

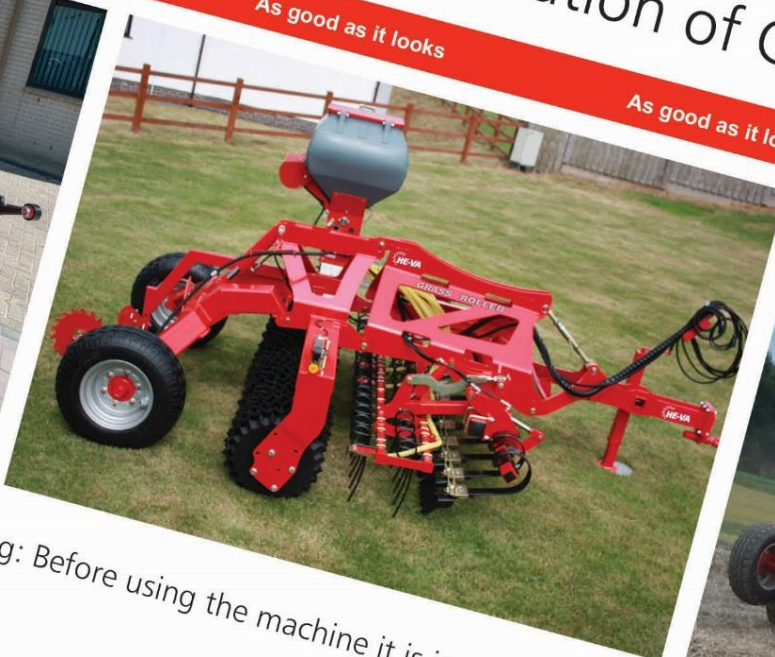
UK

HE-VA

as it 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.

Grass-Roller

Rigid, trailed and three-point mounted: 2.9 m

Manual no. 8000381-01 060225



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EC DECLARATION OF CONFORMITY

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

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

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

The declaration comprises the following machine:

Grass – Roller 2,9 m

Nykøbing, December 29th 2009



Villy Christiansen

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

Delivery check

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

Check that the frame construction has not been damaged. You should also check that the roller blocks have not been exposed to impacts, which may have damaged the roller tube or the double-sealed ball bearings.

Finally check that the transport wheel nuts are tightened and OK. Check the air pressure in the tyres: approx. 3.8 bar/55 psi.

Machine description

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



Technical specifications

Working width	Roller type / Ring type		No. of spokes	Weight without equipm. and without water	Weight without equipm. with water	Power requirement HP	Transport width	Total length
Lift mounted:								
2,90m	710mm Plain roller			1.035	1.995	80-120	3,00 m	2,00 m
2,90m	620mm/24" Camb.	5S		1.510	-	80-120	3,00 m	2,00 m
2,90m	550/600 mm Star ring			1.440	-	80-120	3,00 m	2,00 m
Trailed:								
* 2,90m	710mm Plain roller			1.515	2.475	50-70	3,00 m	4,60 m
* 2,90m	620mm/24" Camb.	5S		1.990	-	50-70	3,00 m	4,60 m
* 2,90m	550/600 mm Star ring			1.920	-	50-70	3,00 m	4,60 m
* The machine requires 1 double-acting oil outlet								
Tine spacing				Cm	8,5			
Maximum forward speed:				Km/h	25			
Electrical system:								
Battery voltage:				V	12			
Plug for lights:					7 – poles			
Hydraulic system:								
Ma. working pressure:				Bar	220			
Pump effect:				L/min	Min 15			
Oil type:				Hydro Texaco HD32				



Safety instructions

General information

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

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

The machine must be lowered to firm ground.

The hydraulics must be relieved.

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

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

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

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

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

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

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

Transport on public roads

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

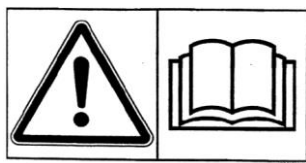
Front axle load

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

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



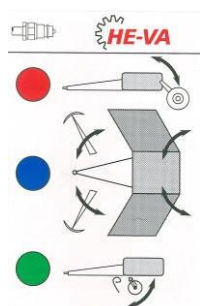
Safety - and other markings on the machine



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



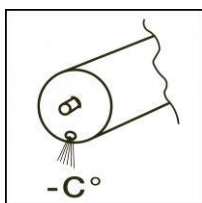
Plate with serial number and year of manufacture.



Indication label for the machine's hydraulic systems.

Red: Wheel frame

Green: Extra equipment



Empty the water out of the rollers before the temperature gets below 0 C°.

If this is not observed, our guarantee obligations will no longer apply.



Tighten up the bolts regularly.

If this is not observed, our guarantee 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
Wheel bolt M18x1,5 fine-threaded	433 Nm		
Wheel bolt M22x1,5 fine-threaded	803 Nm		



Operating instructions

Attachment

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

Important:

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

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

The trailed model requires 1 double-acting oil outlet.

The hoses for the wheel frame are provided with **red** cable straps.

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



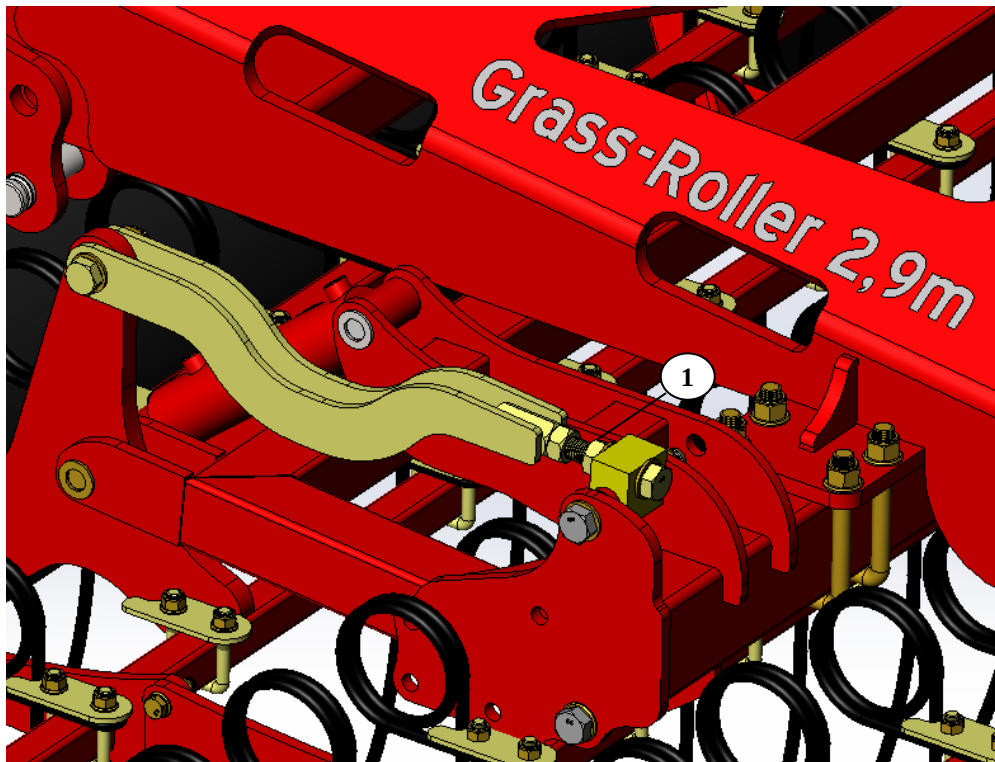
Settings and adjustment

Long finger harrow

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

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

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



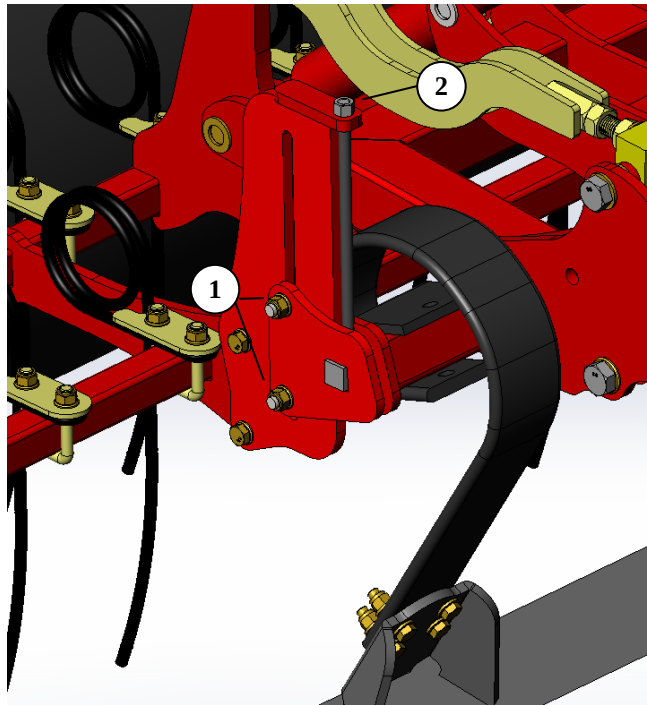
Each tine can be worn approx. 200 mm. However, they will be less flexible and may need earlier replacement.



Levelling board

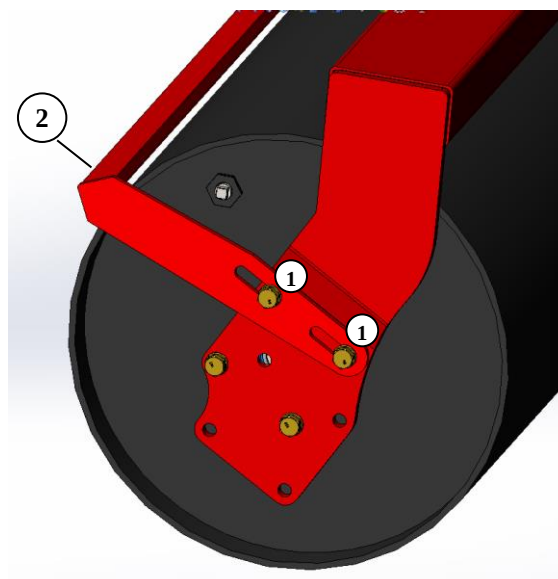
The levelling board is raised in proportion to the wear and tear of the tines. This is performed by loosening 2 nuts ①, then using a 19 mm spanner on the thread spindle, which determines the height ②. When the desired height is reached, the 2 nuts are tightened again ①.

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



Roller scraper

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



Maintenance

Lubrication

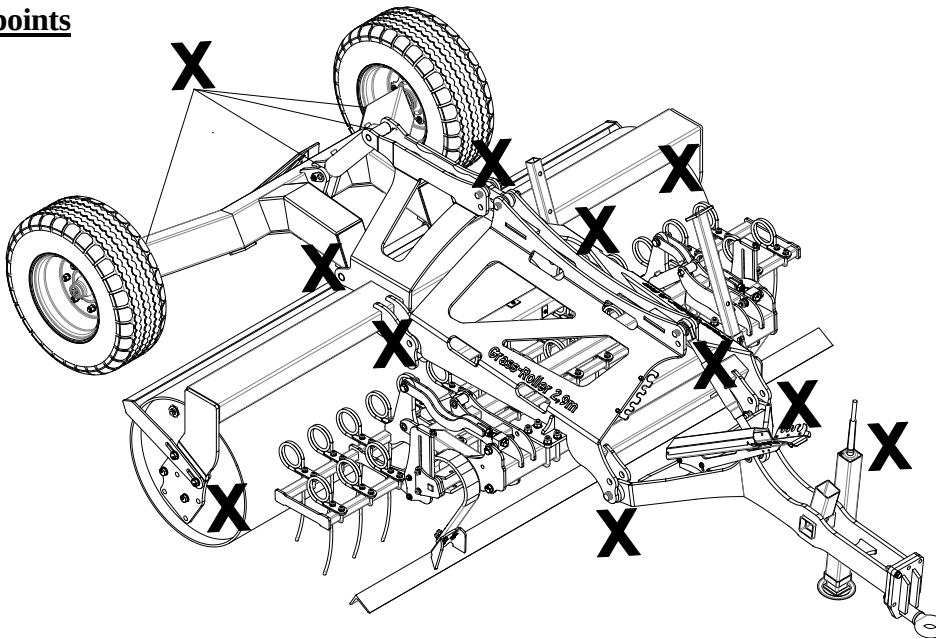
Important:

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

After every approx. 10 working hours all movable parts. After every 30 working hours the tip cylinder's pins and the 3 pins in the drawbar are to be lubricated.

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

Lubrication points



Important:

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

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

Empty the water from the rollers to avoid frost damage.

Important:

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

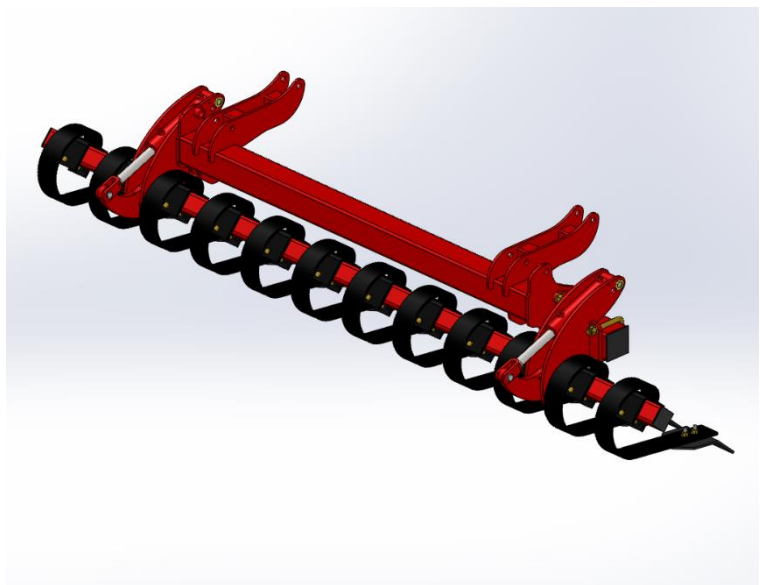
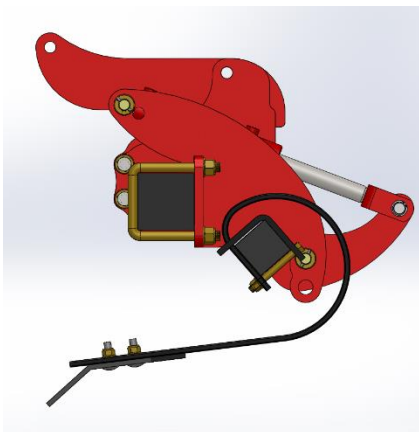
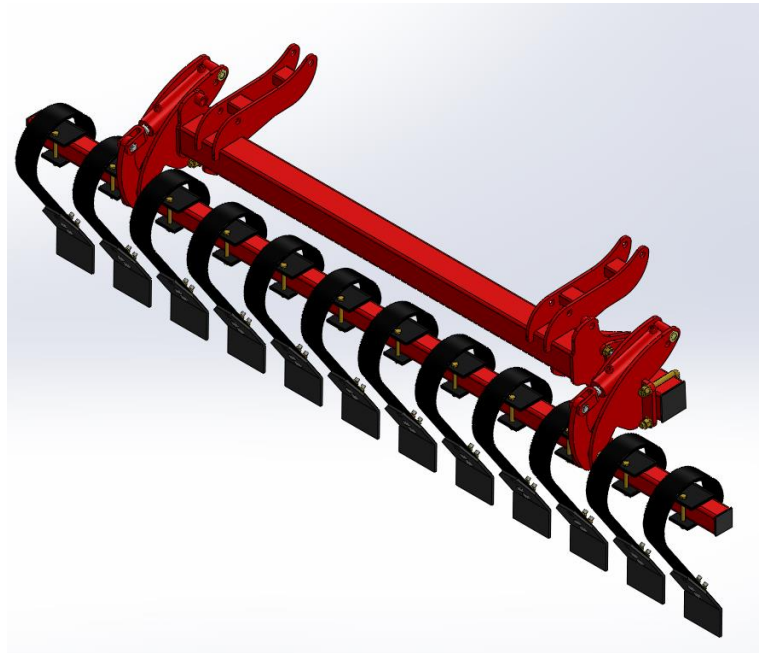
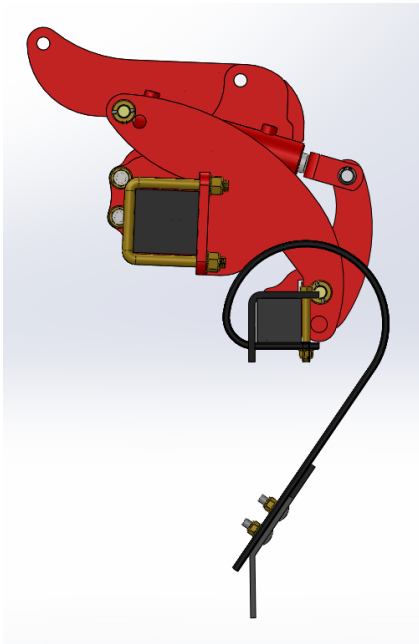
Repairs

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



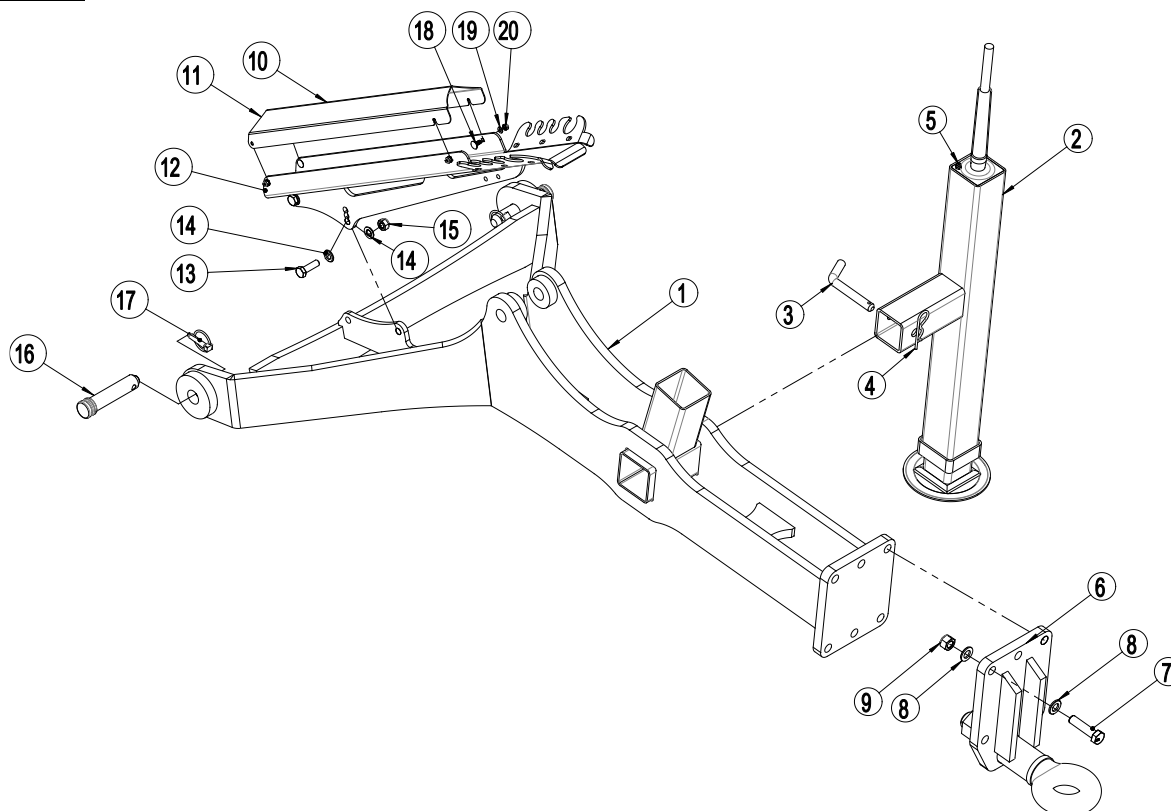
Spring-Board

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



Spare parts list

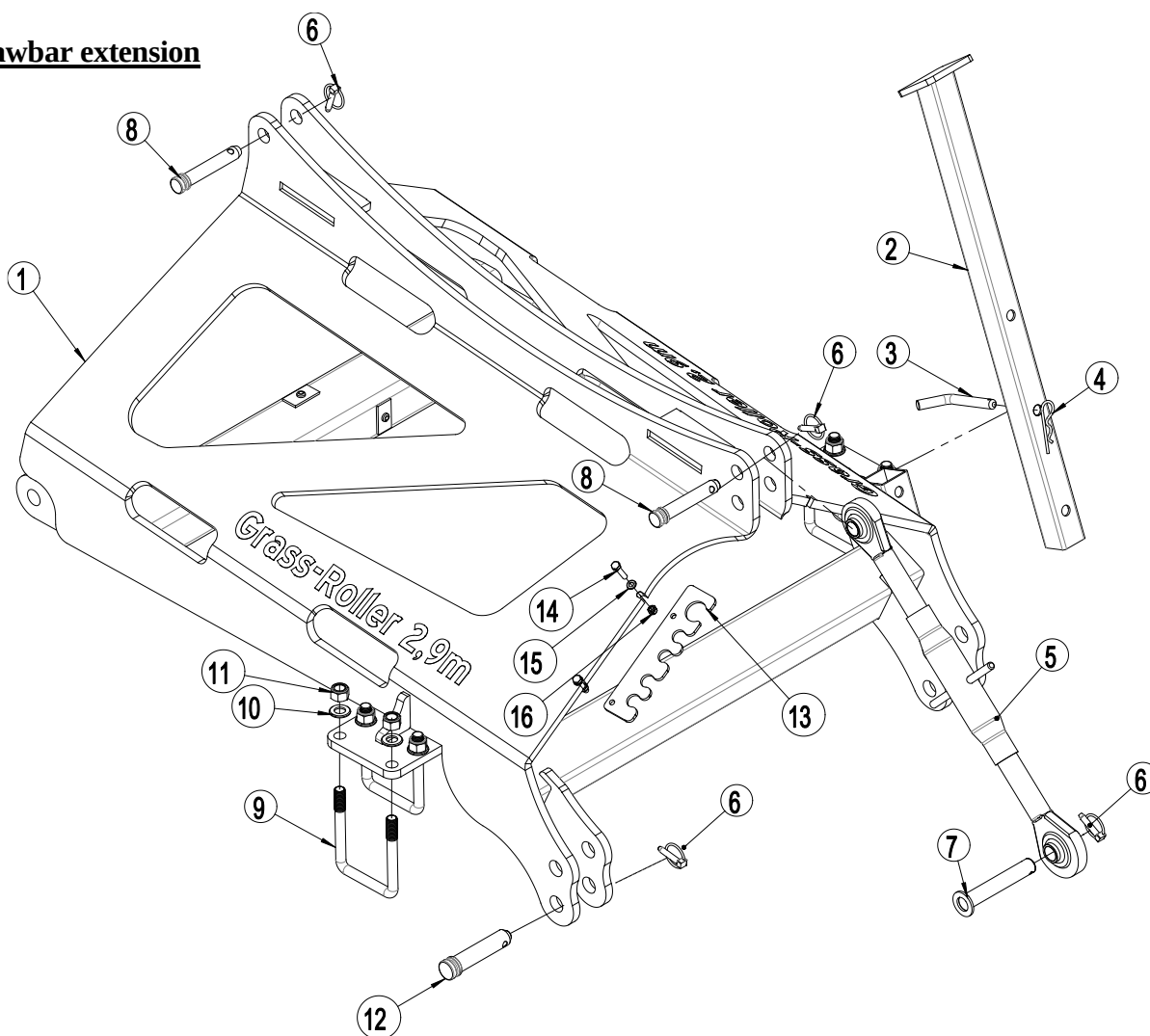
Drawbar



Pos.	Item no.	Designation	2,9m
1	1200020	Drawbar	1
2	690141095	Support leg 3500 kg	1
3	1030280	Pin for support leg Ø16 L=94	1
4	0377400	R-clip Ø4, galvanized	1
5	690136029	Lubricating nipple M8	1
6	630757028	Cpl. drawbar with Ø50 turnable draw eye	1
7	0235851	Bolt M16x65 10.9	6
8	0272290	Facet plate Ø16	12
9	0264090	Locking nut M16	6
10	7345010	Cpl. antenna support w/bolts	1
11	7345003	Holder for hoses, top part	1
12	7345004	Holder for hoses, bottom part	1
13	0235360	Set screw M12x40 8.8 DIN 933	2
14	0272270	Facet plate Ø12	4
15	0264070	Locking nut M12 DIN985	2
16	69528096J	Pin Ø28 L=96 w/Ø40 head	2
17	690134004	Ring pin Ø10x40	2
18	0246060	Carriage bolt M6x16 DIN 603	4
19	0272240	Facet plate Ø6	8
20	0264040	Locking nut M6	4



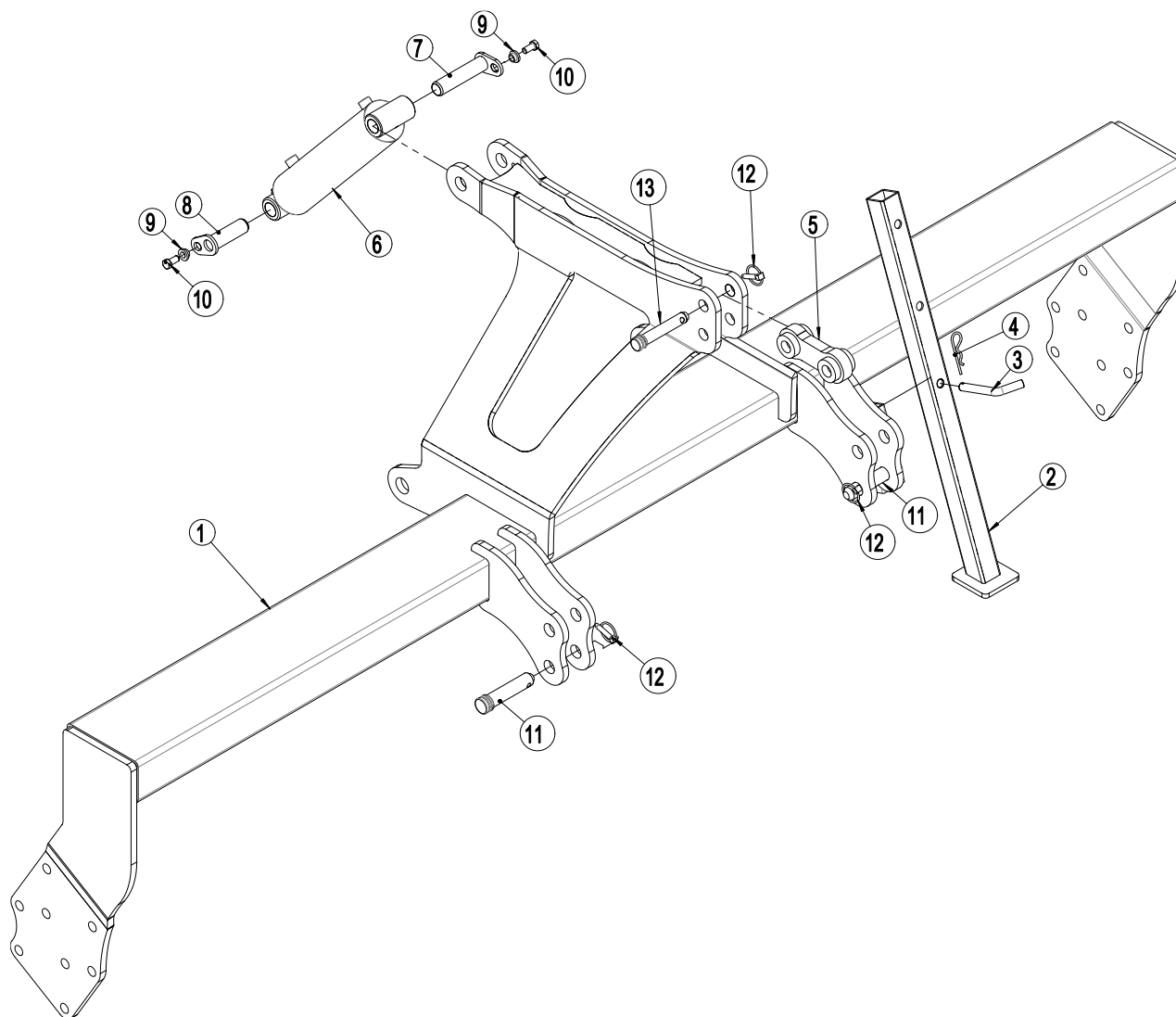
Drawbar extension



Pos.	Item no.	Designation	2,9m
1	1200001	Cpl. extended drawbar	1
2	1200050	Support leg	1
3	1030280	Pin for support leg Ø16 L=94	1
4	0377400	R-clip Ø4, galvanized	1
5	690302011	Top link for 36.01 – 55.01 heavy model (36x3,0 430-620 mm)	1
6	690134004	Ring pin Ø10x40	5
7	69525140F	Pin Ø25 L=61 welded facet plate and clip hole	1
8	69525097J	Pin Ø25 L=97 Pin for top link, w/Ø28 head (Cat.II)	2
9	690110404	U-bolt M18x100x100x100	4
10	0272300	Facet plate Ø18	8
11	0264100	Locking nut M18	8
12	69528096J	Pin Ø28 L=96 w/Ø40 head	2
13	630410050	Parking device for hose	1
14	0234790	Bolt M8x40 8.8	2
15	0272250	Facet plate Ø8	4
16	0264050	Locking nut M8	2



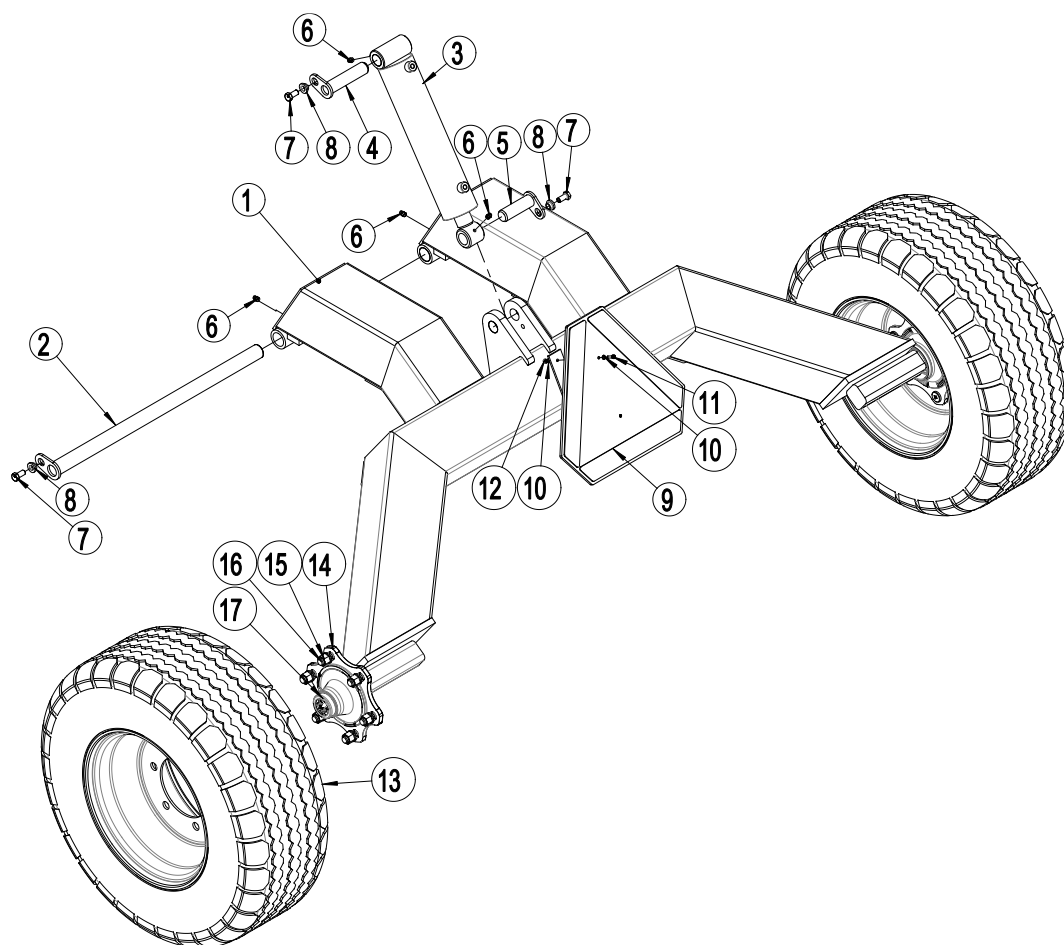
Roller bar



Pos.	Item no.	Designation	2,9m
1	1200002	Roller bar 2,9m	1
2	1200050	Support leg	1
3	1030280	Pin Ø16 L=94	1
4	0377400	R-clip Ø4	1
5	1200034	Top link between roller bar and draw bar	1
6	690200085	Cylinder 80/40x255 Ø30/Ø30	1
7	69430130G	Pin Ø30 L=130	1
8	69430094G	Pin Ø30 L=94	1
9	630532600	Bush	2
10	690101101	Bolt M12x25 8.8 with glue	2
11	69528096J	Pin Ø28 L=96 w/Ø40 head	2
12	690134004	Ring pin, Ø10	3
13	6952597J	Pin Ø25 L=97 w/Ø40 head	1



Wheel frame

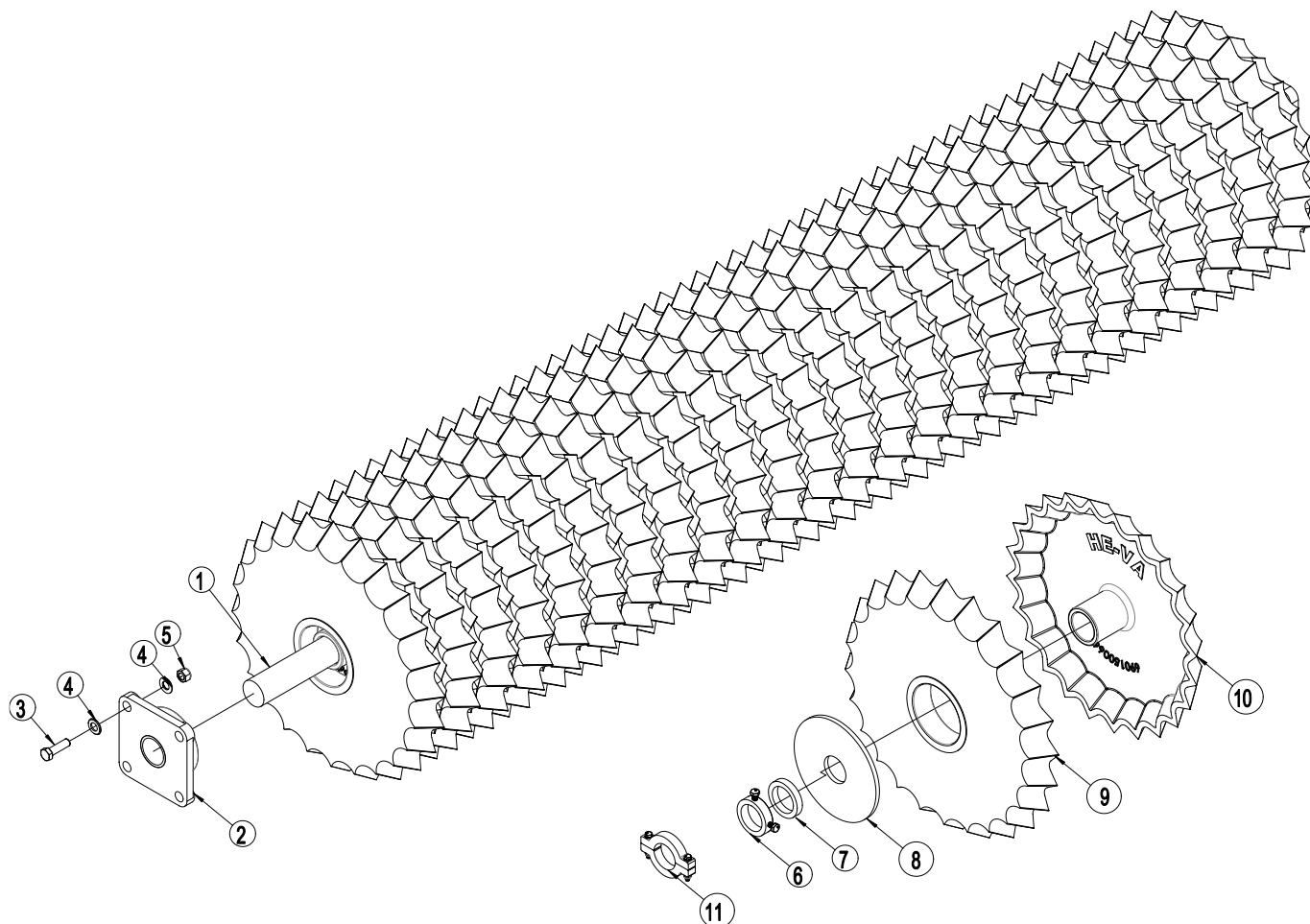


Pos.	Item no.	Designation	2,9m
1	30935000	Wheel frame	1
2	69435700G	Pin Ø35 L=700	1
3	690200085	Cylinder 80/40x255 Ø30/Ø30	1
4	69430130G	Pin Ø30 L=130	1
5	69430095G	Pin Ø30 L=95	1
6	690136029	Lubricating nipple M8	4
7	690101101	Bolt M12x25 8.8 with glue	3
8	630532600	Bush	3
9	690142001	Warning triangle	1
10	0272230	Facet plate Ø5	2
11	0233860	Set screw M5x20 8.8	1
12	0264030	Locking nut M5	1
13	690141310	Wheel 10.0/75x15,3 – 10 ply	2
14	690141025	Hub 1700 kg 6-M18/160-205	2
15	690141055	Hub nut M18	12
16	690141039	Hub bolt M18x1,5x49	12
17	690141314	Hub cap Ø62	2



Rollers etc.

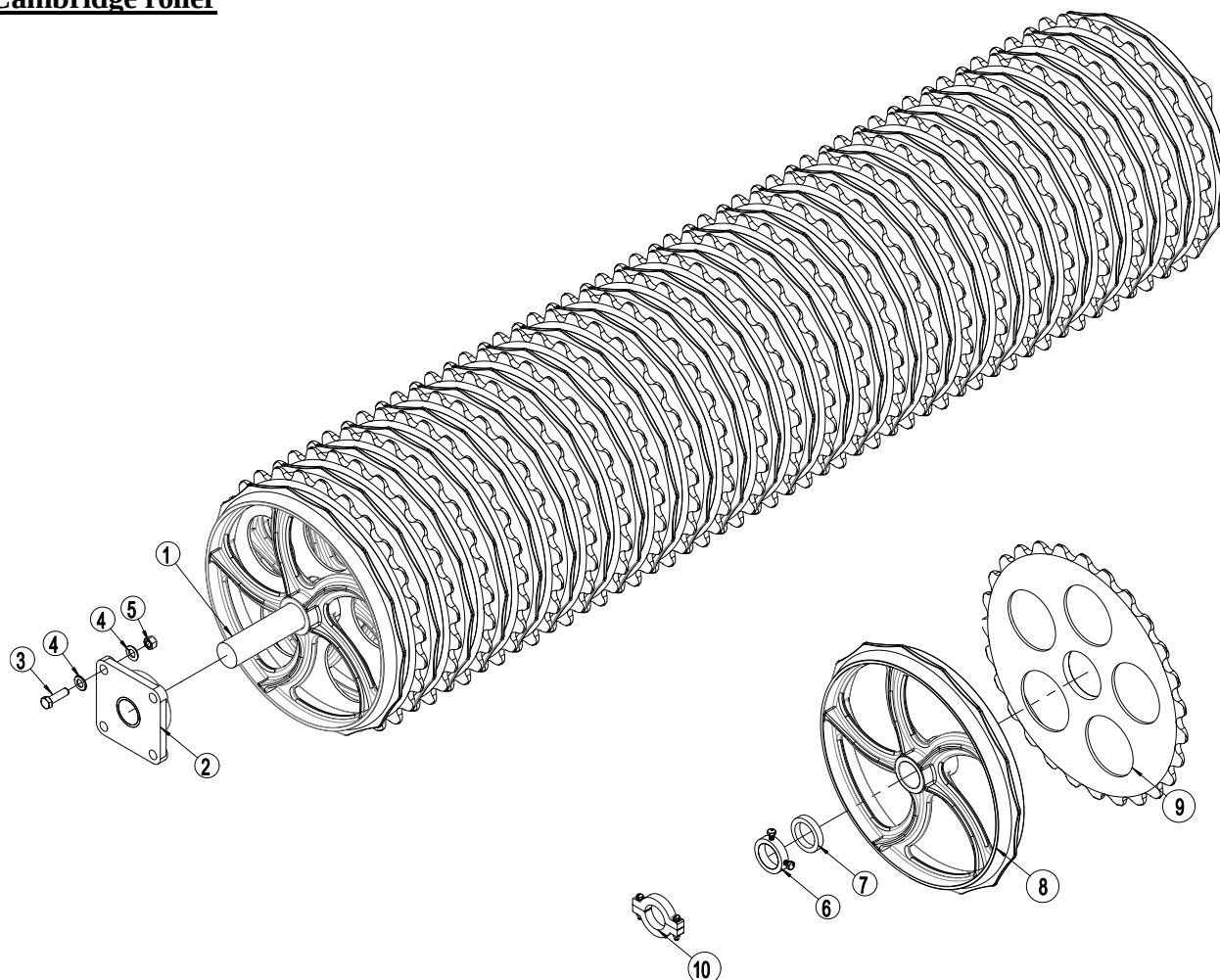
Star roller



Pos.	Item no.	Designation	2,9m
1	678632908	Axle Ø60 L= 2900	1
2	0478971	Bearing UCF 312 (Ø60)	2
3	0236140	Bolt M20x65 8.8	8
4	0272310	Facet plate 20 mm	16
5	0264110	Locking nut M20	8
6	671040400	Stop ring w/bolt	2
7	671040402	Stop ring 15 mm	2
8	690150112	Mounting disc for star ring	1
9	690150065	Star ring Ø600 Center Ø135	27
10	690150066	Star ring Ø550 w/neck Ø60	27
11	690150090	Adjustment shim 15 mm cpl. with bolts and nuts	
11a	690150099	Adjustment shim 20 mm cpl. with bolts and nuts	
11b	690150091	Adjustment shim 25 mm cpl. with bolts and nuts	



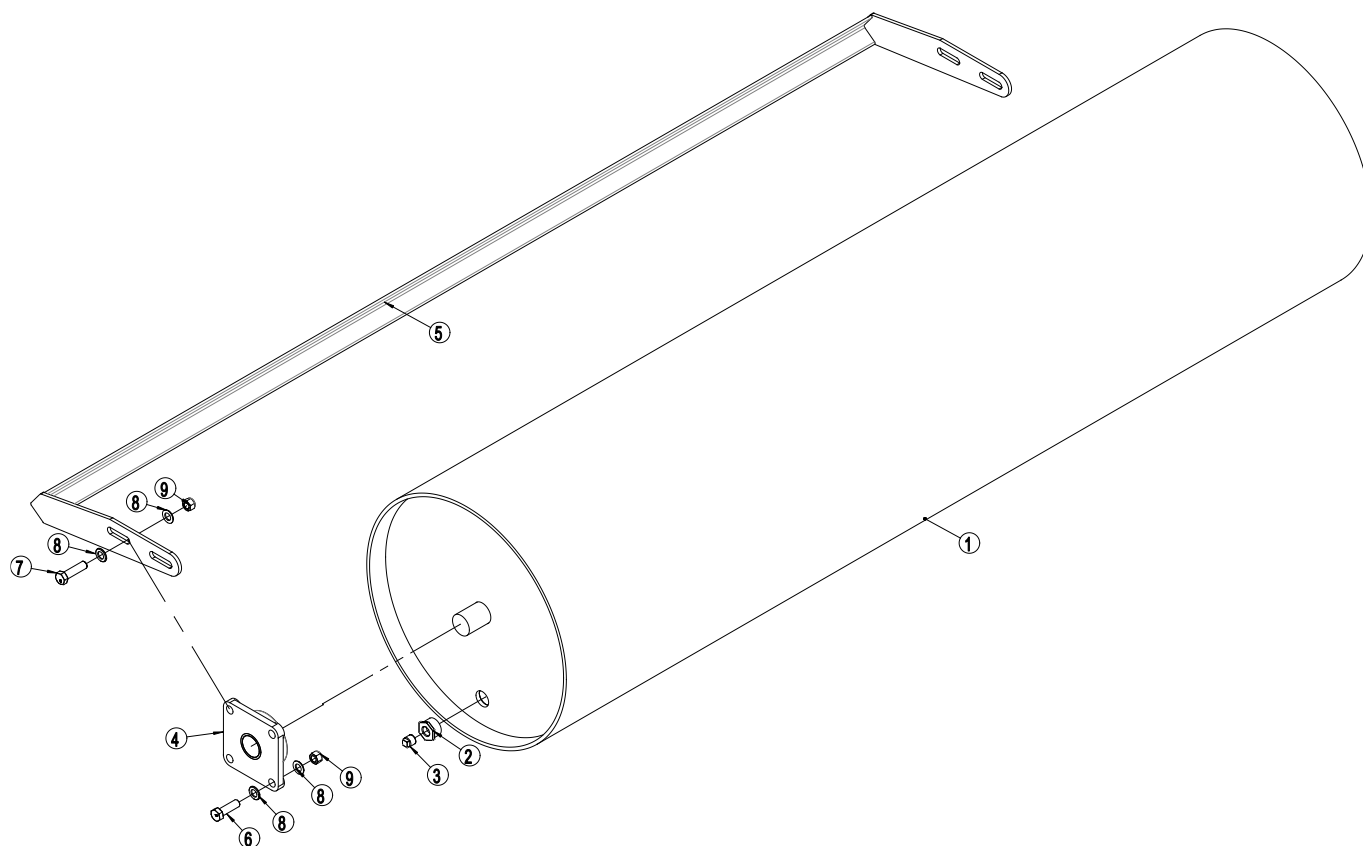
Cambridge roller



Pos.	Item no.	Designation	2,9m
1	678632908	Axle Ø60 L= 2900	1
2	0478971	Bearing UCF 312 (Ø60)	2
3	0236140	Bolt M20x65 8.8	8
4	0272310	Facet plate 20 mm	16
5	0264110	Locking nut M20	8
6	671040400	Stop ring w/bolt	2
7	671040402	Stop ring 15 mm	2
8	690150049	Cambridge ring, plain Ø620mm	26
9	690150059	Cambridge ring, serrated Ø620/Ø60	25
10	690150090	Adjustment shim 15 mm cpl. with bolts and nuts	
10a	690150099	Adjustment shim 20 mm cpl. with bolts and nuts	
10b	690150091	Adjustment shim 25 mm cpl. with bolts and nuts	



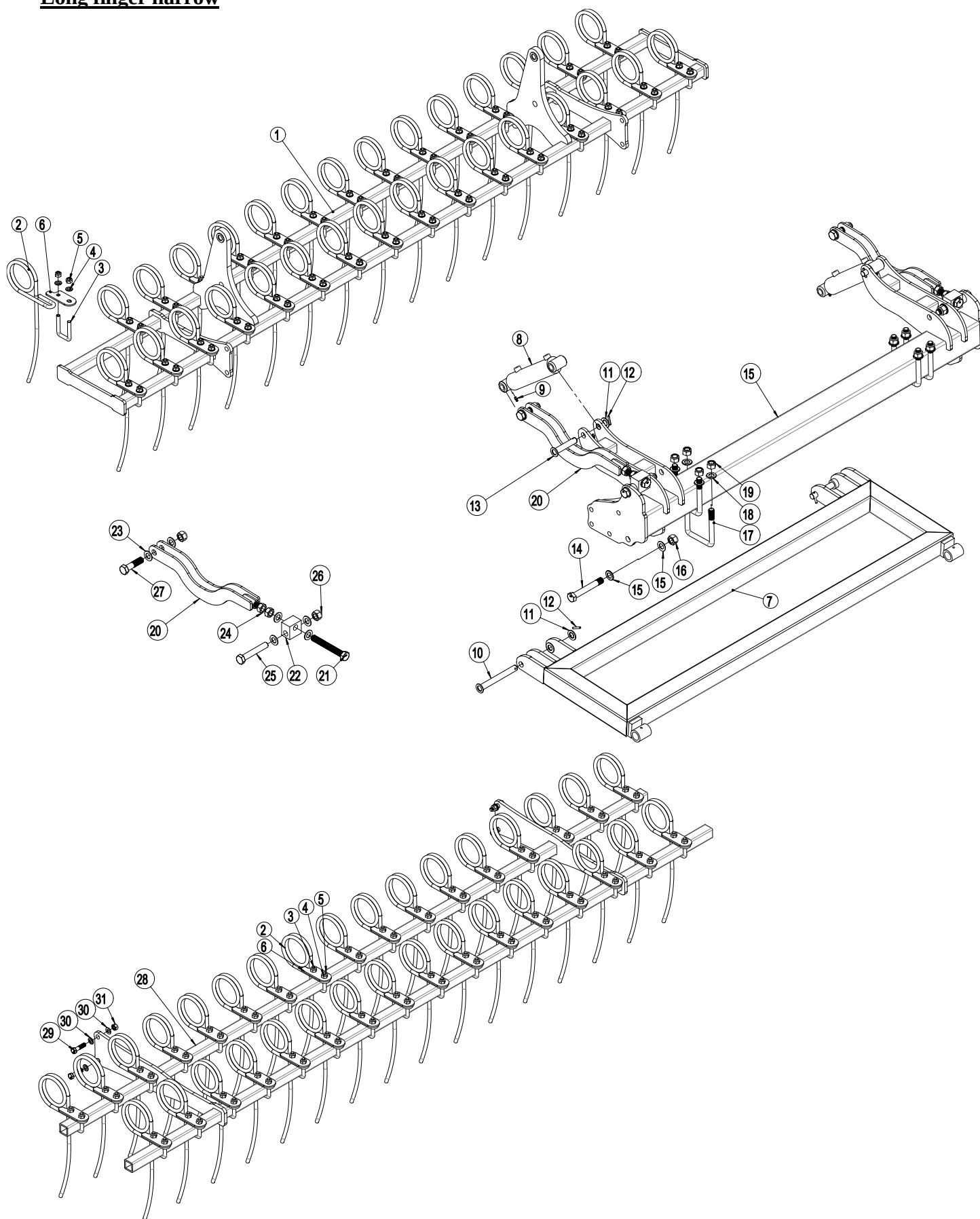
Plain roller



Pos.	Item no.	Designation	2,9m
1	630257110	Roller 2,9 m	1
2	690203320	Bushing 1½" – ¾" - black	2
3	690203320	Plug ¾" RG - black	2
4	0478971	Bearing UCF 312 (Ø60)	2
5	630257113	Scraper bar	1
6	0236140	Bolt M20x65 8.8	4
7	0236160	Bolt M20x75 8.8	4
8	0272310	Facet plate 20 mm	16
9	0264110	Locking nut M20	8



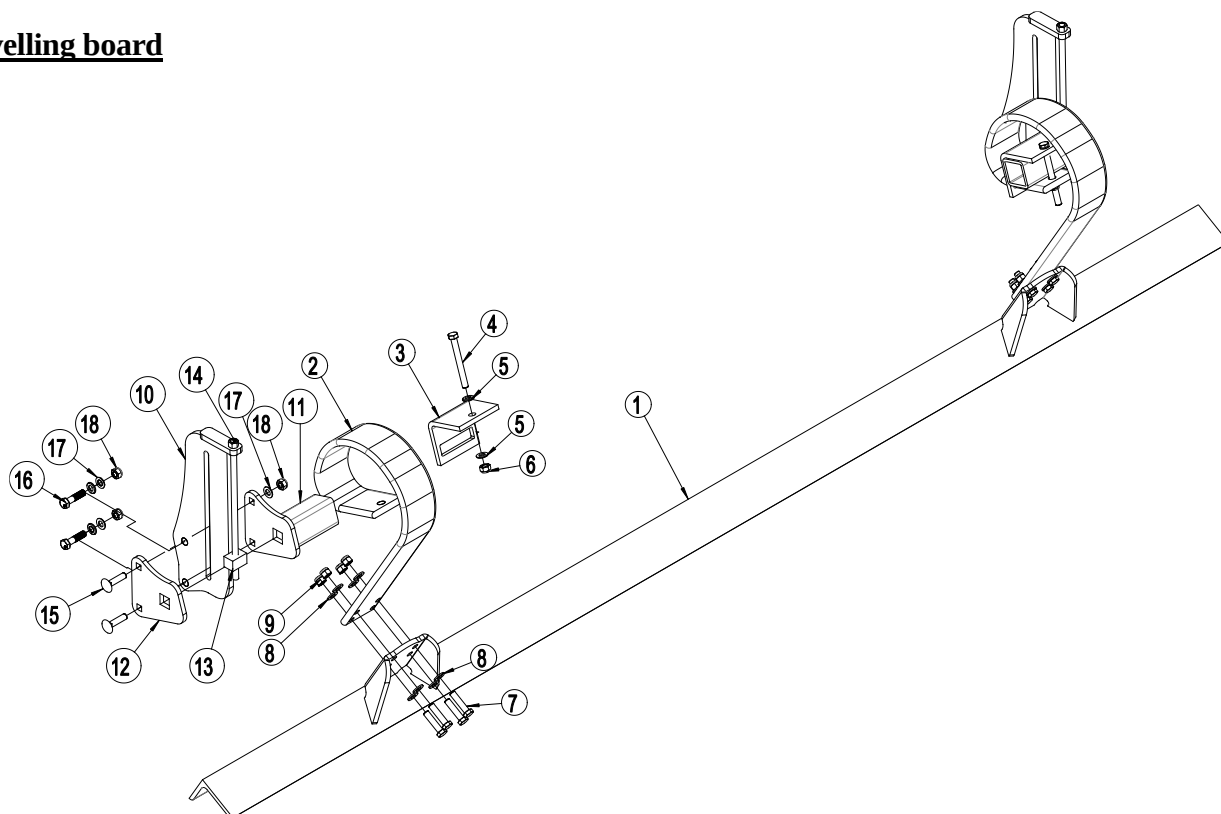
Long finger harrow



Pos.	Item no.	Designation	2,9m
1	1200046	Harrow frame 2,9m	1
2	0426110	Long finger tine Ø12 100 curved	31
3	690110050	U-bolt M12x40x40x40	31
4	0272270	Facet plate 12mm	62
5	0264070	Locking nut M12	62
6	1012521	Tine holder f/long finger tine	31
7	1200042	Lift frame	1
8	690200040	Cylinder 50/30x155mm Ø20/Ø20	2
9	690136001	Lubricating nipple M6	2
10	69520162F	Pin Ø20 L=162	2
11	0272310	Facet plate Ø20	4
12	690130132	Roll pin Ø6x40	4
13	69520087F	Pin Ø20 L=87	2
14	0236230	Bolt M20x140 8.8	2
15	0272310	Facet plate Ø20	2
16	0264110	Locking nut M20	2
17	690110404	U-bolt M18x100x100x100	4
18	0272300	Facet plate Ø18	8
19	0264100	Locking nut M18	8
20	630327521	Parallel arm	2
21	690112015	Bolt M20x150 8.8 set bolt	2
22	630327251	Angle block	2
23	0272310	Facet plate Ø20	12
24	0261410	Nut M20	4
25	0236230	Bolt M20x140 8.8	2
26	0264110	Locking nut M20	4
27	0236170	Bolt M20x80 8.8	2
28	1200053	2 x extra bars	1
29	0235380	Bolt M12x50 8.8	4
30	0272270	Facet plate Ø12	8
31	0264070	Locking nut M12	4



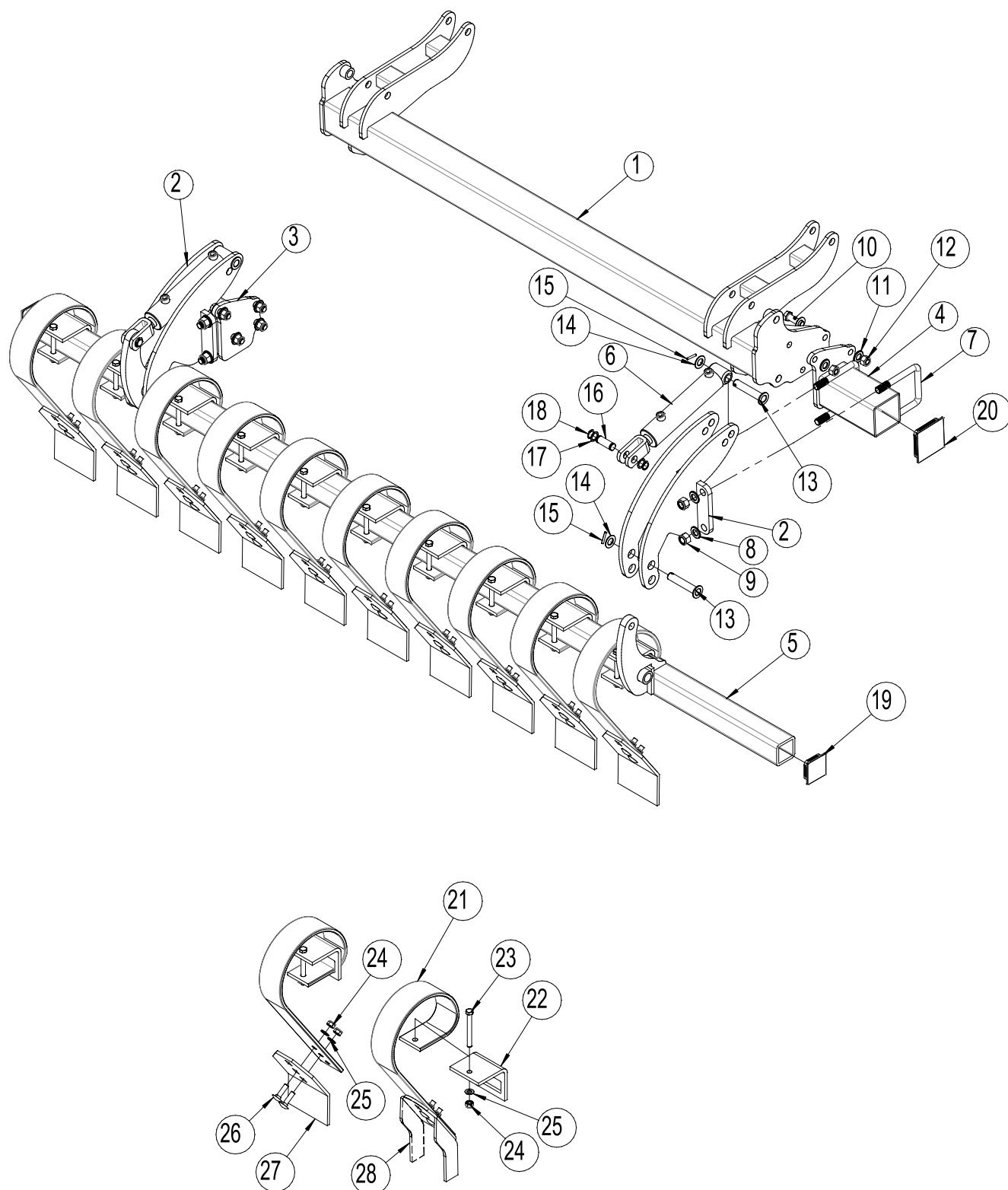
Levelling board



Pos.	Item no.	Designation	2,9m
1	1200044	Levelling board 2830	1
2	0422146	Spring-Board tine 90x14mm	2
3	0422395	Tine holder for tine 90x14	2
4	690103098	Bolt M12x11 10.9	2
5	0272270	Facet plate 12mm	4
6	0264070	Locking nut M12	2
7	0235380	Bolt M12x50 8.8	8
8	0272270	Facet plate 12 mm	16
9	0264070	Locking nut M12	8
10	630286185	Plate for height adjustment	2
11	630367169	Clamping plate with bar	2
12	630367165	Clamping plate	2
13	630327199	Threaded block for height adjustment	2
14	630327217	Threaded rod for height adjustment	2
15	0248680	Carriage bolt M12x50 8.8	4
16	0235380	Bolt M12x50 8.8	4
17	0272270	Facet plate 12mm	8
18	0264070	Locking nut M12	4



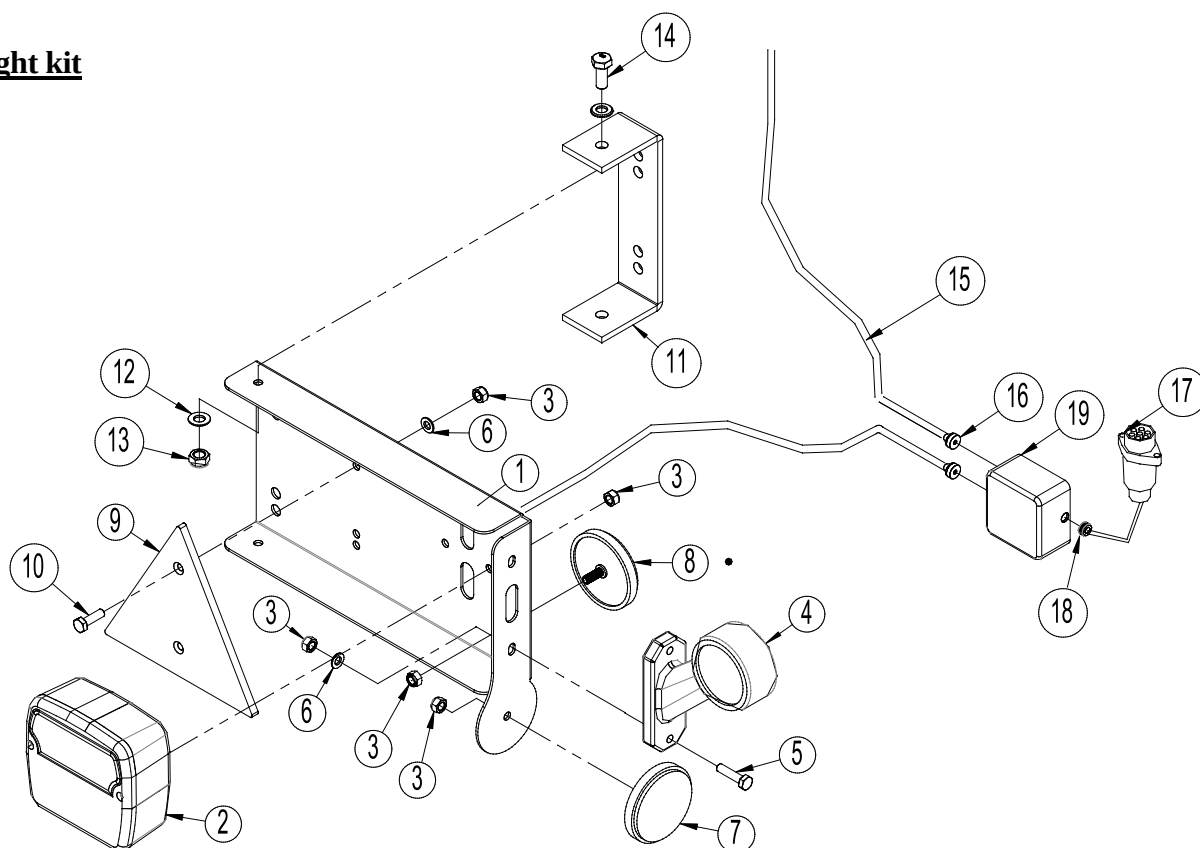
Spring-Board



Pos.	Item no.	Designation	2,9m
1	1200037	Suspension f/harrow with Spring-Board	1
2	630367120	Suspension f/cylinder	2
3	1200040	Suspension f/Spring-Board, left	1
4	1200041	Suspension f/Spring-Board, right	1
5	1200051	Spring-Board bar	1
6	690200160	Cylinder 50/30x155 mm Ø20/yoke	2
6a	690200046	Gasket set 50/30	
7	690110404	U-bolt M18x100x100x100	4
8	0272300	Facet plate Ø18	8
9	0264100	Locking nut M18	8
10	0235810	Set screw M16x50 8.8	8
11	0272900	Facet plate Ø16	16
12	0264090	Locking nut M16	8
13	69520095F	Pin Ø20 L=95 welded facet plate and clip hole	4
14	0272310	Facet plate Ø20	4
15	0371395	Retaining pin Ø5x35 DIN481	4
16	69520046D	Pin Ø20 L=46 w/locking ring groove	2
17	690115010	Washer Ø20/Ø28x1	4
18	691372020	Locking ring Ø20 DIN471	4
19	0489610	Plastic plug 70x70x5	2
20	0489660	Plastic plug 100x100x5	2
21	0422145	Spring-Board tine 80x10 mm	12
22	0422390	Tine holder (tine 80x10 – bar 70x70)	12
23	690103098	Bolt M12x110 10.9	12
24	0264070	Locking nut M12	36
25	0272270	Facet plate Ø12	36
26	0248670	Carriage bolt M12x45	24
27	633052100	Spring-Board wearing point, flat	12
28	633052150	Spring-Board, slicing point	12



LED Light kit



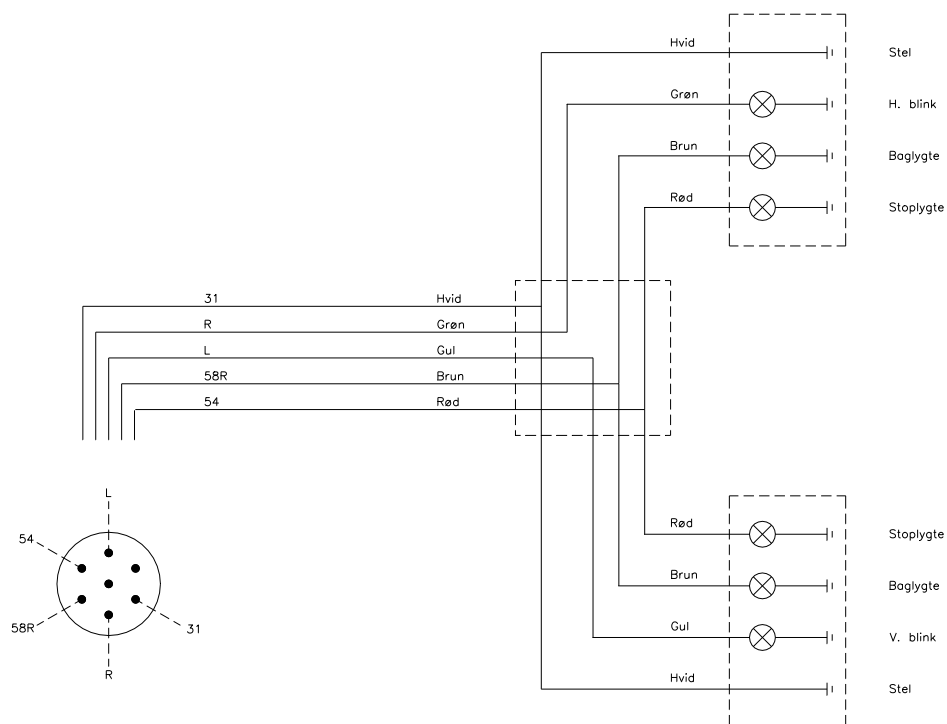
Pos.	Item no.	Designation	Pc.
1	7357505	Lightbox (L)	1
	7357508	Lightbox (R)	1
2	7357504	Rear light	2
3	0264030	Locking nut M5	16
4	7357507	Marking lights (L)	1
	7357509	Marking lights (R)	1
5	0234340	Bolt M5x25	4
6	0272240	Facet plate Ø5	8
7	0656240	Reflex, yellow	2
8	0656250	Reflex, white	2
9	690160017	Reflex, red	2
10	0234330	Bolt M6x20	4
11	7357516	Bracket	2
12	0272250	Facetted washer Ø8	16
13	0264050	Locking nut M8	8
14	0234750	Bolt M8x20	4
15	690160080	Cable 5 x 1mm ² (Inform about lenght 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

Notice:

Check number and measurements of all hoses before ordering spare parts.

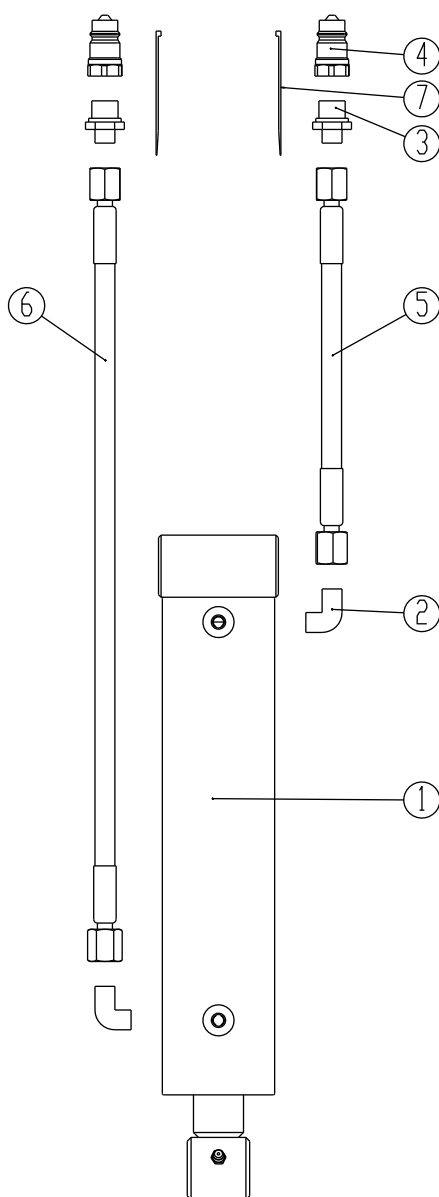


Light kit: El. diagram



Hydraulics

Raise / lower



Pos.	Item no.	Designation	2,9 m
1	690200085	Cylinder Ø80/40 x 255 Ø30/Ø30	1
2	690203006	Indskruning, vinkel 10-3/8" BSP	2
3	0446752	Brystnippel, Ø10 –1/2"	2
4	0444020	Lynkopling, han 1/2"	2
5	690201011	Hydraulikslange 1/4" L = 5350 mm	1
6	690201011	Hydraulikslange 1/4" L = 5350 mm	1
7		Strips RØD	2



Pos.	Item no.	Designation	Strigle	Spring-Board
1	690200040	Cylinder Ø50/30 x 155 Ø20,25	2	-
1	690201160	Cylinder Ø50/30 x 155 Ø20/25 w/fork end	-	2
2	690203006	Fitting, 90° angle 10-3/8" BSP	4	4
3	690203015	Fitting, connector T10	2	2
4	0446752	Fitting, straight Ø10 –1/2"	2	2
5	0444020	Quick coupling, Male 1/2"	2	2
6	690201038	Hydraulic hose 1/4" L = 4000 mm	1	1
7	0454215	Hydraulic hose 1/4" L = 820 mm	1	-
7	690201053	Hydraulic hose 1/4" L = 1260 mm	-	
8	0454244	Hydraulic hose 1/4" L = 935 mm	1	-
8	0454441	Hydraulic hose 1/4" L = 1460 mm	-	
9	0454244	Hydraulic hose 1/4" L = 935 mm	1	-
9	0454441	Hydraulic hose 1/4" L = 1460 mm	-	
10	0454215	Hydraulic hose 1/4" L = 820 mm	1	-
10	690201053	Hydraulic hose 1/4" L = 1260 mm	-	
11	690201038	Hydraulic hose 1/4" L = 4000 mm	1	1
12		Strips BLUE	2	
12		Strips GREEN		2
Hoses at 3-point linkage models				
6	690201033	Hydraulic hose 1/4" L = 2500 mm	1	1
7	0454215	Hydraulic hose 1/4" L = 820 mm	1	-
7	690201053	Hydraulic hose 1/4" L = 1260 mm	-	1
8	690201052	Hydraulic hose 1/4" L = 935 mm	1	-
8	0454441	Hydraulic hose 1/4" L = 1460 mm	-	1
9	690201052	Hydraulic hose 1/4" L = 935 mm	1	-
9	0454441	Hydraulic hose 1/4" L = 1460 mm	-	1
10	0454215	Hydraulic hose 1/4" L = 820 mm	1	-
10	690201053	Hydraulic hose 1/4" L = 1260 mm	-	1
11	690201033	Hydraulic hose 1/4" L = 2500 mm	1	1



[illegible]

as it looks

As good as it looks

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As good as it looks



The design is subject to modification without notice.