

UK

# HE-VA

Operating Instructions  
Spare Parts List  
Declaration of Conformity



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

## Tip-Roller

Manual no. 8000331-14 24.04.26

6.30 m. with 560 & 620 mm. Cambridge, 550/600 mm. Star rings, 550/600 mm. Crosskill rings and 550 & 600 mm. 2D Corrugated rings.

7.30 - 7.60 - 8.20 - 9.50 - 10.20 m with all ring types.

 **HE-VA**

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## **EC DECLARATION OF CONFORMITY**

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

Tip – Roller 6,3m – 7,3m – 7,6m - 8,2m – 9,5m – 10,2m

Nykøbing the 29th December 2009



Villy Christiansen

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

## **Description of the machine**

The Tip-Roller is a 3-sectioned hydraulic, wheel mounted roller. Tip-Roller is to be used for packing the top soil, to maintain the content of moisture in it, and to eliminate not solid stones from the surface of the cultivated area.

The roller sections has an independent suspension. Side sections are center-mounted in an intermediate joint, connecting the side sections to the wheel frame, which gives the sections a perfect adaption to the ground in uneven areas. The changing between transport- and work position is by hydraulic force. The roller has a low and compact transport position with a width of 2,42 meters.

**Read the manual before operating the roller and strictly follow the safety instructions.**

## **Delivery Check**

Check the roller for any damages. Check the hydraulic hoses for cuts and squeezing damages. Check also the other hydraulic components, are not 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 cast roller rings or the double-sealed ball bearings.

*Finally check that the transport wheels are tightened and OK.*

*Check the air pressure in the tyres according to Technical Specifications chart next page*

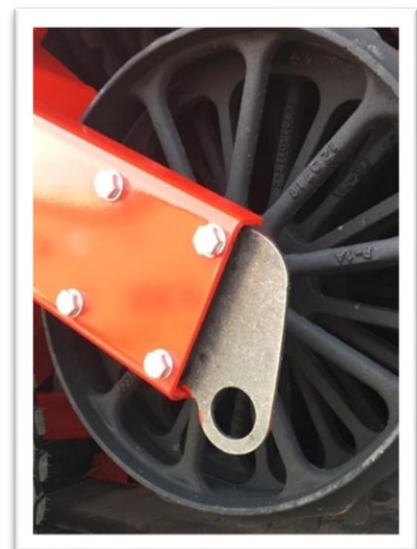
## **Instructions for unloading and final assembly**

In order to minimize the roller's space during transport, the roller is supplied partially separated from the factory. If the machine is delivered unassembled, it must therefore be completely installed first.

### **Transport Brackets**

At delivery the machine is mounted with brackets for hoisting gear, which is not painted.

These brackets is for attachment of chains or straps, when loading or unloading the machine from the transport vehicle, and they must be dismantled before use.



## Specifications

3-section hydraulic wheel-mounted field roller with free movement in all sections. The roller is delivered with a working width of 6.3 - 7.3 - 8.2 - 9.5 or 10.2 meters, respectively, with 5 different ring types: cambridge- cam- star- 2D wave- cross-kill ring and rigid roller.

The side sections of 8.2m and all 3 sections of 9.5m and 10.5m are fitted with support bearings.

### Technical specifications

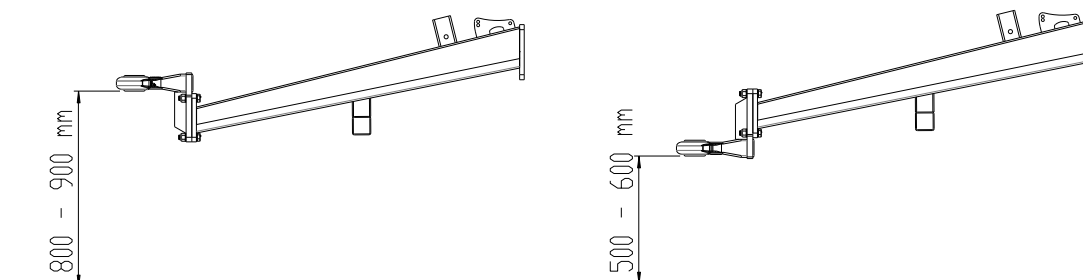
Work width	6,3 m	7,3 m	7,6 m	8,2 m	9,5 m	10,2 m
Width in workposition	6,55 m	7,55 m	7,85 m	8,45 m	9,75 m	10,45 m
Length	4.95 m	4,95 m	4,95 m	4,95 m	5,8 m	5,8 m
Transport width	2,42 m	2,42 m	2,42 m	2,42 m	2,46 m	2,46 m
Transport height w/without add. equipment	1,72 / 2,54	1,72 / 2,54	1,72 / 2,54	1,72 / 2,54	1,72 / 2,54	1,72 / 2,54
Weight kg basic machine depending on ring type	2.110 - 4.190	2.710- 4.780	2.778 – 4.984	3.010 - 5.200	4.820 - 6.350	5.020 - 6.850
Wheel size	11.5/80x15.3 – 14 PLY			400/60x15,5 - 16 PLY		
Max tyre pressure bar/psi	4,7/68			4,3/62		
Wheel size (add. equipment)	400/60x15,5 - 16 PLY			500/50x17 - 18 PLY		
Max tyre pressure bar/psi	4,3/62			3,6/52		
Wheel size (add. equipment)	-			480/45x17 – 18 PLY		
Max tyre pressure bar/psi	-			4,6		
Oil pressure	min. 150 bar					
Hydraulic outlets	2 pcs double function					
Quick couplings, standard	Sterling type E 402					
Hydraulic oil	Hydro Texaco HD32, Specification DIN 51524-3 / ISO 11158 L-HV					

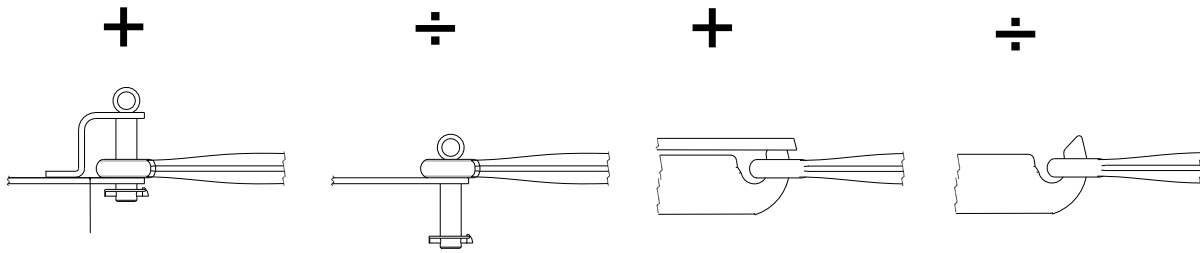
## Operating Instructions

### Attachment

On delivery the roller is in transport position. When the roller is attached, check that the towing hook height is 500-600 mm. Reverse the tractor, put in and **secure** the draw bolt.

Attention: Check that the towing eye fits the height of the tractors drawbar





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

The hoses for the tip cylinder are provided with **red** tie strap.

The hoses for the wing cylinder are provided with **blue** tie strap.

**Important:**

Check that the male end mounted by the factory fits the female end of the quick couplings of the tractor.  
 Now pressurise the tip cylinder (red) so that the side sections are tipped free of the transport fittings.  
 Then the wing cylinder (blue) is pressured so that the wings are turned as much back as possible.  
 Now relieve the pressure on the tip cylinder, and the roller will tip forward down to working position. When the bottom has been reached, let go of the hydraulic handle and the roller is ready for use.

**Transport**

At change-over for transport, the roller is tipped totally backward by pressurising the tip cylinder. Now pressurise the wing cylinder so that the side sections turn forward, towards the stop on the transport fittings of the drawbar.

When both sides lie in parallel with the drawbar, they are lowered down into the transport fittings by unpressurising the tip cylinder. Then relieve the pressure on all hydraulic hoses, and the roller is ready for transport.

**INSTRUCTIONS FOR TRANSPORT AT PUBLIC ROADS:**

Before transport at public roads, make sure that the attachment of the implement to the tractor, is in accordance with the local rules and regulations in force (permitted total weight, permitted axel load, transport width, lights and warning signs).

**FRONT AXEL LOAD:**

When the implement is attached and at maximum load, the tractors driving properties must be ensured. Check that the front axel is sufficiently loaded. The front axel load must be at least 20% of the tractors weight. Permitted axel load and total weight for the tractor must be respected.

**NB! The driving, controlling and braking properties are affected by the attached implement**



**When rolling**

Speed: max. 10 km/h.

When turning, drive in wide curves as far as possible. The turning should be performed no sharper, than all roller rings are still rotating forward.

Only lower the wheels when making ready for transport position.

Do not drive over any large stones, which are not moveable.

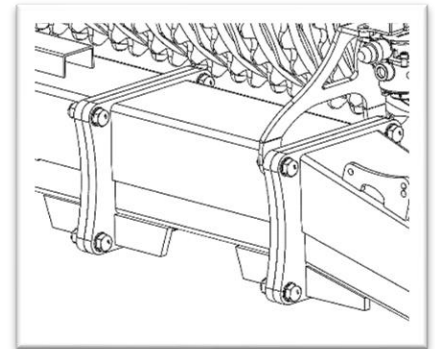
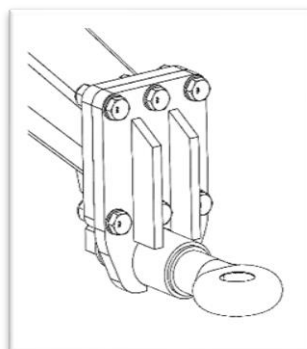
**Maintenance**

- A. After approximately 10 hours of operation, retighten wheels, ball bearings and stop rings. Check hoses, fittings and cylinders for any leaks and retighten.

Maximum torque according to ISO 898-1 in Nm. <b>With lubricated thread</b>			
Metric thread	Quality 8.8	Quality 10.9	Quality 12.9
M10x1,5	47	65	79
M12x1,75	81	114	136
M14x2,0	128	181	217
M16x2,0	197	277	333
M18x2,5	275	386	463
M20x2,5	385	541	649
M22x2,5	518	728	874
M24x3,0	665	935	1120
Wheel nut M18x1,5 fine thread		385 Nm	
Wheel nut M22x1,5 fine thread		550 Nm	

**Controle tightening:**

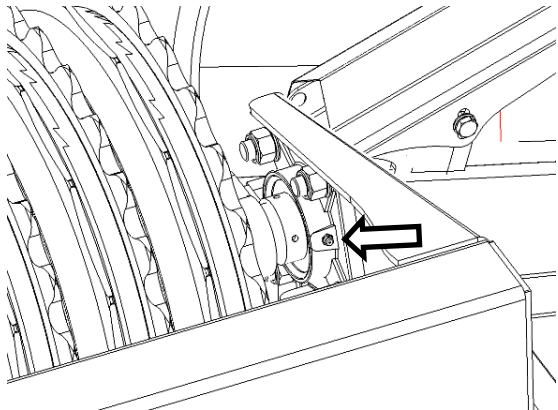
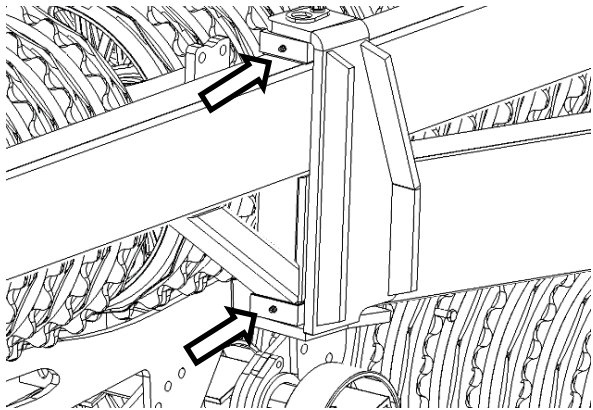
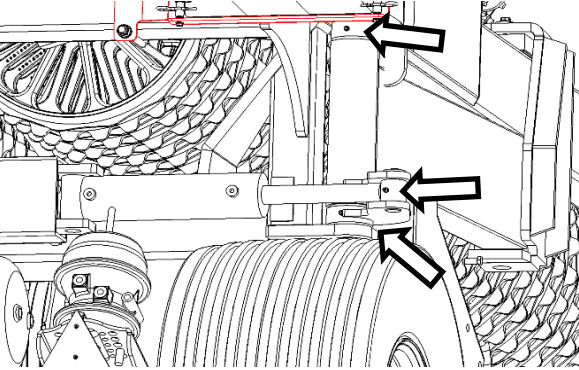
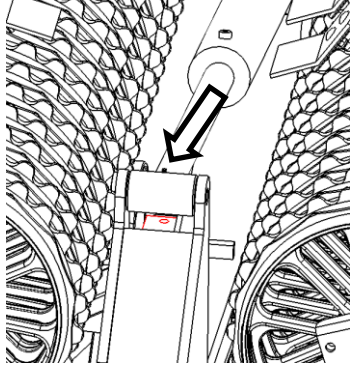
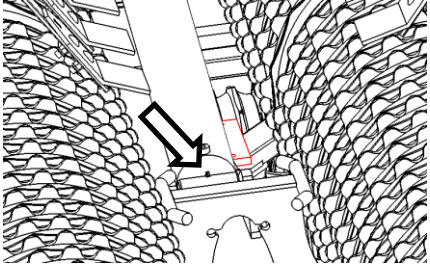
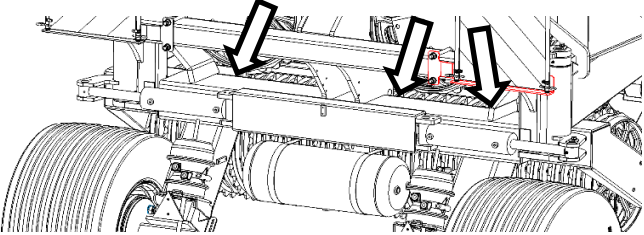
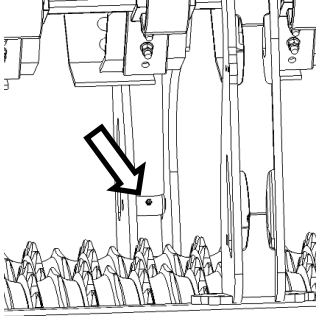
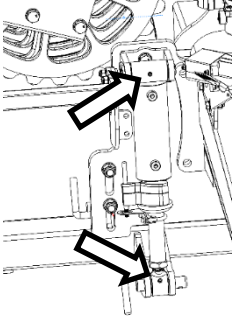
- flange for towing eye, 6 bolts M16 or M20 in quality 10.9
- flanges between drawbar and the rear drawbar 6 or 12 bolts M16 or M20 in quality 10.9



- B. After approximately every 10 hours of operation, lubricate all movable parts of the side sections as well as the three lubricating points of the wing cylinder and cylinder pins and suspension at Spring-Board. After approximately every 30 hours of operation, lubricate the 3 pins in the drawbar.
- C. After the season, clean the roller and lubricate with grease and oil, and the piston rods must be lubricated with grease or preservative oil.



### Lubrication chart

 <p>All ends on roller blocks, twice each season and after wash</p>	 <p>2 nipples on wings pivot joints 10 hours</p>
 <p>1 nipple on folding cylinder 2 pc on pin for wings 10 hours</p>	 <p>Rod end of tip cylinder 30 hours</p>
 <p>Cylinder end of tip cylinder 30 hours</p>	 <p>3 nipples on pivot joint between rear drawbar and wheel frame 30 hours</p>
 <p>1 nipple on each Spring-Board cylinder 10 hours</p>	 <p>2 nipples at track eradicator cylinder 10 hours</p>



## **Safety at the Tip-Roller**

Do not operate the machine, **if any people<sup>1</sup>** are at risk in **the dangerous area.<sup>2</sup>**

When persons are at risk in the dangerous area (e.g. when doing adjustments, maintenance or connect or disconnecting), the following points must be met:

- Lower the machine on solid ground.
- Hydraulic must be relieved.
- Tractor must be turned off, and the key removed.
- Driver must be aware of, when operating that there is no persons at risk in the dangerous area.
- He-Va cannot be held responsible for any falling accidents due to washing lubrication and other maintenance tasks
- By the time tires will become tender and explosion danger can occur, when transporting or when controlling tire pressure
- Drive carefully when going from road to paddock and opposite. Be aware of ditches along the road and holes in dirt roads, because gravity point is reasonable high in transport position. Especially when additional equipment is mounted
- The machine must not be operated by persons who have not been properly instructed or trained

Most accidents when operating the machine, transporting and doing maintenance occurs, when avoiding the simplest safety regulations.

For this reason, it is of highest importance, that any person who is operating the machine, strictly follows the safety regulations and other instructions, which belongs the machine.

The machine must only be operated, maintained and fixed by persons, who is confidential with and skilled for this work and is aware of moments of danger, which can occur.

**ATTENTION!!** Rotating parts and loose in a loose condition, is a dangerous combination.

**IMPORTANT!!** It is strictly prohibited for any person to take place on the frame of the machine, when it is either operating or the tractor is idling.

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<sup>1</sup> People at risk: Any person, who is completely or partially in the dangerous area.

<sup>2</sup> Dangerous area: At the machine and underneath it, and in distance of 4 m from it.



## **Safety Instructions, regarding Hydraulic System**

1. The highest allowable pressure is 225 bar.
2. It is recommended to mark the hydraulic connections between the implement and tractor, to avoid incorrect operation!
3. When checking for hydraulic leaks, suitable safety gear must be used due to danger. (Safety goggles , gloves, etc.)  
At high pressure, Hydraulic oil can penetrate the skin and cause serious injuries.  
At injuries, consult a doctor immediately. **RISK OF INFECTION!**
4. Before any work at the hydraulic system, the implement must be lowered to solid ground.  
Pressure must be relieved, engine stopped, and ignition key removed.
5. Check the hydraulic hoses on a regular basis, however, every six months as a minimum due to any cracks, wear and tear, etc. Replace any defective hoses immediately.
6. Hydraulic hoses last for no more than 5 years.  
New hydraulic hoses must be identical to the manufacturer's specifications.

## **Disposal**

When, after many years of use, the machine is to be regarded as end-of-life, it must be disposed of to a registered and approved product dealer. This will carry out the statutory discharge and disposal of hydraulic oil, as well as sorting materials for further processing for recycling.

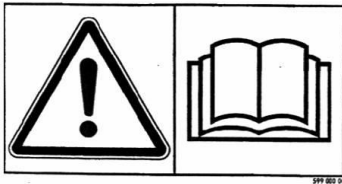


## Markings on the machine

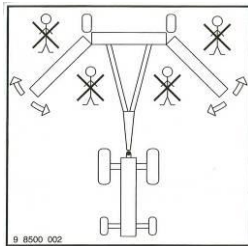
Several markings are located at your machine, which contains **safety regulations** and other instructions to inform about correct operating.

Please read these instructions carefully, and make the driver aware about the markings and **safety regulations** in this Operating Instructions. Keep the markings clean and readable. If they are not, they must be replaced.

### Safety – and other markings on the machine



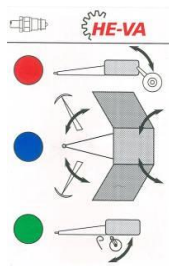
Study the Operating Instructions thoroughly before any operation of the machine and observe all safety instructions.



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.



Identification marks for the hydraulic system:

**Red:** Tip cylinder

**Blue:** Folding cylinder

**Green:** Additional equipment

**HUSK - PLEASE NOTE -  
ACHTUNG - ATTENTION  
EFTERSPÆND BOLTE  
TIGHTEN UP THE BOLTS  
BOLZEN NACHZIEHEN  
RESSERRER LES BOULONS**

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



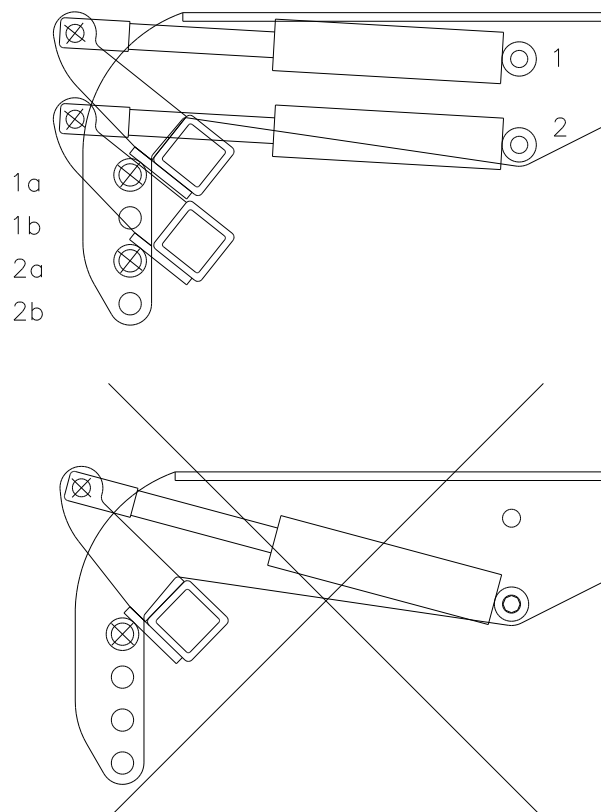
## **Spring-Board**

The Spring-Board requires 1 double-acting Hydraulic outlet on the tractor. The tine angle is hydraulically controlled from the driver's cab and the depth control is done manually. The tine work independently, but may be connected by means of transverse locking fittings (additional equipment) if a greater levelling effect is required. The change-over is done very easily and quickly without any tools.

### **Installation of Cylinder on Spring-Board**

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

The ring type decides whether the cylinders must be installed in hole 1 or 2. If the machine has 450 or 550 mm rings, the cylinders must be located in hole 1 and hole 1a or 1b. If with 620 mm rings, the cylinders must be located in hole 2 and hole 2a or 2b.



**Noter**

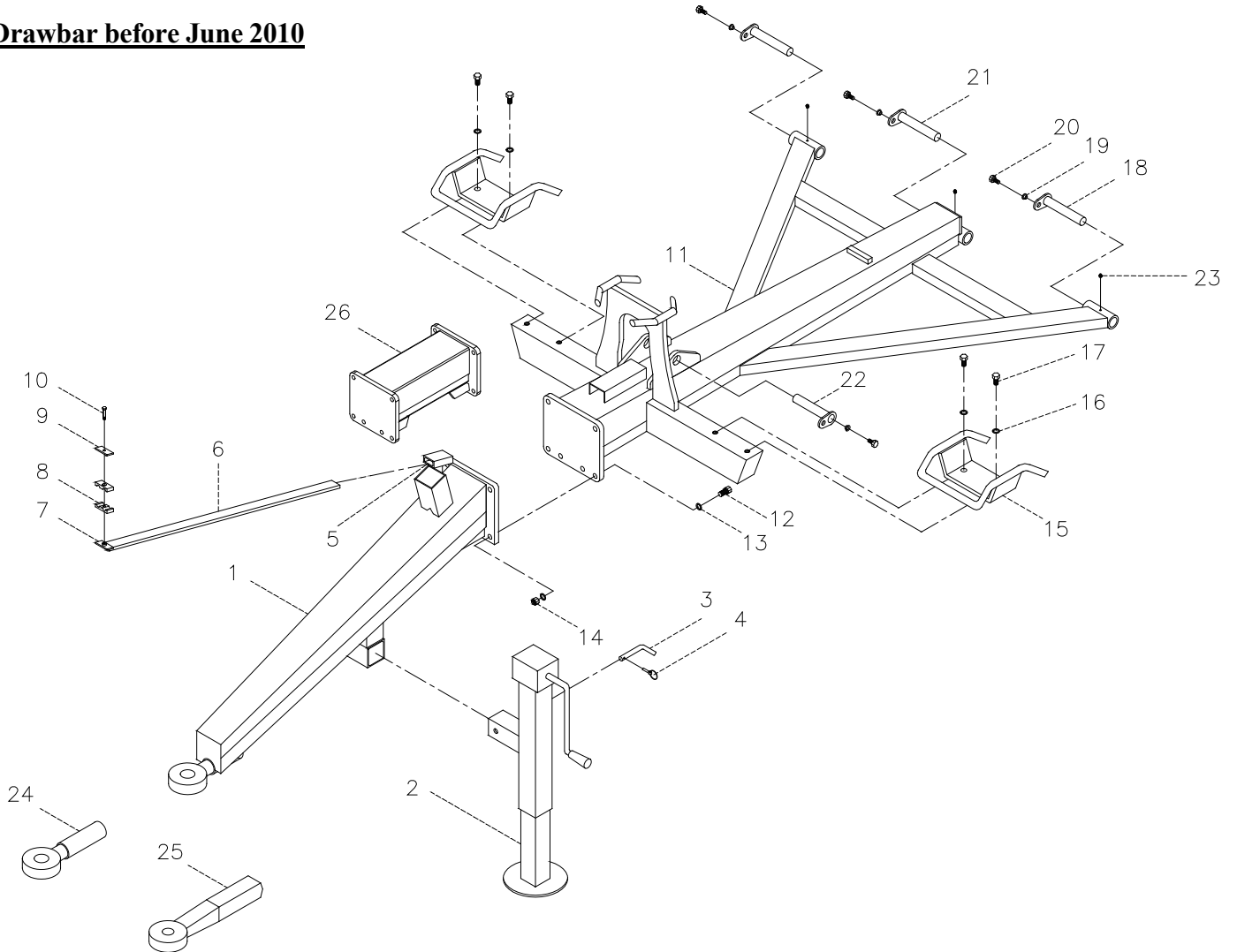
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ATTENTION: Parts list must be read as follows: Drawings are always placed before/above the belonging parts list

### Spare Parts List

#### Drawbar before June 2010

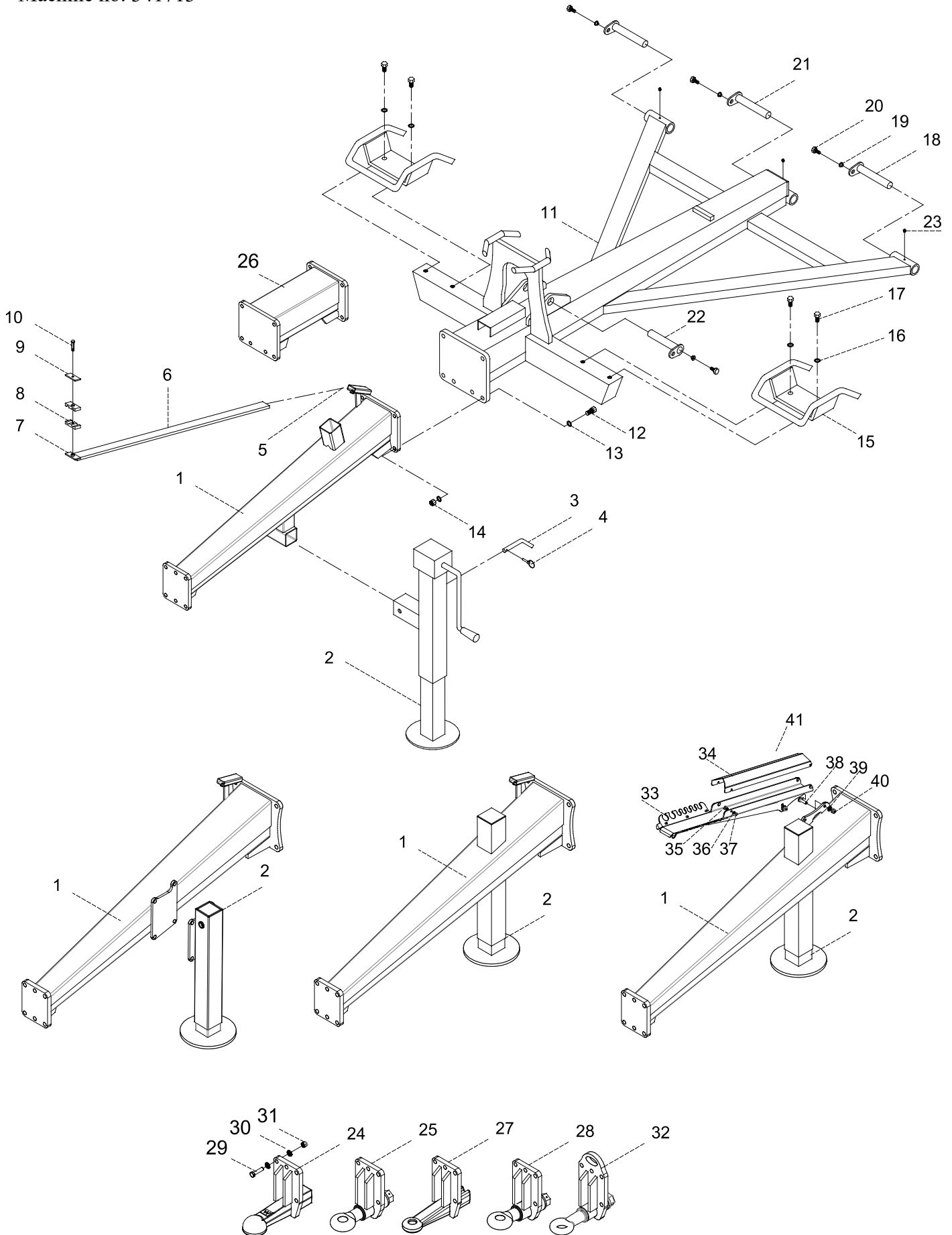


Pos.	Art. No.	Designation	6,3	7,3/7,6	8,2	9,5	10,2
1	630771010	Front drawbar (Danish)	1	1	1		
1	630831000	Front drawbar (Danish)				1	1
1	630771100	Front drawbar (German)	1	1	1		
1	630831100	Front drawbar (German)				1	1
2	690141102	Support leg 6000 kg	1	1	1	1	1
3	69516094A	Pin $\varnothing$ 16 L=94	1	1	1	1	1
4	690133005	Hairpin split $\varnothing$ 4	1	1	1	1	1
5	690103075	Bolt M10x25	2	2	2	2	2
6	630771200	Parking device f/hose	1	1	1	1	1
7	690210212	Welding plate f.double pipe support	1	1	1	1	1
8	690210210	Pipe support double $\varnothing$ 14/ $\varnothing$ 14	4	4	4	4	4
9	690210211	Top plate f/double pipe support	1	1	1	1	1
10	690210213	Screw f/double pipe support	1	1	1	1	1
11	630775000	Rear drawbar	1				
11	630785000	Rear drawbar		1			
11	630765000	Rear drawbar			1		
11	630835000	Rear drawbar				1	1
12	690103190	Bolt M16x65 8.8	6	6	6		
12	690103164	Bolt M20x70 8.8				6	6
13	690117013	Faceted disc $\varnothing$ 16	12	12	12		
13	690117005	Faceted disc $\varnothing$ 20				12	12
14	690113008	Self-locking nut M16	6	6	6		
14	690113009	Self-locking nut M20				6	6
15	630530300	Transport fittings 18"/ $\varnothing$ 450 mm	2	2	2	2	2
15	630530400	Transport fittings 21"/ $\varnothing$ 500 mm	2	2	2	2	2
15	630805100	Transport fittings 24"/ $\varnothing$ 625 mm	2	2	2	2	2
16	690117013	Faceted disc $\varnothing$ 16	4	4	4	4	4
17	690103128	Bolt M16x55 8.8	4	4	4	4	4
18	69435175G	Pin $\varnothing$ 35 L=175	2	2	2	2	2
19	630532600	Locking sleeve for pin head	4	4	4	4	4
20	690101101	Bolt M12x25	4	4	4	4	4
21	69435185G	Pin $\varnothing$ 35 L=185	1	1	1	1	1
22	69435170G	Pin $\varnothing$ 35 L=170	1	1	1	1	1
23	690136029	Lubricating nipple M8	3	3	3	3	3
24	690141211	Towing eye (Danish)	1	1	1	1	1
25	690105003	Towing eye (German)	1	1	1	1	1
26	630779000	Drawbar extension 500mm (Extra equipment)	1	1	1		
26	630801003	Drawbar extension 500mm				1	1



**Drawbar after June 2010**

Machine no: 341713



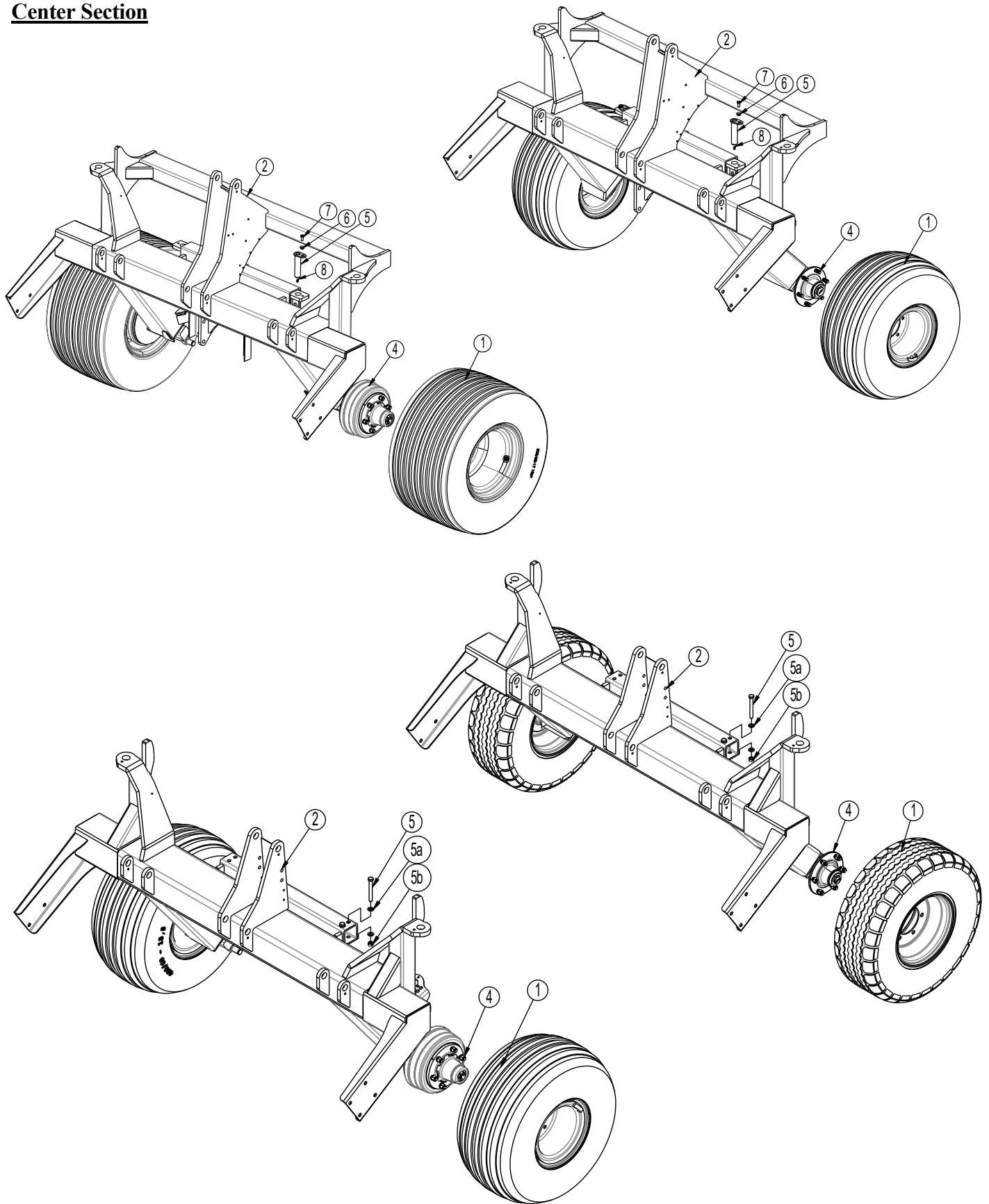
Pos.	Art. No.	Designation	6,3	7,3	7,6	8,2	9,5	10,2
1	630771000	Drawbar	1	1	1	1		
1	630771020	Drawbar <b>(after machine no. 344524)</b>	1	1	1	1		
1	630831015	Drawbar <b>(after machine no. 341713)</b>					1	1
1	1210869	Drawbar w/centre mounted supportleg	1	1	1	1		
1	630831021	Drawbar w/centre mounted supportleg <b>(after machine no. 342015)</b>					1	1
1	630771023	Drawbar prepared for new parking device f/hose	1	1	1	1		
1	630831027	Drawbar prepared for new parking device f/hose					1	1
2	690141102	Support leg 6000 kg	1	1	1	1	1	1
2	690141099	Support leg hydraulisk <b>(after machine no. 341713)</b>					1	1
2	690141098	Support leg hydraulisk <b>(after machine no. 342015)</b>	1	1	1	1	1	1
2	630141109	Support leg Hydr. <b>(after serial no. 359540)</b>					1	1
3	69516094A	Pin Ø16 L=94	1	1	1	1	1	1
4	690133005	Hairpin splitØ4	1	1	1	1	1	1
5	690103075	Bolt M10x25	2	2	2	2	2	2
6	630771200	Parking device f/hose	1	1	1	1	1	1
7	690210212	Welding plate f/double pipe support	1	1	1	1	1	1
8	690210210	Pipe support double Ø14/Ø14	4	4	4	4	4	4
9	690210211	Top plate f/double pipe support	1	1	1	1	1	1
10	690210213	Screw / double pipe support M8x65 mm	1	1	1	1	1	1
11	630775000	Rear drawbar	1					
11	630775020	Rear drawbar <b>(after machine no 344524)</b>	1					
11	630785000	Rear drawbar		1	1			
11	630785020	Rear drawbar <b>(after machine no 344524)</b>		1	1			
11	630765000	Rear drawbar				1		
11	630765020	Rear drawbar <b>(after machine no 344524)</b>				1		
11	630835000	Rear drawbar					1	1
11	630835025	Rear drawbar <b>(after machine no 348298)</b>					1	1
12	690103275	Bolt M16x65 10.9	6	6	6	6		
12	690103173	Bolt M20x70 10.9 <b>(after machine no 344524)</b>	6	6	6	6		
12	690103173	Bolt M20x70 10.9					6	6
13	690117013	Faceted disc Ø16	12	12	12	12		
13	690117005	Faceted disc Ø20 <b>(after machine no 344524)</b>	12	12	12	12		
13	690117005	Faceted disc Ø20					12	12
14	690113008	Self locking nut M16	6	6	6	6		
14	690113009	Self locking nut M20 <b>(after machine no 344524)</b>	6	6	6	6		
14	690113009	Self locking nut M20					6	6
15	630530300	Transport fitting 18"/Ø450 mm	2	2	2	2	2	2
15	630530400	Transport fitting 21"/Ø500 mm	2	2	2	2	2	2
15	630805100	Transport fitting 24"/Ø625 mm	2	2	2	2	2	2
16	690119008	Faceted discØ16_	4	4	4	4	4	4



Pos.	Art. No.	Designation	6,3	7,3	7,6	8,2	9,5	10,2
17	690103128	Bolt M16x55 8.8	4	4	4	4	4	4
18	69435175G	Pin Ø35 L=175	2	2	2	2	2	2
19	630532600	Locking sleeve for pin head	4	4	4	4	4	4
20	690101101	Bolt M12x25	4	4	4	4	4	4
21	69435185G	Pin Ø35 L=185	1	1	1	1	1	1
22	69435170G	Pin Ø35 L=170	1	1	1	1	1	1
23	690136029	Lubricating nipple M8	3	3	3	3	3	3
24	630757023	Drawbar ball type	1	1	1	1	1	1
24a	690105012	Loose towing eye ball type	1	1	1	1	1	1
25	630757028	Drawbar Ø50 pivoted M16 bolts	1	1	1	1		
25a	690141211	Loose towing eye, Ø50 turnable	1	1	1	1		
26	630779000	Drawbar extension 500mm (extra equipment)	1	1	1	1		
26	630779020	Drawbar extension 500mm (extra equipment) <b>(after machine no 344524)</b>	1	1	1	1		
26	630801003	Drawbar extension					1	1
27	630757013	Drawbar Ø40 solid M16 bolts	1	1	1	1		
27a	690105003	Loose towing eye, Ø40	1	1	1	1		
27	630757030	Drawbar Ø40 solid , strong model M20 bolts					1	1
27b	690105009	Loose drawbar, ø40, strong model					1	1
28	630757017	Drawbar Ø50 pivoted M20 bolts					1	1
28a	690105006	Loose towing eye, Ø50 turnable					1	1
29	690103069	Bolt M20x80 10.9					6	6
29	690103275	Bolt M16x65 10.9	6	6	6	6		
30	0272310	Faceted disc Ø20					12	12
30	0272290	Faceted disc Ø16	12	12	12	12		
31	0264110	Self locking nut M20					6	6
31	0264090	Self locking nut M16	6	6	6	6		
32	630757043	Drawbar pivoted M16 bolts, homologated	1	1	1	1		
32a	690105004	Loose towing eye turnable, homologeret	1	1	1	1		
33	7345001	Plate for parking device f/hose. 8 seats	1	1	1	1	1	1
33	7345002	Plate for parking device f/hose. 14 seats	1	1	1	1	1	1
34	7345003	Cover for parkingdevice hydr. hose	1	1	1	1	1	1
35	0246060	Bolt M6x16 FZB DIN603	4	4	4	4	4	4
36	0272240	Faceted disc 6mm, fzb	4	4	4	4	4	4
37	0264040	Self locking nut M6, fzb DIN985	4	4	4	4	4	4
38	0235360	Bolt (setbolt) M12x40mm,8.8 fzg	2	2	2	2	2	2
39	0272270	Faceted disc Ø12	4	4	4	4	4	4
40	0264070	Self locking nut M12	2	2	2	2	2	2
41	7345010	Complete parking device 8 seats (pos 33-40)						
41	7345019	Complete parking device 14 seats (pos 33-40)						



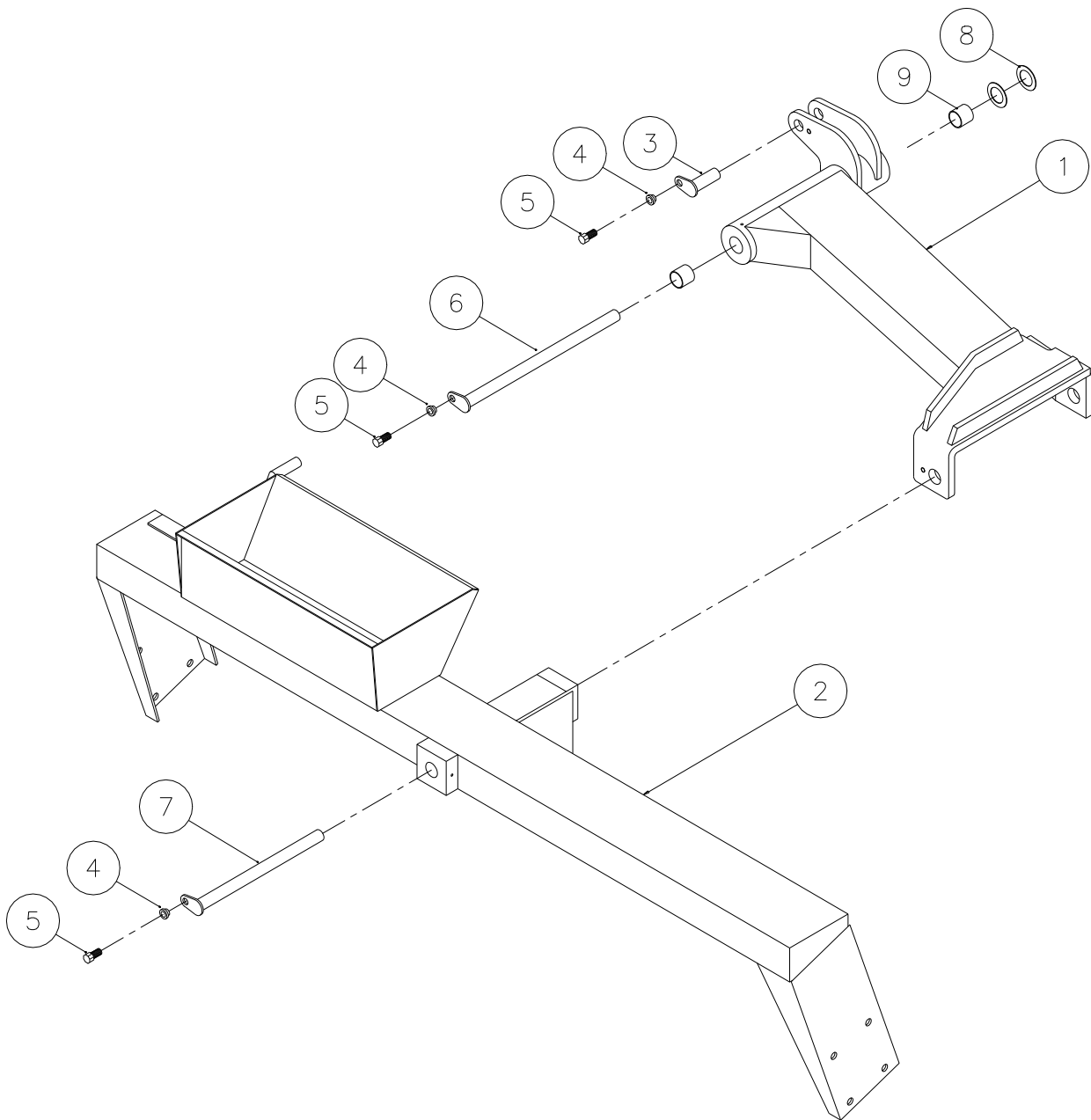
**Center Section**



Pos.	Art. No.	Designation	6.3	7.3	8.2	9.5	10,2
1	690141215	Wheel 11,5 / 80 x 15,3 - 14 PLY	2	2	2		
1	0396330	Wheel 400/60 x 15,5 – 16 PLY Right				1	1
1	0396340	Wheel 400/60 x 15,5 – 16 PLY Left				1	1
1	690141360	Wheel 500/50x17 – 18ply Right (additional)				1	1
1	690141362	Wheel 500/50x17 – 18ply Left (additional)				1	1
2	630762000	Center frame	1	1	1		
2	1210462	Center frame <b>from 2020</b>	1	1	1		
2	630832000	Center frame				1	1
2	630832039	Center frame <b>(from machine no. 341663)</b>				1	1
2	630762100	Center frame with brake	1	1	1		
2	1210422	Center frame with brake <b>from 2020</b>	1	1	1		
2	630832100	Center frame with brake				1	1
2	630832110	Center frame with brake <b>(from machine no. 341663)</b>				1	1
2	1210414	Center frame with brake Dual brake <b>from 2020</b>				1	1
2	1210415	Center frame with brake Hydr. brake <b>from 2020</b>				1	1
3	690142001	Warning triangle	1	1	1	1	1
3a	690103014	Bolt M5x20	2	2	2	2	2
3b	690113002	Self-locking nut M5	2	2	2	2	2
3c	690117002	Faceted washer ø5	2	2	2	2	2
4	690141025	Hub 1700 kg TVZ (see hub cap)	2	2	2		
4	0395440	Hub 1700 kg He-Va (see hub cap)	2	2	2		
4	690141030	Hub 2500 kg TVZ (see hub cap)				2	2
4	0395442	Hub 2500 kg He-Va (see hub cap)				2	2
4	690141032	Hub w/brake 3750 kg TVZ, Axle 70x70	2	2	2	2	2
4	7297579	Hub w/brake 3750 kg TVZ, <b>(from may 2020)</b>	2	2	2	2	2
4a	690141039	Hub bolt M18x1.5x49	12	12	12	12	12
4b	0396470	Hub nut M18	12	12	12	12	12
4a	690141042	Hub bolt M18x1.5x61mm TVZ brake hub	12	12	12	12	12
4b	0396470	Hub nut M18	12	12	12	12	12
4f	690141314	Hub cap ø62 1700 kg hub TVZ (see hub cap)	2	2	2		
4f	0395436	Hub cap ø78 1700 kg hub He-va (see hub cap)	2	2	2		
4f	690141033	Hub cap ø80 2500 kg hub TVZ (see hub cap)				2	2
4f	0395437	Hub cap ø88 2500 kg hub He-va (see hub cap)	2	2	2	2	2
4f	690141034	Hub cap Ø90 for hub with brake	2	2	2	2	2
5	0235930	Bolt M16x130	4	4	4	4	4
5a	0264090	Self-locking nut M16	4	4	4	4	4
5b	0272290	Faceted washer ø16	8	8	8	8	8
5	69435148I	Pin Ø35 L=148 <b>(from machine no. 341663)</b>				2	2
5a	690136029	Lubricating nipple <b>(from machine no. 341663)</b>				2	2
6	630532600	Locking sleeve <b>(from machine no. 341663)</b>				2	2
7	690101101	Bolt M12x25 8.8 <b>(from machine no. 341663)</b>				2	2

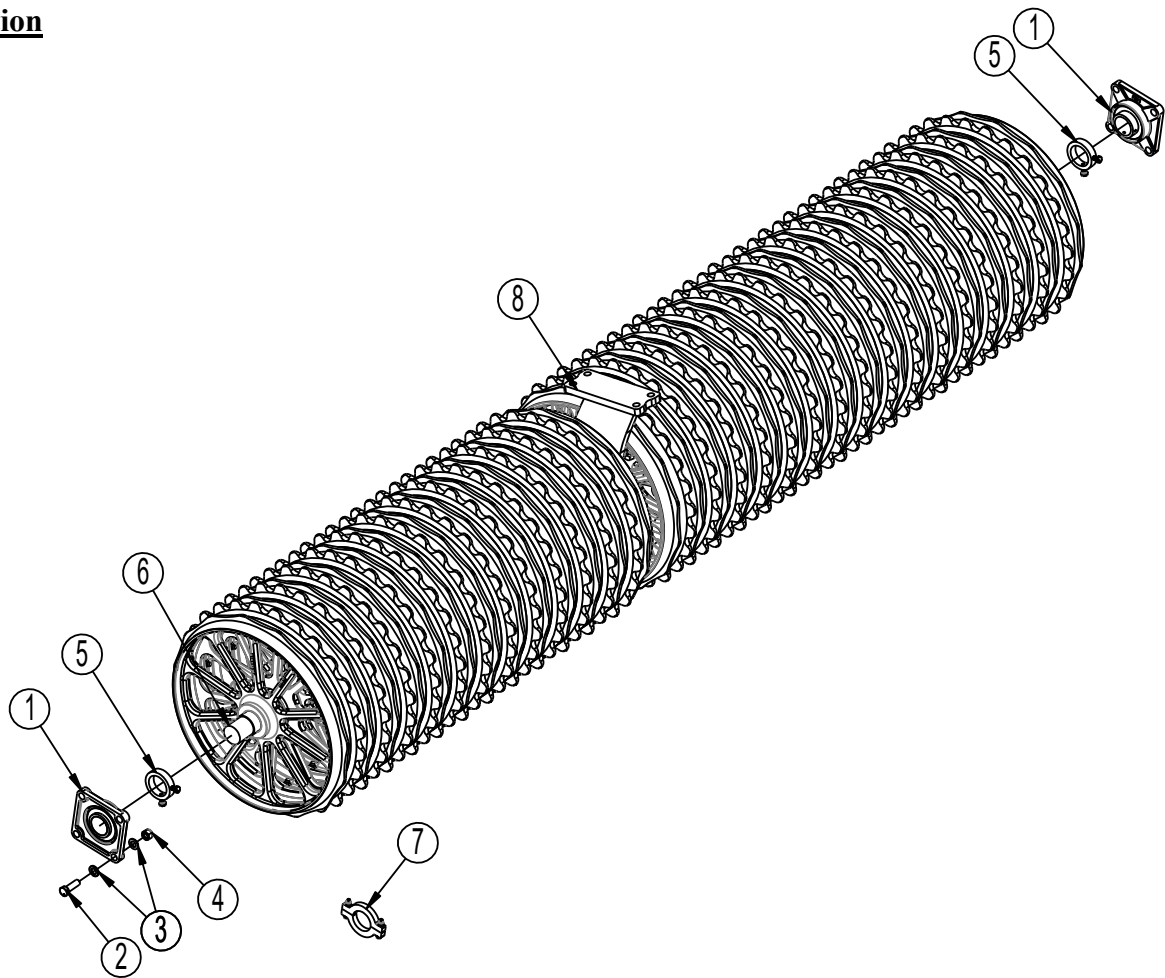


**Wing - Side Section**



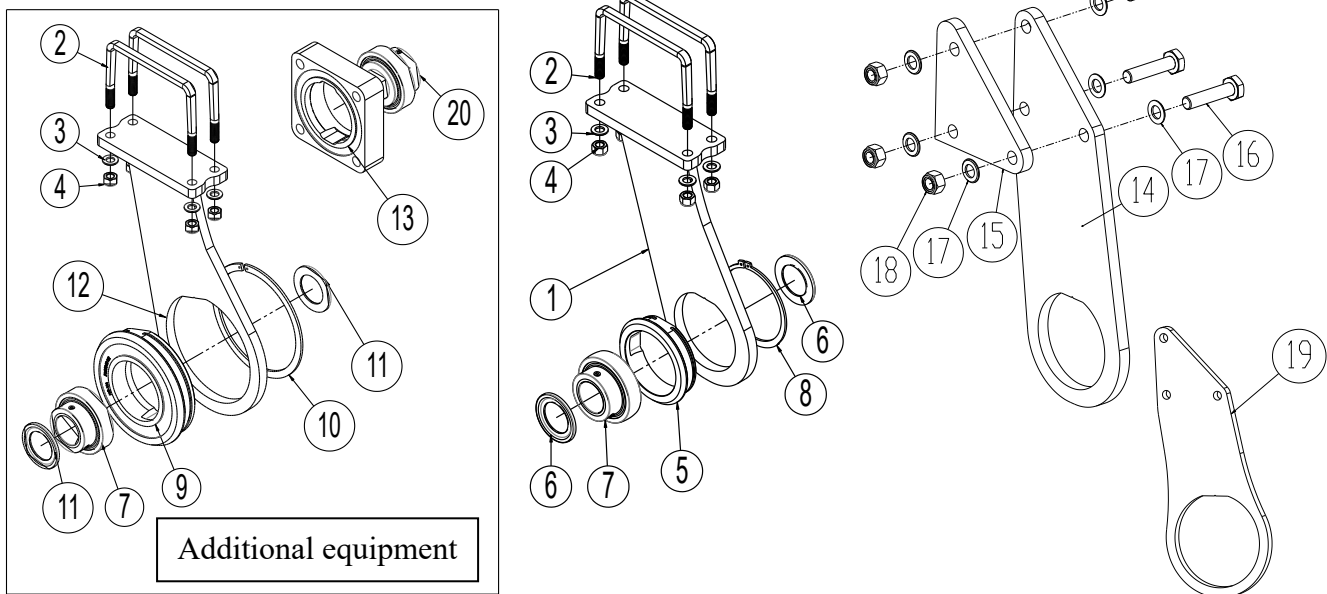
Pos.	Art. No.	Designation	6.3	7.3	7.6	8.2	9.5	10.2
1	630773000	Wing right	1					
1	630783000	Wing right		1	1			
1	630763000	Wing right				1		
1	630833000	Wing right					1	1
1	630833300	Wing right <b>(from machine no. 341663)</b>					1	
1	630833011	Wing right <b>(from machine no. 341663)</b>						1
1	630773100	Wing left	1					
1	630783100	Wing left		1	1			
1	630763100	Wing left				1		
1	630833100	Wing left					1	1
1	630833200	Wing left <b>(from machine no. 341663)</b>					1	
1	630833012	Wing left <b>(from machine no. 341663)</b>						1
2	630774000	Side section right	1					
2	630784000	Side section right		1				
2	1210770	Side section right			1			
2	630764000	Side section right				1		
2	630834000	Side section right					1	
2	630514000	Side section right						1
2	630514200	Side section right <b>(from machine no. 341663)</b>						1
2	630774100	Side section left	1					
2	630784100	Side section left		1				
2	1210772	Side section left			1			
2	630764100	Side section left				1		
2	630834100	Side section left					1	
2	630514100	Side section left						1
2	630514300	Side section left <b>(from machine no. 341663)</b>						1
3	69430090G	Pin ø30 L=90	2	2	2	2	2	2
3	69435090G	Pin Ø35 L=90 <b>(from machine no. 341663)</b>					2	2
4	630532600	Lock bush f/pin head	6	6	6	6	6	6
5	690101101	Bolt M12x25	6	6	6	6	6	6
6	69440525G	Pin ø40 L=525	2	2	2	2	2	2
7	69440508G	Pin ø40 L=508	2	2	2	2		
7	69440550G	Pin ø40 L=550					2	2
8	690140714	Sliding disc ø42/ø66x1.5	4	4	4	4	4	4
9	690140715	Sliding sleeve ø40/ø44 L=40	4	4	4	4	4	4



**Roller section**

Pos.	Art. No.	Designation	6,3	7,3	7,6	8,2	9,5	10,2
1	690140813	Bearing UCF 211 ø55, complete bearing	6	6	6	6	6	6
2	690103197	Bolt M16x50 8.8 fzb	24	24	24	24	24	24
3	0272290	Facet washer Ø16 DIN125B	48	48	48	48	48	48
4	0264090	Self-locking nut M16	24	24	24	24	24	24
5	671040400	Stop bushing w/2 pc. M12 bolts (til Ø60 shaft)	3	3	3	5	6	6
6	678692370	Shaft f/middle section Ø60 CrNiMo6 L=2370	1	1	1	1		
6	678632370	Shaft f/middle section Ø60 ST60 L=2370					1	1
6	678662370	Shaft f/side section Ø60 ST70 L=2370	2					
6	678632913	Shaft f/side section Ø60 CrNi L=2913		2				
6	678633113	Shaft f/side section Ø60 CrNi L=3113			2			
6	678633283	Shaft f/side section Ø60 ST60 L=3283				2		
6	678633980	Shaft f/side section Ø60 ST60 L=3980					2	
6	678634295	Shaft f/side section Ø60 ST60 L=4295						2
7	690150090	Spacer rings 15 mm, incl bolte						
7	690150099	Spacer rings 20 mm, incl bolte						
7	690150091	Spacer rings 25 mm, incl bolte						
8	Supportbearing	For side sections see next page				2	2	2
8	Supportbearing	For middle section sections see next page					1	1

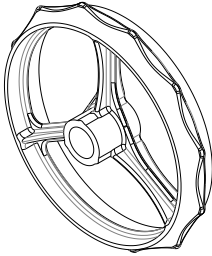
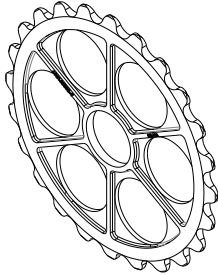
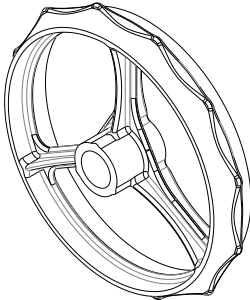
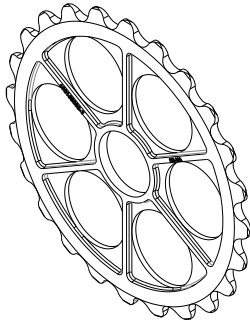
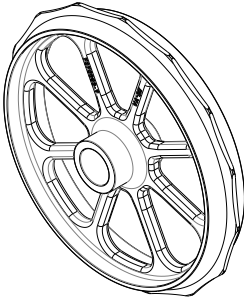
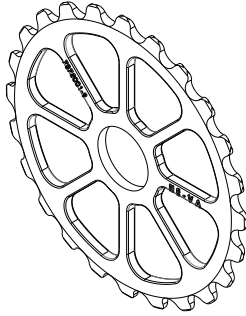


**Support bearing**

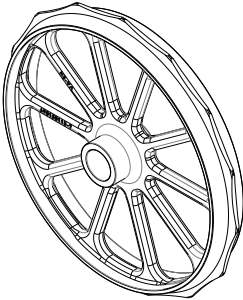
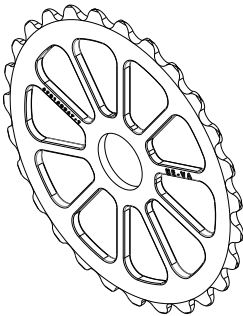
Pos.	Art. No.	Designation	8,2	9,5	10,2
1	630764006	Console for bearing with Ø60 axle	2	2	2
2	0382852	U-bolt M16x100x200x100	4	4	4
3	0272290	Facet plate Ø16 DIN125B	8	8	8
4	0264090	Self-locking nut M16	8	8	8
5	630764008	Bearing housing for UC 312	2	2	2
6	7355000	Thrust plate, narrow f/ UCF312 hub	4	4	4
7	690140116	Bearing UC312 R6	2	3	3
8	691370150	Seeger circlip ring Ø150 DIN471	2	3	3
9	7355040	Rubber damped support bearing UCRSC 312	2	3	3
10	691370220	Seeger circlip ring Ø220 DIN471	2	3	3
11	7355000	Thrust plate, narrow f/ UCF312 hub	4	6	6
12	1210139	Console for rubber damped support bearing with Ø60 axle (Additional equipment)	2	2	2
13	7355034	Bearinghousing UCRSF 211 w/PVC ring	6	6	6
14	630832023	Plate for support bearing, middlesektion		1	1
15	630832042	Shims to plate for supportbearing at middle section. Available in 7 diff. thicknesses. Do always measure before ordering		1	1
16	0236180	Bolt M20x90 8.8		3	3
17	0272310	Facet plate Ø20	4	6	6
18	0264110	Self-locking nut M 20	2	3	3
19	1210138	Plate for support bearing when rubber damped bearings		1	1
20	7355064	Bearing (ball bearing) UC211 R6 (Ø55)	6	6	6

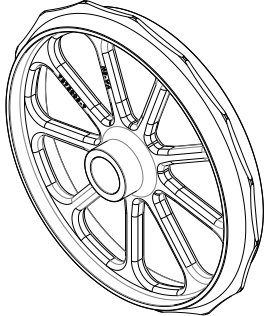
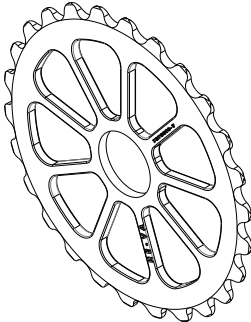
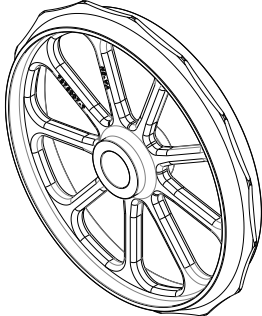


**Roller Rings**

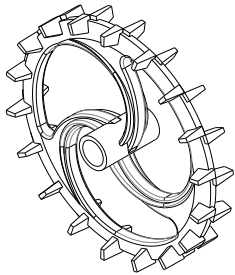
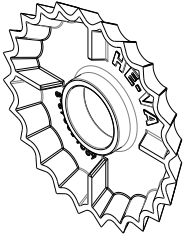
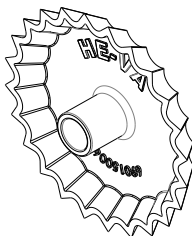

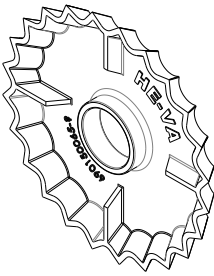
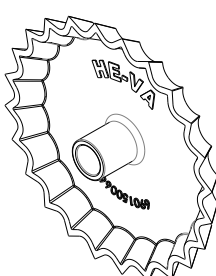

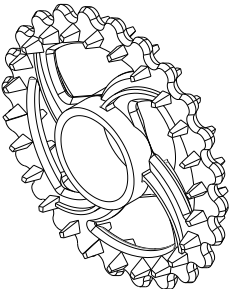
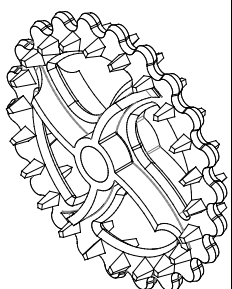

Cambridge rings Ø450 mm		Description	Quality	Part no.
<p>Pos. 1 450 mm Lenient (3 spokes)</p> 	<p>Pos. 2 450 mm Breaker</p> 	Pos. 1. Hub 104 mm	GG25	690150039
		Pos. 1. Hub 80 mm	GG25	690150041
		Pos. 1. Hub 72 mm ☐	GG25	630764021
		Pos. 1. Hub 82 mm ☐	GG25	630764020
		Pos. 2	GG25	690150040
☐ = At the bearing				
Cambridge rings Ø510 mm		Description	Quality	Part no.
<p>Pos. 3 510 mm Lenient (3 spokes)</p> 	<p>Pos. 4 510 mm Breaker</p> 	Pos. 3 Hub 104 mm	GG25	690150030
		Pos. 3 Hub 104 mm	GGG50	690150088
		Pos. 3 Hub 80 mm	GGG50	690150087
		Pos. 3 Hub 72 mm ☐	GGG50	630764031
		Pos. 3 Hub 82 mm ☐	GGG50	630764030
		Pos. 4		690150032
Cambridge rings Ø510 mm		Description	Quality	Part no.
<p>Pos. 8 510 mm Lenient (8 spokes)</p> 	<p>Pos. 9 510 mm Breaker (8 spokes)</p> 	Pos. 8 Hub 104 mm	GG25	7375003
		Pos. 8 Hub 104 mm	GGG50	7375010
		Pos. 8 Hub 80 mm	GG25	7375004
		Pos. 8 Hub 80 mm	GGG50	7375008
		Pos. 8 Hub 72 mm ☐	GGG50	7375025
		Pos. 8 Hub 82 mm ☐	GGG50	7375026
		Pos. 9	GG25	7375001
		Pos. 9	GGG50	7375013



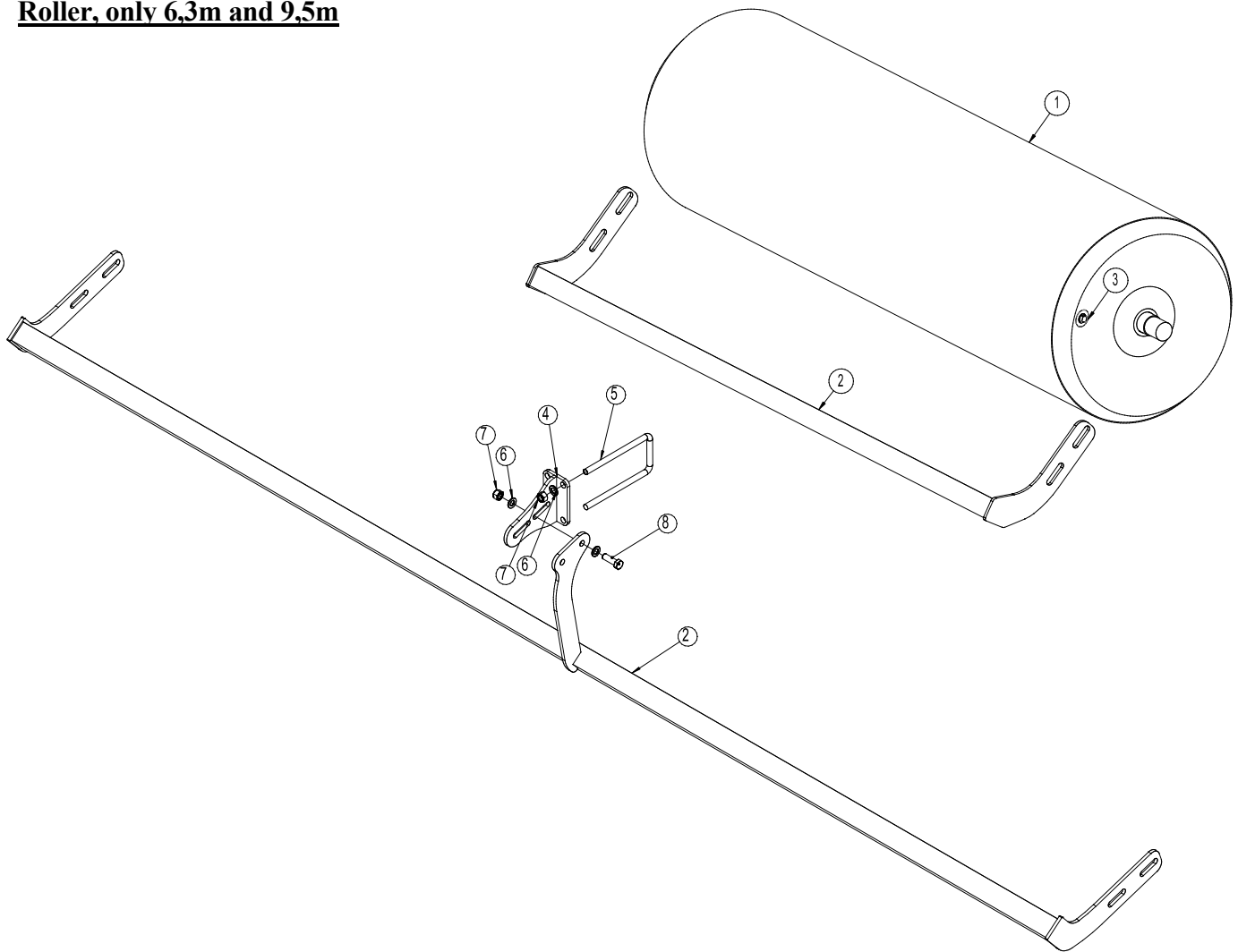
Cambridge rings Ø560 mm		Description	Quality	Part no.
Pos. 10 560 mm Lenient (9 spokes) 	Pos. 11 560 mm Breaker (9 spokes) 	Pos. 10 Hub 104 mm	GG25	7375005
		Pos. 10 Hub 104 mm	GGG50	7375009
		Pos. 10 Hub 80 mm	GG25	7375007
		Pos. 10 Hub 80 mm	GGG50	7375011
		Pos. 10 Hub 72 mm	GGG50	7375023
		Pos. 10 Hub 82 mm	GGG50	7375024
		Pos. 11	GG25	7375000
		Pos. 11	GGG50	7375012

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
2D Rings		Description	Quality	Part no.
Pos. 15 2D rings (8-9-10 spokes) 		Pos. 15 Ø500	GG25	7375004
		Pos. 15 Ø550	GG25	7375007
		Pos. 15 Ø600	GG25	690150111
		Pos. 15 Ø500 Hub 67 mm a/bearing	GGG50	7375049
		Pos. 15 Ø500 Hub 72 mm a/bearing	GGG50	7375025
		Pos. 15 Ø550 Hub 67mm a/bearing	GGG50	7375050
		Pos. 15 Ø550 Hub 72 mm a/bearing	GGG50	7375023
		Pos. 15 Ø600 Hub 67mm a/bearing	GGG50	7375051
		Pos. 15 Ø600 Hub 72 mm a/bearing	GGG50	7375021



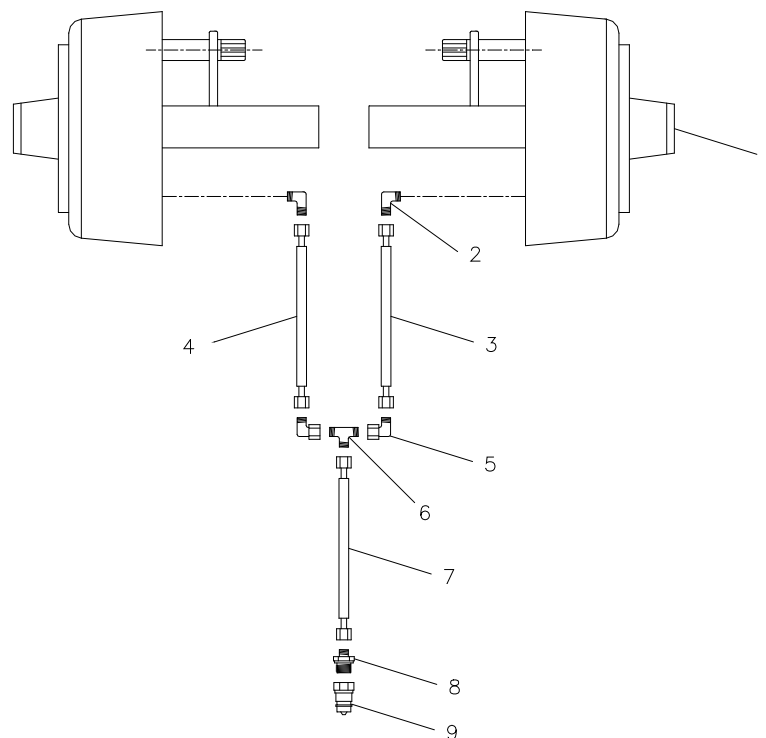
Cam ring 550 mm			Description	Quality	Part no.
Pos. 16 550 mm Knastring 			Pos. 16 Hub 155 mm	GG25	690150007
Star ring Ø450/Ø500 mm			Description	Quality	Part no.
Pos. 17 500 mm 	Pos. 18 450 mm 	Pos. 19 235 mm 	Pos. 17 Ø500/Ø135	GGG50	690150063
			Pos. 18 Ø485	GGG50	690150064
			Pos. 19 Mounting plate		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			Description	Quality	Part no.
Pos. 22 Loose Crosskill 	Pos. 23 Rigid Crosskill 	Pos. 24 Hub 	Pos. 22 530 mm	GG25	690150011
			Pos. 23 485 mm	GG25	690150034
			Pos. 22 600 mm	GG25	690150075
			Pos. 23 550 mm	GG25	690150074
			Pos. 24 Hub Ø104		690150076



**Roller, only 6,3m and 9,5m**

Pos.	Art. No.	Designation	6,3	9,5
1	630330079	Roller Ø610 L=2370	3	
1	630330079	Roller Ø610 middle section L=2370		1
1	1200109	Roller for side sections Ø610 L= 3980		2
2	630536608	Scraper bar middle section	1	
2	1200126	Scraper bar middle section		1
2	630536612	Scraper bar for side section	2	
2	1200119	Scraper bar for side section, right		1
2	1200125	Scraper bar for side section, left		1
3	690203321	Plug ¾" RG-black	3	3
4	1200123	Bracket for Scraper		2
5	690110106	U-bolt M16 x200x100x200		4
6	0272290	Facet washer Ø16		16
7	0264090	Self-locking nut M16		12
8	690103197	Bolt M16x50 8.8		4

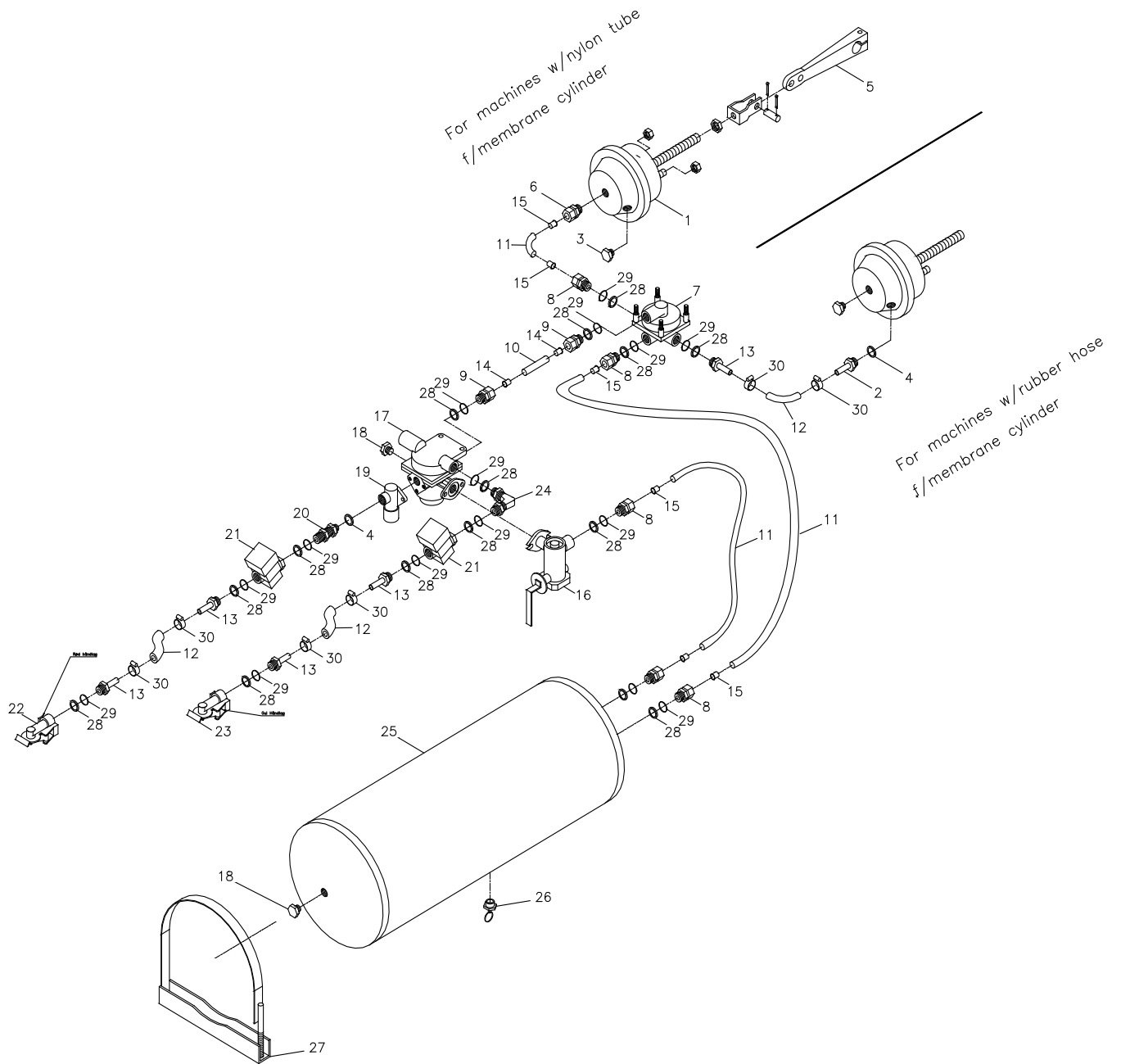


**Hydraulic brakes**

Pos.	Art. No.	Designation	Qty.
1	690141032	Hub with brake, 3750 kg TVZ 300Gx90	2
1a	690141150	Brakecylinder, 30nternal, TVZ	2
1b	690141151	Brakeshoes (set of 2 ocs.) TVZ	3
2	690203006	Fitting, 90angle 10-3/8" BSP	2
3	690201018	Hydraulic hose 1480mm 1/4"	1
4	690201053	Hydraulic hose 1260mm 1/4"	1
5	690203016	Fitting, 90angle 10mm	2
6	690203015	Fitting, T10	1
7	690201025	Hydraulic hose 5640mm 1/4"	1
7a	690201012	Hydraulic hose 6000mm 1/4" ---ONLY 9.5---	1
7b	690201028	Hydraulic hose 6700mm 1/4" ---ONLY 10.2---	1
8	690203003	Fitting, straight 10-1/2" BSP	2
9	690203001	Quick coupling, male E402 1/2"	2



**Air brakes**

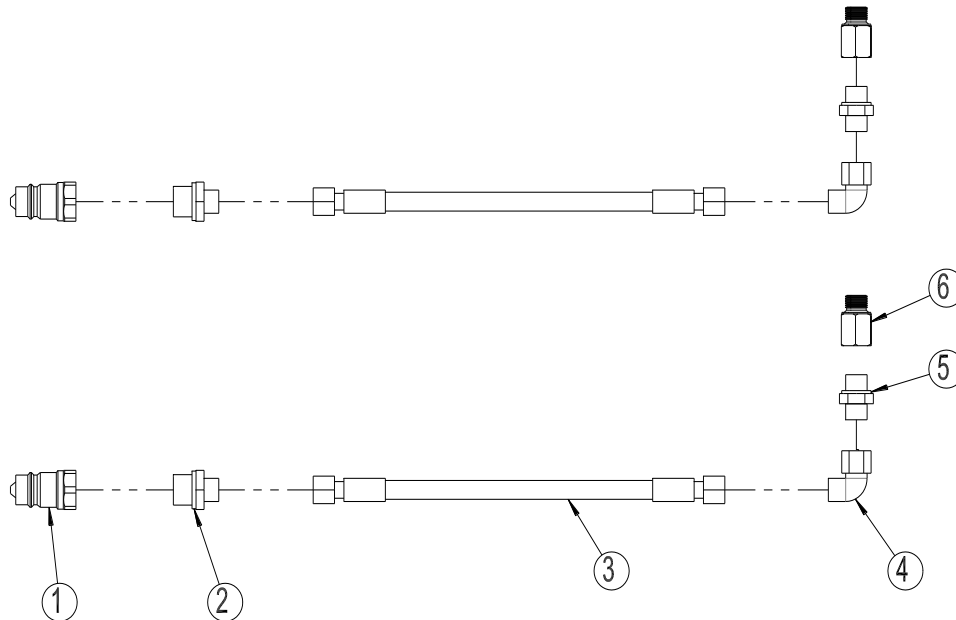


Pos.	Art. No.	Designation	w/nylon tube f/ membrane cyl.	w/rubber hose f/membrane cyl.
1	690190001	Membrane cylinder 16"	2	2
2	690190070	Hose fitting M16x1.5 w/ Ø12	0	2
3	690190005	Test fitting, straight M16x1.5	2	2
4	690208102	Bonded seal PP 45-12	1	3
5	690190010	Mounting set, short U-bracket	2	2
6	690202930	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	Nylon tube Ø10x1mm	1	1
11	690190085	Nylon tube Ø15x1.5mm	4	2
12	690190105	Hose Ø14.5x5mm	2	4
13	690190073	Hose fitting M22x1.5, w/Ø12	4	6
14	690190090	Support bushing f/tube Ø10x1.5mm	2	2
15	690190095	Support bushing f/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 40 l	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	Hose clamp 15-24 mm	4	8



## Hydraulics

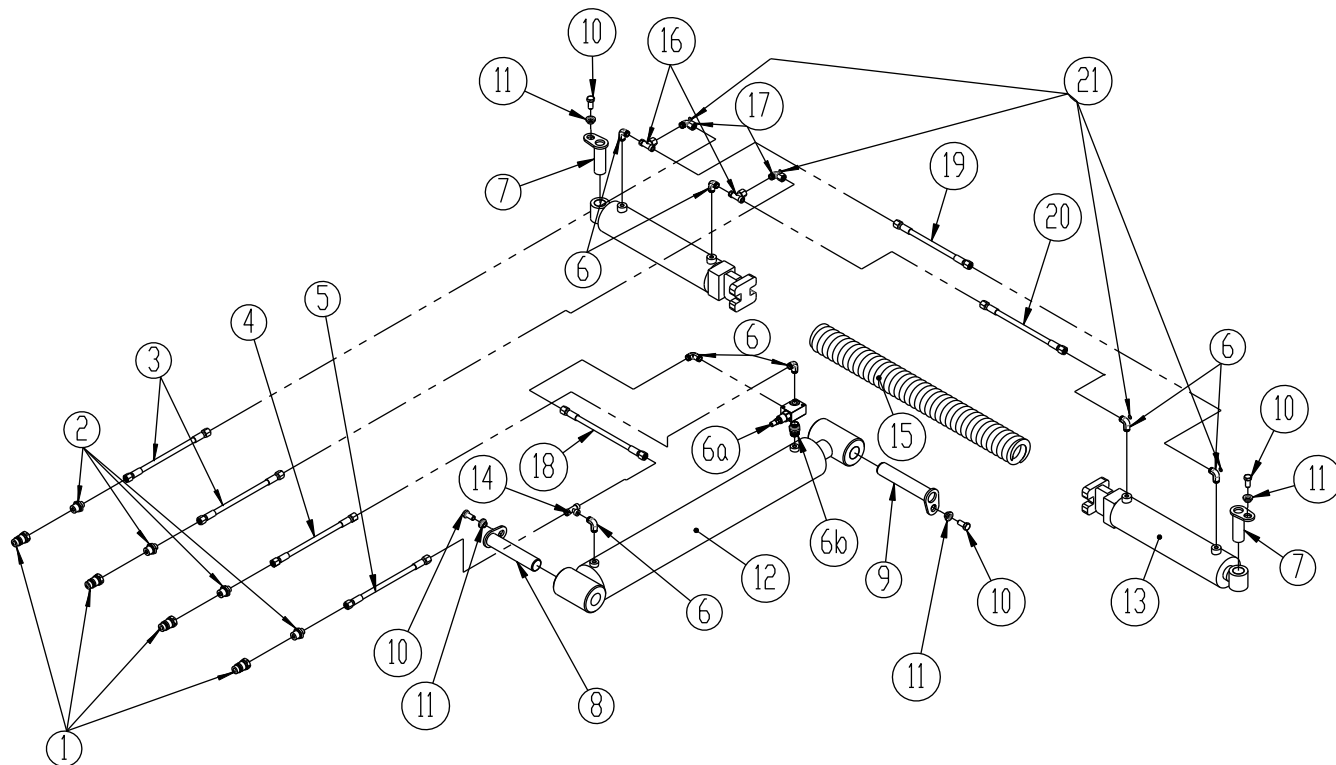
### Hydraulic circle: Supporting leg



Pos	Art. No.	Designation	9,5m	10.2m
1	690203001	Quick coupling (male) ½"	2	2
2	690203003	Fitting, straight 10-1/2" BSP	2	2
3	690201044	Hydr.hose 3460 mm ¼" st/st	2	2
4	690203016	Fitting 90 angel 10mm	2	2
5	690203002	Fitting, straight 10-3/8" BSP	2	2
6	690203903	Fitting, 3/8" – 3/8" BSP L=22mm	2	2



**Tip and folding all models**



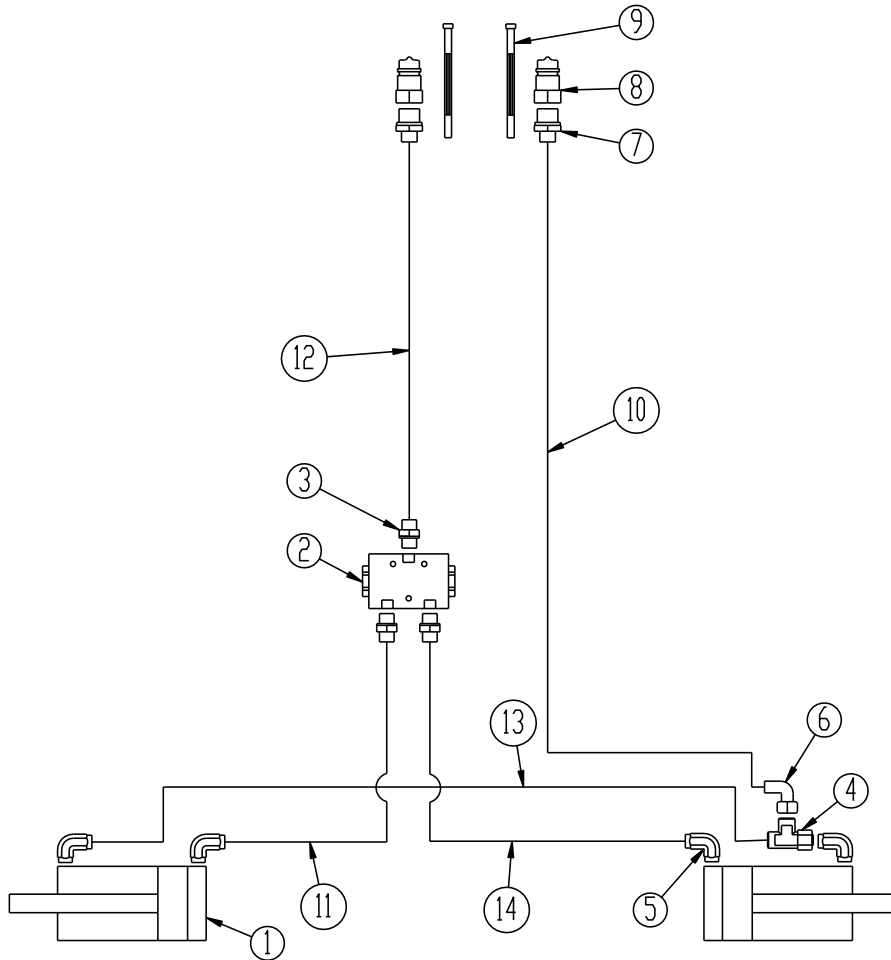
Pos.	Art. No.	Designation	6.3	7.3/7,6	8.2	9.5	10.2
1	690203001	Quick coupling (male) 1/2"	4	4	4	4	4
1a	690210001	Dust cap (blue)	2	2	2	2	2
1b	690210002	Dust cap (red)	2	2	2	2	2
2	690203003	Fitting, straight 10-1/2" BSP	4	4	4	4	4
3	690201025	Hydr. Hose 1/4" x 5640 mm)	2				
3	690201012	Hydr. Hose 1/4" x 6000 mm		2	2		
3	690201054	Hydr. Hose 1/4" x 7100 mm				2	
3	690201066	Hydr. Hose 1/4" x 7800mm					2
4	690201029	Hydr. Hose 1/4" x 4300 mm	1	1	1		
4	690201025	Hydr. Hose 1/4" x 5640 mm				1	
4	690201007	Hydr. Hose 1/4" x 6000 mm					1
5	690201007	Hydr. Hose 1/4" x 3700 mm	1	1	1		



Pos.	Art. No.	Designation	6.3	7.3/7.6	8.2	9.5	10.2
5	690201047	Hydr. Hose 1/4" x 4610 mm				1	
5	690201004	Hydr. Hose 1/4" x 4950 mm					1
6	690203006	Fitting, 90° 10-3/8" BSP	6	6	6	6	6
6a	690207104	Adjustable pressure relief valve 3/8"	1	1	1	1	1
6b	690202810	Nipple 3/8" x 3/8"	1	1	1	1	1
7	69430090G	Pin ø30 x 90	2	2	2	2	2
7	69435085G	Pin Ø35 L= 85 <b>(from machine no. 341663)</b>				2	2
8	69435170G	Pin ø35 x 170	1	1	1	1	1
9	69435185G	Pin ø35 x 185	1	1	1	1	1
10	690101101	Bolt M12 x 25 mm	4	4	4	4	4
11	630532600	Lock bush for pin head	4	4	4	4	4
12	690200020	Tipcylinder (complete) ø100/50x700mm, ø35mm	1	1			
12a	690200285	Gasket kit 100/50	-	-			
12	690200310	Tipcylinder (complete) ø110/50x700mm ø35mm			1		
12a	690200311	Gasket kit 110/50			-		
12	690200014	Tipcylinder (complete) ø100/60 x1000mm, ø35mm				1	
12a	690200012	Gasket kit 100/60				-	
12	690200315	Cylinder 110/60x1000					1
12a	690200316	Pakningsæt 110/60 (Laizhou)					-
12	7345137	Tipcylinder 120/60x1000 <b>(from june 2021)</b>					1
12a	690200320	Gasket kit 120/60 (Laizhou)					-
13	690200220	Wing cylinder (complete) ø80/40x280mm, ø30mm	2	2	2		
13a	690200143	Gasket kit 80/40	-	-	-		
13	690200257	Wing cylinder (complete) ø90/40x280mm, ø30mm				2	2
13a	690200274	Gasket kit 90/40				-	-
13	690200254	Cylinder Ø90/40x280, Ø35/Ø35 <b>(from machine no. 341663)</b>				2	2
13a	690200274	Gasket kit 90/40				-	-
14	690203004	Adjustable T10V	1	1	1	1	1
15	631031005	Spring ø16 x ø78 x 950 mm	1	1	1	1	1
16	690203014	Adjustable T10L	2	2	2	2	2
17	690203016	Adjustable elbow 10 mm	2	2	2	2	2
18	690201015	Hydr. Hose 1/4" x 710 mm	1	1	1		
18	690201055	Hydr. Hose 1/4" x 1010mm				1	1
19	690201036	Hydr. Hose 1/4" x 1590 mm	1	1	1	1	1
20	690201035	Hydr. Hose 1/4" x 990 mm	1	1	1	1	1
21	690207901	Throttle (1 mm)	4	4	4	4	4



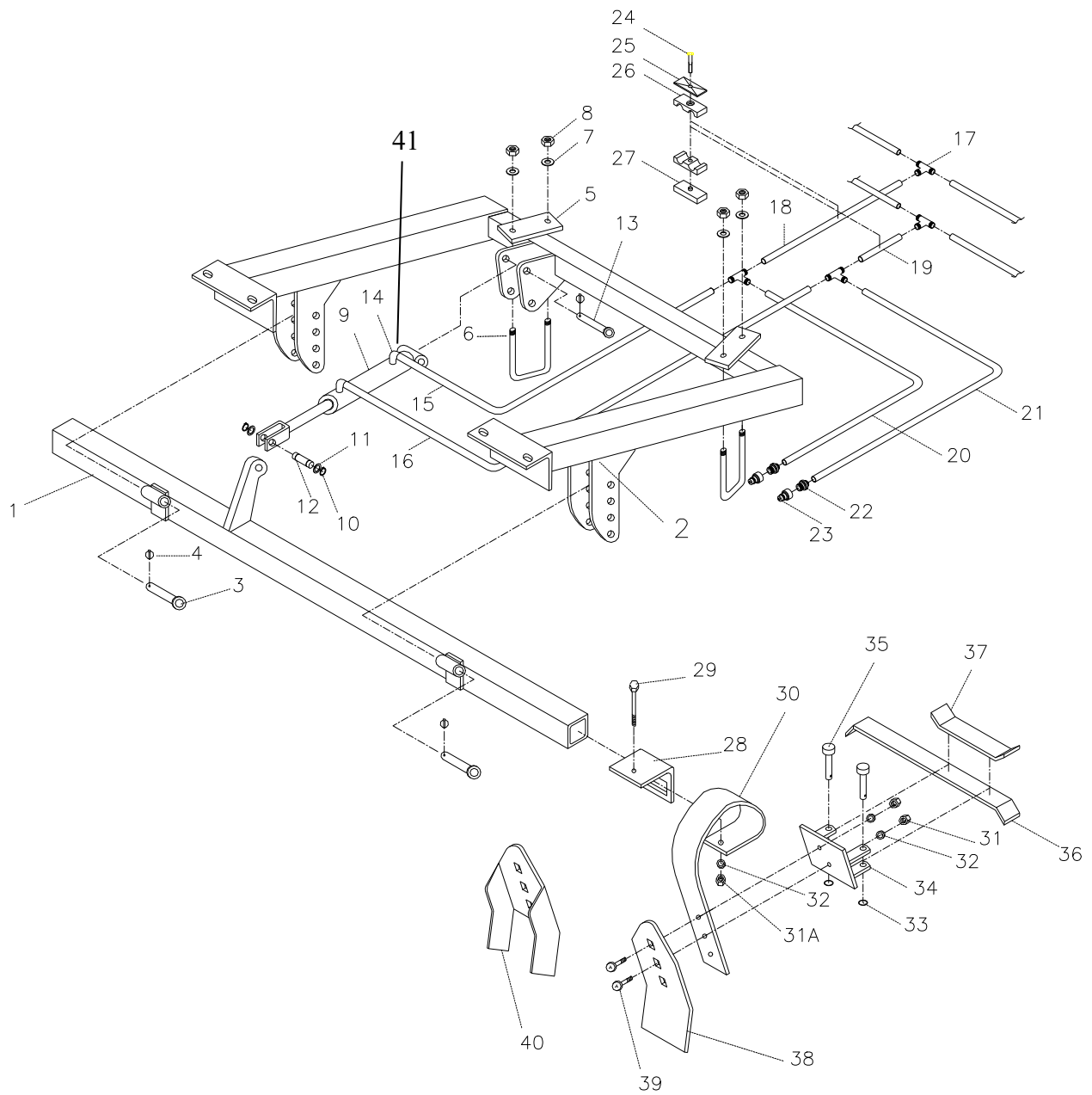
**Folding 9,5 - 10,2m from machine number 355570**



Pos	Art. No.	Designation	9,5m	10.2m
1	690200254	Cylinder Ø90/40x280 ø35/ø35 <b>(From machine no. 341663)</b>	2	2
2	0442775	Flowdivider 3/8"	1	1
3	690203002	Fitting straight 10-3/8" BSP	3	3
4	690203120	Fitting T10	1	1
5	690203006	Fitting 90° 10 x 3/8" BSP	4	4
6	690203016	Fitting 90° adjustable 10mm	1	1
7	690203003	Indskruning lige Ø10 x1/2" BSP	2	2
8	690203001	Quick coupling (male) 1/2"	2	2
9		Straps	2	
10	690201074	Hydraulic hose 7450 mm 1/4" st/st	1	
10	690201066	Hydraulic hose 7800 mm 1/4" st/st		1
11	690201040	Hydraulic hose 1590 mm 1/4" st/st	1	
12	690201028	Hydraulic hose 6750 mm 1/4" st/st	1	
12	690201054	Hydraulic hose 7100 mm 1/4" st/st		1
13	0454498	Hydraulic hose 1590 mm 1/4" st/st	1	
14	0454166	Hydraulic hose 450 mm 1/4" st/st	1	



**Spring-Board Center Section 6.3m – 9.5m - 10.2m**



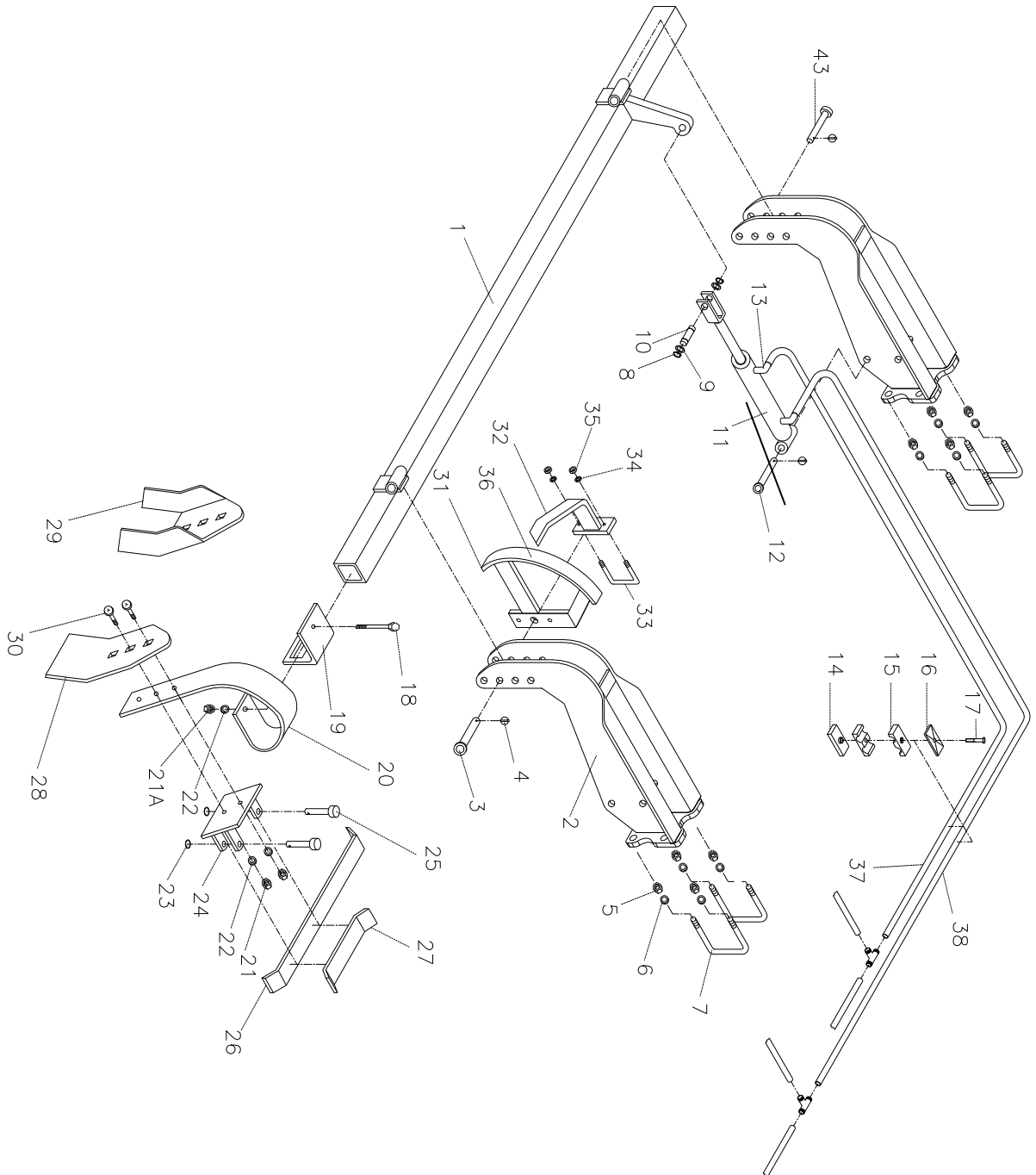
Pos.	Art. No.	Designation	6.3	7.3	7.6	8.2	9.5	10.2
1	635053020	Box section for tines	1					
1	633073020	Box section for tines		1	1	1		
1	635093020	Box section for tines					1	
1	63583010	Box section for tines						1
2	635051000	Suspension for centre section	1					
2	633071000	Suspension for centre section		1	1			
2	633061000	Suspension for centre section				1		
2	635091000	Suspension for centre section					1	1
3	69525087F	Pin ø25 L=87	2	2	2	2	2	2
4	690134001	Ring split-pin ø4,5	3	3	3	3	3	3
5	670861100	Flange	2	2	2	2	2	2
6	690110101	U-bolt M16x100x100x100	2	2	2	2	2	2
7	690117013	Faceted disc ø16	4	4	4	4	4	4
8	690113008	Self-locking nut M16	4	4	4	4	4	4
9	690200160	Cylinder 50/30x155	1	1	1	1	1	1
9e	690200045	Gasket set 50/30 mm	1	1	1	1	1	1
10	691372020	Locking ring Ø20 Din 471	2	2	2	2	2	2
11	690115010	Washer Ø20/Ø28x1mm	2	2	2	2	2	2
12	69520046D	Pin ø20 L=46	1	1	1	1	1	1
13	69520087F	Pin ø20 L=87	1	1	1	1	1	1
14	690203006	Fitting, 90angle, 10-3/8" BSP	2	2	2	2	2	2
15	690201051	Hydraulic hose 1/4" L=250 mm	1			1		
15	690201051	Hydraulic hose 1/4" L=250 mm		1	1			
15	690201042	Hydraulic hose 1/4" L=500 mm					1	1
16	690201009	Hydraulic hose 1/4" L=355 mm	1			1		
16	690201051	Hydraulic hose 1/4" L=250 mm		1	1			
16	690201009	Hydraulic hose 1/4" L=355 mm					1	1
17	690203015	Header T10	4	4	4	4	4	4
18	690201032	Hydraulic hose 1/4" L=1130 mm	1				1	
18	690201018	Hydraulic hose 1/4" L=1460 mm		1	1			
18	690201032	Hydraulic hose 1/4" L=1130 mm				1		
18	690201053	Hydraulic hose 1/4" L=1260 mm					1	1
19	690201053	Hydraulic hose 1/4" L=1260 mm	1	1	1			
19	690201053	Hydraulic hose 1/4" L=1260 mm				1		
19	690201053	Hydraulic hose 1/4" L=1260 mm					1	1
20	690201038	Hydraulic hose 1/4" L=4000 mm	1					
20	690201029	Hydraulic hose 1/4" L=4300 mm		1	1			
20	690201045	Hydraulic hose 1/4" L=4800 mm				1		
20	690201025	Hydraulic hose 1/4" L=5640 mm					1	
20	690201012	Hydraulic hose 1/4" L=6000 mm						2



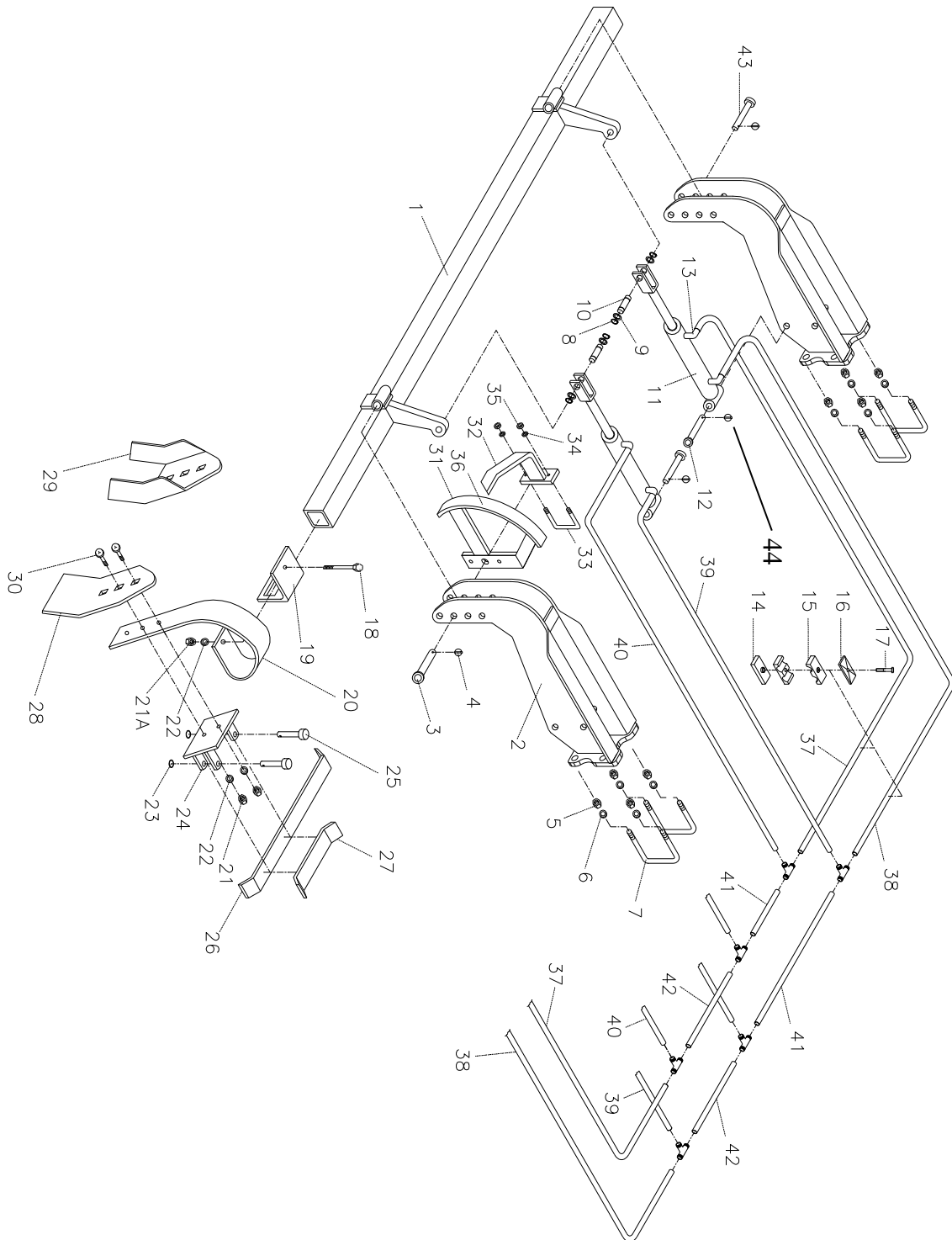
Pos.	Art. No.	Designation	6.3	7.3	7.6	8.2	9.5	10.2
21	690201006	Hydraulic hose 1/4" L=3800 mm	1					
21	690201047	Hydraulic hose 1/4" L=4610 mm		1	1	1		
21	690201025	Hydraulic hose 1/4" L=5640 mm					1	
22	690203003	Fitting, straight 10-1/2" BSP	2	2	2	2	2	2
23	690203001	Quick coupling (male) E402 1/2"	2	2	2	2	2	2
24	690210213	Screw f/double pipe support	5	5	5	5	5	5
25	690210211	Top plate f/double pipe support	5	5	5	5	5	5
26	690210210	Pipe support double ø14/ø14	10	10	10	10	10	10
27	690210212	Welding plate for double pipe support (no use)	5	5	5	5	5	
28	633052200	Clamp for tine	8	6	6	6	8	8
29	690103098	Bolt M12x110	8	6	6	6	8	8
30	0422145	Tine (10x80)	8	6	6	6	8	8
30a	633052000	Tine complete	8	6	6	6	8	8
31	690113006	Self-locking nut M12	16	12	12	12	16	16
31A	690113013	Self-locking nut M12 (all metal)	8	6	6	6	8	8
32	690117014	Faceted disc ø12	24	18	18	18	24	24
33	690134000	Locking ring 30xø3	16	12	12	12	16	16
34	633055500	Tine bracket for locking system	8	6	6	6	8	8
35	69512040K	Pin ø12.5x40	16	12	12	12	16	16
36	633055710	Long locking bar f/locking system	7	5	5	5	7	7
37	633055700	Short locking bar f/locking system	2	2	2	2	2	2
38	633052100	Tine point (8x150)	8	6	6	6	8	8
39	690101220	Bolt M12x45	16	12	12	12	16	16
40	633052150	Tine point (crust breaker)	8	6	6	6	8	8
41	690207901	Restrictor (1mm)	1	1	1	1	1	1



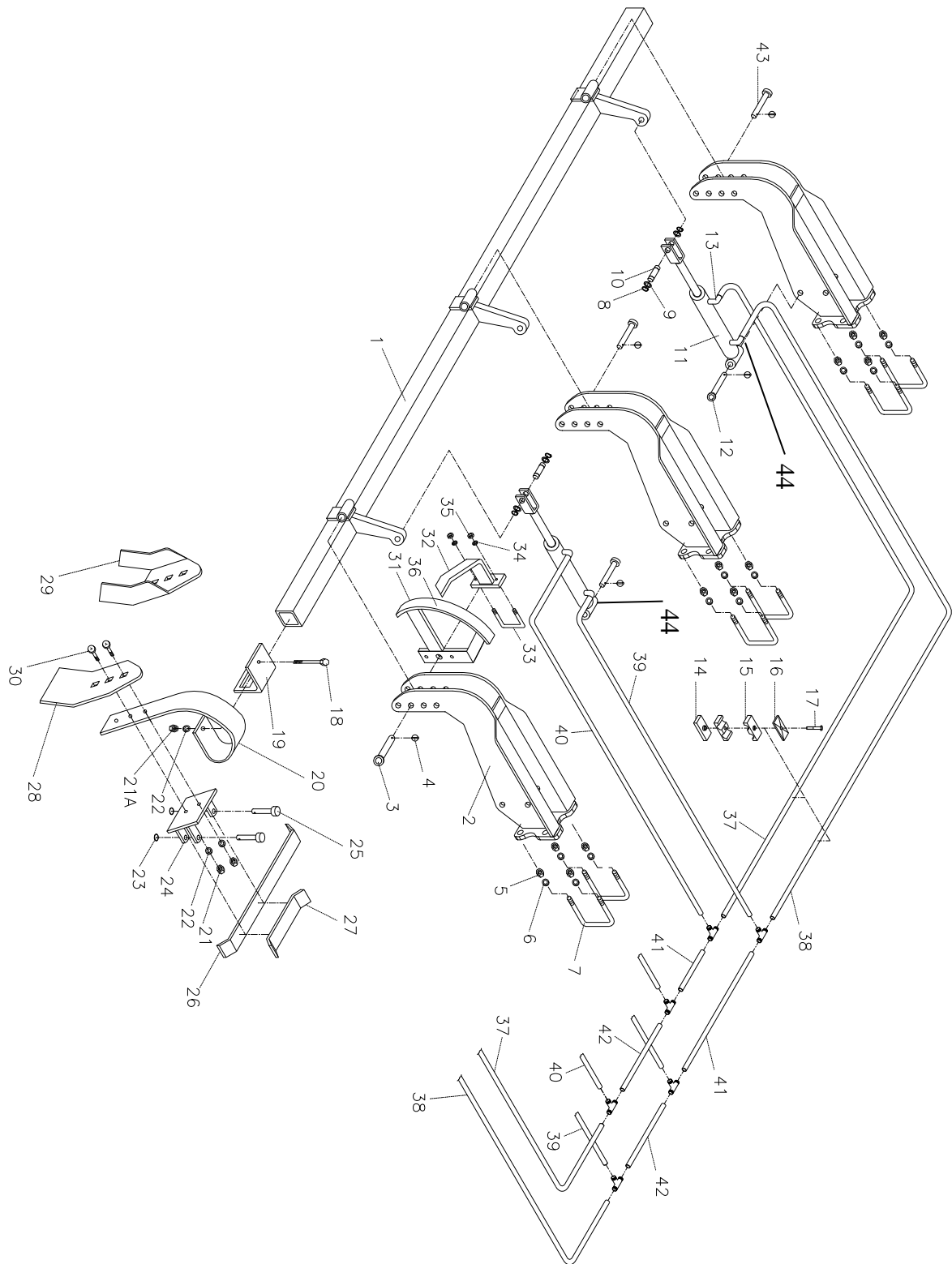
**Spring-Board Side Section (left) 6.3 m**



**Spring-Board Side Section (left) 7.3 - 8.2m**



**Spring-Board Side Section (left) 9.5m + 10.2m**



Pos.	Art. No.	Designation	6.3	7.3	7.6	8.2	9.5	10,2
1	635053010	Box sections f/tines (right)	1					
1	635053030	Box sections f/tines (left)	1					
1	633073010	Box sections f/tines (right)		1				
1	633073030	Box sections f/tines (left)		1				
1	633077010	Box sections f/tines (right)			1			
1	633077030	Box sections f/tines (left)			1			
1	633063010	Box sections f/tines (right)				1		
1	633063030	Box sections f/tines (left)				1		
1	635093010	Box sections f/tines (right)					1	
1	635093030	Box sections f/tines (left)					1	
1	635083000	Box sections f/tines (right)						1
1	635083020	Box sections f/tines Left						1
2	635054500	Horn	4	4	4	4	6	6
2	635054520	Horn <b>(from machine no. 341642)</b>	4	4	4	4	6	6
3	69525095F	Pin ø25 L=95	1	1	1	1	1	1
4	690134001	Ring split-pin ø4,5	6	6	6	6	10	10
5	690113008	Self-locking nut M16	16	16	16	16	24	24
5	690113016	Self-locking nut M18 <b>(from machine no. 341642)</b>	16	16	16	16	24	24
6	690117013	Faceted disc ø16	16	16	16	16	24	24
6	690117015	Faceted disc ø18 <b>(from machine no. 341642)</b>	16	16	16	16	24	24
7	690110106	U-bolt M 16x200x100x200mm	8	8	8	8	12	12
7	690110403	U-bolt M 18x200x100x200mm <b>(from machine no. 341642)</b>	8	8	8	8	12	12
8	691372020	Locking ring Ø20 Din 471	8	8	8	8	8	8
9	690115010	Washer Ø20/Ø28x1mm	8	8	8	8	8	8
10	69520046D	Pin ø20 L=46	4	4	4	4	4	4
11	690200160	Cylinder 50/30 x 155	2	4	4	4	4	4
11e	690200045	Packing set 50/30 mm	2	4	4	4	4	4
12	69520087F	Pin ø20 L=87	2	4	4	4	4	4
13	690203006	Fitting, 90angle, 10-3/8" BSP	4	4	4	4	4	4
13	690203002	Fitting, straight 10-3/8"BSP		4	4	4	4	4
14	690210212	Welding plate f/double pipe support (no use)	8	10	10	10	13	
15	690210210	Pipe support double ø14/ø14	16	20	20	20	24	24
16	690210211	Top plate f/double pipe support	8	10	10	10	12	12
17	690210213	Screw f/double pipe support	8	10	10	10	12	12
18	690103098	Bolt M12x110	16	22	24	26	28	30
19	633052200	Clamp for tine	16	22	24	26	28	30
20	0422145	Tine (10x80)	16	22	24	26	28	30

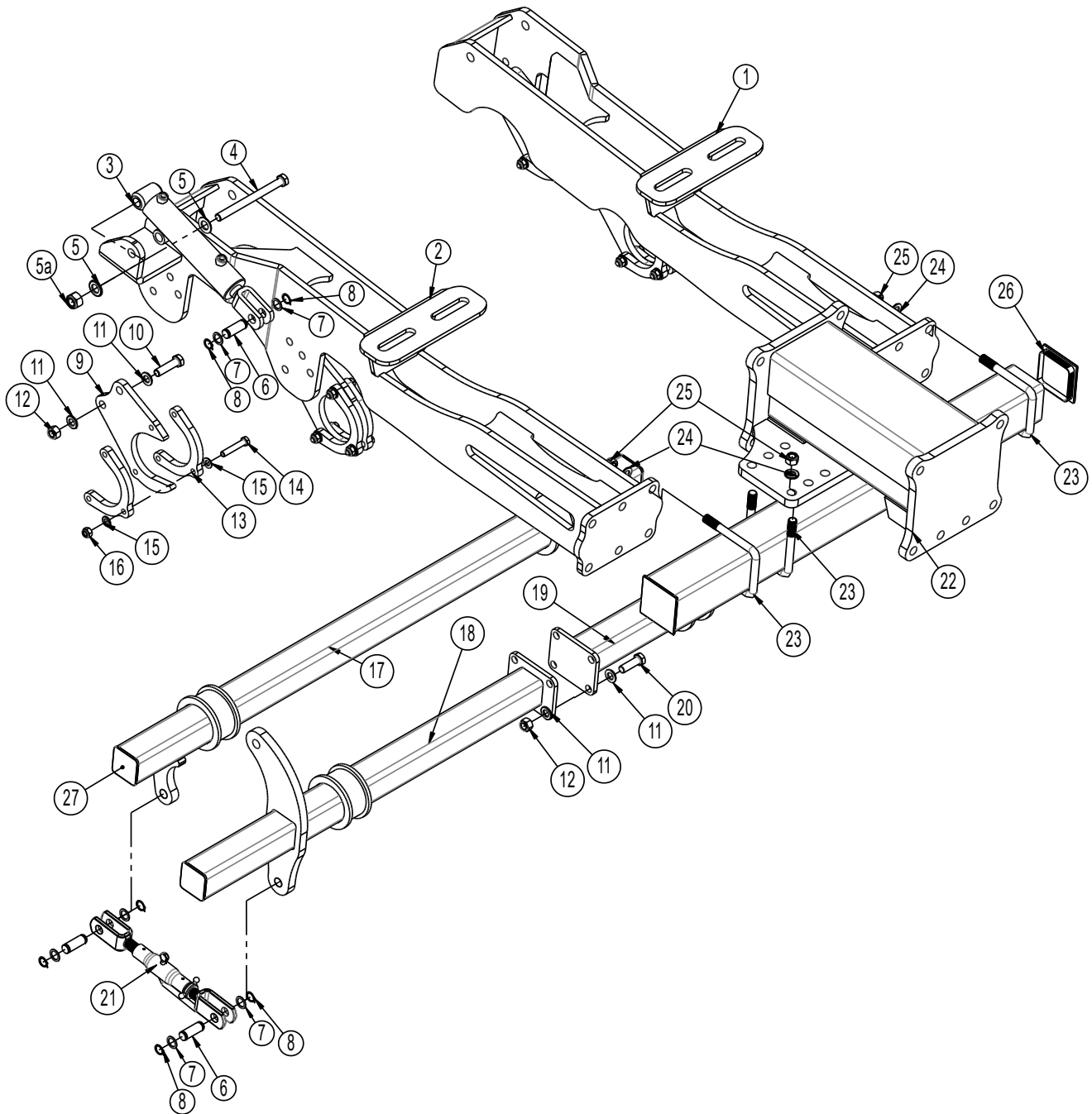


Pos.	Art. No.	Designation	6.3	7.3	7.6	8.2	9.5	10,2
20a	633052000	Tine complete	16	22	24	26	28	30
21	690113006	Self-locking nut M12	48	66	72	78	76	80
21A	690113013	Self-locking nut M12 (all metal)					38	40
22	690117014	Faceted disc Ø12	48	66	72	78	114	120
23	690134000	Locking ring 30xø3	32	44	48	52	76	80
24	633055500	Tine brackets for locking system	16	22	24	26	38	40
25	69512040K	Pin ø12.5x40	32	44	48	52	76	80
26	633055710	Long locking rod for locking system	30	42	46	50	35	37
27	633055700	Short locking rod for locking system	6	6	6	6	6	6
28	633052100	Tine point (8x150)	16	22	24	26	38	40
29	633052150	Tine point (crust breaker)	16	22	24	26	38	40
30	690101220	Bolt M12x45	32	44	48	52	76	80
31	635151000	Scale f/depth control	1	1	1	1	1	1
32	635152000	Pointer f/depth control	1	1	1	1	1	1
33	690110020	U-bolt M10x70x70x70 mm	1	1	1	1	1	1
34	690117012	Faceted disc Ø10	2	2	2	2	2	2
35	690113005	Self-locking nut M10	2	2	2	2	2	2
36	698500018	Label for scale f/depth control	1	1	1	1	1	1
37	690201048	Hydraulic hose 1/4". L= 3610 mm (right side sect.)	1					
37	690201006	Hydraulic hose 1/4". L= 3800 mm (left side sect.)	1					
37	690201022	Hydraulic hose 1/4" L= 3140 mm		2	2	2		
37	690201044	Hydraulic hose 1/4" L= 3460 mm					2	
37	690201048	Hydraulic hose 1/4" L= 3610mm						2
38	690201044	Hydraulic hose 1/4". L= 3460 mm (right side sect)	1					
38	690201048	Hydraulic hose 1/4" L= 3610 mm. (left side sect.)	1					
38	690201060	Hydraulic hose 1/4" L= 3000 mm		2	2	2		
38	690201005	Hydraulic hose 1/4" L= 3300 mm					2	
38	690201044	Hydraulic hose 1/4" L= 3460 mm						1
39	690201059	Hydraulic hose 1/4" L= 350 mm		2	2	2	2	
40	690201042	Hydraulic hose 1/4" L= 500 mm		2	2	2	2	2
41	690201020	Hydraulic hose 1/4" L= 1625 mm		2	2	2	2	2
42	690201016	Hydraulic hose 1/4" L= 1830 mm		2	2	2	2	2
43	69525087F	Pin Ø25 L=87	3	3	3	3	7	7
44	690207901	Restrictor (1mm)	2	2	2	2	2	2

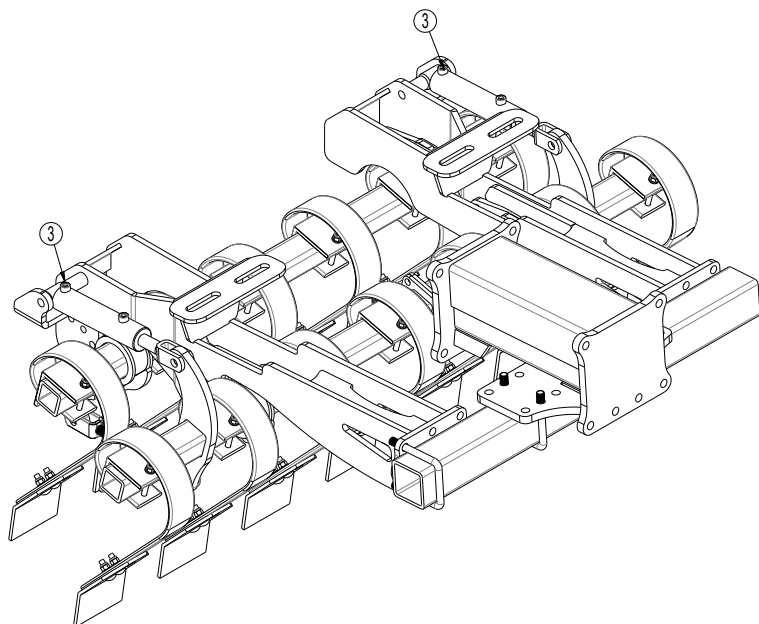


**2 row Spring-Board center frame**

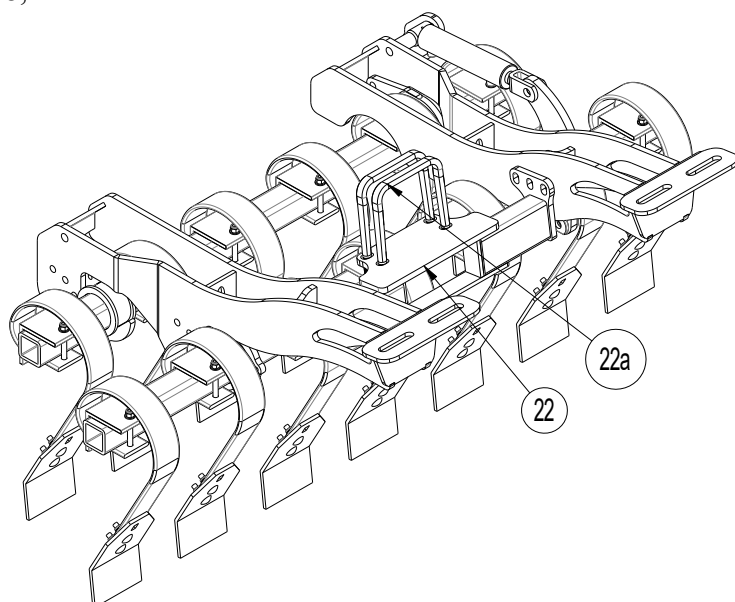
7,3 – 7,6 m shown



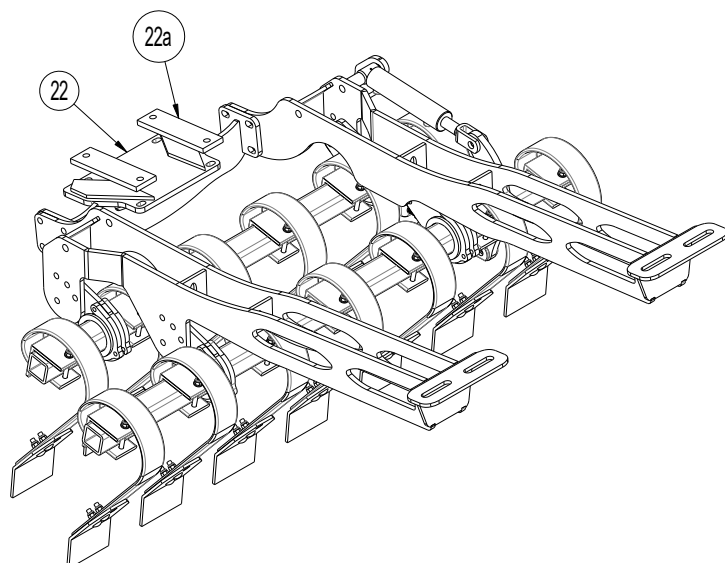
6,3m



8,2m



9,5 – 10,2m

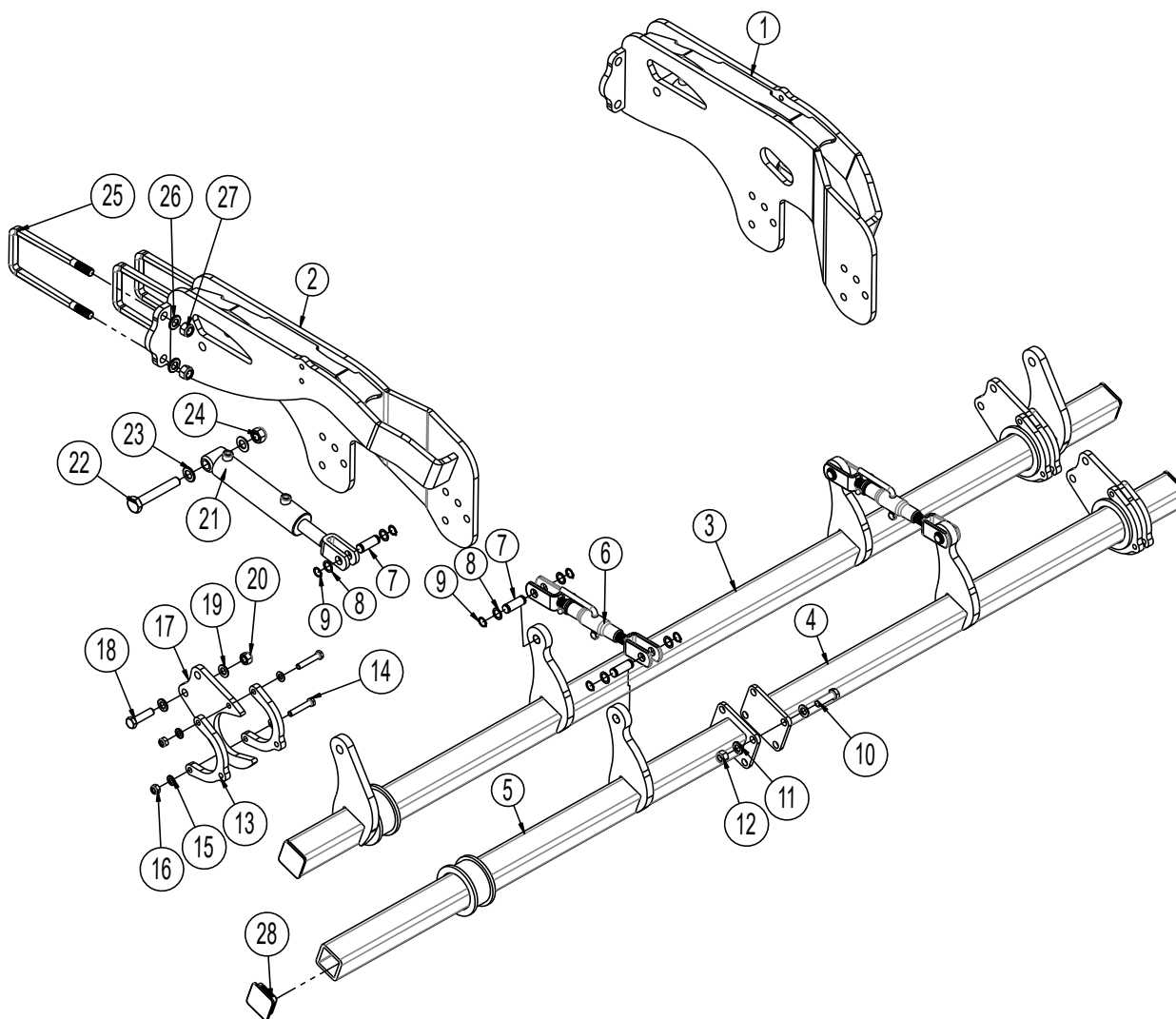


Pos.	Art. No.	Designation	6,3	7,3	7,6	8,2	9,5	10,2
1	1210083	Left horn	1					
1	1210373	Left horn		1	1			
1	1210196	Left horn				1		
1	1210284	Left horn					1	1
2	1210130	Right horn	1					
2	1210376	Right horn		1	1			
2	1210206	Right horn				1		
2	1210287	Right horn					1	1
3	690200160	Cylinder 50/30x155mm ø20/fork	2	1	1	1	1	1
	690200046	Gasketset 50/30 mm (Laizhou)						
4	0236277	Bolt M20x190mm, 8.8 fzb	2	1	1	1	1	1
5	0272310	Faceted disc Ø20	4	2	2	4	2	2
5a	0264110	Self-locking nut M20 DIN985	2	1	1	3	1	1
6	69520046D	Pin Ø20 L=46	6	5	5	5	5	5
7	690115010	Washer Ø20/Ø28x1,0	12	10	10	10	10	10
8	691372020	Seeger circlip ring ø20 DIN 471	12	10	10	10	10	10
9	1215021	Bracket for 70x70mm pipe	4	4	4	4	4	4
10	0235840	Bolt M16x60mm, 8.8 fzb	8	8	8	8	8	8
11	0272290	Faceted disc 16mm, fzb	24	24	24	24	24	24
12	0264090	Self-locking nut M16 DIN985	12	12	12	12	12	12
13	1215009	Lock for tool 70x70x pipe	8	8	8	8	8	8
14	0235410	Bolt M12x65mm, 8.8 fzb	12	12	12	12	12	12
15	0272270	Faceted disc Ø12	12	12	12	12	12	12
16	0264070	Self-locking nut M12 DIN985	12	12	12	12	12	12
17	1210093	Rear bar	1					
17	1210384	Rear bar		1	1			
17	1210193	Rear bar				1	1	1
18	1210137	Right part of front bar	1	1	1			
19	1210136	Left part of front bar	1					
19	1210383	Left part of front bar		1	1			
19	1210191	Front bar				1	1	1
20	690103127	Bolt M16x50 10.9	4	4	4			
21	690302031	Top-link M22, L=315-410mm	2	1	1	1	1	1
22	1330037	Drawbar extension		1	1			
22	1210208	Drawbar extension				1		
22	1210294	Drawbar extension					1	1
22a	1137541	Flange					2	2
22a	690110500	U-bolt M20x180x180x180 mm				2		
23	690110404	U-bolt M18x100x100x100		12	12			
24	0272300	Faceted disc Ø18		24	24			
25	0264100	Self-locking nut M18 DIN985		24	24			
26	0489660	Plug 100x100 Black	2	2	2			
27	690109202	Plug 70x70x3 Black	4	4	4	4	4	4



**2 row Spring-Board sidesection**

Right sidesection shown 7.3m

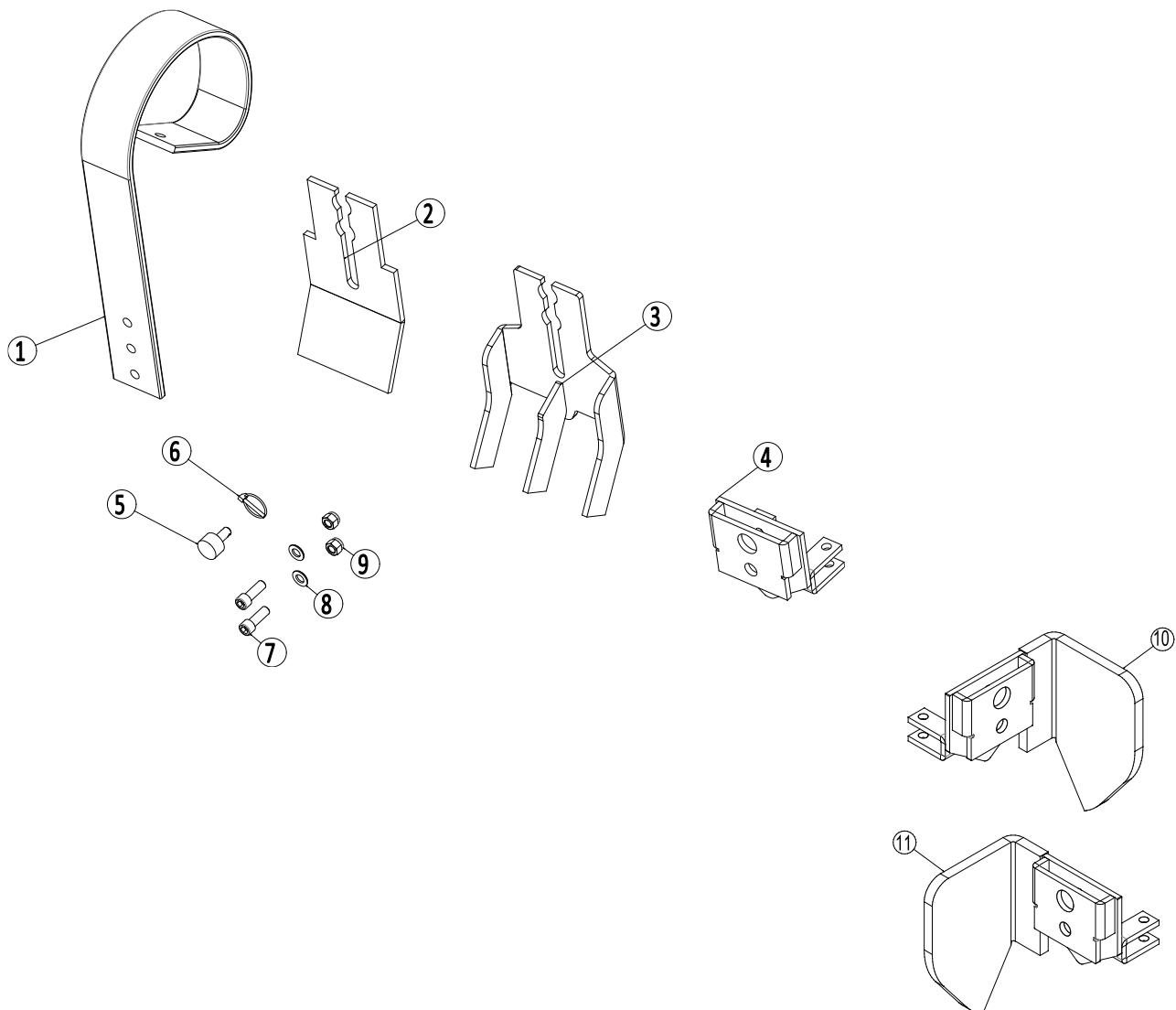


Pos.	Art. No.	Designation	6,3	7,3	7,6	8,2	9,5	10,2
1	1210100	Left horn	2	2	2	2	3	3
2	1210110	Righthorn	2	2	2	2	3	3
3	1210128	Rear bar	2					
3	1210368	Rear bar		2				
3	1210785	Rear bar			2			
3	1210273	Rear bar (R)				1		
3	1210275	Rear bar (L)				1		
3	1210352	Rear bar (R)					1	
3	1210280	Rear bar (L)					1	
3	1210710	Rear bar (R)						1
3	1210714	Rear bar (L)						1
4	1210129	Front bar (R)	1					
4	1210126	Front bar (L)	1					
4	1210353	Front bar (R)					1	
4	1210282	Front bar (L)					1	



Pos.	Art. No.	Designation	6,3	7,3	7,6	8,2	9,5	10,2
4	1210712	Front bar (R)						1
4	1210715	Front bar (L)						1
4	1210663	Left part of front bar (R)		1		1		
4	1210671	Left part of front bar (L)		1				
4	1210796	Left part of front bar (R)			1			
4	1210791	Left part of front bar (L)			1			
4	1210647	Left part of front bar (L)				1		
5	1210665	Right part of front bar (R)		1				
5	1210670	Right part of front bar (L)		1				
5	1210797	Right part of front bar (R)			1			
5	1210788	Right part of front bar (L)			1			
5	1210662	Right part of front bar (R)				1		
5	1210646	Right part of front bar (L)				1		
6	690302031	Top-link M22, L=315-410mm	2	4	4	4	4	4
7	69520046D	Pin Ø20 L=46	8	12	12	12	14	14
8	690115010	Washer Ø20/Ø28x1,0	16	24	24	24	28	28
9	691372020	Seeger circlip ring ø20 DIN 471	16	24	24	24	28	28
10	690103127	Bolt M16x50 10.9	-	4	4	4	-	-
11	0272290	Faceted disc 16mm, fzb	-	8	8	8	-	-
12	0264090	Self-locking nut M16 DIN985	-	4	4	4	-	-
13	1215009	Lock for tool 70x70 mm pipe	8	16	16	16	24	24
14	0235410	Bolt M12x65mm, 8.8 fzb	24	48	48	48	72	72
15	0272270	Faceted disc Ø12	48	96	96	96	144	144
16	0264070	Self-locking nut M12 DIN985	24	48	48	48	72	72
17	1215021	Bracket for 70x70mm pipe	4	8	8	8	12	12
18	0235840	Bolt M16x60mm, 8.8 fzb	8	16	16	16	24	24
19	0272290	Faceted disc 16mm, fzb	16	32	32	32	48	48
20	0264090	Self-locking nut M16 DIN985	8	16	16	16	24	24
21	690200160	Cylinder 50/30x155mm ø20/fork	4	4	4	4	6	6
	690200046	Gasket set 50/30 mm (Laizhou)						
22	0236220	BoltM20x130mm, 8.8 fzb	4	4	4	4	6	6
23	0272310	Faceted disc Ø20	8	8	8	8	12	12
24	0264110	Self-locking nut M20 DIN985	4	4	4	4	6	6
25	0382902	U-Bolt M18x200x100x200	12	12	12	12	18	18
26	0272300	Faceted disc Ø18	24	24	24	24	36	36
27	0264100	Self-locking nut M18 DIN985	24	24	24	24	36	36
28	690109202	Plug 70x70x3 Black	4	4	4	4	4	4



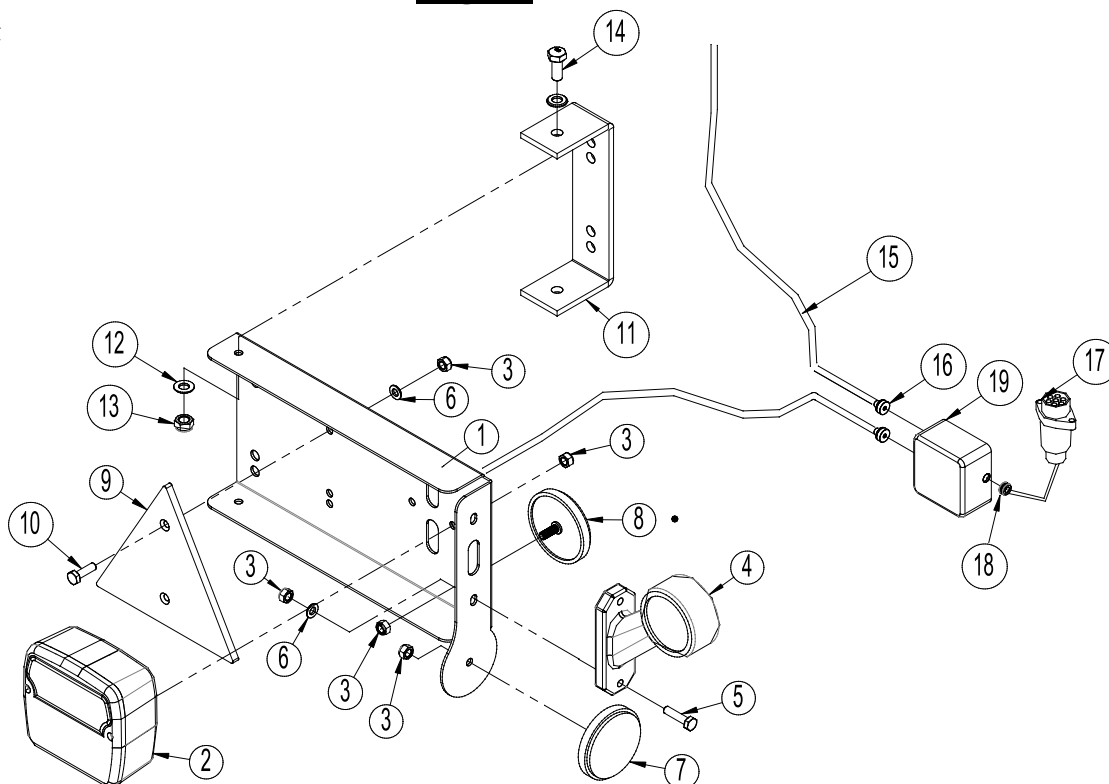
**Easy – Change**

Pos.	Item no.	Designation	Qty.
1	0422145	Spring-Board tine	1
2	1170388	Flat wearing point – Easy-Change	1
3	1170410	Slicing plate point w/3 tines – Easy-Change	1
4	1170389	Easy-Change bracket for transverse locking system	1
5	1170391	Locking pin	1
6	0378200	Ring split Ø4,5 mm	1
7	0227842	Bolt M12 x 35 8.8	2
8	0272270	Facet plate 12mm	2
9	0264070	Self-locking nut M12	2
10	1170806	Edge equipment, left	1
11	1170805	Edge equipment, right	1



## Lights

### LED - Light set

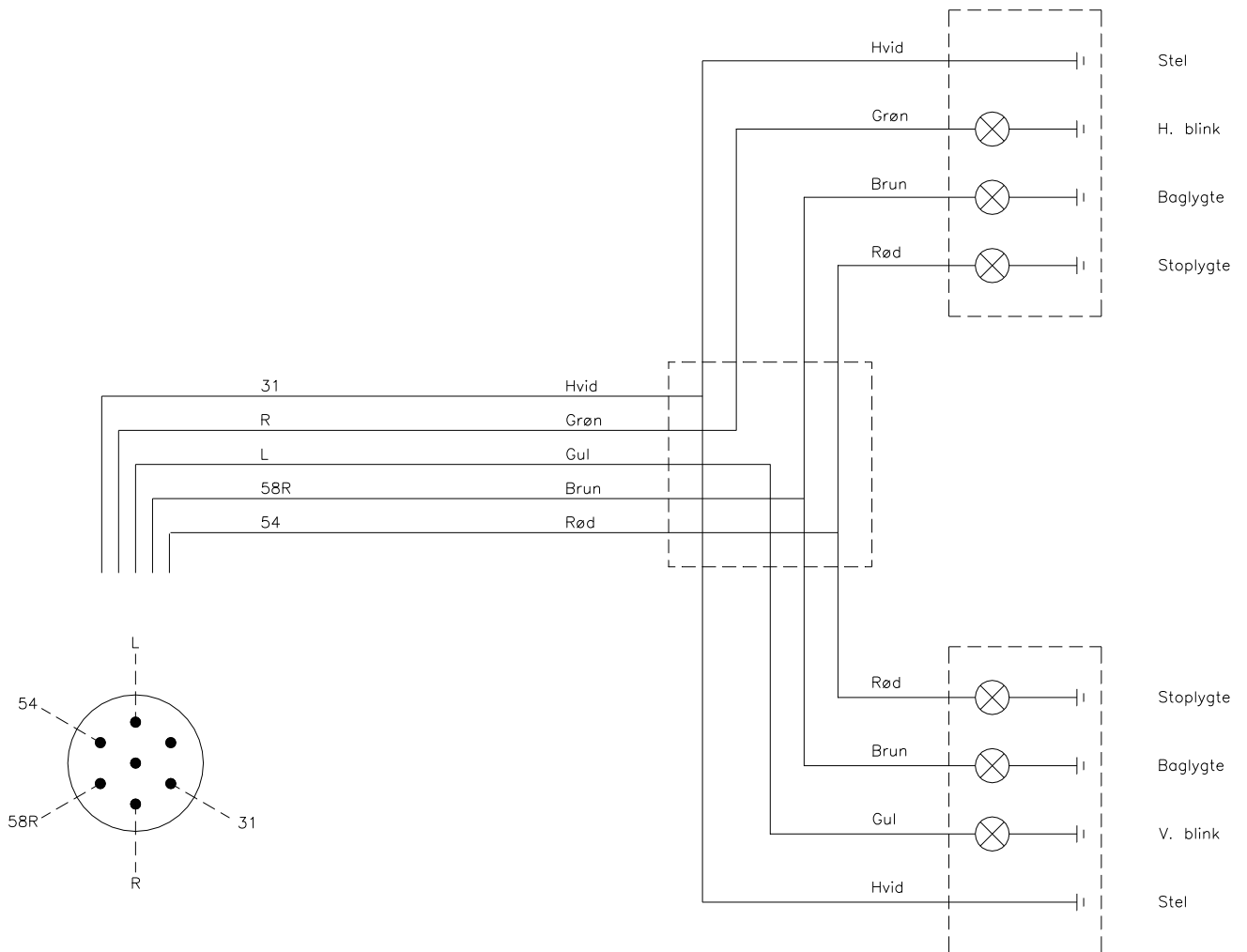


Pos.	Item no.	Designation	Qty.
1	7357505	Lightbox (L)	1
	7357508	Lightbox (R)	1
2	7357504	Rear light	2
3	0264030	Locking nut M5	16
4	7357507	Marking lights (L)	1
	7357509	Marking lights (R)	1
5	0234340	Bolt M5x25	4
6	0272240	Facet plate Ø5	8
7	0656240	Reflex, yellow	2
8	0656250	Reflex, white	2
9	690160017	Reflex, red	2
10	0234330	Bolt M6x20	4
11	7357516	Bracket	2
12	0272250	Facetplate Ø8	16
13	0264050	Locking nut M8	8
14	0234750	Bolt M8x20	4
15	690160080	Cable 5 x 1mm <sup>2</sup> (Inform about length by ordering sparepart)	
16	7357545	Rutaseal nipple M20 8-12mm Grey RAL7001	2
17	690160070	Plug 7 poles DIN 72 577 – ISO 1724	1
18	7357546	Rubberbushing Nr. 38A Ø10/3 black	1
19	0520492	Junction box 105x105x60	1

**Note: Check number and measurements of all cables before ordering the spare parts.**



**Lighting set: El. diagram**









as it looks

As good as it looks

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The design is subject to modification without notice.