

UK

HE-VA

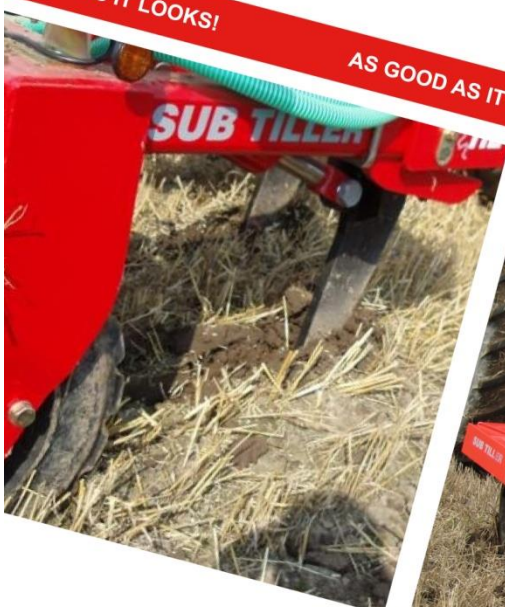
GOOD AS IT LOOKS!

AS GOOD AS IT LOOKS!

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AS GOOD AS IT LOOKS!

AS GOOD AS IT LOOKS!



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

Sub-Tiller

Rigid: 2,0 m - 2,5 m - 3,0m - 3,5 m - 4,0 m
Hydraulic: 4,0 m - 5,0 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.

The declaration comprises the following machine:

Sub-Tiller 2,0m - 2.5m – 3.0m – 3.5m – 4.0m (rigid)
Sub-Tiller 4.0m – 5.0m (hydraulic)

Nykøbing 01.06.2010

A handwritten signature in dark ink, appearing to read "Villy Christiansen", with a horizontal line drawn underneath it.

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 Sub-Tiller for possible damages.

Machine Description

Range of Application

The Sub-Tiller is a sub-soiler for soil loosening from 0 cm to 60 cm depth. The work is performed either before seeding (min. tillage) or after harvest where a loosening of the tramlines in the field is desirable in order to discourage structure damages. Infinitely variable tine spacing, depending on the actual working task. The Sub-Tiller is ideal for all soil types and a V-profile roller is recommendable for moist and sticky soil types while a square tube roller is recommendable for lighter soil types. The Sub-Tiller can be mounted with HE-VA Multi-Seeder which opens up the possibility of till-seeding of rape or crops for green manure. The Sub-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 have to be aware of the tractor wheels, and under certain circumstances a mounting of twin wheels is recommendable.

Technical specifications

Model	2.0 m Rigid	2.5 m Rigid	3.0 m Rigid	3,5 m Rigid	4.0 m Rigid	4.0 m Hydr.	5.0 m Hydr.
Working width	2m	2,5m	3m	3,5m	4m	4m	5 m
Transport height						2,6m	3m
Transport width						2,43m	2,43m
Power requirement HP	60-120 HK	60-120 HK	60-200 HK	140-280 HK	200-280 HK	200-280 HK	200-360 HK
Requirement for number of double acting oil outlets	1	1	1	1	1	2	2
No. of tines	2/3 stk.	2/3 stk	2/3/5 stk	5/7 stk	7 stk	7 stk	9 stk.
Weight Square tube roller and Quick-Push shear bolt	900 kg	985 kg	1230 kg	1480 kg	1560 kg	1910 kg	2240 kg
Weight Square tube roller and hydraulic automatic release system	1005 kg	1090 kg	1410 kg	1720 kg	1640 kg	1990 kg	2390 kg
Weight V-profile roller and Quick-Push shear bolt	1250 kg	1500 kg	1850 kg	2200 kg	2380 kg	2730 kg	3260 kg
Weight V-profile roller and hydraulic automatic release system	1355 kg	1605 kg	2025 kg	2440 kg	2620 kg	2970 kg	3690 kg

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

Safety instructions for Sub-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 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.

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.

Instructions on transport on the public roads:

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

Front axle load:

After the attachment of the machine and at maximum load, the driving properties of the tractor must be 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.

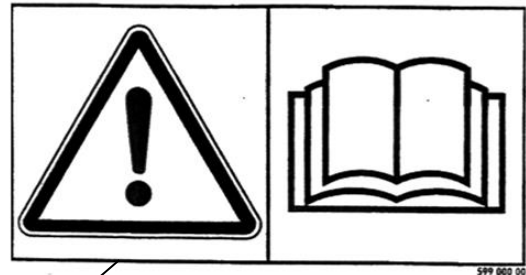
NB! The driving, controlling and braking properties are affected by the attached machine combination.

Labels on the machine

You will find several labels on your machine containing **safety** and practical instructions as regards the correct application of the machine. Please study the instructions and point out to the user the importance of the labels as well as the **safety instructions** in the Operating Instructions. Always keep the labels clean and readable – if not they must be replaced.



A



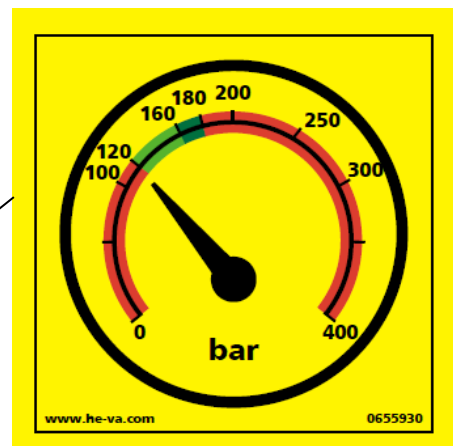
B

**HUSK - PLEASE NOTE -
ACHTUNG - ATTENTION**

**EFTERSPÆND BOLTE
TIGHTEN UP THE BOLTS
BOLZEN NACHZIEHEN
RESSERRER LES BOULONS**

C

D



Explanation of the machine labels

- A** Plate with number and year of manufacture.
- B** Study the Operating Instructions thoroughly before any operation of the machine and observe all safety instructions.
- C** Tighten up all bolts regularly. If this is not performed, our guarantee obligations will no longer apply.
- D** Correct hydraulic pressure on the release system.

Start-up of the machine

General information

The machine requires 1 double acting outlet (rigid).

The machine requires 2 double acting outlets (hydraulic).

The hoses for depth adjustment are provided with **red** cable straps.

Attachment and uncoupling (rigid machines)

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. The hydraulic cylinder which controls the roller is equipped with a pilot-controlled check valve which hermetically cuts off the oil for the hydraulic cylinder, meaning that it is locked in the chosen position regardless of the tightness of the quick couplings.

Attachment and uncoupling (hydr. machines)

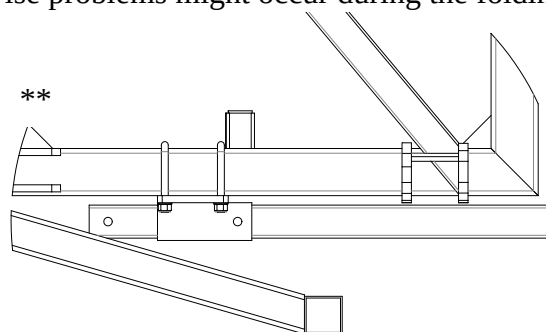
1. Be aware that the machine is to be attached und uncoupled to the tractor in transport position.
2. When the machine is hanging on the tractor, the support stand in the rear **MUST** be removed and parked in the holder on wing **
3. The roller has to be placed in the lowest position otherwise problems might occur during the folding.

From transport to working position:

4. The machine is to be raised to max. transport height.
5. The depth adjusting cylinder is placed at the top.
6. Now unfold the wing sections.
7. Adjust the working depth.

From working to transport position:

8. Raise the machine to max. transport height.
9. The depth adjusting cylinder (the roller) is placed at the top.
10. Now the wing sections are folded together into transport position. ⚠ Be sure that the locking claws lock the wing sections.

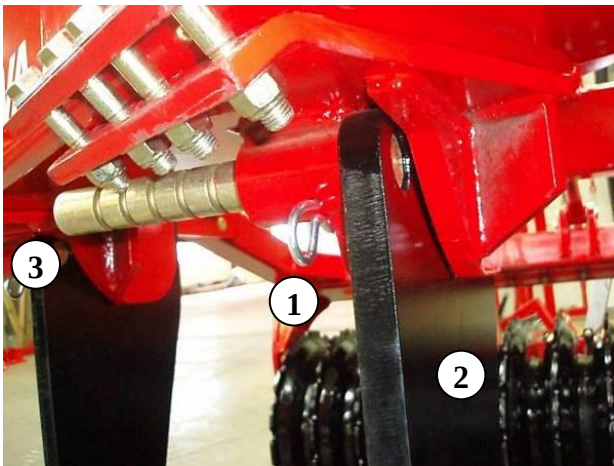


Settings and adjustment

Stone protection

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.



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

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

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

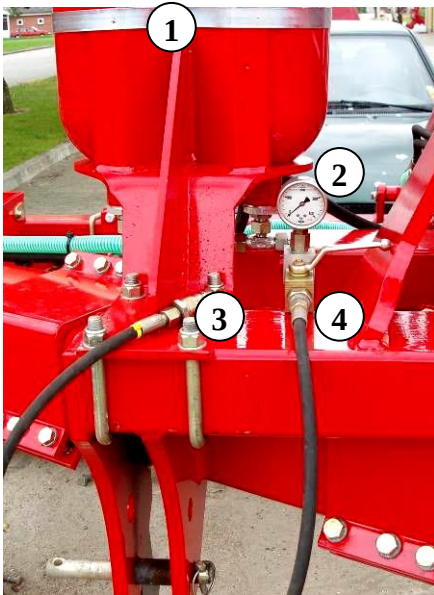
⚠ Important: All activities under the machine are deprecated when the shear bolt is being moved or changed.

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

When the shear bolt is broken for the eighth time, it is used up. Be aware that the shear bolt must **never** be shorter than 65 mm.

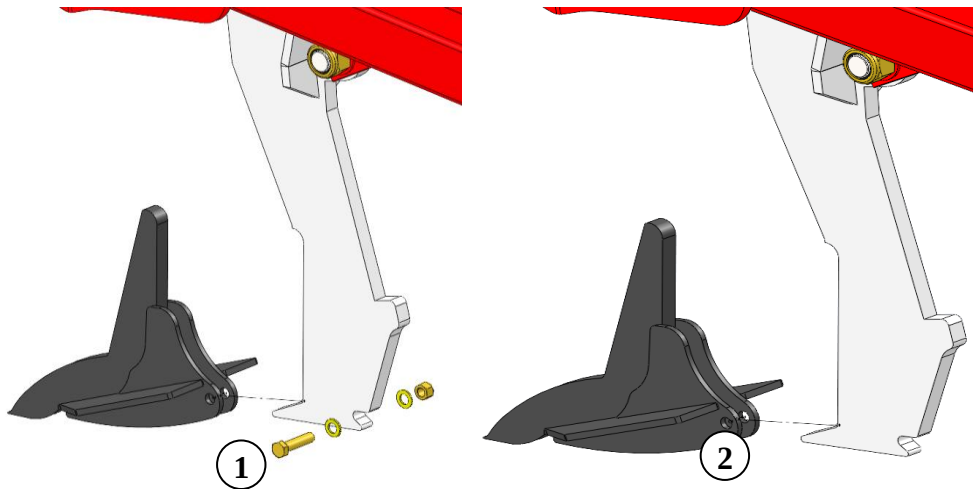
When a new shear bolt is mounted it is important that it is placed rightly. The end of 40 mm (Pos. 3) is to turn away from the tine.

Hydraulic automatic release system.



- 1 Before each season it has to be controlled, that the gas pressure in the accumulator (Pos.1) is 110 bars. ⚠ This requires special tools and can only be preformed by an authorized dealer.
- 2 Before the start-up of the machine the hydraulic pressure in the closed hydraulic stone protection system has to be controlled on the machine's pressure gauge (Pos. 2). The pressure has to be **minimum 120 bar** and must not exceed 160 bar.
- 3 IMPORTANT – the hydraulic pressure is to be controlled continuously and must never be under 120 bar.
- 4 If there is a need to adjust the working pressure, follow the below instructions:
 - a Mount the quick coupling of the hydraulic hose (Pos. 3) in the tractor's 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 off the ball valve again (Pos. 4), and the tractor's hydraulic system is relieved before the quick coupling (Pos. 3) is dismounted and placed in the parking device of the machine.
- 5 During the operation of the machine the tine is swinging automatically to the rear if it meets an obstacle. In normal circumstances the tine will automatically return to the 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 is returning to the working position with high speed and might throw with 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 M16x65 mm bolt (Pos. 1) by means of 2 pcs. 24 mm 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.

Item no. 645000043 = 120 mm wearing point

Item no. 645000044 = 200 mm wearing point

Item no. 645000063 = 350 mm wearing point

4. Check the M16 x 65 mm 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**
Item no. 0235852 (special bolt) + 0264090
5. Mount the M16 x 65 mm bolt (Pos. 1), lubricate and tighten it to 25 Nm.
Be careful not to tighten the bolt too much, as it might damage the wearing point!

Scraper

The Sub-Tiller has special designed scrapers among the packer rings on the V-profile roller. To avoid unnecessary wear and to obtain the best scraper effect it is important to check the centering of the scrapers every day



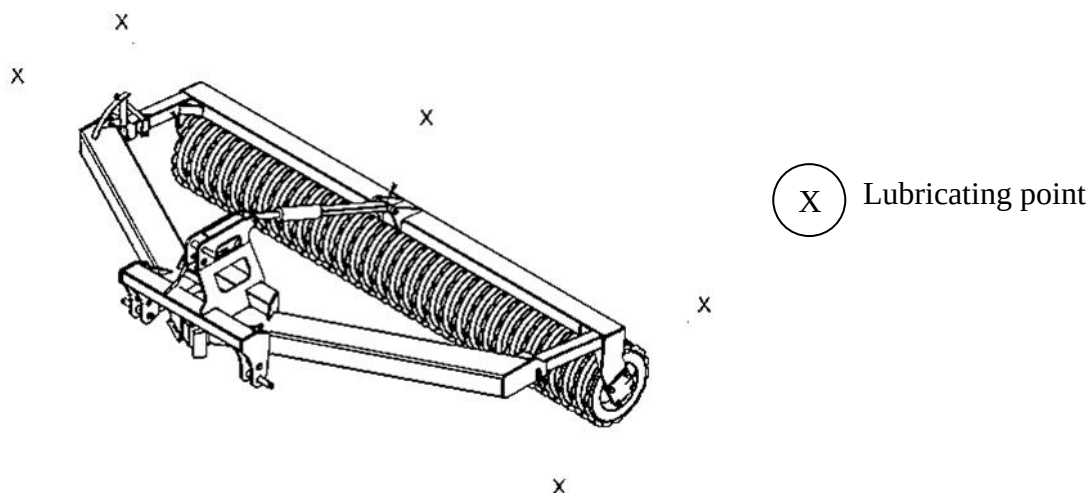
Maintenance

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

Lubrication

For lubrication, maintenance and repair, lower the Sub-Tiller, put the brakes of the tractor on and stop the motor.

The 2.0 – 4.0 m Sub-Tiller (rigid) have five lubricating points and the 4.0 – 5.0 m Sub-Tiller (hydraulic) have 20 lubricating points - all Sub-Tillers must be lubricated after every 30 working hours as well as after the cleaning in order to press out any water and dirt. The lubricating points on the rigid machines are located where the bar is mounted on the frame as well as at ball bearings and cylinders. The lubrication points on the hydraulic machines are furthermore located where the wing sections are hinged on the middle section and at the locking mechanism of the wing sections on the middle section.



Moreover, the machines with hydraulic automatic release system have 2 lubricating points per tine which are to be lubricated after 10 hours of operation.

Attention!

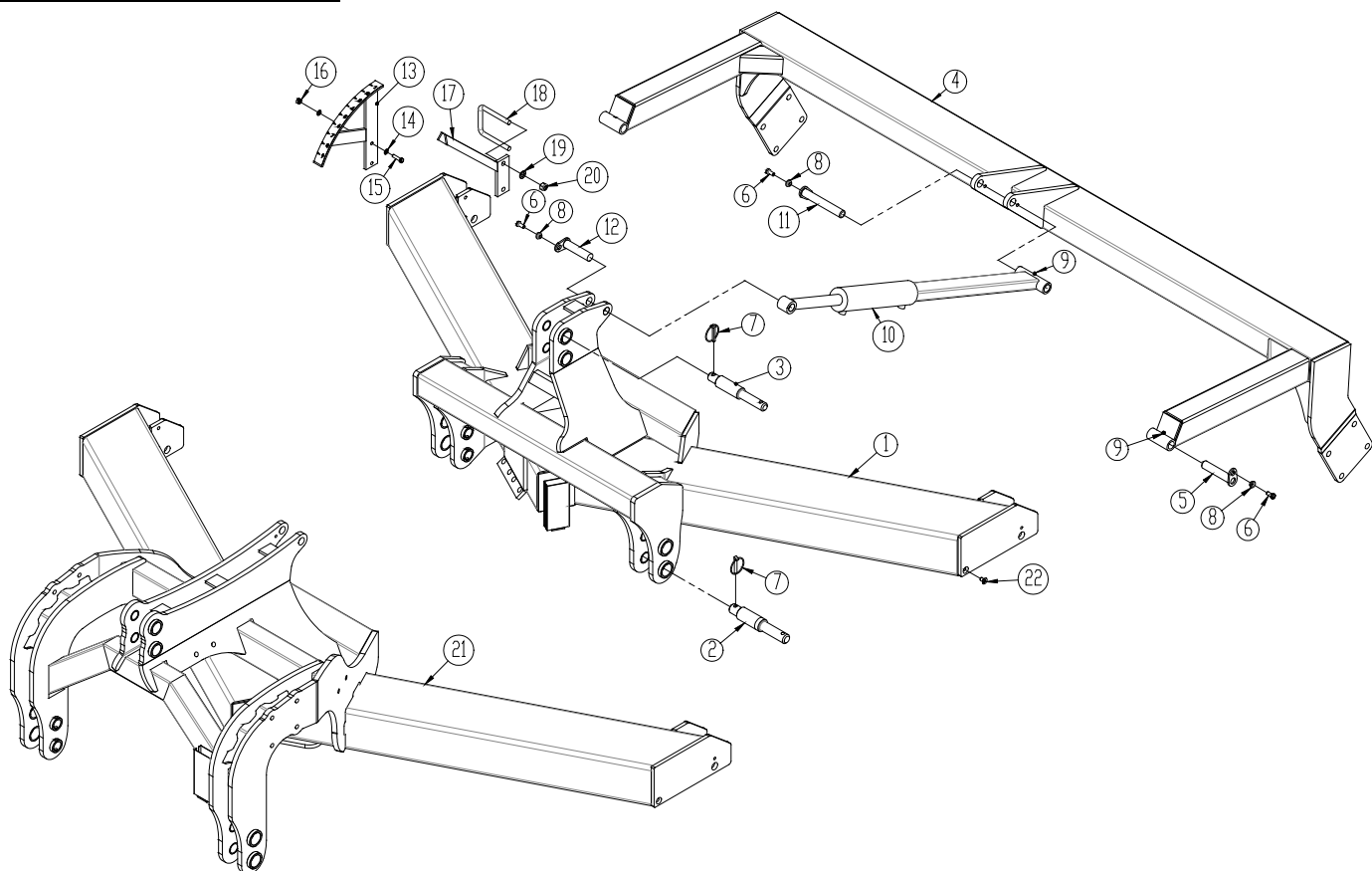
However, the double-sealed ball bearings in the roller should only be lubricated every 20 working hours and by 1-2 strokes so that the sealing rings are not pressed out.

Important!

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

Spare part list

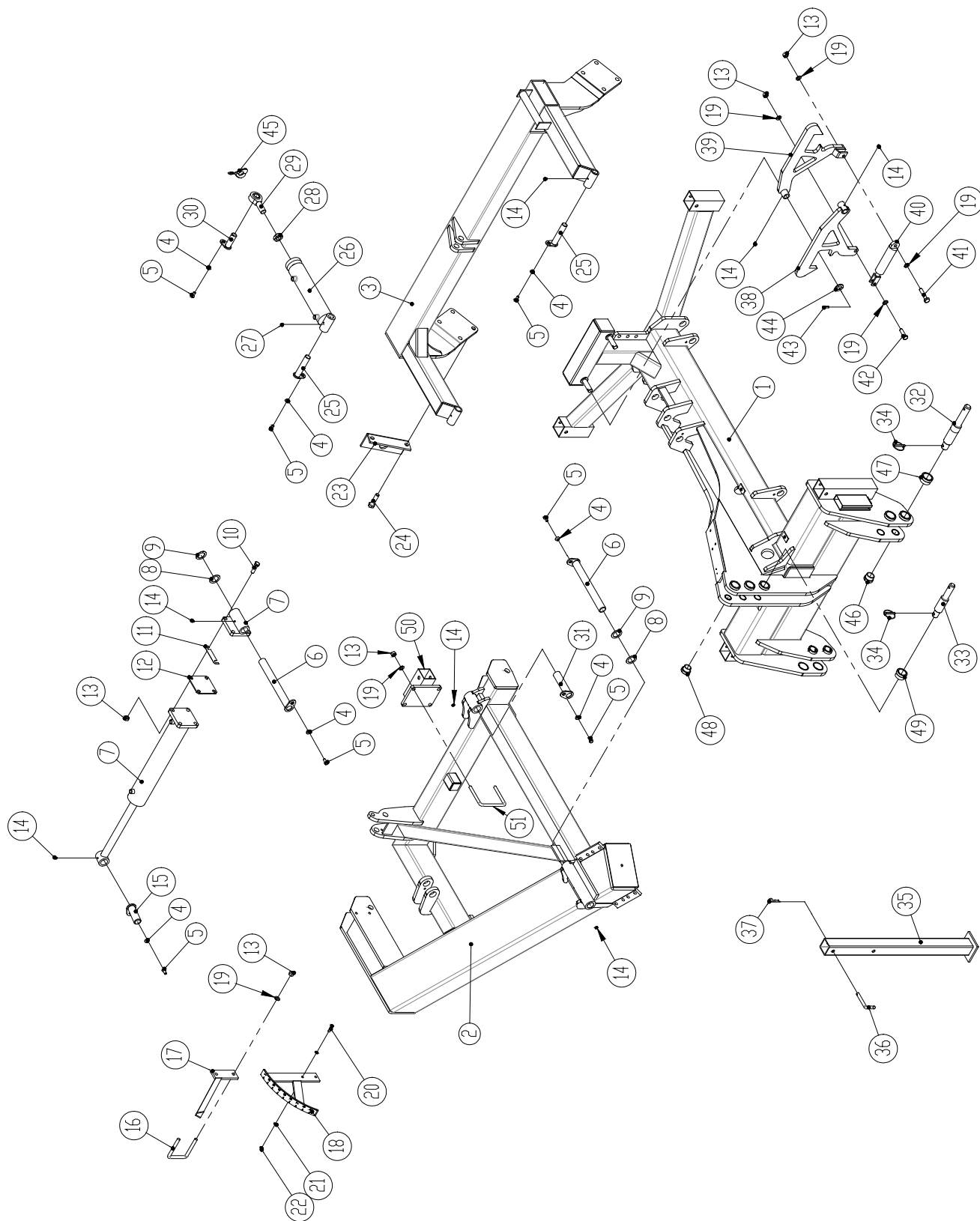
Frame 2,0 – 4,0 m (rigid)



Pos.	Item no.	Designation	2m	2,5 m	3m	3,5 m	4m
1	645001537	Frame 2,0 m	1				
	645000149	Frame 2,5 m		1			
	645000002	Frame 3,0 m			1		
	645000090	Frame 3,5 m				1	
	645000138	Frame 4,0 m					1
2	69528105C	Pin for lift arm Ø28/Ø36 L=105	2				
	69537105C	Pin for lift arm Ø37/Ø50 L=105		2	2	2	2
3	69525105C	Pin for top link Ø25/Ø32 L=105	1				
	69532105C	Pin for top link Ø32/Ø45 L=105 (to machine number 35590)		1	1	1	1
	69532125C	Pin for top link Ø32/Ø45 L=125 (from machine number 35591)		1	1	1	1
4	645001544	Roller bar 2,0 m	1				
	645000153	Roller bar 2,5 m		1			
	645000027	Roller bar 3,0 m			1		
	645000156	Roller bar 3,5 m				1	
	645000157	Roller bar 4,0m					1

Pos.	Item no.	Designation	2m	2,5 m	3m	3,5 m	4m
5	69430145G	Pin Ø30 L=145	2	2	2	2	2
6	0235330	Bolt M12x25 8,8	4	4	4	4	4
7	690134008	Ring pin Ø11,5	2	2	2	2	2
8	630532600	Lock bush for pin head	4	4	4	4	4
9	0432500	Lubricating nipple M8	3	3	3	3	3
10	645000036	Cylinder 80/40 – 280 mm.	1	1	1	1	1
	690200142	Gasket set for 80/40					
11	69430200G	Pin Ø30 L=200	1	1	1	1	1
12	69430125G	Pin Ø30 L=125	1	1	1	1	1
13	645000162	Scale for depth control	1	1	1	1	1
14	0272260	Facet plate Ø10	4	4	4	4	4
15	0235070	Bolt M10x40 8.8	2	2	2	2	2
16	0264060	Self-locking nut M10	2	2	2	2	2
17	645000165	Pointer for depth control	1	1	1	1	1
18	0382160	U-bolt M16 100x100x100	1	1	1	1	1
19	0272290	Facet plate Ø16	2	2	2	2	2
20	0264090	Self-locking nut M16	2	2	2	2	2
21	1240059	Frame (w/disc-opens) 3,0 m			1		
	1240426	Frame (w/disc-opens) 3,5 m				1	
	1240721	Frame (w/disc-opens) 4,0 m					1
22	0227855	Hexagon screw M12x20					

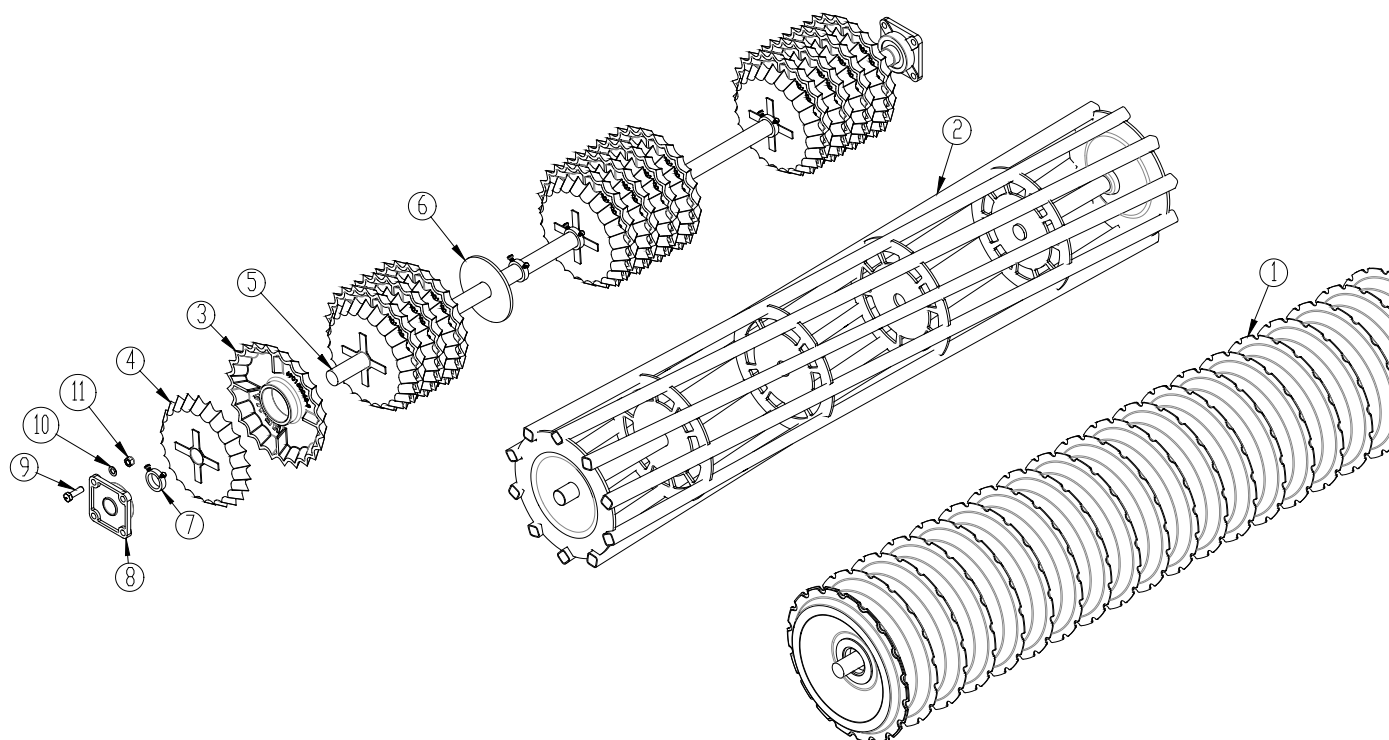
Frame 4.0 – 5.0 m (hydraulic)



Pos.	Varenr.	Betegnelse	4m	5m
1	645000197	Middle frame (to machine number 26690)	1	1
	645000415	Middle frame (from machine number:26691)	1	1
2	645000201	Wing (left)	1	
	645000200	Wing (right)	1	
	645000250	Wing (left)		1
	645000249	Wing (right)		1
3	645000242	Roller bar (left) (to 2009)	1	
	645000241	Roller bar (right) (to 2009)	1	
	645000477	Roller bar (left) (from 2010)	1	
	645000478	Roller bar (right) (from 2010)	1	
	645000258	Roller bar (left) (to 2009)		1
	645000257	Roller bar (right) (to 2009)		1
	645000481	Roller bar (left) (from 2010)		1
	645000482	Roller bar (right) (from 2010)		1
4	630532600	Lock bush for pin head	16	16
5	0235330	Bolt M12x25 8.8	16	16
	69440367G	Pin Ø40x367	4	4
7	690200255	Cylinder 90/40x500	2	2
	690200273	Gasket set		
8	0272528	Shim Ø62x42x1	10	10
9	0272530	Shim Ø62x42x2	10	10
10	0235840	Bolt M16x60 8.8	8	8
11	645000397	Shim 0,5mm		
12	645000382	Shim 5mm		
	645200176	Shim 3mm		
13	0264090	Self-locking nut M16	12	12
14	0432500	Lubricating nipple M8	12	12
15	69440110G	Pin Ø40x110	2	2
16	0382160	U-bolt M16 100x100x100	1	1
17	645000165	Pointer for depth control	1	1
18	645000162	Scale for depth control	1	1
19	0272290	Facet plate Ø16	6	6
20	0235070	Bolt M10x70 8.8	2	2
21	0272260	Facet plate Ø10	4	4
22	0264060	Self-locking nut M10	2	2
23	645000404	Transport bracket	1	1
24	0236160	Bolt M20x75 8.8	2	2
25	69430145G	Pin Ø30x145	6	6
26	690200117	Cylinder 80/40x255	2	2
	690200144	Gasket set		
27	0432100	Lubricating nipple M8	2	2
28	0261452	Counter nut M30x2	2	2
29	690140772	Rod end M30x2 (male thread)	2	2
30	69430090G	Pin Ø30x90	2	2
31	69440165G	Pin Ø40x165	2	2
32	69537125C	Pin for lift arm Ø37/Ø50x328		2

Pos.	Varenr.	Betegnelse	4m	5m
33	69532095C	Pin for top link Ø32/Ø44 L=95		1
34	690134008	Ring pin Ø11,5		3
35	645000273	Support stand	4	4
36	69516094A	Pin Ø16x94	4	4
37	0377400	R-clip Ø4	4	4
38	645000169	Locking claw, left	1	1
39	645000170	Locking claw, right	1	1
40	690200170	Cylinder 40/25x80	1	1
41	0235880	Bolt M16x80 8.8	1	1
42	0235830	Bolt M16x55 8.8	1	1
43	0371690	Roll pin Ø8x40	2	2
44	0272340	Facet plate Ø27	2	2
45	690200664	Distance clip blue 6,2mm	2	2
	690200665	Distance clip red 9,4mm	2	2
	690200666	Distance clip yellow 18.8mm	2	2
	690200667	Distance clip black 31.6mm	4	4
	690200668	Distance clip silver 50.8mm	4	4
46	690134036	Bush for lift arm Ø37,5		
47	690134038	Bush for lift arm Ø50,5		
48	690134034	Bush for top link Ø32,5		
49	690134037	Bush for top link Ø45,5		
50	645001556	Holder for support stand	2	2
51	0382800	U-bolt M16x100x150x100	4	4

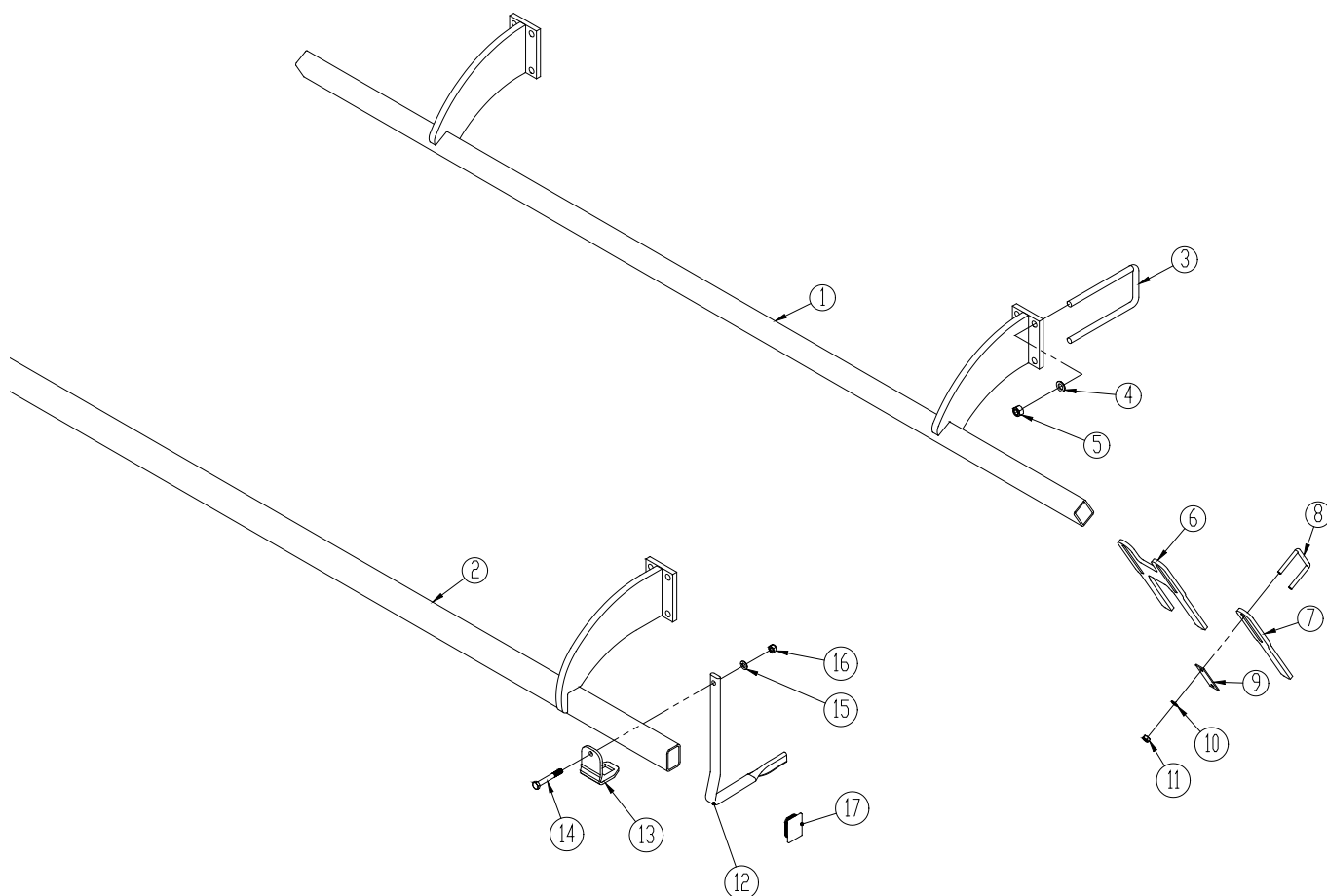
Rollers



Pos.	Item no.	Designation	2m	2,5m	3m	3,5m	4m	4m Hydr	5m Hydr
1		V-profil roller Ø600, center pipe ø355mm							
	630916300	V-profile roller			1				
	630916350	V-profile roller				1			
	630926300	V-profile roller					1		
		V-profil roller Ø600, axle Ø127mm							
	1160479	V-profile roller	1						
	1160468	V-profile roller		1					
	1160470	V-profile roller			1				
	1160480	V-profile roller				1			
	1160481	V-profile roller					1		
	1160629	V-profile roller (right)						1	
	1160626	V-profile roller (left)						1	
	1160623	V-profile roller (right)							1
	1160620	V-profile roller (left)							1

Pos.	Item no.	Designation	2m	2,5m	3m	3,5m	4m	4m Hydr	5m Hydr
2	1048310	Square tube roller Ø550	1						
	1048210	Square tube roller Ø550		1					
	1048240	Square tube roller Ø550			1				
	1048280	Square tube roller Ø550				1			
	1048330	Square tube roller Ø550					1		
	xxxx	Square tube roller Ø550						1	
	xxxx	Square tube roller Ø550						1	
	1048360	Square tube roller Ø550							1
	1048380	Square tube roller Ø550							1
3	690150064	Star rings Ø450 (No. per leg)	4	4	4	4	4	4	4
4	690150063	Star rings Ø500 (No. per leg)	4	4	4	4	4	4	4
5	678611935	Axle 1935mm	1						
	678612435	Axle 2435mm		1					
	678612935	Axle 2935mm			1				
	678613435	Axle 3435mm				1			
	678613935	Axle 3935mm					1		
	1160631	Axle 1633mm (right roller)						1	
	1160628	Axle 2210mm (left roller)						1	
	1160625	Axle 2133mm (right roller)							1
	1160622	Axle 2710mm (left roller)							1
6	690150052	Rondel (No. per leg)	1	1	1	1	1	1	1
7	671040400	Stop ring (No. per leg)	2	2	2	2	2	2	2
8	0478971	Bearing complete Ø60 UCF 312	2	2	2	2	2	4	4
9	0236140	Bolt M20x65mm	8	8	8	8	8	16	16
10	0272310	Facet plate M20	8	8	8	8	8	16	16
11	0264110	Self-locking M20	8	8	8	8	8	16	16

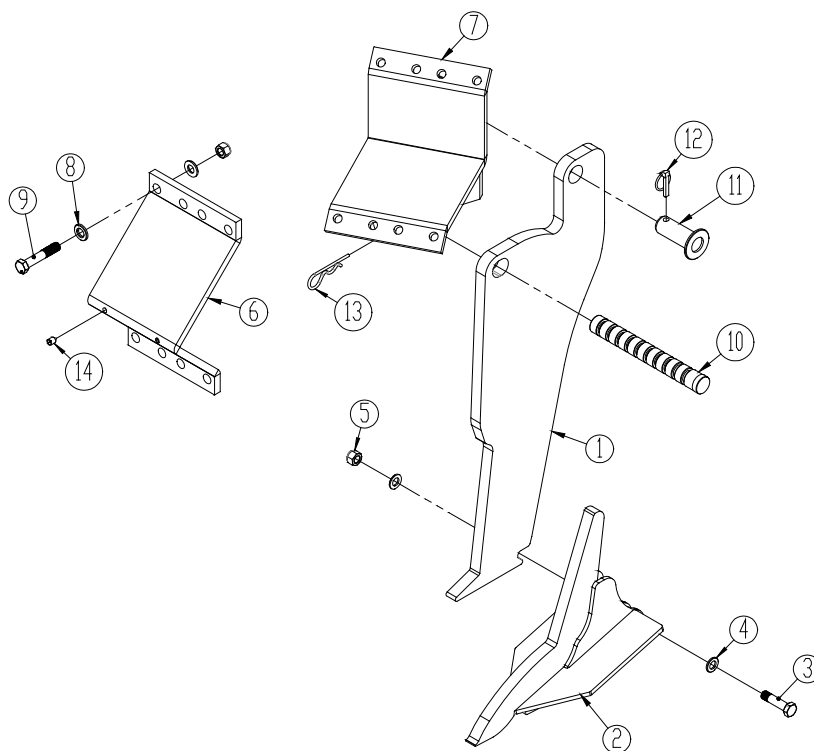
Scraper



Pos.	Item no.	Designation	2m	2,5m	3m	3,5m	4m	4m Hydr	5m Hydr
1		Scraper bar (V-profile roller, center pipe ø355mm)							
	630918555	Scraper bar			1				
	630918655	Scraper bar				1			
	1240414	Scraper bar					1		
2		Scraper bar (V-profile roller, axle ø127mm)							
	645001550	Scraper bar	1						
	645000707	Scraper bar		1					
	645000799	Scraper bar			1				
	645000827	Scraper bar				1			
	645000823	Scraper bar					1		
	645001158	Scraper bar (right)						1	
	645001156	Scraper bar (left)						1	

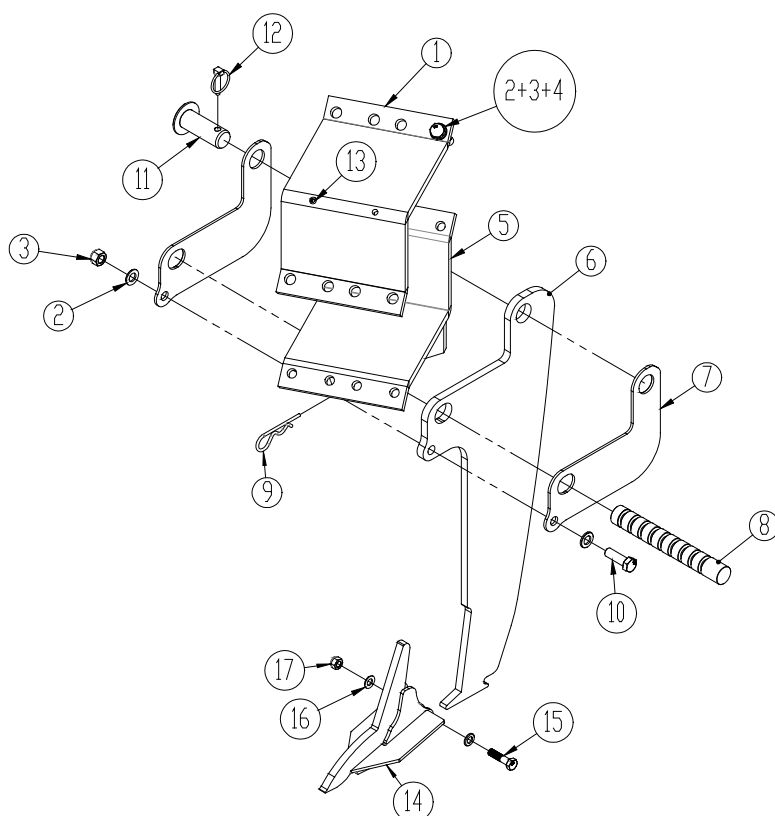
Pos.	Item no.	Designation	2m	2,5m	3m	3,5m	4m	4m Hydr	5m Hydr
	645001154	Scraper bar (right)							1
	645001152	Scraper bar (left)							1
3	690110106	U-bolt M16x200x100x200	4	4	4	4	4	8	8
4	0272290	Facet plate Ø16	8	8	8	8	8	16	16
5	0264090	Self-locking nut M16	8	8	8	8	8	16	16
6	630938506	Scraper double			11	13	15		
7	630938505	Scraper single			1	1	1		
8	690110025	U-bolt M10x50x70x50			23	27	31		
9	630938507	Clamping plate			23	27	31		
10	0272260	Facet plate Ø10			46	54	62		
11	0264060	Self-locking nut M10			46	54	62		
12	630938520	Scraper tine – short model	12	16	19	22	26	24	32
13	630938522	Clamp 50x70 f/scraper	12	16	19	22	26	24	32
14	0235450	Bolt M12x90mm.	12	16	19	22	26	24	32
15	0272270	Facet plate Ø12	12	16	19	22	26	24	32
16	0264070	Self-locking nut M12	12	16	19	22	26	24	32
17	0489487	Plastic pipe plug							

Tine with Quick-Push shear bolt



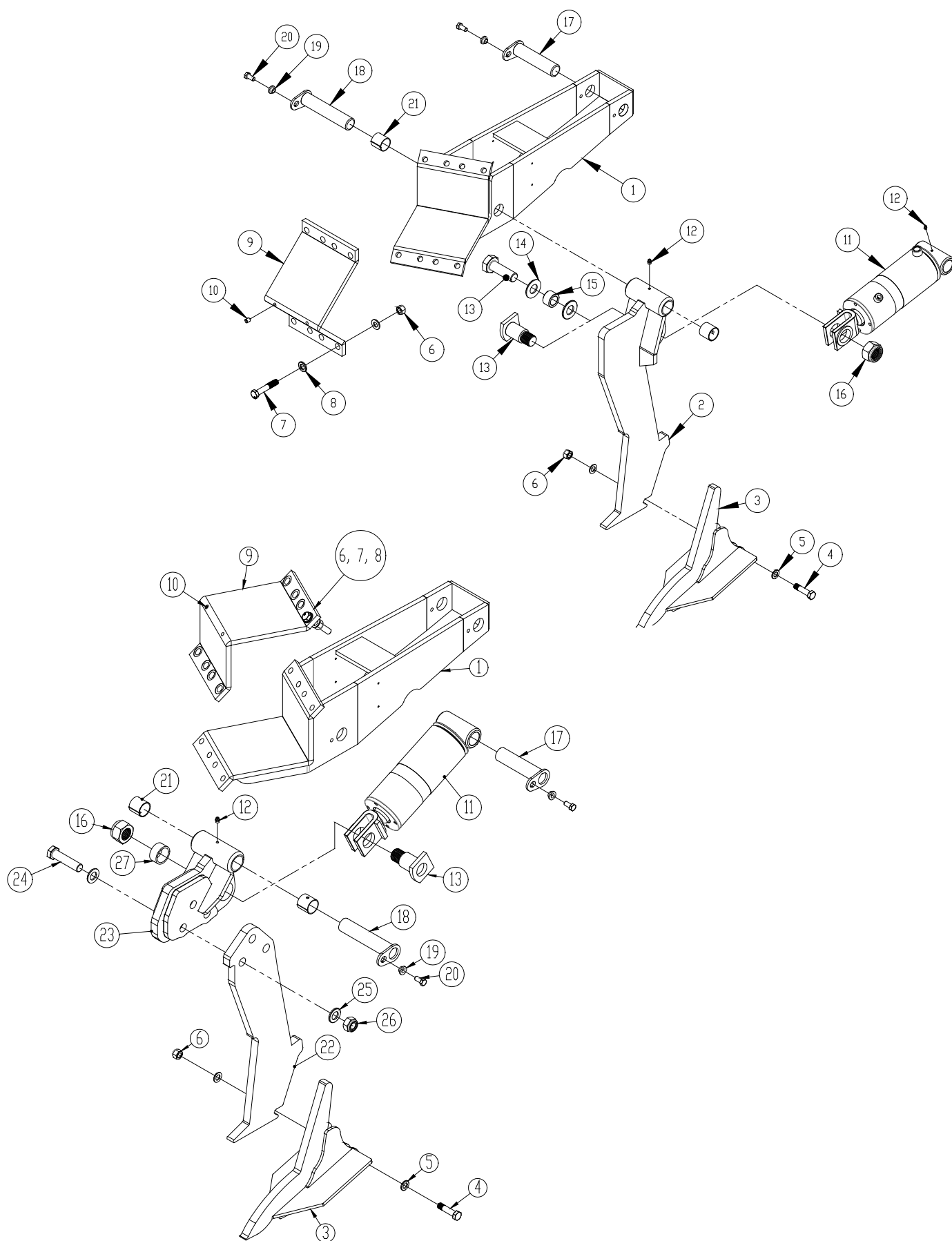
Pos.	Item no.	Designation	Number per leg
1	645000062	Tine for Quick-Push	1
	645000061	Tine for Quick-Push (+100mm)	1
	1240425	Tine for Quick-Push w/ 1 hardmetalplate	1
	1241163	Tine for Quick-Push w/ 2 hardmetalplate	1
2	645000043	Points w/120 mm wing shares	1
	645000044	Points w/200 mm wing shares	1
	645000044T	Points w/200 mm wing shares w/hardmetalplate	1
	645000063	Points w/350 mm wing shares	1
3	0235852	Bolt M16x65 8.8	1
4	0272290	Facet plate Ø16	2
5	0264090	Self-locking nut M16	9
6	645000328	Clamping plate for tine bracket	1
7	645000055	Tine bracket (left)	1
7	645000051	Tine bracket (right + centre)	1
8	0272900	Facet plate Ø16 (hardened)	16
9	0238850	Bolt M16x90 10,9	8
10	645000059	Shear bolt Ø35 (chrome)	1
11	69435070F	Pin Ø35 L=71	1
12	0378600	Ring pin Ø11	1
13	0377600	R-clip 6 mm electroplated	1
14	0227523	Pivot screw M12x20 DIN916	2

Easy Draft tine w/Quick-Push shear bolt



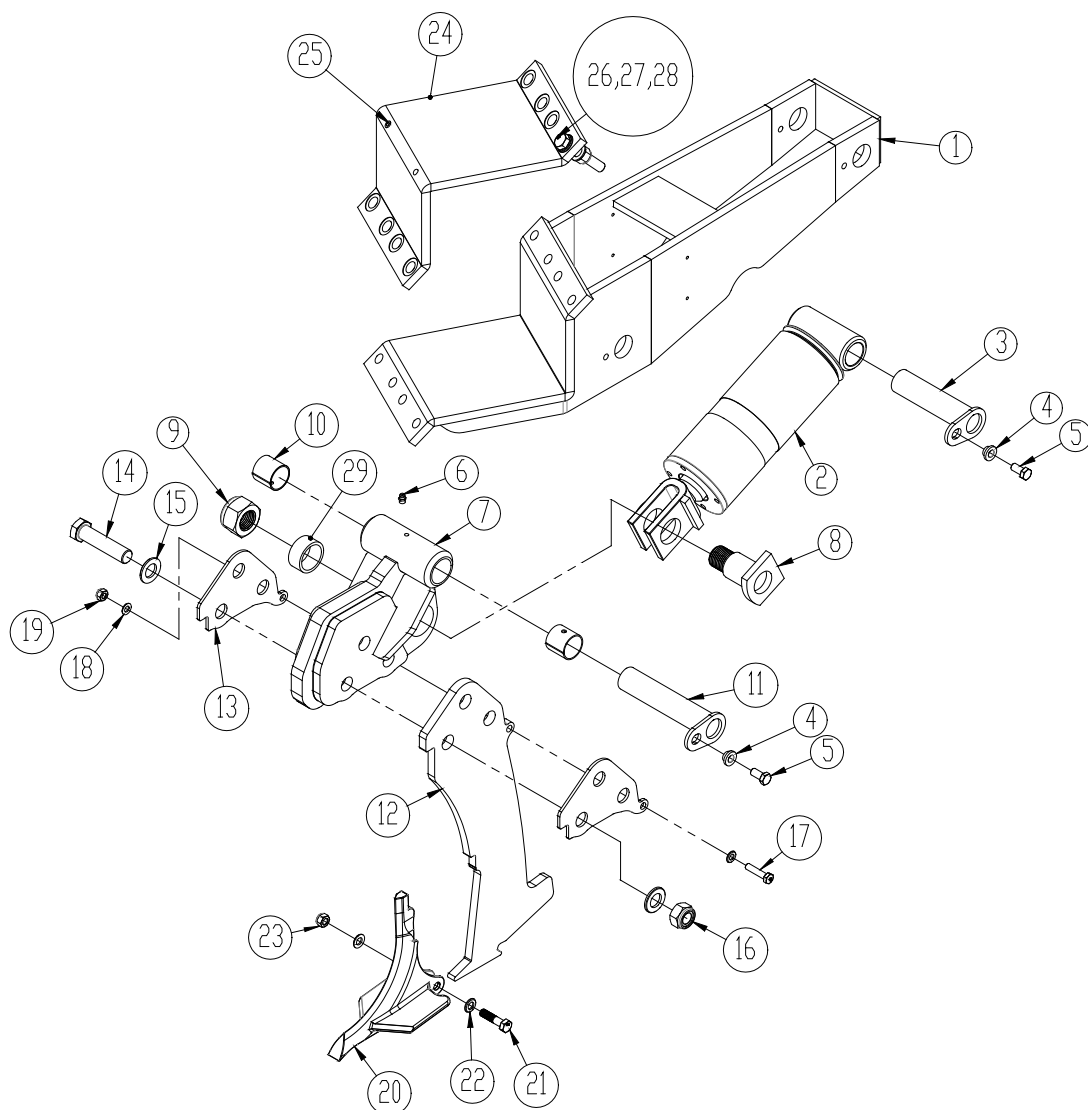
Pos.	Item no.	Designation	No. per leg
1	645000328	Clamping plate for tine bracket	1
2	0272900	Facet plate Ø16	16
3	0264090	Self-locking nut M16	8
4	0238850	Bolt M16x90 10.9	8
5	645000055	Tine bracket (left)	1
	645000051	Tine bracket (right+center)	1
6	645001447	Tine	1
	1241157	Tine (+100mm)	1
7	645001448	Shims	2
8	645000925	Shear bolt ø35 (chrome black)	1
9	0377600	R-clip 6 mm	1
10	690103127	Bolt M16x50	1
11	69435070F	Pin Ø35 L=71	1
12	0378600	Ring pin Ø11	1
13	0227523	Pivot screw M12x20 DIN916	2
14	645000056	Points 120mm w/hardmetal	1
15	0235380	Bolt M12x50	1
16	0272270	Facet plate Ø12	1
17	0264070	Self-locking nut M12	1

Tine with hydraulic automatic release system



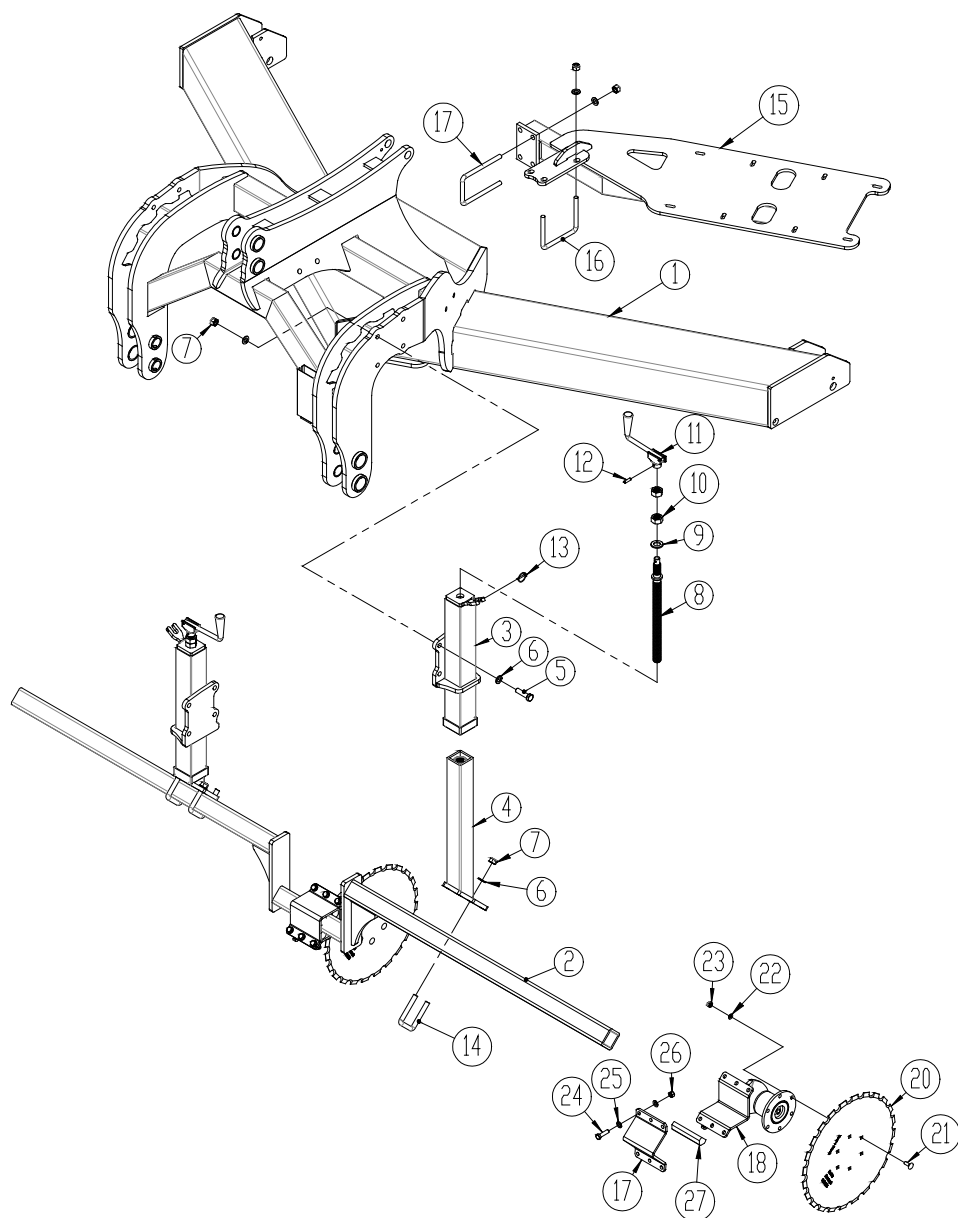
Pos.	Item no.	Designation	No. per leg
1	645000124	Tine bracket for hydr. automatic release system (L)	1
1	645000072	Tine bracket for hydr. automatic release system (R+C)	1
2	645000086	Tine for hydraulic automatic release system	1
	645001100	Tine for hydraulic automatic release system w/ 1 hardmetalplate	1
	1240001	Tine for hydraulic automatic release system w/ 2 hardmetalplate	1
	645000557	Tine for hydraulic automatic release system (+100mm)	1
3	645000043	Points w/120 mm wing shares	1
	645000044	Points w/200 mm wing shares	1
	645000044T	Points w/200 mm wing shares w/hardmetal	1
	645000063	Points w/350 mm wing shares	1
4	0235852	Bolt M16x65 8.8	1
5	0272290	Facet plate Ø16	2
6	0264090	Self-locking nut M16	9
7	0238850	Bolt M16x90 10,9	8
8	0272900	Facet plate Ø16 (hardened)	16
9	645000328	Clamping plate for tine bracket	1
10	0227523	Pivot screw M12x20 DIN916	2
11	690200305	Cylinder 110/50x165 with yoke (until mac. nr 27671)	1
	0467400	Cylinder 110/50x165 with yoke (from mac. nr 27672 to 30542)	1
	0467402	Cylinder 110/50x165 with yoke (from mac. nr 30543 to 31/12 18)	1
	0467405	Cylinder 110/50x165 with yoke (from 1/1 2019)	1
11a	690200313	Gaset set for 0467402	
	0467470	Gaset set for 0467405	
12	0432500	Lubricating nipple M8	2
13	690103868	Bolt M30x95 10,9 (until mac. nr 27671)	1
13	645000500	Pin M36 (from mas. nr 27672)	1
14	0272350	Facet plate Ø30 (until mac. nr 27671)	2
15	645000113	Bush (until mac. nr 27671)	1
16	0264155	Self-locking nut M30 (until mac. nr 27671)	1
16	0264190	Self-locking nut M36 (from mas. nr 27672)	1
17	69440165G	Pin Ø40 L=165	1
18	69440195G	Pin Ø40 L=195	1
19	630532600	Lock bush for pin head	2
20	0235330	Bolt M12x25 8,8	2
21	0475100	Slide bush Ø40/44 L=40	2
22	645001518	Tine for hydraulic automatic release system	1
	1240727	Tine for hydraulic automatic release system w/ 1 hardmetalplate	1
	1240728	Tine for hydraulic automatic release system (+100mm)	1
23	645001515	Bracket for tine	1
24	0236410	Bolt M24x100 mm	3
25	0272330	Facet plate Ø24 mm	6
26	0264130	Self-locking nut M24	3
27	0475370	Slide bush Ø55/45 L=25	1

Easy Draft tine with hydraulic automatic release system



Pos.	Item no.	Designation	No. per leg
1	645000072	Tine bracket for hydr. automatic release system (R + C)	1
	645000124	Tine bracket for hydr. automatic release system (L)	1
2	0467402	Cylinder 110/50x165 with yoke (until 31/12 2018)	1
	0467405	Cylinder 110/50x165 with yoke (from 1/1 2019)	1
2a	690200313	Gasket set for 0467402	1
	0467470	Gasket set for 0467405	1
3	69440165G	Pin Ø40 L=165	1
4	630532600	Lock bush for pin head	2
5	0235330	Bolt M12x25	2
6	0432500	Lubricating nipple M8	2
7	645001515	Bracket for tine	1
8	645000500	Pin M36	1
9	0264190	Nut M36	1
10	0475100	Slide bush Ø40/44 L=40	2
11	69440195G	Pin Ø40 L=195	1
12	645001457	Tine	1
13	645001456	Shims	2
14	0236410	Bolt M24x100 mm	3
15	0272330	Facet plate Ø24 mm	6
16	0264130	Self-locking nut M24	3
17	0235080	Bolt M10x45 mm	1
18	0272260	Facet plate Ø10 mm	2
19	0264060	Self-locking nut M10	1
20	645000056	Points 120mm w/hardmetal	1
21	0235380	Bolt M12x50	1
22	0272270	Facet plate Ø12	2
23	0264070	Self-locking nut M12	1
24	645000328	Clamping plate for tine bracket	1
25	0227523	Pivot screw M12x20	2
26	0238850	Bolt M16x90 10.9	4
27	0272900	Facet plate Ø16	8
28	0264090	Self-locking nut M16	4
29	0475370	Slide bush Ø55/45 L=25	1

Disc-opens



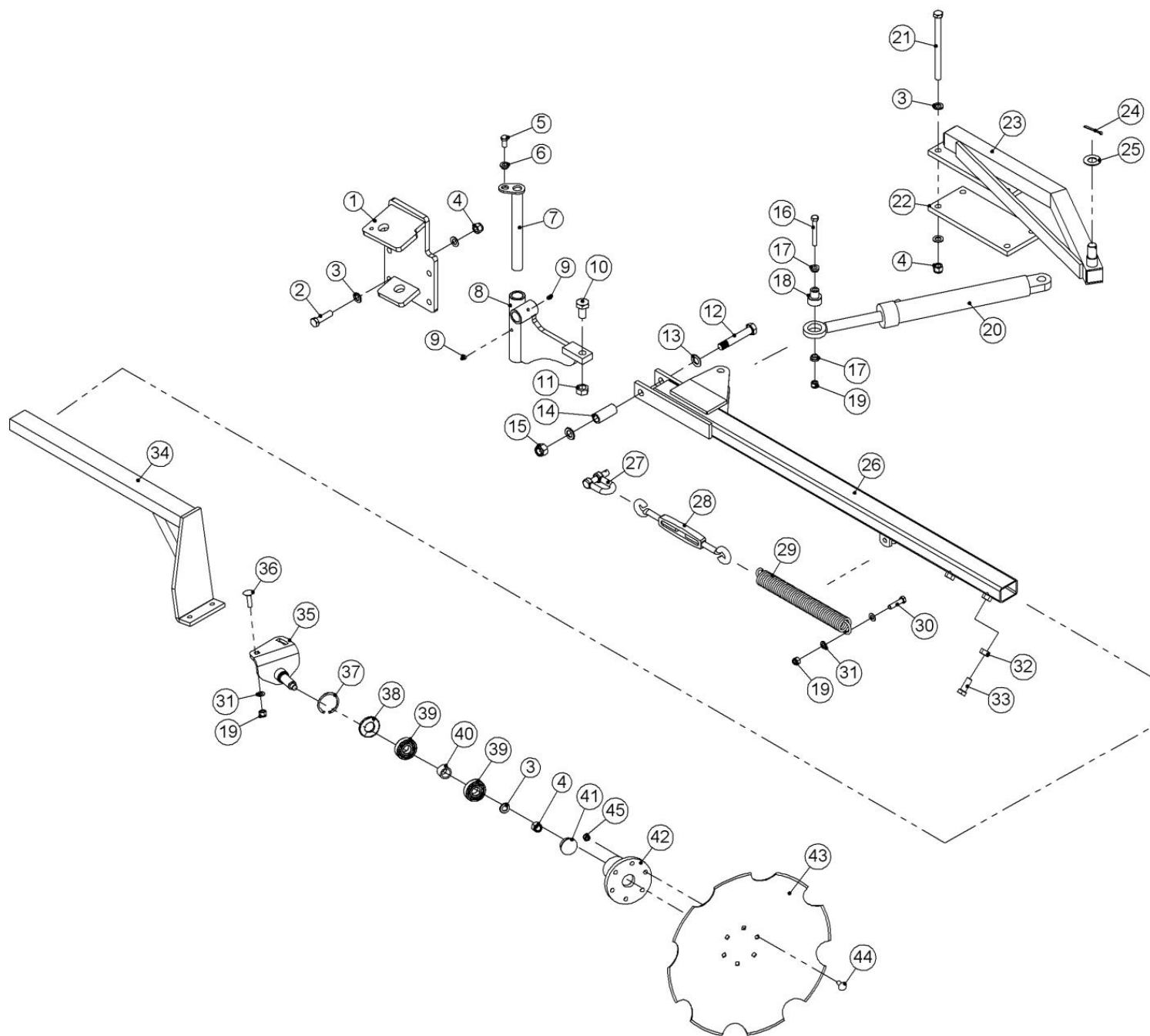
Number per machine

Pos.	Item no.	Designation	2m	2,5m	3m	3,5m	4m	4m Hydr	5m Hydr
1		Look at pos 21 page 15	-	-				-	-
2	1240148	Bar	-	-	1			-	-
	1240433	Bar				1			
	1240724	Bar					1		
3	1240144	Outer pipe (left)	-	-	1	1	1	-	-
	1240142	Outer pipe (right)			1	1	1		
4	645440017	Inner pipe	-	-	2	2	2	-	-
5	0235840	Bolt M16x60	-	-	8	8	8	-	-
6	0272290	Facet plate 16mm	-	-	24	24	24	-	-
7	0264090	Locking nut M16	-	-	16	16	16	-	-
8	690304122	Spindle	-	-	2	2	2	-	-
9	0272330	Facet plate Ø24	-	-	2	2	2	-	-
10	0261425	Nut M24	-	-	4	4	4	-	-
11	690304102	Crank handle	-	-	2	2	2	-	-
12	0371660	Retaining pin Ø8x32	-	-	2	2	2	-	-
13	0378200	Ring pin Ø4,5	-	-	2	2	2	-	-
14	0382150	U-bolt M16x70x70x70	-	-	4	4	4	-	-
15	1241151	Seed hopper plate (200L)							
	1240106	Seed hopper plate (twin)							
16	0382800	U-bolt M16x100x150x100			2	2	2		
17	690110104	U-bolt M16x150x100x150			2	2	2		

No. per leg

Pos.	Item no.	Designation	2m	2,5m	3m	3,5m	4m	4m Hydr	5m Hydr
18	1240726	Carrier arm	-	-	1	1	1	-	-
19	1240423	Clamping plate	-	-	1	1	1	-	-
20	0427854	Disc Ø470mm	-	-	1	1	1	-	-
21	0248421	Carriage bolt M10x30	-	-	6	6	6	-	-
22	0272260	Facet plate Ø10	-	-	6	6	6	-	-
23	0264060	Locking nut M10	-	-	6	6	6	-	-
24	690103091	Bolt M12x45	-	-	6	6	6	-	-
25	0272270	Facet plate Ø12	-	-	12	12	12	-	-
26	690113013	Lock nut M12	-	-	6	6	6	-	-
27	0484870	Rubber cord	-	-	4	4	4		

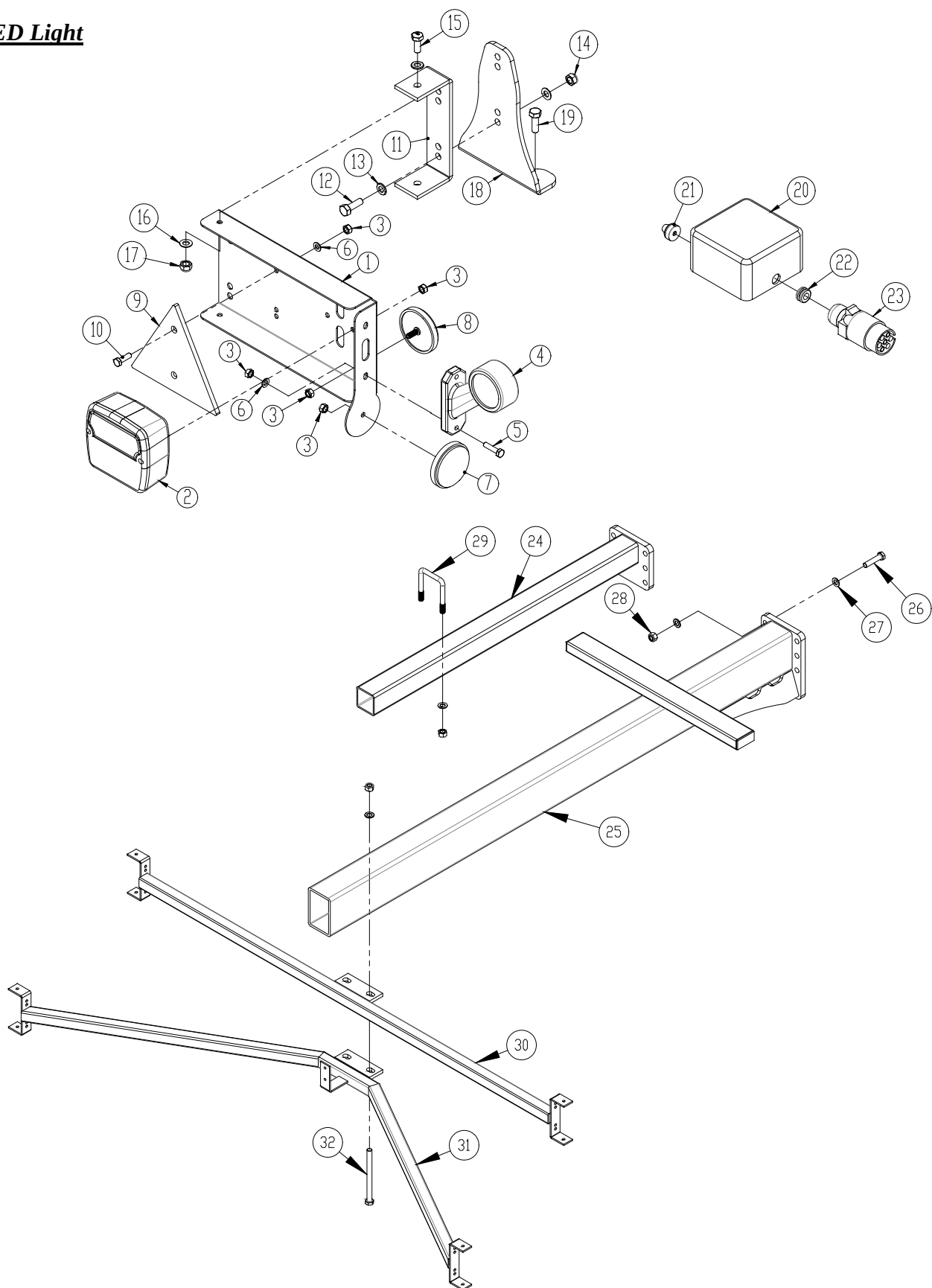
Hydraulic marker



Pos.	Item no.	Designation	Number
1	645000320	Marker bearing, left	1
	645000321	Marker bearing, right	1
2	0235840	Steel bolt M16x60 8.8	8
3	0272290	Facet plate Ø16	34
4	0264090	Self-locking nut M16	34
5	0235330	Steel setscrew M12x25 8.8	2
6	630532600	Lock bush for pin head	2
7	69430275G	Pin Ø30x275	2

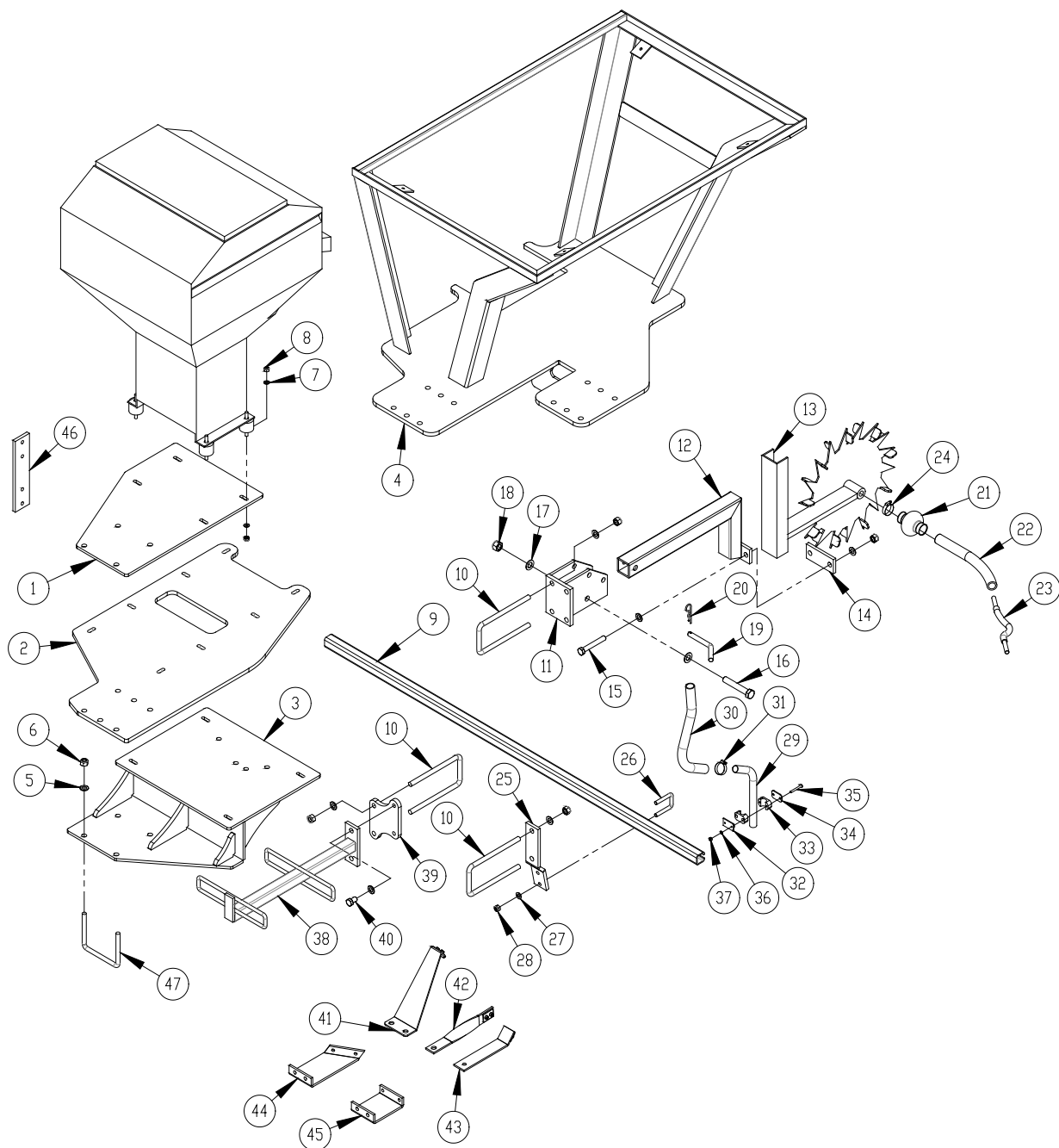
Pos.	Item no.	Designation	Number
8	1140043	Turning link, left	1
	1140044	Turning link, right	1
9	0432500	Lubricating nipple M8	4
10	0236090	Steel setscrew M20x40 8.8	2
11	0261410	Steel nut M20	2
12	0236210	Steel bolt M20x120 8.8	2
13	0272310	Facet plate Ø20	4
14	1140091	Distance bush	2
15	0264110	Self-locking nut M20	2
16	0235450	Steel bolt M12x90 8.8	2
17	1140358	Bush	4
18	1140094	Bush	2
19	0264070	Self-locking nut M12	6
20	690200153	Cylinder 50/30x300	2
	690200154	Gasket set 50/30	
21	0236010	Steel bolt M16x220 8.8	8
22	645000308	Clamping plate	2
23	645000309	Cylinder bearing, left	1
	645000316	Cylinder bearing, right	1
24	0373350	Split pin Ø5x50	2
25	0271650	Washer Ø24	2
26	645000322	Marker outer tube, left	1
	645000323	Marker outer tube, right	1
27	690304500	Shackle 10 mm	2
28	0433490	Stay tightener M16	2
29	0431800	Extension spring	2
30	0235380	Steel bolt M12x50 8.8	2
31	0272270	Facet plate Ø12	8
32	0261100	Steel nut M12	2
33	0235790	Steel setscrew M16x40 8.8	2
34	645000315	Marker inner tube, left	1
	645000314	Marker inner tube, right	1
35	1140127	Bracket plate, left	1
	1140128	Bracket plate, right	1
36	0248670	Bolt (carrier bolt) M12x45	4
37	0379220	Seeger circlip ring I 62	2
38	0483401	Sealing lamella Z 206	2
39	0472960	Ball bearing 6305 Z	4
40	1066840	Distance bush	2
41	0489380	Plastic plug	2
42	1066810	Hub	2
43	0428051	Disc Ø510	2
44	0248421	Bolt (carrier bolt) M10x30	12
45	0264060	Self-locking nut M10	12

LED Light



Pos.	Item no.	Designation	Number
1	7357505	Light bracket, left	1
	7357508	Light bracket, right	1
2	7357504	Rear light	2
3	0264030	Self-locking nut M5	
4	7357507	Marking lights (V)	1
	7357509	Marking lights (H)	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	Self-locking nut M8	
15	0234330	Bolt M6x20	
16	0272240	Facet plate Ø6	
17	0264040	Self-locking nut M6	
18	30910110	Consol	2
19	0230825	Taptite bolt M8x25	
20	0520492	Connecting box 105x105x60	1
21	7357545	Rutaseal nippel M20 8-12mm	2
22	7357546	Rubber bushing	1
23	0527140	Plug 7 poles DIN 72 577 – ISO 1724	1
	690160080	Cable 5x1mm ²	
24	645000364	Light beam holder, hydraulic machine (without seed equipment)	1
25		See pos 4 page 40 Light beam holder, hydraulic machine (with seed equipment)	1
26	0235860	Bolt M16x70	
27	0272290	Facet plate Ø16	
28	0264090	Self-locking nut M16	
29	690110107	U-bolt M16x80x80x80	1
30	645000360	Bar for light	1
31	645001336	Bar for light	1
32	0235990	Bolt M16x200	1

Multi-Seeder mounting (2m-4m rigid)



Pos.	Item no.	Designation	Number
1	645000065	Seed hopper plate for 200 l	1
2	1132966	Seed hopper plate (twin)	1
3	645000331	Seed hopper plate for 410 l	1
4	1132941	Seed hopper plate 850/1150L	1
	1190205	Seed hopper plate 850/1150L w/ Disc-opens	1
5	0272290	Facet plate Ø16	18
6	0264090	Self-locking nut M16	16
7	0272260	Facet plate Ø10	16
8	0264060	Self-locking nut M10	8
9	645000275	C-profile for mounting of seed tube outlet 2,5 m	1
	645000276	C-profile for mounting of seed tube outlet 3 m	1
	645000277	C-profile for mounting of seed tube outlet 3,5 m	1
	645000278	C-profile for mounting of seed tube outlet 4 m	1

Pos.	Item no.	Designation	Number
10	690110106	U-bolt M16x200x100x200	
11	645000099	Suspension for driving wheel	1
12	645000111	Pivoting arm for driving wheel	1
13	0539050	Driving wheel (to Nov 2017)	1
	0539290	Driving wheel (from Nov 2017)	1
14	645000109	Flange for suspension for driving wheel	1
15	0235910	Bolt M16x110 8.8	2
16	0236210	Bolt M20x120 8.8	1
17	0272310	Facet plate Ø20	2
18	0264110	Self-locking nut M20	1
19	69516094A	Pin Ø16 L=94 mm	1
20	0377400	R-clip Ø4	1
21	0488700	Bellows	1
22	0487487	Rubber hose	1
23	0539102	Flexible driving cable 3,50 m.	1
	0539117	Flexible driving cable 3,75 m.	1
24	0434480	Clamp Ø40-60mm	1
25	645000260	Bracket for mounting of C-profile	2-4
26	0382120	U-bolt M12x40x40x40	2-4
27	0272270	Facet plate Ø12	4-8
28	0264070	Self-locking nut M12	4-8
29	645000285	Seed tube	2-7
30	0539055	Seed hose Ø26 inside.	2-7
31	690109306	Clamp 26-38 mm 12 mm wide	2-7
32	690210224	Welding plate for tube-support Ø25, single	2-7
33	0449705	Tube-support Ø25, single	2-7
	0449706	Top plate for tube-support Ø25, single	2-7
35	0234390	Bolt M6x50 8.8	4-14
36	0272240	Facet plate Ø6	4-14
37	0264040	Self-locking nut M6	4-14
38	645000291	Seed hose bracket	1
	645001121	Seed hose bracket (twin-seed hopper)	1
39	1190060	Clamping plate	1
40	0235770	Bolt M16x30	2
41	645000380	Cable bracket, mounted on the main frame	
42	645000337	Cable bracket	
43	1139500	Cable bracket, mounted on the roller frame	
44	645000523	Bracket (slug pellets boom) center pipe roller Ø355)	2-4
45	645000519	Bracket (slug pellets boom) center pipe roller Ø127)	2-4
46	645000332	Bracket for hydr. fan	1
47	0382800	U-bolt M16x100x150x100	2

Attention:

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

Multi-Seeder

If the Sub-Tiller is mounted with HE-VA Multi-Seeder, we refer you to the separate Multi-Seeder Manual with spare part list.

This exploded view diagram illustrates the assembly of a mechanical system, likely a conveyor or transport mechanism. The components are numbered 1 through 45. The assembly is organized into several main sections:

- Top Section:** Features a large, box-like component (1) with a sloped top. It is supported by a vertical post (7) and a base plate (8). A horizontal beam (4) is attached to the base plate via a bracket (2) and a pin (3).
- Central Section:** A long horizontal beam (9) is the central structural element. It is supported by a bracket (5) and a pin (10). A vertical plate (11) is attached to the beam via a bracket (17) and a pin (18).
- Right Section:** A vertical plate (12) is attached to the beam via a bracket (19) and a pin (20). A horizontal plate (13) is attached to the beam via a bracket (21) and a pin (22). A curved plate (23) is attached to the beam via a bracket (24) and a pin (25).
- Bottom Section:** A horizontal plate (26) is attached to the beam via a bracket (27) and a pin (28). A vertical plate (29) is attached to the beam via a bracket (30) and a pin (31). A horizontal plate (32) is attached to the beam via a bracket (33) and a pin (34). A vertical plate (35) is attached to the beam via a bracket (36) and a pin (37).
- Other Components:** A bracket (6) is attached to the end of the beam (4). A bracket (38) is attached to the end of the beam (9). A bracket (39) is attached to the end of the beam (9). A bracket (40) is attached to the end of the beam (9). A bracket (41) is attached to the end of the beam (9). A bracket (42) is attached to the end of the beam (9). A bracket (43) is attached to the end of the beam (9). A bracket (44) is attached to the end of the beam (9). A bracket (45) is attached to the end of the beam (9).

The diagram uses dashed lines to indicate the assembly path and alignment of the components.

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Pos.	Item no.	Designation	Number
14	645000109	Flange for suspension for driving wheel	1
15	0235910	Bolt M16x110 8.8	2
16	0236210	Bolt M20x120 8.8	1
17	0272310	Facet plate Ø20	2
18	0264110	Self-locking nut M20	1
19	69516094A	Pin Ø16 L=94 mm	1
20	0377400	R-clip Ø4	1
21	0488700	Bellows	1
22	0487487	Rubber hose	1
23	0539102	Flexible driving cable 3,50 m.	1
	0539117	Flexible driving cable 3,75 m.	1
24	0434480	Clamp Ø40-60mm	1
25	645000260	Bracket for mounting of C-profile	4
26	0382120	U-bolt M12x40x40x40	4
27	0272270	Facet plate Ø12	8
28	0264070	Self-locking nut M12	8
29	645000285	Seed tube	7-9
30	0539055	Seed hose Ø26 inside.	7-9
31	690109306	Clamp 26-38 mm 12 mm wide	7-9
32	690210224	Welding plate for tube-support Ø25, single	7-9
33	0449705	Tube-support Ø25, single	7-9
34	0449706	Top plate for tube-support Ø25, single	7-9
35	0234390	Bolt M6x50 8.8	14-18
36	0272240	Facet plate Ø6	14-18
37	0264040	Self-locking nut M6	14-18
38	645000291	Seed hose bracket	1
	645001121	Seed hose bracket (twin-seed hopper)	1
39	1190060	Clamping plate	1
40	0235770	Bolt M16x30	2
41	645000380	Cable bracket, mounted on the main frame	
42	645000337	Cable bracket	
43	1139500	Cable bracket, mounted on the roller frame	
44	645000523	Bracket (slug pellets boom) center pipe roller Ø355)	4
45	645000519	Bracket (slug pellets boom) center pipe roller Ø127)	4

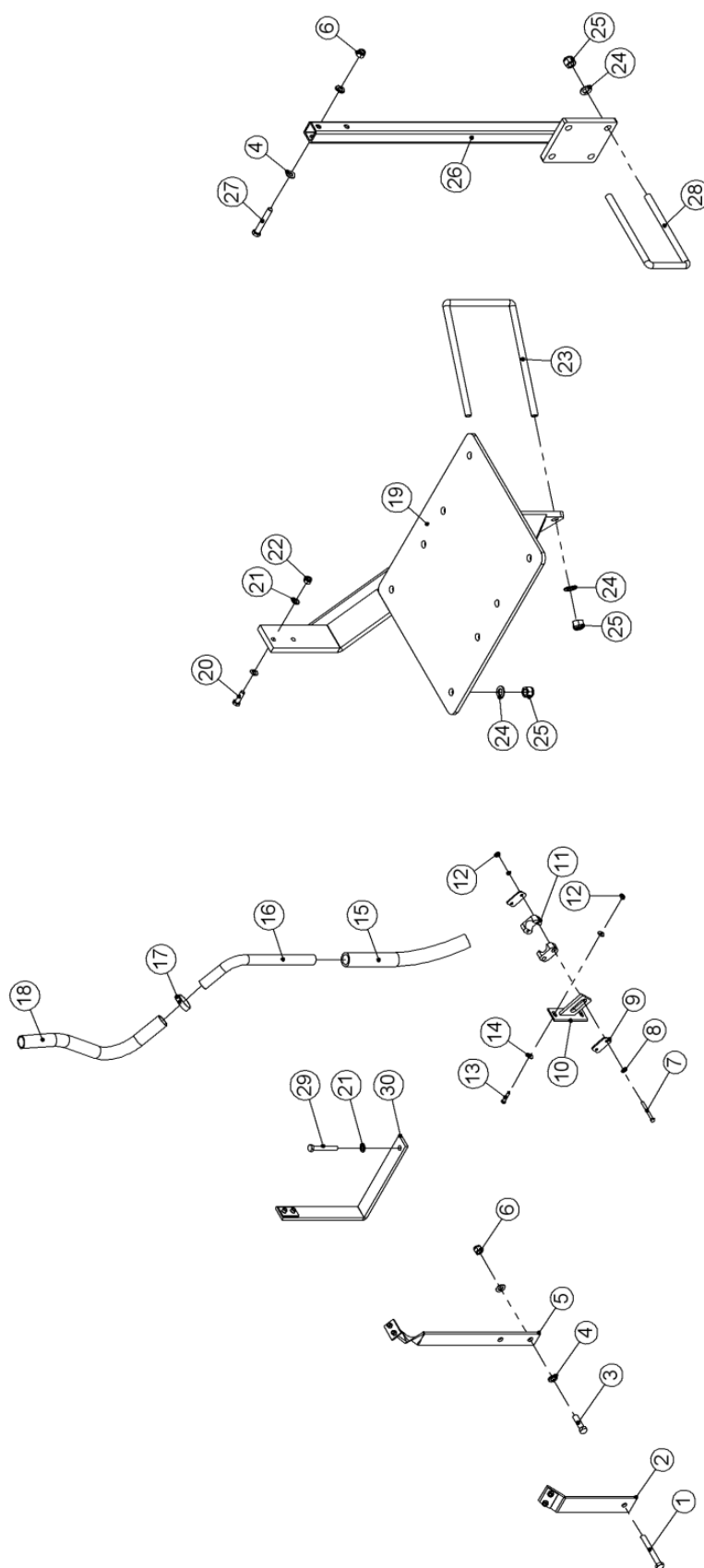
Attention:

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

Multi-Seeder

If the Sub-Tiller is mounted with HE-VA Multi-Seeder, we refer you to the separate Multi-Seeder Manual with spare part list.

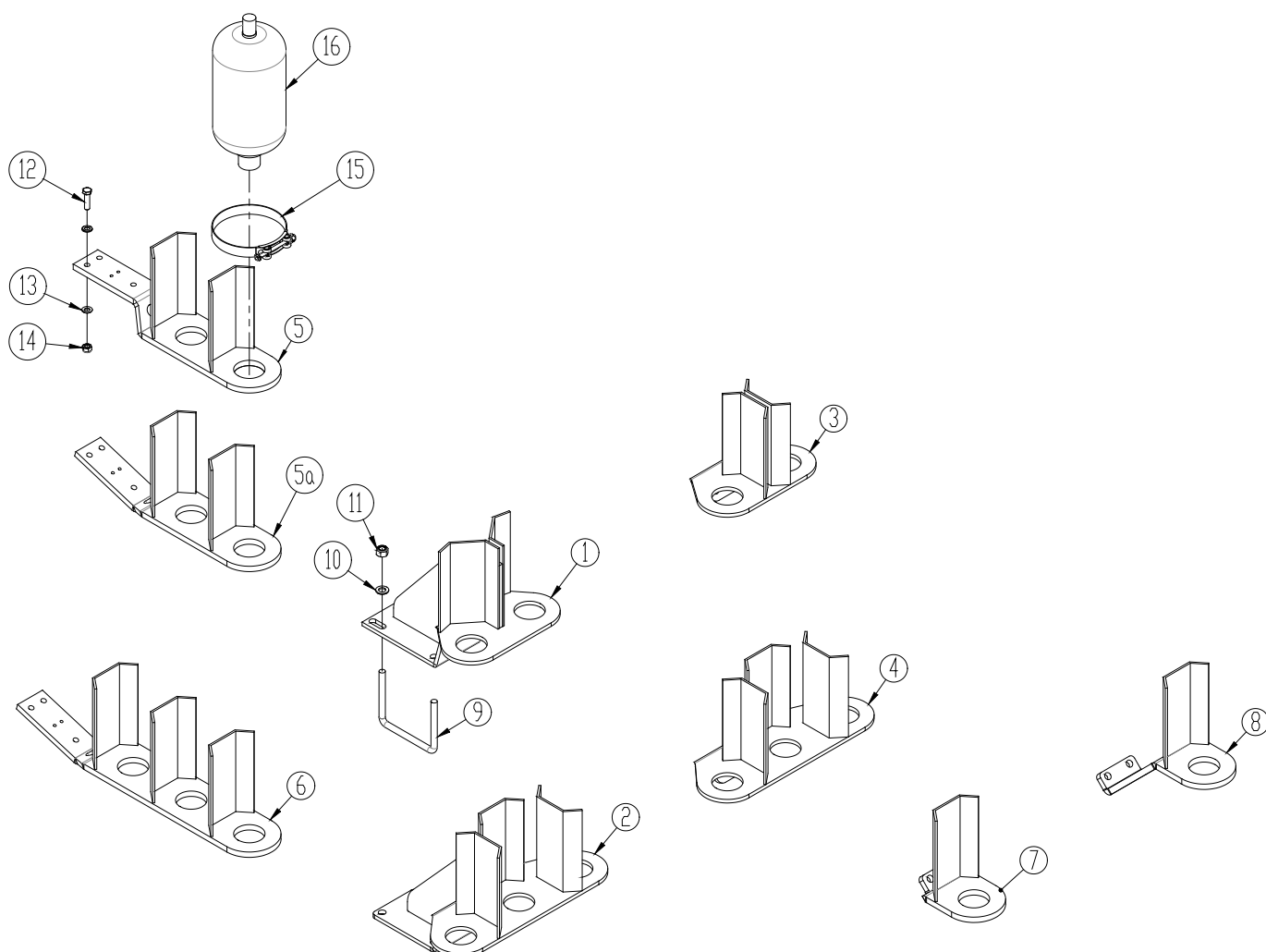
Fertilizer equipment (rigid)



Pos.	Item no.	Designation	Per tine	Fertilizer	Universal spreader
1	0235460	Steel bolt M12x100 8.8		1	
2	1139500	Cable bracket		1	
3	0235370	Steel bolt M12x45 8.8		2	
4	0272270	Facet plate Ø12		8	
5	645000403	Cable bracket		1	
6	0264070	Self-locking nut M12		4	
7	0234400	Steel bolt M6x60 8.8	2		
8	0272240	Facet plate Ø6	4		
9	0449706	Top plate for tube-support Ø25, single	2		
10	645000344	Bracket for fertilizer tube	1		
11	0449705	Tube-support Ø25, single	2		
12	0264040	Self-locking nut M6	4		
13	0234350	Steel bolt M6x30 8.8	2		
14	0271530	Washer Ø6	4		
15	0487487	Rubber hose ø25x350	1		
16	645000283	Seed tube outlet, bended	1		
17	0434460	Clamp 26-38 mm 9 mm wide	1		
18	0539055	Seed hose Ø26 inside	1		
19	645000345	Bracket for fertilizer tank 410 l (right)		1	
	645001185	Bracket for fertilizer tank 410 l (left)		1	
20	0235060	Steel setscrew M10x35		2	
21	0272260	Facet plate Ø10		4	
22	0264060	Self-locking nut M10		2	
23	0382850	U-bolt M16 260x180x260		2	
24	0272290	Facet plate Ø16		8	4
25	0264090	Self-locking nut M16		8	4
26	645000377	Stand for Universal spreader			1
27	0235440	Steel bolt M12x80 8.8			2
28	690110106	U-bolt M16 200x100x200			2
29	0235140	Steel setscrew M10x75		1	
30	645000429	Cable bracket		1	

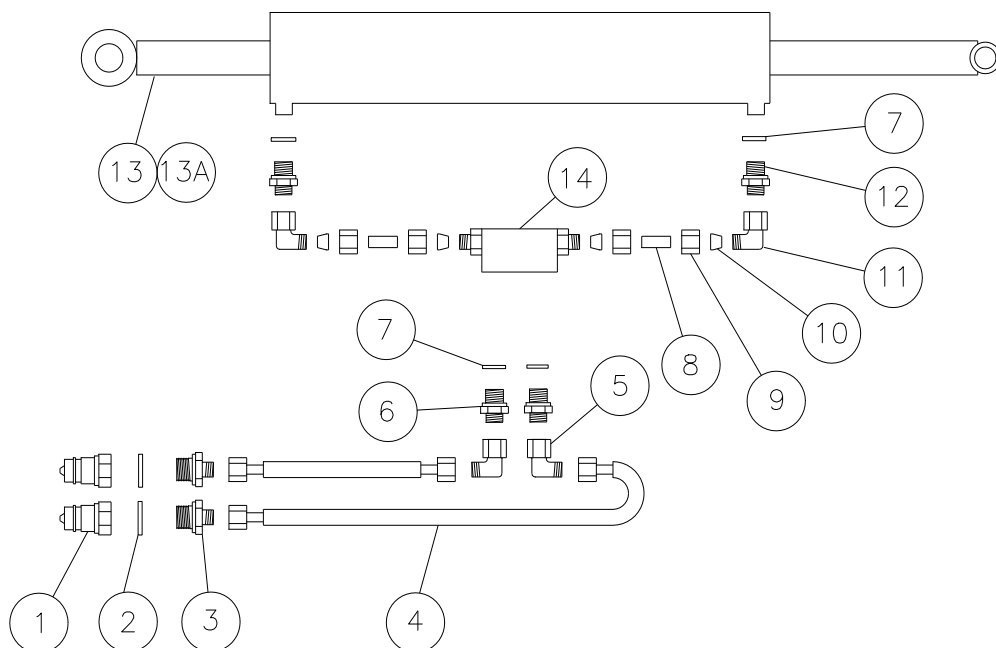
Spare part list – Hydraulics

Support for accumulator



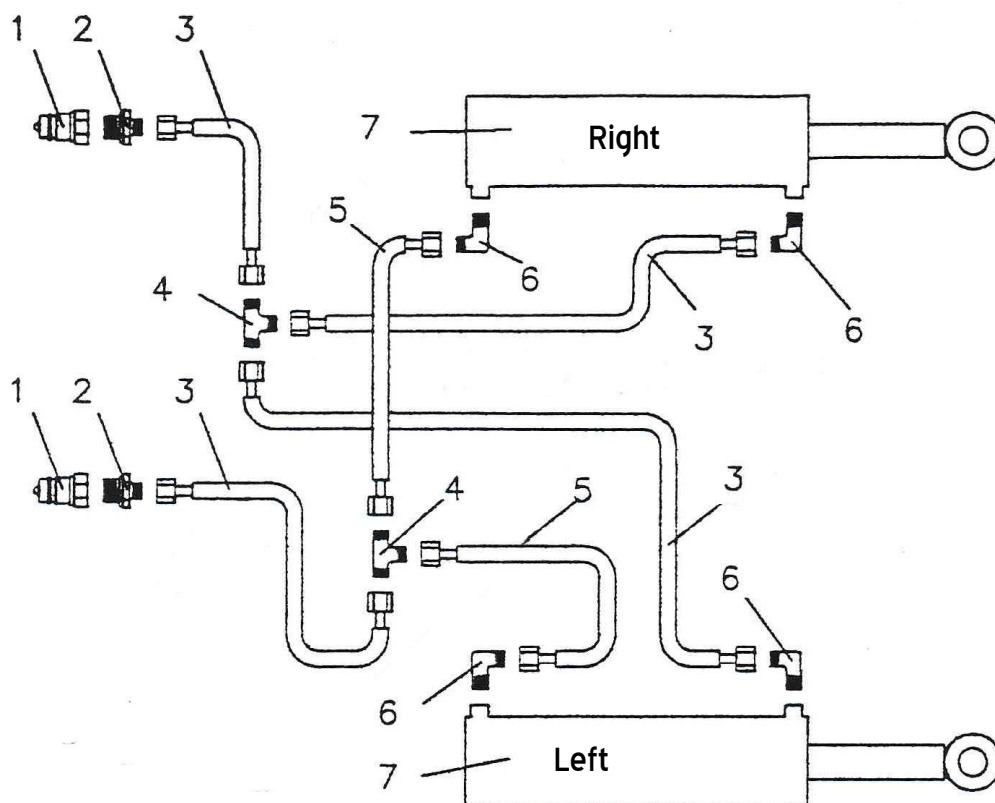
Pos.	Item no.	Designation	Rigid	Hydraulic
1	645000125	Support for accumulator (2 accumulator)	1	
2	645001509	Support for accumulator (3 accumulator)	1	
3	1240005	Support for accumulator (2 accumulator) disc-opens	1	
4	645001478	Support for accumulator (3 accumulator) disc-opens	1	
5	645000370	Support for accumulator (2 accumulator) obsolete		1
5a	645000422	Support for accumulator (2 accumulator) (from mac.nr 26691)		1
6	645001469	Support for accumulator (3 accumulator)		1
7	645001163	Support for accumulator right (if extra accumulator on)	1	1
8	645001160	Support for accumulator left (if extra accumulator on)	1	1
9	0382800	U-bolt M16x100x150x100		
10	0272290	Facet plate Ø16		
11	0264090	Self-locking nut M16		
12	0235370	Bolt M12x45mm		
13	0272270	Facet plate Ø12		
14	0264070	Self-locking nut M12		
15	690206516	Clamp f/accumulator		
16	690206513	Accumulator 4,5L 110 bar (90 bar to mac. nr 35113) (110 bar from mac. nr 35114)		

Hydraulics for depth control of roller (rigid)



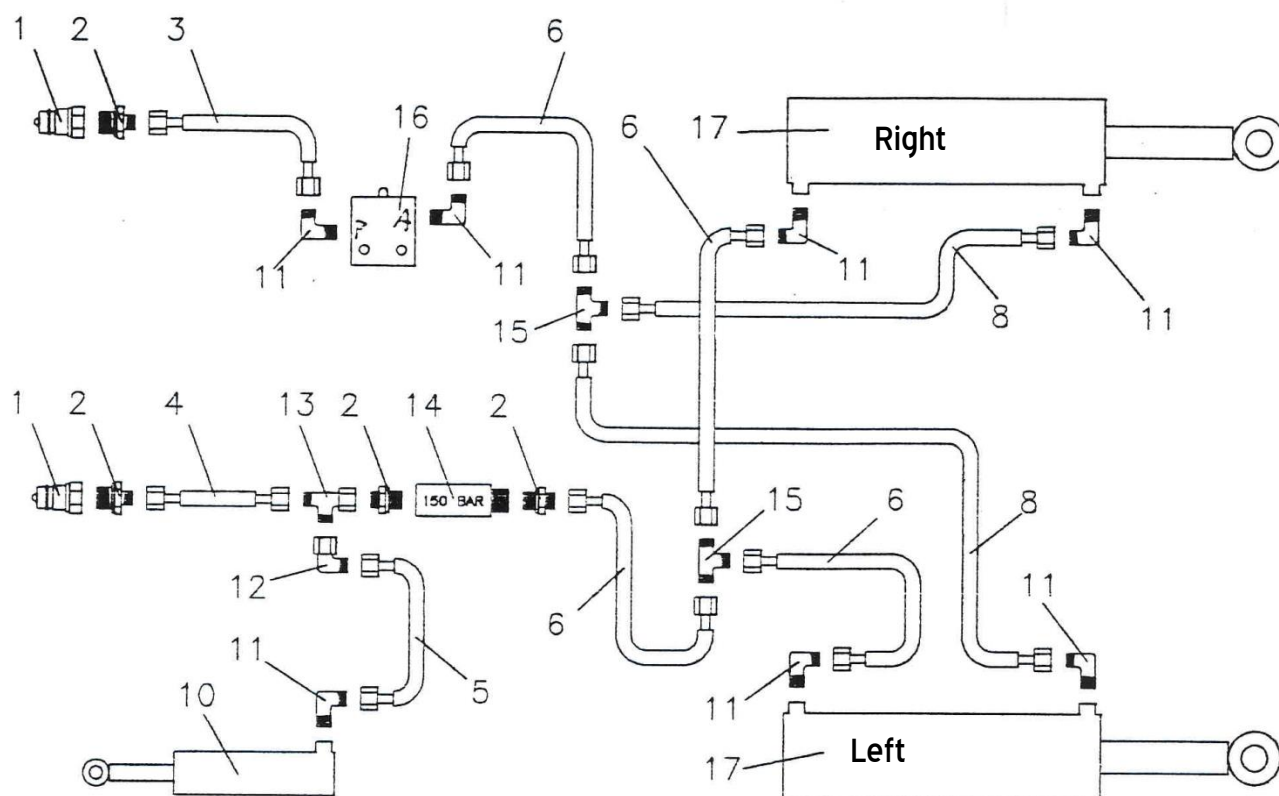
Pos.	Item no.	Designation	2,0m	2,5m	3,0m	3,5m	4,0m
1	0444020	Quick coupling, male E402 ½"	2	2	2	2	2
2	0449070	Bounded seal ½"	2	2	2	2	2
3	0446752	Fitting, straight Ø10-½" BSP	2	2	2	2	2
4	690201046	Hydraulic hose 1660 mm ¼"		2			
	690201016	Hydraulic hose 1830 mm ¼"			2		
	0454577	Hydraulic hose 1950 mm ¼"				2	
	0454645	Hydraulic hose 2300 mm ¼"					2
5	0446678	Fitting 90angle Ø10x¾"	2	2	2	2	2
6	0446751	Hexagon nipple Ø10x¾"	2	2	2	2	2
7	0449060	Bounded seal ¾"	4	4	4	4	4
8	662000804	Hydraulic tube Ø12 L=106	2	2	2	2	2
9	690203111	Union nut Ø12	4	4	4	4	4
10	690203110	Olive ring Ø12	4	4	4	4	4
11	0446679	Fitting 90angle Ø12	2	2	2	2	2
12	0446754	Hexagon nipple Ø12x¾"	2	2	2	2	2
13		See pos 10 page 16	1	1	1	1	1
14	0442510	Check valve (pilot-controlled, double) ¾"	1	1	1	1	1

Hydraulics for depth control of roller (hydraulic)



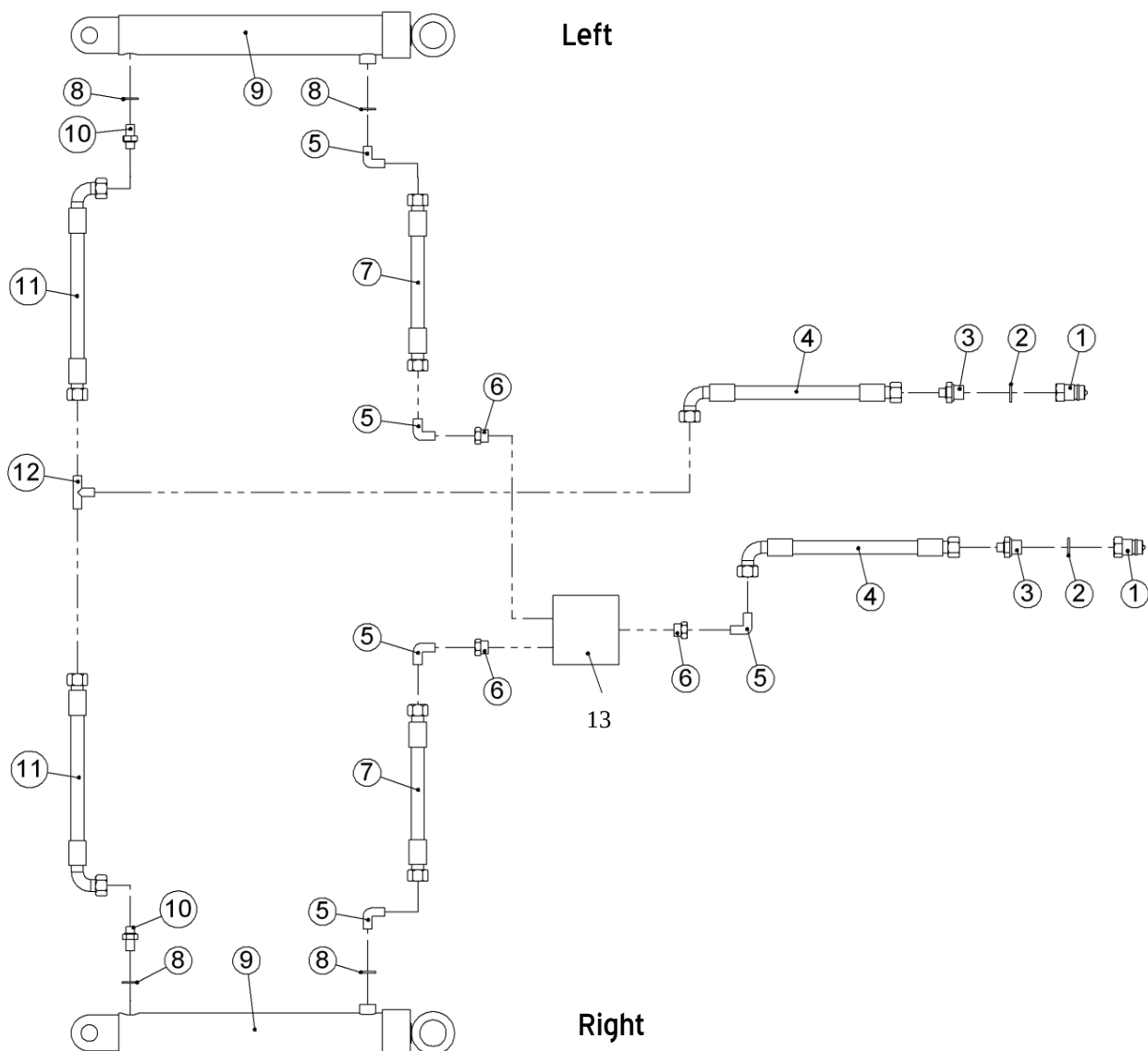
Pos.	Item no.	Designation	Number
1	0444020	Quick coupling, male E402 ½”	2
2	0446752	Fitting, straight Ø10-½” BSP	2
3	0454645	4 m hydr. hose 2300 mm. ¼” st/st	4
3	0454645	5 m hydr. hose 2300 mm. ¼” st/st	4
4	690203015	Fitting T Ø10	2
5	0454583	4 m hydr. hose 2050 mm. ¼” st/st	2
5	0454583	5 m hydr. hose 2050 mm. ¼” st/st	2
6	690203006	Fitting, 90angle Ø10-¾” BSP	4
7		See pos 26 page 18	2

Hydraulics for folding cylinder



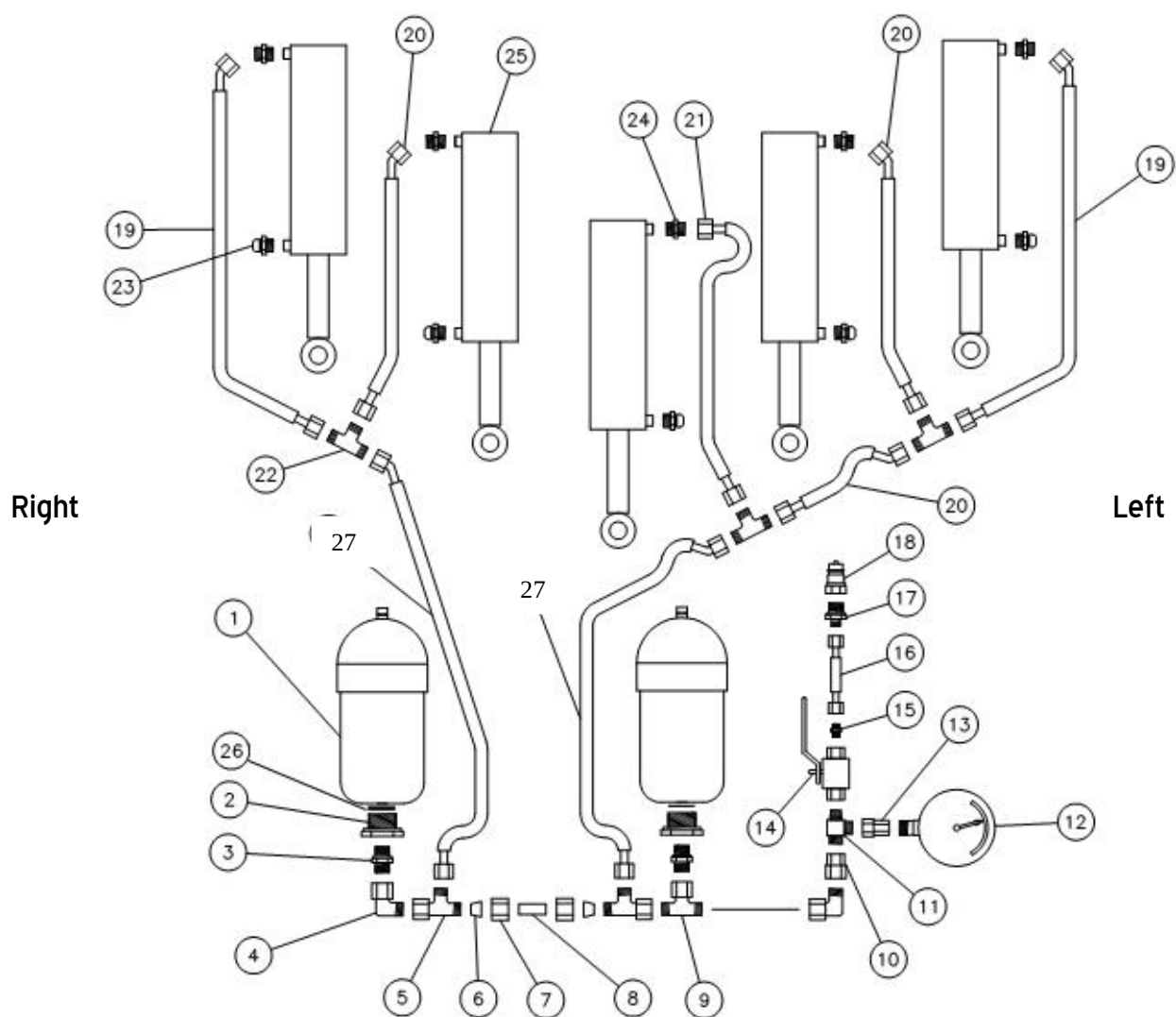
Pos.	Item no.	Designation	Number
1	0444020	Quick coupling, male E402 ½"	2
2	0446752	Fitting, straight Ø10-½" BSP	4
3	0454938	Hydraulic hose 3700 mm. ¼" st/st	1
4	0454577	Hydraulic hose 1950 mm. ¼" st/st	1
5	0454498	Hydraulic hose 1590 mm. ¼" st/st	1
6	0454210	Hydraulic hose 710 mm. ¼" st/st	3
8	0454215	Hydraulic hose 820 mm. ¼" st/st	2
10		See pos 40 page 18	1
11	690203006	Fitting, 90angle Ø10-¾" BSP	7
12	690203016	Fitting 90angle Ø10	1
13	690203014	Fitting T10L	1
14	0442450	Sequential valve ½" inside tube 30-12	1
15	690203015	Fitting T10	2
16	690207101	Mechanical stop valve FC10 – normally closed	1
17		See pos 7 page 18	2

Hydraulics for marker



Pos.	Item no.	Designation	Number
1	0444020	Quick coupling, male E402 1/2"	2
2	0449070	Bounded seal 1/2"	2
3	0444490	Fitting, straight Ø10-1/2" BSP	2
4	0454560	Hydraulic hose 1850 mm 1/4" st/90°	2
5	0446130	Fitting, 90angle 1/4", 1x conic	5
6	1058230	Fitting	3
7	0454690	Hydraulic hose 2550 mm 1/4" st/st	2
8	0449050	Bounded seal 1/4"	4
9		See pos 20 page 34	
10	0444500	Hexagon nipple 1/4", 1x conic	2
11	0454610	Hydraulic hose 2150 mm 1/4" st/90°	2
12	0446510	Fitting T 1/4"	1
13	0442810	Valve	1

Hydraulics for automatic release system (rigid)



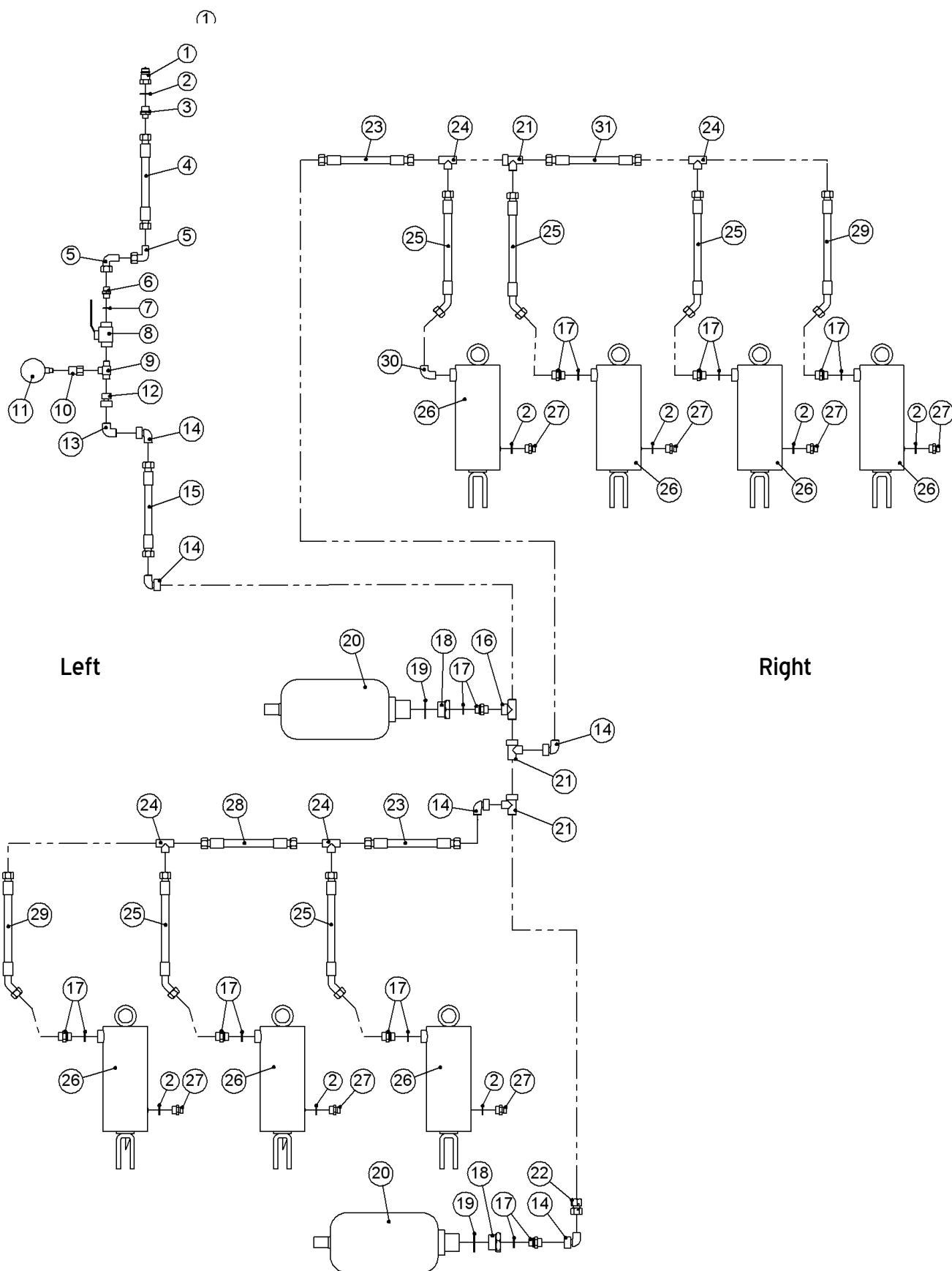
Pos.	Item no.	Designation	Number
1		See pos 16 page 44	2
2	690204501	Fitting straight 1/2"x1 1/4"	2
3	690204512	Fitting straight Ø15x1/2"	2
4	690204500	Fitting 90angle Ø15 mm premounted union nut	2
5	690204502	Fitting T15L	2
6	690204503	Olive ring Ø15	2
7	690204504	Union nut Ø15	2
8	662000803	Hydraulic tube Ø15 L=38	1
9	690204505	Fitting T15	1
10	690204506	Reversed fitting Ø15 / 1/2"	1
11	690203314	Fitting T 3/8"-Ø12-Ø12	1
12	690206824	Pressure gauge 400 bar	1
13	690206825	Pressure gauge fitting Ø12 / 1/4"	1

Pos.	Item no.	Designation	Number
14	690202990	Ball valve 3/8" PN500 DN 10	1
15	690203002	Fitting, straight Ø10-3/8" BSP	1
16	690201032	Hydraulic hose 1130 mm 1/4" st/st	1
17	690203003	Fitting, straight Ø10-1/2" BSP	1
18	0444020	Quick coupling 1/2" E402, male	1
19	690201448	Hydraulic hose 1150 mm 1/2" st/45°	2
20	690201430	Hydraulic hose 590 mm 1/2" st/45°	0-9
21	690201414	Hydraulic hose 400 mm 1/2" st/st	0-1
22	690204507	Fitting T15	0-7
23	690206002	Filter plug 1/2" (until masnr. 27671)	2-7
23	0446350	Fitting (from masnr. 27672-30542)	2-7
23	0444950	Banjobolt 1/4" (from masnr. 30543)	2-7
23a	0487590	PvC hose (from masnr. 27672-30542)	2-7
23a	0451700	Hydraulic hose 1500mm 1/4" w/banjofitting) (from masnr. 30543)	2-7
23b	0230290	Taptite (from masnr. 27672-30542)	2-7
23c	0449310	Rubber suspension (from masnr. 27672-30542)	2-7
23d	0449050	Bounded seals 1/4" (fra maskinnr 30543)	4-14
24	690204512	Fitting straight Ø15x1/2"	2-7
25		See pos 11 page 28 or pos 2 page 30	
26	0449110	Bounded seal 1 1/4"	2
27	0454183	Hydraulic hose 600 mm 1/2" st/st	2

Attention:

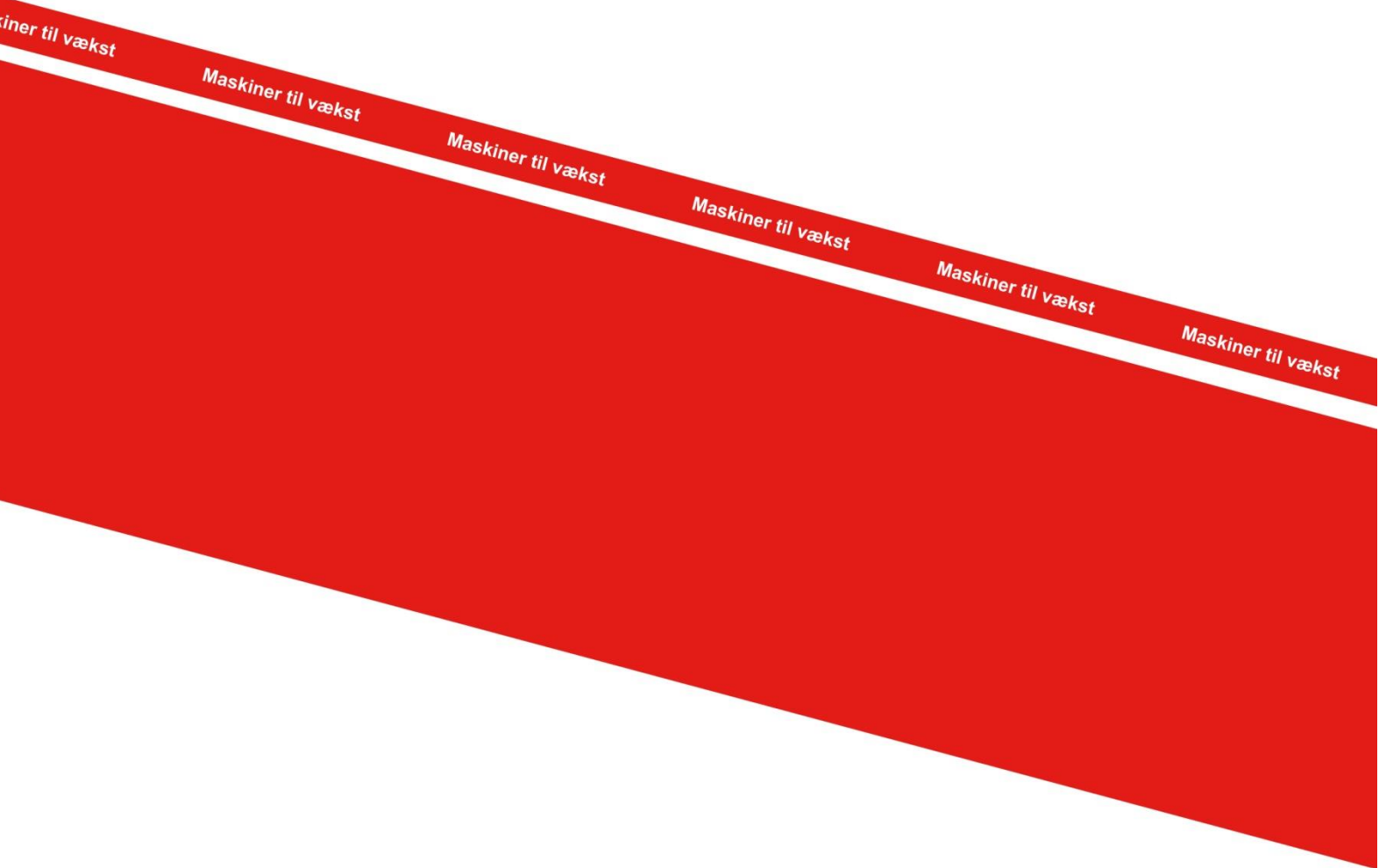
The number of hoses and hose lengths can vary – dependent on the machine type, therefore check measurements and number before ordering the spare parts.

Hydraulics for automatic release system (hydraulic)



Pos.	Item no.	Designation	4m. 7 tines	5m. 7 tines	5m. 9 tines
1	0444020	Quick coupling ½" E402, male	1	1	1
2	0449070	Bounded seal ½" (until masnr. 27671)	8	8	10
2	0449050	Bounded seal ¼" (from masnr. 27672)	8	8	10
3	0446752	Hexagon nipple, Ø10-½" BSP	1	1	1
4	0454630	Hydraulic hose 2300 mm ½" st/st	1	1	1
5	0446678	Fitting 90angle Ø10	2	2	2
6	0446751	Hexagon nipple, Ø10-¾" BSP	1	1	1
7	0449060	Bounded seal ¾"	1	1	1
8	0442350	Ball valve ¾"	1	1	1
9	690203314	Fitting T ¾"-Ø12-Ø12	1	1	1
10	690206825	Pressure gauge fitting Ø12-¼"	1	1	1
11	0442052	Pressure gauge 0-400 bar	1	1	1
12	690204506	Reversed fitting Ø15-½"	1	1	1
13	0446240	Fitting Ø15	1	1	1
14	0446680	Fitting Ø15	5	5	5
15	690201445	Hydraulic hose 1150 mm ½" st/st	1	1	1
16	690204505	Fitting T15	1	1	1
17	690204512	Fitting straight Ø15x½" w/o-ring	7	7	9
18	690204501	Fitting straight ½"x¼"	2	2	2
19	0449110	Bounded seal 1 ¼"	2	2	2
20		See pos. 16 page 44	2	2	2
21	690204502	Fitting T15 L	3	3	3
22	0447530	Reversed fitting Ø15 w/o-ring	1	1	1
23	690201449	Hydraulic hose 850 mm ½" st/st	2		
24	690204507	Fitting T15	4	4	6
25	690201430	Hydraulic hose 590 mm ½" st/45°	5	5	7
26		See pos 11 page 28 or pos 2 page 30			
27	690206002	Filter plug ½" (until masnr. 27671)	7	7	9
27	0446350	Fitting (from masnr. 27672-30542)	7	7	9
27	0444950	Banjobolt ¼" (from masnr. 30543)	7	7	9
27a	0487590	PvC hose (from masnr. 27672-30542)	7	7	9
27a	0451700	Hydraulic hose 1500mm ¼" w/banjo fitting) (from masnr. 30543)	7	7	9
27b	0230290	Taptite (from masnr. 27672-30542)	7	7	9
27c	0449310	Rubber suspension (from masnr. 27672-30542)	7	7	9
27d	0449050	Bounded seals ¼" (from masnr 30543)	14	14	18
28	690201458	Hydraulic hose 690 mm ½" st/st	1		
29	690201448	Hydraulic hose 1150 mm ½" st/45°	2		
30	690203151	Fitting ½"	1	1	1
31	0454183	Hydraulic hose 600 mm ½" st/st	1		

Notes



2010
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The design is subject to modification without notice.