

HE-VA

Operating Instructions
Spare Parts List
Declaration of Conformity

as it looks



As good as it looks



As good as it looks

As good as it looks



As good as it looks

Warning: Be sure to read the operation instructions before using the machine.

Grass-Roller

Trailed: 4,5 m - 6,3 - 8,2 m

Manual no. 8000391-03 010921
For Farmer model use Tip-Roller manual



N. A. Christensensvej 34
DK-7900 Nykøbing Mors
Tel: 97724288
Fax: 97722112
www.he-va.com

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EC DECLARATION OF CONFORMITY

in accordance with the EU Machinery Directive 2006/42/EC
applicable as from December 29th 2009:

HE-VA ApS
N. A. Christensensvej 34,
DK-7900 Nykøbing Mors

hereby confirms that the following machine has been manufactured in accordance with the Council Directive 2006/42/EC.

The declaration comprises the following machine:

Grass – Roller 4,5m - 6,3m – 8,2m

Nykøbing the 29th December 2009

A handwritten signature in black ink, appearing to read 'Villy Christiansen', is written over a horizontal line.

Villy Christiansen

The undersigned is furthermore authorised to compile technical documentation for the above machine.

Delivery check

Check the roller for any damage. Check the hydraulic hoses for cuts and squeezing damage. Check also that the other hydraulic components have not been damaged during transport.

Check that the frame construction has not been damaged. You should also check that the roller blocks have not been exposed to impacts, which may have damaged the roller tube or the double-sealed ball bearings. Finally check that the transport wheel nuts are tightened and OK. Check the air pressure in the tyres: approx. 3.8 bar/55 psi.

Instructions regarding unloading and placing.

The machine is delivered in completely mounted condition. Our specially trained driver will help with the unloading of the machine.

The machine should be unloaded from the lorry using a tractor and the ramps as instructed by the driver.

The machine should then be placed on level, firm ground.

Machine description

Grass-Roller is a roller for consolidation of grassland. With water in the smooth steel rollers a high weight is achieved and with that effective consolidation which guarantees an evenly pressed grassland. This helps achieve the highest yield from the grass and good quality clean silage without soil, stones, spores etc. With a hydr. long finger harrow in 2 rows mounted in front of the Grass-Roller the grass can be ripped out and dead thatch can be removed or divided into fine particles. The Grass-Roller can be equipped with Spring-Board levelling bar or molehill bar mounted on the long finger harrow for levelling of molehills, cow pats etc., which helps avoid ingress of soil and foreign matter into fodder when harvested. Add a HE-VA Multi-Seeder onto the Grass-Roller and grass or other seeds can be drilled at the same time as the consolidation. This allows complete reseeding, and overseeding or patching in existing pastures.



Technical specifications

Grass-Roller		4,5 m	6.3 m	8.2 m
Working width	Cm	450	630	820
Max. legal speed	Km/h	25	25	25
Total weight	Kg	1560	3050	3880
Total weight with water	Kg	2830	5280	6790
Axle pressure	Kg	-	1980	-
Axle pressure with water	Kg	-	3650	-
Towing eye pressure	Kg	-	810	-
Towing eye pressure with water	Kg	-	1550	-
Total length	Cm	409	409	550
Width in total	Cm	222	242	244
Roller volume	L	3 x 420 L	3 x 770 L	1 x 770 L 2 x 1130 L
Front harrow				
Tine spacing	Cm	9	9	9

Technical requirements

Tractor		4,5 m	6.3 m	8.2 m
Motor performance	kW (HP)	70 - 120	100 - 140	120 - 160
Electric system				
Battery voltage	V	12	12	12
Plug for lights		7 - poles	7 – poles	7 – poles
Hydraulic system all models				
Max. working pressure	Bar	220	220	220
Pump effect	L/min	Min 15	Min 15	Min 15
Oil type		Hydro Texaco HD32	Hydro Texaco HD32	Hydro Texaco HD32



Safety instructions

General information

Do not start-up the machine if there are persons in exposed **positions**¹ within a **hazardous area**.²

When persons are in exposed positions (e.g. in connection with adjustment, maintenance, attachment and uncoupling), the following conditions must be observed:

The machine must be lowered to firm ground.

The hydraulics must be relieved.

The tractor must be stopped and the key removed from the ignition switch.

The driver must ensure that no persons are staying in exposed positions during the operation.

Most accidents that happen in connection with the operation, transport and maintenance of machines are caused by non-compliance with the most elementary safety conditions.

Therefore it is vital that anybody working at the machine carefully complies with the safety instructions as well as other instructions applying to the machine.

The machine may only be operated, maintained and repaired by persons, who are familiar with this work and who are further familiar with the possible elements of danger with this particular machine.

Instructions on transport on the public roads:

Check before transport on public roads that the attachment of the machine at the tractor is in accordance with the local rules and regulations in force (permitted total weight, permitted axle load, transport width, lights, warning signs, etc.).

Front axle load:

After the attachment of the machine and at maximum load, the driving properties of the tractor must be checked. Check that the front axle is sufficiently loaded. As a minimum, the front axle load must be 20% of the tractor weight. Permitted axle load and permitted total weight for the tractor must always be observed.

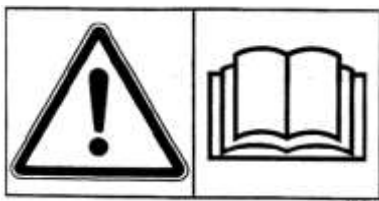
Notice! The driving, controlling and braking properties are affected by the attached machine combination.

¹ Persons in exposed positions: Any person who is staying wholly or partly within a hazardous area.

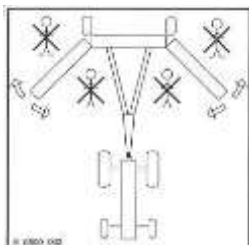
² Hazardous area: On and under the machine within a distance of 4 m from the machine.



Safety – and other markings on the machine



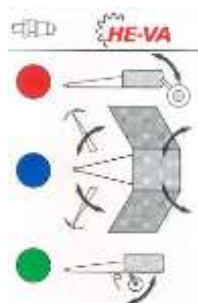
Study the Operating Instructions thoroughly before any operation of the machine and observe all safety instructions.



Take care that no persons are within the machine's hazardous area during the unfolding and folding procedure.



Plate with number and year of manufacture.

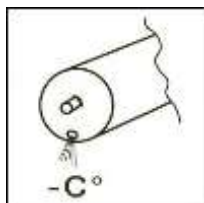


Indication label for the machine's hydraulic systems:

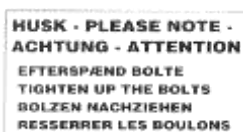
Red: Tip-hydraulics (Lifting of middle section)

Blue: Wing-hydraulics (Folding and weight transfer system)

Green: Extra equipment



Empty the rollers of water, before the temperature is below 0 C°. If this is not observed, our guarantee obligations will no longer apply.



Tighten up the bolts regularly. If this is not performed, our guarantee obligations will no longer apply.

Maximum torque according to ISO 898-1 in Nm. w/lubricated thread			
Metric thread	Quality 8.8	Quality 10.9	Quality 12.9
M10	38	54	63
M12	66	95	110
M14	105	150	176
M16	164	235	274
M18	233	323	377
M20	331	458	535
M22	450	622	727
M24	572	791	925
Hub bolts M18x1,5 fine thread		360	
Hub bolts M22x1,5 fine thread		550	

Operating Instructions

Attachment

On delivery the roller is in transport position. At start-up the roller is attached to the tractor.

Important:

Check that the towing hook height is between 500 and 550 mm.

Raise the support leg and place it in the transport fittings on top of the drawbar. Now fit all the hydraulic hoses.

The roller requires two double-acting hydraulic outlets.

The hoses for the tip cylinder are provided with **red** cable straps.

The hoses for the wing cylinder are provided with **blue** cable straps.

The hoses for the long finger harrow are provided with **green** straps (extra equipment).

Power plug and control box for weight transfer protection are putted into the cabin (8.2m models)

Unfolding and folding

of the machine, notice no. 2 and 6 are only for 6,3m

1. Check that the male quick couplings mounted from the factory fit the tractor's female quick couplings.
2. Contact on the control box for weight transfer protection activated (diode lights up)
3. Now pressurise the tip-cylinder (red), so that the side sections are lifted free of the transport cradle.
4. Then the wing-cylinders are pressured (blue), so that the side sections are folded out as much as possible, the hydraulic rams being fully closed.
5. Now relieve the pressure of the tip-cylinder (red), and the roller will tip forward, down to working position. When the bottom has been reached, let go of the hydraulic handle.
6. Contact on the control box for weight transfer protection de-activated (diode off)
7. Now the wing-cylinders are pressured (blue), so that the side sections are pressed down against the ground and the manometer is showing the hydraulic pressure according to the schedule on the next page in order to obtain the correct weight transfer between the middle section and the side sections.

Change-over from working to transport position, notice no. 8 and 13 are only for 6,3m

8. Contact on the control box for weight transfer protection activated (diode lights up)
9. First the side sections are lifted free of the ground by pressurising the wing-cylinders (blue).
10. The roller is tipped completely backwards and is locked by pressurising the tip-cylinder (red).
11. Now pressurise the wing-cylinders (blue), so that the side sections are turning forwards, towards the stop on the transport fittings of the drawbar.
12. When both side sections are parallel with the drawbar, they are lowered down into the transport cradle by relieving the tip-cylinder (red). This is to be performed with care.
13. Contact on the control box for weight transfer protection de-activated (diode off)
14. All hydraulic hoses are relieved, and the machine is ready for transport.

Important: It is not permitted to pressurise any cylinders in transport position.



Settings and adjustment

Weight transfer

The weight transfer is adjusted dependent on the water quantity in the rollers. The weight transfer is adjusted by pressurising the hydraulic system (blue).

The pressure is read on the machine's manometer.

Water level / Bar	4,5 m	6,3 m	8,2 m
1/1	15	30	40-45
3/4	15	30	40-45
1/2	15	30	40-45
1/4	15	30	40-45

NOTE: The weight transfer system can be loaded with max. **100 bar**.

Long finger harrow

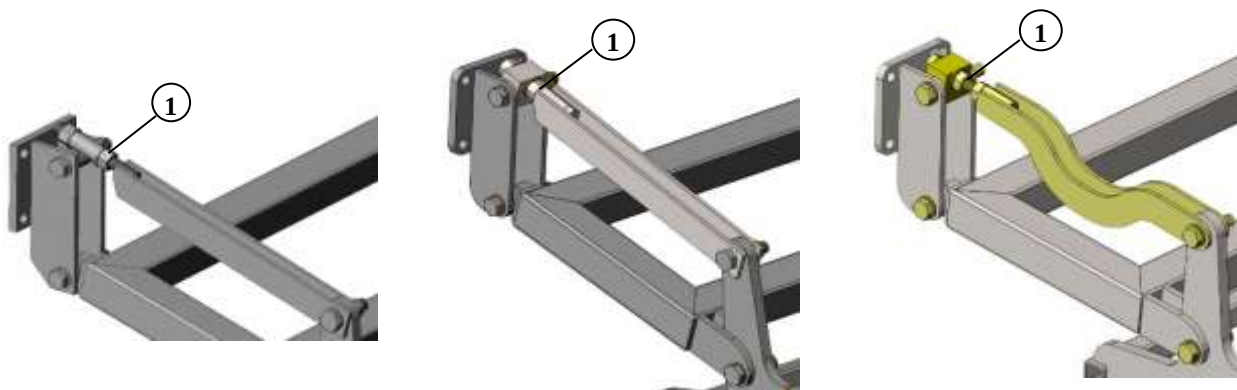
The long finger harrow is raised and lowered with the hydraulic system, which is marked with the **green** colour.

During work the long finger harrow can be raised and lowered as required. However, you have to take care that the harrow does not work too deeply meaning that it will carry the whole roller's weight.

Recommended harrow depth: 25 mm below the roller.

The front harrow is to operate in horizontal position when the machine is in working position. This is adjusted on the parallel rods, by loosening the nuts on each parallel rod and by tightening on the opposite side. ①

Each tine can be worn approx. 200 mm. However, they will be less flexible and maybe there is a need for an earlier replacement.

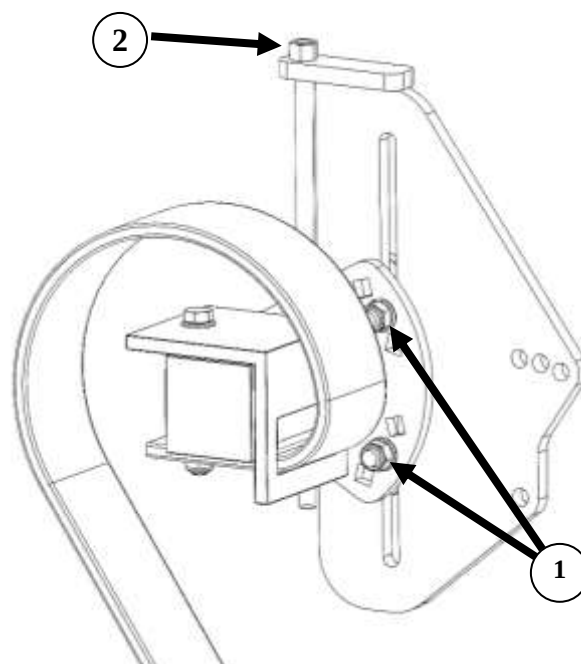


From machine number 341717

Levelling board

The levelling board is raised in proportion to the wear and tear of the tines. This is performed by loosening 2 nuts (pos. 1), and hereafter screwing with a 19 mm spanner on the thread spindle (pos. 2), which determines the height. When the desired height is reached, the 2 nuts (pos. 1), are tightened again.

Be sure that all adjusters are set the same otherwise the levelling board will operate unevenly. This is easily done by measuring the length of the spindle.



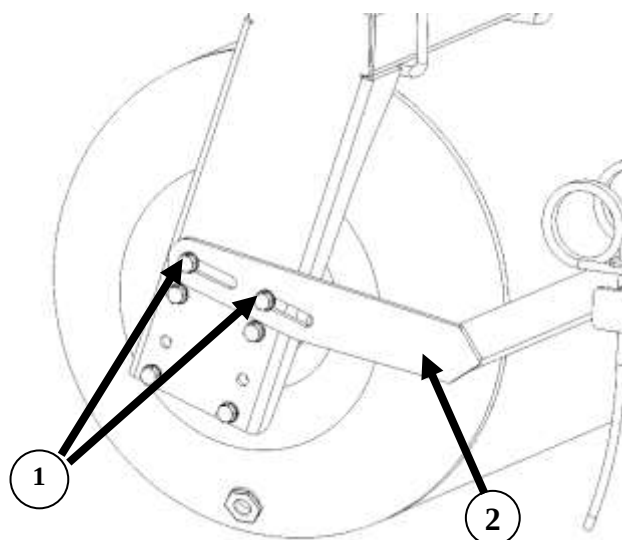
Roller scraper

6.3 m

The scrapers are bolted on the end plates. In order to adjust the scraper bar loosen the 2 bolts (pos. 1) at the top and push the scraper bar (pos. 2) against the roller. Please be aware that the scraper bar is to be placed 5 – 10 mm from the roller.

8.2 m

The scrapers are adjusted in the same way as for 6.3 m. In the middle of the side sections 2 bolts are placed, which are to be loosened too.



Maintenance

Lubrication

Important:

After every approx. 10 working hours the wheels, ball bearings and stop rings are tightened. Hoses, fittings and cylinders are inspected for eventual leaks and are tightened too.

After every approx. 10 working hours all movable parts in the side sections are to be lubricated as well as the 3 lubricating points on the wing cylinder. After every 30 working hours the tip cylinder's pins and the 3 pins in the drawbar are to be lubricated.

The bearings of the roller are to be lubricated after every 100 working hours and/or after cleaning.

Important:

Oil, type Hydro Texaco HD32 has been filled in the hydraulic system.

After the season, the roller is to be cleaned and lubricated with grease and oil.

Important:

The piston rods are to be lubricated with grease, for long term storage.

Repairs

All repairs are to be performed with original HE-VA spare parts.



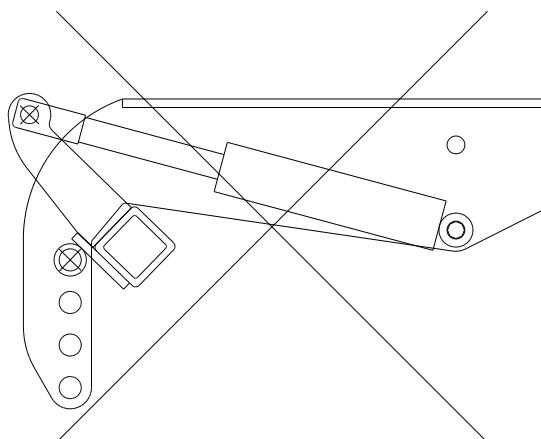
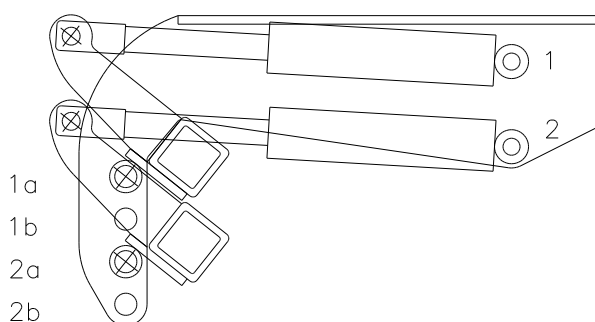
Spring-Board

The Spring-Board requires 1 double-acting hydraulic outlet on the tractor. The tine angle and thereby the aggressiveness of the tines is hydraulically controlled from the driver's cab and the depth control is done manually. The Spring-Board tine bar is adjustable in height and thereby the working angle of the tines against the ground is being changed. The tines work independently, but may be connected by means of a transverse locking system (extra equipment) if a greater levelling effect is required. The change-over is done very easily and quickly without any tools.

Mounting of cylinder on Spring-Board

The hydraulic cylinders are mounted as shown below. It is important that the mounting is performed properly to get the correct force on the cylinders.

On the Grass-Roller the cylinders for Spring-Board must be mounted in hole 2 and 2b. Moreover, the tine points of the Spring-Board tines are placed completely down, so that they are bolted in the lower holes.

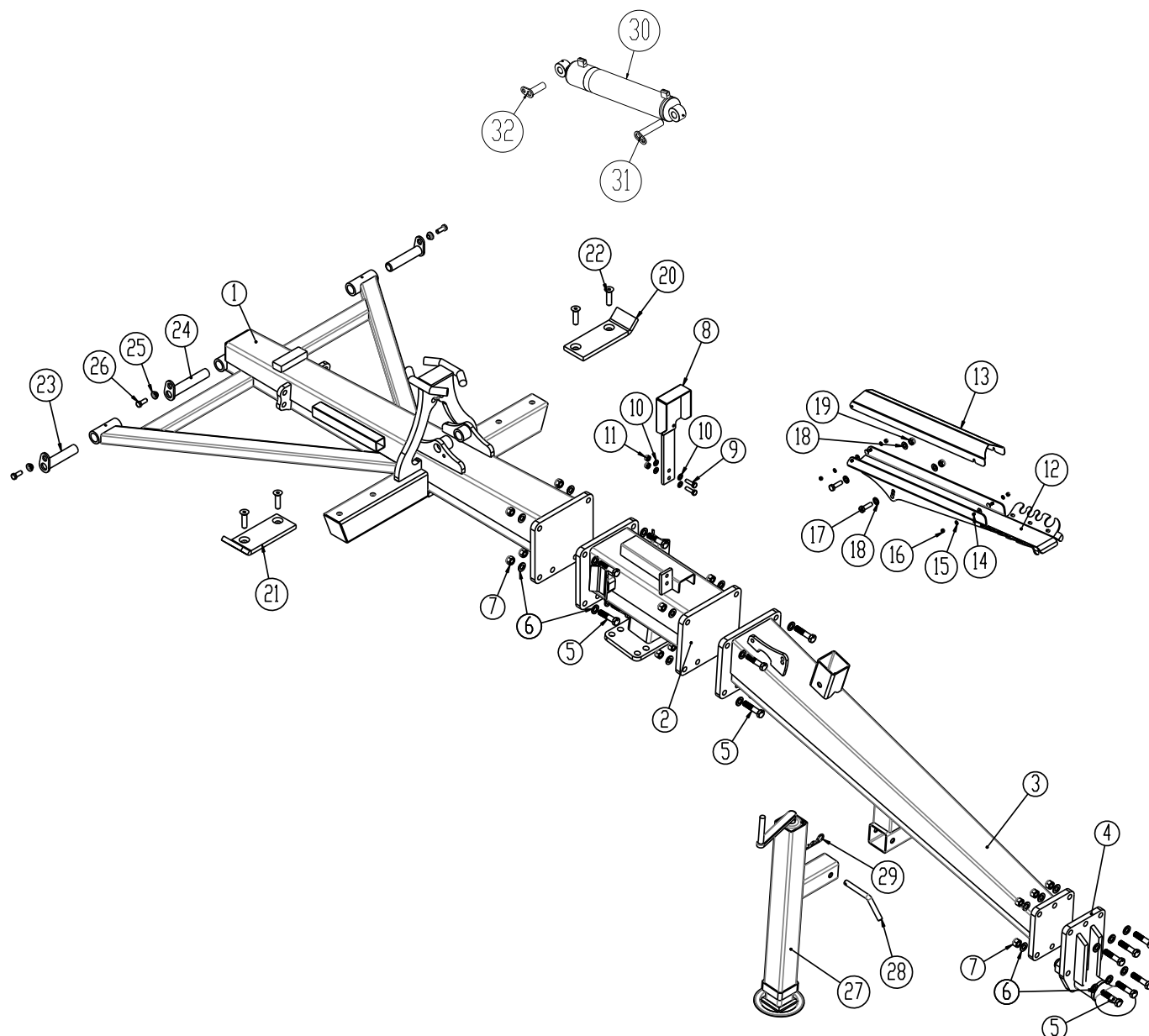


Spare parts list

How to read the Spare parts list

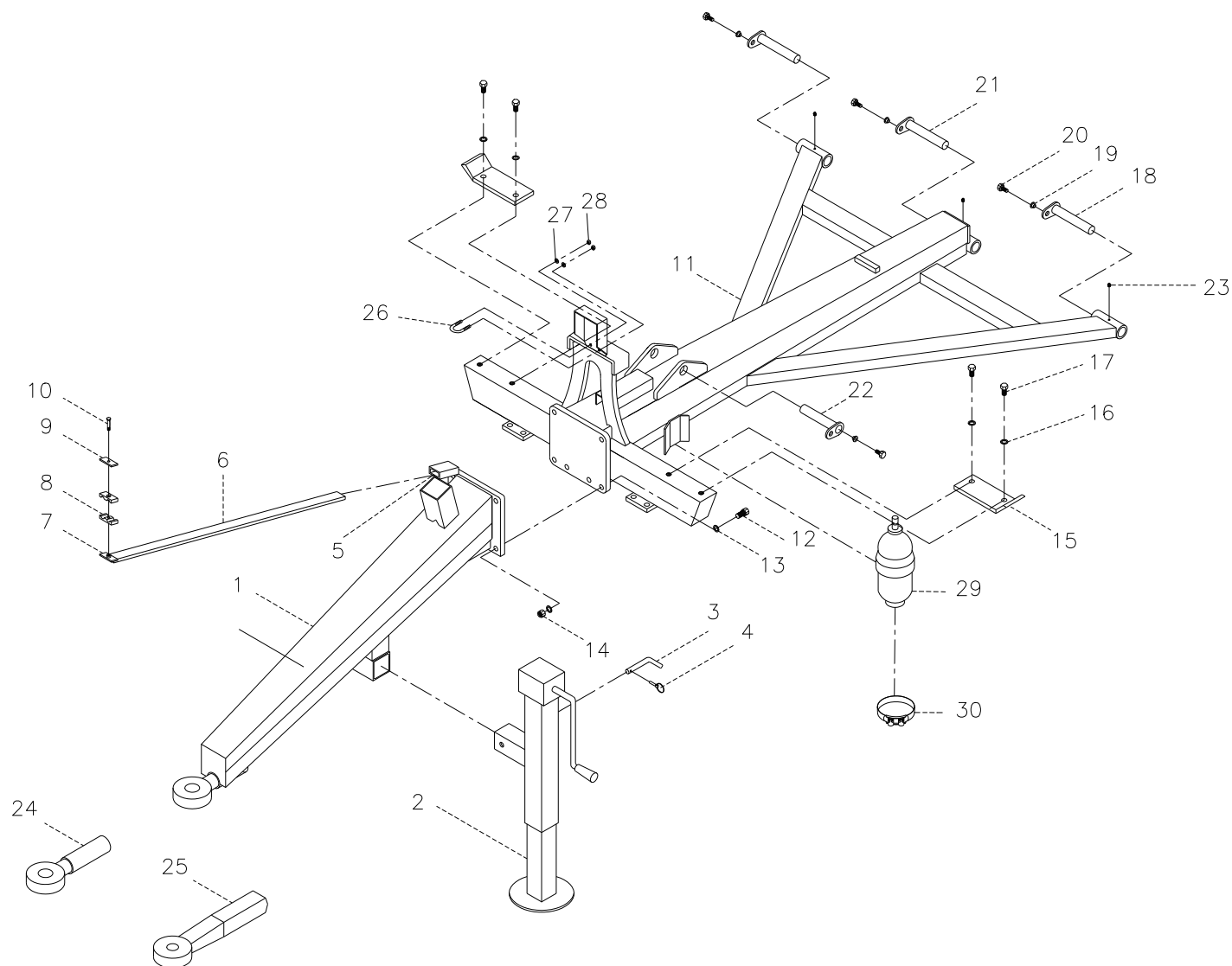
The exploded drawings are always ahead of the belonging parts table. Pay attention to some part tables which are continued to the next page. Also, some drawings are on two pages, one after the other.

Front - and back drawbar 4,5 m



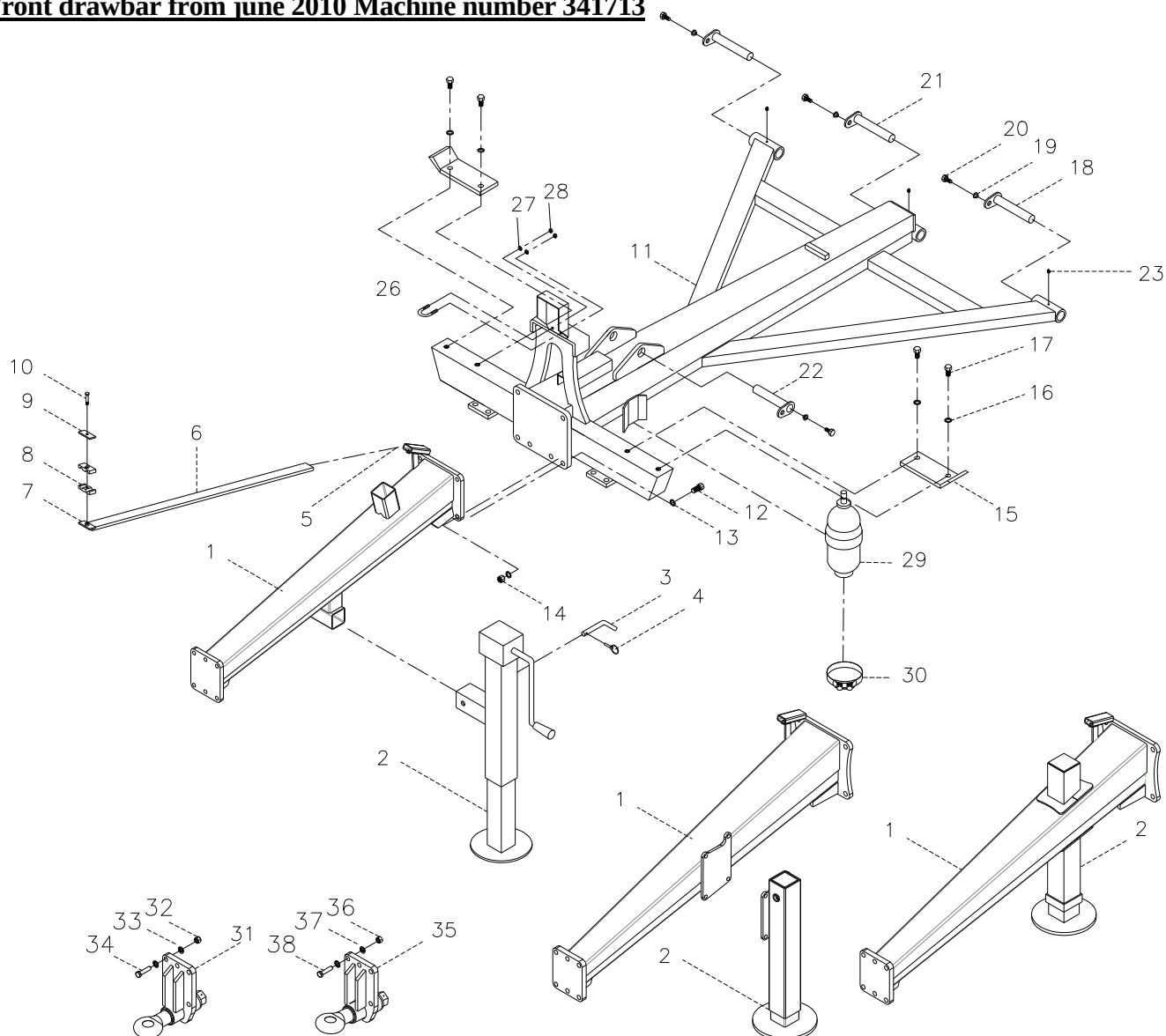
Pos.	Item no.	Designation	4,5m
1	630536200	Back drawbar	1
2	630286135	Drawbar extension 500 mm	1
3	630757032	Drawbar	1
4	630757028	Towing eye complete	1
5	690103130	Bolt M16x70 10.9	18
6	0272290	Facet washer Ø16 DIN 125B	36
7	0264090	Self-locking nut M16	18
8	630941066	Manometer holder	1
9	0235060	Set bolt M10x35 8.8	2
10	0272260	Facet washer Ø10 DIN 125B	4
11	0264060	Self-locking nut M10	2
12	7345001	Hose parking main part	1
13	7345003	Hose parking upper part	1
	7345010	Hose parking complete	
14	0246060	Carriage bolt M6x16 Fzb DIN 603	4
15	0272240	Facet washer Ø6 Fzb	4
16	0264040	Self-locking nut M6	4
17	0235360	Set bolt M12x40 8.8	2
18	0272270	Facet washer Ø12 Fzb DIN 125B	4
19	0264070	Self-locking nut M12	2
20	630762045	Transport bracket left	1
21	630762048	Transport bracket right	1
22	690103004	Bolt M16x60 countersinck DIN 7991	4
23	69430140G	Pin Ø30 L=140	2
24	69430170G	Pin Ø30 L=170	1
25	630532600	Lock bushing for pinhead	2
26	0235340	Bolt M12x30 8.8 Fzb	3
27	690141095	Support leg	1
28	69216094A	Pin Ø16 L=94	1
29	0377400	R-clip Ø4	1
30	690200109	Tip-Cylinder 100/50x600 Hydrflex	1
31	69420150G	Pin Ø30 L=150	1
32	69430090G	Pin Ø30 L=90	1

Front and rear drawbar 6,3 - 8,2m before May 2010, before machine no. 341713



Pos.	Item no.	Designation	6.3m	8.2m
1	630771010	Front drawbar (Danish)	1	0
1	630831000	Front drawbar (Danish)	0	1
2	690141102	Supporting leg 6000 kg	1	1
3	69516094A	Pin Ø16 L=94	1	1
4	690133005	R-clip Ø4	1	1
5	690103075	Bolt M10x25	1	1
6	630771200	Parking device for hose	1	1
7	690210212	Welding plate for tube-support double	1	1
8	690210210	Tube-support double Ø14/Ø14	2	2
9	690210211	Top plate for tube-support double	1	1
10	690210213	Screw for tube-support double	1	1
11	630327110	Back drawbar	1	0
11	630347500	Back drawbar	0	1
12	690103190	Bolt M16x65	1	0
12	690103164	Bolt M20x70	0	1
13	690117013	Facet plate Ø16	1	0
13	690117005	Facet plate Ø20	0	1
14	690113008	Self-locking nut M16	1	1
14	690113009	Self-locking nut M20	0	1
15	630762045	Transport bracket	2	2
16	690119008	Spring washer Ø16	2	2
17	690103127	Bolt M16x50	2	2
18	69435175G	Pin Ø35 L=175	2	2
19	630532600	Lock-bush for pin head	4	4
20	690101101	Bolt M12x25	4	4
21	69435185G	Pin Ø35 L=185	1	1
22	69435175G	Pin Ø35 L=175	1	1
23	690136029	Lubricating nipple M8	3	3
24	690141211	Towing eye (Danish)	1	1
25	690105003	Towing eye (German)	1	1
26	690110003	U-bolt M8x60xØ35	1	1
27	690117004	Facet plate ø8	2	2
28	690113004	M8 Self-locking nut	2	2
29	690206403	Accumulator H700R 15 bar	1	1
29a	690206410	Accumulator H700R 40 bar	1	1
30	690206511	Clamp for accumulator	2	2

Front drawbar from june 2010 Machine number 341713



Pos.	Item no.	Designation	6,3m	8,2m
1	630771000	Front drawbar	1	0
1	630771020	Front drawbar from machine number 344524	1	
1	630831015	Front drawbar from machine number 341713	0	1
1	630831021	Front drawbar w/centre mounted supporting leg from machine number 342015		1
2	690141102	Supporting leg 6000 kg	1	1
2	690141099	Supporting leg hydraulic from machine number 341713		1
2	690141098	Supporting leg hydraulic from machine number 342015		1
3	69516094A	Pin Ø16 L=94	1	1
4	690133005	R-clip Ø4	1	1
5	690103075	Bolt M10x25	1	1
6	630771200	Parking device for hose	1	1
7	690210212	Welding plate for tube-support double	1	1

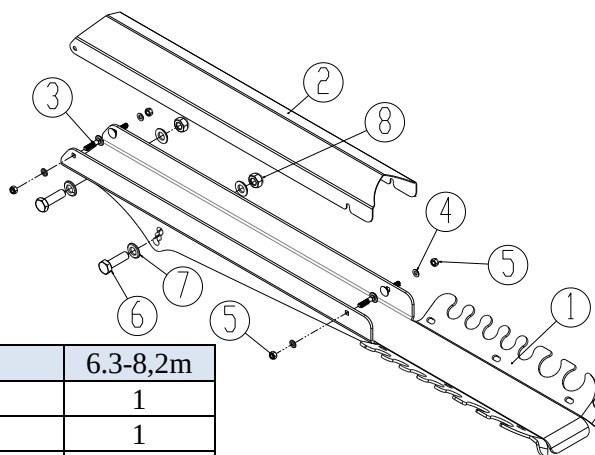
The tabel continues →



8	690210210	Tube-support double Ø14/Ø14	2	2
9	690210211	Top plate for tube-support double	1	1
10	690210213	Screw for tube-support double	1	1
11	630327110	Back drawbar	1	0
11	630327515	Back drawbar from machine number 344524	1	0
11	630347500	Back drawbar	0	1
12	690103275	Bolt M16x65 10.9	6	0
12	690103173	Bolt M20x70 10.9 from machine number 344524	6	
12	690103173	Bolt M20x70 10.9	0	6
13	690117013	Facet plate Ø16	12	0
13	690117005	Facet plate Ø20 from machine number 344524	12	
13	690117005	Facet plate Ø20	0	12
14	690113008	Self-locking nut M16	6	6
14	690113009	Self-locking nut M20 from machine number 344524	6	
14	690113009	Self-locking nut M20	0	1
15	630762045	Transport bracket	2	2
16	690119008	Spring washer Ø16	2	2
17	690103127	Bolt M16x50	2	2
18	69435175G	Pin Ø35 L=175	2	2
19	630532600	Lock-bush for pin head	4	4
20	690101101	Bolt M12x25	4	4
21	69435185G	Pin Ø35 L=185	1	1
22	69435175G	Pin Ø35 L=175	1	1
23	690136029	Lubricating nipple M8	3	3
26	690110003	U-bolt M8x60xØ35	1	1
27	690117004	Facet plate ø8	2	2
28	690113004	M8 Self-locking nut	2	2
29	690206403	Accumulator H700R 15 bar	1	1
29a	690206410	Accumulator H700R 40 bar	1	1
30	690206511	Clamp for accumulator	2	2
31	630757028	Drawbar cpl.Ø50 pivotal M16 bolte	1	0
31a	690141211	Towing eye Ø50 pivotal M16 bolts	1	
32	690113008	Self-locking nut M16	6	0
33	690117013	Facet plate Ø16	12	0
34	690103275	Bolt M16x65 10.9	6	0
35	630757017	Drawbar cpl.Ø50 pivotal M20 bolte	0	1
35a	690105006	Towing eye Ø50 pivotal M20 bolte		1
36	690117005	Self-locking nut M20	0	6
37	690113011	Facet plate Ø20	0	12
38	690103069	Bolt M20x80 10.9	0	6

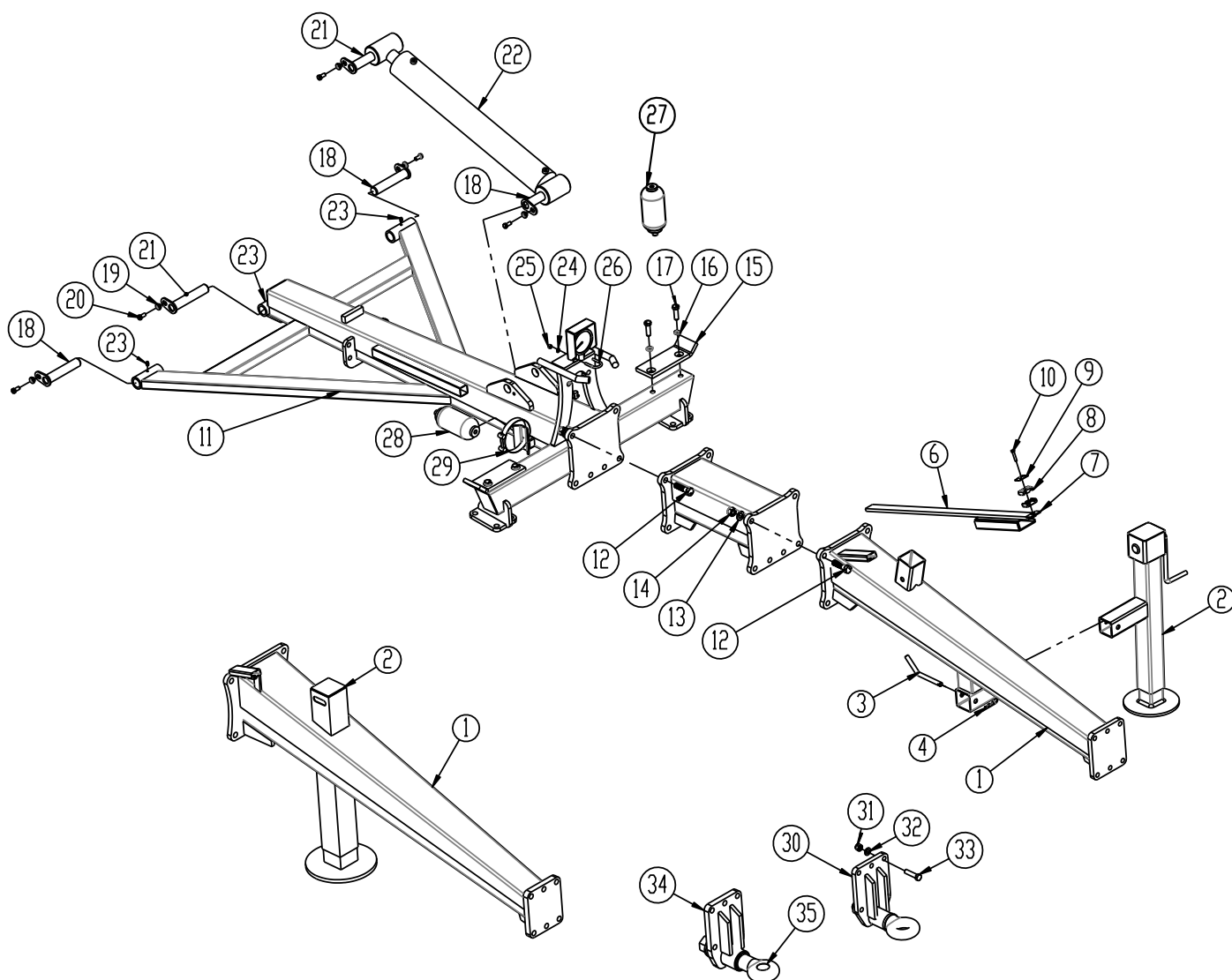


Hose parking from may 2016



Pos.	Item no.	Designation	6.3-8,2m
1	7345006	Hose parking large model	1
2	7345003	Hose parking upper part	1
3	0246060	Carriage bolt M6x16 Fzb DIN 603	4
4	0272240	Facet washer Ø6 Fzb	4
5	0264040	Self.-locking nut M6	4
6	0235360	Set bolt M12x40 8.8	2
7	0272270	Facet washer Ø12 Fzb DIN 125B	4
8	0264070	Self-locking nut M12	2

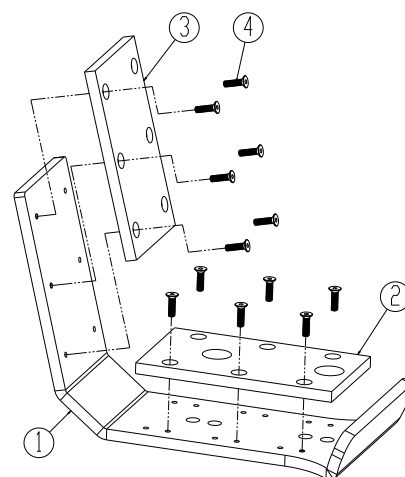
Front- and back drawbar, From machine no. 347534



Pos.	Item no.	Designation	6.3m	8.2m
1	630771020	Front drawbar	1	0
1	630831021	Front drawbar	0	1
2	690141102	Supporting leg 6000 kg	1	0
2	690141098	Supporting leg, Hydraulic	0	1
3	69516094A	Pin Ø16 L=94	1	1
4	690133005	R-clip Ø4	1	1
5	690103075	Bolt M10x25	1	1
6	630771200	Parking device for hose	1	1
7	690210212	Welding plate for tube-support double	1	1
8	690210210	Tube-support double Ø14/Ø14	2	2
9	690210211	Top plate for tube-support double	1	1
10	690210213	Screw for tube-support double	1	1
11	630330001	Back drawbar	1	0
11	630367136	Back drawbar, From serial no. 347534	0	1
12	690103173	Bolt M20x70 10.9	12	12
13	690117005	Facet washer Ø20	12	12
14	690113009	Self-locking nut M20	12	12
15	630762045	Transport bracket Right	1	1
15	630762048	Transport bracket Left	1	1
16	690119008	Spring washer Ø16	2	2
17	690103127	Bolt M16x50	2	2
18	69435175G	Pin Ø35 L=175	3	3
19	630532600	Lock-bush for pin head	5	5
20	690101101	Bolt M12x25 8.8	5	5
21	69435185G	Pin Ø35 L=185	2	2
22	690200020	Tip cylinder Ø100/50 x 700 mm, Ø35 mm Replaced by 690200310	1	
22	690200310	Tip cylinder Ø110/50x700 mm, Ø35/Ø35 mm	1	
22	690200315	Tip cylinder Ø110/60 x 1000 mm, Ø35/Ø35 mm		1
23	690136029	Lubricating nipple M8	3	3
24	690110003	U-bolt M8x60xØ35	1	1
25	690117004	Facet plate ø8	2	2
26	690113004	Self-locking nut M8	2	2
27	690206403	Accumulator H700R 15 bar	1	1
28	690206410	Accumulator H700R 40 bar	1	1
29	690206511	Clamp for accumulator	2	2
30	630757028	Towing eye complete Ø50, turnable, M16 bolts	1	
31	690113008	Self-locking nut M16	6	
31	690113009	Self-locking nut M20		6
32	690117013	Facet washer Ø16	12	
32	690117005	Facetwasher Ø20		12
33	690103275	Bolt M16x65 10.9	6	
33	690103173	Bolt M20x70 10.9		6
34	630757017	Towing eye complete, Ø50, turnable, heavy duty, M20 bolte		1
35	690141211	Towing eye Ø50, turnable, heavy duty		1

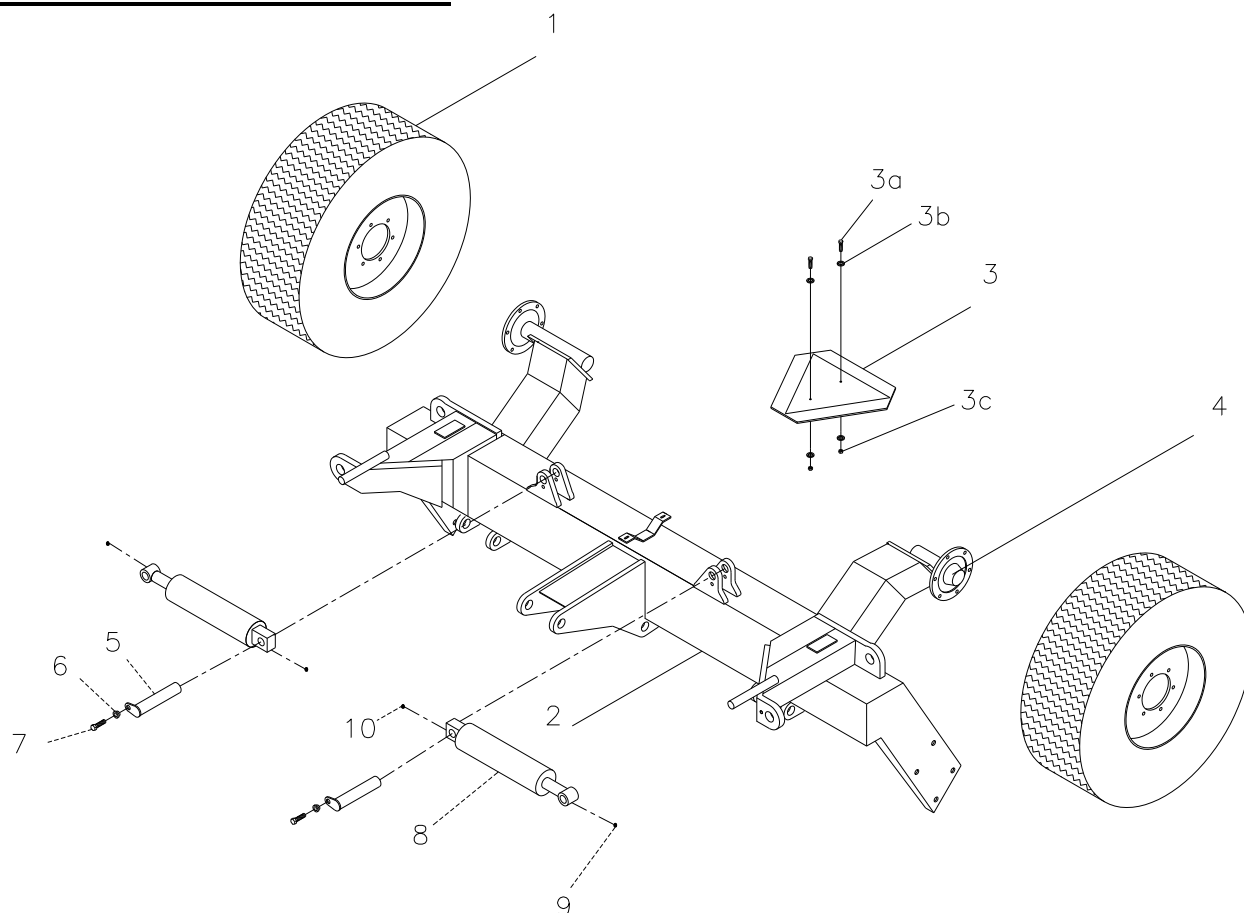


Transport bracket, only when Starrings are mounted, all models



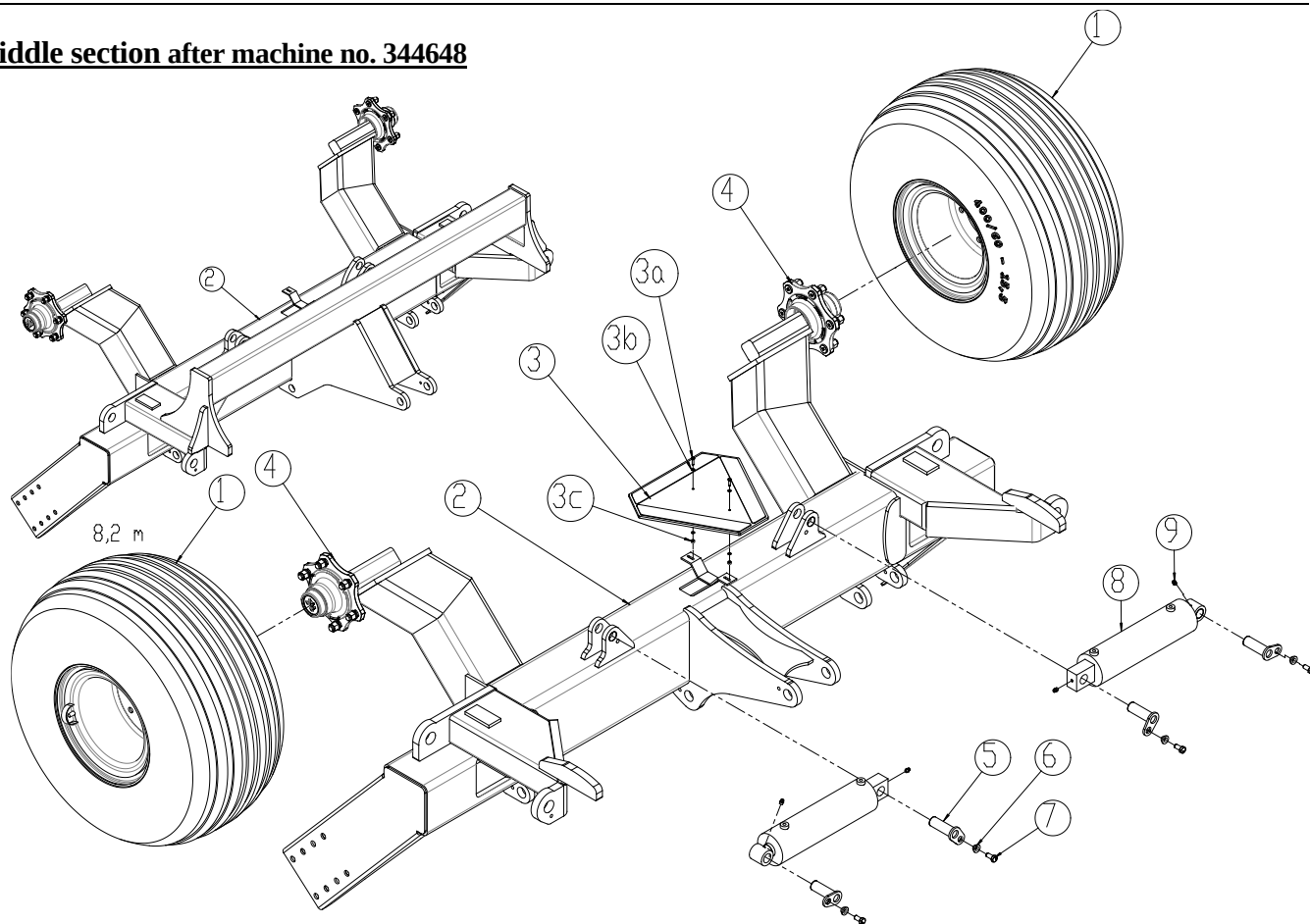
Pos.	Item no.	Designation	Qty.
1	1210334	Transport bracket	2
2	1210333	Plastic PEHD-300 15 mm black, horizontal	2
3	1210336	Plastic PEHD-300 15 mm black, vertical	2
4	0228032	Bolt countersunk M8x30 8.8 fzb DIN 7991	24

Middle section before machine 344648



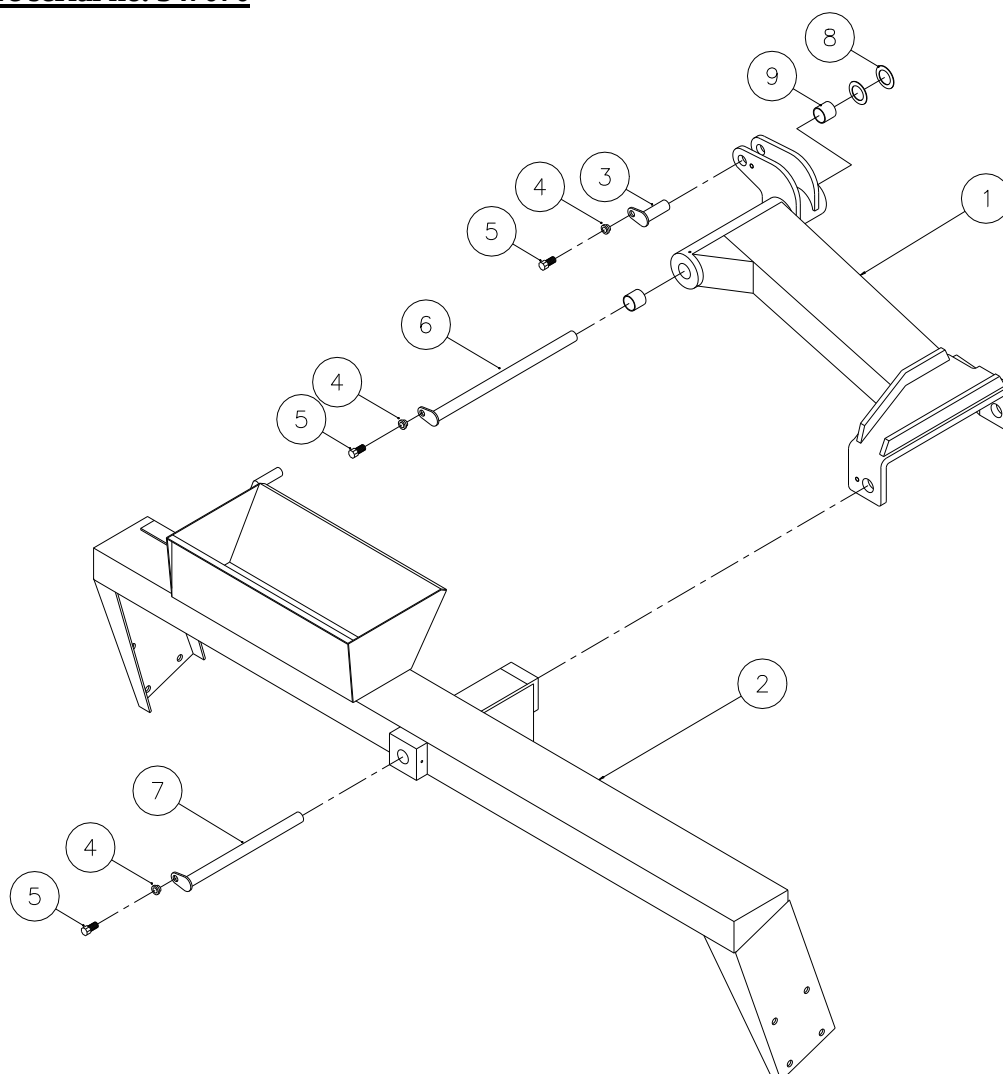
Pos.	Item no.	Designation	4,5m	6.3m	8.2m
1	690141335	Wheel 400 / 60 x 15,5 14 PLY		2	2
2	630536300	Middle section From machine no. 347231	1		
2	630327100	Middle section		1	
2	630347600	Middle section			1
2	630347602	Middle section From machine no. 344648			1
3	690142001	Warning triangle		1	1
3a	690103014	Bolt M5x20		2	2
3b	690117002	Facet plate Ø5		4	4
3c	690113002	Self-locking nut M5		2	2
4	690141025	Hub 1700 kg - TVZ, see cover at hub for identification	2		
4	0395440	Hub 1700 kg - He-va, see cover at hub for identification	2		
4	690141030	Hub 2500 kg. - TVZ, see cover at hub for identification		2	2
4	0395442	Hub 2500 kg. - He-va, see cover at hub for identification		2	2
4	690141031	Hub w/brakes 2500kg		2	2
4a	690141039	Hub bolt M18x1,5x49		12	12
4b	690141055	Hub nut M18		12	12
4f	690141314	Hub cover ø78 1700 kg hub - TVZ see cover for identif.	2		
4f	0395436	Hub cover ø78 1700 kg hub - He-va see cover for identif.	2		
4f	690141033	Hub cover ø80 2500 kg hub - TVZ see cover for identif.		2	2
4f	0395437	Hub cover ø88 2500 kg hub - He-va see cover for identif.		2	2
5	69430090G	Pin ø30 L=90	1		
5	69430100G	Pin ø30 L=100		2	2
6	630532600	Lock bush for pin head		2	2
7	690101101	Bolt M12x25		2	2
8	630286167	Traverse cylinder ø70/ø40-600 (not shown)	1		
8a	690200068	Gasket set 70/40 mm Laizhou			
8	630762047	Traverse cylinder 90/40 - 280		2	
8a	690200274	Gasket set 90/40			
8	690200340	Traverse cylinder 100/40 x 285			2
8a	690200290	Gasket set 100/40			
9	690136001	Lubricating nipple M6		2	2
10	690136029	Lubricating nipple M8		2	2

Middle section after machine no. 344648



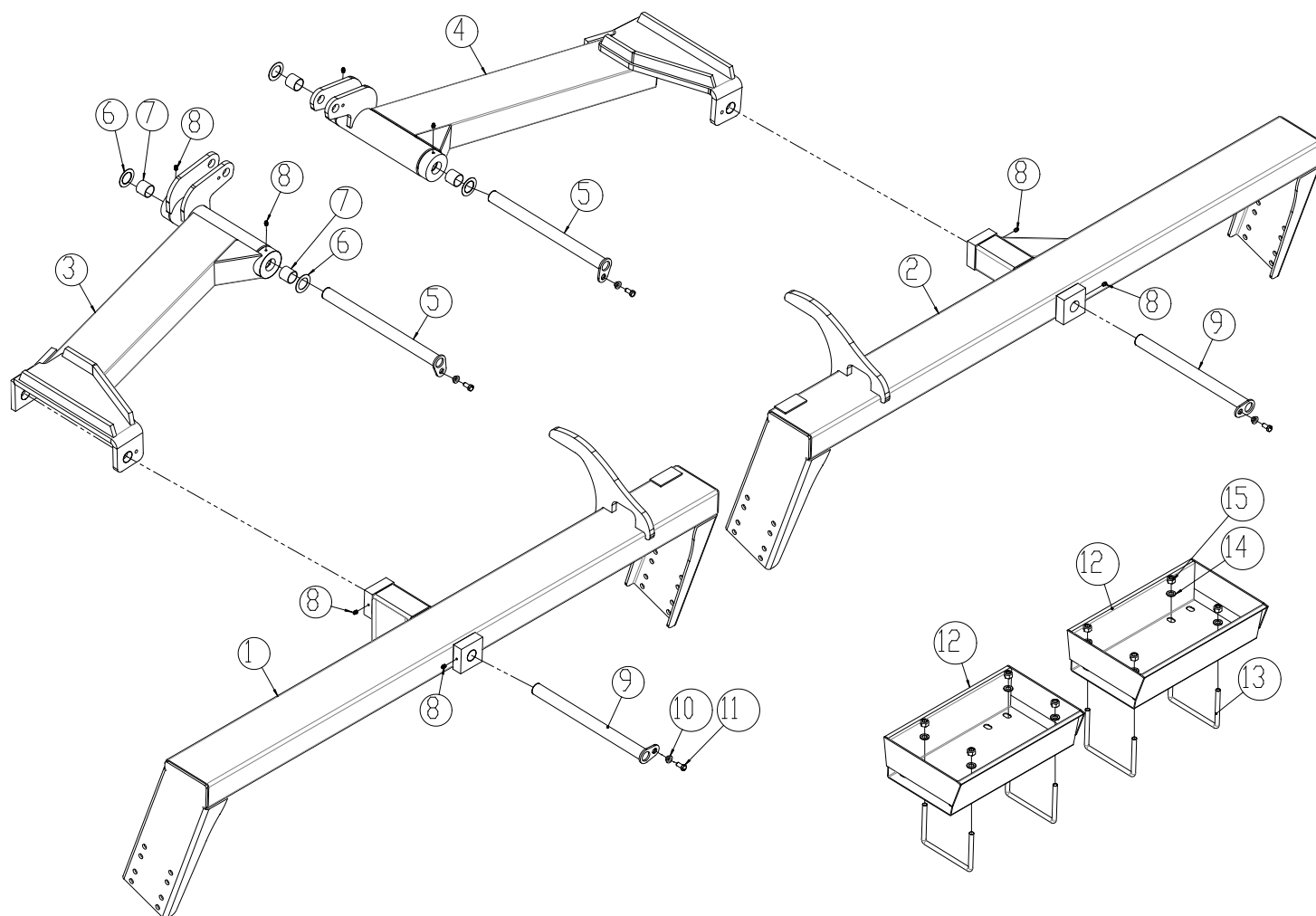
Pos.	Item no.	Designation	6,3m	8,2m
1	690141335	Wheel 400 / 60 x 15,5 14 PLY	2	2
2	630330065	Middle section	1	
2	630347602	Middle section		1
3	690142001	Warning triangle	1	1
3a	690103014	Bolt M5x20	2	2
3b	690117002	Facet washer Ø5	4	4
3c	690113002	Safety nut M5	2	2
4	690141030	Hub 2500 kg. - TVZ, see cover at hub for identification	2	2
4	0395442	Hub 2500 kg. - He-va, see cover at hub for identification	2	2
4	690141031	Hub w/brakes 2500 kg - Item no. has expired	2	2
4	690141044	Hub w/brakes 4500 kg - TVZ	2	2
4a	690141039	Hub bolt M18x1,5x49	12	12
4b	690141055	Hub nut M18	12	12
4f	690141033	Hub cap ø80 (2500 kg hub) - TVZ see cover for identif.	2	2
4f	0395437	Hub cover ø88 2500 kg hub - He-va see cover for identif.	2	2
5	69430090G	Pin Ø30 L=90	2	
5	69435090G	Pin Ø35 L=90		2
6	630532600	Lock bush for pin head	2	2
7	690101101	Bolt M12x25	2	2
8	630762047	Traverse cylinder 90/40 – 280	2	
8a	690200274	Gasket set 90/40		
8	690200340	Traverse cylinder 100/40x285 Ø35/Ø35		2
8a	690200290	Gasket set 100/40		
9	690136029	Lubricating nipple M8	2	2

Wing sections Before serial no. 347070

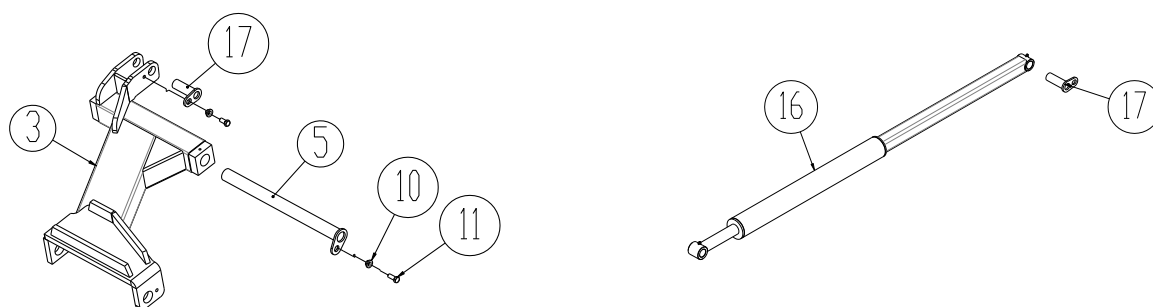


Pos.	Item no.	Designation	6,3m	8,2m
1	630773000	Wing suspension right	1	
1	630773100	Wing suspension left	1	
1	630347710	Wing suspension right Before serial no. 344648		1
1	630347712	Wing suspension right After serial no. 344648		1
1	630347700	Wing suspension left Before serial no. 344648		1
1	630347702	Wing suspension left After serial no. 344648		1
2	630774000	Wing section right Before serial no. 347070	1	
2	630774100	Wing section left Before serial no. 347070	1	
2	630347810	Wing section right Before serial no. 347070		1
2	630347800	Wing section left Before serial no. 347070		1
3	69430090G	Pin ø30 L=90	2	2
4	630532600	Lock bush for pin head	6	6
5	0235330	Bolt M12x25	6	6
6	69440525G	Pin ø40 L=525	2	2
7	69440508G	Pin ø40 L=508	2	
7	69440550G	Pin ø40 L=550		2
8	690140714	Spacer disc Ø42/Ø66x1,5	4	4
9	690140715	Bushing Ø40/Ø44 L=40	4	4

Wing section right / left After serial no. 347070

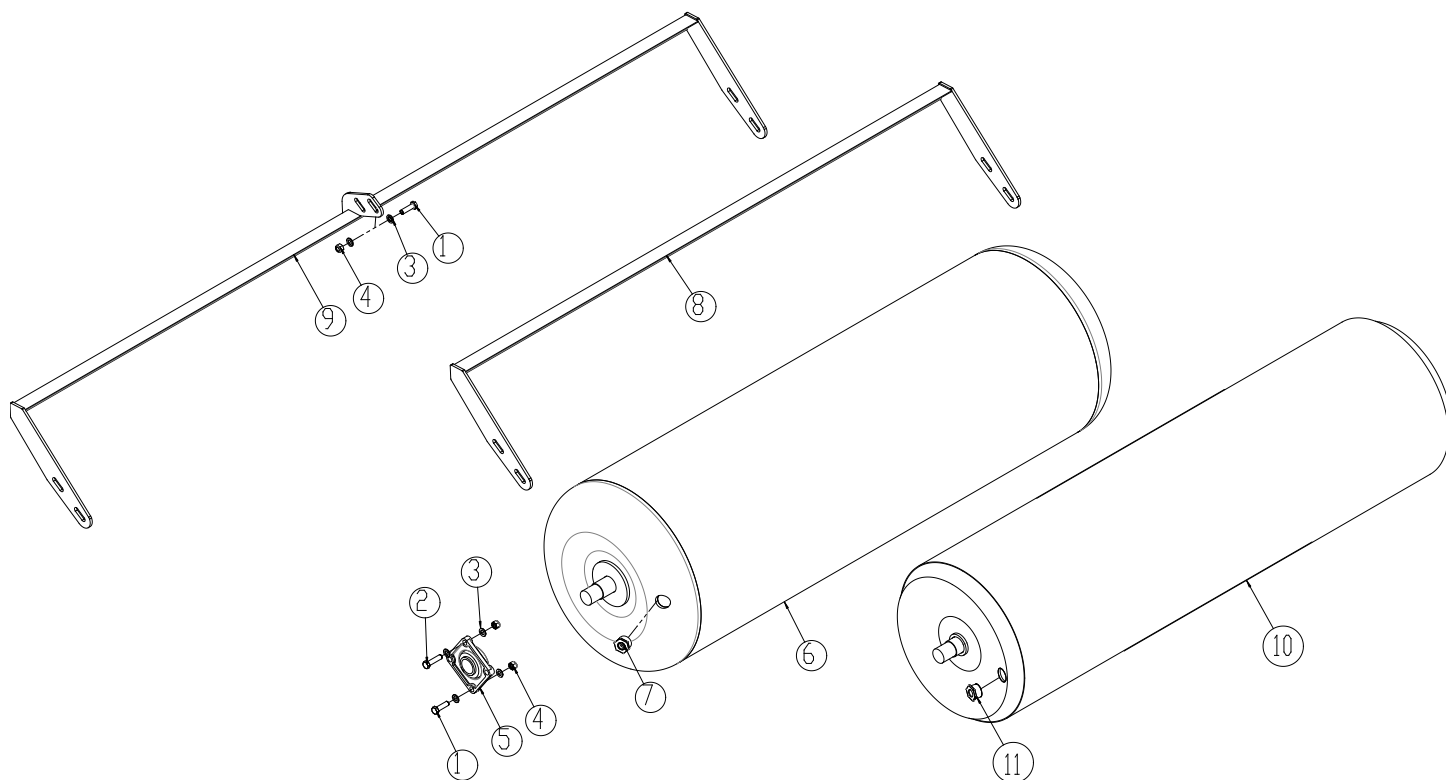


Wing suspension and folding cylinder 4,5m



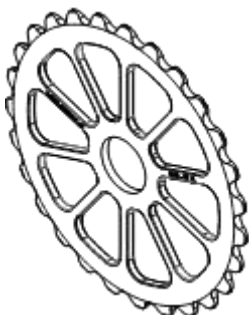
Pos.	Item no.	Designation	4,5m	6,3m	8,2m
1	630286159	Side section, right	1		
1	630330062	Side section, right After serial no. 347070		1	
1	630367102	Side section, right After serial no. 347534			1
2	630286146	Side section, left	1		
2	630330071	Side section, left After serial no. 347070		1	
2	630367101	Side section, left After serial no. 347534			1
3	630536410	Wing suspension, right	1		
3	630773000	Wing suspension, right		1	
3	630347712	Wing suspension, right			1
4	630536400	Wing suspension, left	1		
4	630773100	Wing suspension, left		1	
4	630347702	Wing suspension, left			1
5	69440525G	Pin Ø40 L=525	2	2	2
6	690140714	Spacer disc Ø42/Ø66 x 1,5mm	4	4	4
7	690140715	Bushing Ø40/Ø44 L=40	4	4	4
8	690136029	Lubricating nipple M8	8	8	8
9	69440508G	Pin Ø40 L=508	2	2	
9	69440550G	Pin Ø40 L=550			2
10	630532600	Lock bush for pin head	4	4	4
11	690101101	Bolt M12x25	4	4	4
12	630555015	Stone boxes, incl U-bolts	2	2	2
13	690110105	U-bolt M16x100x200x100	4	4	4
14	690117013	Facet washer Ø16	8	8	8
15	690113008	Self-locking nut M16	8	8	8
16	630286167	Folding cylinder 4,5m - 70/40x600 welded with extension	1		
	690200068	Gasket set 70/40 Laizhou			
17	69430090G	Pin Ø30 L=90	2		

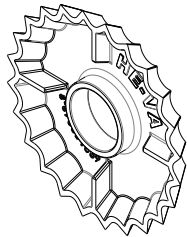
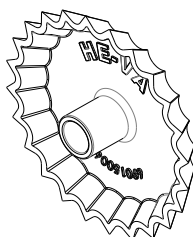
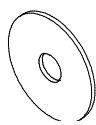
Packer roller



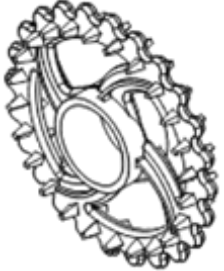
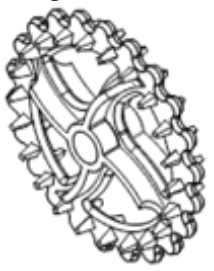
Pos.	Item no.	Designation	4,5m	6,3m	8,2m
1	0235830	Bolt M16x55 8.8	12	12	16
2	0235850	Bolt M16x65 8.8	12	12	12
3	0272890	Facet washer Ø16	60	48	56
4	0264090	Self-locking nut M16	30	24	28
5	690140813	Bearing UCF 211, ø55, 4-holes, ø60 shaft	6	6	6
6	630536600	Valser f/sideled+midterled L=1500 / Ø610	3		
6	630327207	Roller f/wing section+middle section L=2370 / Ø710		3	1
6	630327239	Roller f/side section L= 3283 / Ø710			2
7	690203320	Fitting reduction 1½" – ¾" RG – sort	6	6	6
8	630536615	Scraper bar middle section	1		
8	630762041	Scraper bar		3	1
9	630536610	Scraper bar side sections right/left	2		
9	630327232	Scraper bar for side section right/left			2
10	630330079	Roller L=2370 / Ø610		3	
11	690203321	Plug ¾" RG-sort	6	6	6

Rings

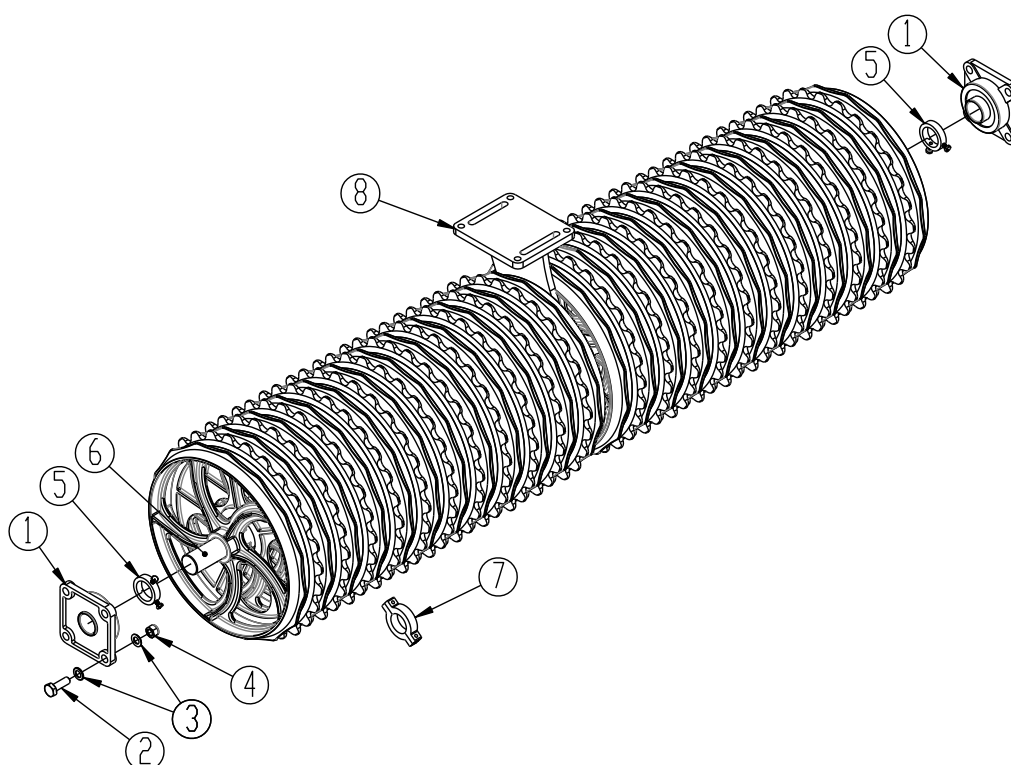
Cambridge rings Ø620 mm		Description	Quality	Part no.
Pos. 12 620 mm Lenient (10 spokes) 	Pos. 13 620 mm Breaker (10 spokes) 	Pos. 12 Hub 104 mm	GG25	690150113
		Pos. 12 Hub 104 mm	GGG50	7375016
		Pos. 12 Hub 80 mm	GG25	690150111
		Pos. 12 Hub 80 mm	GGG50	7375015
		Pos. 12 Hub 72 mm □	GGG50	7375021
		Pos. 12 Hub 82 mm □	GGG50	7375022
		Pos. 13	GG25	690150067
		Pos. 13	GGG50	690150116

Star ring Ø450/Ø500 mm			Description	Quality	Part no.
Pos. 17 500 mm 	Pos. 18 450 mm 	Pos. 19 235 mm 	Pos. 17 Ø500/Ø135	GGG50	690150063
			Pos. 18 Ø485	GGG50	690150064
			Pos. 19 Mounting plate		690150112

Star ring Ø550/Ø600 mm			Description	Quality	Part no.
Pos. 20 600 mm 	Pos. 21 550 mm 	Pos. 19 235 mm 	Pos. 20 Ø600/Ø135	GGG50	690150065
			Pos. 21 Ø550	GGG50	690150066
			Pos. 19 Mounting plate		690150112

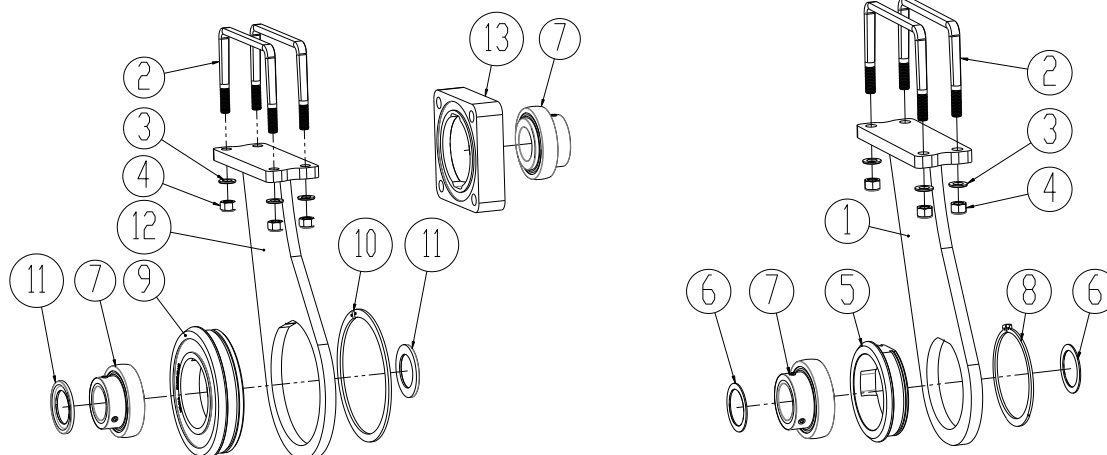
Crosskill 485/530 mm – 550/600 mm			Beskrivelse	Quality	Part no.
Pos. 22 Loose Crosskill 	Pos. 23 Rigid Crosskill 	Pos. 24 Hub 	Pos. 22 600 mm	GG25	690150075
			Pos. 23 550 mm	GG25	690150074
			Pos. 24 Hub Ø104		690150076

Roller section when cast iron rings



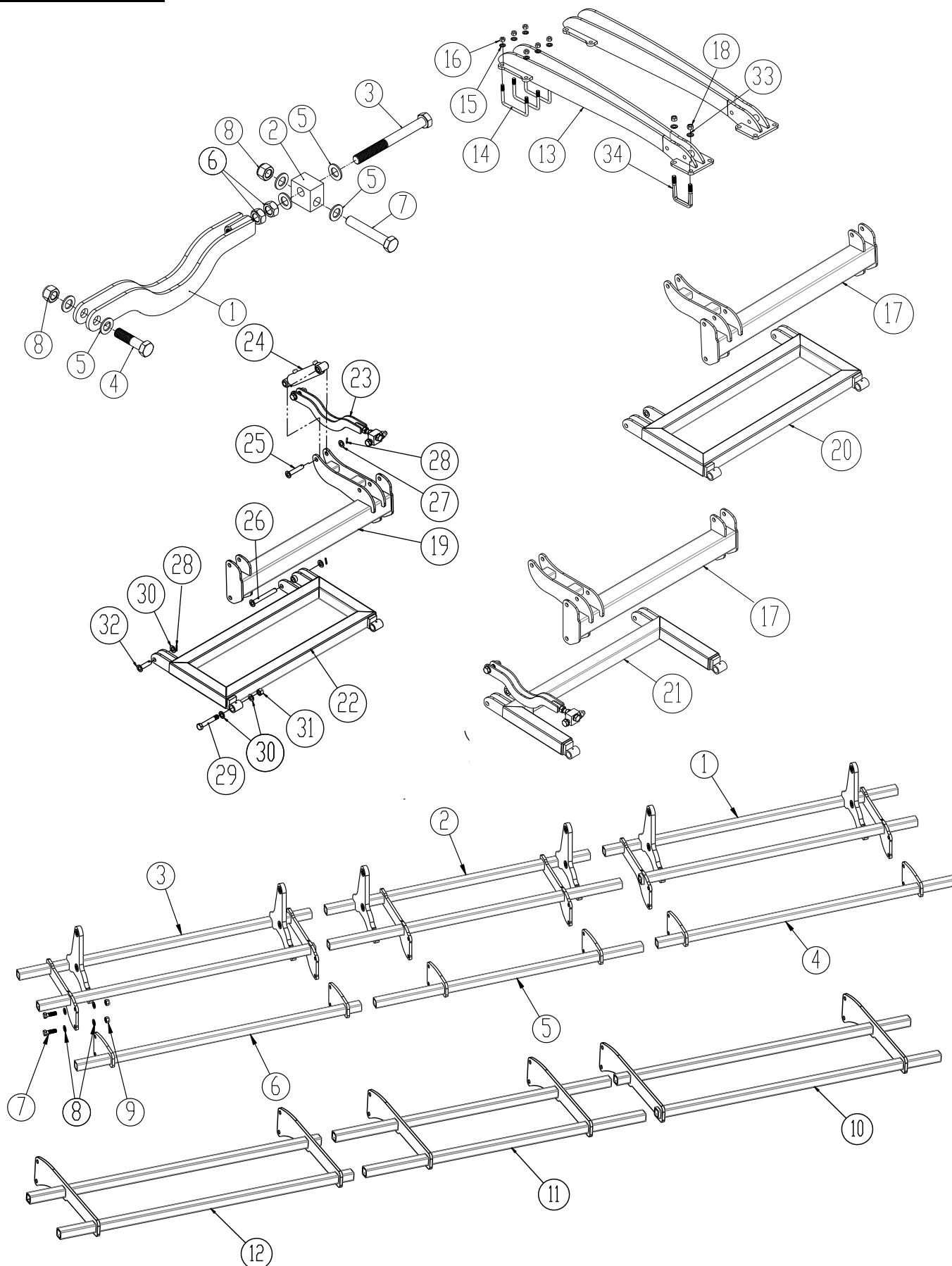
Pos.	Art. No.	Designation	4,5	6,3	8,2
1	690140813	Bearing UCF 211 ø55, complete bearing	6	6	6
2	690103197	Bolt M16x50 8.8 fzb	24	24	24
3	0272290	Facet washer Ø16 DIN125B	48	48	48
4	0264090	Self-locking nut M16	24	24	24
5	671040400	Stop bushing w/2 pc. M12 bolts (til Ø60 shaft)	3	3	5
6	678661736	Axle for middle + side sections Ø60 ST70 L=1736	3		
6	678692370	Shaft f/middle section Ø60 CrNiMo6 L=2370		1	1
6	678662370	Shaft f/side section Ø60 ST70 L=2370		2	
6	678633283	Shaft f/side section Ø60 ST60 L=3283			2
8		Support bearing, for side sections see next page			2

Support bearing



Pos.	Art. No.	Designation	8,2
1	630764006	Console for bearing with Ø60 axle	2
2	0382852	U-bolt M16x100x200x100	4
3	0272290	Facetwasger Ø16 DIN125B	8
4	0264090	Self-locking nut M16	8
5	630764008	Housing for bearing	2
6	690117102	Disc	4
7	690140116	Bearing UC312	2
8	691370150	Seeger circlip ring Ø150 DIN471	2
9	7355040	Rubber damped support bearing	2
10	691370220	Seeger circlip ring Ø220 DIN471	2
11	7355000	Disc Ø90xØ62x2	4
12	1210139	Console for rubber damped support bearing with Ø60 axle	2
13	7355013	Housing for rubber damped bearings at ends of roller sektionen	6

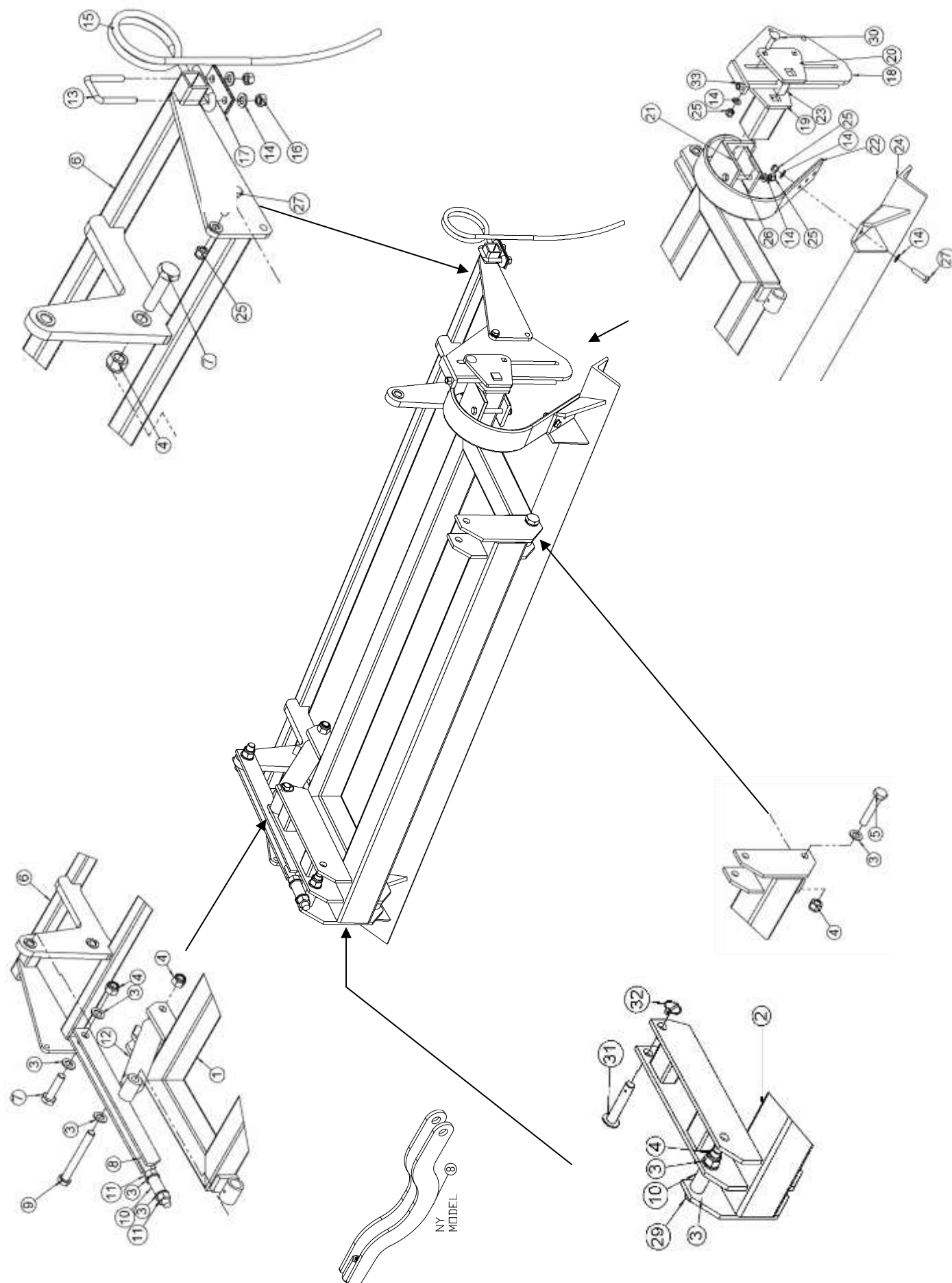
Harrow 4,5 meter



Pos.	Item no.	Designation	4,5m
1	630286141	Harrow frame, left	1
2	630286150	Harrow frame, middle	1
3	630286153	Harrowframe, right	1
4	1200223	1 additional harrow bar Grass-Roller left	1
5	1200224	1 additional harrow bar Grass-Roller middle	1
6	1200225	1 additional harrow bar Grass-Roller right	1
7	0235810	Bolt M16x50 8.8	12
8	0272290	Facet washer Ø16	24
9	0264090	Låsemøtrik M16	12
10	630286154	2 additional harrow bar Grass-Roller left	1
11	630286161	2 additional harrow bar Grass-Roller middle	1
12	630286160	2 additional harrow bar Grass-Roller right	1
13	630286130	Horn	4
14	690110102	U-bolt M16x80x160x80	12
15	0272290	Facet washer Ø16	24
16	0264090	Self-locking nut M16	24
17	630286145	Suspention for front harrow left and middle	2
18	0264100	Self-locking nut M18	24
19	630286164	Suspention for front harrow right	1
20	630286109	Lifting frame frontharrow left	1
21	630286181	Lifting frame frontharrow middle	1
22	630286110	Lifting frame frontharrow right	1
23	630327523	Parallel arm complete	3
24	690200040	Cylinder 50/30x155 Ø20,5/20,5	3
25	69520087F	Pin Ø20 L=87	3
26	69520155F	Pin Ø20 L155	3
27	0272310	Facet washer Ø20	9
28	0371395	Roll pin Ø5x35	9
29	0236200	Bolt	6
30	0272310	Facet washer Ø20	12
31	0264110	Self-locking nut M20	6
32	69520061F	Nagle	3
33	0272300	Facet washer Ø18	24
34	0382900	DragbåndM18x100x100x100	12



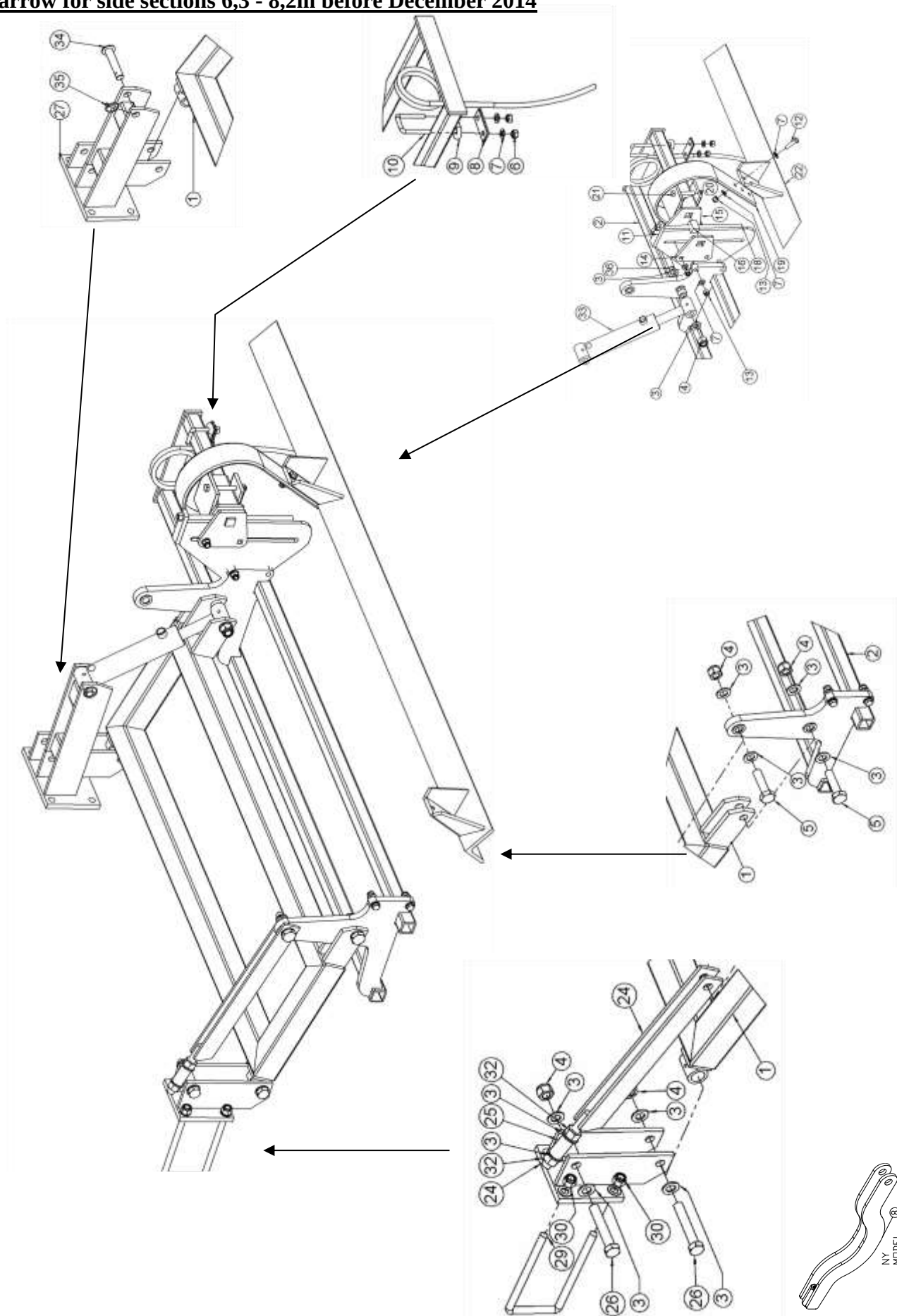
Harrow for middle sektion 6,3 - 8,2m before December 2014



Pos.	Item no.	Designation	6.3m	8.2m
1	630327182	Lifting frame left + middle front harrow	1	1
2	630327183	Suspension f/harrow middle section	1	1
2a	690110101	U-Bolt M16x100x100x100 for mounting of 63027183	4	4
2b	0272290	Facetwasher Ø16	8	8
2c	0264090	Self-locking nut M16	8	8
3	0272310	Facet plate Ø20	24	24
4	0264110	Self-locking nut M20	8	8
5	0236200	Bolt M20x110 8.8	2	2
6	630327178	Harrow section middle section	1	0
6	630327226	Harrow section middle section	0	1
7	0236170	Bolt M20x80 8.8	3	3
8	630327180	Parallel rod f/front harrow	2	2
8	630327252	Parallel rod f/front harrow From machine number 341717	2	2
8	630327521	Parallelrod (new curved model) From machine number 341717	2	2
8a	690112015	Bolt M20 x 150 Set bolt From machine number 341717	2	2
9	690103160	Bolt M20x180 8.8	1	1
10	630327179	Toggle joint at bracket on the harrow	2	2
10	630327251	Angle block for parallel rod From machine number 341717	2	2
11	690112009	Nut M20	4	4
12	690200040	Cylinder 50/30x155mm Ø20/Ø20 mm	1	1
12a	690200045	Gasket set 50/30		
13	690110050	U-bolt M12 40x40x40	23	23
14	0272270	Facet plate Ø12	74	74
15	0426110	Long finger tine ø12 x 100 curved	23	23
16	690113013	Self-locking nut M12 (all-metal)	46	46
17	1012520	Clamping plate M12	23	23
18	630327192	Height adjustment for levelling board	2	2
19	630327193	Clamping plate w/bar for height adjustment	2	2
20	630327191	Clamping plate for height adjustment	2	2
21	633052200	Clamp	2	2
22	0422144	Spring-Board tine 80x10mm – short	2	2
23	630327199	Threaded block for height adjustment of levelling board	2	2
24	630327196	Levelling board – Middle section	1	0
24	630327237	Levelling board – Middle section	0	1
25	690113013	Self locking nut M12 (all-metal)	16	16
26	0235470	Bolt M12x110 8,8	2	2
27	0235380	Bolt M12x50 8.8	10	10
28	0236210	Bolt M20x120 8.8	3	3
30	690101221	Bolt (carrier bolt) M12x50	4	4
31	69520087F	Pin Ø20 L=87	1	1
32	690134001	Ring pin Ø4,5 mm	1	1
33	630327217	Threaded rod for levelling board	2	2



Harrow for side sections 6,3 - 8,2m before December 2014



Pos.	Item no.	Designation	6.3m	8.2m
1	630327182	Lifting frame left + middle front harrow	1	0
1	630327181	Lifting frame right	1	0
1	630327221	Lifting frame left	0	1
1	630327220	Lifting frame right	0	1
2	630327177	Harrow frame left	1	0
2	630327176	Harrow frame right	1	0
2	630327228	Harrow frame left	0	1
2	630327227	Harrow frame right	0	1
3	690117005	Facet plate Ø20	20	30
4	690113009	Self-locking nut M20	8	12
5	690103151	Bolt M20x90 8.8	2	3
6	690113013	Self-locking nut M12 (all-metal)	48	62
7	690117014	Facet plate Ø12	76	88
8	1012520	Clamp, M12	24	31
9	0426110	Long finger tine ø12 x 100 curved	24	31
10	690110050	U-bolt M12 40x40x40	24	31
11	630327192	Height adjustment f/levelling board	2	3
12	690103096	Bolt M12x50 8.8	10	15
13	690113019	Self-locking nut M12 (all-metal)	16	16
14	630327191	Clamp for height adjustment	2	3
15	630327193	Clamp with bar for height adjustment	2	3
16	630327199	Threaded block for height adjustment of levelling board	2	3
17	690101221	Bolt (carrier bolt) M12x50	4	6
18	630327217	Threaded rod for levelling board	2	3
19	633052000	Spring-Board tine 80x10 mm	2	3
20	633052200	Clamp for Spring-Board tine	2	3
21	690103098	Bolt M12x110 8,8	2	3
22	630327195	Levelling board, left	1	0
22	630327194	Levelling board, right	1	0
22	630327236	Levelling board, left	0	1
22	630327235	Levelling board, right	0	1
24	630327180	Parallel rod f/front harrow	2	3
24	630327252	Parallel rod (discontinued model) From machine no 341717	2	3
24	630327521	Parallel rod (new curved model) From machine no 341717	2	3
24a	690112015	Bolt M20 x 150 Set bolt 8 From machine number 341717	2	3
25	630327179	Toggle joint at bracket on the harrow	2	3
25	630327251	Angle block for parallel rod From machine number 341717	2	3
26	690103159	Bolt M20x120 8.8	4	6
27	630327185	Left cylinder bracket f/side sections	1	1

The tabel continues →



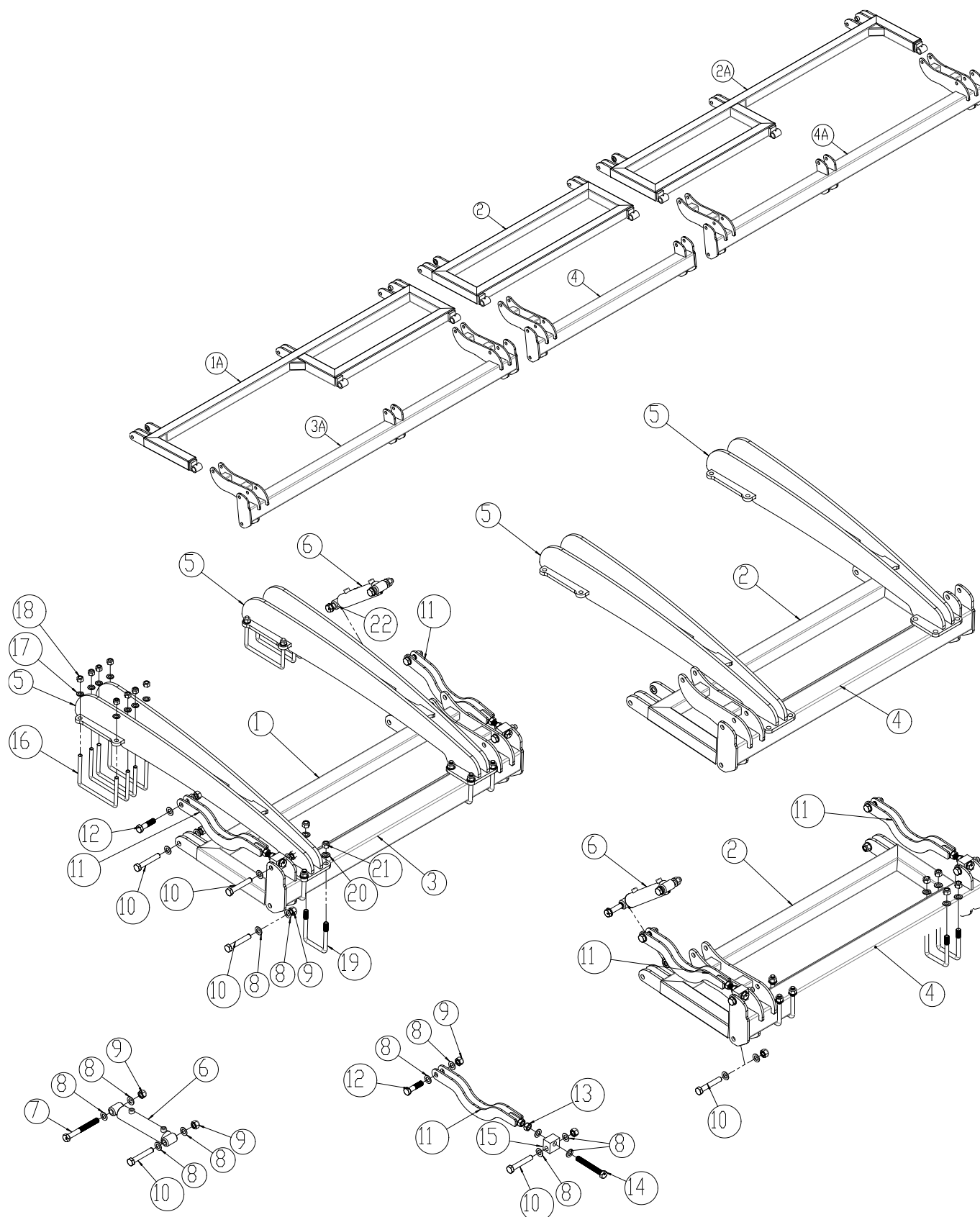
27a	630327186	Right cylinder bracket f/side sections	1	1
27b	630327277	Middle cylinder bracket, left side section	0	1
27c	630327279	Middle cylinder bracket, right side section	0	1
28	630327184	Mounting bracket on side sections without cylinder	2	2
29	690110106	U-bolt M16x200x100x200	4	6
30	690113008	Self-locking nut M16	8	12
31	690117013	Facet plate Ø16	8	12
32	690112009	Nut M20	4	6
33	690200040	Cylinder 50/30x155mm Ø20/Ø20 mm	1	2
33a	690200045	Gasket set 50/30		
34	69520087F	Pin Ø20 L=87	1	2
35	690134001	Ring pin Ø4,5 mm	1	2
36	690103160	Bolt M20x180 8.8	1	2

Notes

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Lifting frames and suspension for harrows 6,3 - 8,2m, from January 2015

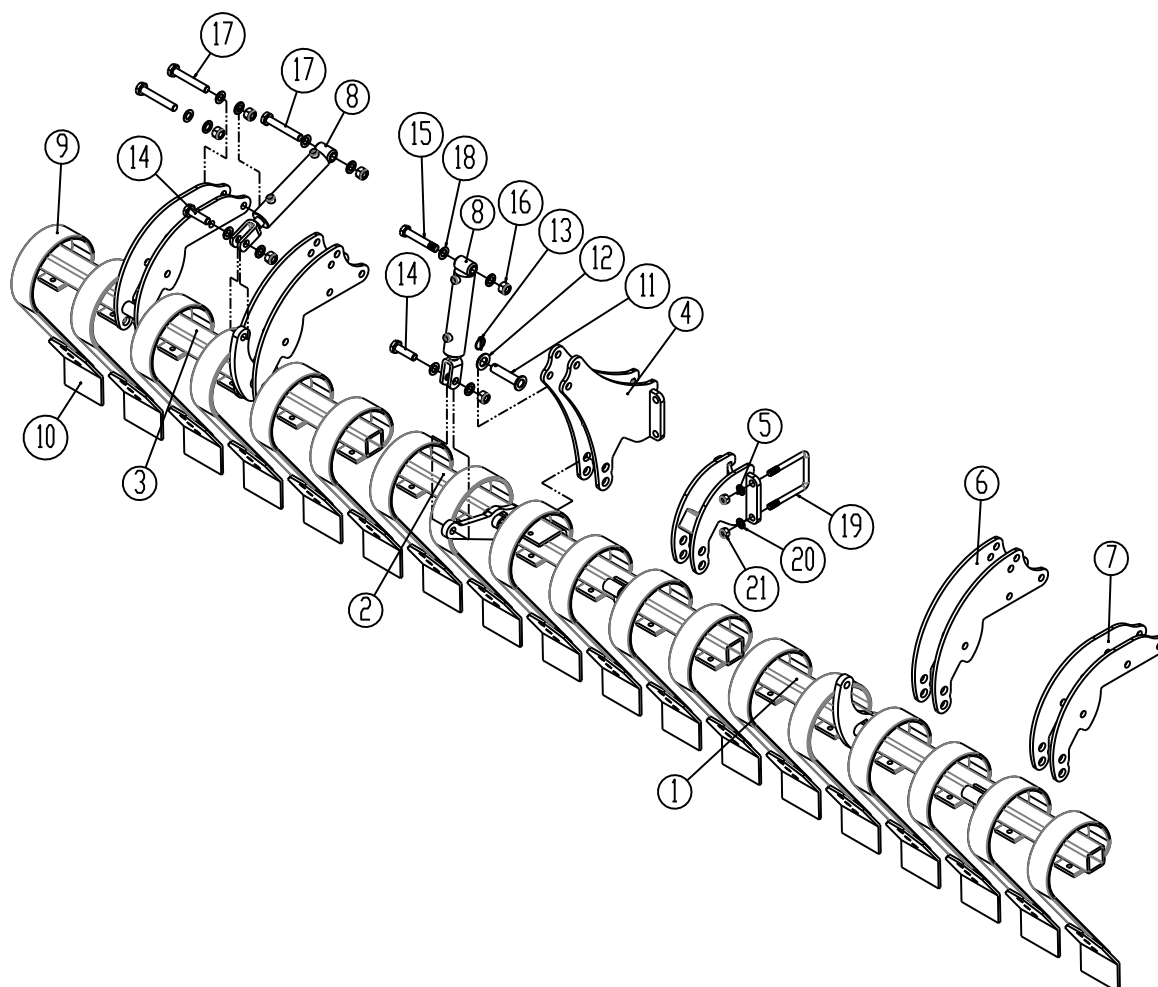


Pos.	Item no.	Designation	6,3m	8,2m
1	630327181	Lifting frame, right	1	
1A	630367105	Lifting frame, right		1
2	630327182	Lifting frame, left - middle	2	1
2A	630367124	Lifting frame, left		1
3	630330032	Suspention right	1	
3A	630367103	Suspention right		1
4	630330059	Suspention left - middle	2	1
4A	630367125	Suspention left		1
5	630330012	Horn	4	6
6	690200040	Cylinder 50/30x155mm Ø20/Ø20 mm	3	3
	690200045	Gasket set 50/30		
7	690103160	Bolt M20x180 8.8	3	3
8	690117005	Facet washer Ø20	12	12
9	690113009	Self-locking nut M20	18	20
10	690103159	Bolt M20x120 8.8	18	20
11	630327521	Parallel arm	6	8
12	690103160	Bolt M20x180 8.8	6	8
13	690112009	Nut M20	12	16
14	690112015	Bolt M20x150 8.8 Set bolt	6	8
15	630327251	Angel block w/parallel arm	6	8
16	690110105	U-bolt M16x100x200x100	16	24
17	690117013	Facet washer Ø16	32	48
18	690113008	Self-locking nut M16	32	48
19	690110404	U-bolt M18x100x100x100	8	12
20	690117015	Facet washer Ø18	16	24
21	690113016	Self-locking nut M18	16	24
22	690136001	Grease nipple M6	6	6



Spare parts list Spring-Board

Middle and side section to suit harrow mounting 4,5m

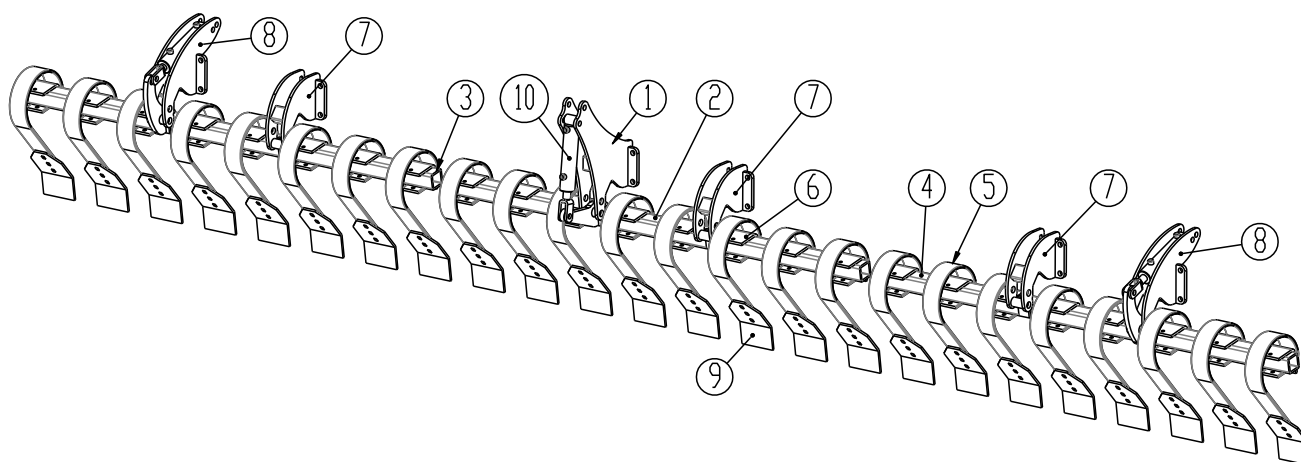


Pos.	Item no.	Designation	4,5m
1	630286173	Spring-Board bar left	1
2	630286169	Spring-Board bar middle	1
3	630286176	Spring-Board bar right	1
4	630330022	Suspention middle frame for cylinder	1
5	630330021	Suspention middle where non cylinder	1
6	630286172	Suspention Spring-Board side frame for cylinder	4
7	630286171	Suspention Spring-Board side frame where non cylinder	4
8	690200160	Cylinder 50/30x155 Ø20,25/clevis	3
8a	690200045	Gasket set 50/30	
9	633052050	Tine 10x80	18
10	633052100	Wearing point 8x150	18
11	69525095F	Pin Ø25 L=95	6
12	0272340	Facet washer Ø27	6

The table continues →

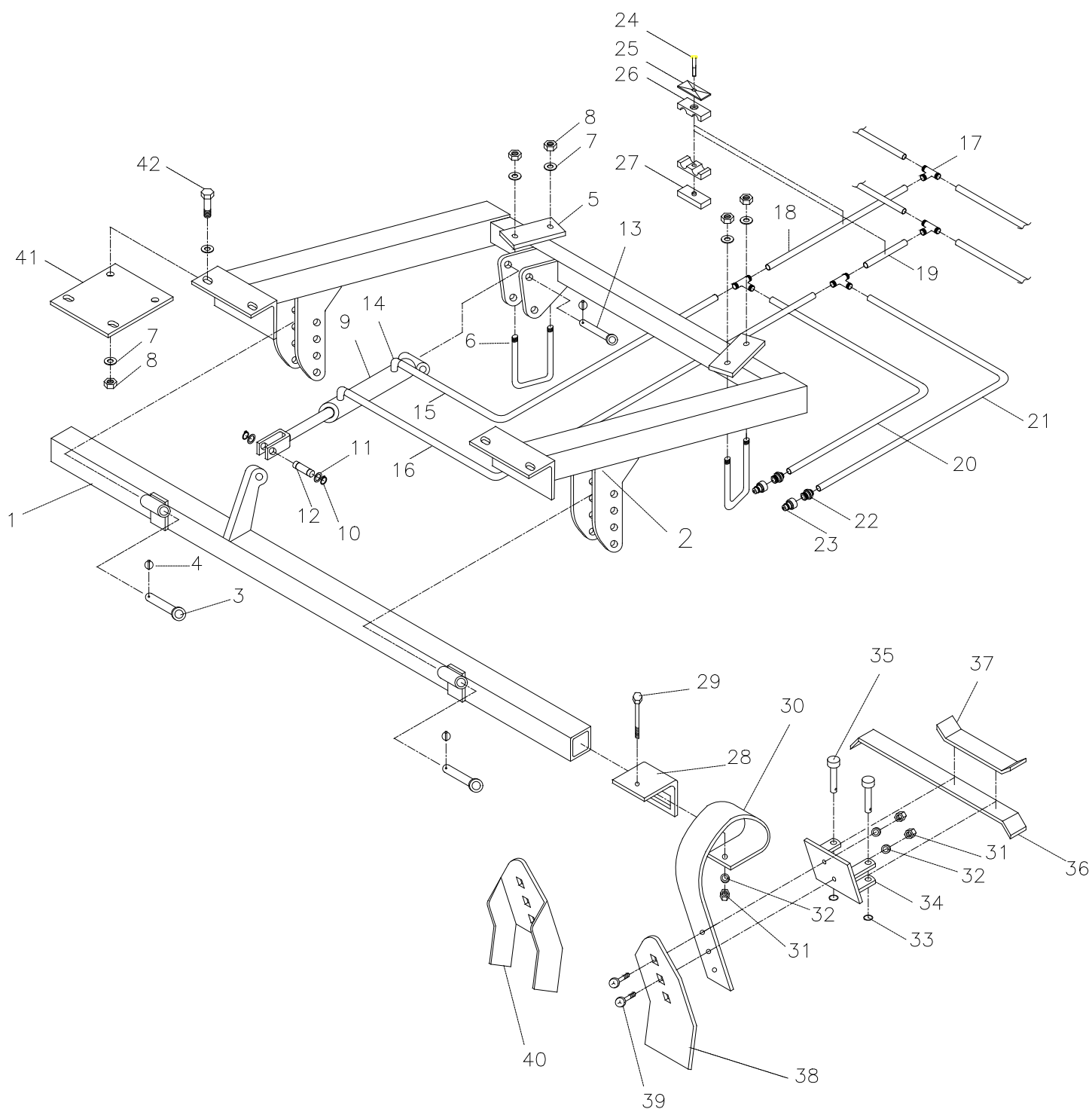
13	0378200	Ring clip Ø4,5	6
14	0236150	Bolt M20x70 8.8 fzb DIN931	3
15	0236210	Bolt M20x120 8.8 fzb DIN931	1
16	0264110	Self locking nut M20	14
17	0236220	Bolt M20x130 8.8 fzb DIN931	10
18	0272310	Facet washer Ø20	28
19	690110101	U-bolt M16 100x100x100	4
20	0272290	Facet washer Ø16	8
21	0264090	Self locking nut M16	8

Middle and side section to suit harrow mounting 6,3 - 8,2m



Pos.	Item no.	Designation	6,3m	8,2m
1	630330022	Suspension middle section for cylinder	1	
2	630330023	Spring-Board bar middle	1	
2	630367117	Spring-Board bar middle		1
3	630330025	Spring-Board bar right	1	
4	630330024	Spring-Board bar left	1	
3+4	630367117	Spring-Board bar right / left		2
5	0422145	Spring-Board tine 80x10 - long	24	32
6	0422390	Clamp for Spring-Board tine, 70x70 mm bar	24	32
7	630330021	Suspension middle/side sections without cylinder	3	3
8	630367120	Suspension side sections with cylinder	2	5
9	633052100	Wearing point Spring-Board 150x8	24	32
10	690200160	Cylinder 50/30x155 Ø20,25/clevis	3	3
	690200045	Gasket set 50/30		

Middle section incl. hydraulics, when only Spring-Board 6.3 – 8.2m



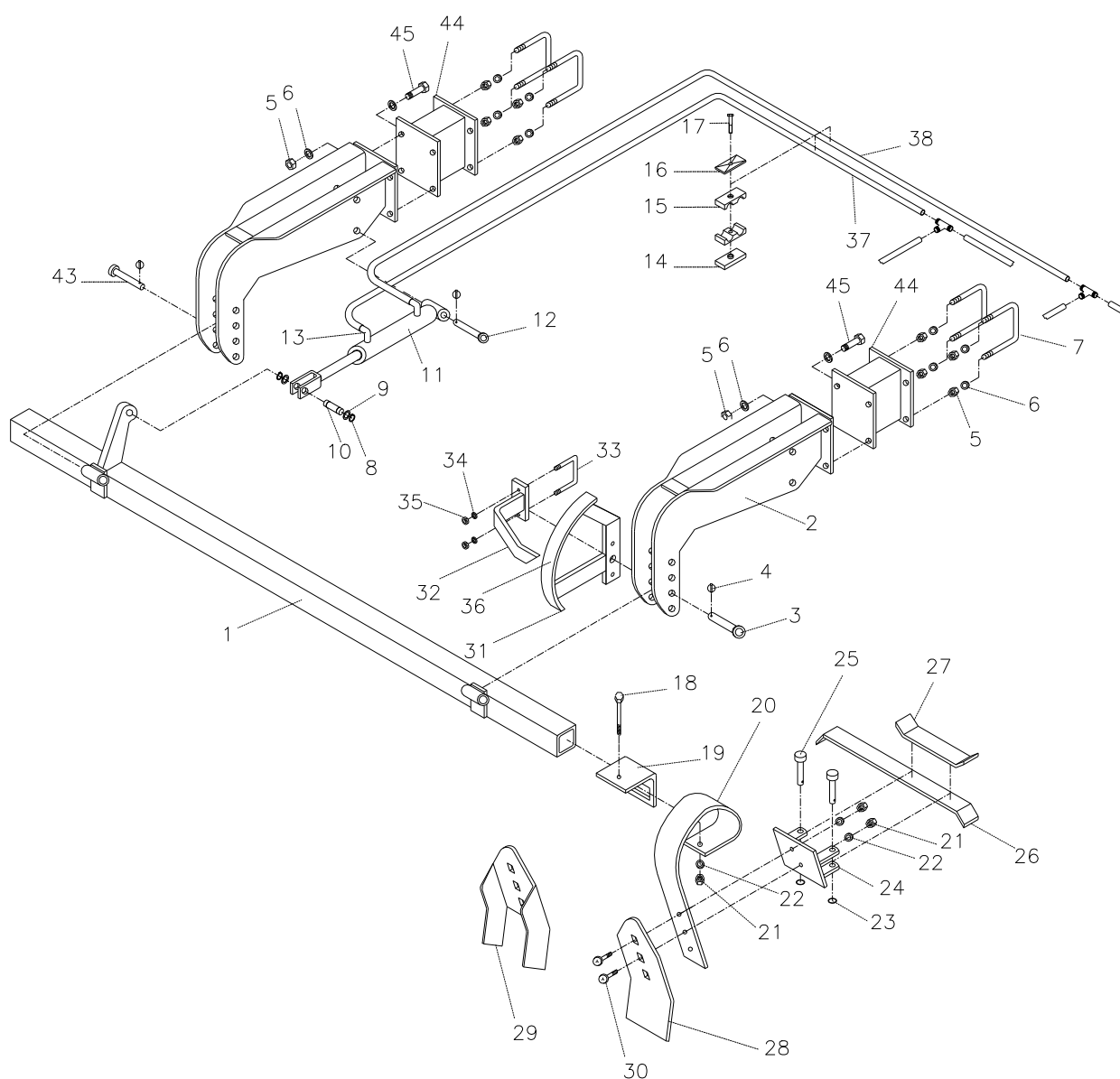
Pos.	Item no.	Designation	6.3m	8.2m
1	635053020	Bar for tines	1	0
1	633073020	Bar for tines	0	1
2	635051000	Suspension for middle section	1	0
2	633061000	Suspension for middle section	0	1
3	69525087F	Pin Ø25 L=87	2	2
4	690134001	Ring pin Ø4,5	3	3
5	670861100	Flange	2	2
6	690110101	U-bolt M16x100x100x100	2	2
7	690117013	Facet plate Ø16	8	8
8	690113008	Self-locking nut M16	6	6
9	690200160	Cylinder 50/30x155	1	1
9e	690200045	Gasket set 50/30 mm	1	1
10	691372020	Seeger circlip ring Ø20 Din 471	2	2
11	690115010	Washer Ø20/Ø28x1mm	2	2
12	69520046D	Pin Ø20 L=46	1	1
13	69520087F	Pin Ø20 L=87	1	1
14	690203006	Fitting 90angle 10 x 3/8" BSP	2	2
15	690201051	Hydraulic hose 1/4" L=250 mm	1	1
16	690201059	Hydraulic hose 1/4" L=350 mm	1	1
17	690203015	Fitting T10	4	4
18	690201032	Hydraulic hose 1/4" L=1130 mm	1	1
19	690201053	Hydraulic hose 1/4" L=1260 mm	1	1
20	690201038	Hydraulic hose 1/4" L=4000 mm	1	0
20	690201047	Hydraulic hose 1/4" L=4610 mm	0	1
21	690201006	Hydraulic hose 1/4" L=3800 mm	1	
21	690201047	Hydraulic hose 1/4" L=4610 mm		1
22	690203003	Fitting, straight 10 x 1/2" BSP	2	2
23	690203001	Quick coupling (male) E402 1/2"	2	2
24	690210213	Screw for tube-support double	5	5
25	690210211	Top plate for tube-support double	5	5
26	690210210	Tube-support double ø14/ø14	10	10
27	690210212	Welding plate for tube-support double	5	5
28	633052200	Clamp for tine	8	6
29	690103098	Bolt M12x110	8	6
30	633052050	Tine (10x80)	8	6
30a	633052000	Tine complete	8	6
31	690113006	Self-locking nut M12	24	18
32	690117014	Facet plate ø12	24	18
33	690134000	Locking ring 30xø3	16	12

The table continues →

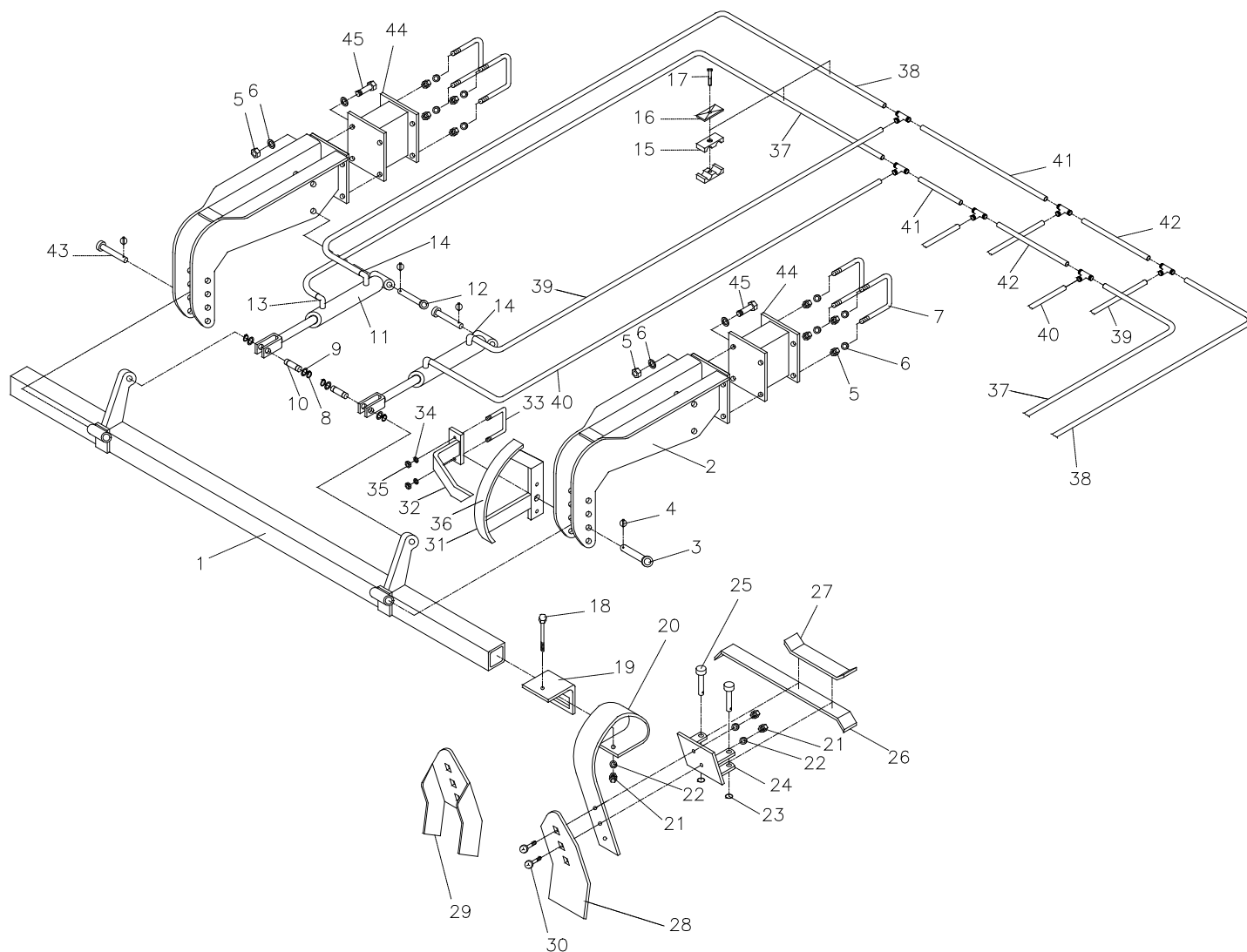


Pos.	Item no.	Designation	6.3m	8.2m
34	633055500	Tine bracket for transverse locking system	8	6
35	69512040K	Pin Ø12,5x40	16	12
36	633055710	Long locking bar for transverse locking system	7	5
37	633055700	Short locking bar for transverse locking system	2	2
38	633052100	Tine point (8x150)	8	6
39	690101220	Bolt (carrier bolt) M12x45	16	12
40	633052150	Tine point (slicing plates)	8	6
41	635055010	Distance plate for mounting	2	2
42	690103126	Bolt M16x45	4	4

Side section incl. hydraulics, when only Spring-Board (left shown) 6.3m



Side section incl. hydraulics, when only Spring-Board (left shown) 8.2m

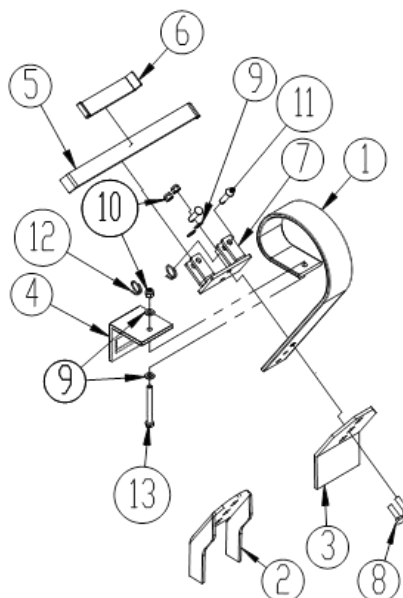


Pos.	Item no.	Designation	6.3m	8.2m
1	635053010	Bar for tines (right)	1	
1	635053030	Bar for tines (left)	1	
1	633063010	Bar for tines (right)		1
1	633063030	Bar for tines (left)		1
2	635054500	Horn	4	4
3	69525095F	Pin Ø25 L=95	1	1
4	690134001	Ring pin Ø4,5	6	6
5	690113008	Self-locking nut M16	32	32
6	690117013	Facet plate Ø16	48	48
7	690110106	U-bolt M16x200x100x200	8	8
8	691372020	Seeger circlip ring Ø20 Din 471	4	8
9	690115010	Washer Ø20/Ø28x1mm	4	8
10	69520046D	Pin Ø20 L=46	2	4
11	690200160	Cylinder 50/30 x 155	2	4
11e	690200045	Gasket set 50/30 mm	2	4
12	69520087F	Pin Ø20 L=87	2	4
13	690203006	Fitting, 90angle 10 x 3/8" BSP	2	4
14	690203002	Fitting, straight 10 - 3/8" BSP	2	4
15	690210210	Tube bracket double ø14/ø14	16	20
16	690210211	Top plate for tube-support double	8	10
17	690210213	Screw for tube-support double	8	10
18	690103098	Bolt M12x110	16	26
19	633052200	Clamp for tine	16	26
20	633052050	Tine (10x80)	16	26
20a	633052000	Tine complete	16	26
21	690112011	Binding nut 12mm	32	52
22	690117014	Facet plate Ø12	48	78
23	690134000	Locking ring 30xø3	32	52
24	633055500	Tine bracket for transverse locking system	16	26
25	69512040K	Pin ø12,5x40	32	52
26	633055710	Long locking bar for transverse locking system	14	24
27	633055700	Short locking bar for transverse locking system	4	4
28	633052100	Tine point (8x150)	16	26
29	633052150	Tine point (slicing plates)	16	26
30	690101220	Bolt (carrier bolt) M12x45	32	52
31	635151000	Scale f/depth control	1	1
32	635152000	Pointer f/depth control	1	1
33	690110020	U-bolt M10x70x70x70 mm	1	1
34	690117012	Facet plate Ø10	2	2
35	690113005	Self-locking nut M10	2	2
36	698500018	Label for scale for depth control	1	1
37	690201048	Hydraulic hose 1/4" L= 3610 mm (right side section)	1	0
The tabel continues →				



Pos.	Item no.	Designation	6.3m	8.2m
37	690201006	Hydraulic hose 1/4" L= 3800 mm (left side section)	1	0
37	690201022	Hydraulic hose 1/4" L= 3140 mm	0	2
38	690201044	Hydraulic hose 1/4" L= 3460 mm (right side section)	1	0
38	690201048	Hydraulic hose 1/4" L= 3610 mm (left side section)	1	0
38	690201060	Hydraulic hose 1/4" L= 3000 mm	0	2
39	690201009	Hydraulic hose 1/4" L= 355 mm	0	2
40	690201069	Hydraulic hose 1/4" L= 450 mm	0	2
41	690201063	Hydraulic hose 1/4" L= 1600 mm	0	2
42	690201016	Hydraulic hose 1/4" L= 1830 mm	0	2
43	69525087F	Pin Ø25 L=87	3	3
44	635055000	Connecting link	4	4
45	690103197	Bolt M16x50	16	16

Spring-Board tine with traverse locking system

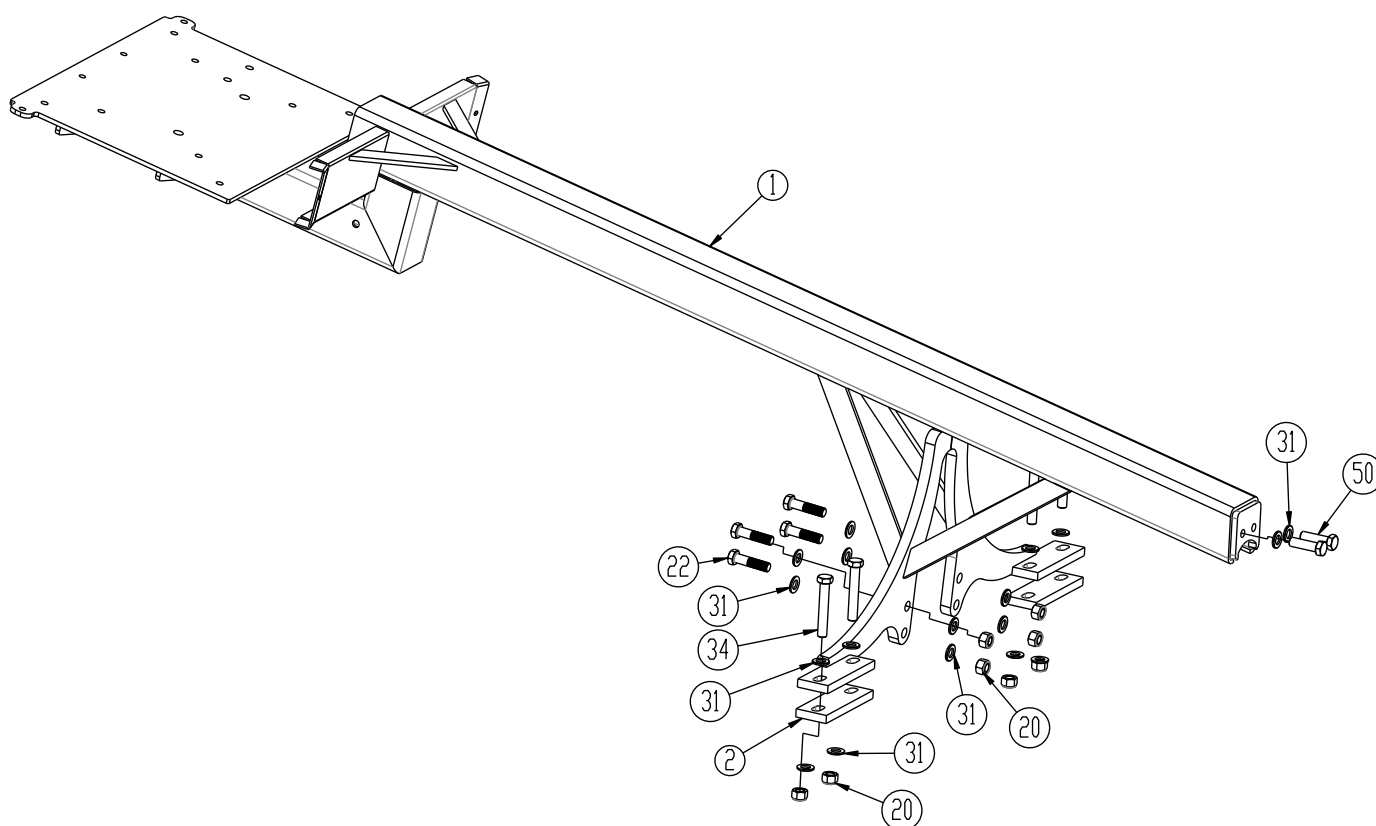


Pos.	Item no.	Designation	Pcs.
1	0422145	Springboard tine 80x10 - lang	1
2	633052150	Slicing point (crust breaker)	1
3	633052100	Wearing point for Spring-Board tine	1
4	633052200	Clamp for Spring-Board tine	1
5	633055710	Traverse bar (long) for traverse locking system	1
6	633055700	Traverse bar (short) for traverse locking system	1
7	633055500	Bracket for traverse locking system	1
8	690101220	Carriage bolt M12x45 8.8	2
9	690117014	Facet washer Ø12	4
10	690113006	Self locking nut M12	3
11	69512040K	Pin Ø12,5 L = 40 St 52 Yellow Zink Plated	2
12	690134000	Ring clip 30xø3 Galvanized	2
13	690103098	Bolt M12x110 10.9	1

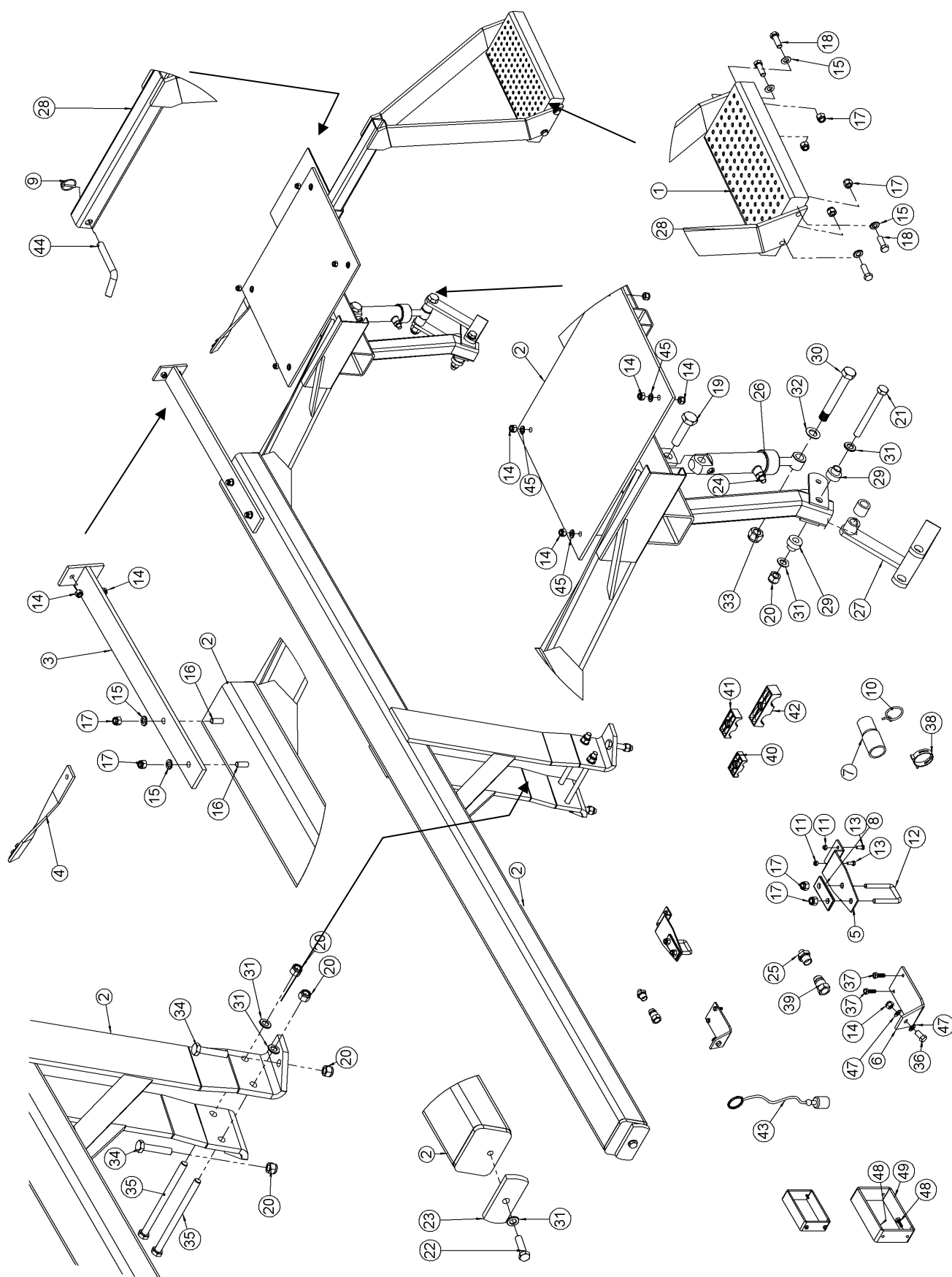
Spare parts list – mounting of Multi-Seeder

Spare parts and wearing parts for HE-VA Multi-Seeder can be found in a separate operation instruction which also contains a spare parts list.

4,5 meter



6,3 og 8,2 meter



Pos.	Item no.	Designation	4,5m	6.3m	8.2m
1	0487007	Step panel 200 x 400 x 45 mm	1	1	1
2	1132998	Mounted frame for Grass-Roller	1		
2	1131850	Mounted frame for Grass-Roller			1
2	1131470	Mounted frame for Grass-Roller		1	
3	1131960	Mounted fan bracket			1
3	1131950	Bracket for fan		1	
4	1131840	Mounted cable bracket		1	1
5	1131780	Bracket for distribution plate	8	8	16
6	1131770	Wide holder short			8
7	0489020	Rubber bellow for drill hose			8
8	1012520	Clamping plate M12	8	8	16
9	0378200	Ring split, ø4.5 mm, galv. No.2045321	1	1	1
10	0435100	Clamp for drilling tube 38/12			8
11	0264040	Self-locking nut M6, fzb DIN985	16	16	32
12	0382120	U-bolt M12	8	8	16
13	0234280	Steel set screw M6x16mm 8.8 fzb	16	16	32
14	0264060	Self-locking nut M10, fzg DIN985	4	6	6
15	0272270	Facet plate 12mm, fzg	8	12	12
16	0235360	Steel set screw M12x40mm,8.8 fzg		2	2
17	0264070	Self-locking nut M12, fzb DIN985	20	21	37
18	0235350	Steel set screw M12x35mm, 8.8 fzb	4	4	4
19	0236170	Steel bolt M20x80mm, 8.8 fzg		1	1
20	0264090	Self-locking nut M16, fzb DIN985	8	5	5
21	0235950	Steel bolt M16x150mm, 8.8 fzb		1	1
22	0235840	Steel bolt M16x60mm, 8.8 fzb	4	1	1
23	1131120	Clamping flange		1	1
24	0444500	Hexagon nipple 1/4" Kon 01BK04		2	2
25	0444490	Hexagon nipple 1/2"x1/4" 02BP0804		2	2
26	0468200	Hydraulic cylinder 40/20 x99mm 2x1/4"		1	1
26a	0468270	Gasket set			
27	1131130	Mounted lifting bracket for wheel, short		1	1
28	30551200	Mounted bracket for step panel	1	1	1
29	1130290	Bush		2	2
30	0236240	Steel bolt M20x150mm, 8.8 fzb		1	1
31	0272290	Facet plate 16mm, fzb	18	11	11
32	0272310	Facet plate 20mm, fzb		4	4
33	0264110	Self-locking nut M20, fzb DIN985		2	2
34	0235880	Steel bolt M16x80mm, 8.8 fzb			2
34	0235900	Steel bolt M16x100mm, 8.8 fzb		4	

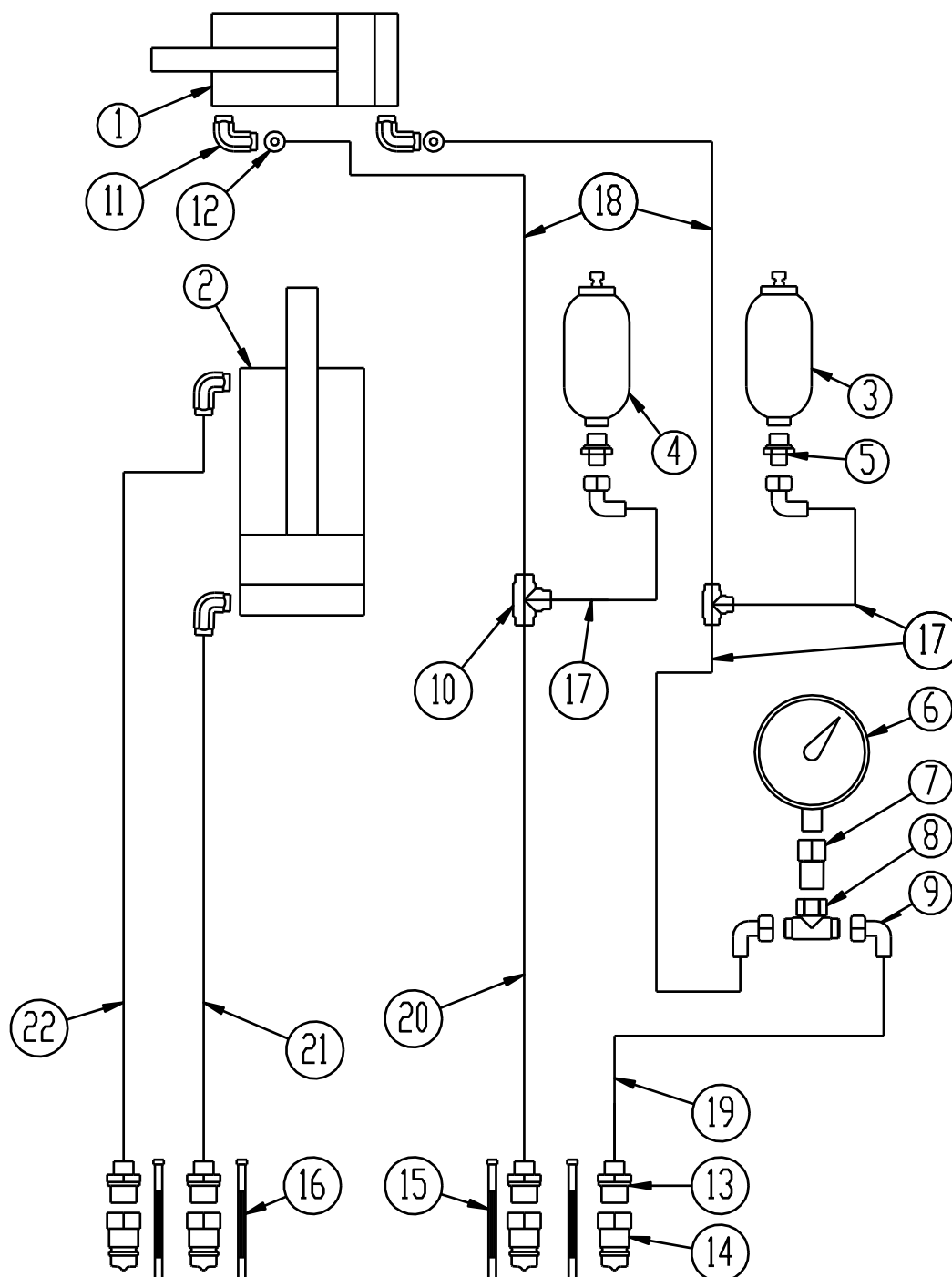
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35	0242760	Machine bolt M16x240mm, 4.6 fzb			2
36	0235030	Steel set screw M10x20mm, 8.8 fzb		8	8
37	0230825	Screw Tapetite M8x25 6k.hov 211-08-025			16
38	0435110	Clamp for tube 46/12			8
39	0444020	Quick-coupling ½" Hanpart-kegle Sterling		2	2
40	0449430	Tube-support double ø14-14mm green		1	1
41	0449700	Tube-support double ø22-22mm green (at hydraulic fan)		1	1
42	0449730	Tube-support double ø32-32mm green		2	5
43	0449020	Dust cap 1/2" Std., 1/2" C51		2	2
44	1030280	Pin for wing, ø16x150mm		1	1
45	0235430	Steel bolt M12x75mm, 8.8 fzb	4	1	1
46	0230320	Screw Tapetite M6x50 6k.hov 211-06-050		2	7
47	0272260	Facet plate 10mm, fzb DIN125B		8	18
48	0230290	Screw Tapetite M6x20 6k.hov 211-06-020		4	4
49	630327242	Hose bracket square		2	2
	0455160	Hydr. hose 1/4"x8000 mm			1
	0455060	Hydr. hose 1/4"x6900 mm		1	
	0454490	Hydr. hose 1/2" x 1550mm		0	1
	0434450	Clamp Ø22-32mm, 9 mm wide		8	32
	0434531	Clamp Ø68-85mm, 9 mm wide			2
	0434531	Clamp Ø68-85mm, 9 mm wide (at hydraulic fan)		2	
50	0235830	Bolt M16x55 8.8	2	2	

Spare parts list Hydraulics

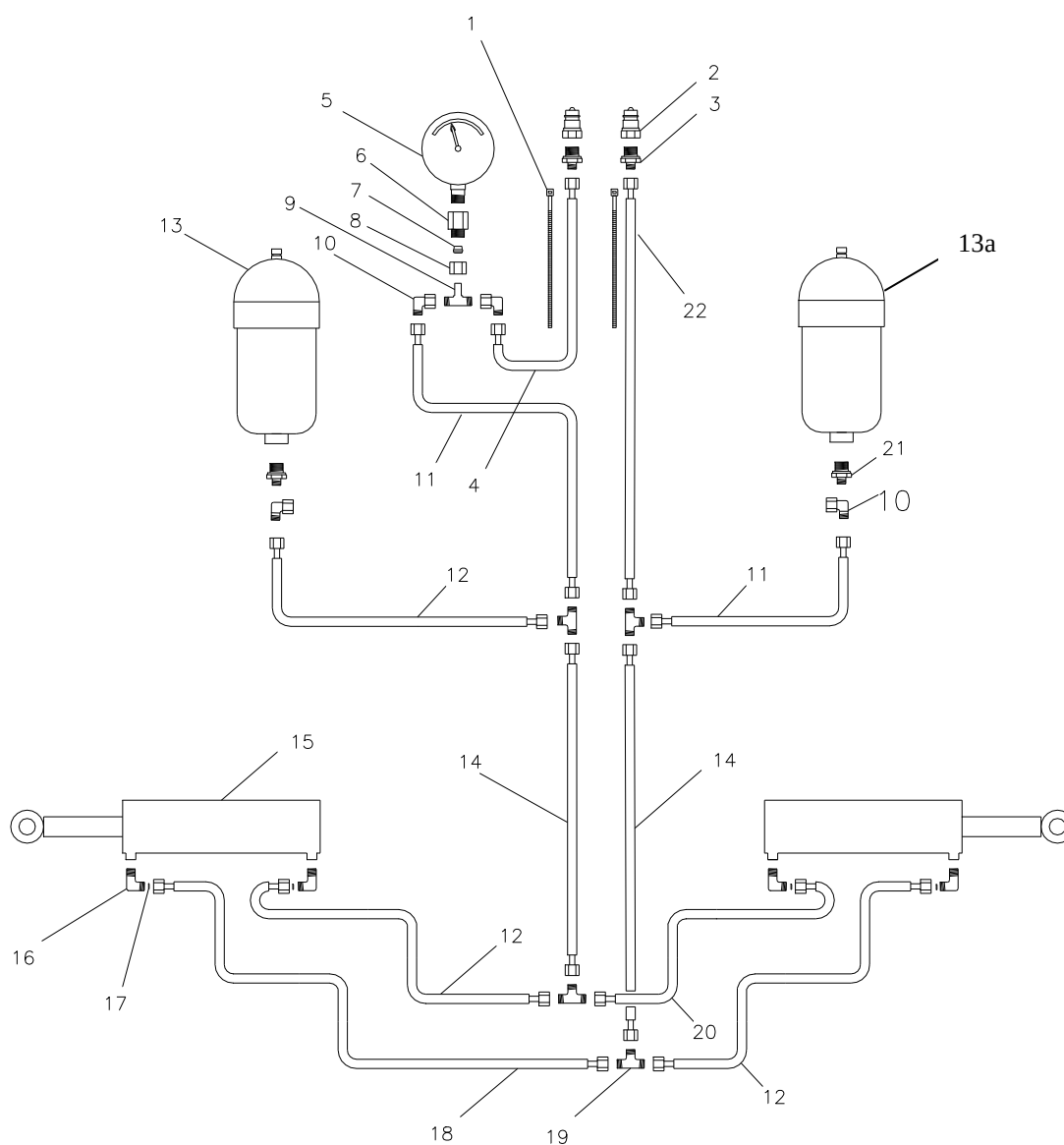
Tip, Folding & weight transfer system red and blue 4,5m



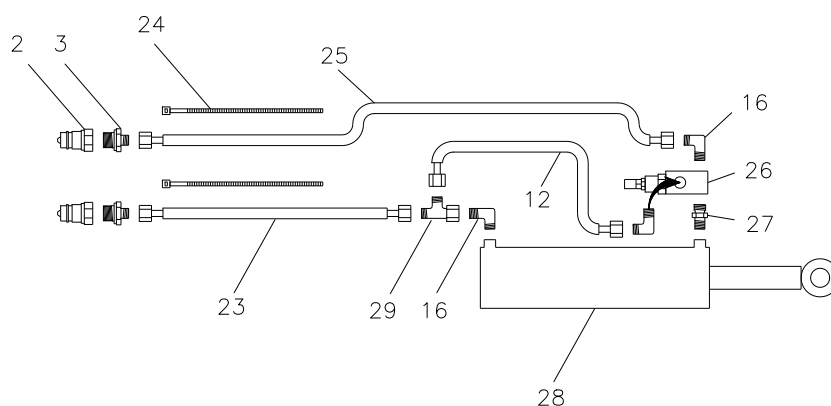
Pos.	Item no.	Designation	4,5 m
1	630286167	Cylinder folding 70/40 x 600	1
1a	690200068	Gasket set 70/40	1
2	690200109	Cylinder tip 100/50 x 500	1
2a	690200284	Gasket set 100/50 Hydraflex	1
3	690206410	Accumulator H700R. 40 bar	1
4	690206403	Accumulator H700R 15 bar	1
5	690203096	Fitting straight M18x1,5 / ø10	2
6	690206822	Manometer 250 bar Ø100mm	1
7	690206823	Manometer fitting 10- ½"	1
8	690203014	Fitting T - 10 with union nut	1
9	0446678	Fitting 90° Ø10	4
10	690203015	Fitting T - 10	2
11	690203006	Fitting, 90angle 10-3/8" Bsp	4
12	690207901	Restrictor 1mm	2
13	690203003	Fitting, straight 10- ½" BSP	4
14	690203001	Quick coupling, male E402 ½"	4
15	690119202	Cable straps (blue)	2
16	690119203	Cable straps (red)	2
17	690201042	Hydraulic hose L = 500 1/4" st/st	3
18	690201021	Hydraulic hose L = 2300 1/4" st/st	2
19	690201237	Hydraulic hose L = 2800 1/4" st/st	1
20	690201022	Hydraulic hose L = 3140 1/4" st/st	1
21	690201006	Hydraulic hose L = 3800 1/4" st/st	1
22	690201029	Hydraulic hose L = 4300 1/4" st/st	1



Hydraulics for folding & weight transfer system (blue) 6.3m

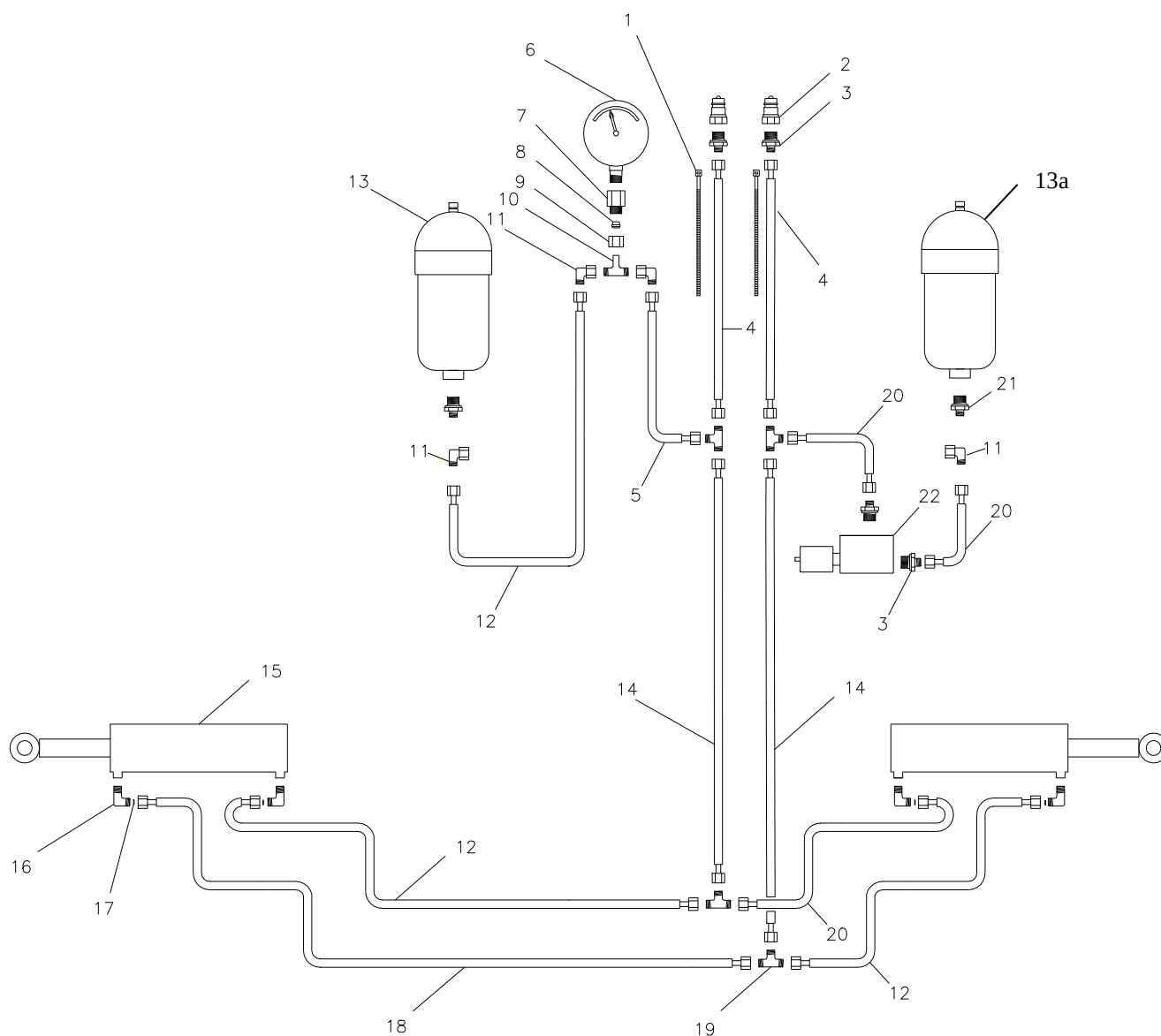


Tip cylinder for middle section (red) 6.3m

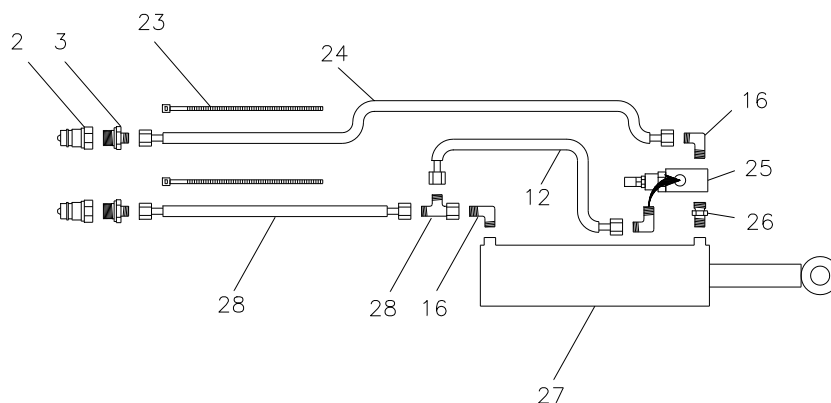


Pos.	Item no.	Designation	6.3 m
1	690119202	Cable straps (blue)	2
2	690203001	Quick coupling, male E402 ½"	4
3	690203003	Fitting, straight 10- ½" BSP	4
4	690201006	Hydraulic hose 3800mm ¼" st/st	1
5	690206822	Manometer 250 bar Ø100mm	1
6	690206823	Manometer fitting 10- ½"	1
7	690203010	Cutting ring Ø10	1
8	690203011	Union nut Ø10	1
9	690203020	Fitting EVT 10 L without union nut/cutting ring	1
10	690203016	Fitting 90angle 10mm	4
11	690201042	Hydraulic hose 500mm ¼" st/st	2
12	690201015	Hydraulic hose 710mm ¼" st/st	4
13	690206410	Accumulator H700R. 40 Bar	1
13a	690206403	Accumulator H700R 15 bar	1
14	690201016	Hydraulic hose 1830mm ¼" st/st	2
15	630762047	Cross cylinder 90/40x280mm (right + left)	2
15A	690200274	Gasket set 90/40	
16	690203006	Fitting, 90angle 10-3/8" Bsp	7
17	690207901	Restrictor 1mm	4
18	690201055	Hydraulic hose 1010mm ¼" st/st	1
19	690203015	Fitting T10	4
20	690201059	Hydraulic hose 350mm ¼" st/st	1
21	690203012	Fitting, straight M18x1,5x12mm w/joint ring	2
22	690201038	Hydraulic hose 4000mm ¼" st/st	1
23	690201029	Hydraulic hose 4300mm ¼" st/st	1
24	690119203	Cable straps (red)	2
25	690201045	Hydraulic hose 4800mm ¼" st/st	1
26	690207104	Adjustable pressure control valve 3/8"	1
27	690202810	Hexagon nipple 3/8"x 3/8" BSP-T	1
28	690200020	Tip cylinder Ø100/50 x 700mm, Ø35 mm	1
28a	690200028	Gasketset 100/50	
29	690203004	Fitting T10V	1

Hydraulics folding & weight transfer system (blue) 8.2m (Before machine no. 352600)

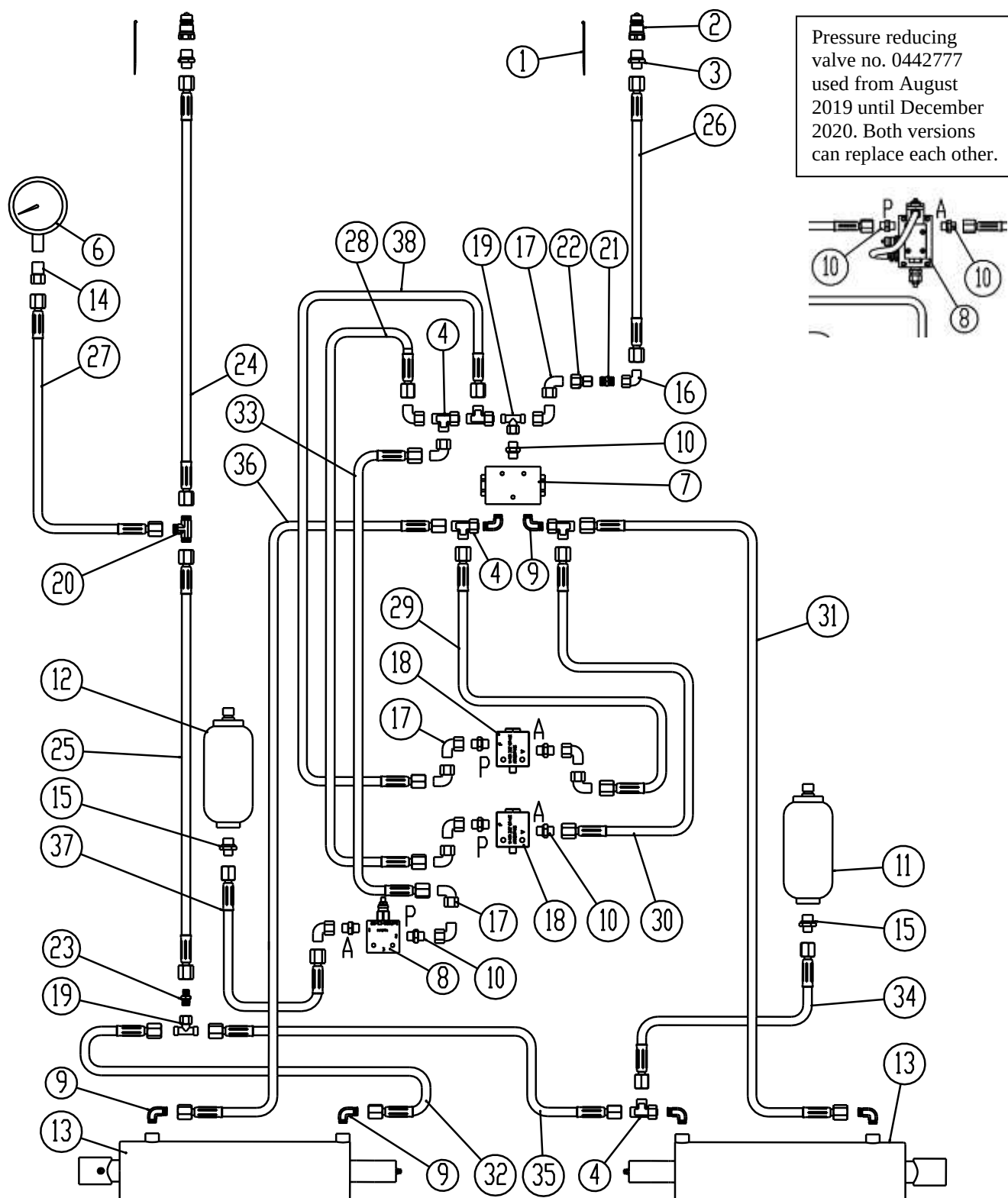


Tip cylinder for middle section (red) 8.2m



Pos.	Item no.	Designation	8.2m
1	690119202	Cable straps (blue)	2
2	690203001	Quick coupling, male E402 ½"	4
3	690203003	Fitting, straight 10- ½" BSP	4
4	690201048	Hydraulic hose 3610mm 1/4" st/st	2
5	690201051	Hydraulic hose 250mm ¼ " st/st	1
6	690206822	Manometer 250 bar Ø100mm	1
7	690206823	Manometer fitting 10- ½"	1
8	690203010	Cutting ring Ø10	1
9	690203011	Union nut Ø10	1
10	690203020	Fitting EVT 10 L without union nut / cutting ring	1
°11	690203016	Fitting 90° angle 10mm	4
12	690201055	Hydraulic hose 1010mm 1/4" st/st	3
13	690206410	Accumulator H700R. 40 Bar	1
13a	690206403	Accumulator H700R 15 bar	1
14	690201022	Hydraulic hose 3140mm 1/4" st/st	2
15	630762047	Cross cylinder 90/40x280mm (right)	2
15a	690200274	Gasket set 90/40	
16	690203006	Fitting, 90angle 10-3/8" Bsp	4
17	690207901	Restrictor 1mm	4
18	690201055	Hydraulic hose 1010mm 1/4" st/st	2
19	690203015	Fitting T10	4
20	690201059	Hydraulic hose 350mm 1/4" st/st	3
21	690203012	Fitting, straight M18x1,5x12mm w/joint ring	2
22	690209453	Depth stop valve, electric	1
23	690119203	Cable straps (red)	2
24	690201025	Hydraulic hose 5640mm 1/4" st/st	1
25	690207104	Adjustable pressure control valve 3/8"	1
26	690202810	Hexagon nipple 3/8"x 3/8" BSP-T	1
27	690200014	Tip cylinder Ø100/60 x 1000mm, Ø35 mm	1
27a	690200019	Gasket set 100/60	
28	690203004	Fitting T10V	1
29	690201047	Hydraulic hose 4610mm 1/4" st/st	1

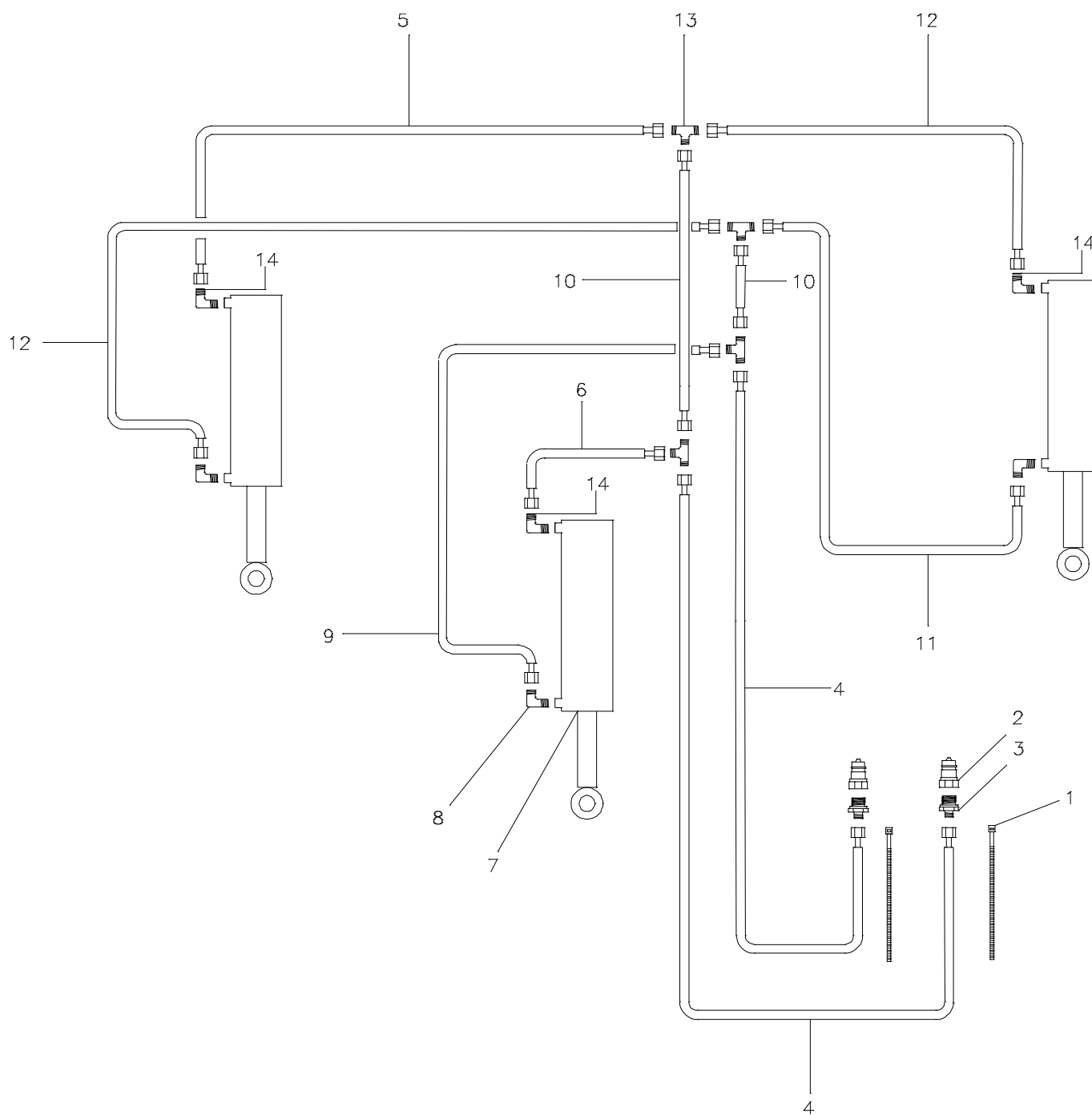
Hydraulics folding & weight transfer system (blue) 8.2m (after machine no. 352600)



Pos.	Item no.	Designation	8,2 m
1	690119202	Straps (red)	2
2	0444020	Quick coupling, male E402 ½"	2
3	690203103	Fitting, straight 10- ½" BSP	2
4	690203017	Fitting T12, w/O-ring	6
5	690203115	Fitting T12	2
6	690206822	Manometer 250 bar, Ø100	1
7	0442775	Flowdivider 3/8" 50/50% 10-20 l/min	1
8	0442777	Pressure reducing valve 3/8" From August 2019 - December 2020	1
8a	0442776	Pressure reducing valve 3/8", set to 30 bar, Port 1 = A, Port 2 = P, Notice: Can replace pos. 8 no. 0442777 From January 2021	1
9	690203106	Fitting 90° 12-3/8" BSP	6
10	0446754	Fitting straight, Ø12 x 3/8"	7
11	690206410	Accumulator H700R 40 bar	1
12	690206403	Accumulator H700R 15 bar	1
13	690200340	Cylinder Ø100/40x285	2
14	690206825	Manometer Fitting Ø12 x ¼"	1
15	690203097	Fitting straight M18x1,5x10 mm	2
16	0446678	Fitting 90° adjustable Ø10	1
17	0446679	Fitting 90° adjustable Ø12	13
18	690207108	End stop valve V-101 3/8" DT NC	2
19	690203125	Fitting T12 L adjustable w/O-ring	2
20	690203015	Fitting T10	1
21	690203018	Fitting straight ø10-ø10	2
22	0447529	Fitting straight ø12-ø10 w/2 x O-rings	2
23	0446755	Fitting straight ø12-ø10	1
24	690201048	Hydraulic hose 1/4" L = 3610 mm st/st	1
25	690201022	Hydraulic hose 1/4" L = 3140 mm st/st	1
26	690201028	Hydraulic hose 1/4" L = 6700 mm st/st	1
27	690201009	Hydraulic hose 1/4" L = 355 mm st/st	1
28	0454172	Hydraulic hose 3/8" L = 500 mm st/st	1
29	0454172	Hydraulic hose 3/8" L = 500 mm st/st	1
30	0454172	Hydraulic hose 3/8" L = 500 mm st/st	1
31	0454182	Hydraulic hose 3/8" L = 600 mm st/st	1
32	0454182	Hydraulic hose 3/8" L = 600 mm st/st	1
33	0454172	Hydraulic hose 3/8" L = 500 mm st/st	1
34	1454160	Hydraulic hose 3/8" L = 400 mm st/st	1
35	0454130	Hydraulic hose 3/8" L = 310 mm st/st	1
36	0454234	Hydraulic hose 3/8" L = 870 mm st/st	1
37	0454140	Hydraulic hose 3/8" L = 350 mm st/st	1
38	0454182	Hydraulic hose 3/8" L = 600 mm st/st	1



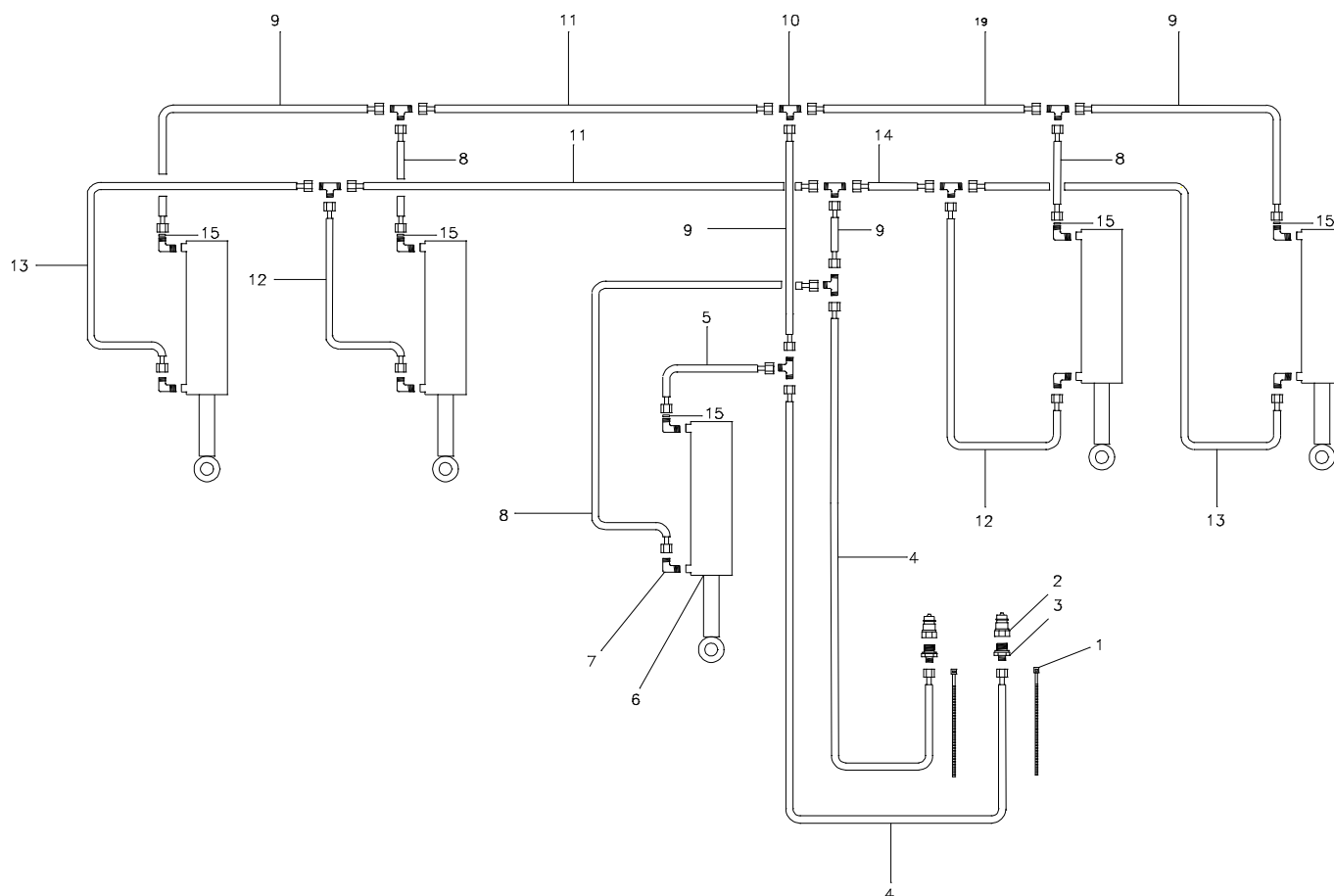
Hydraulics, front harrow (green) 4,5 - 6.3m



Pos.	Item no.	Designation	4,5m	6,3 m
1	690119204	Straps (grøn)	2	2
2	690203001	Quick coupling, male E402 ½"	2	2
3	690203003	Fitting Straight 10- 1/2" BSP	2	2
4	690201005	Hydraulic hose 3300 mm 1/4" st/st	2	
4	690201038	Hydraulic hose 4000mm 1/4" st/st		2
5	690201033	Hydraulic hose 2500 mm	1	
5	690201044	Hydraulic hose 3460mm 1/4" st/st		1
6	690201042	Hydraulic hose 500mm ¼ " st/st	1	
6	690201064	Hydraulic hose 820mm 1/4 " st/st		1
7	690200040	Cylinder 50/30x155 Ø20,25/20,25	3	
7	690200040	Cylinder 50/30x155mm ø20/ø20		3
7a	690200045	Gasket set 50/30		
8	690203006	Fitting straight 10-3/8" Bsp	6	6
9	690201040	Hydraulic hose 625mm	1	
9	690201055	Hydraulic hose 1010mm 1/4" st/st		1
10	690201020	Hydraulic hose 1625 mm 1/4" st/st	2	
10	690201068	Hydraulic hose 1950mm 1/4" st/st		2
11	690201237	Hydraulic hose 2800mm ¼ " st/st	1	
11	690201006	Hydraulic hose 3800mm 1/4" st/st		1
12	690201060	Hydraulic hose 3000 mm 1/4" st/st	2	
12	690201048	Hydraulic hose 3610mm 1/4" st/st		2
13	690203015	Connector T10	4	4
14	690207901	Restrictor 1mm	3	3

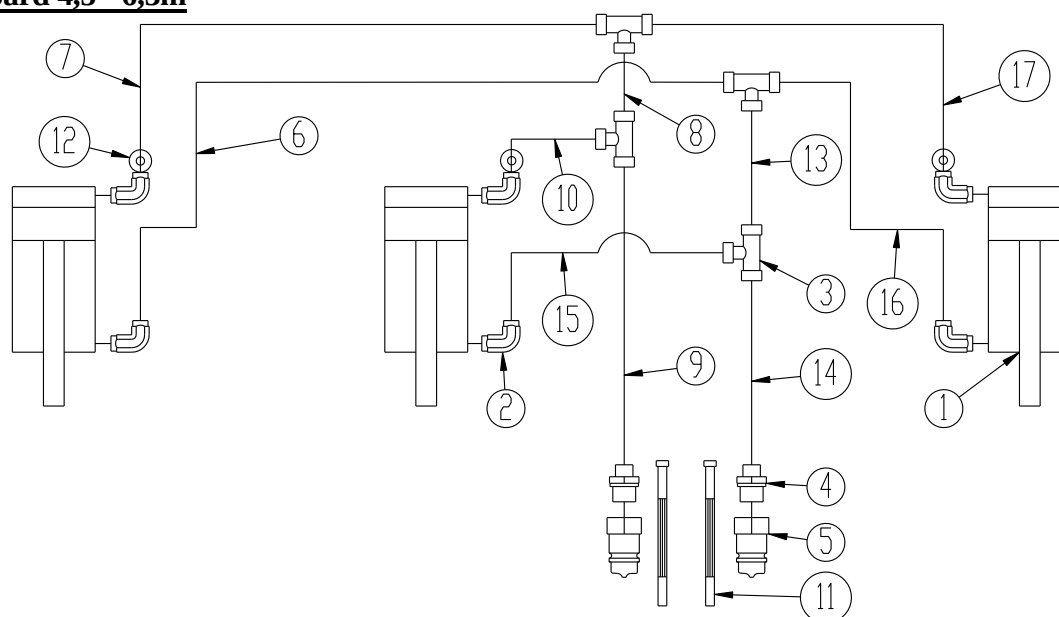


Hydraulics, front harrow (green) 8.2m



Pos.	Item no.	Designation	8.2m
1	690119204	Cable straps (green)	2
2	690203001	Quick coupling, male E402 1/2"	2
3	690203003	Fitting, straight 10- 1/2" BSP	2
4	690201045	Hydraulic hose 4800mm 1/4 " st/st	2
5	690201042	Hydraulic hose 500mm 1/4 " st/st	1
6	690200040	Cylinder 50/30x155mm ø20/ø20	5
6a	690200045	Gasket set 50/30	
7	690203006	Fitting, 90angle 10-3/8" Bsp	10
8	690201015	Hydraulic hose 710mm 1/4 " st/st	3
9	690201068	Hydraulic hose 1950mm 1/4 " st/st	4
10	690203015	Fitting T10	8
11	690201237	Hydraulic hose 2800mm 1/4 " st/st	2
12	690201052	Hydraulic hose 935mm 1/4 " st/st	2
13	690201021	Hydraulic hose 2300mm 1/4 " st/st	2
14	690201060	Hydraulic hose 3000mm 1/4 " st/st	2
15	690207901	Restrictor 1mm	5

Spring-Board 4,5 - 6,3m



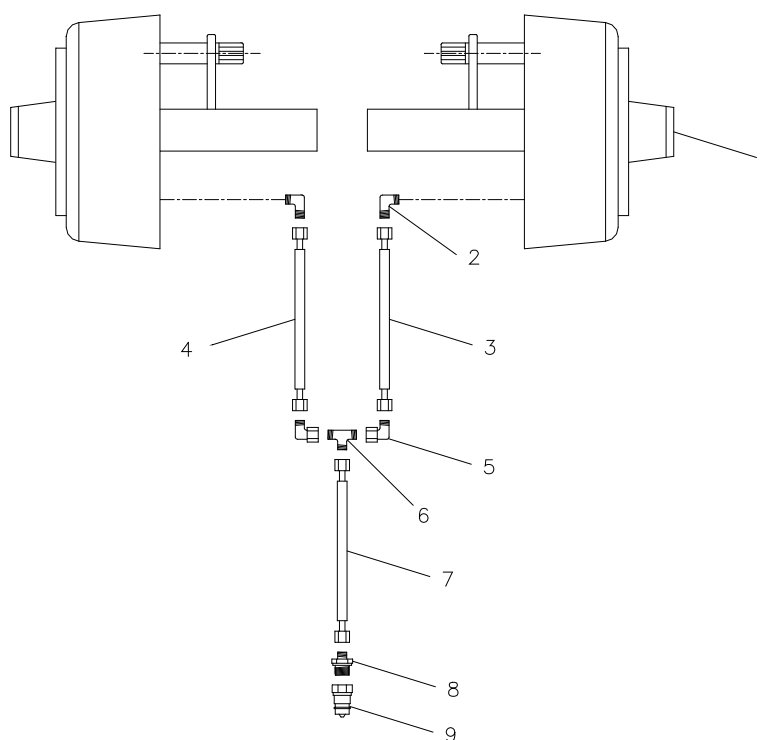
Pos.	Item no.	Designation	4,5m	6,3m
1	690200160	Cylinder 50/30x155 Ø20,25/Clevis	3	3
1a	690200046	Gasket set 50/30 Laizhou		
2	690203006	Fitting, 90° 10-3/8" Bsp	6	6
3	690203015	Fitting T10	4	4
4	690203003	Fitting straight 10- 1/2" BSP	2	2
5	690203001	Quick coupling, male E402 1/2"	2	2
6	690201023	Hydraulic hose 3160 mm 1/4" st/st (right section)	2	
6	690201048	Hydraulic hose 3610 mm 1/4" st/st (right section)		1
7	690201060	Hydraulic hose 3000 mm 1/4" st/st (right section)	1	
7	690201044	Hydraulic hose 3460 mm 1/4" st/st (right section)		1
8	690201020	Hydraulic hose 1625 mm 1/4" st/st	1	
8	690201032	Hydraulikslange 1130 mm 1/4" st/st		1
9	690201005	Hydraulic hose 3300 mm 1/4" st/st	1	
9	690201038	Hydraulikslange 4000 mm 1/4" st/st		1
10	690201055	Hydraulic hose 1010 mm 1/4" st/st	1	
10	690201051	Hydraulikslange 250 mm 1/4" st/st		1
11		Straps, yellow	2	
12	690207901	Restrictor Ø1mm	3	
13	690201020	Hydraulic hose 1625 mm 1/4" st/st	1	
13	690201053	Hydraulic hose 1260 mm 1/4" st/st		1
14	690201005	Hydraulic hose 3300 mm 1/4" st/st	1	
14	690201006	Hydraulic hose 3800 mm 1/4" st/st		1
15	690201055	Hydraulic hose 1010 mm 1/4" st/st	1	
15	690201059	Hydraulic hose 350 mm 1/4" st/st		1
16	690201005	Hydraulic hose 3300 mm 1/4" st/st (left section)	1	
16	690201006	Hydraulic hose 3800 mm 1/4" st/st (left section)		1
17	690201023	Hydraulic hose 3160 mm 1/4" st/st (left section)	1	
17	690201048	Hydraulic hose 3610 mm 1/4" st/st (left section)		1



A schematic diagram of a four-channel hydraulic system. The system consists of four vertical cylinders, each with a piston rod extending downwards. The cylinders are connected to a common horizontal manifold at the top. The manifold is divided into four sections, each corresponding to one cylinder. Each section contains a check valve (13) and a pressure gauge (14). The cylinders are connected to the manifold via ports (15) and (16). The cylinders are labeled with numbers 1, 2, 3, and 4. The manifold is labeled with numbers 5, 6, 7, and 8. The check valves are labeled with numbers 9, 10, 11, and 12. The pressure gauges are labeled with numbers 13, 14, 15, and 16. The ports are labeled with numbers 17 and 18. The cylinders are connected to the manifold via ports (15) and (16). The cylinders are labeled with numbers 1, 2, 3, and 4. The manifold is labeled with numbers 5, 6, 7, and 8. The check valves are labeled with numbers 9, 10, 11, and 12. The pressure gauges are labeled with numbers 13, 14, 15, and 16. The ports are labeled with numbers 17 and 18.

Pos.	Item no.	Designation	8,2m
1	690200160	Cylinder 50/30x155 Ø20,25/Clevis	5
1a	690200046	Gasket set 50/30 Laizhou	
2	690203006	Fitting, 90° 10-3/8" Bsp	10
3	690203015	Fitting T10	8
4	690203003	Fitting straight 10- ½" BSP	2
5	690203001	Quick coupling, male E402 ½"	2
6	690207901	Restrictor ø1mm	5
7		Straps	2
8	690201032	Hydraulic hose 1130 mm 1/4" st/st	1
9	690201047	Hydraulic hose 4610 mm 1/4" st/st	2
10	690201053	Hydraulic hose 1260 mm 1/4" st/st	1
11	690201063	Hydraulic hose 1600 mm 1/4" st/st	2
12	690201016	Hydraulic hose 1830 mm 1/4" st/st	2
13	690201060	Hydraulic hose 3000 mm 1/4" st/st	2
14	690201022	Hydraulic hose 3140 mm 1/4" st/st	2
15	690201009	Hydraulic hose 355 mm 1/4" st/st	2
16	690201069	Hydraulic hose 350 mm 1/4" st/st	2
17	690201051	Hydraulic hose 250 mm 1/4" st/st	1
18	690201059	Hydraulic hose 350 mm 1/4" st/st	1

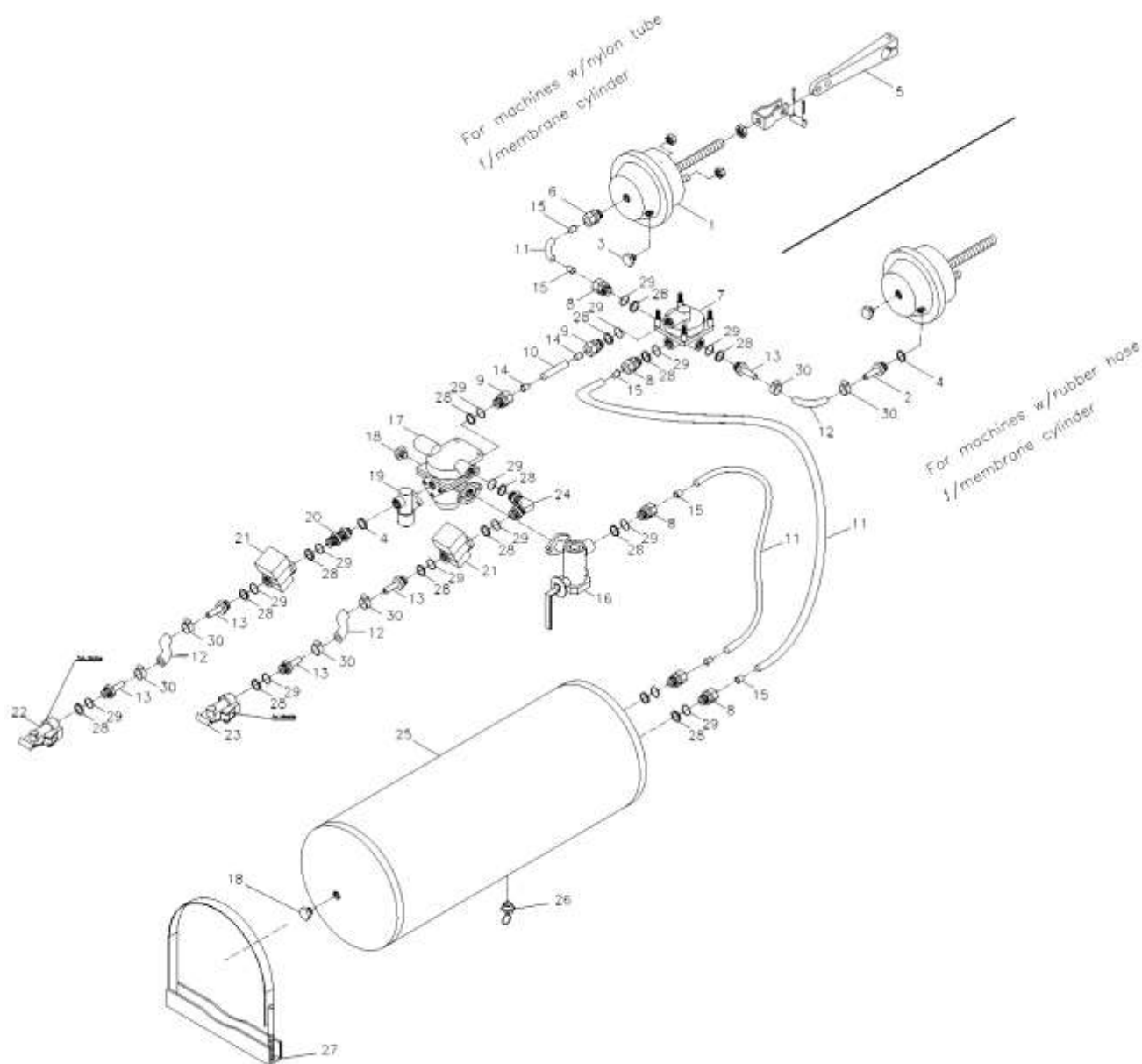
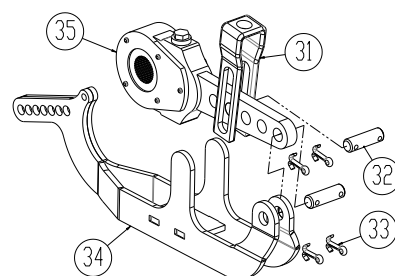
Hydraulic brakes



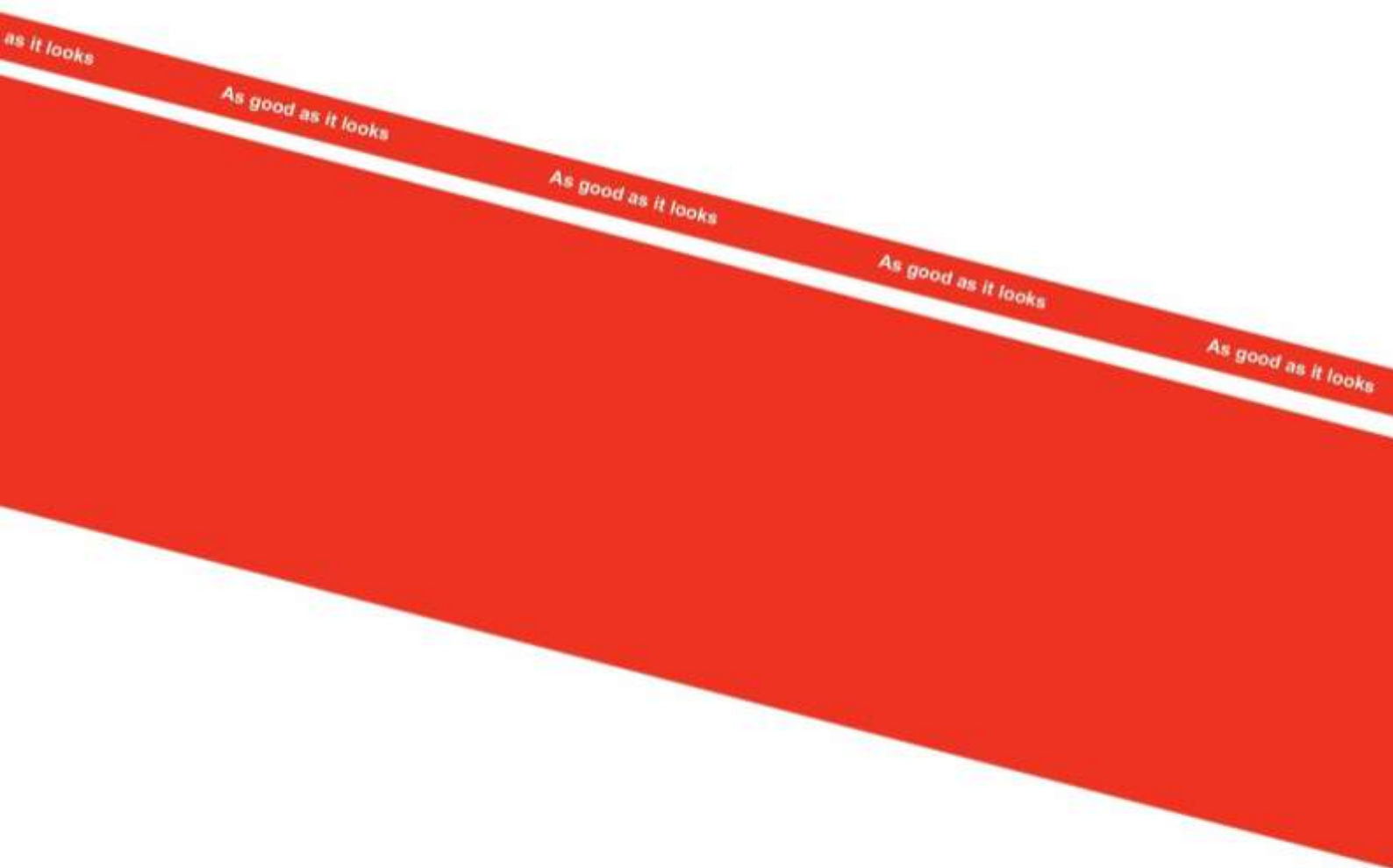
Pos.	Item no.	Designation	Pcs.
1		Look at pos. 4 page 24	2
2	690202921	Fitting, 90angle 1/4"x 10 w/union nut	2
3	690201018	Hydraulic hose 1480mm 1/4" st/st	1
4	690201053	Hydraulic hose 1260mm 1/4" st/st	1
5	690203016	Fitting 90angle 10mm	2
6	690203015	Fitting T10	1
7	690201012	Hydraulic hose 6000mm 1/4" st/st	1
8	690203003	Fitting, straight 10-1/2" BSP	2
9	690203013	Quick coupling 1/2" female BSP ISO567	2

Air brakes all models

New model brake arm and belongings
See pos. 31 - 35



Pos.	Item no.	Designation	w/artificial tube f/membrane cyl.	w/rubber hose f/membrane cyl.
1	690190001	Membrane cylinder 16"	2	2
2	690190070	Hose fitting M16x1,5 m/ Ø12 fitting	0	2
3	690190005	Test fitting, straight M16x1,5	2	2
4	690208102	Bonded seal PP 45-12	1	3
5	690190010	Mounting set, short yoke	2	2
6	690202930	Fitting, straight M16x1,5, Ø15 hose	2	0
7	690190015	Relay valve M22x1,5	1	1
8	690202941	Fitting, straight M22x1,5, Ø15 hose	6	4
9	690202940	Fitting, straight M22x1,5, Ø10 hose	2	2
10	690190080	Artificial tube Ø10x1mm	1	1
11	690190085	Artificial tube Ø15x1,5mm	4	2
12	690190105	Hose Ø14,5x5mm	2	4
13	690190073	Hose fitting M22x1,5, m/Ø12 fitting	4	6
14	690190090	Support bushing for tube Ø10x1,5mm	2	2
15	690190095	Support bushing for tube Ø15x1,5mm	8	4
16	690190020	Brake power regulator M22x1,5	1	1
17	690190025	Trailer air brake valve M22x1,5	1	1
18	690190026	Plug	2	2
19	690190035	Relief valve	1	1
20	690203420	Fitting straight M16x1,5+M22x1,5	1	1
21	690190040	Filter M22x1,5	2	2
22	690190045	Hose coupling M22x1,5 (red)	1	1
23	690190046	Hose coupling M22x1,5 (yellow)	1	1
24	690190030	V-Fitting M22x1,5	1	1
25	690190050	Air receiver 40ltr	1	1
26	690190051	Drainage valve	1	1
27	690190052	Suspension for air receiver	2	2
28	690190060	Pressure ring M22x1,5	15	15
29	690190065	O-ring M22x1,5	15	15
30	690109305	Clamp 15-24 mm	4	8
31	7297510	Connection clamp, new model		2
32	690190010-003	Pin ø14x45		4
33	690190010-002	Split pin ø4x40 galvanized		8
34	7297582	Brake arm adjustable, new model		2
35	7297597	Brake arm for handbrake, new model		2



The design is subject to modification without notice.