

UK

HE-VA

Operating Instructions
Spare Parts List
Declaration of Conformity

as it looks



As good as it looks



As good as it looks

As good as it looks



As good as it looks

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

Grass-Tiller

Rigid models: 1.50 - 1.80 - 2.50 - 3.00 - 3.50 m



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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.

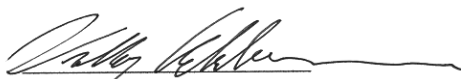
In addition, the following harmonized EU standard has been used:
ISO 12100 Machine safety, general design principles, risk assessment and risk reduction.

The declaration comprises the following machines:

Grass-Tiller

1,5m - 1,8m - 2,5m – 3,0m – 3,5m

Nykøbing, April 1st 2015

A handwritten signature in black ink, appearing to read "Villy Christiansen".

Villy Christiansen

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

Delivery check

Upon delivery to the dealer/supplier as well as to the customer, check the Grass-Tiller for possible damages.

Machine Description

Range of Application

Grass-Tiller is a sub-soiler, especially suited for perennial grasslands. Grass-Tiller effectively loosens the structural damages caused by heavy machinery during cutting or slurry work. A serrated disc placed in front of each tine slices through the grass, allowing the tine to loosen the soil down to a depth of 60 cm.

Grass-Tiller is available with the Ø450/500 mm Star roller (synchronous or full width mounting) and with the Ø550 mm Square tube roller. The packer roller acts as depth control, for a uniform packing of grasslands. With infinitely variable tine adjustment, the spacing of the tines can be easily suited for all working conditions. Grass-Tiller applies to all soil types.

Grass-Tiller can be equipped with the HE-VA Multi-Seeder, allowing for till-seeding rape, grass or cover crops.

Grass-Tiller is mounted in the tractor's three-point suspension, and the hydraulic depth control via the packer roller is controlled by the hydraulic system of the tractor. In order to achieve optimum control you should be aware of the tractor wheel type. Under certain circumstances, a mounting of twin wheels is recommendable.

Technical specifications

Working width	Type of stone protection	No. of tines	Transport width M	Power requirement HP	Max HP	Weight kg		
						Star roller Ø450/500 (synchronously)	Star roller Ø450/500 (full width)	Square tube roller Ø550 mm
1,5m rigid	Quick-Push shear bolt	2	1,5m	60-100	250	-	-	-
		3	1,5m	90-120	250	-	-	-
	Hydr. auto release system	2	1,5m	60-100	250	-	-	-
		3	1,5m	90-120	250	-	-	-
1,8m rigid	Quick-Push shear bolt	2	1,8m	60-100	250	-	-	-
		3	1,8m	90-120	250	-	-	-
	Hydr. auto release system	2	1,8m	60-100	250	-	-	-
		3	1,8m	90-120	250	-	-	-
2,5m rigid	Quick-Push shear bolt	3	2,5m	90-120	250	1.435	1.850	1.280
	Hydr. auto release system	3	2,5m	90-120	250	1.485	1.900	1.330
3m rigid	Quick-Push shear bolt	3	3m	90-120	250	1.475	2.060	1.350
		4	3m	110-160	250	1.680	2.135	1.435
	Hydr. auto release system	3	3m	90-120	250	1.565	2.150	1.440
		4	3m	110-160	250	1.820	2.285	1.575
3,5m rigid	Quick-Push shear bolt	5	3,5m	130-200	250	1.960	2.470	1.630
	Hydr. auto release system	5	3,5m	130-200	250	2.080	2.590	1.750

Grass-Tiller complies with DS/ISO 11001-1, three-point suspension.

Safety instructions for Grass-Tiller

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:

1. The machine must be lowered to firm ground.
2. The hydraulics must be relieved.
3. The tractor must be stopped and the key removed from the ignition switch.
4. The driver must ensure that no persons are staying in exposed positions during the operation.

* Person in exposed position: 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 should 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.

ATTENTION !! Rotary parts and loose clothes are a dangerous combination.

IMPORTANT !! In connection with the risk of parts falling down, it may endanger the lives of persons staying on the base frame of the machine, when it is operated attached to a tractor.

Safety and Instructions on Hydraulics

1. The maximum working pressure is 225 bar.
2. It is advisable to label the attachment parts at hydraulic connections between the tractor and the tool in order to eliminate incorrect operation!
3. When checking for hydraulic leaks, use suitable safety wear (eye protectors, gloves, etc.) High-pressure hydraulic oil may penetrate the skin and cause dangerous injuries. In case of injury, consult a doctor immediately. **RISK OF INFECTION!**
4. Before operating the hydraulics, lower the machine to firm ground. Relieve the hydraulics, stop the motor and remove the ignition key.
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.

The life of hydraulic hoses is maximum 5 years.

New hydraulic hoses must meet the manufacturer's requirements.

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 ensured. 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.

Labels on the machine



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



Plate with number and year of manufacture



Correct hydraulic pressure on the release system

IMPORTANT!

All bolts must be tightened after the first few hours of operation, otherwise our guarantee will not apply.

IMPORTANT!

Resserrer tous les boulons et écrous après la première mise en marche. Le cas échéant nos obligations de garantie seront à considérer comme nulles.

WICHTIG!

Alle Møttern nach kurzem Gebrauch nachziehen. Bei Nichtbeachtung entfallen Gewährleistungsansprüche.

VIGTIG!

Efterspænd alle møtrikker efter kort tids brug. Hvis dette ikke overholdes, bortfalder vore garantiforpligtelser.

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

Start-up of the machine

General information

The machine requires 1 double acting outlet.

Attachment and uncoupling

1. Under normal circumstances, attach the tractor in the lowest lifting points of the machine both as regards the lifting arms and the top link.
2. When the machine is to be parked and uncoupled from the tractor, it is important, that the roller is placed in the lowest position, so that the machine is placed stably.
3. When uncoupling, relieve the tractor's oil outlet, and the machine's quick couplings can be uncoupled without pressure.

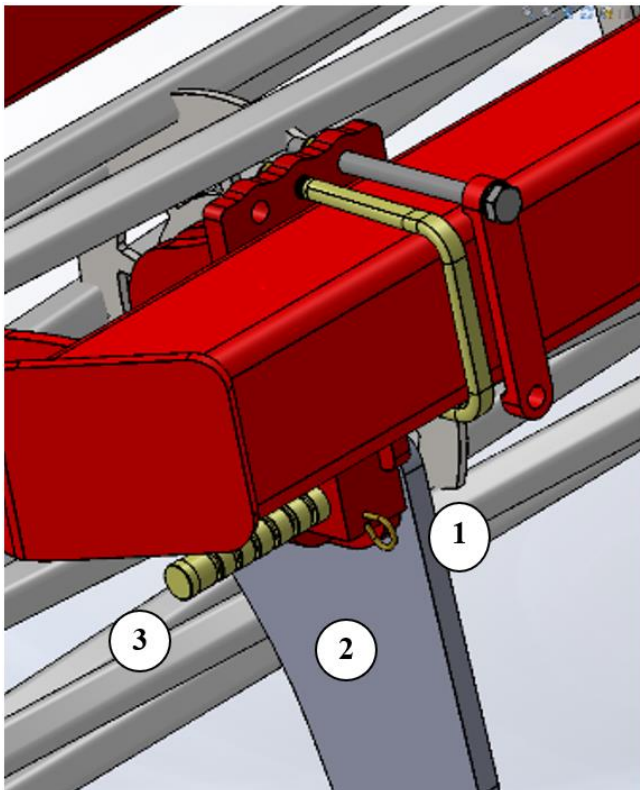
Settings and adjustment

Quick-Push shear bolt

When the shear bolt is broken and the tine has been released, place the shear bolt one notch forward before the machine can operate again.



Important: It is not recommended to be under the machine while the shear bolt is being moved or replaced.



Pull out the R-clip (Pos. 1).

Pull the tine back to normal working position (Pos. 2).

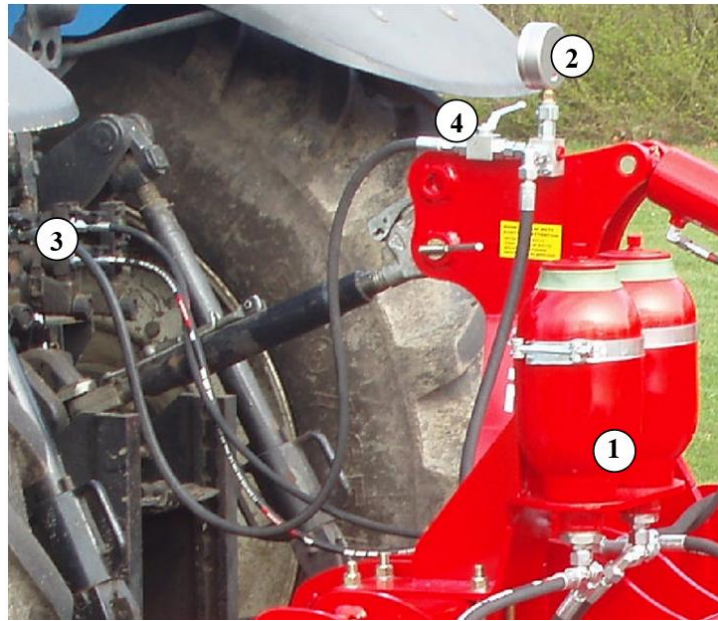
Push the shear bolt (Pos. 3) **one** notch forward to a new position in the tine. Do not push the bolt totally through (it may be necessary to remove soil etc. from the hole in the tine).


Push back the R-clip (Pos. 1), so that it locks the shear bolt in place, and the machine is ready for operation.

When the shear bolt is broken for the 8th time, it is used up. Note that the shear bolt must **never** be shorter than 65 mm.

When a new shear bolt is mounted it is important that it is placed correctly. The 40 mm end (Pos. 3) must turn away from the tine.

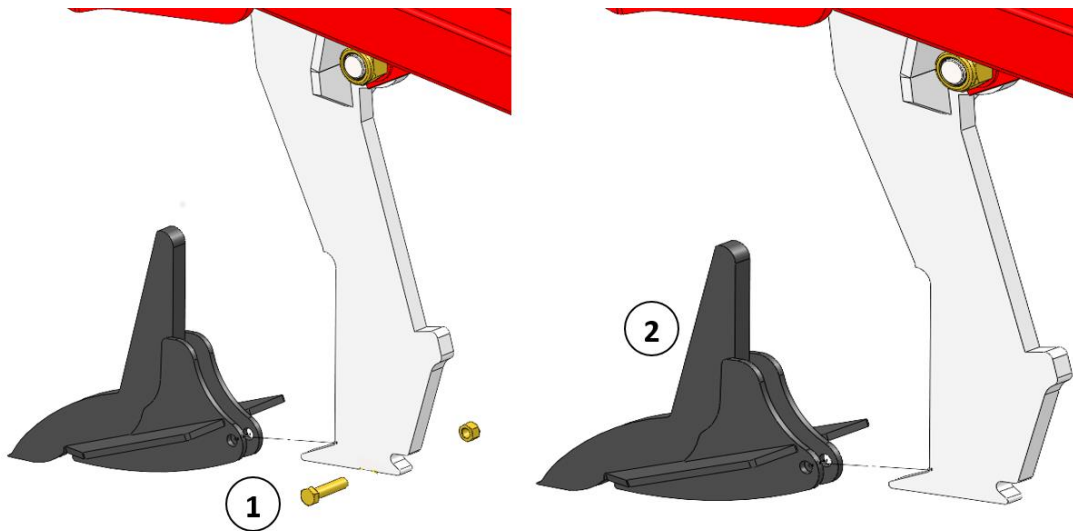
Hydraulic auto-release system



1. Before each season, check that the gas pressure of the accumulators (Pos.1) is at 110 bar.
 -  This requires special tools and can only be performed by an authorized dealer.
2. Before start-up of the machine, check the hydraulic pressure in the closed hydraulic stone protection system on the machine's pressure gauge (Pos. 2). The pressure should be **minimum 120 bar** (from machine no 35314) and must not exceed 160 bar.
3. **IMPORTANT** – check the hydraulic pressure continuously, to ensure that it stays above 120 bar.
4. If there is a need to adjust the working pressure, follow these instructions:
 - a. Mount the quick coupling of the hydraulic hose (Pos. 3) in the tractor oil outlet.
 - b. Turn on the ball valve (Pos. 4), and the working pressure can now be adjusted up or down with the tractor's oil outlet.
 - c. When the desired pressure is achieved, turn the ball valve off again (Pos. 4), and the tractor's hydraulic system is relieved before the quick coupling (Pos. 3) is dismantled and placed in the parking device of the machine.
5. During operation of the machine, the tine swings automatically to the rear if it meets an obstacle. In normal circumstances, the tine will automatically return to working position again after having passed the obstacle. At extreme obstacles and/or soil conditions, it might be necessary to stop and eventually lift the machine from the soil.


It is important that no persons are near to the machine, as the tine returns to working position at high speed and might throw soil and stones.

Replacement of wearing point



Before working with the wearing points, the machine must be secured. This can be performed by placing trestles under the main frame or by supporting the roller.

The wearing point might fall off when the shear bolt is removed - risk of foot or leg injury!

1. Dismount bolt (Pos. 1) by means of 2 pcs. spanners.
2.  The wearing point might fall off, when the shear bolt is removed – risk of foot or leg injury.
3. Dismount the wearing point by pushing it forward. This might be difficult due to entrance of soil, and it might be a good idea to use a hammer.

Mount the new wearing point (Pos. 2), by pushing it to the rear and then into place.

4. Check the bolt for any damages and replace if required. **Reorder the original bolt by replacing. It is a special bolt that secure that the wings isn't tightened**
5. Mount the bolt (Pos. 1), lubricate and tighten it to 20 Nm.
Be careful not to tighten the bolt too much, as it might damage the wearing point!

Maintenance

- After 10 hours of operation, **retighten** the machine.
Check hydraulic hoses, fittings and cylinders for leaks and retighten. See table below.
- Furthermore, check on a regular basis that all bolts are **tightened**.
- Before winter storage, wash and lubricate the machine. If you are using a high-pressure cleaner, do not spray directly on the ball bearings. After the washing, you may spray the machine with oil.

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 nut M18x1,5 fine thread		385 Nm	
Wheel nut M22x1,5 fine thread		550Nm	

Lubrication

For lubrication, maintenance and repair, lower the Grass-Tiller, activate the tractor brakes, and stop the motor.

Typically, the lubrication points are located by the spring release, by the roller bearings, by the cylinders and the wing sections hinges.

The machine must be lubricated after 10 working hours as well as after cleaning in order to press out any water and dirt.

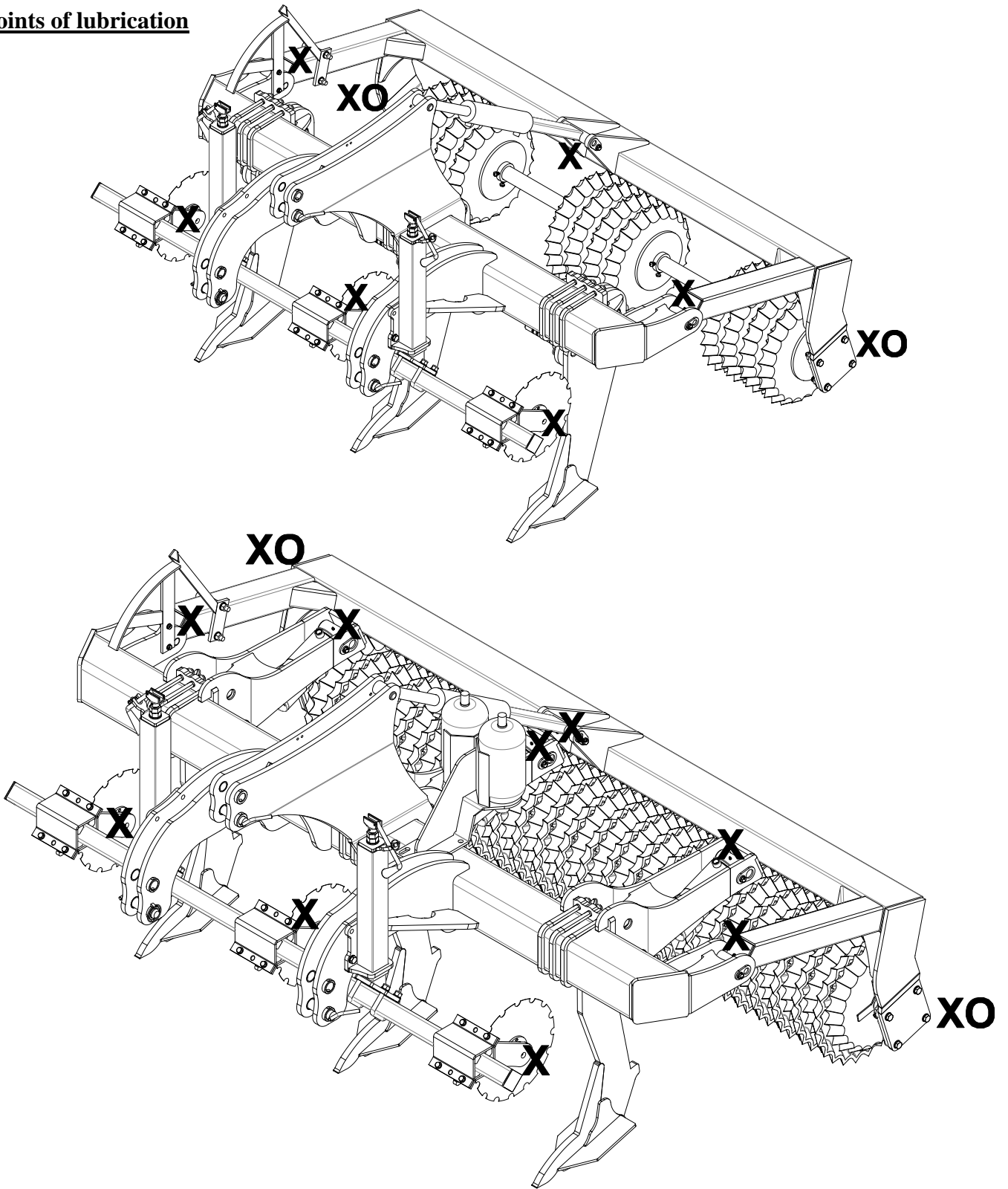
Note! XO

The double-sealed ball bearings in the roller should only be lubricated every 20 working hours and by 1-2 strokes so that the sealing rings are not pressed out.

Important!

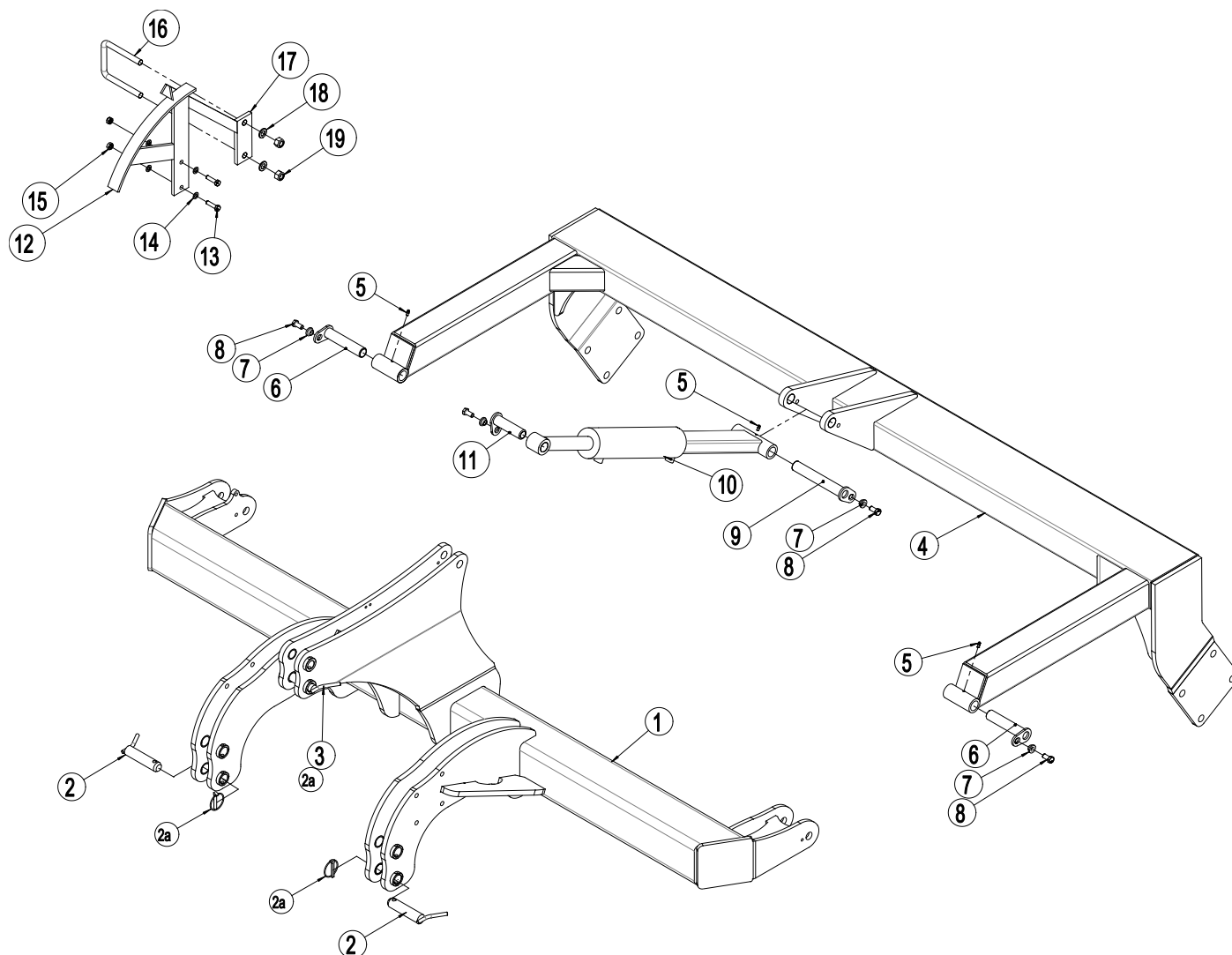
The hydraulic system is filled with oil type Hydro Texaco HD32

Points of lubrication



Spare parts list

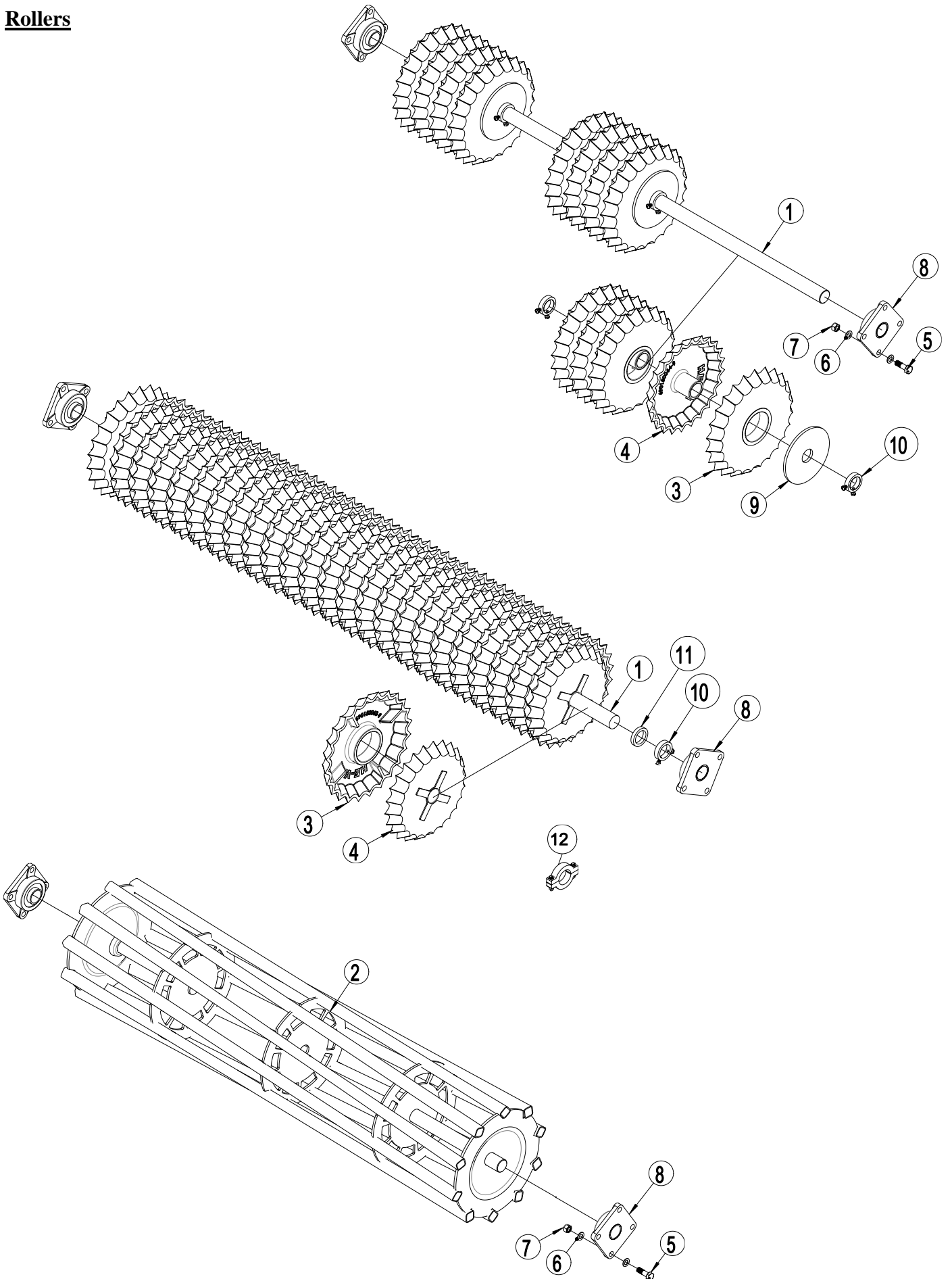
Frame 1,5 - 1,8 - 2,5 - 3,0 - 3,5 m



Pos.	Item no.	Designation	1,5m	1,8m	2,5 m	3,0 m	3,5 m
1	1250082	Frame 1,5 m	1				
	1250004	Frame 1,8 m		1			
	645440028	Frame 2,5 m			1		
	645440010	Frame 3,0 m				1	
	645440030	Frame 3,5 m					1
2	69522233C	Pin Ø22/Ø28 L=233 Cat I/II	2	2			
	69537129B	Pin for top link Cat. III Ø37 L=129 w/handle and cotter slot			2	2	2
2a	690134008	Ring pin Ø11,5			3	3	3
3	69519220C	Pin Ø19/Ø25 L=220 Cat I/II	1	1			

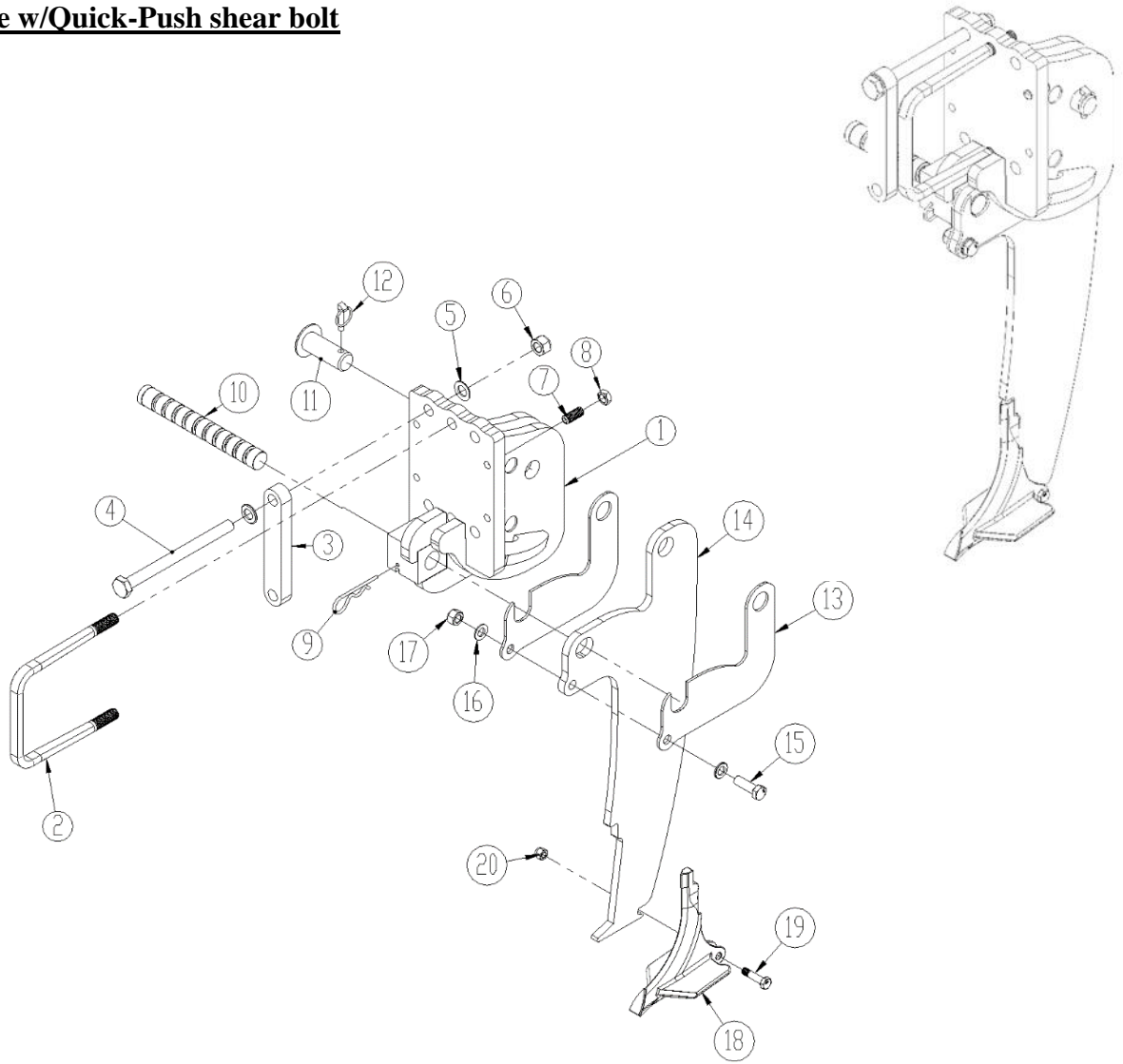
Pos.	Item no.	Designation	1,5m	1,8m	2,5 m	3,0 m	3,5 m
	69532129B	Pin for top link Cat. III Ø32 L=129 w/handle and cotter slot			1	1	1
4	1250084	Roller bar 1,5 m (quick-push)	1				
	1250093	Roller bar 1,5 m (hydraulic tine)	1				
	1250006	Roller bar 1,8 m (quick-push)		1			
	1250097	Roller bar 1,8 m (hydraulic tine)		1			
	645000153	Roller bar 2,5 m			1		
	645000027	Roller bar 3,0 m				1	
	645000156	Roller bar 3,5 m					1
5	690136029	Lubricating nipple M8	2	2	2	2	2
6	69430145G	Pin Ø30 L=145	2	2	2	2	2
7	630532600	Lock bush for pin head	4	4	4	4	4
8	690101101	Bolt M12x25 8.8	4	4	4	4	4
9	69430200G	Pin Ø30 L=200	1	1	1	1	1
10	645410007	Cylinder for depth adjustment 80/40x280	1	1	1	1	1
10a	690200143	Gasket set 80/40 (Laizhou)					
11	69430107G	Pin Ø30 L=107	1	1	1	1	1
12	645000162	Scale for depth control	1	1	1	1	1
13	0235070	Bolt M10x40 8.8 (set bolt)	2	2	2	2	2
14	0272260	Facet plate Ø10	4	4	4	4	4
15	0264060	Self-locking nut M10	2	2	2	2	2
16	0382160	U-bolt M16 100x100x100	1	1	1	1	1
17	645000165	Pointer for depth control	1	1	1	1	1
18	0272290	Facet plate Ø16	2	2	2	2	2
19	0264090	Self-locking nut M16	2	2	2	2	2

Rollers



Pos.	Varenr.	Betegnelse	1,5m	1,8m	2,5 m	3,0 m	3,5 m	
1	1250085	Axle Ø60, 1490 mm	1					
	1250001	Axle Ø60, 1790 mm		1				
	678672435	Axle Ø60, 2435 mm			1			
	678672935	Axle Ø60, 2935 mm				1		
	678673435	Axle Ø60, 3435 mm					1	
2	7452033	Square tube roller Ø550 1,5 m	1					
	7452026	Square tube roller Ø550 1,8 m		1				
	1048210	Square tube roller Ø550 2,5 m			1			
	1048240	Square tube roller Ø550 3,0 m				1		
	1048280	Square tube roller Ø550 3,5 m					1	
3	690150064	Star ring Ø450 w/neck Ø60 GGG50						
4	690150063	Star ring Ø500, center Ø135 GGG50						
5	0236140	Bolt M20x65 8.8	8	8	8	8	8	
6	0272310	Facet plate Ø20	16	16	16	16	16	
7	0264110	Self-locking nut M20	8	8	8	8	8	
8	0478971	Bearing UCF 312 Ø60	2	2	2	2	2	
9	690150112	Round plate Ø235	1 per section					
10	671040400	Stop ring 20mm with 2 bolts M10x25 8.8	2 per section					
	671040400	Stop ring 20mm with 2 bolts M10x25 8.8	2	2	2		2	
	630651200	Stop ring 27mm with 2 bolts M10x25 8.8				2		
11	671040402	Shim 15 mm		2	2		2	
	671040403	Shim 47 mm				2		
12	695150095	Shim 15 mm incl. bolts etc..						
	695150099	Shim 20 mm incl. bolts etc.						
	695150091	Shim 25 mm incl. bolts etc..						

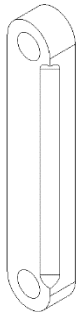
Easy draft tine w/Quick-Push shear bolt



1245080

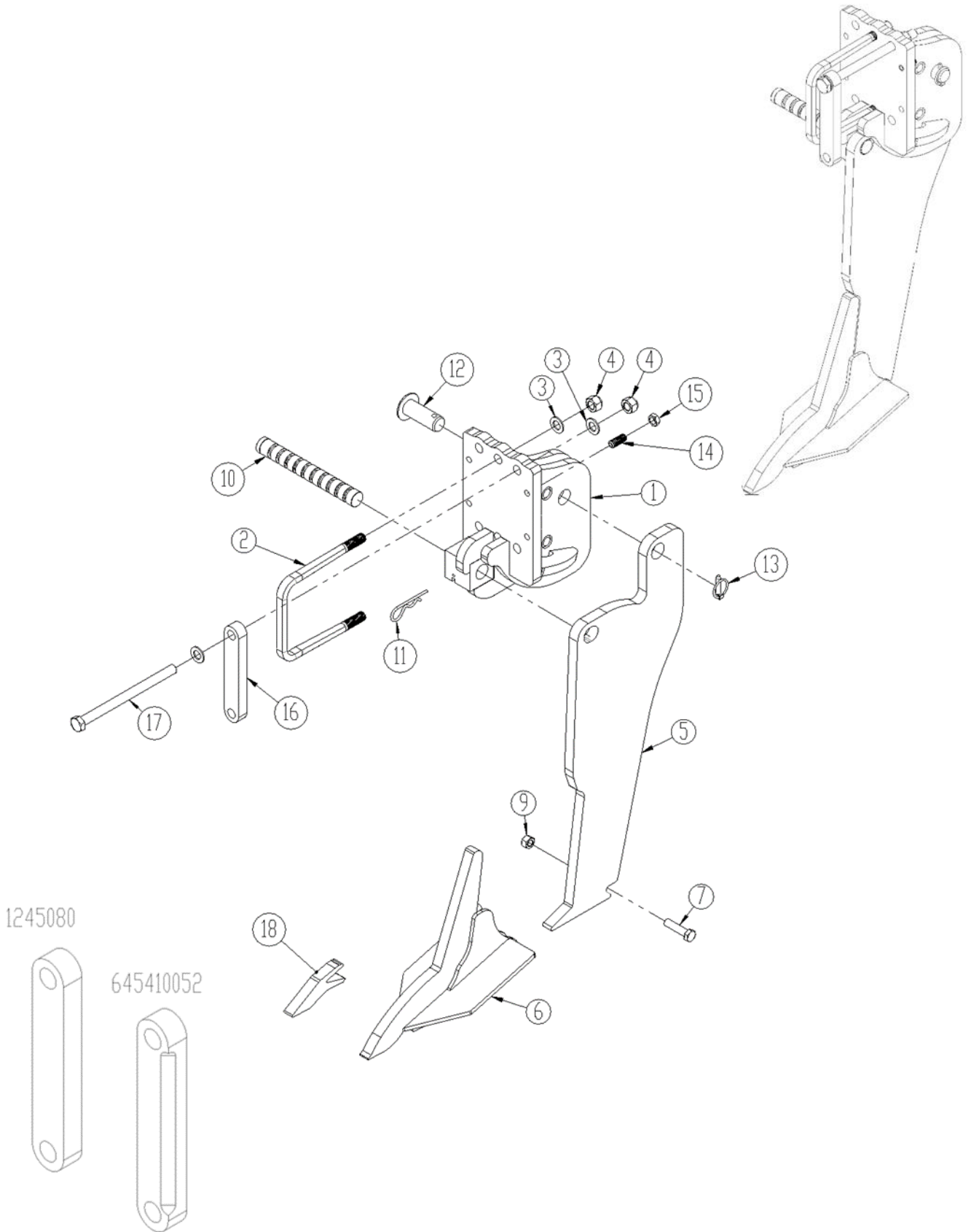


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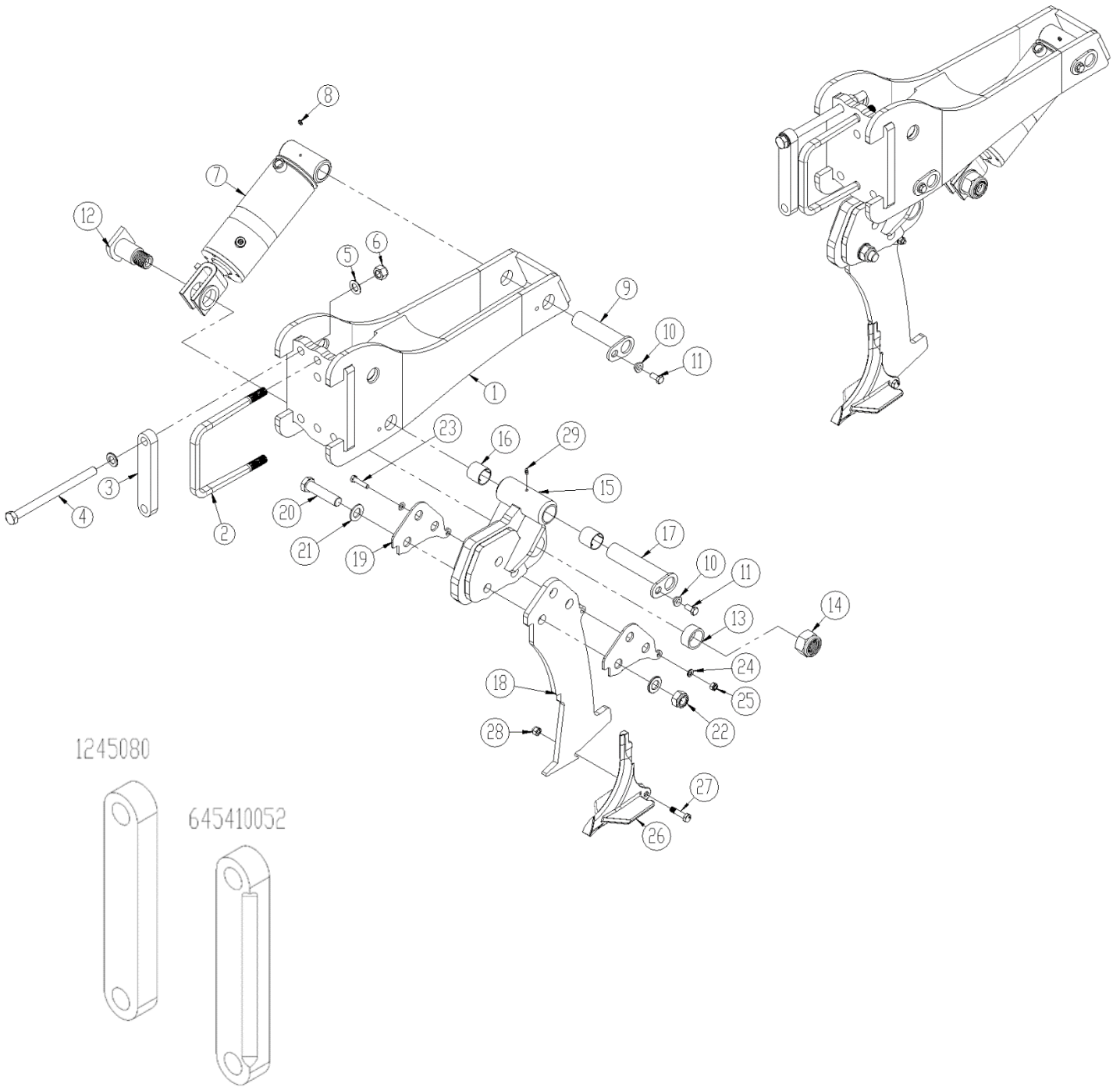
Pos.	Item no.	Designation	No. per leg
1	1245038	Tine bracket short , right	1
	1245016	Tine bracket short, left	1
	1245039	Tine bracket long, right	
	1245024	Tine bracket long, left	
2	690110500	U-bolt M20x180x180x180 mm (Ø20/14x24,5 mm)	1
3	1245080	Flange (-45°) (from machine nr. 34680)	2
	645410052	Flange (+45°) (from machine nr. 34680)	0
4	0236313	Bolt M20x260	4
5	0272310	Facet plate Ø20	10
6	0264110	Self-locking nut M20	6
7	0227528	Pivot screw M16x40	4
8	0261392	Counter nut M16	4
9	0377600	R-clip Ø6	1
10	645000925	Shear bolt ø35 (chrome black)	1
11	69435070F	Pin Ø35 L=71	1
12	0378600	Ring pin Ø11	1
13	645001448	Shear bolt ø35 (chrome black)	2
14	645001447	Tine	1
	1241157	Tine (+100 mm)	
	645001459	Tine w/1 hardmetal	
15	690103127	Bolt M16x50 mm	1
16	0272290	Facet plate Ø16	2
17	0264090	Self-locking nut M16	1
18	645000056	Points 120mm w/hardmetal (center)	1
	645000056T	Points 120mm w/hardmetal (center/wing)	
	645000054	Points 200mm w/hardmetal (center)	
	645000054T	Points 200mm w/hardmetal (center/wing)	
19	0235372	Bolt M12x50mm (special bolt)	1
20	0264070	Self-locking nut M12	1

Tine w//Quick-Push shear bolt



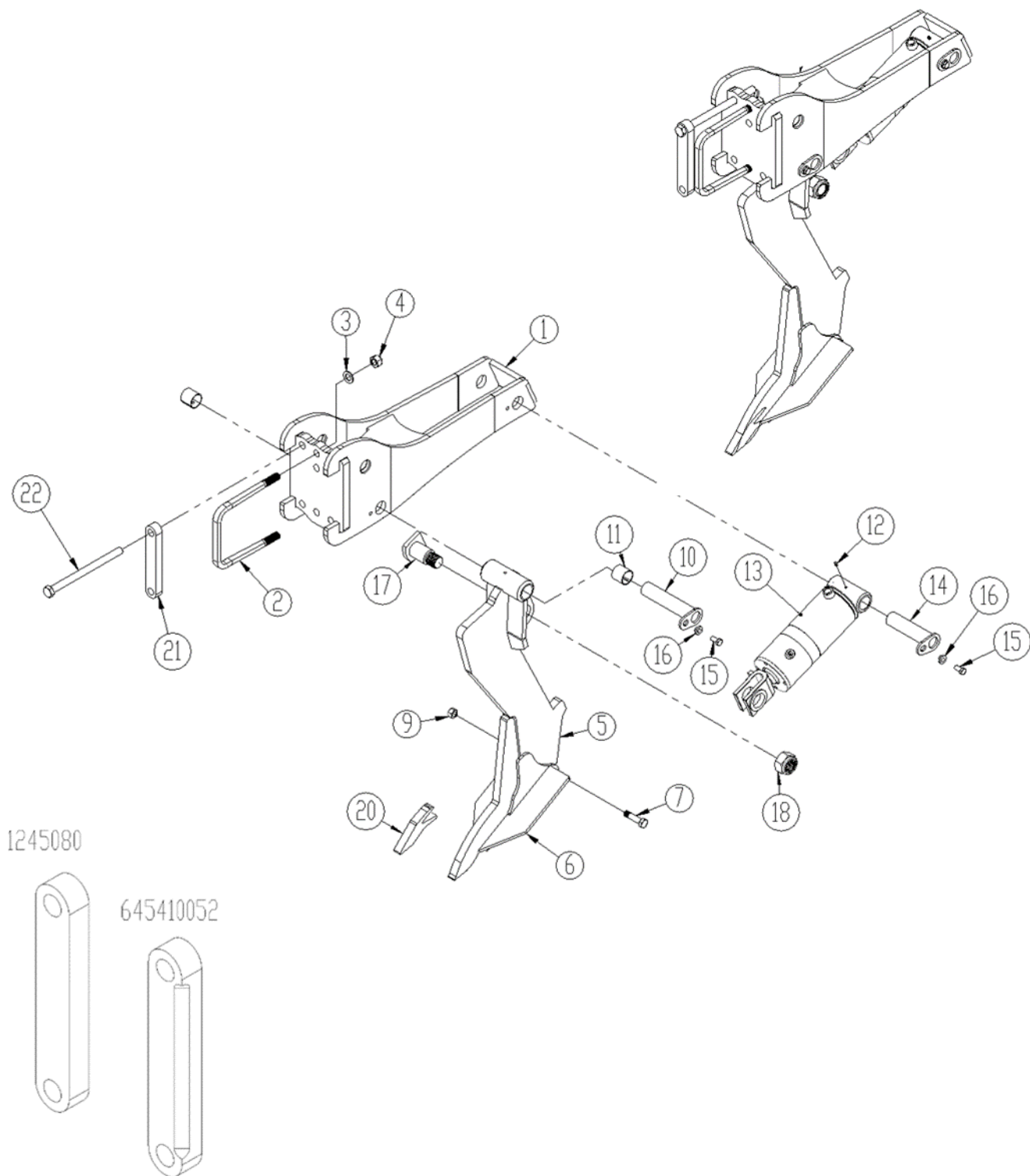
Pos.	Item no.	Designation	Per tine
1	645410027	Tine bracket, short, right (until March 2017)	
	645410028	Tine bracket, short, left (until March 2017)	
	1245038	Tine bracket, short, right (from April 2017)	1
	1245016	Tine bracket, short, left (from April 2017)	1
	1245039	Tine bracket, long, right	
	1245024	Tine bracket, long, left	
2	690110500	U-bolt M20x180x180x180 mm (Ø20/14x24,5 mm)	3
3	0272310	Facet plate Ø20	6
4	0264110	Nut M20	6
5	1250011	Tine	1
6	645000043	Wearing point 120 mm wing share	
	645000044	Wearing point 200 mm wing share	
	645000044T	Wearing point 200 mm wing share w/hardmetal	
	645000063	Wearing point 350 mm wing share	
7	0235852	Bolt M16x65	1
9	0264090	Self-locking nut M16	1
10	645000059	Shear bolt Ø35 (chromated)	1
11	0377600	R-clip Ø6	1
12	69435070F	Pin Ø35 L=71	1
13	0378600	Ring pin Ø10	1
14	0227528	Pivot screw M16x40	4
15	0261392	Counter nut M16	4
16	1245080	Flange (-45°) (from machine nr. 34680)	2
	645410052	Flange (+45°) (from machine nr. 34680)	
17	0236313	Bolt M20x260	4
18	645000045	Wearing point for surface welding	

Easy draft tine w/hydraulic auto-release system



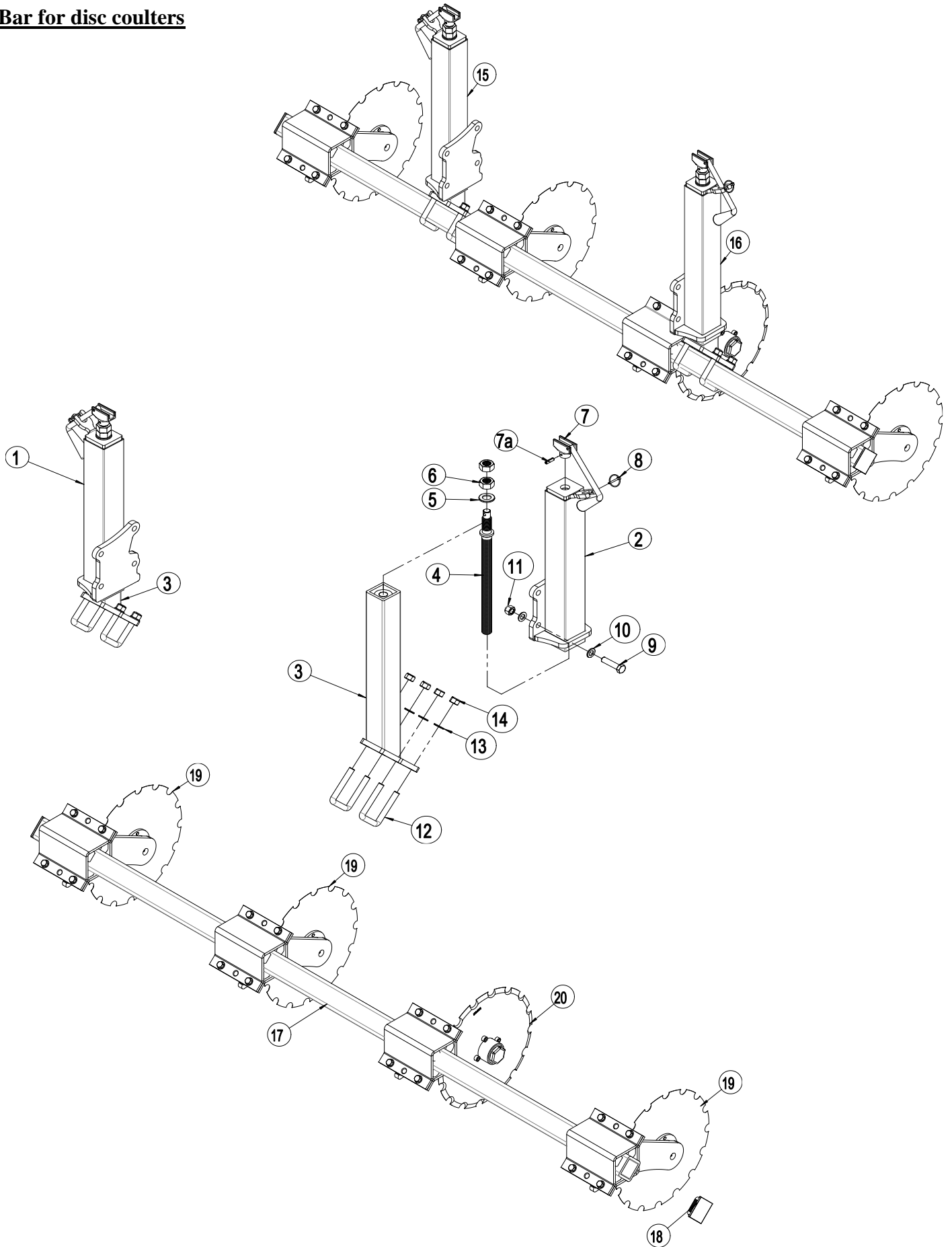
Pos.	Item no.	Designation	No. per tine
1	645410001	Tine bracket (short)	1
	1250048	Tine bracket (long)	
2	690110500	U-bolt M20x180x180x180 mm (Ø20/14x24,5 mm)	1
3	1245080	Flange (-45°) (from machine nr. 34680)	2
	645410052	Flange (+45°) (from machine nr. 34680)	0
4	0236313	Bolt M20x260	4
5	0272310	Facet plate Ø20	10
6	0264110	Self-locking M20	6
7	0467405	Cylinder 110/50x165 w/yoke	1
	0467470	Gaset set for 0467405	
8	0432510	Lubricating nipple M8x1,25	2
9	69440165G	Pin Ø40 L=165	1
10	630532600	Lock bush	2
11	0235330	Bolt M12x25	2
12	645000500	Pin M36	1
13	0475370	Inner tension bush EG Ø55/45 L=25	1
14	0264190	Self-locking M36	1
15	645001515	Bracket for tine	1
16	0475100	Slide bush Ø40/Ø44 L=40 (until April 2024)	2
	0475309	Inner tension bush EG ø44/40x40mm (from May 2024)	2
17	69440195G	Pin Ø40 L=195	1
18	645001457	Tine	1
	1241464	Tind w/1 hardmetalplate	
19	645001456	Shims	2
20	0236410	Bolt M24x100 mm	3
21	0272330	Facet plate Ø24 mm	6
22	0264130	Self-locking M24	3
23	0235080	Bolt M10x45 mm	1
24	0272260	Facet plate Ø10 mm	2
25	0264060	Self-locking M10	1
26	645000056	Points 120mm w/hardmetal (center)	1
	645000056T	Points 120mm w/hardmetal (center/wing)	1
	645000054	Points 200mm w/hardmetal (center)	1
	645000054T	Points 200mm w/hardmetal (center/wing)	1
27	0235372	Bolt M12x50 ((special bolt)	1
28	0264070	Self-locking M12	1
29	0432523	Lubricating nipple M8x1,25 90°	1

Tine w/hydraulic auto-release system



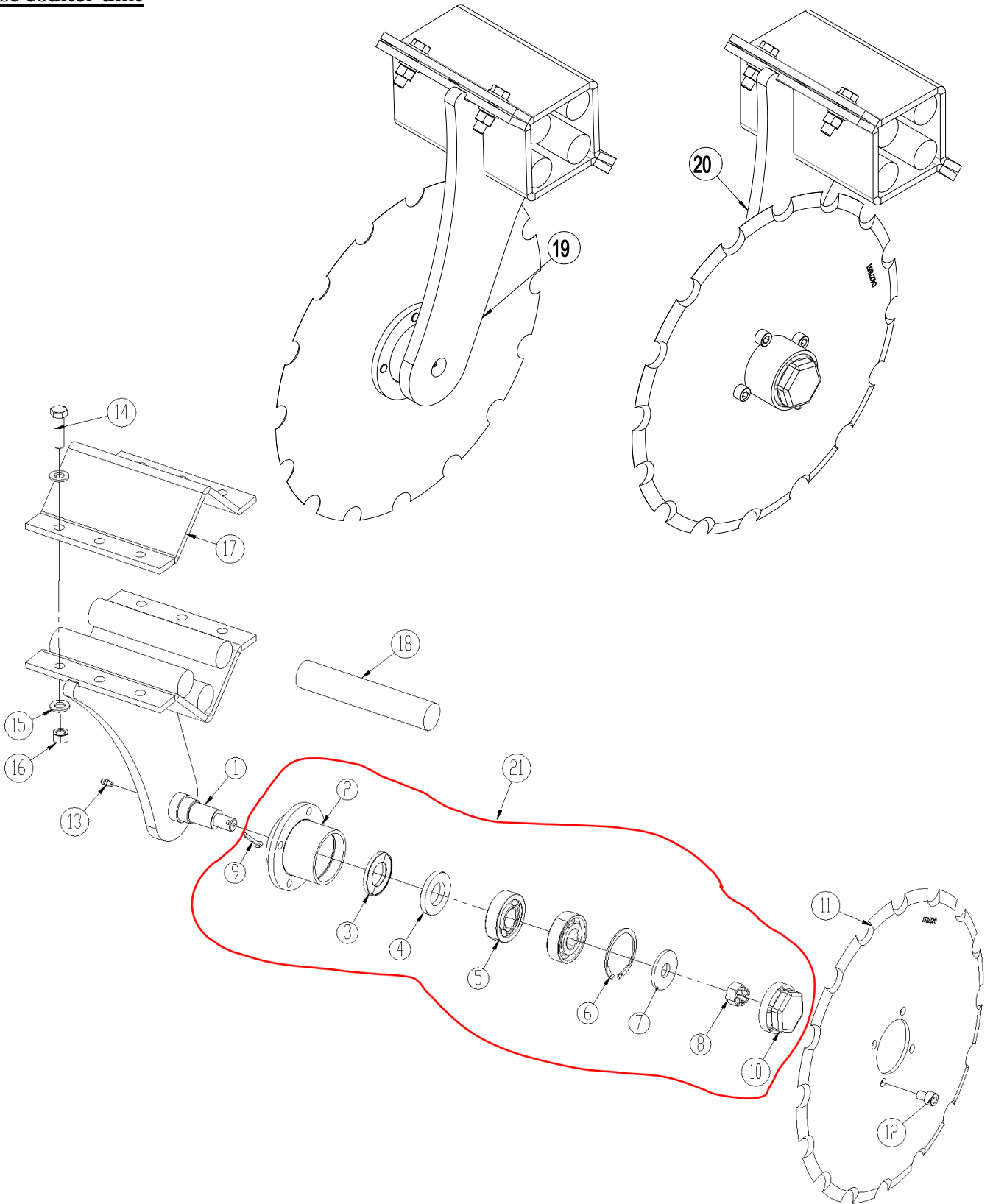
Pos.	Item no.	Designation	Per tine
1	645410001	Tine bracket (short)	1
	1250048	Tine bracket (long)	
2	690110500	U-bolt M20x180x180x180 mm (Ø20/14x24,5 mm)	3
3	0272310	Facet plate Ø20	6
4	0264110	Self-locking nut M20	6
5	645000086	Tine	1
	645001100	Tine w/1 hardmetalplate	
	1240001	Tine w/2 hardmetalplate	
	645000557	Tine (+100mm)	
6	645000043	Wearing point 120 mm wing share	
	645000044	Wearing point 200 mm wing share	
	645000044T	Wearing point 200 mm wing share w/hardmetal	
	645000063	Wearing point 350 mm wing share	
7	0235852	Bolt M16x65 (special bolt)	1
9	0264090	Self-locking nut M16	1
10	69440195G	Pin Ø40 L=195	1
11	0475100	Slide bush Ø40/Ø44 L=40 (until April 2024)	2
	0475309	Inner tension bush EG ø44/40x40mm (from May 2024)	
12	0432510	Lubricating nipple M8x1,25	1
13	0467402	Cylinder Ø110/50x165 w/fork, hole Ø45 (until 31/12 2018)	1
	0467405	Cylinder Ø110/50x165 w/fork, hole Ø45 (from 1/1 2019)	
	690200313	Gaset set for 0467402	
	0467470	Gaset set for 0467405	
14	69440165G	Pin Ø40 L=165	1
15	0235330	Bolt M12x25	2
16	630532600	Lock bush	2
17	645000500	Pin M36	1
18	0264190	Self-locking nut M36	1
20	645000045	Wearing point for surface welding	
21	1245080	Flange (-45°) (from machine nr. 34680)	2
	645410052	Flange (+45°) (from machine nr. 34680)	
22	0236313	Bolt M20x260	4

Bar for disc coulters



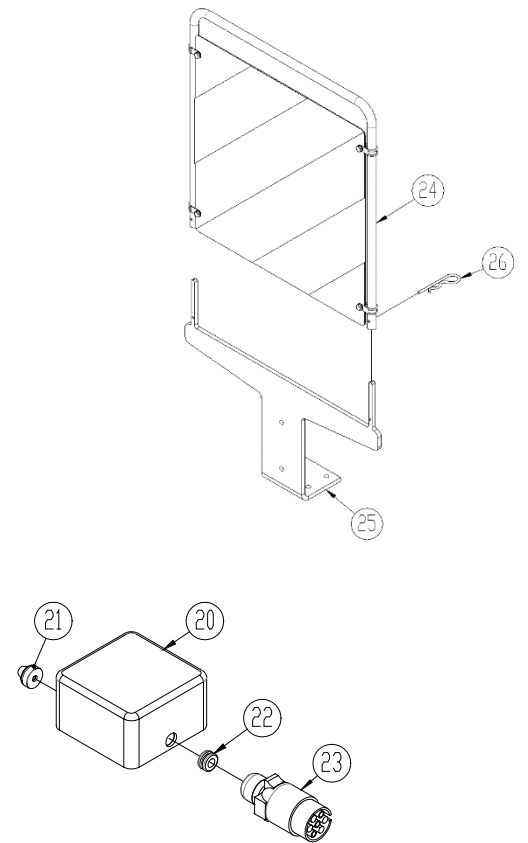
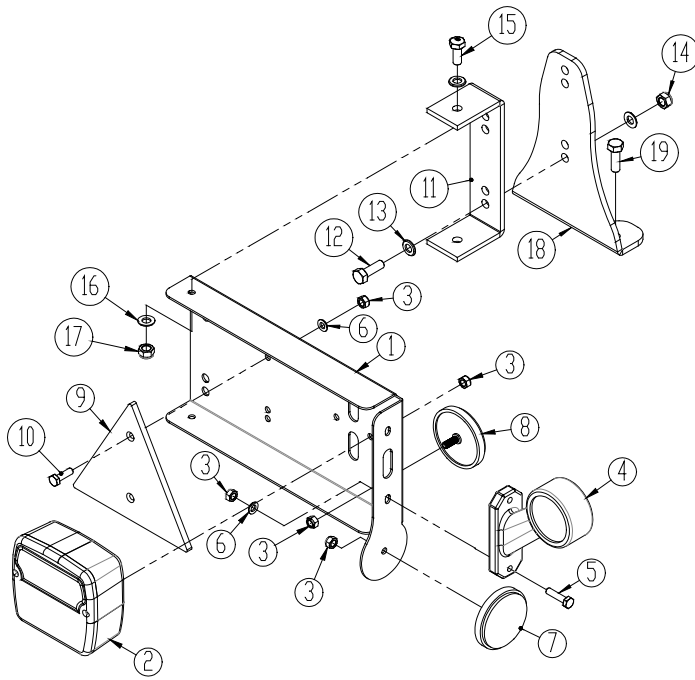
Pos.	Varenr.	Betegnelse	1,5m	1,8m	2,5 m	3,0 m	3,5 m
1	645440025	Spindle console outer part, right	1	1	1	1	1
2	645440020	Spindle console outer part, left	1	1	1	1	1
3	645440017	Spindle console inner part, R/L	2	2	2	2	2
4	690304122	Threaded rod 28TR L=455	2	2	2	2	2
5	0272330	Facet plate Ø24	2	2	2	2	2
6	0261425	Nut M24 (galvanized)	4	4	4	4	4
7	690304102	Crank Ø20x160mm incl. 8mm roll pin	2	2	2	2	2
7a	690130158	Roll pin Ø8x30	2	2	2	2	2
8	0378200	Ring pin Ø4,5mm	2	2	2	2	2
9	0235851	Bolt M16x65 10.9 FZG	8	8	8	8	8
10	0272290	Facet plate Ø16	16	16	16	16	16
11	0264090	Self-locking nut M16	8	8	8	8	8
12	0382150	U-bolt M16x70x70x70	4	4	4	4	4
13	0272290	Facet plate Ø16	8	8	8	8	8
14	0264090	Self-locking nut M16	8	8	8	8	8
15	645440026	Spindle complete, right (pos 1-14 w/o pos 2)					
16	645440024	Spindle complete, left (pos 2-14)					
17	1250086	Bar	1				
	1250016	Bar		1			
	645440027	Bar			1		
	645440031	Bar				1	
	645440029	Bar					1
18	690109202	Plastic plug, black			2	2	2
19	645000129	Disc coulter unit complete, left					
20	645000130	Disc coulter unit complete, right					

Disc couler unit



Pos.	Item no.	Designation	Per unit
1	645440014	Carrier arm for disc coulter, left	1
1a	645440016	Carrier arm for disc coulter, right	1
2	1036541	Hub for angular contact ball bearing	1
3	0483390	Sealing Z 006 SKF	1
4	0483580	Sealing ring 30x55x7 DIN3760A	1
5	0479070	Angular contact ball bearing Ø62/25 mm	2
6	0379220	Locking ring I 62 DIN472	1
7	1036930	Disc Ø50xØ18x4mm	1
8	0262150	Hexagon castle nut M16, FZB DIN935-8	1
9	0373310	Split pin Ø5 x 32	1
10	0393830	Hub cover Ø62	1
11	0427851	Disc f/disc coulter, 16 notch 5mm	1
12	0227790	Screw M10x14mm 8.8 DIN912 (ISO 4762)	4
13	690136001	Lubricating nipple M6	1
14	690103091	Bolt M12x45 10.9	4
15	690117014	Facet plate M12	8
16	690113013	Self-locking nut M12	4
17	30949045	Bracket for rubber damper	1
18	690210710	Rubber cord Ø35 L=190	4
19	645000129	Disc coulter unit complete, left (pos 1 - 18)	
20	645000130	Disc coulter unit complete, right (pos 1a - 18)	
21	1036300	Repair kit w/hub	

LED-Light

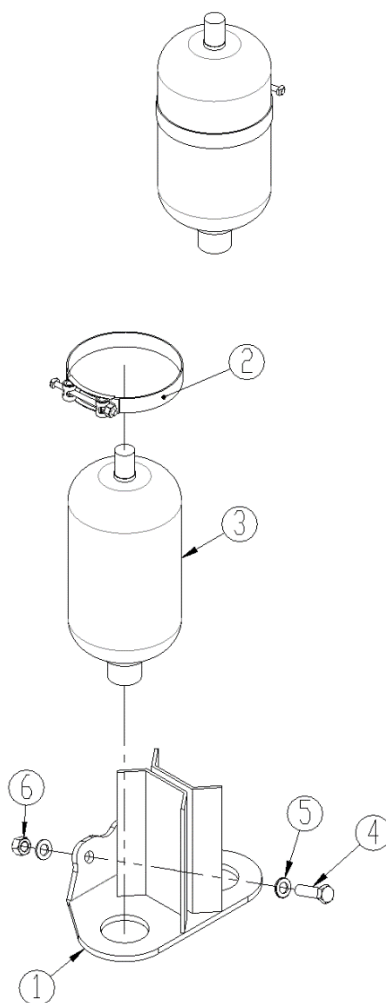


Pos.	Varenr.	Betegnelse	Antal
1	7357505	Lightbox (L)	1
	7357508	Lightbox (R)	1
2	7357504	Rear light	2
3	0264030	Locking nut M5	
4	7357507	Marking lights (L)	1
	7357509	Marking lights (R)	1
5	0233860	Bolt M5x20	
6	0272230	Facet plate Ø5	
7	0656240	Reflex, yellow	2
8	0656250	Reflex, white	2
9	0521030	Reflex, red	2
10	0233860	Bolt M5x20	
11	7357516	Bracket	2
12	0234760	Bolt M8x25	
13	0272250	Facet plate Ø8	
14	0264050	Locking nut M8	
15	0234330	Bolt M6x20	
16	0272240	Facet plate Ø6	
17	0264040	Locking nut M6	
18	30910110	Consol	2
19	0230825	Taptite bolt M8x25	
20	0520492	Junction box 105x105x60	1
21	7357545	Rutaseal nipple M20 8-12mm	2
22	7357546	Rubberbushing Nr. 38A Ø10/3 black	1
23	0527140	Plug 7 poles DIN 72 577 – ISO 1724	1
	690160080	Cable 5 x 1mm ²	
24	1241423	Bracket	2
25	690160074	Warning boards	2
26	0377400	R-clip Ø4	2

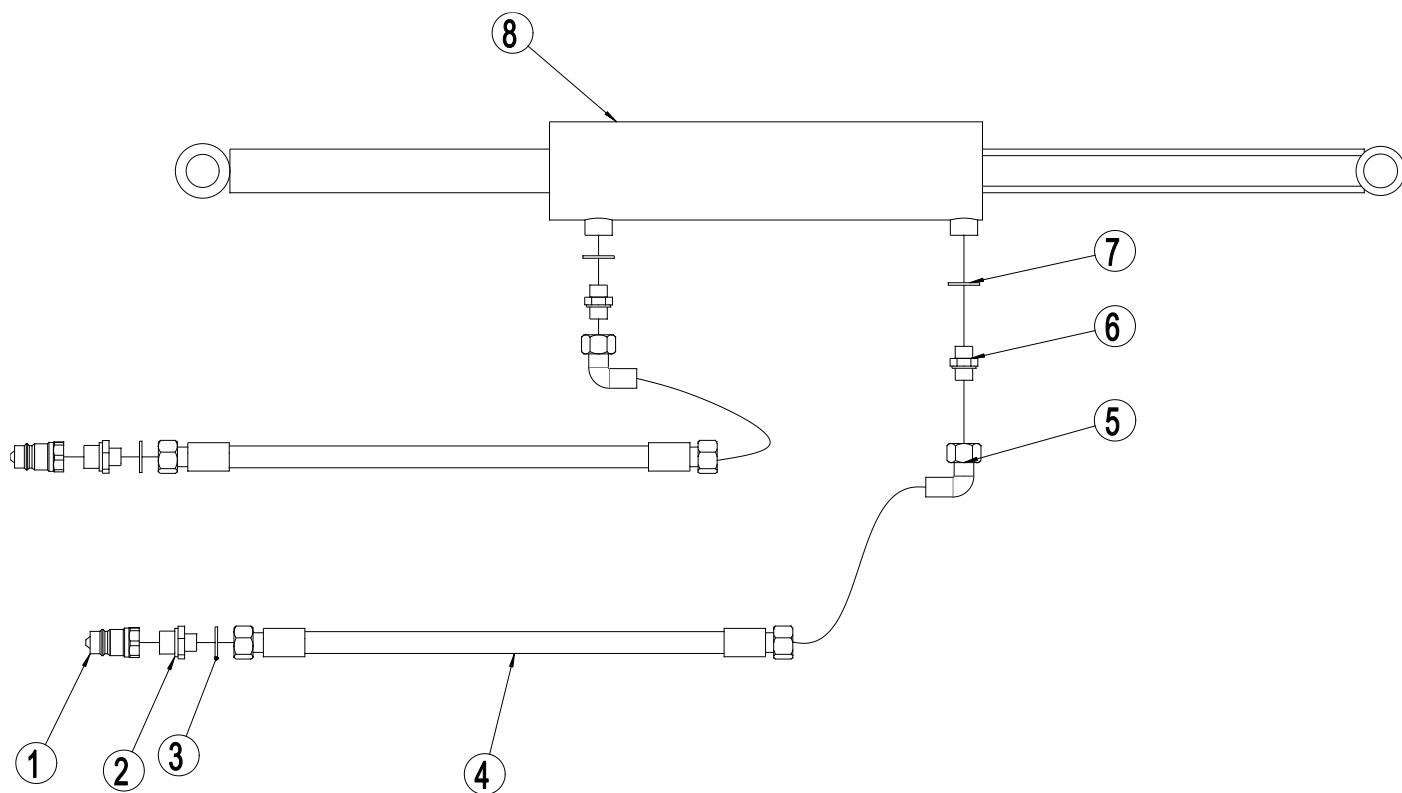
Attention: The number of hoses and hose lengths can vary – dependent on the machine type, therefore check measurements and number before ordering spare parts.

Spare parts list - Hydraulics

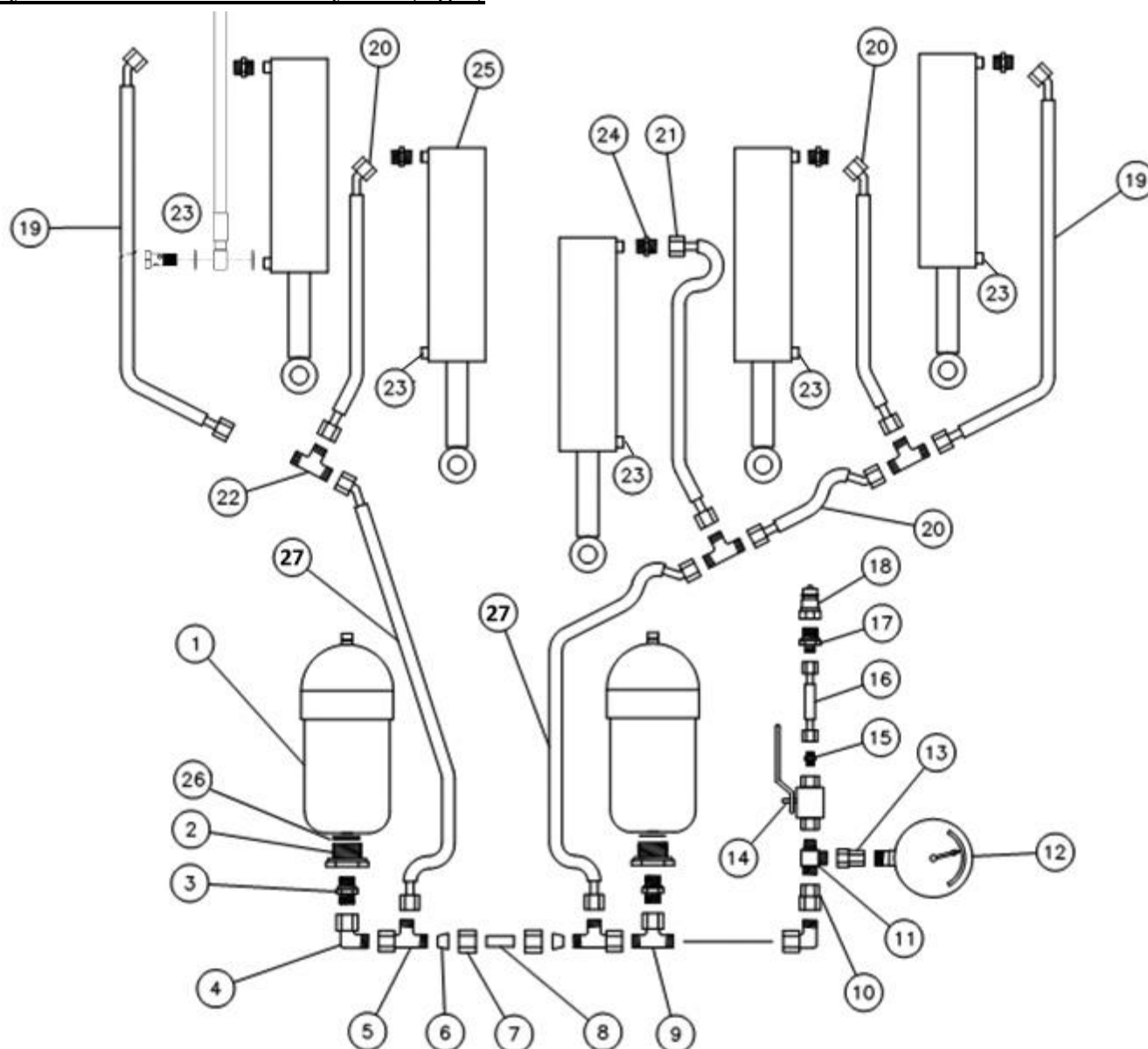
Support for accumulator



Pos.	Item no.	Designation	Number
1	645000125	Support for accumulator (discontinued)	1
	1165341	Support for accumulator	
2	690206516	Clamp 175-187 mm.	2
3	690206513	Accumulator 4,5L 90 bar (until machine nr. 35313)	2
	690206513	Accumulator 4,5L 110 bar (from machine nr. 35314 until 37567)	2
	690206515	Accumulator 6,0L 110 bar (from machine nr. 37568)	2
4	0335830	Bolt M16x55	2
5	0272290	Facet plate Ø16	4
6	0264090	Self-locking nut M16	4

Hydraulics for roller depth control


Pos.	Item no.	Designation	1,5m	1,8m	2,5m	3,0m	3,5m
1	690203013	Quick coupling, male E402 1/2"	2	2	2	2	2
2	690203003	Fitting, straight 10-1/2" BSP	2	2	2	2	2
3	690208108	Bonded seal 1/2"	2	2	2	2	2
4	690201021	Hydraulic hose 2300mm 1/4"	2	2	2	2	2
5	690203016	Fitting 90angle Ø10x3/8"	2	2	2	2	2
6	690203002	Hexagon nipple Ø10x3/8"	2	2	2	2	2
7	690208104	Bonded seal 3/8"	2	2	2	2	2
8		See pos. 10 page 16	1	1	1	1	1

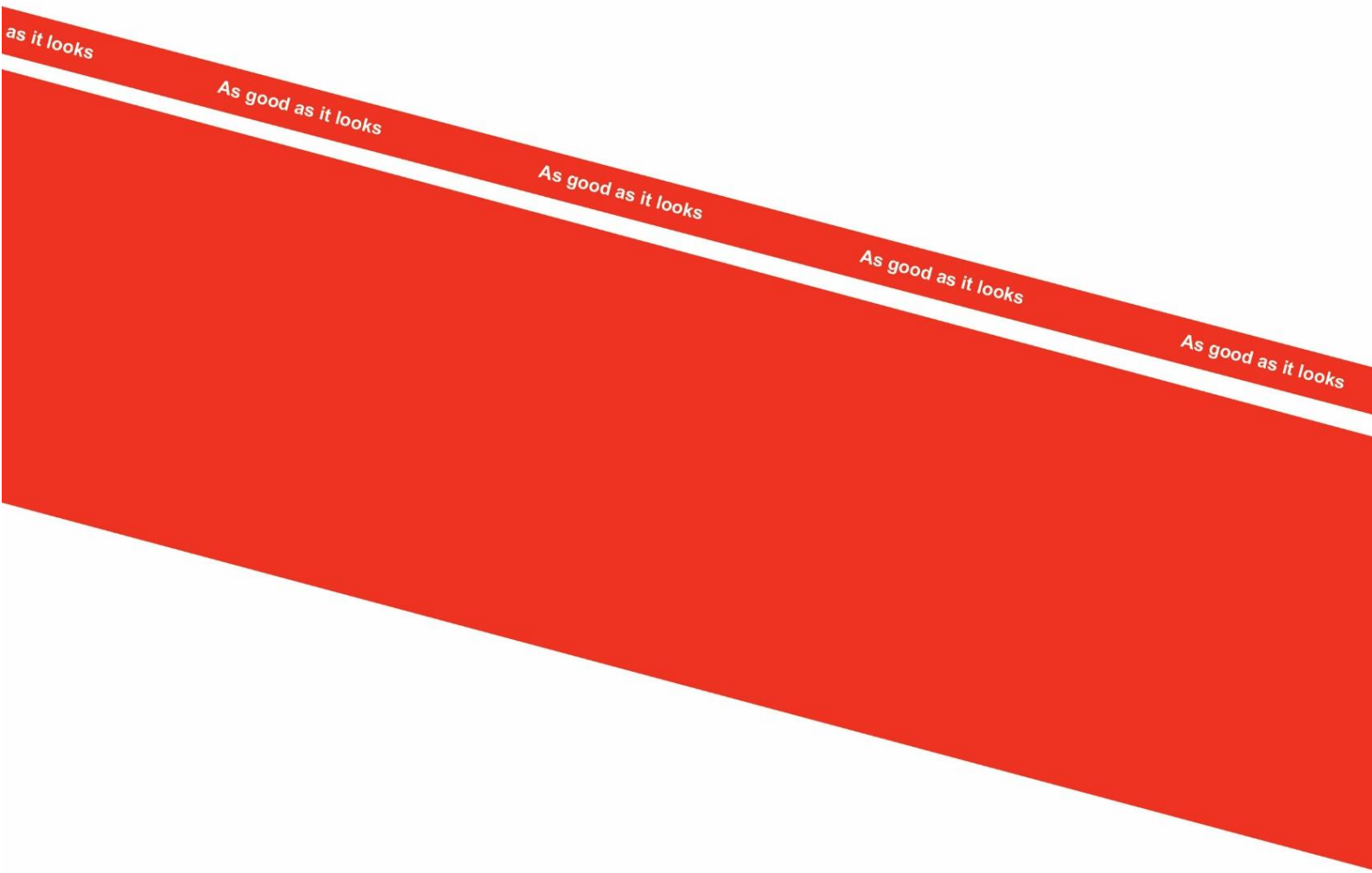
Hydraulics for auto-release system (rigid)


Pos.	Item no.	Designation	Number
1		See pos. 3 page 34	2
2	690204501	Fitting straight ½" x 1 ¼" (until machine nr. 37567)	2
	0446720	Fitting, straight M22 x 1,5 x ¾" (from machine nr. 37568)	2
3	690204512	Fitting straight Ø15 mm x ½"	2
4	690204500	Fitting 90angle Ø15 mm w/pre-mounted union nut	2
5	690204502	Fitting T Ø15L	2
6	690204503	Olive ring Ø15	2
7	690204504	Union nut Ø15	2
8	662000803	Hydraulic tube Ø15 L=38	1

Pos.	Item no.	Designation	Number
9	690204505	Fitting T Ø15	1
10	690204506	Reversed fitting Ø15 / ½"	1
11	690203314	Fitting T ¾"-Ø12-Ø12	1
12	690206824	Pressure gauge 400 bar	1
13	690206825	Pressure gauge fitting Ø12 / ¼"	1
14	690202990	Ball valve ¾" PN500 DN 10	1
15	690203002	Fitting, straight Ø10-¾" BSP	1
16	690201032	Hydraulic hose 1130 mm ¼" st/st	1
17	690203003	Fitting, straight Ø10-½" BSP	1
18	690203016	Quick coupling ½" E402, male	1
19	690201448	Hydraulic hose 1150 mm ½" st/45°	2
20	690201430	Hydraulic hose 590 mm ½" st/45°	0-7
21	690201414	Hydraulic hose 400 mm ½" st/st	0-1
22	690204507	Fitting T Ø15	0-5
23	0451700	Hydraulic hose 1500 mm ¼" - w/banjo coupling	2-5
23a	0444950	Banjo bolt ¼"	2-5
23b	0449050	Bonded seal, PP45B	4-10
24	690204512	Fitting straight Ø15x½"	2-5
25		See pos. 13 page 26	2-5
26	0449110	Bonded seal 1 ¼"	2
27	0454183	Hydraulic hose 600 mm ½" st/st	2

Attention: The number of hoses and hose lengths can vary – dependent on the machine type, therefore check measurements and number before ordering spare parts.

Notes



The design is subject to modification without notice.