933	M16x50
e	1	Rear guard	FE00.07.03.01	
f	2	Strap	FE00.07.02.00	
g	2	Hook bolt	G-hook	M16

Table 10. - Spare parts of rear guard

6. Spare parts of bogie

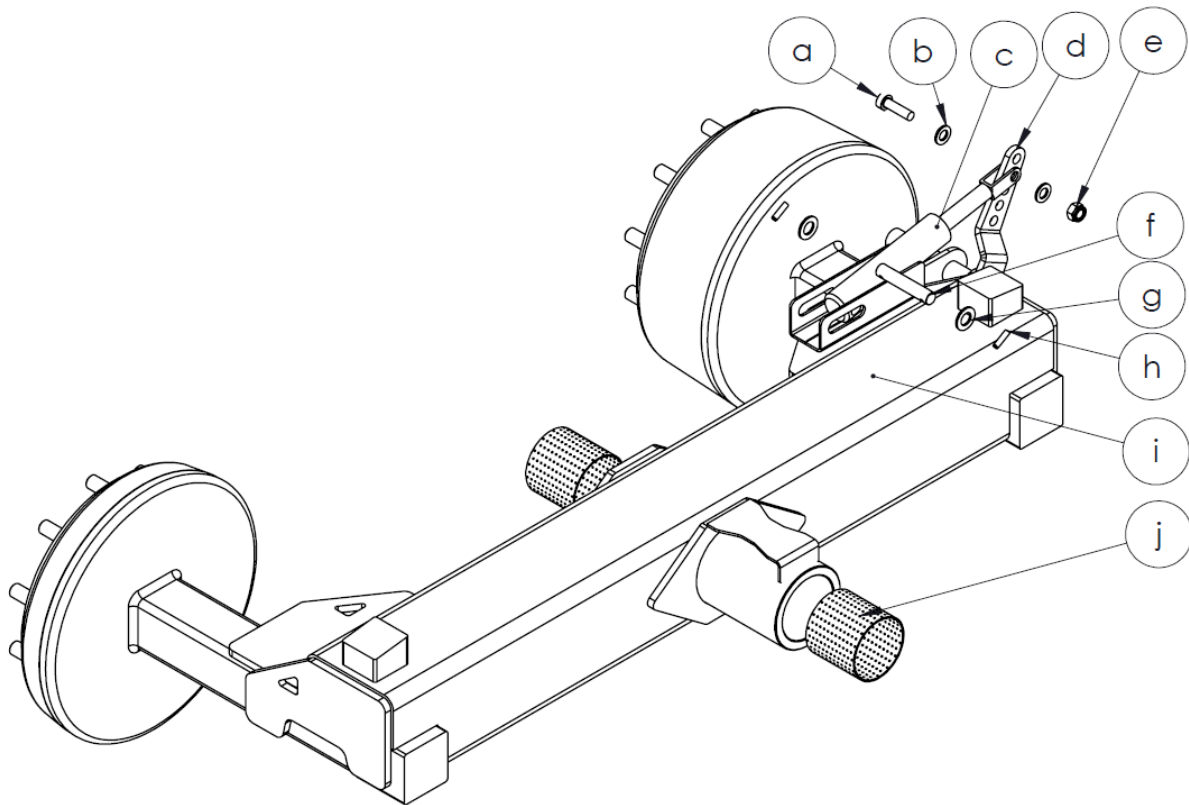


Figure 16. – Spare parts of bogie – hydraulic brakes

Pos.	QTY	Part name	Drawing No. 105R	Drawing No. 135R	Description
a	1	Bolt	DIN 933 M16x50	DIN 933 M16x50	
b	2	Washer	DIN 125 M16	DIN 125 M16	
c	1	Brake cylinder	CY.01.00	CY.01.00	
d	1	Brake lever	S70RM8QFN_i200	S80RM8QFN_i200	
e	1	Nut	DIN 985 M16	DIN 985 M16	
f	1	Round pin w. Cross hole	ST0012	ST0012	D20_L120_2xd8_EL
g	2	Washer	DIN 125 M20	DIN 125 M20	
i	1	Bogie	105R.09.01.00	135R.09.01.00	H0 – no brakes H1VP – one brake; left side H1PP – one brake; right side H2 – two brakes
j	2	Slide bearing	60x65 L60	80x85 L80	

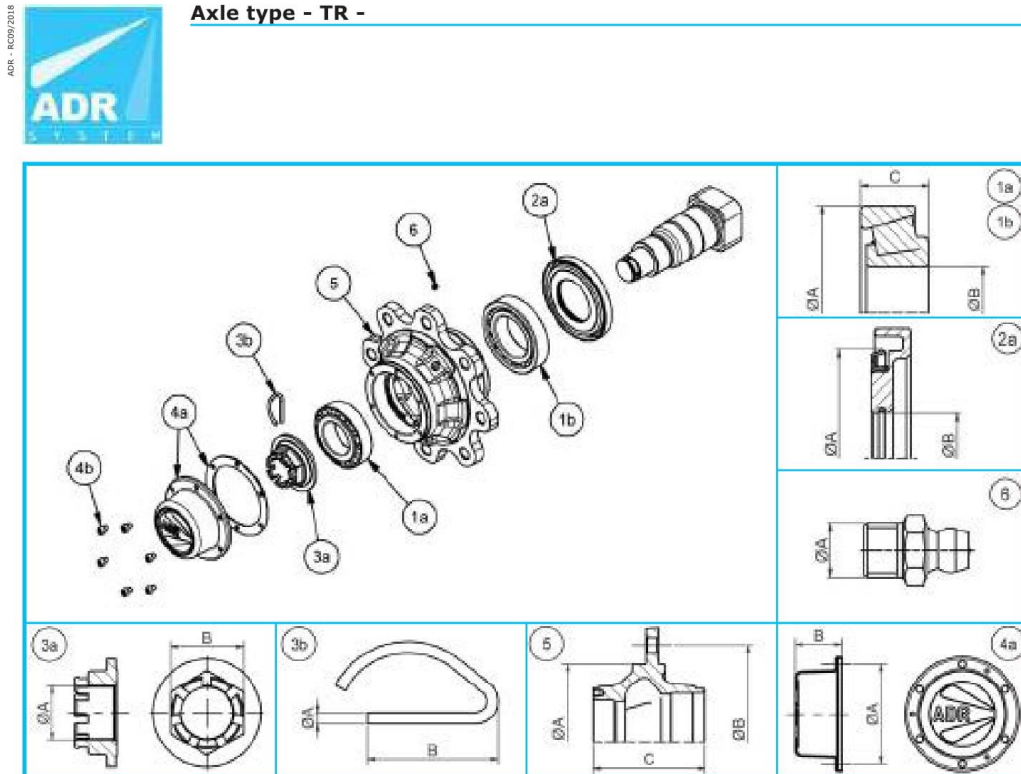
Table 11. - Spare parts of bogie

Spare parts to stub axles

Additional information about ADR axle spare parts:

<http://www.adraxles.com/EN/res/429/ADR---Spare-Parts-Catalogue.pdf>

TR type -



Item	Description	Code	A	B	C	Qty.	Kit code
1a	Bearing 32213	59132213	120	65	32,75	1	9RCTC
1b	Bearing 32216	59132216	140	80	35,25	1	
2a	Oil seal	5471403	140	82	-	1	9RNTR
3a	Crown nut	57548B6	M48X1,5	65	-	2	9RDF4865
3b	Spring pin	58209	5	58	-	2	
4a	Cap with gasket	56112518	139	62	-	2	9RT125AC
4b	Screw M8X1,25	96308A0101	-	-	-	12	
5	Hub 8 holes for M20X1,5	61L8TD004	220	275	160	1	61L8TD004
	Hub 10 holes for M22X1,5	61L1TD003	280	335	160	1	61L1TD003
6	Grease nipple	98608A1	M8X1,25	-	-	50	9R98608A1

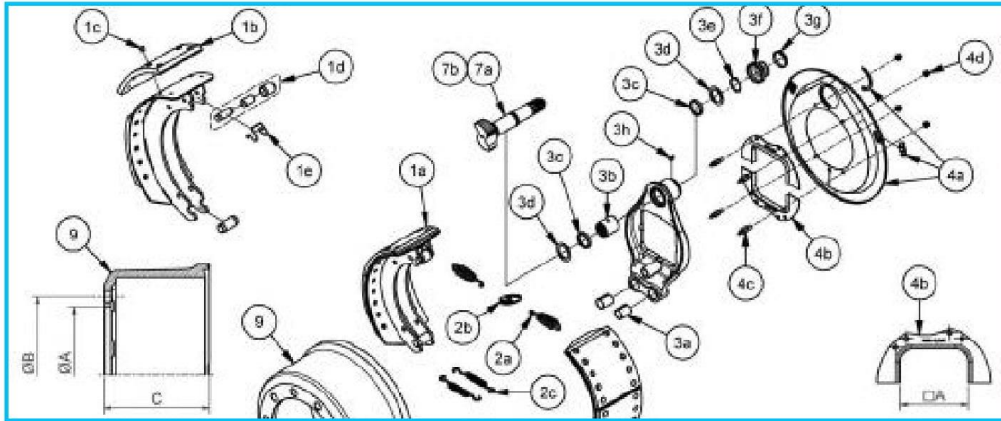
VC type -

ADR - ECOM/2018



Brake 406X120 - 412E - VC

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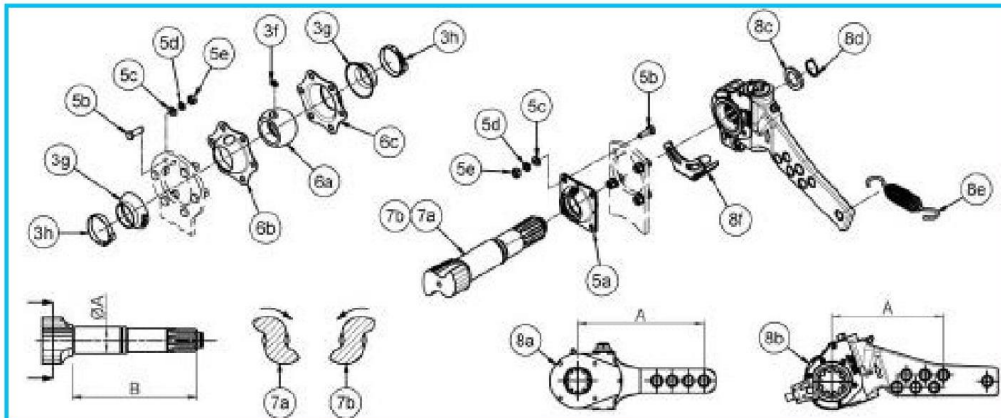
Item	Description	Code	A	B	C	Qty.	Kit code
1a	Brake shoe complete	732VC03	-	-	-	2	9RE0092
2a	Spring Ø5,2 L106	738128	-	-	-	2	
2b	Twist lock	736XC02	-	-	-	1	
2c	Spring Ø3,0 L138	738129	-	-	-	2	
3a	Bush Ø28/32 L40	771008	-	-	-	2	
1b	Brake lining	734VC02	-	-	-	4	9RH0034
2a	Spring Ø5,2 L106	738128	-	-	-	2	
2b	Twist lock	736XC02	-	-	-	1	
2c	Spring Ø3,0 L138	738129	-	-	-	2	
1c	Rivet	96701	-	-	-	34	9RL0026
2a	Spring Ø5,2 L106	738128	-	-	-	4	
2b	Twist lock	736XC02	-	-	-	2	
2c	Spring Ø3,0 L138	738129	-	-	-	4	
1d	Roll Ø32	73BVC01	-	-	-	2	
1e	Spring	738127	-	-	-	2	
3a	Bush Ø28/32 L40	771008	-	-	-	2	
3b	Camshaft bush Ø42	771007	-	-	-	1	
3c	Seal Ø42	5490501	-	-	-	2	
3d	Washer Ø42	73G01	-	-	-	2	
3e	Retaining ring Ø42	58514	-	-	-	1	
3f	Rubber cover	53A11	-	-	-	1	
3g	Clamp	98E01	-	-	-	1	
3h	Grease nipple M8X1,25	98608A1	-	-	-	1	
4a	Protection plate with rubber caps	743WC0006	-	-	-	1	9RM061
4b	Square seal	7479012	90	-	-	2	
4c	Spacer L51	57708A1	-	-	-	4	
4d	Nut M8X1,25	97708A1	-	-	-	4	
4a	Protection plate with rubber caps	743WC0006	-	-	-	1	9RM062
4b	Square seal	747A012	100	-	-	2	
4c	Spacer L51	57708A1	-	-	-	4	
4d	Nut M8X1,25	97708A1	-	-	-	4	
4a	Protection plate with rubber caps	743WC0006	-	-	-	1	9RM038
4b	Square seal	747A112	110	-	-	2	
4c	Spacer L51	57708A1	-	-	-	4	
4d	Nut M8X1,25	97708A1	-	-	-	4	
4a	Protection plate with rubber caps	743WC0006	-	-	-	1	9RM040
4b	Square seal	747A242	120	-	-	2	
4c	Spacer L51	57708A1	-	-	-	4	
4d	Nut M8X1,25	97708A1	-	-	-	4	
4a	Protection plate with rubber caps	743WC0006	-	-	-	1	9RM042
4b	Square seal	747A342	130	-	-	2	
4c	Spacer L51	57708A1	-	-	-	4	
4d	Nut M8X1,25	97708A1	-	-	-	4	
4a	Protection plate with rubber caps	743WC0006	-	-	-	1	9RM044
4b	Square seal	747A542	150	-	-	2	
4c	Spacer L51	57708A1	-	-	-	4	
4d	Nut M8X1,25	97708A1	-	-	-	4	

Brake 406X120 - 412E - VC

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ADR - RC09/2018



Item	Description	Code	A	B	C	Qty.	Kit code
4a + 4b	Protection plate with rubber caps	743WCR222	Ø127	-	-	1	
4c	Spacer L38	57708A2	-	-	-	4	9RM046
4d	Nut M8X1,25	97708A1	-	-	-	4	
5a	Camshaft bush assembled	74417U01	-	-	-	1	
5b	Screw M8X1,25 L25	96108A0251	-	-	-	4	
5c	Washer Ø8	9810081	-	-	-	4	9RL010
5d	Elastic washer Ø8	9830081	-	-	-	4	
5e	Nut M8X1,25	97108A1	-	-	-	4	
6a	Camshaft bush Ø39	772007	-	-	-	1	
6b	Casing	7480401	-	-	-	1	
6c	Casing	7480402	-	-	-	1	
6d	Rubber cover	56A10	-	-	-	2	
3g	Clamp	98E01	-	-	-	2	
3h	Grease nipple M8X1,25	98608A1	-	-	-	1	(2) 9RL001
5b	Screw M8X1,25 L25	96108A0251	-	-	-	6	
5c	Washer Ø8	9810081	-	-	-	6	
5d	Elastic washer Ø8	9830081	-	-	-	6	
5e	Nut M8X1,25	97108A1	-	-	-	6	
7a	Right camshaft	75P4062...	42	(1) <=300	-	1	75P4062...
	Right camshaft	75P4063...	42	(1) >300	-	1	75P4063...
7b	Left camshaft	75Q4062...	42	(1) <=300	-	1	75Q4062...
	Left camshaft	75Q4063...	42	(1) >300	-	1	75Q4063...
8a	Slack adjuster	7621603	203	-	-	1	
8c	Washer Ø26	9812601	-	-	-	1	9RR0010
8d	Retaining ring Ø25	58508	-	-	-	1	
8e	Spring Ø3,5 L173	738201	-	-	-	1	
8b	Automatic slack adjuster	7631606	180	-	-	1	
8c	Washer Ø26	9812601	-	-	-	1	
8d	Retaining ring Ø25	58508	-	-	-	1	
8e	Spring Ø2,8 L145	738203	-	-	-	1	
8f	Setting plate	76A12	-	-	-	1	9RS0018
5b	Screw M8X1,25 L25	96108A0251	-	-	-	2	
5c	Washer Ø8	9810081	-	-	-	2	
5d	Elastic washer Ø8	9830081	-	-	-	2	
5e	Nut M8X1,25	97108A1	-	-	-	2	
9	Drum 10 holes for M22X1,5	66LVA1006	280	335	165	1	66LVA1006
	Drum 10 holes for M22X1,5	66LVA1008	290	335	165	1	66LVA1008

(1) - From 200mm to 300mm step 25mm. From 300mm to 1200mm step 50mm.
 (2) - For axles produced till 2013.

Figure 17. Spare parts stub axle

7. Spare parts of box (D) (DU)

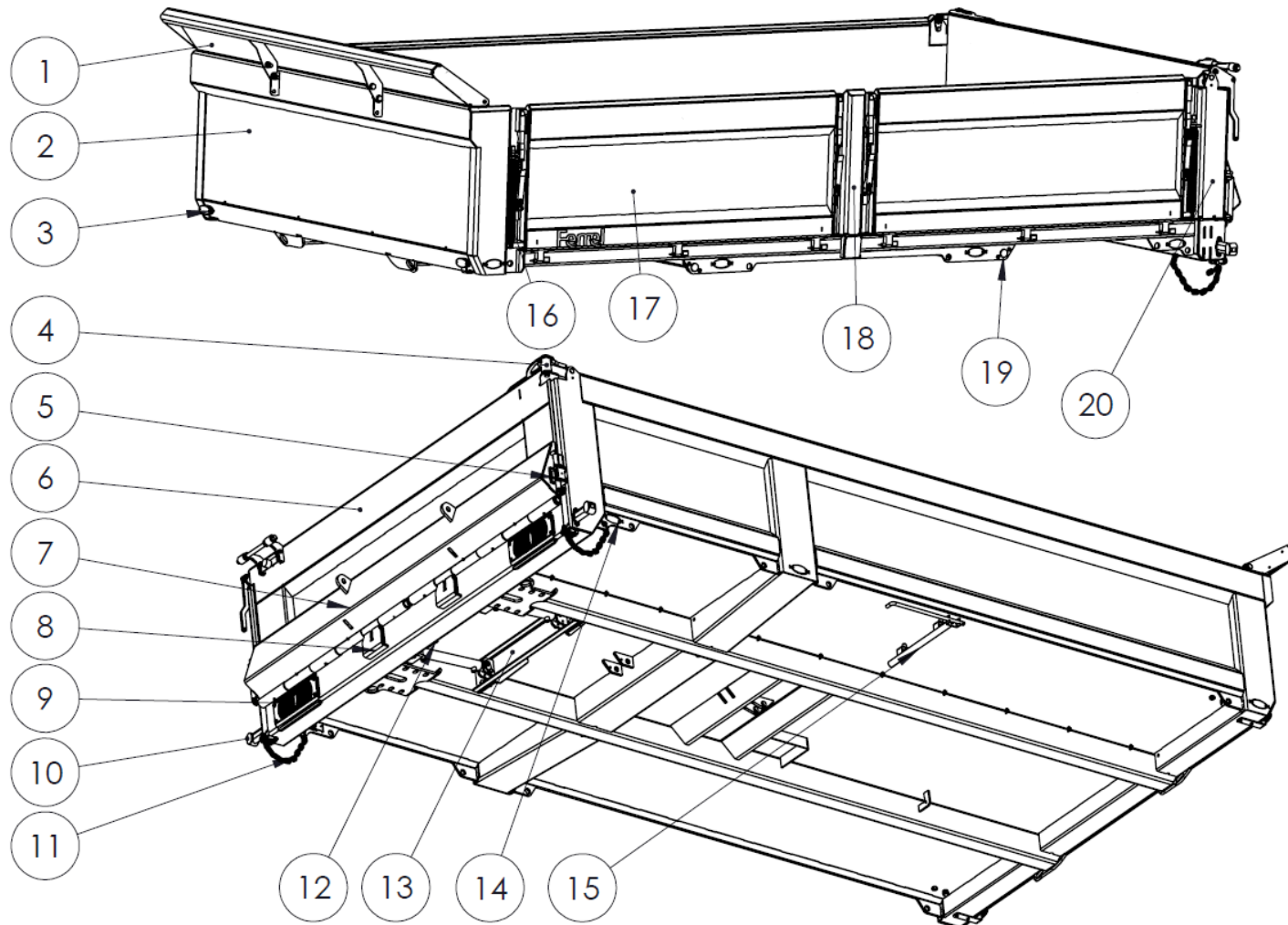
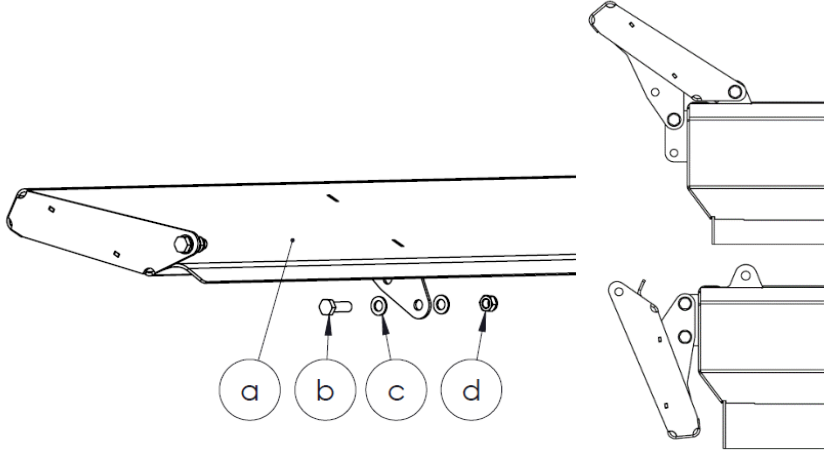
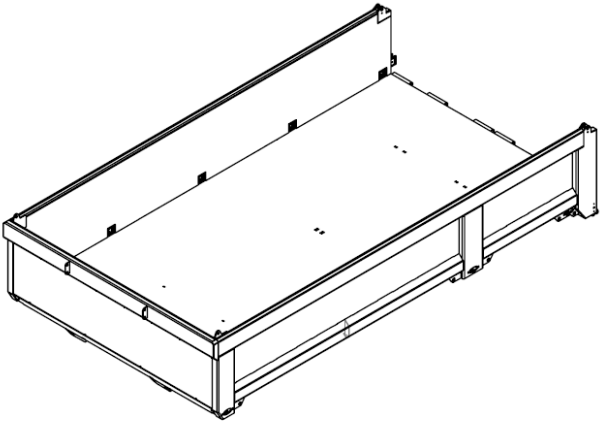
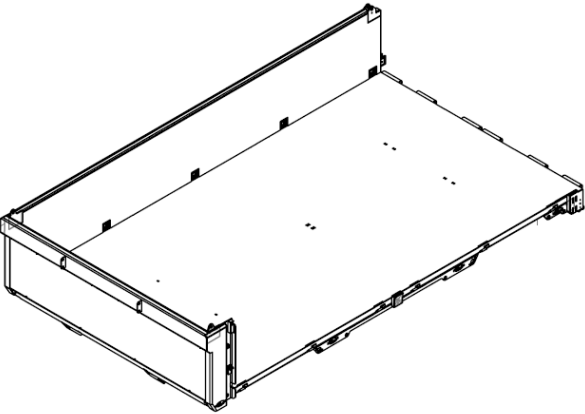
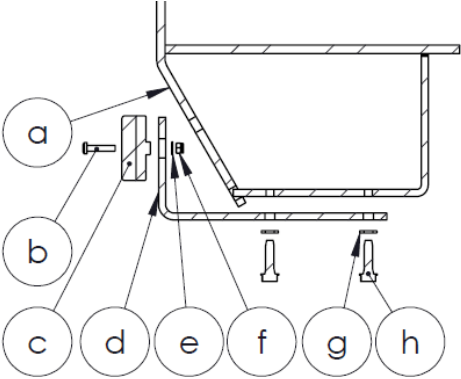
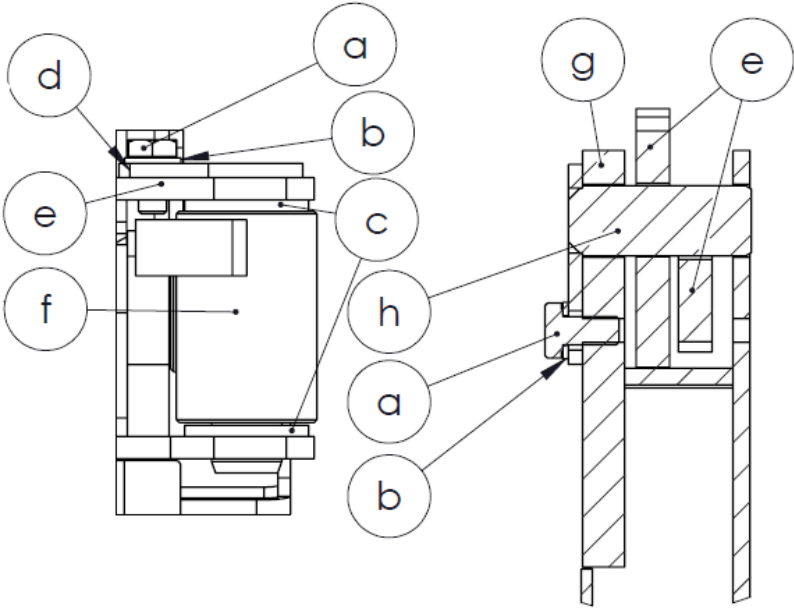
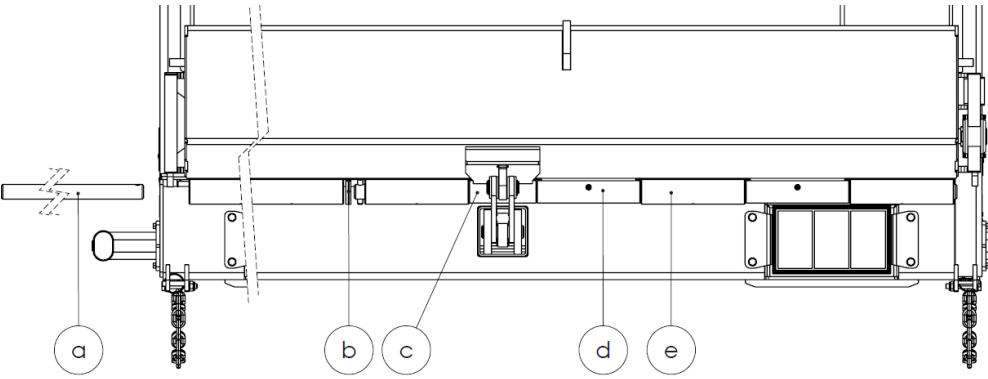


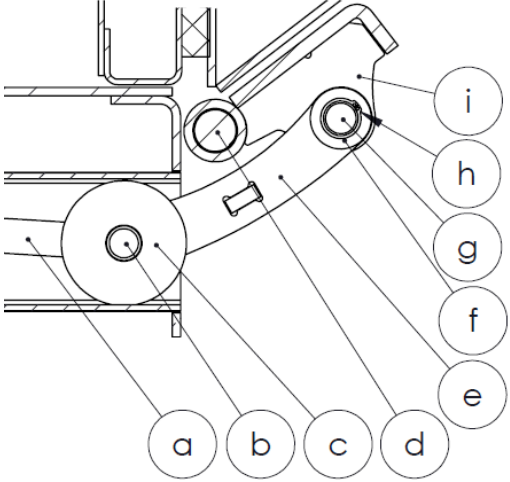
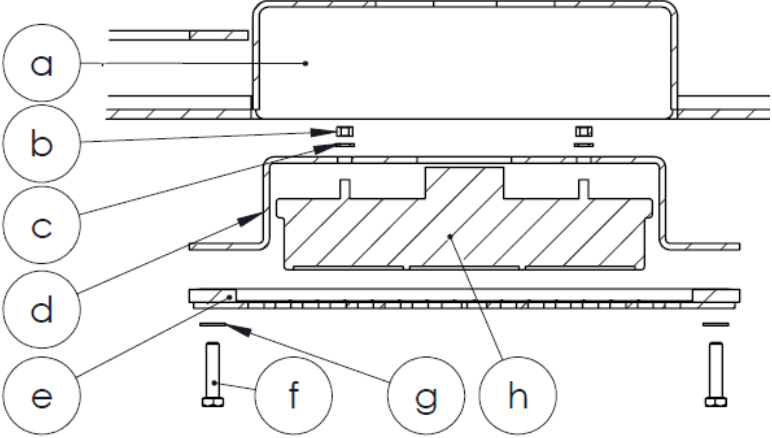
Figure 18. – Spare parts of solid dumper box (D)

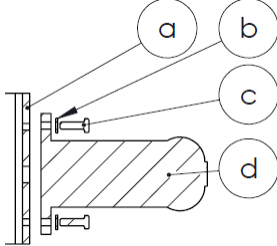
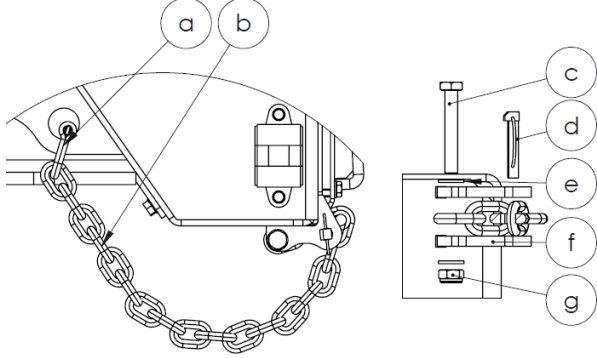
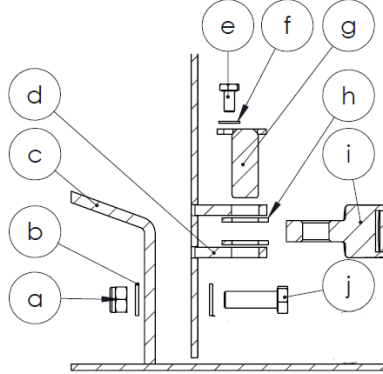
Pos.	QTY	Applicable box	Part name/ Part No	Assembly drawing	Components
1	1	105D 105DU 135D 135DU	Front cover/ FE00.03.00		<ul style="list-style-type: none"> a. FE00.03.00 (1psc) b. Bolt – DIN 933 M16x50 (4psc) c. Washer – DIN 125 M16 (8psc) d. Nut – DIN 985 M16 (4psc)
2	1	105D 135D	Box/ 105D.02.01.00 135D.02.01.00		

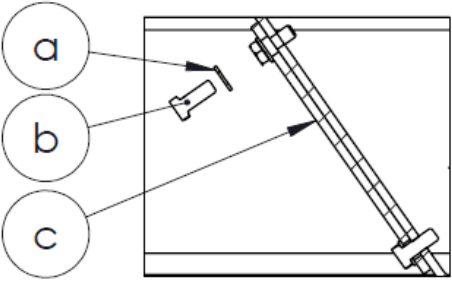
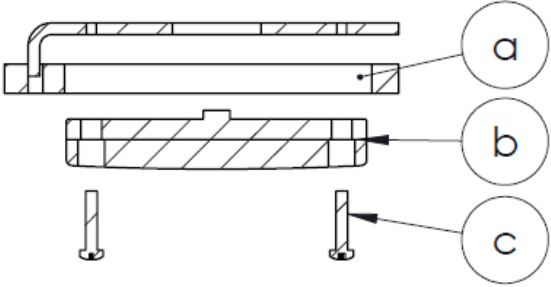
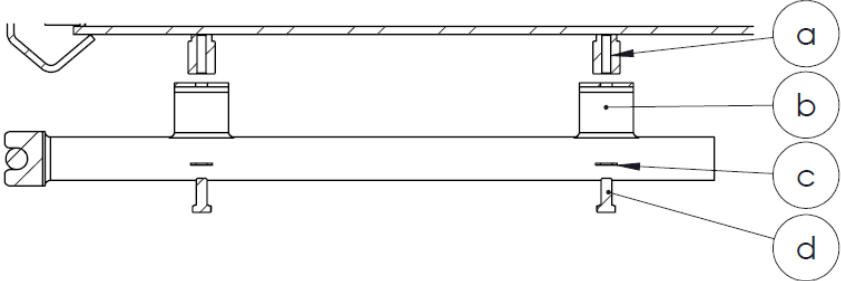
2	1	105DU 135DU	Box/ 105D.03.01.00 135D.03.01.00		
3	2	105D 105DU 135D 135DU	Front lights (white)/ OT0026.003		<ul style="list-style-type: none"> a. Box b. Screw DIN 7045 4x20 (2psc) c. Front light (white) OT0023.003 d. Light flange ST0015.01 (1psc) e. Washer DIN 125 M4 (2psc) f. Nut DIN 985 M4 (2psc) g. Washer DIN 125 (2psc) h. Bolt DIN 933 M6x20 (2psc)
4	1	105D 105DU 135D 135DU	Tailgate hinge/ 135D.06.01.00		<ul style="list-style-type: none"> a. Bolt DIN 933 M10x20 (2psc) b. Washer DIN 125 M10 (2psc) c. Washer DIN 125 M24 (2psc) d. Pin ST0004.00 D25 L105 (1psc) e. Tailgate f. 135D.06.01.00

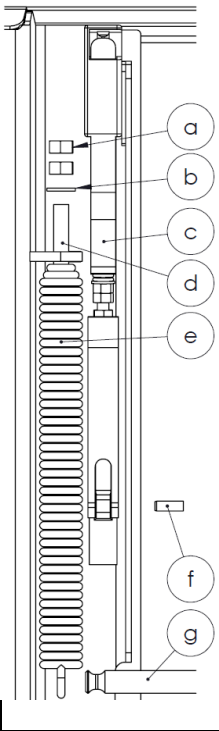
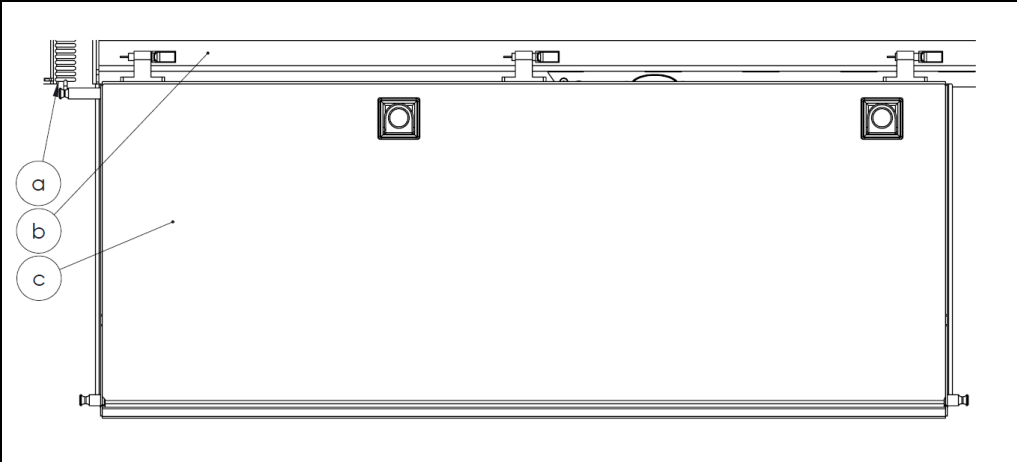
					<ul style="list-style-type: none"> g. Box h. Pin ST0004.00 D25 L60 (1psc)
5	1	<p>105D 105DU 135D 135DU</p>	<p>Tailgate latch/ 135D.05.05.00</p>		<ul style="list-style-type: none"> a. Tailgate b. Box c. 135D.05.05.00 d. Finger screw DIN 653 M8x16 (1psc)

<p>6</p>	<p>1</p>	<p>105D 105DU 135D 135DU</p>	<p>Tailgate/ 105D.04.00.00 135D.04.00.00</p>	 <p>The drawing shows two views of the tailgate assembly. The left view is a side cross-section showing the tailgate (e) mounted on a box (g). Callouts include: a (Bolt DIN 933 M10x20), b (Washer DIN 125 M10), c (Washer DIN 125 M24), d (Pin ST0004.00 D25 L105), f (135D.06.01.00), h (Pin ST0003.00 D25x60), and another a and b. The right view is a front view showing the tailgate (e) and box (g) with callouts g and e.</p>	<ul style="list-style-type: none"> a. Bolt DIN 933 M10x20 (2psc) b. Washer DIN 125 M10 (2psc) c. Washer DIN 125 M24 (2psc) d. Pin ST0004.00 D25 L105 (1psc) e. Tailgate f. 135D.06.01.00 g. Box h. Pin ST0003.00 D25x60 (1psc)
<p>7</p>	<p>1</p>	<p>105D 105DU 135D 135DU</p>	<p>Spreader/ FE00.10.01.00</p>	 <p>The drawing shows a side view of the spreader assembly. Callouts include: a (Crossbar ST0014), b (Splint pin DIN 1481 D10 L50), c (Spreader pusher FE00.10.04.00), d (FE00.10.01.00), and e (Box).</p>	<ul style="list-style-type: none"> a. Crossbar ST0014 (2psc) b. Splint pin DIN 1481 D10 L50 (2psc) c. Spreader pusher FE00.10.04.00 (2psc) d. FE00.10.01.00 e. Box

<p>8</p>	<p>2</p>	<p>105D 105DU 135D 135DU</p>	<p>Spreader pusher/ FE00.10.04.00</p>		<ul style="list-style-type: none"> a. Hydraulic cylinder 40-25/313 (1psc) b. Pin ST0011 D25 L85 (1psc) c. Wheel FE00.10.20.01 (2psc) d. Crossbar ST0014 (1psc) e. Pushing fork FE00.10.03.00 (1psc) f. Washer DIN 125 M24 (2psc) g. Pin ST0013 D25 L57 (1psc) h. Retaining ring DIN 471 D25 (2psc) i. FE00.10.04.00
<p>9</p>	<p>2</p>	<p>105D 105DU 135D 135DU</p>	<p>Rear light/ OT0026.004</p>		<ul style="list-style-type: none"> a. Box b. Nut DIN 985 M6 (2psc) c. Washer DIN 125 M6 (2psc) d. Light flange ST0015.02 (1psc) e. Light guard ST0015.03.00 (1psc) f. Bolt DIN 933 M8x35 (4psc) g. Washer DIN 125 M8 (4psc) h. Rear light OT0026.004

10	2	105D 105DU 135D 135DU	Side horn/ OT0026.001		<ul style="list-style-type: none"> a. Box b. Washer DIN 125 M6 (2psc) c. Bolt DIN 933 M6x20 (2psc) d. Side horn OT0026.001
11	2	105D 105DU 135D 135DU	Limiting chain/ 135D.05.06.00		<ul style="list-style-type: none"> a. D-shackle d8 (1psc) b. Limiting chain DIN 766 d8 (25 links) c. Bolt DIN 933 M10x65 (1psc) d. Spring pin DIN 1481 D11 (1psc) e. Washer DIN 125 M10 (2psc) f. Box g. Nut DIN 985 M10 (1psc)
12	1	105D 105DU 135D 135DU	Cylinder flange/ FE00.10.05.00		<ul style="list-style-type: none"> a. Nut DIN 985 M16 (4psc) b. Washer DIN 125 M16 (4psc) c. Box d. FE00.10.05.00 e. Bolt DIN 933 M10x20 (2psc) f. Washer DIN 985 M10 (2psc) g. Pin ST0003.00 D25x60 (2psc) h. Washer DIN 125 M24 (4psc) i. Hydraulic cylinder 40-25/313 (2psc) j. Bolt DIN 933 M16x50 (4psc)

13	1	105D 105DU 135D 135DU	Center service hatch/ 135DH.02.00.01		<ul style="list-style-type: none"> a. Washer DIN 125 M8 (4psc) b. Bolt DIN 933 M8x20 (4psc) k. 135D.02.00.01 (1psc)
14	6	105D 105DU 135D 135DU	Side light (orange)/ OT0026.002		<ul style="list-style-type: none"> a. Box b. Side light OT0026.002 c. Screw DIN 7045 4x20 (2psc)
15	1	105D 105DU 135D 135DU	Door retainer/ OT0015_ST		<ul style="list-style-type: none"> a. Box b. Door retainer OT0015_ST c. Washer DIN 125 M10 (2psc) d. Bolt DIN 933 M10x20 (2psc)

<p>16</p>	<p>4</p>	<p>105DU 135DU</p>	<p>Side door latch/ OT0017</p>	 <p>Front and rear latch with spring/ Middle post without springs</p>	<ul style="list-style-type: none"> a. Nut DIN 985 M16 (2psc) b. Washer DIN 125 M16 (1psc) c. OT0017 d. Bolt DIN 933 M16x80 (1psc) e. Spring OT0016.01 (1psc/ none for middle latches). f. Splint pin DIN 1481 D10 L30 (2psc) g. Side door
<p>17</p>	<p>2</p>	<p>105DU 135DU</p>	<p>Side door/ 105D.12.01.00 135D.12.01.00</p>		<ul style="list-style-type: none"> a. Spring OT0016.01 (1psc) b. Box c. Side door (front/rear)

<p>18</p>	<p>1</p>	<p>105DU 135DU</p>	<p>Middle post 105D.12.02.00 135D.12.02.00</p>		<ul style="list-style-type: none"> a. Middle post b. box
<p>19</p>	<p>2</p>	<p>105DU 135DU</p>	<p>Side door buffering/ OT0028.01 D40L30M8</p>		<ul style="list-style-type: none"> a. Nut DIN 985 M8 (3psc) b. Washer DIN 125 M8 (3psc) c. Buffer backplate 135D.03.00.01 (1psc) d. Distance plate 135D.03.00.03 (1psc) e. Box f. Bolt DIN 7991 M8x50 (2psc) g. Buffer OT0028.01 D40L30M8

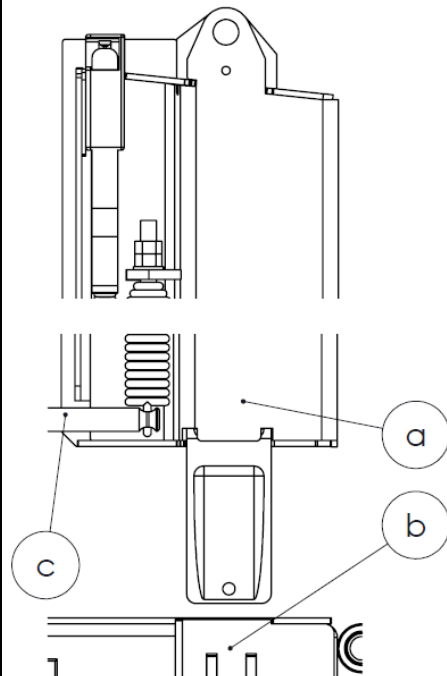
20	1	105DU 135DU	Rear post 105D.12.03.00 135D.12.03.00	 <p>The diagram shows a cross-sectional view of a rear post assembly. It features a central vertical post (a) that supports a horizontal box (b). A side door (c) is attached to the side of the box. The assembly is mounted on a base with several mounting points and a spring mechanism. The drawing is a line drawing with no shading.</p>	a. Middle post b. Box c. Side door
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Table 12. - Spare parts of box

8. Spare parts of tailgate

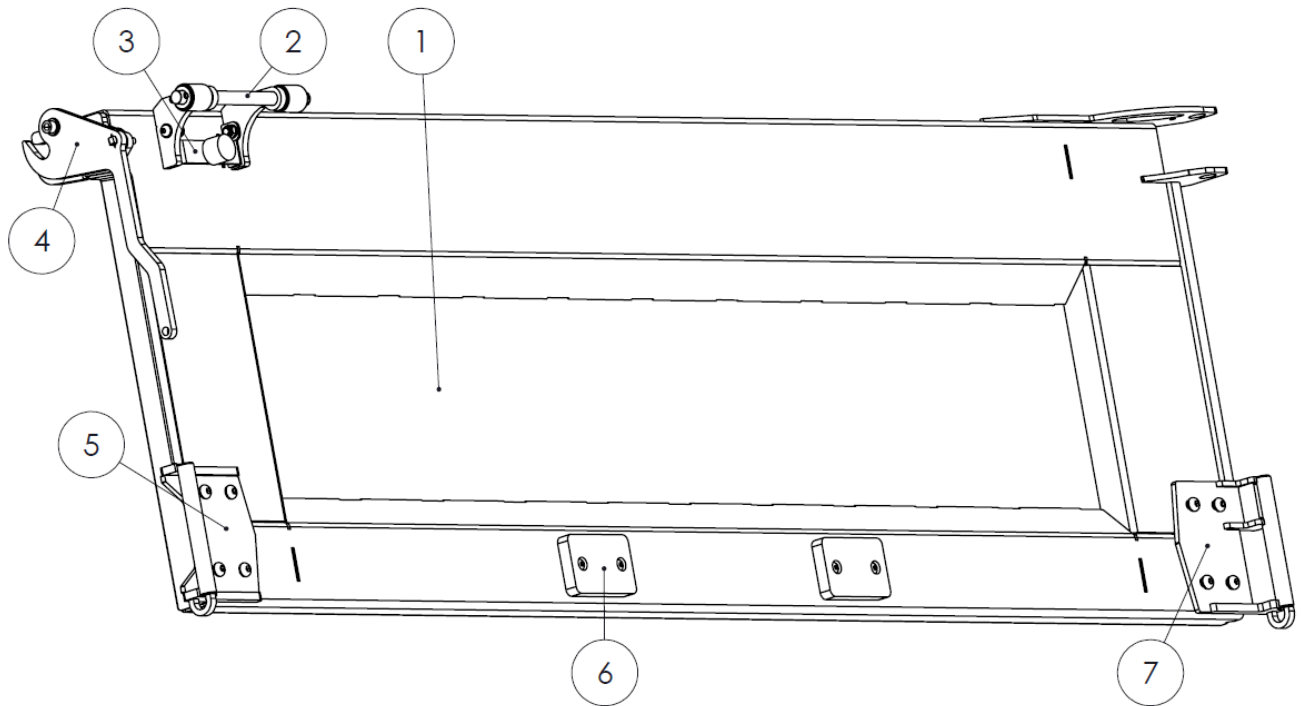


Figure 19. – Spare parts of tailgate 105D.04.00.00/ 135D.04.00.00

Pos.	QTY	Part name	Assembly drawing	Components
1	1	Tailgate frame		
2	1	Top handle		a. Tailgate frame b. Handle bar ST0012 D20_L300_2xd8_EL c. Roller bushing OT0032_01 (2psc) d. Washer DIN 433 M20 (4psc) e. Splint pin DIN 1481 D10 L30 (2psc)
3	1	Top buffer		a. Buffer flange 135D.04.00.01 (1psc) b. Buffer OT0028.01 D40L30M8 (1psc) c. Nut DIN 985 M8 (3psc) d. Tailgate frame e. Washer DIN 125 M8 (5psc) f. Bolt DIN 7380 M10x35 (2psc)

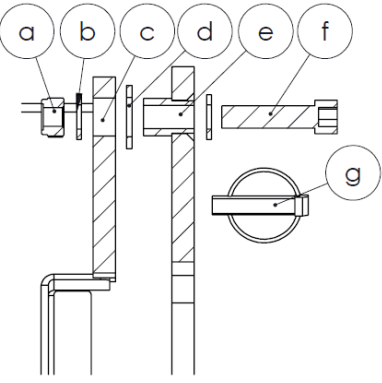
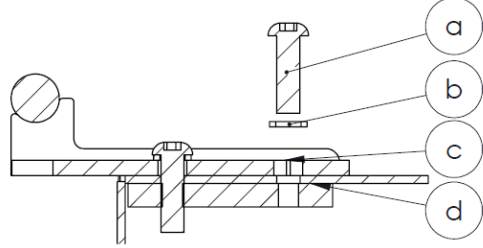
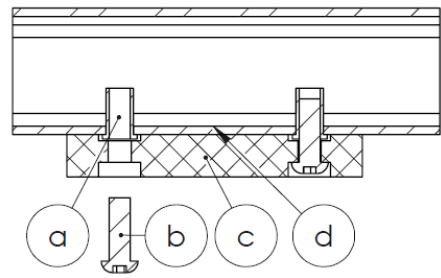
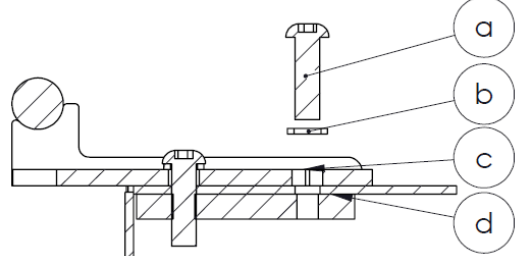
<p>4</p>	<p>1</p>	<p>Tailgate locking handle</p>		<ul style="list-style-type: none"> a. Nut DIN 985 M12 (1psc) b. Washer DIN 125 M12 (2psc) c. Tailgate frame d. Washer DIN 125 M20 (1psc) e. 135D.04.03.00
<p>5</p>	<p>1</p>	<p>Bottom hinge</p>		<ul style="list-style-type: none"> a. Bolt DIN 7380 M12x40 (4psc) b. Washer Heico lock M12 (4psc) c. Bottom hinge 135D.04.04.00 (1psc) d. Tailgate frame
<p>6</p>	<p>2</p>	<p>Bottom buffer</p>		<ul style="list-style-type: none"> a. Rivernut Hex M10 (2psc) b. Bolt DIN 7380 M10x30 (2psc) c. Bottom buffer OT0031 d. Tailgate frame
<p>7</p>	<p>1</p>	<p>Bottom hinge</p>		<ul style="list-style-type: none"> a. Bolt DIN 7380 M12x40 (4psc) b. Washer Heico lock M12 (4psc) c. Bottom hinge 135D.04.04.00 (1psc) d. Tailgate frame

Table 13. - Spare parts of dumper tailgate FE13T.04.00.00

9. Hydraulic system

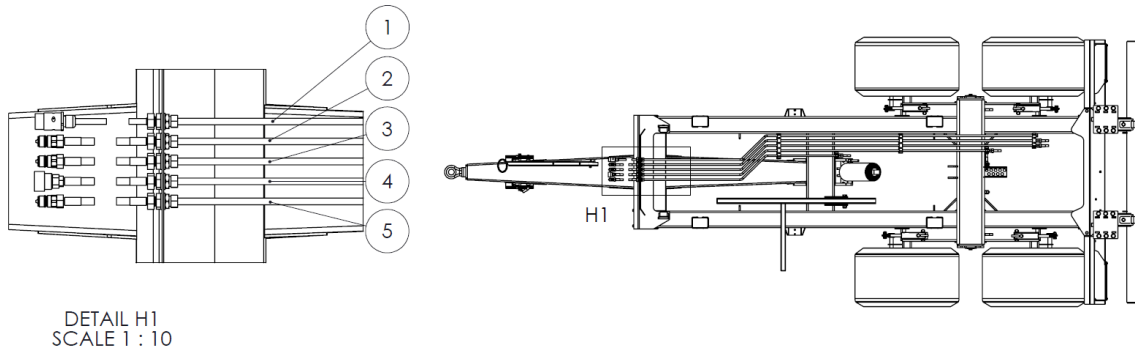


Figure 20. – Hydraulic lines

Line no.	Line function
1	Electrics
2	Spreader up
3	Spreader down
4	Brakes
5	Tilting

Table 14. - Hydraulic lines

1. Hydraulic components

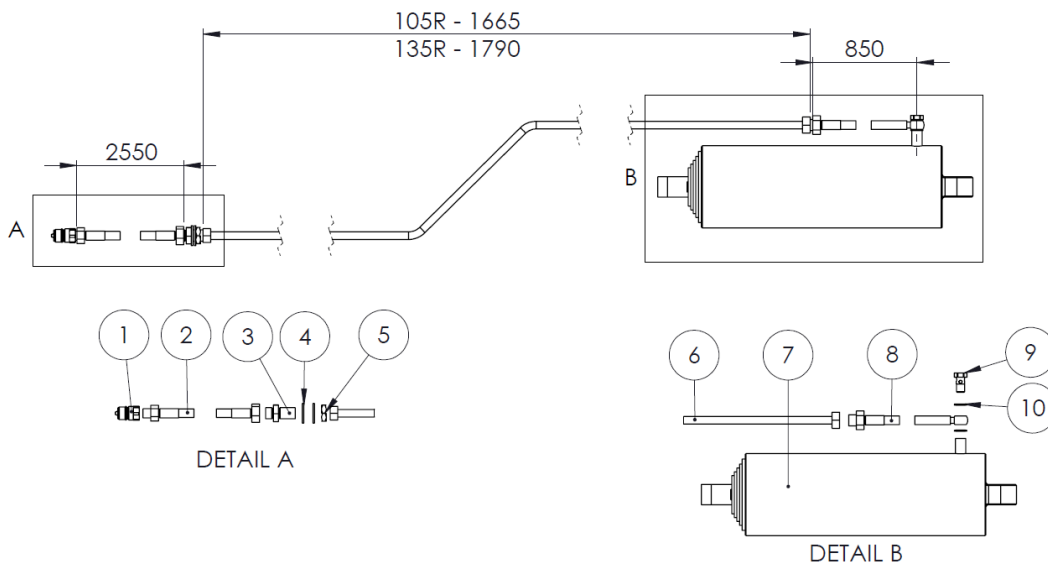


Figure 21. – Tilting line

Pos	QTY.	Part name 105R	Part name 135R	Standard	Thread size 1
1	1	Quick coupling	Quick coupling	5552	Female 1/2"
2	1	Hydraulic hose	Hydraulic hose	EN857 2SC 1/2"	Male 1/2"
3	1	Adapter	Adapter		Male M22x1,5
4	2	Washer	Washer	DIN 125	M22
5	1	Thin nut	Thin nut	DIN 439	M22
6	1	OT105R01	OT135R01		Female M22
7	1	Tilting cylinder NAS5	Tilting cylinder NAT6		1/2"
8	1	Hydraulic hose	Hydraulic hose	EN857 2SC 1/2"	Male M22x1,5
9	1	Banjo bolt	Banjo bolt		1/2"
10	2	Bonded seal washer	Bonded seal washer		1/2"

Table 15. – Components for tilting line

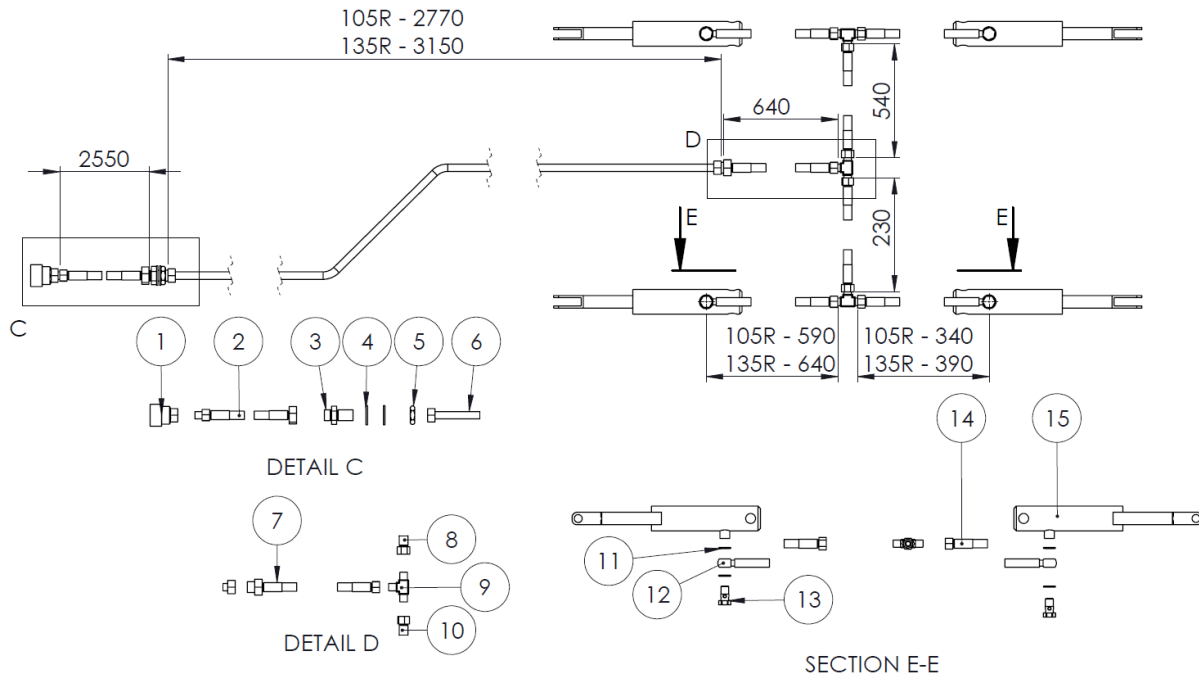


Figure 22. – Hydraulic brake line – 4 brakes

Pos	QTY.	Part name 105R	Part name 135R	Standard	Thread size 1	Thread size 2	Thread size 3
1	1	Quick coupling	Quick coupling	LSQ-S10	Female 3/8"		
2	1	Hydraulic hose	Hydraulic hose	EN857 2SC 3/8"	Male 3/8"	Female M22x1,5	
3	1	Adapter	Adapter		Male M22x1,5	Male M22x1,5	
4	2	Washer	Washer	DIN 125	M22		
5	1	Thin nut	Thin nut	DIN 439	M22		
6	1	OT105R02	OT135R02		Female M22	Female M22x1,5	
7	1	Hydraulic hose	Hydraulic hose	EN857 2SC 3/8"	Male M22x1,5	Female 3/8"	
8	1	Hydraulic hose	Hydraulic hose	EN857 2SC 3/8"	Female 3/8"	Female 3/8"	
9	3	T-adapter	T-adapter		Male 3/8"	Male 3/8"	Male 3/8"
10	1	Hydraulic hose	Hydraulic hose	EN857 2SC 3/8"	Female 3/8"	Female 3/8"	
11	8	Bonded seal washer	Bonded seal washer		1/2"		
12	2	Hydraulic hose	Hydraulic hose	EN857 2SC 3/8"	Female 3/8"	Banjo 3/8"	
13	4	Banjo bolt	Banjo bolt		3/8"		
14	2	Hydraulic hose	Hydraulic hose	EN857 2SC 3/8"	Female 3/8"	Banjo 3/8"	
15	4	Brake cylinder	Brake cylinder	40/25-100	Female 3/8"		

Table 16. – Components for hydraulic brake line - 4 brakes

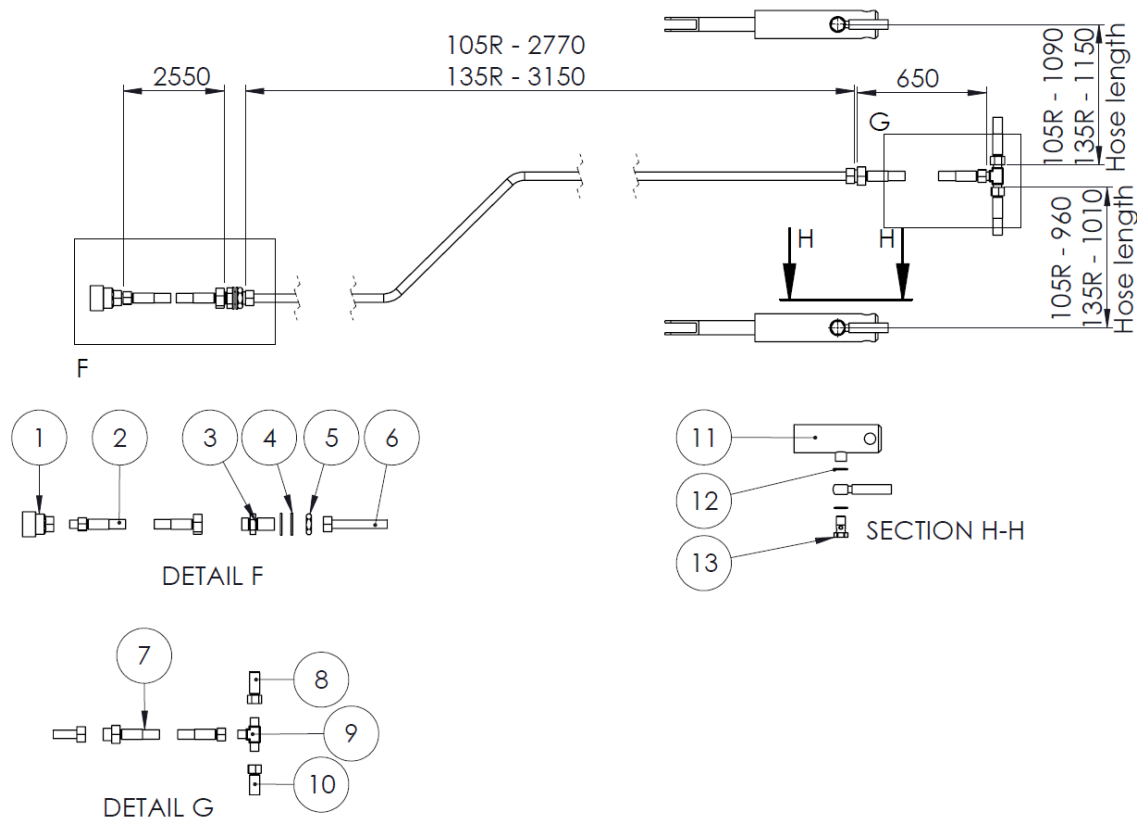


Figure 23. – Hydraulic brake line for – 2 brakes

Pos	QTY.	Part name 105R	Part name 135R	Standard	Thread size 1	Thread size 2	Thread size 3
1	1	Quick coupling	Quick coupling	LSQ-S10	Female 3/8"		
2	1	Hydraulic hose	Hydraulic hose	EN857 2SC 3/8"	Male 3/8"	Female M22x1,5	
3	1	Adapter	Adapter		Male M22x1,5	Male M22x1,5	
4	2	Washer	Washer	DIN 125	M22		
5	1	Thin nut	Thin nut	DIN 439	M22		
6	1	OT105R02	OT135R02		Female M22	Female M22x1,5	
7	1	Hydraulic hose	Hydraulic hose	EN857 2SC 3/8"	Male M22x1,5	Female 3/8"	
8	1	Hydraulic hose	Hydraulic hose	EN857 2SC 3/8"	Female 3/8"	Banjo 3/8"	
9	1	T-adapter	T-adapter		Male 3/8"	Male 3/8"	Male 3/8"
10	1	Hydraulic hose	Hydraulic hose	EN857 2SC 3/8"	Female 3/8"	Banjo 3/8"	
11	2	Brake cylinder	Brake cylinder	40/25-100	Female 3/8"		
12	4	Bonded seal washer	Bonded seal washer		1/2"		
13	2	Banjo bolt	Banjo bolt		3/8"		

Table 17. – Components for hydraulic brake line - 2 brakes

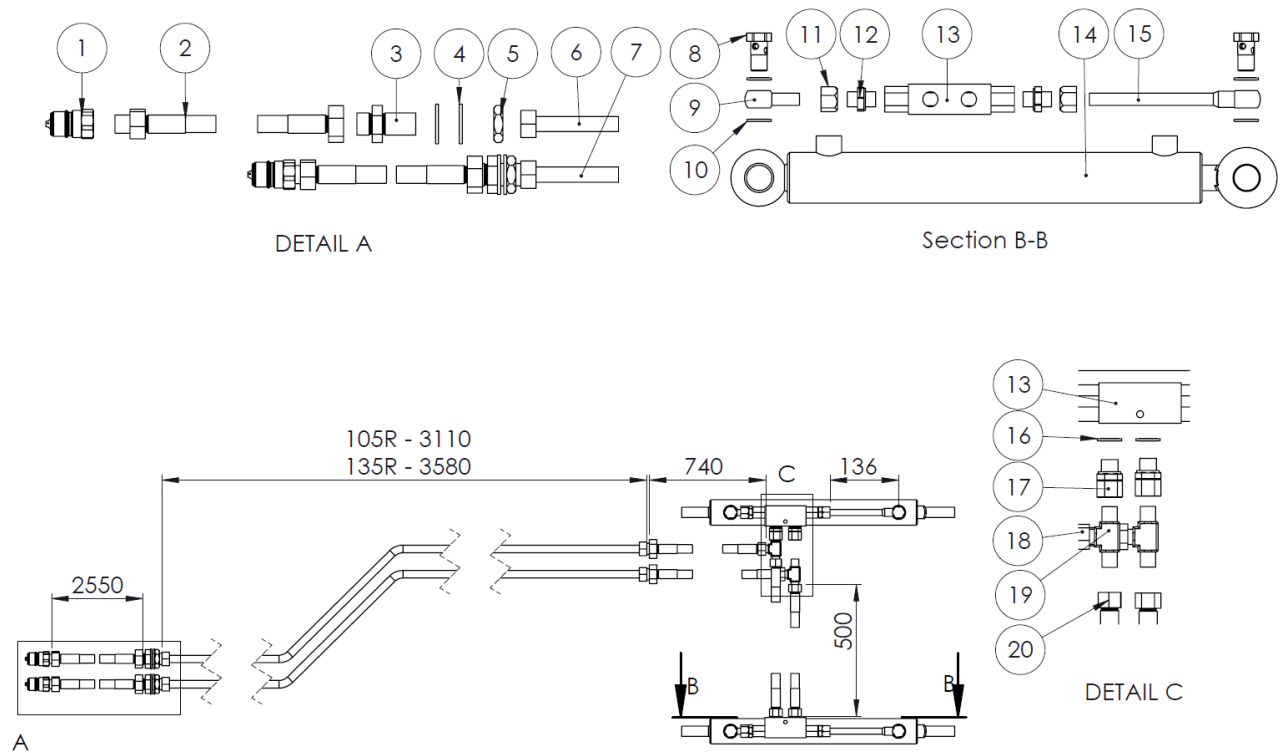


Figure 24. – Spreader up/down line

Pos	QTY.	Part name 105R	Part name 135R	Standard	Thread size 1	Thread size 2	Thread size 3
1	2	Quick coupling	Quick coupling	5552	Female 1/2"		
2	2	Hydraulic hose	Hydraulic hose	EN857 2SC 3/8"	Male 1/2"	Female M22x1,5	
3	2	Adapter	Adapter		Male M22x1,5	Male M22x1,5	
4	4	Washer	Washer	DIN 125	M22		
5	2	Thin nut	Thin nut	DIN 439	M22		
6	1	OT105R03 spreader up	OT135R03 spreader up		Female M22x1,5	Female M22x1,5	
7	1	OT105R03 spreader down	OT135R03 spreader down		Female M22x1,5	Female M22x1,5	
8	4	Banjo bolt	Banjo bolt			3/8"	
9	2	Banjo adapter	Banjo adapter				
10	8	Bonded seal washer	Bonded seal washer		3/8"		
11	4	Clamping nut	Clamping nut		d12mm	3/8"	
12	4	Adapter	Adapter		Male 3/8"	Male 3/8"	
13	2	Hydraulic valve	Hydraulic valve	VBPDE	3/8"	3/8"	
14	2	Hydraulic cylinder	Hydraulic cylinder	40/25-313	Female 3/8"	Female 3/8"	
15	2	Banjo adapter with tube	Banjo adapter with tube				
16	4	Bonded seal washer	Bonded seal washer		3/8"		
17	2	Adapter	Adapter		Male M22x1,5	Male M22x1,5	
18	2	Hydraulic hose	Hydraulic hose	EN857 2SC 3/8"	Male 1/2"	Female 3/8"	
19	2	T-adapter	T-adapter		Male 3/8"	Male 3/8"	Male 3/8"
20	2	Hydraulic hose	Hydraulic hose	EN857 2SC 3/8"	Female 3/8"	Female 3/8"	

Table 18. – Components for Spreader up/down line

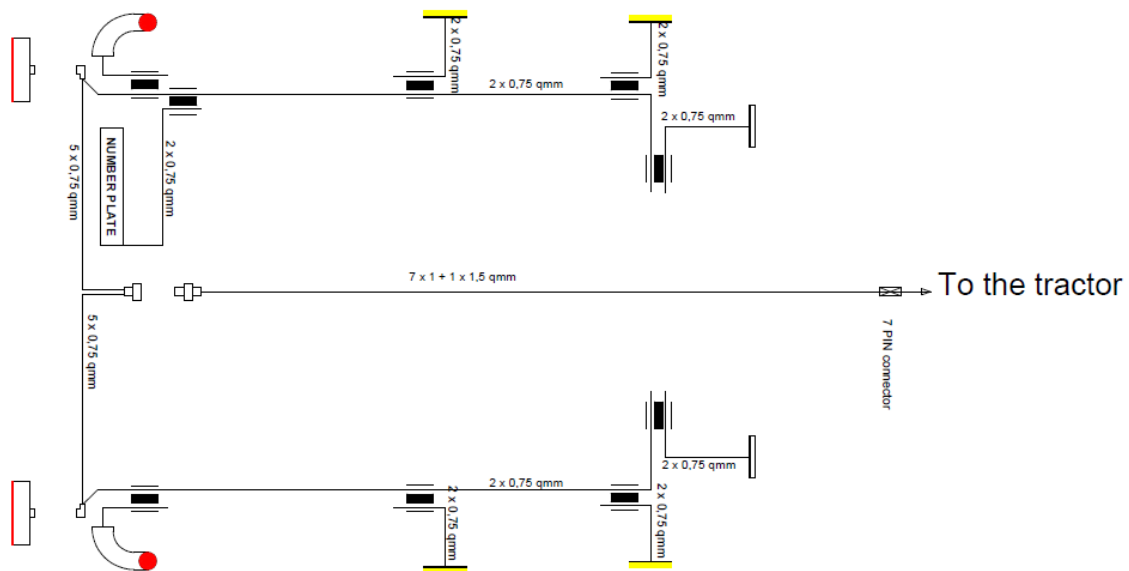
2. Hydraulic cylinder repairs

Cylinder type	Application	Trailer type	Repair method
NAS 5	Tilting cylinder	105D/ 105DH	Cannot be repaired – replace for original part
NAT 6	Tilting cylinder	135D/ 135DH	Cannot be repaired – replace for original part
40/25-313	Tailgate lifting cylinder	105D/ 105DH 135D/ 135DH	Cannot be repaired – replace for original part
40/25-100	Brake cylinder	105D/ 105DH 135D/ 135DH	Cannot be repaired – replace for original part

Table 19. – Hydraulic cylinder table

10. Electrics

1. Electrical scheme:








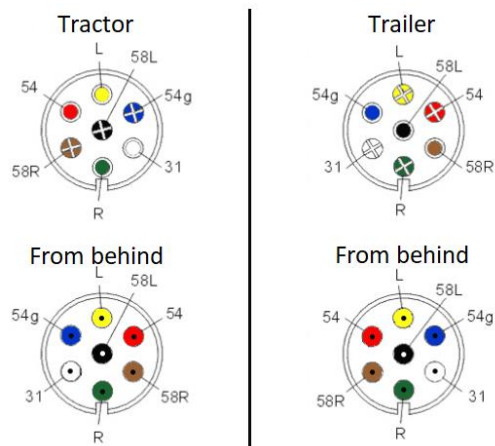
 	DH80078050 (OT0026.003/OT0026.002)
	DH80042002 or DH80101002 (OT0026.004)
	9932600 (right) ; 99325000 (left) (OT0026.001)
	DC connector

Figure 25. –Electrical scheme

3. 7 pin connector scheme



Connector	Connected light	Wire color
L	Left turn signal	Yellow
54g	Fog light	Blue
31	Ground	White
R	Right turn signal	Green
58R	*Right side marker	Brown
54	Brakes	Red
58L	Rear side markers *Left side marker *Numberplate	Black

- *Applicable only with extended light kit

Figure 26. –7 pin connector

4. Repairs

All electrical repairs should be done by specialist.

All lights used on Ferrel trailers are LED-s. They cannot be opened for repairs. In case of damaged light replace for original part.

11. Handbrake

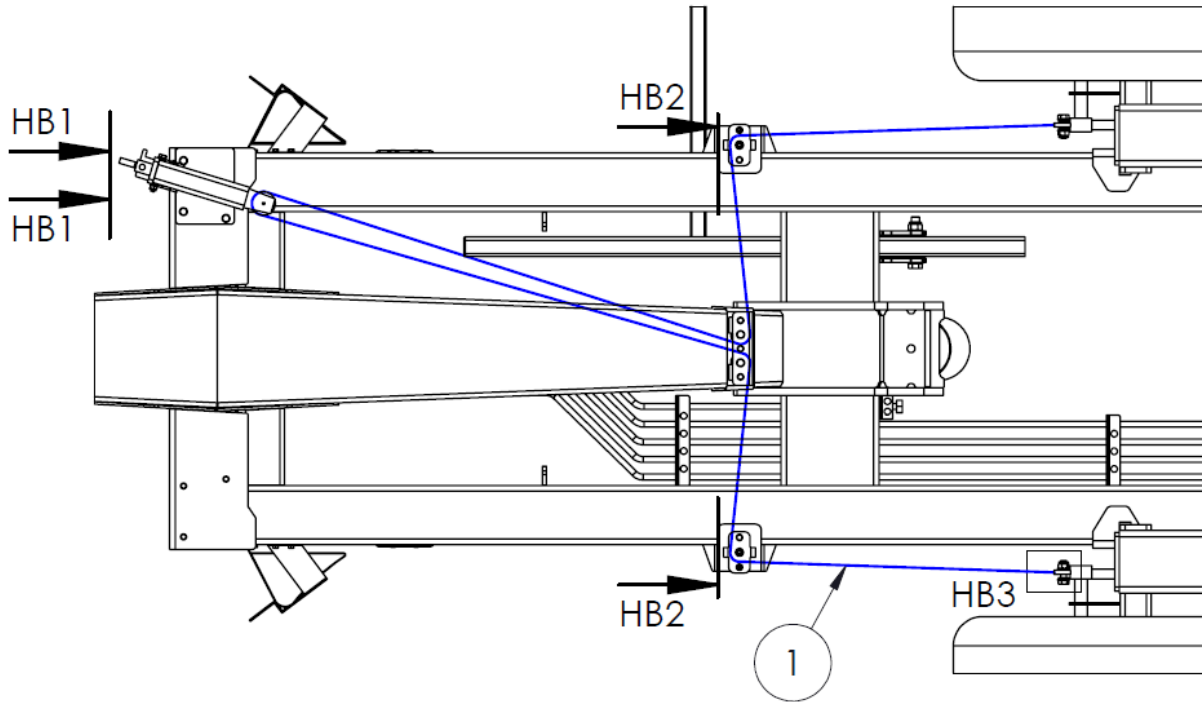
On Ferrel D/DU trailers handbrake is an accessory.

Use handbrake when parking trailer on a slope or when maintaining the trailer.

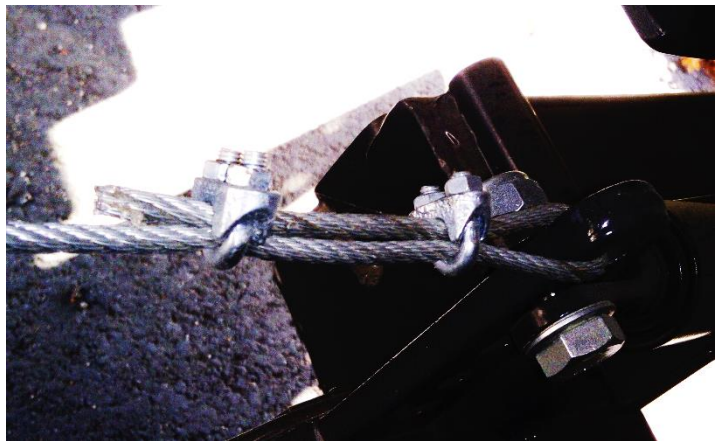
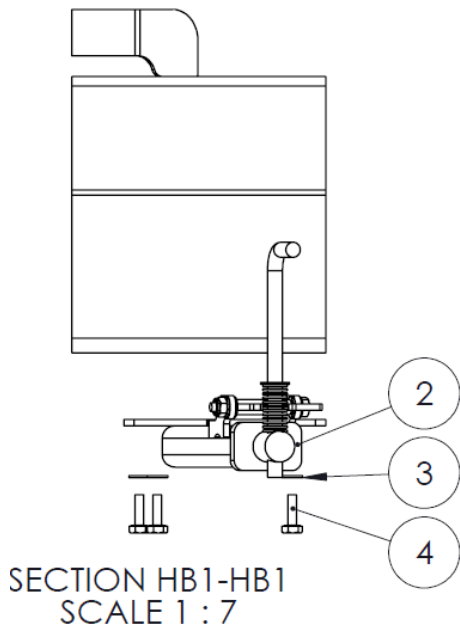
Make sure the handbrake is firmly on when parking – Turn the crank clockwise until brake cylinder is at the front end of the slot (pic. 1)

Make sure the handbrake is completely off before driving – Turn the crank counterclockwise until brake cable is loose.

1. Scheme of handbrake



2. Components of handbrake



Detail HB3

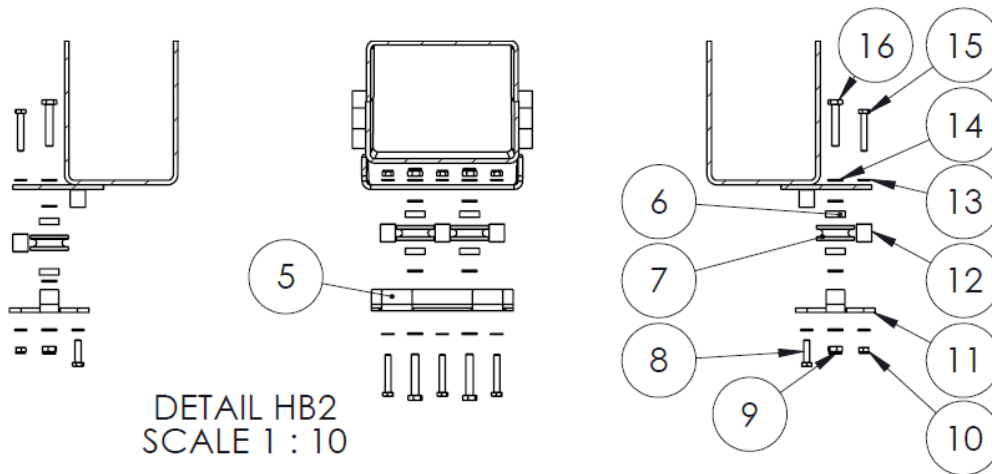


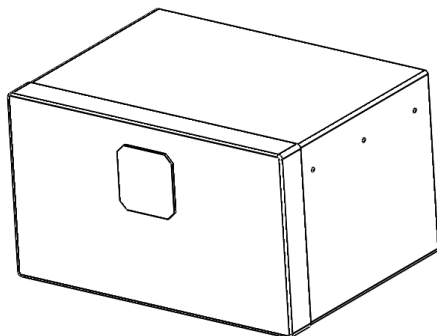
Figure 27. –Scheme of handbrake

Pos.	QTY	Part name	Part No	Description
1	5,5m	Brake cable	-	D5mm
2	1	Brake crank ass.	FE00.06.01.00	Left hand or right hand
3	3	Washer	DIN 125	M10
4	3	Bolt	DIN 933	M10x30
5	1	Handbrake cover 2	135R.08.02	
6	8	Roller bearing	6000-2RSH	D26_d10
7	4	135R.08.04	Cable wheel	
8	2	Bolt	DIN 933	M8x30
9	4	Nut	DIN 985	M10
10	5	Nut	DIN 985	M8
11	2	Handbrake cover 1	135R.08.01	
12	5	Bushing	ST0007	D20_d9_L24
13	12	Washer	DIN 125	M8
14	16	Washer	DIN 125	M10
15	5	Bolt	DIN 933	M8x50
16	4	Bolt	DIN 933	M10x55

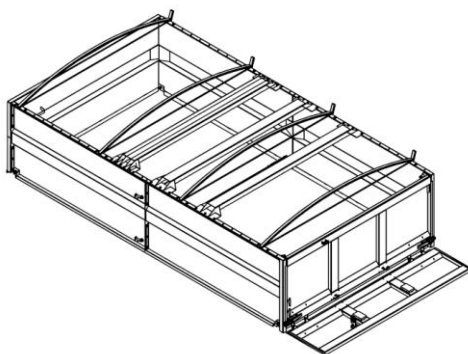
Table 20. - Spare parts of handbrake

2. Additional equipment

- Tool box; OT0030



- Extensions: 1000mm; 105D.15.00.00/135D.15.00.00



- Bale support FE00.13.00.00

