

UK

HE-VA

Operating Instructions
Spare parts list
Declaration of Conformity

looks

As good as it looks

As good as it looks

As good as it looks

As good as it looks



Warning: Before using the machine it is important to read the operation instructions.

Vip-Roller NG

4,5 m - 5,4 m - 6,3 m - 7,3 m - 8,2 m

 **HE-VA**

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

Contents

EC DECLARATION OF CONFORMITY	4
1. DESCRIPTION OF THE MACHINE	5
2. DELIVERY CHECK.....	5
TRANSPORT BRACKETS	5
3. SPECIFICATIONS	6
TECHNICAL SPECIFICATIONS	6
4. OPERATING INSTRUCTIONS.....	7
ATTACHMENT.....	7
TRANSPORT	7
ROLLING.....	7
5. SAFETY AT THE VIP-ROLLER NG.....	8
6. SAFETY INSTRUCTIONS, REGARDING HYDRAULIC SYSTEM.....	9
7. MARKINGS ON THE MACHINE	10
SAFETY – AND OTHER MARKINGS ON THE MACHINE	10
8. MAINTENANCE.....	11
LUBRICATION	11
9. DISPOSAL	12
10. SPARE PART LIST	12
DRAWBAR	12
CHASSIS.....	14
WHEEL FRAME – CENTER SECTION 4,5 - 5,4M	16
WHEEL FRAME – CENTER SECTION 6,3 – 7,3 – 8,2M	18
WING SECTIONS	20
ROLLER RINGS.....	22
RINGS AT THE SUPPORT BEARING.....	26
ROLLER	28
SPRING-BOARD.....	30
SPRING-BOARD W/FIXED MOUNTED WEARING POINTS AND LOCKING SYSTEM.....	32
MOUNTING OF SPRING-BOARD	33
Ø16 MM TINES	35
LED – LIGHT	36
NOTES:	37
PNEUMATIC BRAKES	38
HYDRAULIC BRAKES.....	40
11. HYDRAULIC.....	42
4,5 AND 5,4 METER	42
8,2 METER.....	43



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

The declaration comprises the following machines:

Vip-Roller NG 4,5m – 5,4m – 6,3m – 7,3m – 8,2m

Nykøbing the 29th of December 2018


Villy Christiansen

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

1. Description of the machine

The Vip-Roller is a 3-sectioned hydraulic, wheel mounted roller. Vip-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, 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 2,4 meters.

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

2. 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: approx. 3.8 bar / 55 psi

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.



3. Specifications

3-section hydraulic wheel-mounted field roller with free movability in all sections. Used for rolling of stones and packing of the top soil. The roller is available with a working width of 5.4 m or 6.3 m and with three different ring types: Cambridge-, Cam-, Star-, 2D wave-, and Crosskill rings.

Technical Specifications

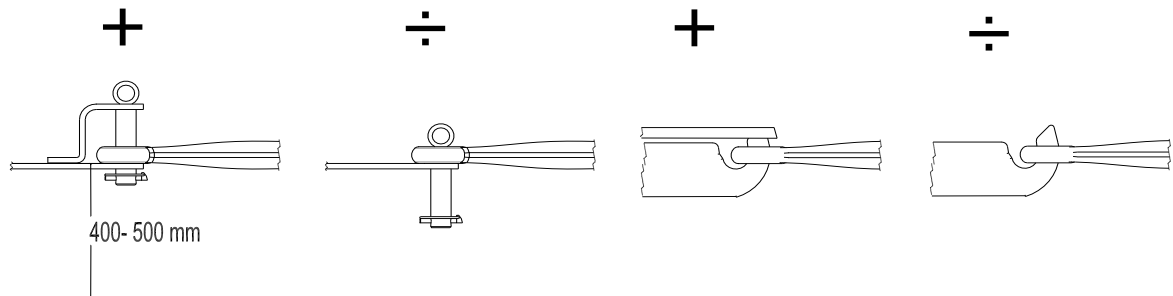
Work Width	4,5 m	5,4 m	6,3m	7,3 m	8,2m
Total Width in workposition	4,8 m	5,7 m	6,6 m	7,6 m	8,2 m
Length	4,2 m	4,2 m	4,7 m	4,7 m	4,7 m
Width in transportposition	2,45 m	2,45 m	2,45 m	2,45 m	2,45 m
Hight in transportposition	2,2 m	2,2 m	1,6 m	1,6 m	1,6 m
Pressure on pintle eye in transport position (% of total weight)	ca. 40 %	ca. 40 %	ca. 40 %	ca. 40%	ca. 40%
Wheel assembly, standard	10.0/75x15.3 – 10 PLY	10.0/75x15.3 – 10 PLY	11.5/80x15.3 - 10 PLY	11.5/80x15.3 - 10 PLY	11.5/80x15.3 - 10 PLY
Tyre pressure	3,8 bar / 55 psi				
Oil pressure	min. 150 bar				
Hydraulic outlets	1 single-acting and 1 double-acting				
Quick-couplings, standard	Sterling type E 402				
Hydraulic oil: system is filled with	Hydro Texaco HD32				



4. Operating Instructions

Attachment

On delivery, the roller is in transport position. When the roller is attached, check that the towing hook height is 400-500 mm. Reverse the tractor, put in and **secure** the draw bolt.



Raise the support leg and place it in the transport fittings on top of the drawbar. The roller requires one double-acting and one single-acting hydraulic outlet.

Now connect the hydraulic hoses, in the hydraulic outlets of the tractor.

IMPORTANT: Check that the male end, mounted by the factory, fits the female end of the tractor.

Now pressurise the tip cylinder so that the side sections are tipped free of the transport fittings. Then the side sections, are turned out by means of the wing cylinder.

Now the roller is hydraulically tipped into working position by means of the tip cylinder.

Transport

At changeover 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 tail.

When both sides lie in parallel with the tail, they are lowered down into the transport fittings by releasing the pressure of the tipping cylinder.

Now relieve the hydraulics totally, and the roller is ready for transport.

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.



5. Safety at the Vip-Roller NG

Do not operate the machine, if any people** are at risk in the dangerous area.*

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:

1. Lower the machine on solid ground.
2. Hydraulic must be relieved.
3. Tractor must be turned off, and the key removed.
4. Driver must be aware of, when operating that there is no persons at risk in the dangerous area.

* **Dangerous area: At the machine and underneath it, and in a distance of 4 m from it.**

** **People at risk: Any person, who is completely or partially in the dangerous area.**

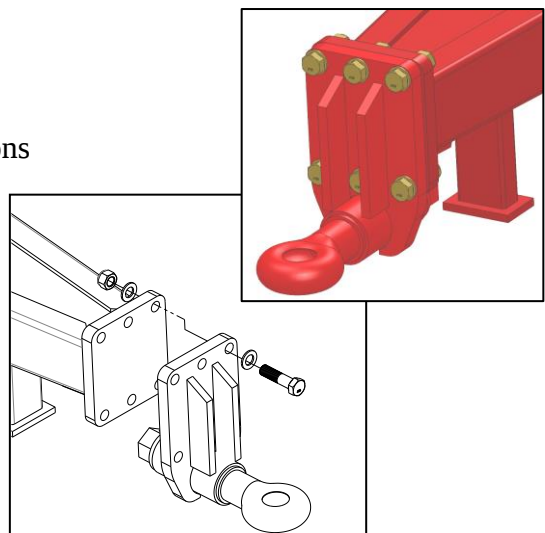
Most accidents when operating the machine, transporting and doing maintenance occurs, when avoiding the most simple safety regulations.

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.

Controle tightening:

- of hub bolts, 386 Nm according to specifications
- flange for towing eye, **6 pc of bolts** 541 Nm



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.



6. 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.

Oil, type Hydro Texaco HD 32 has been filled in the hydraulic system

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 axle load, transport width, lights and warning signs).

FRONT AXEL LOAD:

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

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

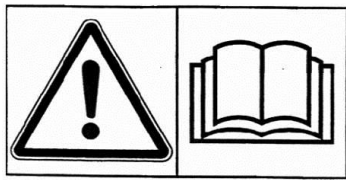


7. Markings on the machine

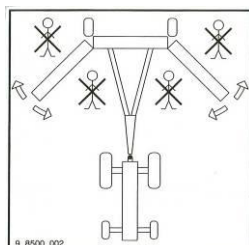
Several markings are located at your machine, which contains **safety regulations** and other instructions to inform about correct operating.

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



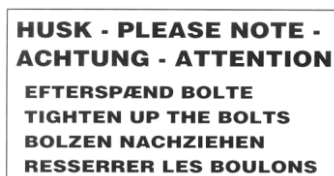
Study the Operating Instructions thoroughly before any operation of the machine and observe all safety instructions.



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.



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

Maximum torque in Nm. w/lubricated thread			
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
Hjulbolt M18x1,5 fine thread	433 Nm		
Hjulbolt M22x1,5 fine thread	803 Nm		



8. Maintenance

- After 10 hours of operation, tightening of wheels, bearings and stop rings must be done.
- Hoses, fittings and cylinders must be checked for any leaks and retightened.
- When the season is done the roller must be cleaned, lubricated and a thin layer of oil sprayed on all painted parts.
- Glossy piston rods must be protected by grease.

Lubrication

At every 10 hours operation:

- every roller sections suspension

At every 30 hours operation:

- wings bushings hinged to wheel frame
- bearings
- cylinders
- wheel frame bushings hinged to chassis

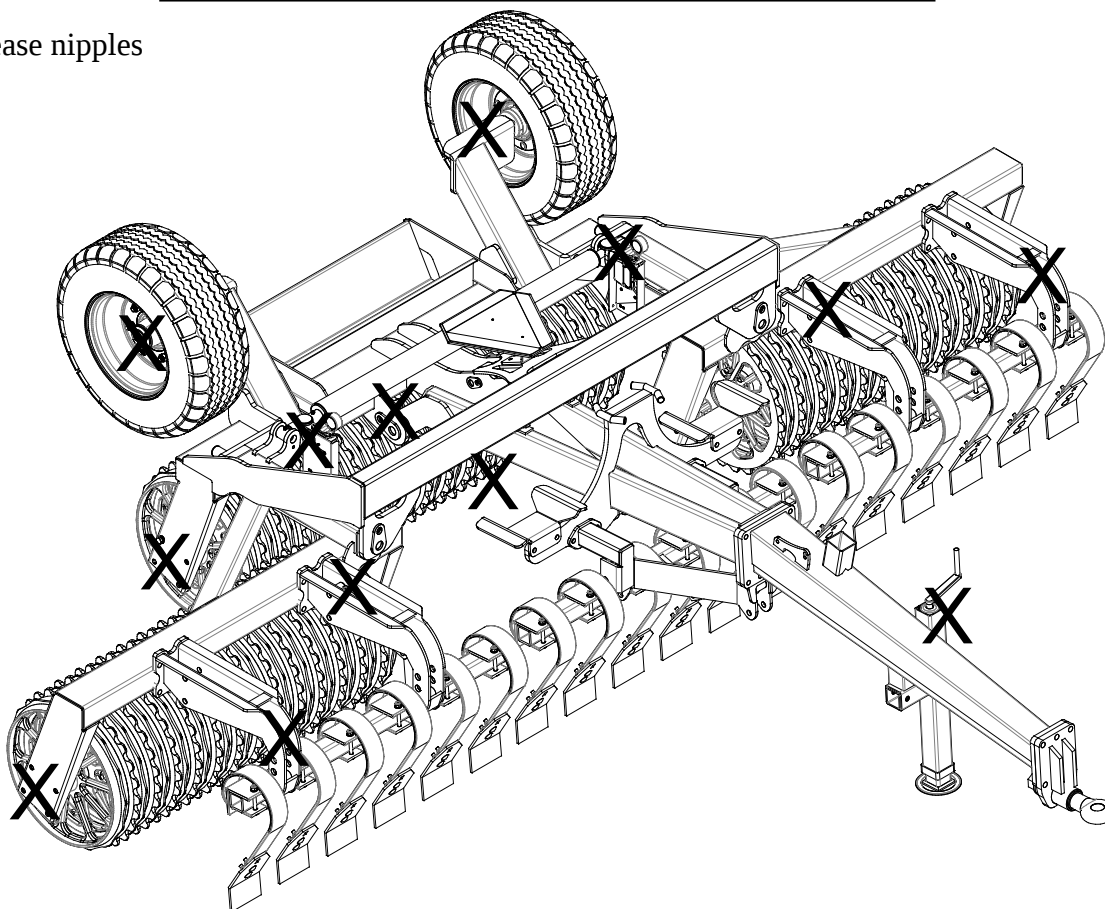
Once a year:

- the support leg

IMPORTANT

Bearings must only be lubricated with 1-2 strokes, otherwise the sealing rings can be released.

X= grease nipples

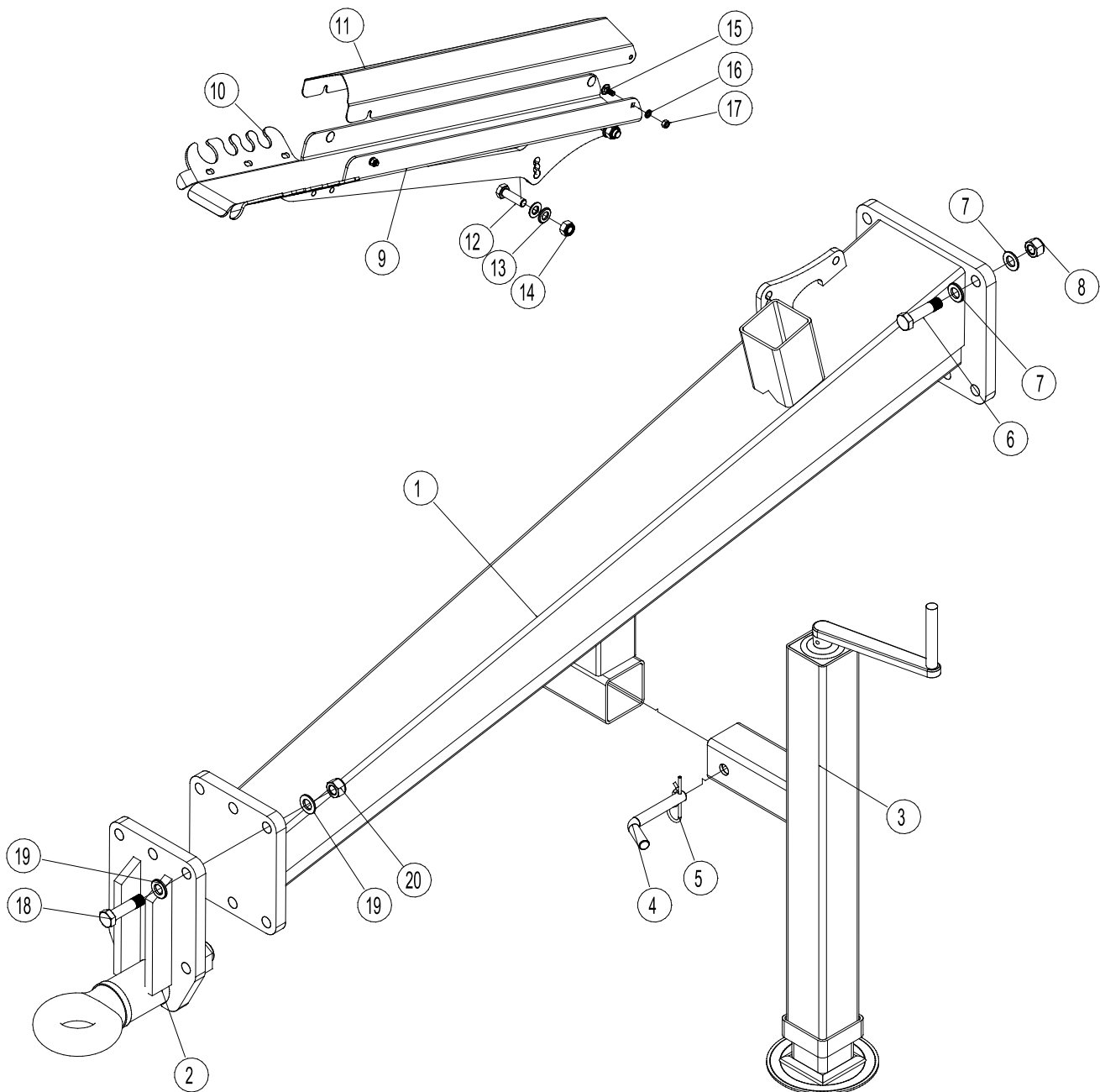


9. Disposal

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.

10. Spare Part List

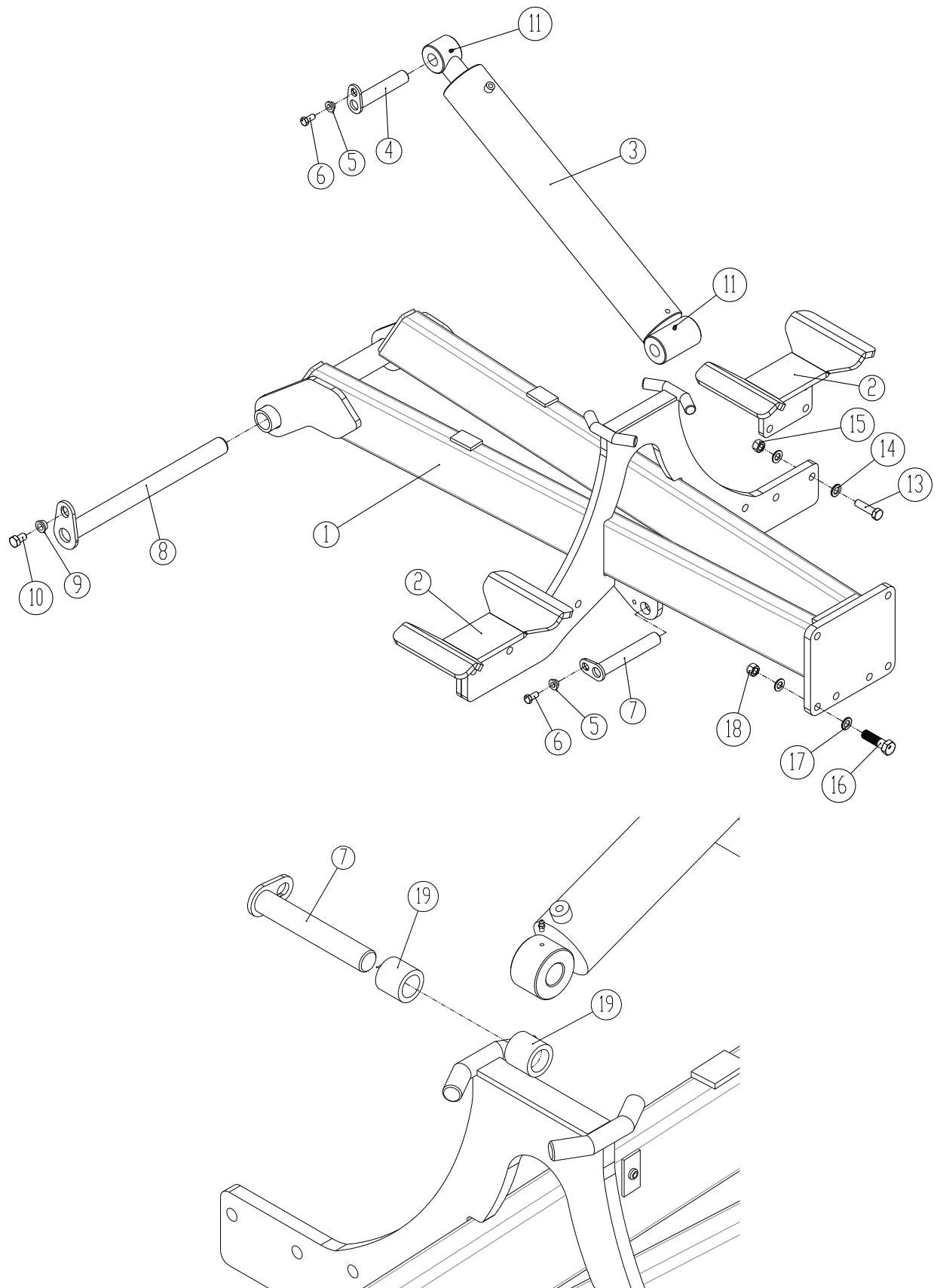
Drawbar



Pos	Part number	Description	4,5m	5,4m	6,3m	7,3m	8,2m
1	630757097	Drawbar	1	1			
1	630771023	Drawbar			1	1	1
2	630757028	Towing eye Ø50 w/swivel - M16 bolte	1	1	1	1	1
3	690141095	Support leg 3500 kg	1	1	1		
3	690141102	Support leg 6000 kg				1	1
4	1030280	Pin for support leg Ø16 L=94 - 45°	1	1	1	1	1
5	0377400	Hairpin split Ø4 mm	1	1	1	1	1
6	690103130	Bolt M16x70 10.9	6	6			
6	690103173	Bolt M20x70 10.9			6	6	6
7	0272290	Facet washer Ø16 mm	12	12			
7	690117005	Facet washer Ø20 mm			12	12	12
8	0264090	Safety nut M16	6	6			
8	690113009	Safety nut M20			6	6	6
9	7345010	Holder for hoses (8 pc) Incl. pos. 10-17					
10	7345004	Holder for hoses, bottom part	1	1	1	1	1
11	7345003	Holder for hoses cover	1	1	1	1	1
12	0235360	Bolt M12x40mm, 8.8 fzg	2	2	2	2	2
13	0272270	Facet washer Ø12 mm	4	4	4	4	4
14	0264070	Safety nut M12	2	2	2	2	2
15	0246060	Bolt (carrier bolt) M6x16 FZB DIN603	4	4	4	4	4
16	0272240	Facet washer 6mm, fzb	8	8	8	8	8
17	0264040	Safety nut M6, fzb DIN985	4	4	4	4	4
18	690103130	Bolt M16x70 10.9	6	6	6	6	6
19	0272290	Facet washer Ø16	12	12	12	12	12
20	0264090	Safety nut M16	6	6	6	6	6



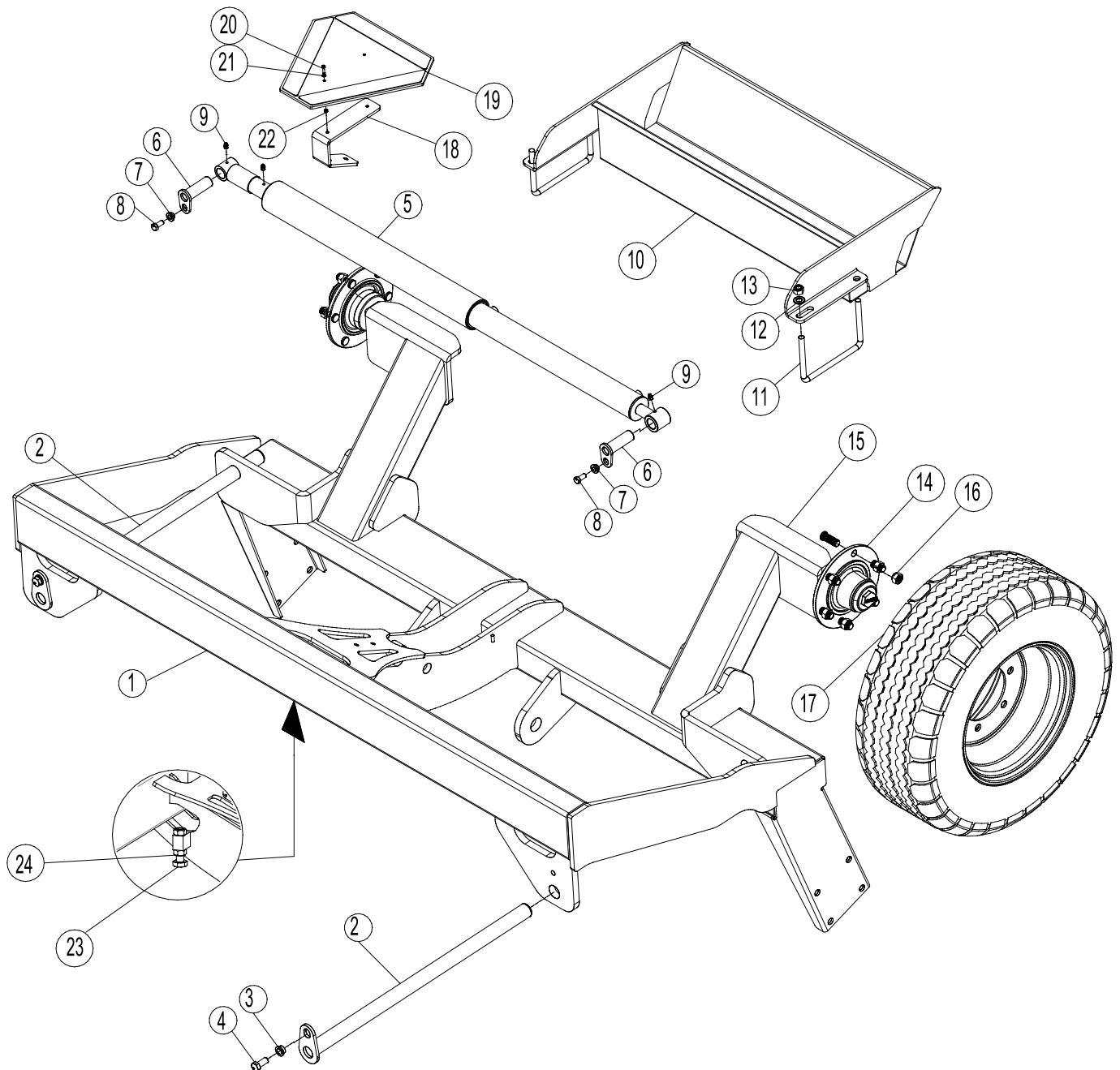
Chassis



Pos	Part number	Description	4,5m	5,4m	6,3m	7,3m	8,2m
1	1325038	Chassis	1	1			
1	1325264	Chassis			1	1	1
1	1325373	Chassis, (From serial number 352888)					1
2	1325225	Transport fittings 24"/Ø620 mm	2	2	2	2	2
2	1325456	Transport fittings 24"/Ø620 mm (From serial number 352888)	2	2	2	2	2
3	690200050	Tip cylinder 80/40x500mm Ø30/Ø30 mm	1	1			
	690200143	Gasket kit 80/40 mm. (Laizhou)					
3	690200110	Cylinder 100/50x600mm Ø30/Ø30 mm (From serial number 352888)	1	1			
3	690200020	Tip cylinder 100/50x700mm Ø35/Ø35mm			1	1	1
	690200285	Gasket kit 100/50mm (Laizhou)					
3	7345085	Cylinder 120/50x800mm Ø35/Ø35mm (From serial number 352888)					1
4	69430155G	Pin Ø30 L=155 mm	1	1			
4	69435185G	Pin Ø35 L=185 mm			1	1	1
5	630532600	Lock bushing for pin head	2	2	2	2	2
6	690101101	Bolt M12x25 8.8. w/glue	2	2	2	2	2
7	69430185G	Pin Ø30 L=185 mm	1	1			
7	69435185G	Pin Ø35 L=185 mm			1	1	1
8	69440495N	Pin Ø40 L=495 mm	1	1			
8	69440680N	Pin Ø40 L=680 mm			1	1	1
9	630532700	Lock bushing for pin head	1	1	1	1	1
10	0235760	Bolt M16x25mm, 8.8 fzb	1	1	1	1	1
11	0432100	Grease nipple M6	2	2	2	2	2
12	0432510	Grease nipple M8	1	1	1	1	1
13	0235840	Bolt M16x60 8.8	4	4	4	4	4
14	0272290	Facet washer Ø16 mm	8	8	8	8	8
15	0264090	Låsemøtrik M16	4	4	4	4	4
16	0235852	Bolt M16x65 DIN 931	6	6			
16	690103173	Bolt M20x70 10.9			6	6	6
17	0272290	Facet washer Ø16 mm	12	12			
17	690117005	Facet washer Ø20 mm			12	12	12
18	0264090	Safety nut M16	6	6			
18	690113009	Safety nut M20			6	6	6
19	1325050	Bushing BK-pipe 45x7 L=45	4	4			



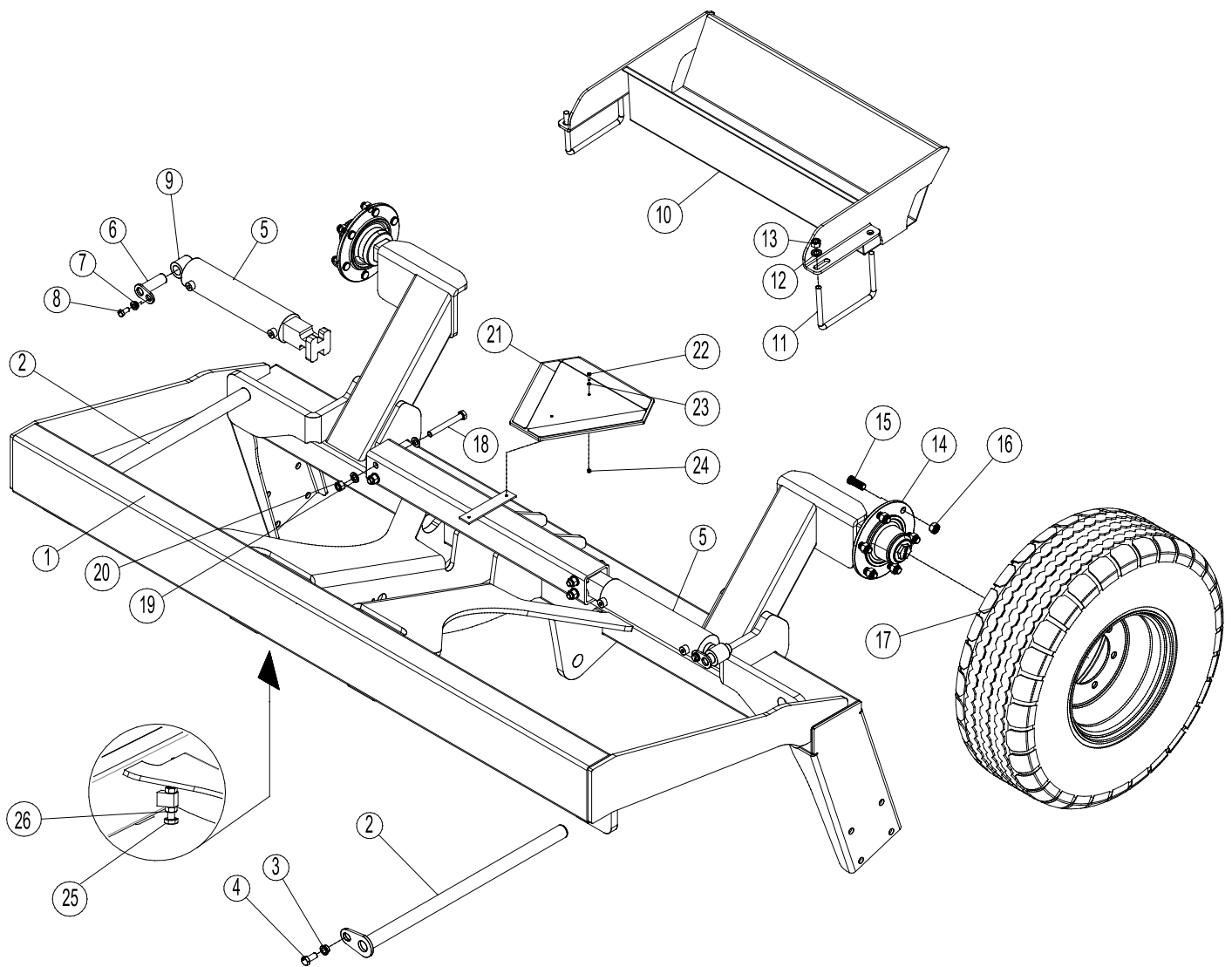
Wheel frame – center section 4,5 - 5,4m



Pos	Part number	Description	4,5m	5,4m
1	1325113	Wheel frame - Center section (Changed from serial number 352888)	1	1
1	1325115	Wheel frame - Center section with brake hubs	1	1
2	69440765N	Pin Ø40 L=765 mm	2	2
3	630532700	Lock bushing for pin head	2	2
4	690103124	Bolt M16x25 mm	2	2
5	1325095	Wing cylinder with spring	1	1
	690200010	Cylinder 60/30x500 mm, Ø30 mm	1	1
	690200077	Gasket kit 60/30 (Laizhou)		
6	69430090G	Pin Ø30 L=90 mm	2	2
7	630532600	Lock bushing for pin head	2	2
8	690101101	Bolt M12x25 w/glue	2	2
9	0432510	Grease nipple M8	2	2
10	1325139	Stone box	1	1
11	690110105	U-bolt M16x100x200x100	2	2
12	0272290	Facet washer Ø16 mm	4	4
13	0264090	Safety nut M16	4	4
14	0395440	Hub 1700 kg 6-M18/160-205	2	2
15	690141039	Hub bolt M18 x 1.5 L=49 mm	12	12
14	690141032	Hub w/brake 3750 kg	2	2
15	690141042	Hub bolt M18 x 1.5 L=60 mm	12	12
16	0396471	Hub nut M18 x 1,5 mm	12	12
17	690141310	Wheel 10.0/75x15.3-10 PLY	2	2
17	690141315	Wheel 11,5/80x15.3-14 PLY (Only an option)	2	2
18	1325326	Bracket for warning triangle	1	1
19	0521010	Warning triangle	1	1
20	0233860	Bolt M5x20 mm	2	2
21	0272230	Facet Ø5 mm	4	4
22	0264030	Safety nut M5	2	2
23	0236180	Bolt M20x90 8.8 (adjustment bolt)	2	2
24	690112009	Nut M20	4	4



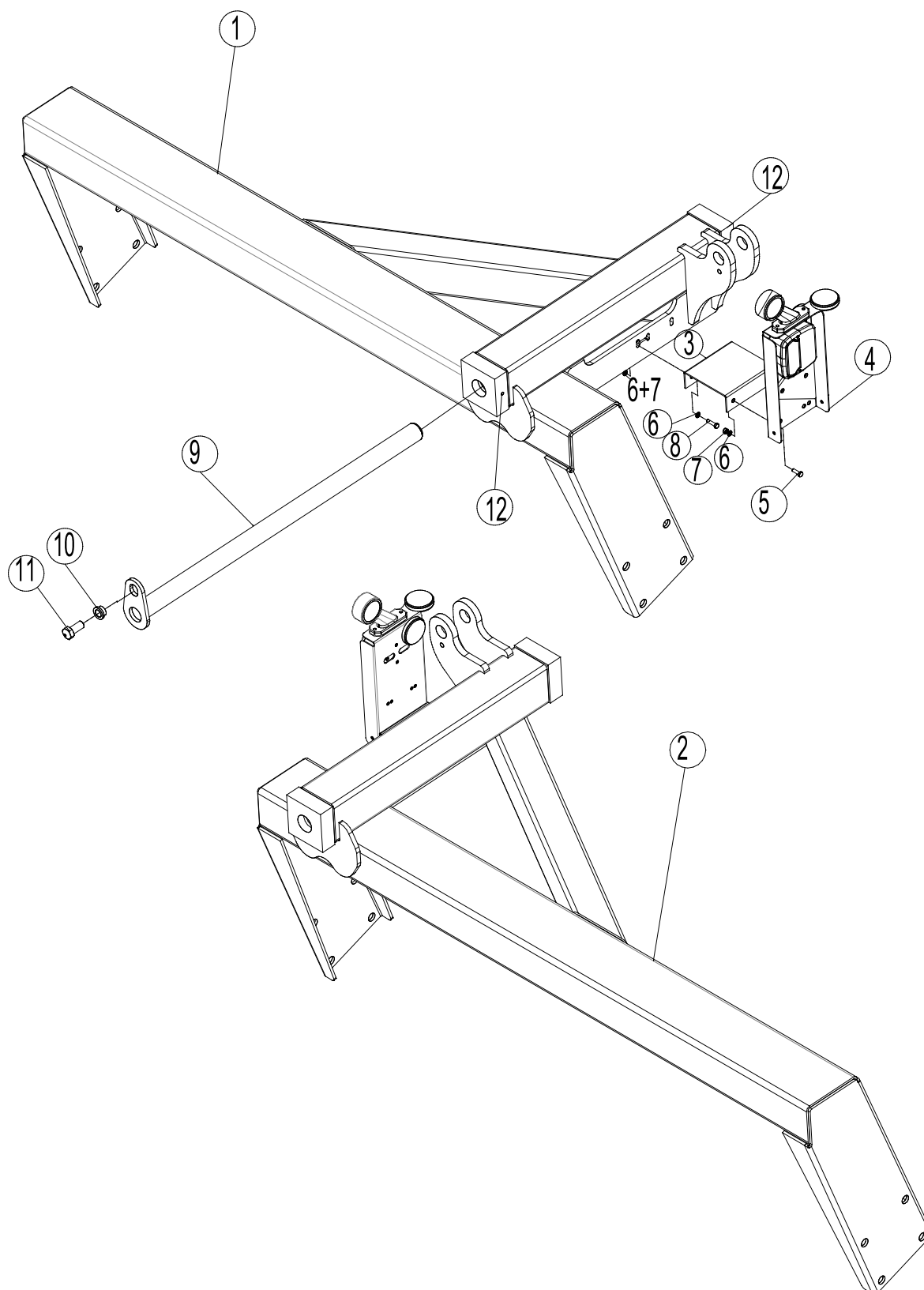
Wheel frame – center section 6,3 – 7,3 – 8,2m



Pos	Part number	Description	6,3m	7,3m	8,2m
1	1325248	Wheel frame - Center section	1	1	1
1	1325370	Wheel frame - Center section with brake hubs	1	1	1
1	1325421	Wheel frame - Center section with brake hubs <i>From serial number 352888</i>			1
2	69440810N	Pin Ø40 L=810 mm	2	2	2
3	630532700	Lock bushing for pin head	2	2	2
4	690103124	Bolt M16x25 mm	2	2	2
5	1325332	Wing cylinder with spring	2	2	2
	0462700	Cylinder 80/40x280 mm Ø30 mm	2	2	2
	690200077	Gasket kit			
6	69430090G	Pin Ø30 L=90 mm	2	2	2
7	630532600	Lock bushing for pin head	2	2	2
8	690101101	Bolt M12x25 w/glue	2	2	2
9	0432510	Grease nipple M8	2	2	2
10	1325139	Stone box	1	1	1
11	690110105	U-bolt M16x100x200x100	2	2	2
12	0272290	Facet washer Ø16 mm	4	4	4
13	0264090	Safety nut M16	4	4	4
14	0395440	Hub 1700 kg 6-M18/160-205	2	2	2
15	690141039	Hub bolt M18 x 1.5 L=49 mm	12	12	12
14	690141032	Hub w/brake 3750 kg	2	2	2
15	690141042	Hub bolt M18 x 1.5 L=60 mm	12	12	12
16	0396471	Hub nut M18 x 1,5	12	12	12
17	0396100	Wheel 11.5/80x15,3-10 PLY	2	2	2
17	0396300	Wheel 400/60 x 15,5-14 PLY (Only an option)	2	2	2
18	0235930	Bolt M16x130 mm 8.8	4	4	4
19	0272290	Facet washer Ø16	8	8	8
20	0264090	Safety nut M16	4	4	4
21	0521010	Warning triangle	1	1	1
22	0233860	Bolt M5x20	2	2	2
23	0272230	Facet washer Ø5 mm	4	4	4
24	0264030	Safety nut M5	2	2	2
25	0236180	Bolt M20x90 8.8 (adjustment bolt)	2	2	2
26	690112009	Nut M20	4	4	4



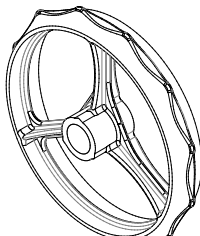
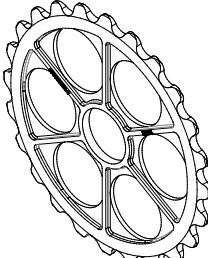
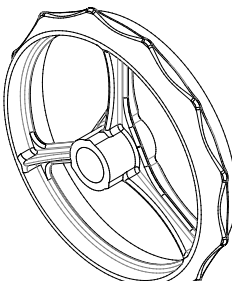
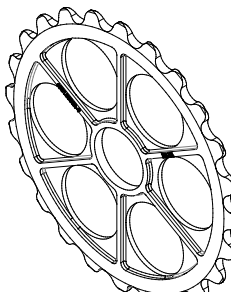
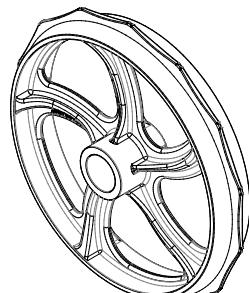
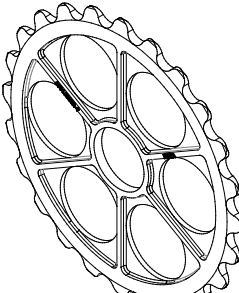
Wing sections



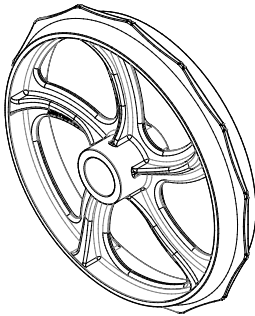
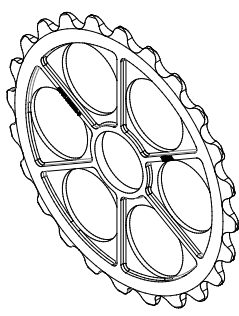
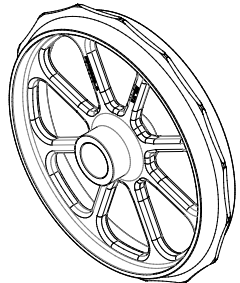
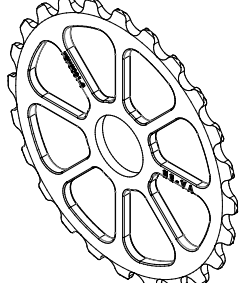
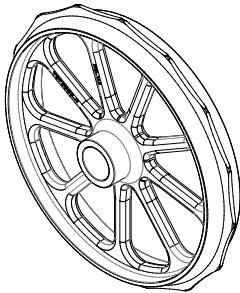
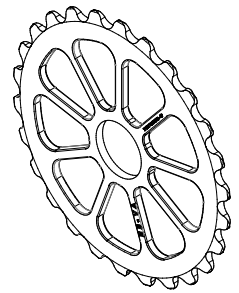
Pos	Part number	Description	4,5m	5,4m	6,3m	7,3m	8,2m
1	1325178	Wing section, right	1				
1	1325179	Wing section, right		1			
1	1325240	Wing section, right			1		
1	1325340	Wing section, right				1	
1	1325337	Wing section, right					1
2	1325194	Wing section, left	1				
2	1325195	Wing section, left		1			
2	1325330	Wing section, left			1		
2	1325350	Wing section, left				1	
2	1325336	Wing section, left					1
3	690160021	Holder for light	2	2	2	2	2
4	7357510	Light, left (see page 36)	1	1	1	1	1
4	7357506	Light, right (see page 36)	1	1	1	1	1
5	0234330	Bolt M6x20 mm, 8.8 fzb	4	4	4	4	4
6	0272240	Facet washer 6 mm, fzb	16	16	16	16	16
7	0264040	Safety nut M6, fzb DIN 985	8	8	8	8	8
8	0234340	Bolt M6x25mm, 8.8 fzb	4	4	4	4	4
9	69440765N	Pin Ø40 L=765 mm	2	2			
9	69440810N	Pin Ø40 L=810 mm			2	2	2
10	630532700	Lock bushing for pin head	2	2	2	2	2
11	690103124	Bolt M16x35 mm 8.8	2	2	2	2	2
12	0432510	Grease nipple, straight H1 M8x1,25	4	4	4	4	4



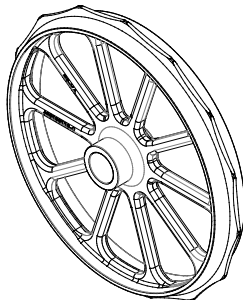
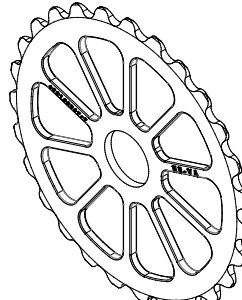
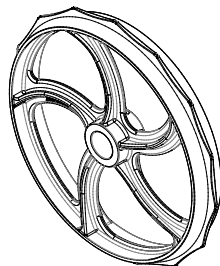
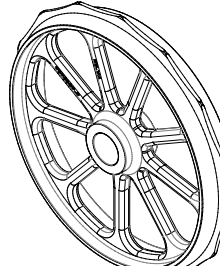
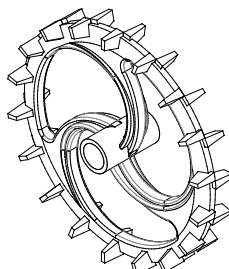
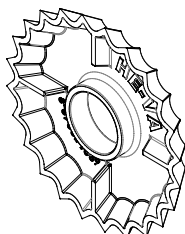
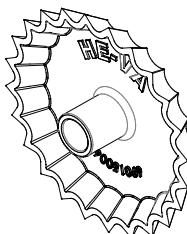
Roller Rings

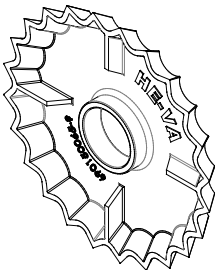
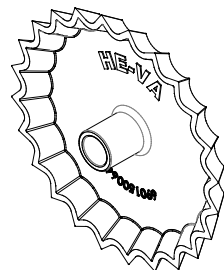
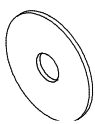
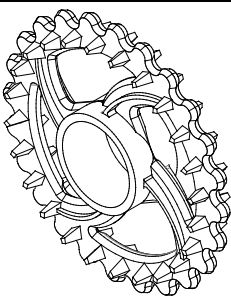
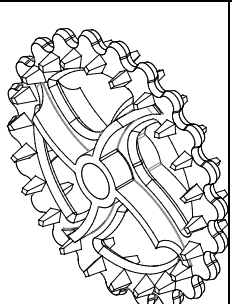
Cambridge rings Ø450 mm		Description	Quality	Part no.
		Pos. 1. Hub 104 mm	GG25	690150039
		Pos. 1. Hub 80 mm	GG25	690150041
		Pos. 1. Hub 72 mm □	GG25	630764021
		Pos. 1. Hub 82 mm □	GG25	630764020
		Pos. 2	GG25	690150040
		□ = At the bearing		
Pos. 1 450 mm Lenient (3 spokes)	Pos. 2 450 mm Breaker			
Cambridge rings Ø510 mm		Description	Quality	Part no.
		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
Pos. 3 510 mm Lenient (3 spokes)	Pos. 4 510 mm Breaker			
Cambridge rings Ø510 mm		Description	Quality	Part no.
		Pos. 5 Hub 104 mm	GG25	690150103
		Pos. 5 Hub 80 mm	GG25	690150105
		Pos. 5 Hub 72 mm □	GG25	630764037
		Pos. 5 Hub 82 mm □	GG25	630764034
		Pos. 4		690150032
Pos. 5 510 mm Lenient (5 spokes)	Pos. 4 510 mm Breaker			



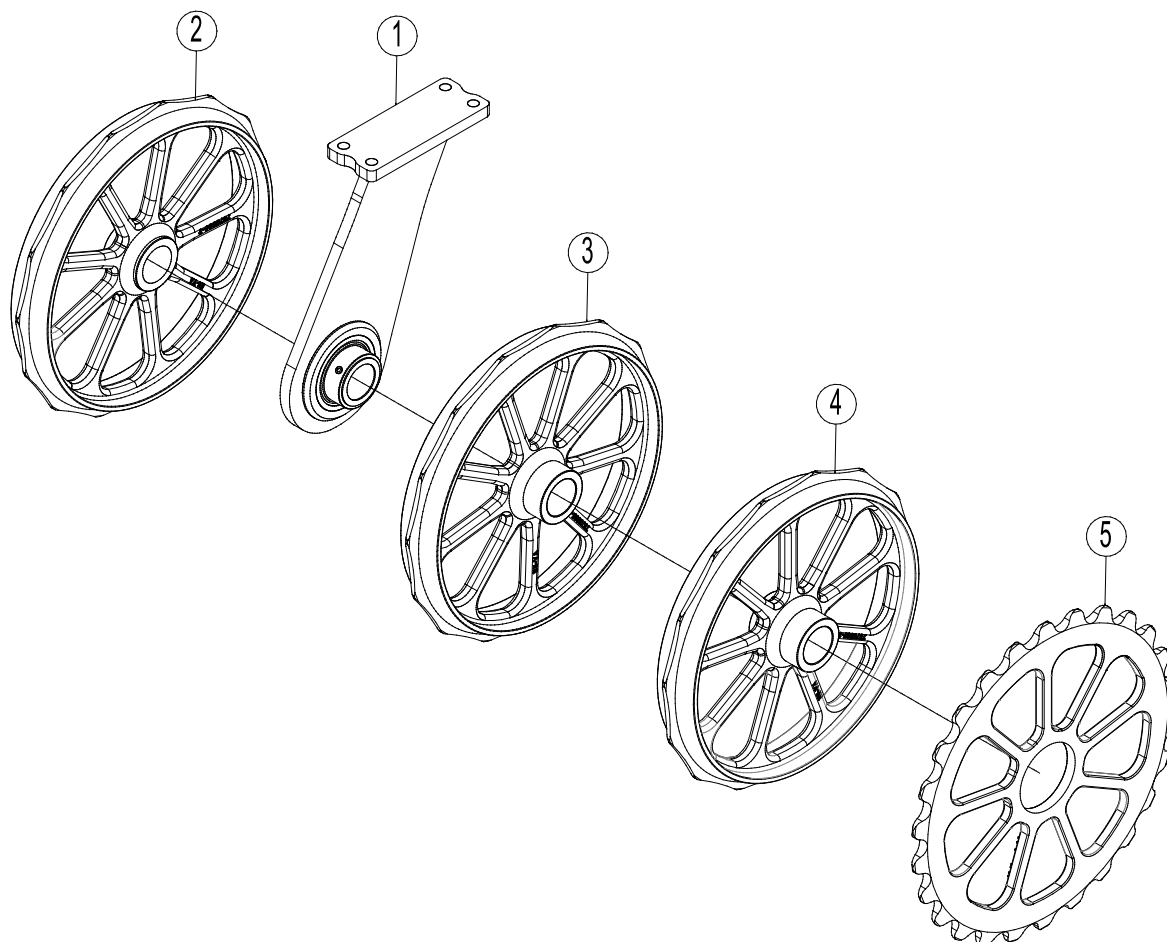
Cambridge rings Ø560 mm		Description	Quality	Part no.
		Pos. 6 Hub 104 mm	GG25	690150101
		Pos. 6 Hub 104 mm	GGG50	690150107
		Pos. 6 Hub 80 mm	GGG50	690150109
		Pos. 6 Hub 72 mm □	GGG50	630764039
		Pos. 6 Hub 82 mm □	GGG50	630764038
		Pos. 7		690150102
Pos. 6 560 mm Lenient (5 spokes)	Pos. 7 560 mm Breaker			
Cambridge rings Ø510 mm		Description	Quality	Part no.
		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 □	GG25	7375009
		Pos. 8 Hub 72 mm □	GGG50	7375025
		Pos. 8 Hub 82 mm □	GG25	7375020
		Pos. 8 Hub 82 mm □	GGG50	7375026
		Pos. 9	GG25	7375001
Pos. 8 510 mm Lenient (8 spokes)	Pos. 9 510 mm Breaker (8 spokes)	Pos. 9	GGG50	7375013
Cambridge rings Ø560 mm		Description	Quality	Part no.
		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	GG25	7375017
		Pos. 10 Hub 72 mm	GGG50	7375023
		Pos. 10 Hub 82 mm	GG25	7375018
		Pos. 10 Hub 82 mm	GGG50	7375024
		Pos. 11	GG25	7375000
Pos. 10 560 mm Lenient (9 spokes)	Pos. 11 560 mm Breaker (9 spokes)	Pos. 11	GGG50	7375012



Cambridge rings Ø620 mm			Description	Quality	Part no.
		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 □	GG25	630764049	
		Pos. 12 Hub 72 mm □	GGG50	7375021	
		Pos. 12 Hub 82 mm □	GG25	630764050	
		Pos. 12 Hub 82 mm □	GGG50	7375022	
		Pos. 13	GG25	690150067	
		Pos. 13	GGG50	690150116	
Pos. 12 620 mm Lenient (10 spokes)	Pos. 13 620 mm Breaker (10 spokes)				
2D rings		Description	Quality	Part no.	
		Pos. 14 Ø500	GG25	690150105	
		Pos. 14 Ø550	GGG50	690150109	
		Pos. 14 Ø600	GGG50	690150082	
		Pos. 15 Ø500	GG25	7375004	
		Pos. 15 Ø550	GG25	7375007	
		Pos. 15 Ø600	GG25	690150111	
Pos. 14 2D rings (5 spokes)	Pos. 15 2D rings (8-9-10 spokes)				
Crosskill ring 550 mm		Description	Quality	Part no.	
		Pos. 16 Hub 155 mm	GG25	690150007	
Pos. 16 550 mm Knastring					
Star ring Ø450/Ø500 mm		Description	Quality	Part no.	
			Pos. 17 Ø500/Ø135	GGG50	690150063
			Pos. 18 Ø485	GGG50	690150064
			Pos. 19 Monteringsplade		690150112
Pos. 17 500 mm	Pos. 18 485 mm	Pos. 19 235 mm			

Star ring Ø550/Ø600 mm			Description	Quality	Part no.
			Pos. 20 Ø600/Ø135	GGG50	690150065
			Pos. 21 Ø550	GGG50	690150066
			Pos. 19 Monteringsplade		690150112
Pos. 20 600 mm	Pos. 21 550 mm	Pos. 19 235 mm			
Crosskill ring 485/530 mm – 550/600 mm			Description	Quality	Part no.
			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 Nav Ø104		690150076
Pos. 22 Loose Crosskill	Pos. 23 Fixed Crosskill	Pos. 24 Hub			

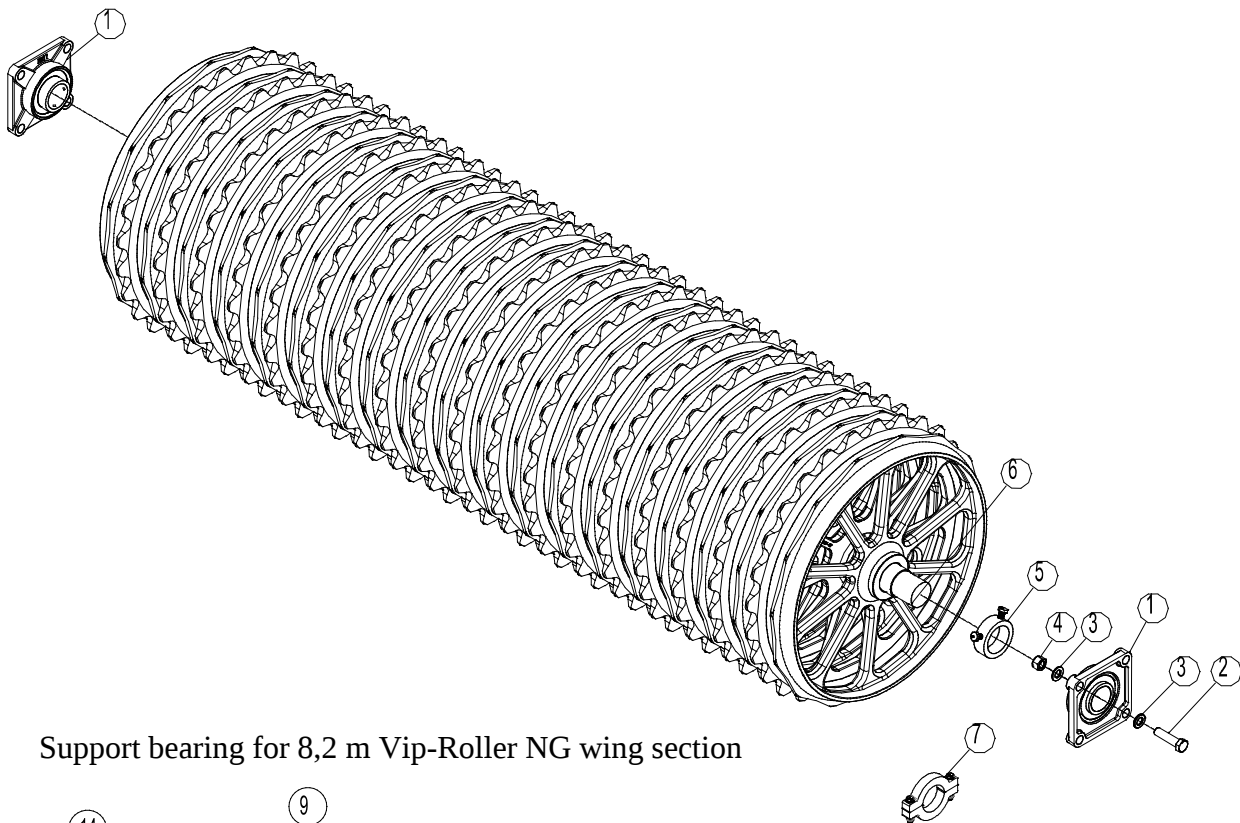
Rings at the support bearing



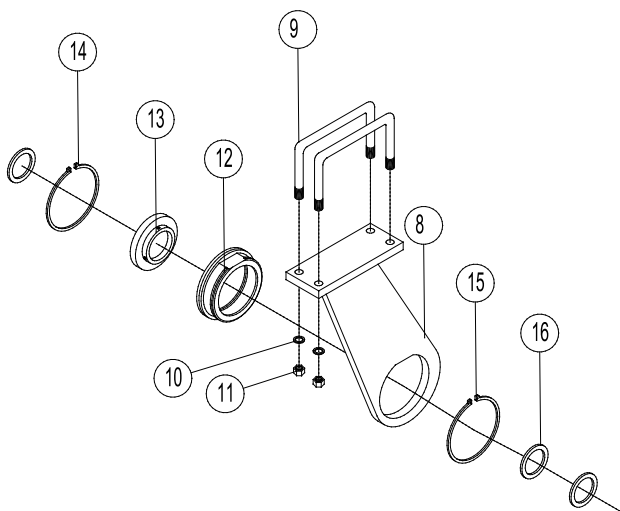
Pos	Description
1	Support bearing (see page 28)
2	Ring with hub 72 mm (see page 22 - 25)
3	Ring with hub 82 mm (see page 22 - 25)
4	Ring with hub 104 (see page 22 - 25)
5	Breaker ring, standard (see page 22 – 25)



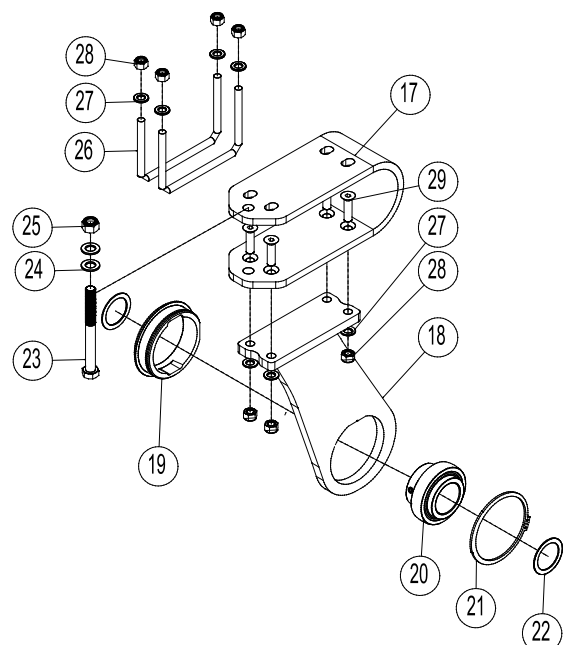
Roller



Support bearing for 8,2 m Vip-Roller NG wing section



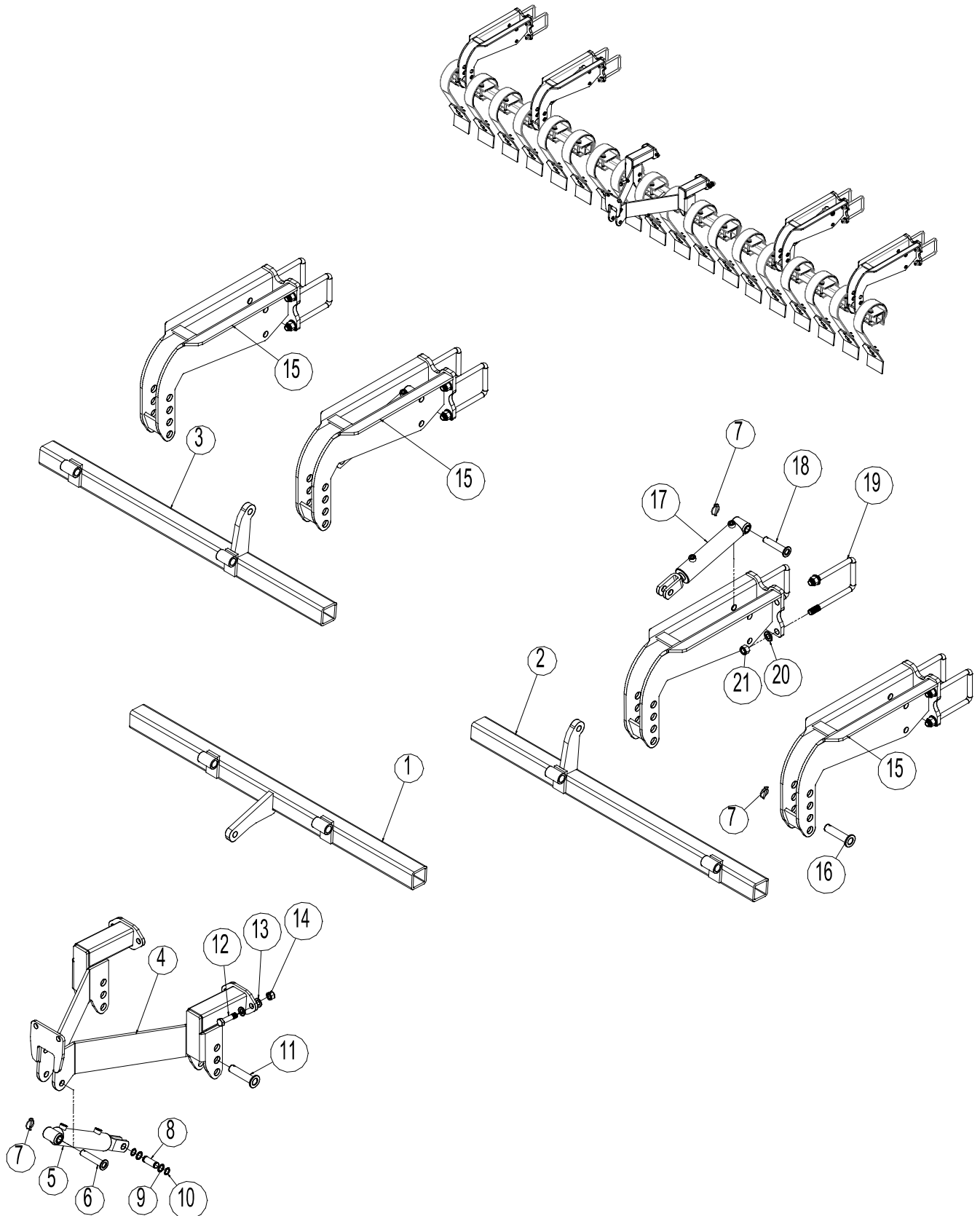
Optional equipment



Pos	Part no.	Description	4,5	5,4	6,3	7,3	8,2
1	690140813	Bearing UCF 211, ø55, 4-huls, Ø60 shaft	6	6	6	6	6
2	690103197	Bolt M16x50 mm 8.8	24	24	24	24	24
3	690117013	Facet washer Ø16 mm	48	48	48	48	48
4	690113008	Safety nut M16	24	24	24	24	24
5	671040400	Stop ring w/bolt Ø60 shaft	12	12	12	12	12
6	678692370	Shaft f/middle section Ø60 CrNiMo6 L=2370	1	1	1	1	1
6	678612370	Shaft f/wing section L=2370 Ø59,95 CK45			2		
6	678612860	Shaft f/wing section L=2860 Ø59,95 CK45				2	
6	678633283	Shaft f/wing section Ø60 ST60 L=3283					2
7	690150090	Adjustment shim 15mm. Incl. bolte - washers - nuts					
7	690150099	Adjustment shim 20mm. Incl. bolte - washers - nuts					
7	690150091	Adjustment shim 25mm. Incl. bolte - washers - nuts					
8	630764006	Console for bearing					2
9	690110105	U-bolt M16x100x200x100					4
10	690117013	Facet washer Ø16 mm					4
11	690113008	Safety nut M16					4
12	630764008	Holder for bearing UC 312					2
13	690140115	Bearing UC 312					2
14	7355000	Pressure ring, narrow for UCF 312 bearing					2
15	691370150	Seeger sirclip ring, outside Ø150 DIN 471					2
16	690117102	Support washer 80 x 60,5 x 2mm					2
Optional equipment							
17	630670617	Spring					2
18	630367135	Console for support bearing w/spring					2
19	630764008	Holder for bearing UC 312					2
20	690140115	Bearing UC 312					2
21	691370150	Seeger sirclip ring, outside Ø150 DIN 471					2
22	690117102	Support washer 80 x 60,5 x 2mm					2
23	690103213	Bolt M20x200 mm 8.8					2
24	0272310	Facet washer Ø20 mm					4
25	0264110	Safety nut M20 DIN985					2
26	690110105	U-bolt M16x100x200x100					4
27	0272290	Facet washer Ø16 mm					16
28	0264090	Safety nut M16					16
29	0229000	Hex. countersunk screw M16x60 8.8 FBZ DIN 7991					8



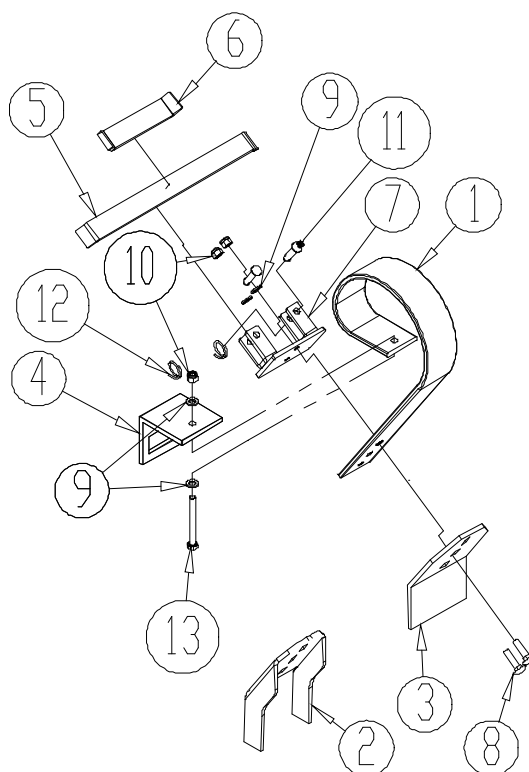
Spring-Board



Pos	Part number	Description	4,5	5,4	6,3	7,3	8,2
1	633033020	Spring-Board bar, middle	1	1			
1	1325296	Spring-Board bar, middle			1	1	1
2	1325090	Spring-Board bar, left	1				
2	1325091	Spring-Board bar, left		1			
2	1325299	Spring-Board bar, left			1		
2	1325302	Spring-Board bar, left				1	
2	1325339	Spring-Board bar, left					1
3	1325088	Spring-Board bar, right	1				
3	1325092	Spring-Board bar, right		1			
3	1325298	Spring-Board bar, right			1		
3	1325301	Spring-Board bar, right				1	
3	1325338	Spring-Board bar, right					1
4	1325075	Horn for middle section	1	1			
4	1325285	Horn for middle section			1	1	1
5	690200160	Cylinder 50/30x155mm Ø20 w/double end	1	1	1	1	1
	690200046	Gasket kit 50/30 mm (Laizhou)					
6	69520087F	Pin Ø20 L=87 Welded facet washer/hole for split	1	1	1	1	1
7	0378200	Ring split Ø4,5mm – galvanized	9	9	9	9	9
8	69520046D	Pin Ø20 L=46 mm	1	1	1	1	1
9	690115010	Washer Ø20/Ø28x1,0 mm	2	2	2	2	2
10	691372020	Seeger sirclip ring Ø20 mm Din 471 outside	2	2	2	2	2
11	69525095F	Pin Ø25 L=95 Welded facet washer/hole for split	2	2	2	2	2
12	0235852	Bolt M16x65 mm DIN 931	2	2	2	2	2
13	0272290	Facet washer 16mm, fzb	4	4	4	4	4
14	0264090	Safety nut M16	2	2	2	2	2
15	635054520	Horn f/Spring-Board	4	4	4	4	4
16	69525095F	Pin Ø25 L=95 Welded facet washer/hole for split	4	4	4	4	4
17	690200160	Cylinder 50/30x155mm ø20 w/double end					
	690200046	Gasket kit 50/30 mm (Laizhou)					
18	69520087F	Pin Ø20 L=87 Welded facet washer/hole for split	2	2	2	2	2
19	690110406	U-bolt M18x150x100x150 mm	8	8			
19	690110403	U-bolt M18x200x100x200 mm			8	8	8
20	0272300	Facet washer Ø18 mm	16	16	16	16	16
21	0264100	Safety nut M18	16	16	16	16	16



Spring-Board w/fixed mounted wearing points and locking system

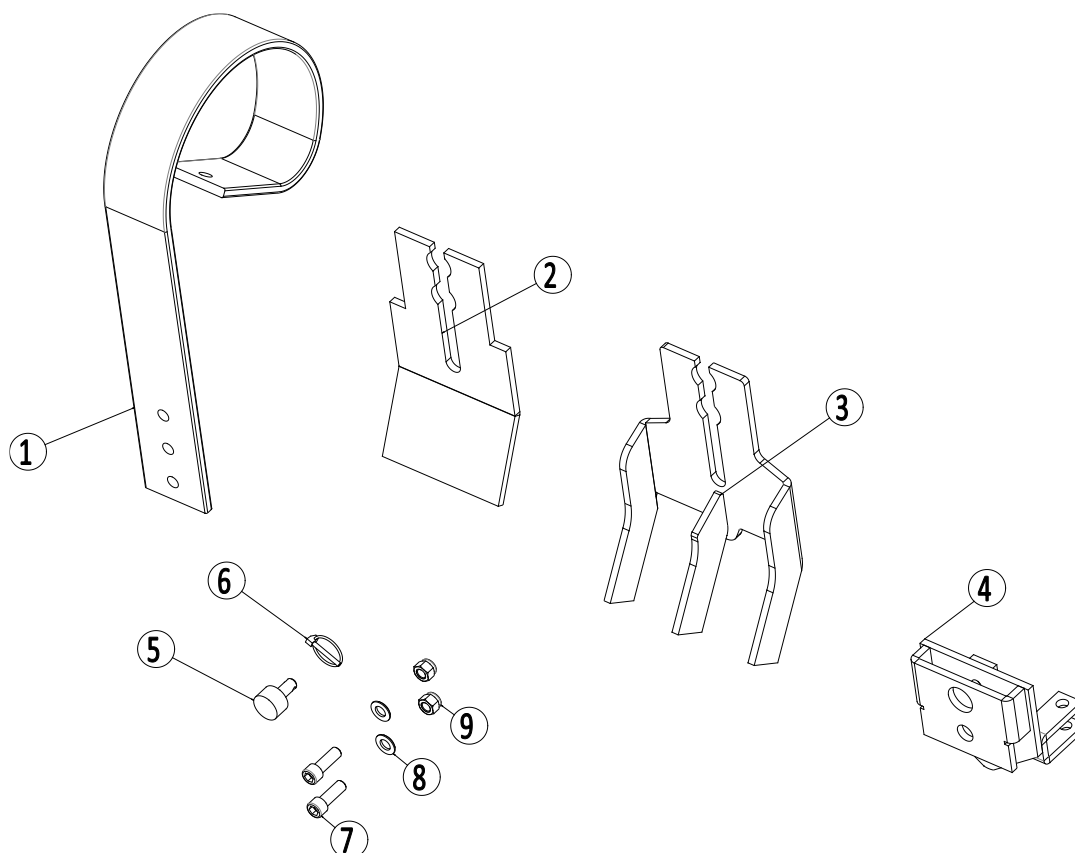


Pos	Part number	Description	No.
1	0422145	Spring-board tine 80x10 mm - long	1
2	633052150	2-tine slicing point (crust breaker)	1
3	633052100	Flat wearing point	1
4	633052200	Clamp for Spring-Board tine	1
5	633055710	Locking bar for traverse locking system (long)	1
6	633055700	Locking bar for traverse locking system (short)	1
7	633055500	Bracket for traverse locking system	1
8	690101220	Carriage bolt M12x45 mm 8.8	2
9	690117014	Facet washer Ø12 mm	4
10	690113006	Safety nut	3
11	69512040K	Pin Ø12,5 L = 40 mm St 52 Yellow Zink Plated	2
12	690134000	Locking ring 30xø3 mm Galvanized	2
13	690103098	Bolt M12x110 mm 10.9	1

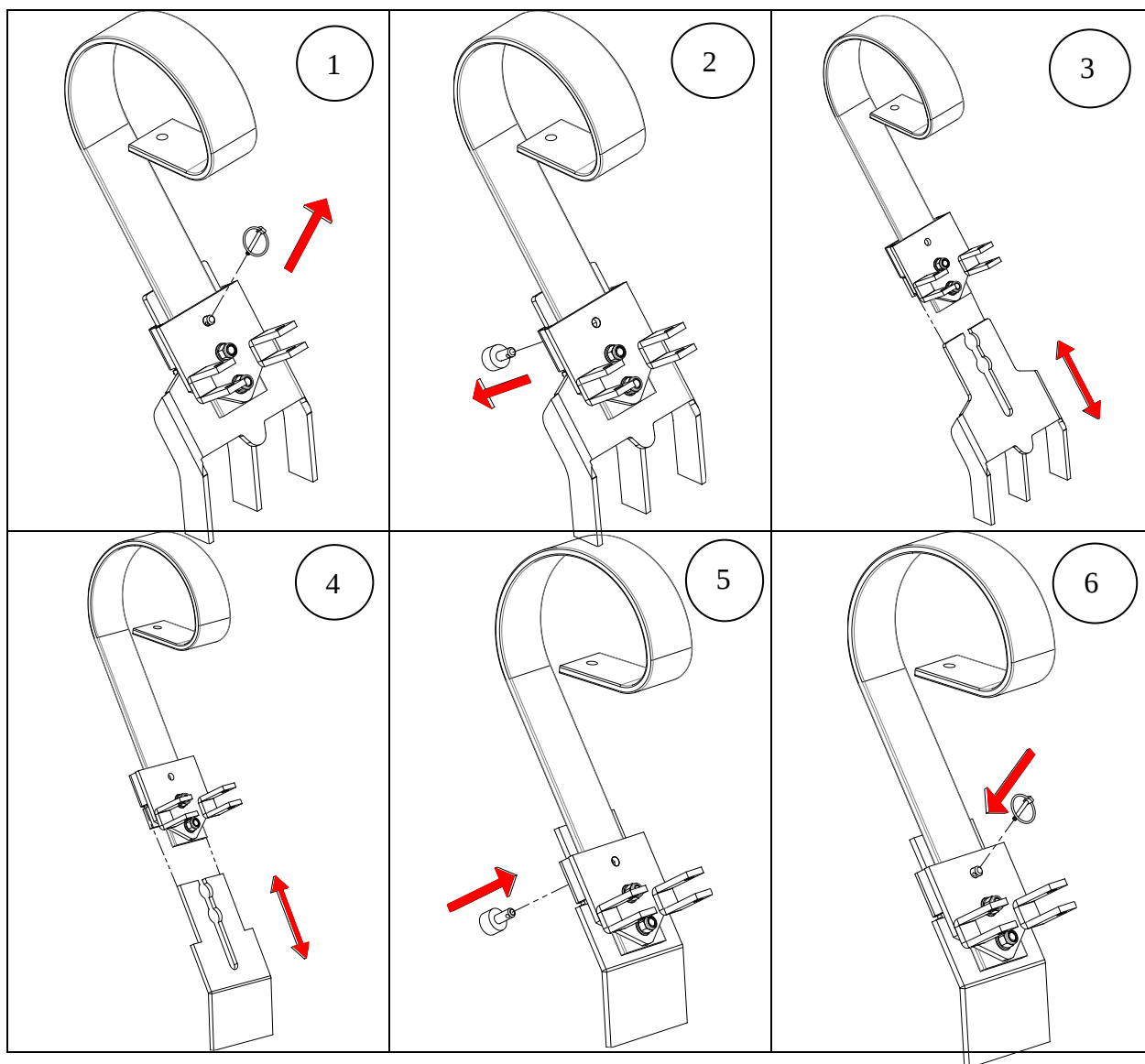
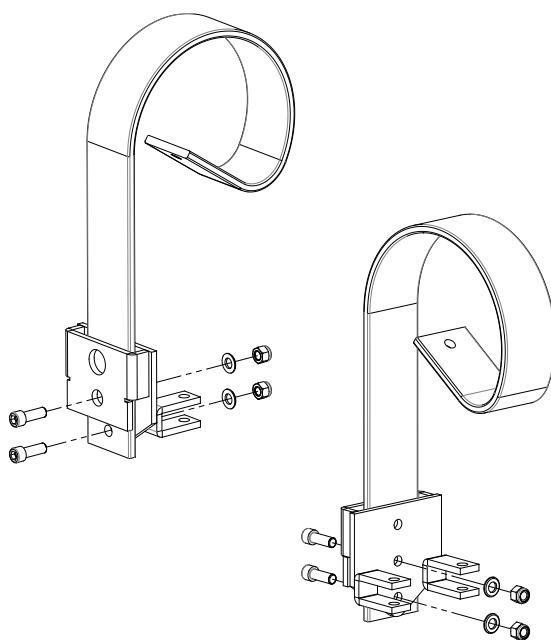


Mounting of Spring-Board

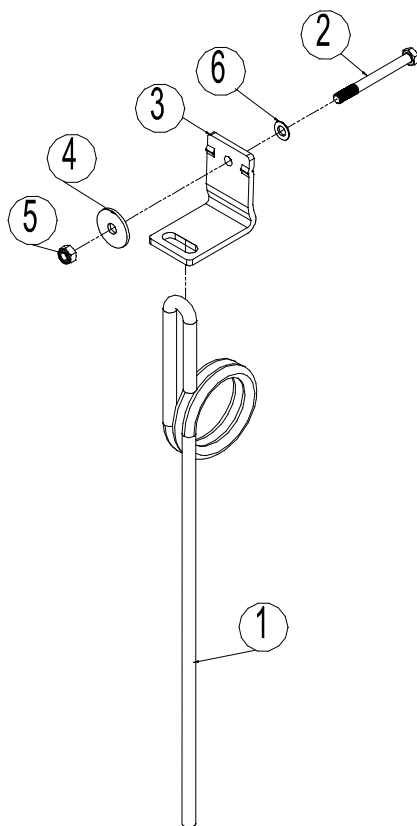
Wearing points and slicing plate points (crust breaker) with traverse locking system and Easy-Change



Pos	Part number	Description	Pieces
1	0422145	Spring-Board tine	1
2	1170388	Flat wearing point – Easy-Change	1
3	1170410	3-tine slicing point (crust breaker) – Easy-Change	1
4	1170389	Easy-Change bracket for traverse locking system	1
5	1170391	Locking pin	1
6	0378200	Ring split Ø4,5 mm	1
7	0227842	Bolt M12 x 35 mm 8.8	2
8	0272270	Facet washer	2
9	0264070	Safety nut M12	2



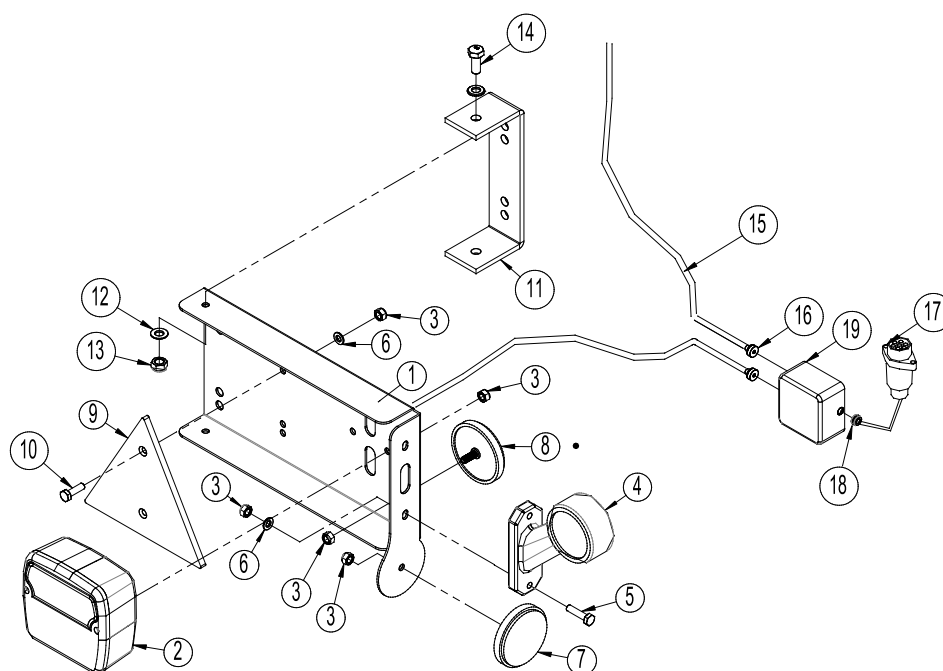
Ø16 mm tines



Pos	Part number	Description	Pieces in each tooth
1	633055609	Tine Ø16 H=655mm	1
2	0235480	Bolt M12x120 mm 8.8	1
3	633055612	Clamp	1
4	0272820	Washer	1
5	0264070	Safety nut M12, fzb DIN985	1
6	0272270	Facet washer 12mm fzb, DIN125B	1



LED – light



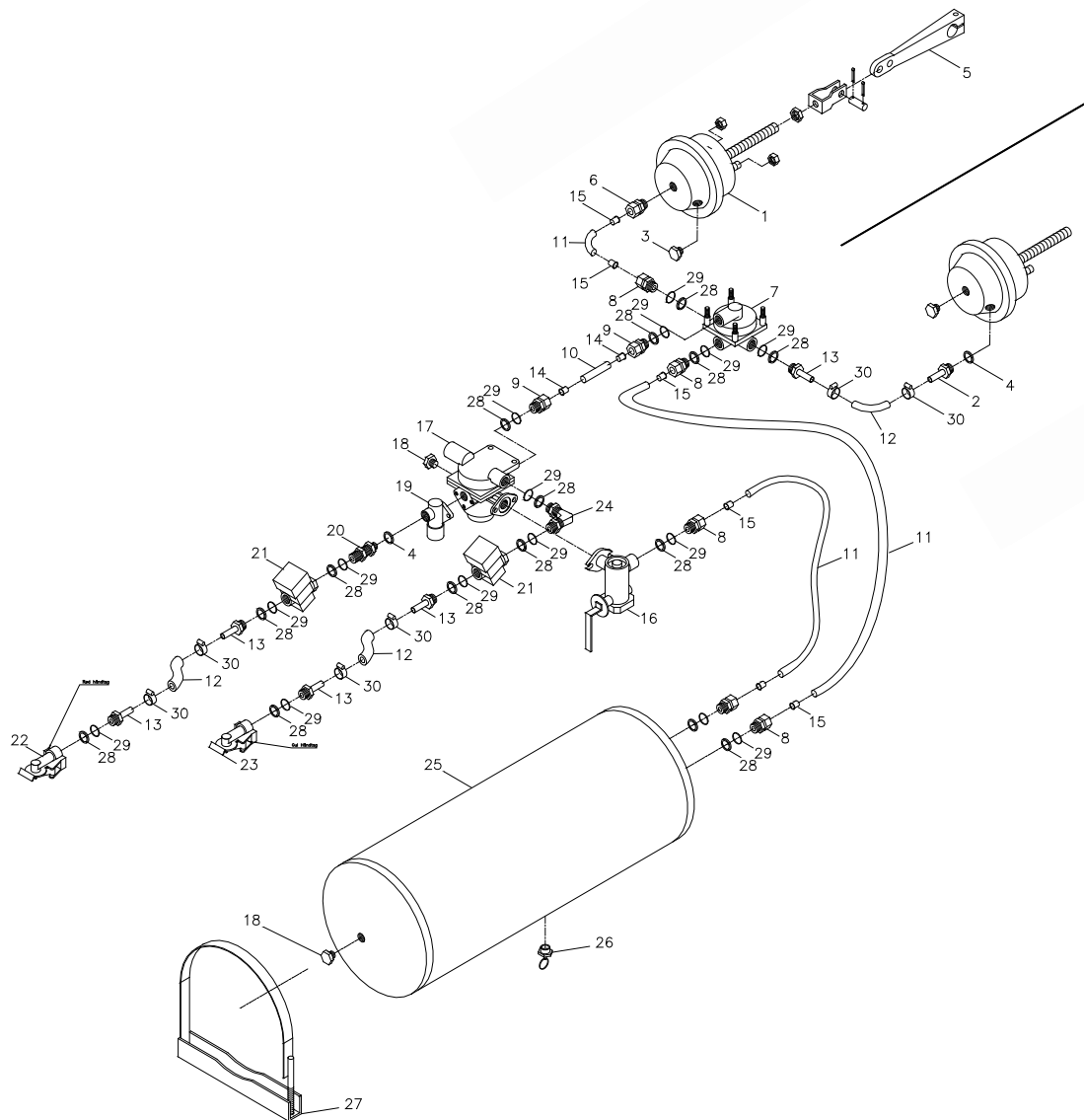
Pos.	Part no.	Description	Pieces
1	7357505	Holder for light (L)	1
	7357508	Holder for light (R)	1
2	7357504	Rear light	2
3	0264030	Safety nut M5	16
4	7357507	Side marker light (L)	1
	7357509	Side marker light (R)	1
5	0234340	Bolt M5x25 mm	4
6	0272240	Facet washer Ø5	8
7	0656240	Reflex, yellow	2
8	0656250	Reflex, hvid	2
9	0521030	Reflex (triangle) red 125/145	2
10	0233860	Bolt M5x20 mm	4
11	7357516	Bracket	2
12	0272240	Facet washer Ø6 mm	16
13	0264040	Safety nut M6	8
14	0234330	Bolt M6x20 mm	4
15	690160080	Wire 5 x 1mm ² (Before ordering find the length)	
16	7357545	Ruta seal nipple M20 8-12mm Grey RAL7001	2
17	690160070	7 pin plug DIN 72 577-ISO 1724	1
18	7357546	Rubberbushing Nr. 38A Ø10/3 sort	1
19	0520492	Connecting box 105x105x60 mm	1

Notice: Amount of wires and length of wires can be various, depending on mashine type. Check number and measurements of all cables before ordering the spare parts.

[illegible]

Pneumatic brakes

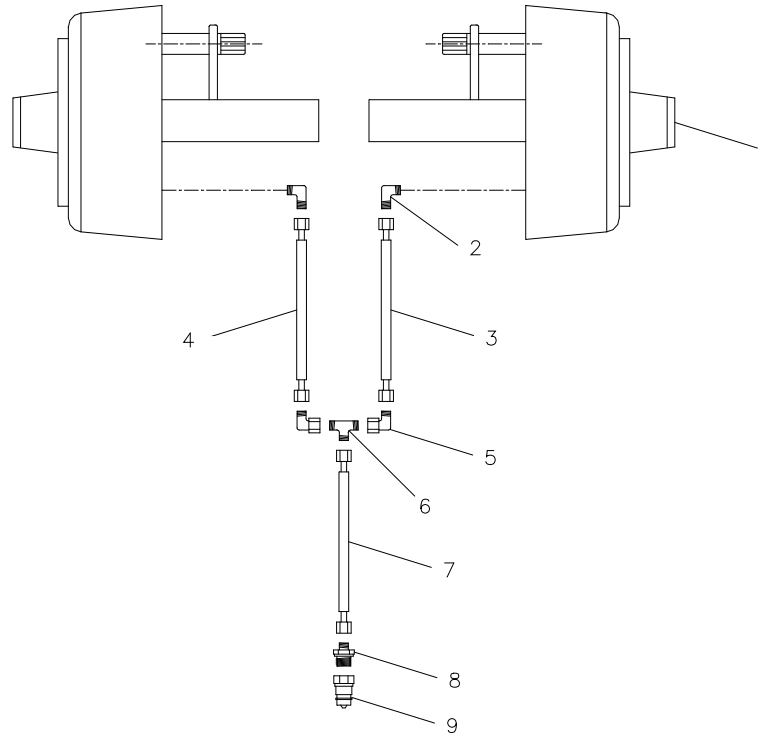
For mashines w/rubbber hose for the pneumatic cylinder



Pos.	Part number	Description	w/nylontube for membranecyl.	w/nylontube for membranecyl.
1	690190001	Membrane cylinder 16"	2	2
2	690190070	Hose fitting M16x1,5 m/ Ø12 hose	0	2
3	690190005	Test connection, straight M16x1,5	2	2
4	690208102	Bonded seal PP 45-12	1	3
5	690190010	Mounting kit, short double sides	2	2
6	690202930	Hose fitting, straight M16x1,5 Ø15 hose	2	0
7	690190015	Relay valve M22x1,5	1	1
8	690202941	Hose fitting, straight M22x1,5, Ø15 hose	6	4
9	690202940	Hose 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, m/Ø12 hose	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 force regulator M22x1,5	1	1
17	690190025	Trailer 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 (rød)	1	1
23	690190046	Hose coupling M22x1,5 (gul)	1	1
24	690190030	V-fitting M22x1,5	1	1
25	690190050	Air tank 40 ltr	1	1
26	690190051	Drainage valve	1	1
27	690190052	Suspension for air reciever	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



Hydraulic brakes

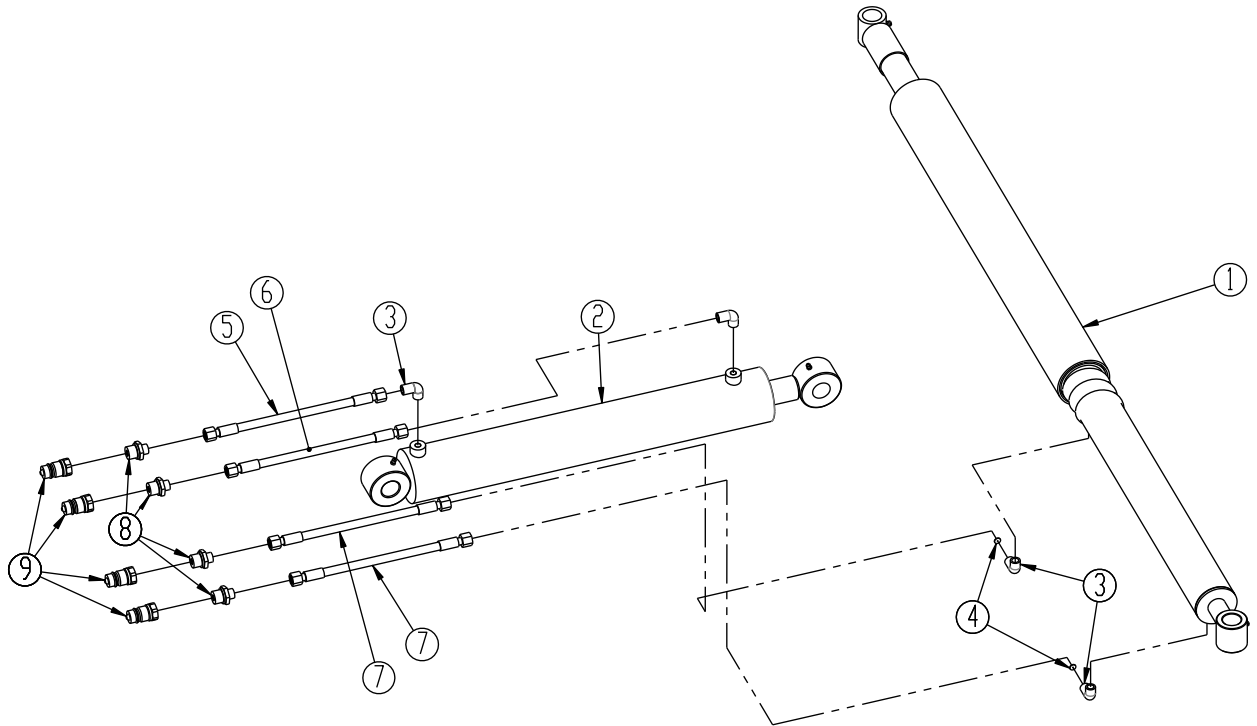


Pos.	Part number	Description	Pcs.
1	690141032	Hub w/brake 3750 kg TVZ 300Gx90 internal cylinder, axle70x70	2
1a	690141150	Brakecylinder indiv TVZ	2
1b	690141151	Brake shoes , (set of 2 pcs.) TVZ	2
2	690203006	Hose fitting, angle 10-3/8" BSP	2
3	690201018	Hydraulic tube 1480mm 1/4" st/st	1
4	690201053	Hydraulic tube 1260mm 1/4" st/st	1
5	690203016	Adjustable angle 10mm	2
6	690203015	Connector T10	1
7	690201025	Hydraulic tube 5640mm 1/4" st/st	1
7a	690201012	Hydraulic tube 6000mm 1/4" st/st	1
7b	690201028	Hydraulic tube 6700mm 1/4" st/st	1
8	690203003	Hose fitting, straight 10-1/2" BSP	2
9	690203013	Quickcoupling 1/2" BSP ISO567	2

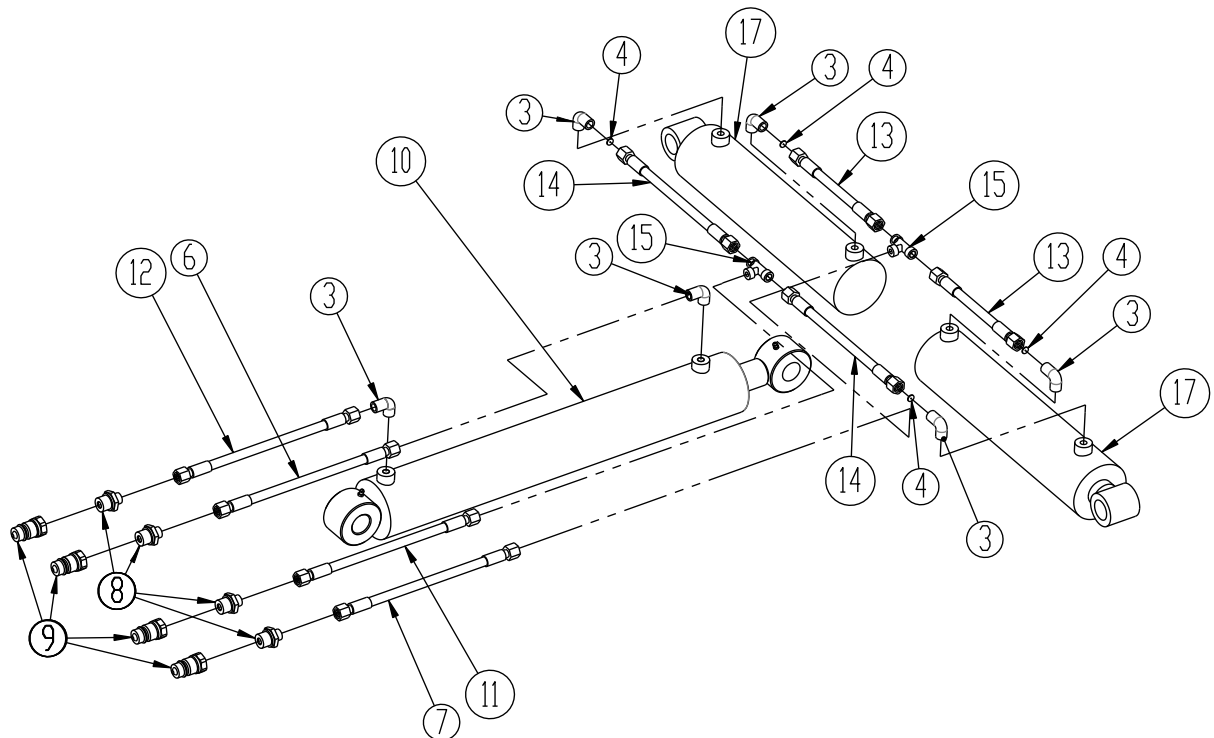


11. Hydraulic

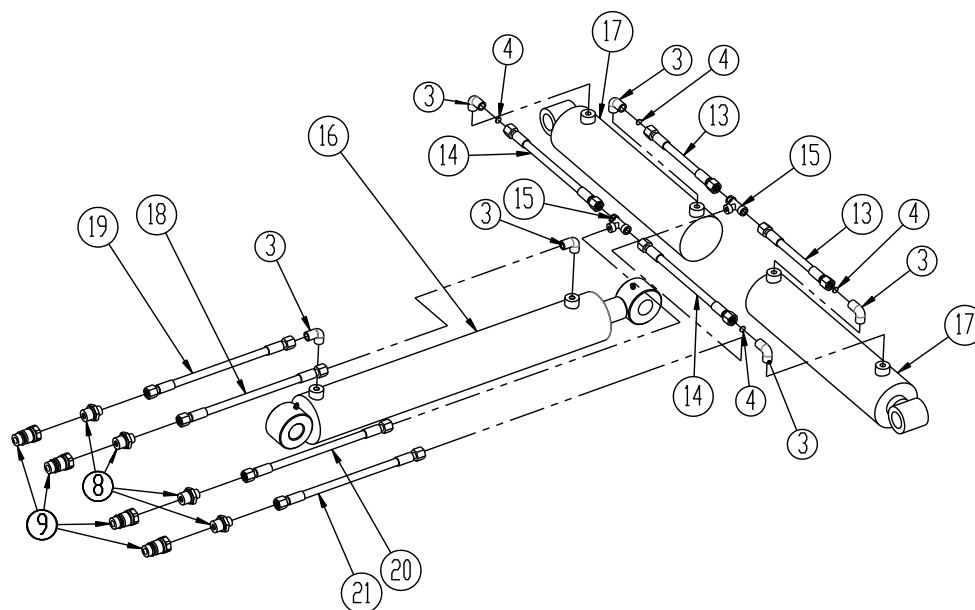
4,5 and 5,4 meter



6,3 and 7,3 meter

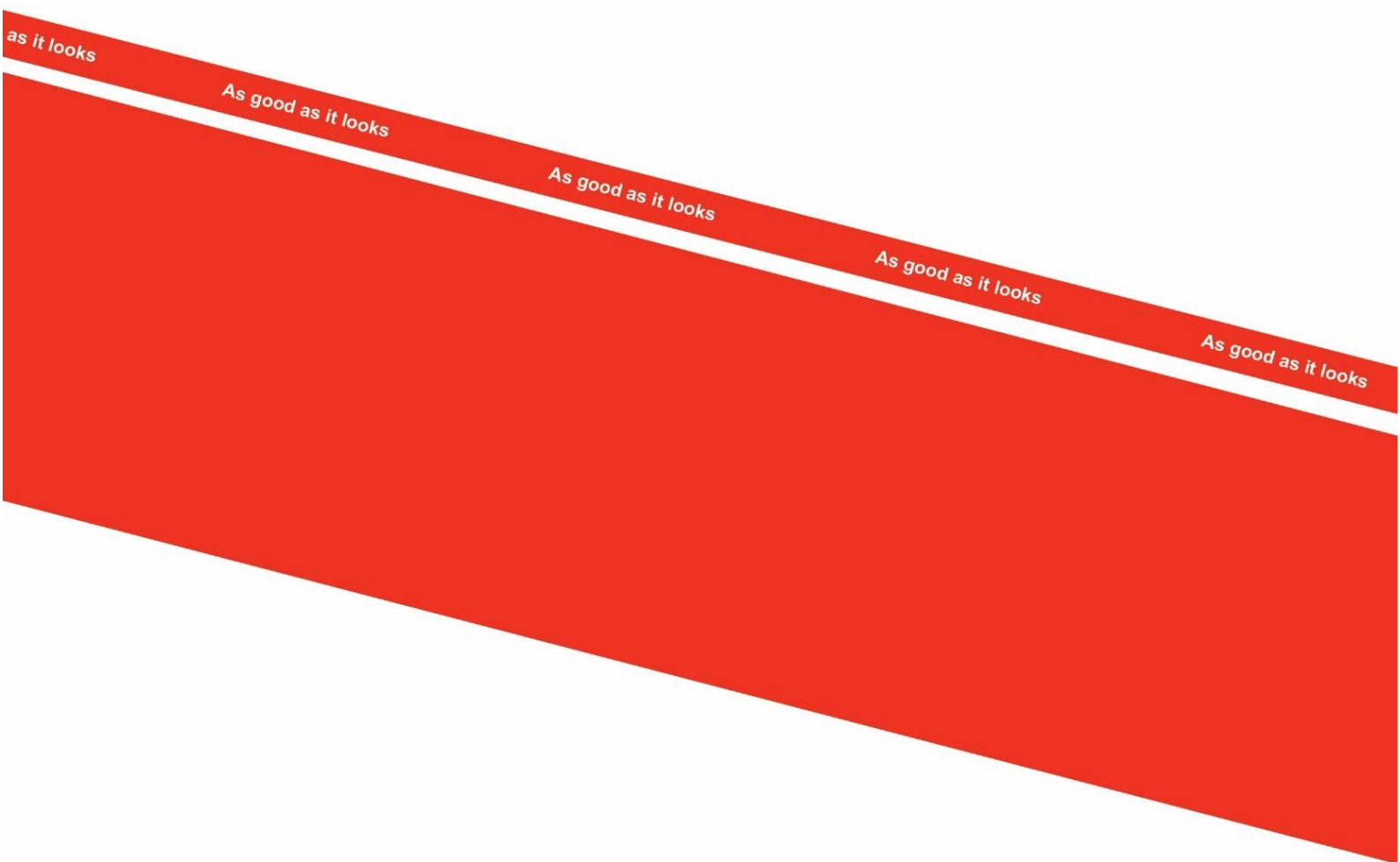


8,2 meter



Pos	Part number	Description	4,5 - 5,4	6,3 - 7,3	8,2
1	1325095	Cylinder, wing	1	-	-
2	690200050	Cylinder tip 80/40 x 500 mm	1	-	-
3	690203006	Fitting 90° male/male VA10LK 3/8"	4	6	6
4	690207901	Restrictor (1 mm)	2	4	4
5	690201005	Hydraulic hose 1/4" L=3300 mm	1	-	-
6	690201038	Hydraulic hose 1/4" L=4000 mm	1	-	-
6	690201029	Hydraulic hose 1/4" L=4300 mm	-	1	-
7	690201011	Hydraulic hose 1/4" L=5350 mm	2	-	-
7	690201025	Hydraulic hose 1/4" L=5640 mm	-	1	-
8	690203003	Fitting straight GA10LK 1/2"	4	4	4
9	690203001	Quick coupling 1/2", male	4	4	4
10	690200020	Cylinder tip 100/50 x 700 mm	-	1	-
11	690201012	Hydraulic hose 1/4" L=6000 mm	-	1	-
12	690201007	Hydraulic hose 1/4" L=3700 mm	-	1	-
13	690201040	Hydraulic hose 1/4" L=625 mm	-	2	2
14	690201035	Hydraulic hose 1/4" L=990 mm	-	2	2
15	690203015	Connector T10 3 x 1/4"	-	2	2
16	7345085	Cylinder tip 120/50 x 800 mm	-	-	1
17	0462700	Cylinder, wing 80/40 x 280mm	-	2	2
18	690201011	Hydraulic hose 1/4" L=5350 mm	-	-	1
19	690201003	Hydraulic hose 1/4" L=4550 mm	-	-	1
20	690201074	Hydraulic hose 1/4" L=7450 mm	-	-	1
21	690201028	Hydraulic hose 1/4" L=6700 mm	-	-	1





The design is subject to modification without notice.