

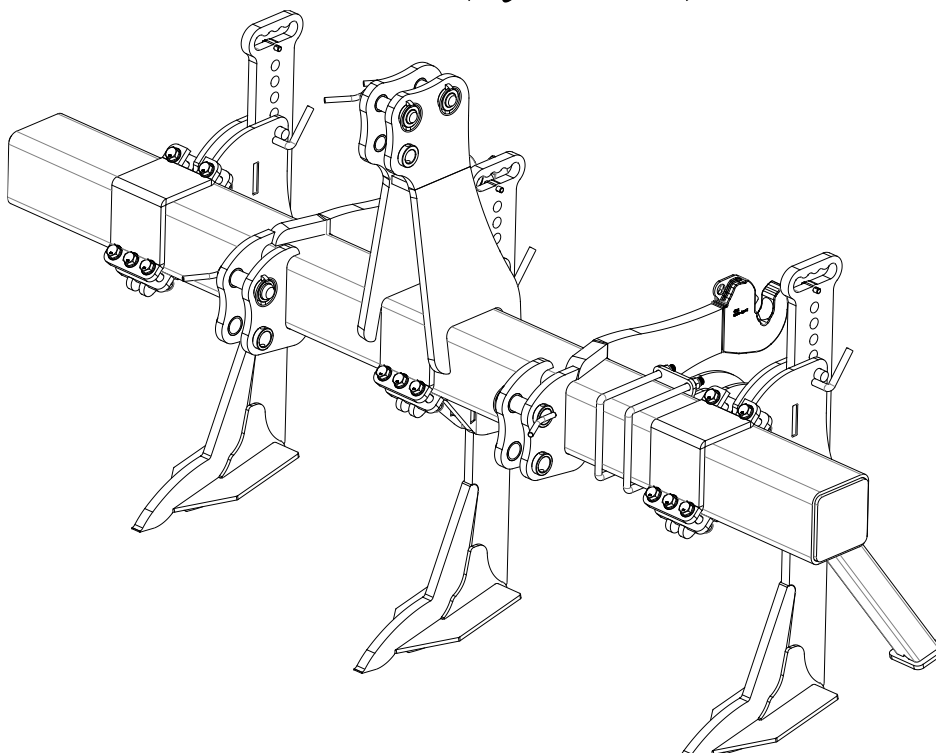


***Operating Instructions
Declaration of Conformity
Spare Parts List***

Combi-Tiller

2.5 m / 3.0 m / 3.5 m / 4.0 m (rigid)

4.0 m / 5.0 m (hydraulic)



Important: Before using the machine, please study the Operating Instructions thoroughly to ensure that you are familiar with the safety instructions.



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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:

Combi-Tiller

2.5 / 3.0 / 3.5 / 4.0 m (rigid)
4.0 m / 5.0 m (hydraulic)

Nykøbing the 29th December 2009

A handwritten signature in black ink, appearing to read 'Villy Christiansen', is written over a horizontal line.

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 Combi-Tiller for possible damages.

Machine Description

Technical specifications

	2.5 m	3.0 m	3.5 m	4.0 m	4.0 m hydr	5.0 m hydr.
Working width	2.5 m	3.0 m	3.5 m	4.0 m	4.0 m	5.0 m
Transport width	2,5 m	3.0 m	3.5 m	4.0 m	2.45 m	2.45 m
Height folded					2.6 m	3.0 m
Power requirement...	40-80	50-100	60-115	70-130	70-150	90-160
Weight	345 kg	385 kg	425 kg	460 kg	685 kg	760 kg
Number of tines	4 pcs	6 pcs	7 pcs	8 pcs	8 pcs	10 pcs
Oil outlet double-acting	-	-	-	-	1	1

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

Complaints

Complaints are performed in the dealer's workshop within the standard hours. If this is impossible you have to pay for the overtime. Machines for complaint work are to be delivered in cleaned condition.

Safety instructions for Combi-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. It is advisable to label the attachment parts at hydraulic connections between the tractor and the implement, in order to eliminate incorrect operation!
2. 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!**
3. Before operating the hydraulics, lower the machine to firm ground.
Relieve the hydraulics, stop the motor and remove the ignition key.
4. 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:

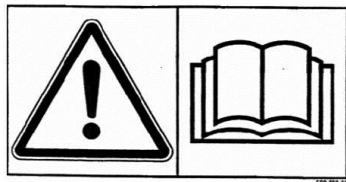
After the attachment of the machine and at maximum load, the driving properties of the tractor must be ensured. Check that the front axle is sufficiently loaded. As a minimum, the front axle load must be 20% of the tractor weight. Permitted axle load and permitted total weight for the tractor must always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

NB!

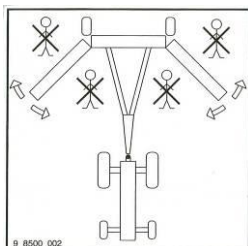
The driving, controlling and braking properties are affected by the attached machine combination.

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. Safety – and other markings on the machine



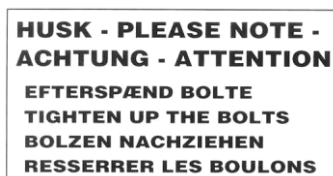
Study the Operating Instructions thoroughly before any operation of the machine and observe all safety instructions.



Take care that no persons are within the machine's hazardous area during the unfolding and folding procedure..



Plate with number and year of manufacture



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

Maximum torque in Nm. w/lubricated thread			
Metric thread	Quality 8.8	Quality 10.9	Quality 12.9
M12	81	114	136
M14	128	181	217
M16	197	277	333
M18	275	386	463
M20	385	541	649
M22	518	728	874
M24	665	935	1120

Start-up of the machine

General information

A hydraulic folding machine requires 1 double acting outlet (hydraulic).

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.

Change-over between working and transport position (only machines with hydraulic folding)

From transport into working position:

1. Open the ball valves.
2. The machine is lifted to max. transport height.
3. Unfold the wing sections.
4. Adjust the working depth.

From working into transport position:

1. The machine is lifted to max. transport height.
2. The wing sections can be folded in.
3. Close the ball valves and relieve the hydraulics.

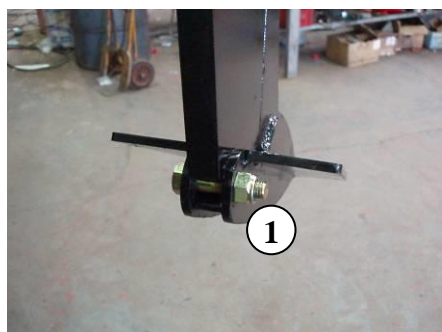
Important

If the Combi-Tiller is mounted in an already section divided construction, there is a risk of an overload of the original construction. Therefore it is important to keep an eye on eventual sign of overload and the like. In case of indication that the machine is damaged, it is to be reinforced at once.

HE-VA ApS disclaims every responsibility if the machine is of another make, or if the Combi-Tiller is mounted in a combination without any preceding qualified guidance.

Setting and adjustment

Replacement of wearing point



1. ⚠ Before working with the machine's wearing points, the machine is to be fastened. This can be performed by trestles under the main frame or by a support of the roller.
2. Dismount M16x65 mm bolt (Pos. 1) by means of 2 pcs. 24 mm spanners. ⚠ The wearing point might fall off, when the bolt is removed – take care of foot and leg injuries.
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.
4. Mount the new wearing point, item no. 645000044 (Pos. 2), by pushing the wearing point to the rear and then in its place.
5. Check the M16 x 65 mm bolt for eventual damages and replace it as required, item no. 0235852+0272290+0264090
6. Mount the M16 x 65 mm bolt (Pos. 1), lubricate and tighten it with **approx.20 Nm. Be carefull not to overtighten – the wearing point can be damaged**

Stone protection

If a tine hits a big stone or similar in the soil, the shear bolt is to break in order to avoid damages on the machine's construction and the tractor.

When a shear bolt breaks, the tine will move backwards.

- ⚠ Before the machine is operating hereafter, check that the tine has free mobility backwards without hitting an eventual connected machine. This is being performed by moving the shear bolt and then check the movement of the tine.

Replacement of the shear bolt



1. The machine is lifted so that the tine can move.
2. Remove the scraps from the old shear bolt.
3. Push the tine forwards and mount the new shear bolt behind the tine.
4. Tighten the bolt with 100 Nm, and the machine is ready for use.

It is important to use original  **HE-VA** shear bolts
Item no. 690152045, otherwise the machine might be damaged
and the guarantee/complaint right will no longer be valid.



Depth adjustment



The Combi-Tiller can operate from -50 mm to max. 400 mm depth.

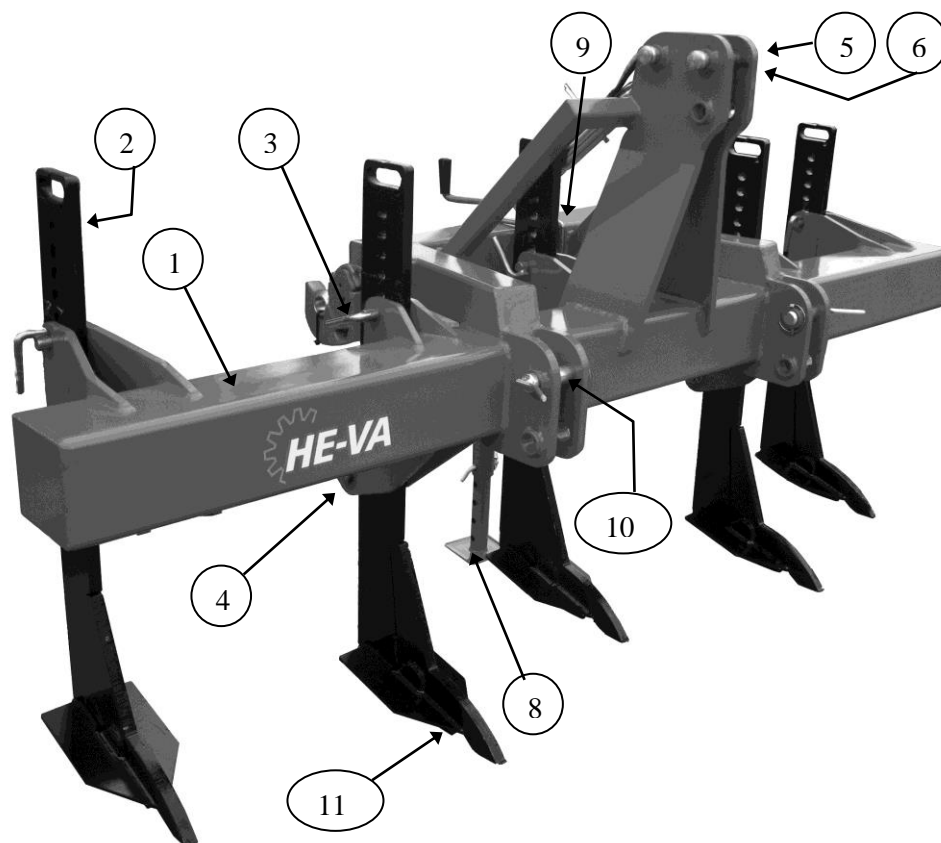
If the Combi-Tiller is used solo or acts as a draw unit for a trailed machine, the working depth can be varied with the tractor's lift.

If the Combi-Tiller is in combination with other machines, the depth adjustment is controlled by moving each single tine down to the required working depth and then lock it with the pin.

If the Combi-Tiller is to be inactive, the individual tines are lifted free from the soil by placing the pin in the lowest hole on the tine.

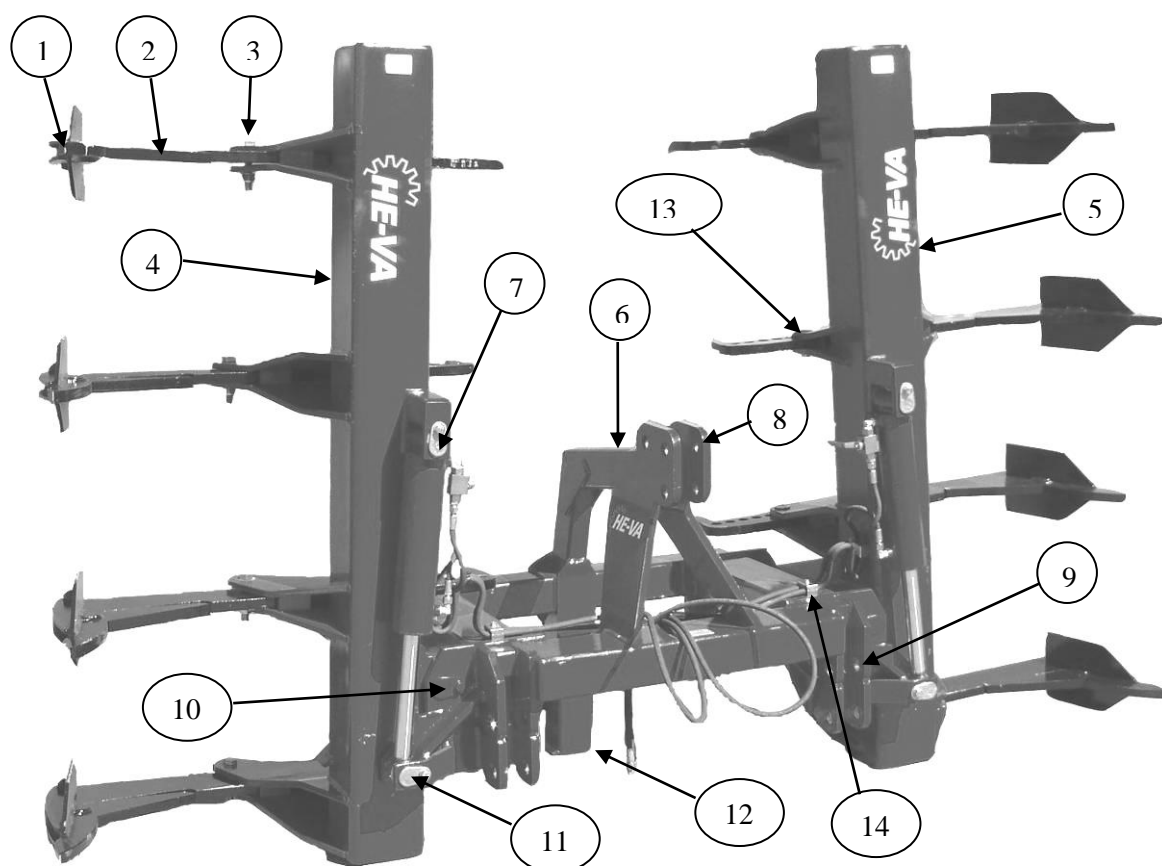
Spare Parts List

Rigid frame



Pos.	Item no.	Designation	2,5 m	3.0 m	3,5m	4.0 m
1	645100002	Frame 2.5 m	1			
1	645100001	Frame 3.0 m		1		
1	645100127	Frame 3,5 m			1	
1	645100067	Frame 4.0 m				1
2	645100045	Tine f/mechanical release system	4/5	5/6	6/7	7/8
3	69525063B	Pin for tine	4/5	5/6	6/7	7/8
3a	690134004	Ring pin Ø10 (ordinary head)	4/5	5/6	6/7	7/8
4	690152045	Shear bolt M20x100 ST.10.9 (slotted)	4/5	5/6	6/7	7/8
5	690134004	Ring pin Ø10	4	4	4	4
6	69532100J	Pin for top link Ø32 L=100 (Cat. III)	1	1	1	1
8a	690141004	Support stand w/pintle+hole bar 6000kg	1	1	1	1
8b	645100066	Bracket for support stand	1	1	1	1
8c	69516094A	Pin Ø16 L=94	1	1	1	1
8d	690133005	R-clip Ø4	1	1	1	1
9a	690110101	U-bolt M16x100x100x100	2	2	2	2
9b	690117013	Facet plate Ø16	4	4	4	4
9c	690113008	Self-locking nut M16	4	4	4	4
10	69537129B	Pin for lift arm Ø37 L=129 (Cat III)	2	2	2	2
11	645000044	Wearing point	4/5	5/6	6/7	7/8
11a	690103190	Bolt M16x65 8.8	4/5	5/6	6/7	7/8
11a	0235852	Bolt M16x65 (specialbolt) fra serienr. 200971	4/5	5/6	6/7	7/8
11b	0272290	Facet plate Ø16	8	12	14	16
11c	0264090	Self-locking nut	4	6	7	8

Hydraulic foldable

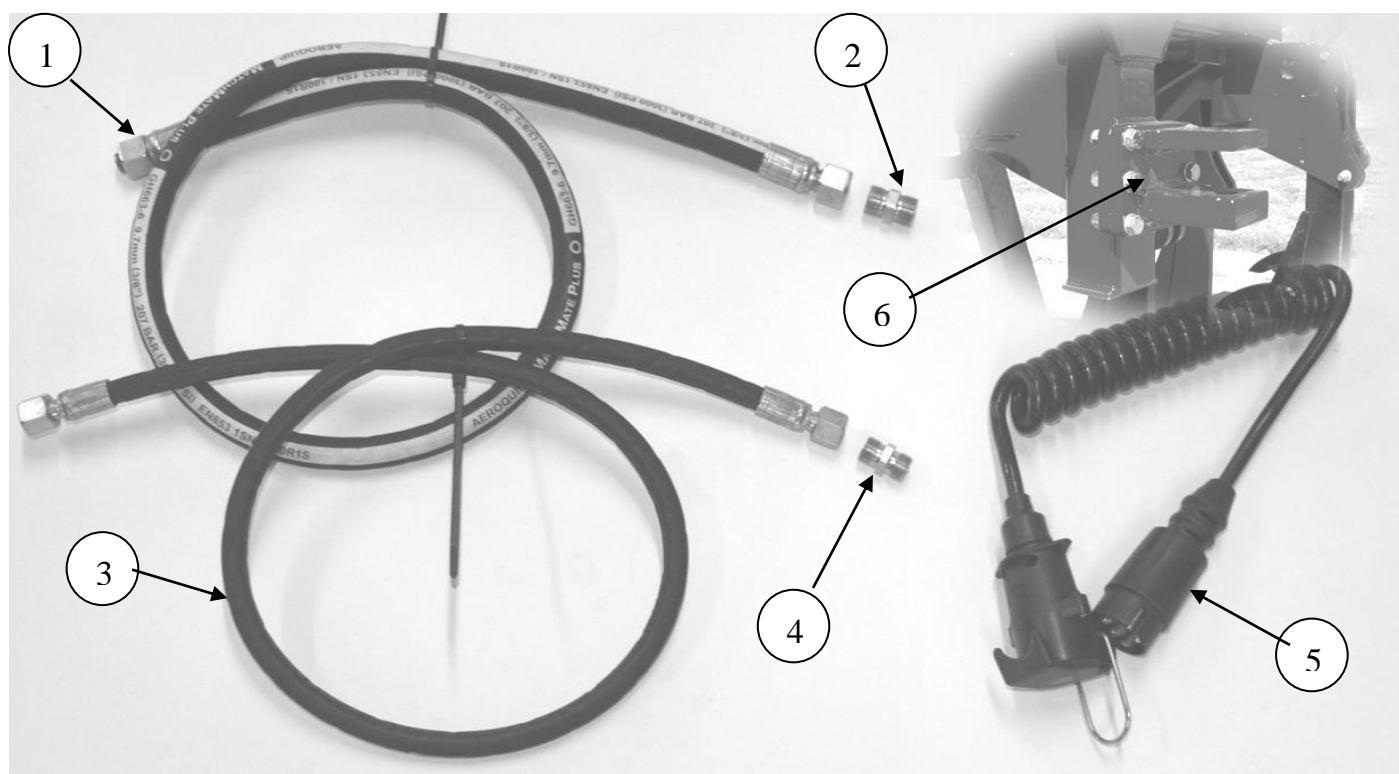


Pos.	Item no.	Designation	4.0 m	5.0 m
1	645000044	Wearing point	8	10
1a	690103190	Bolt M16x65 8.8	8	10
1a	0235852	Bolt M16x65 (specialbolt) from maschinenr. 200971	8	10
1b	0272290	Facet plate Ø16	16	20
1c	0264090	Self-locking nut	8	10
2	645100045	Tine f/mechanical release system	8	10
3	690152045	Shear bolt M20x100 ST.10.9 (slotted)	8	10
4	645100045	Wing section right 4 m	1	-
4	645100064	Wing section right 5m	-	1
5	645100040	Wing section left 4 m	1	-
5	645100063	Wing section left 5 m	-	1
6	645100032	Frame for hydr. folding	1	1
7	69530135G	Pin Ø30 L=135	2	2
7a	630532600	Lock bush for pin head	6	6
7b	690101101	Bolt M12x25	6	6
8	69532100J	Pin for top link Ø32 L=100 (Cat. III)	1	1
9	69537129B	Pin for lift arm Ø37 L=129 (Cat. III)	2	2
10	69435545G	Pin Ø35 L=545	2	2
10a	690140716	Slide bush Ø35/Ø40 L=50	4	4
11	69430090G	Pin Ø30 L=90	2	2
12	645100065	Support stand	1	1

12a	69516094A	Pin for support stand Ø16 L=94mm	1	1
12b	690133005	R-clip Ø4	1	1
13	69525063B	Pin for support stand	8	10
14	690210210	Tube-support double Ø14/Ø14	8	8
14a	690210211	Top plate for tube-support double	4	4
14b	690103054	Bolt M8x40	4	4

Lift mounted with coupling for trailed machine

As an example the machine is mounted in the tractor linkage and tows a trailed HE-VA Disc-Roller.

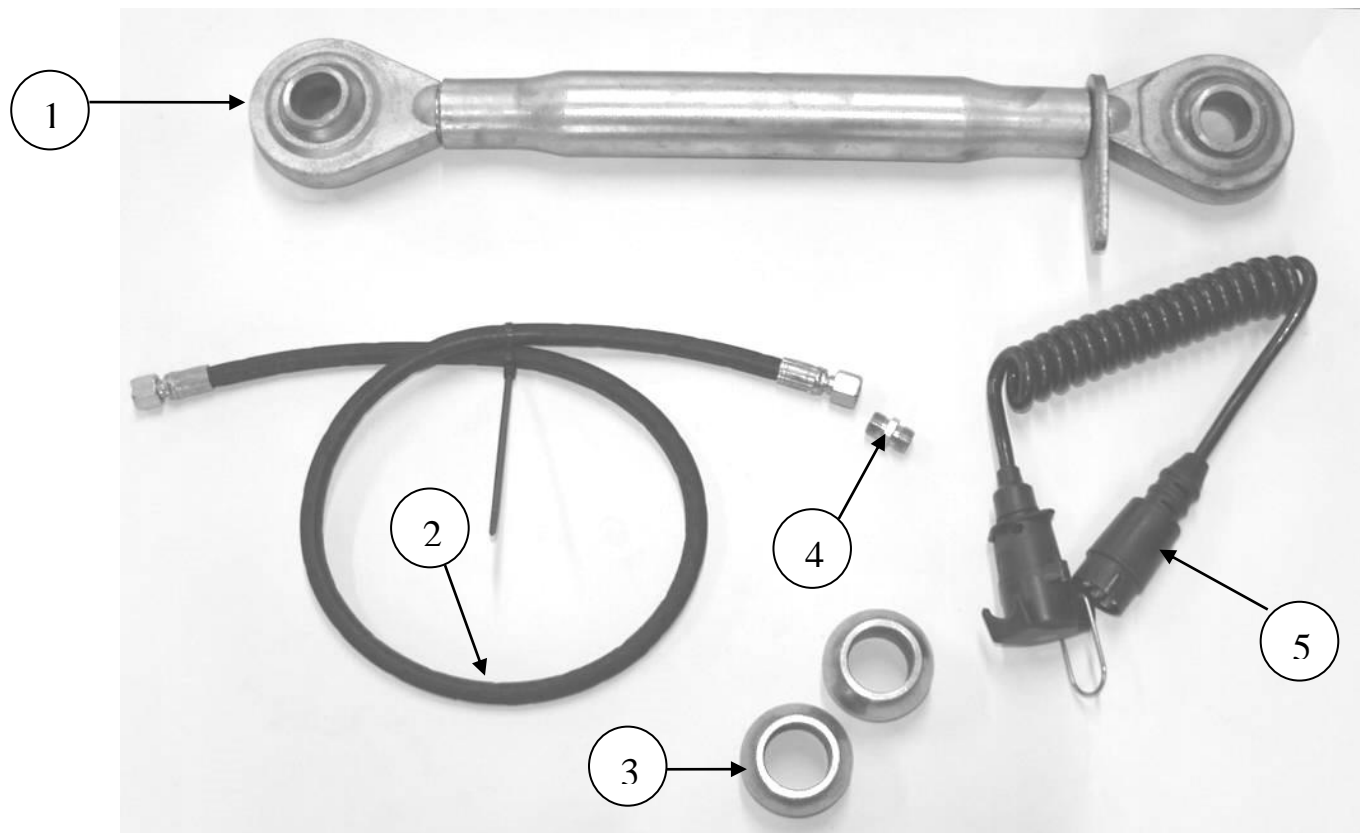


Pos.	Item no.	Designation	Number Rigid	Number Hydr. foldable
1	690201205	Hydr. hose 1130mm 3/8" st/st	2	2
2	690203118	Fitting 12 mm	2	2
3	690201032	Hydr. hose 1130mm 1/4" st/st	2	4
4	690203018	Fitting 10 mm	2	4
5	64519-14	Extension cord for lights	1	1
6	645100068	Drawing clevis	1	1
6a	690103190	Bolt M16x65	6	6
6b	690117013	Facet plate Ø16	12	12
6c	690113008	Self-locking nut M16	6	6

Check measurements of all hoses before ordering the spare parts.

Lift mounted with three point mounted machine

As an example the machine is mounted in the tractor linkages and following mounted with a lift mounted HE-VA Disc-Roller in the Combi-Tiller's three point suspension.

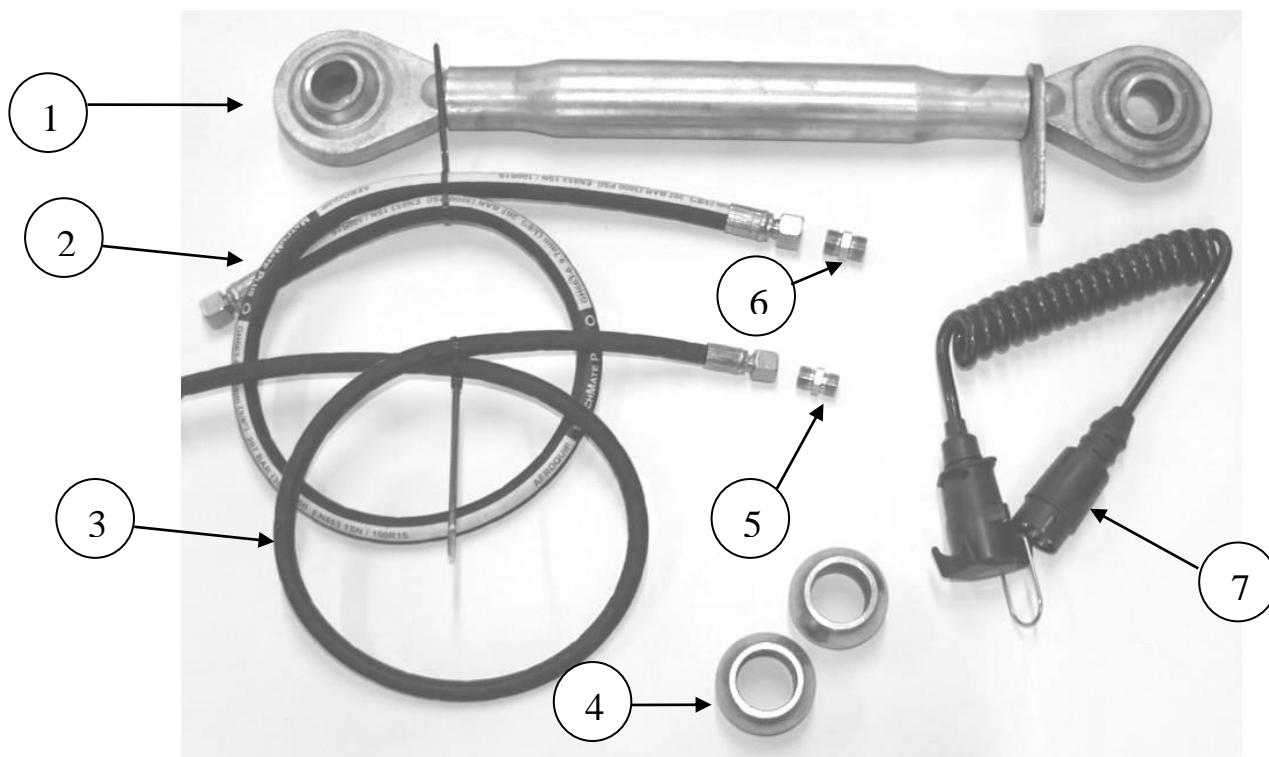


Pos.	Item no.	Designation	Number Rigid	Number Hydr. foldable
1	690302005	Top link Cat. III - 36x3 (570-790mm)	1	1
2	690201032	Hydr. hose 1130mm 1/4" st/st	2	4
3	690134007	Lift ball f/quick coupling Cat. 3 ø64x36,2	2	2
4	690203018	Fitting 10 mm	2	4
5	64519-14	Extension cord for lights	1	1

Check measurements of all hoses before ordering the spare parts.

Module-mounted

As an example the machine is mounted between drawbar and a trailed HE-VA Disc-Roller.

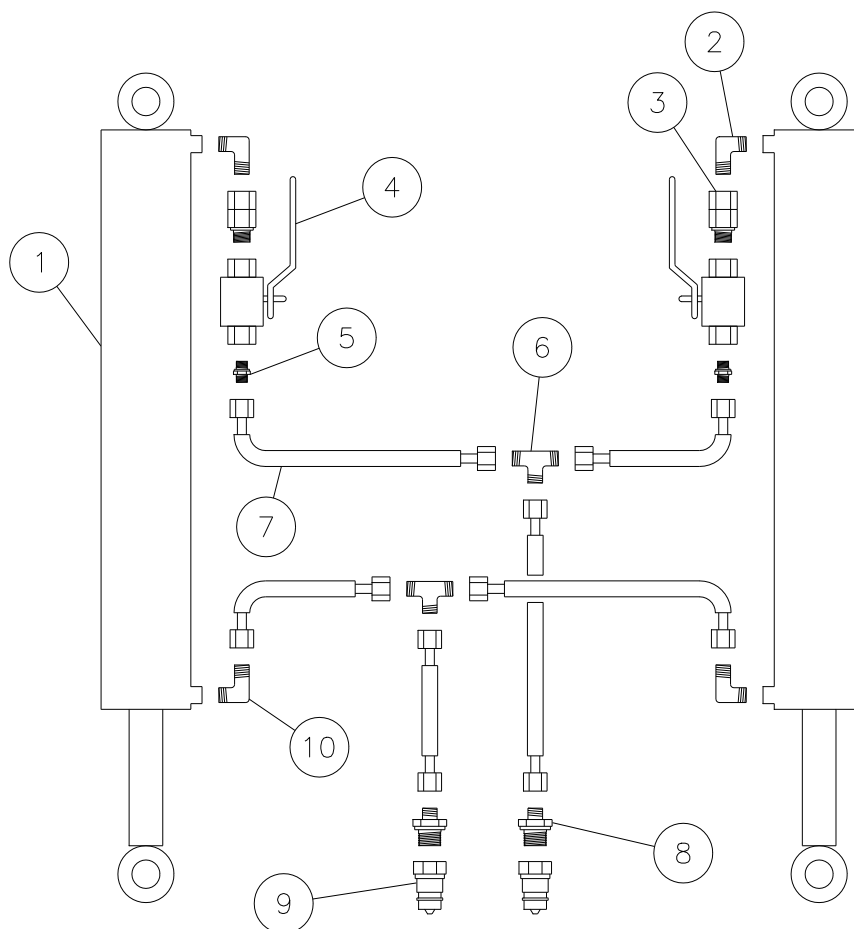


Pos.	Item no.	Designation	Number Rigid	Number Hydr. foldable
1	690302005	Top link Cat.III - 36x3 (570-790mm)	1	1
2	690201205	Hydr. hose 1130 mm 3/8" st/st	2	2
3	690201032	Hydr. hose 1130 mm 1/4" st/st	2	4
4	690134007	Lift ball f/quick coupling Cat. 3 ø64x36,2	2	2
5	690203018	Fitting 10 mm	2	4
6	690203118	Fitting 12 mm	2	2
7	64519-14	Extension cord for lights	1	1

Check measurements of all hoses before ordering the spare parts.

Spare Parts List – Hydraulics

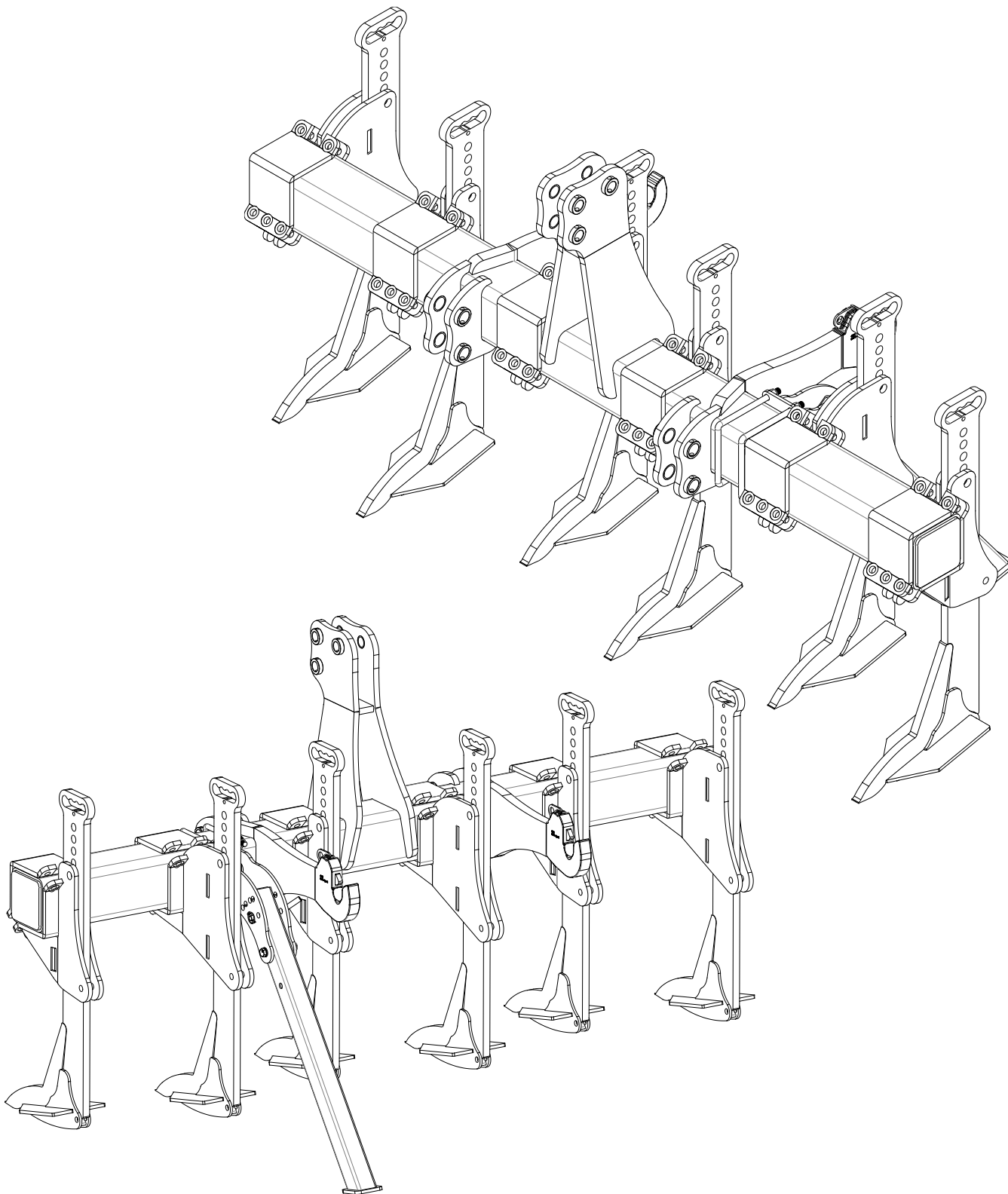
Hydraulic folding of the machine



Pos.	Item no.	Designation	Number
1	690200200	Cylinder 80/40x280	2
2	690203106	Fitting, 90angle VA12LK 3/8"	2
3	690203130	Fitting straight 12 premounted with O-ring	2
4	690202990	Ball valve 3/8" PN500 DN10	2
5	690203002	Fitting, straight 10-3/8" BSP	2
6	690203015	Fitting T10	2
7	690201053	Hydr. hose 1260mm 1/4" st/st	6
8	690203003	Fitting, straight 10-1/2" BSP	2
9	690203001	Quick coupling, male E402 1/2"	2
10	690203314	Fitting, 90angle 10-3/8" BSP	2

NEW updated model 2,5 – 4,0m from 2013

Mounted with removabel tines and support stand



Delivery check

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

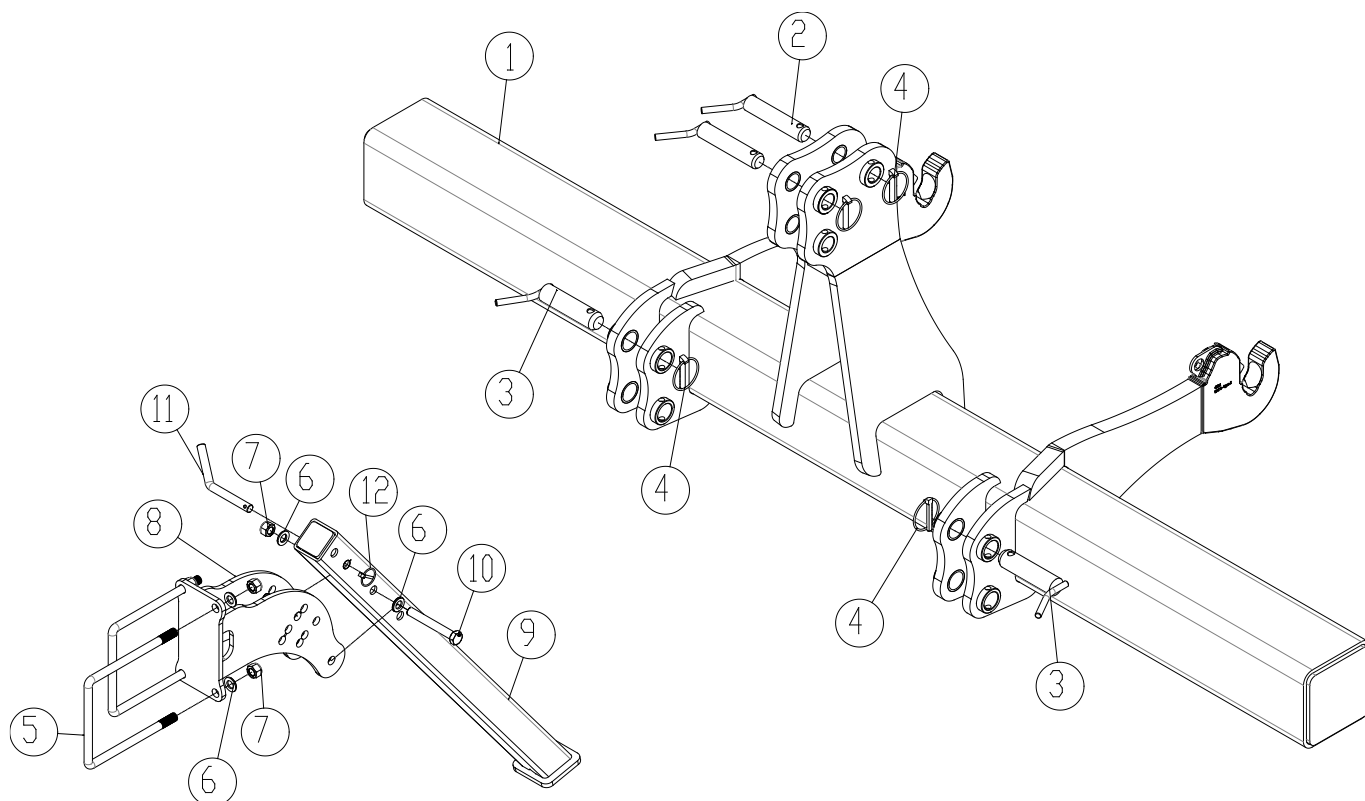
Machine Description

Technical specifications

	2,5 m	3,0 m	3,5 m	4,0 m
Working width	2,5	3,0	3,5	4,0
Transport width	2,5	3,0	3,5	4,0
Power requirement	60 – 80	90 – 100	105 – 115	70 - 130
Weight	470 – 515	570 – 605	590 – 660	670 - 715
Number of tines	3 – 4	5 – 6	5 – 7	7 - 8

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

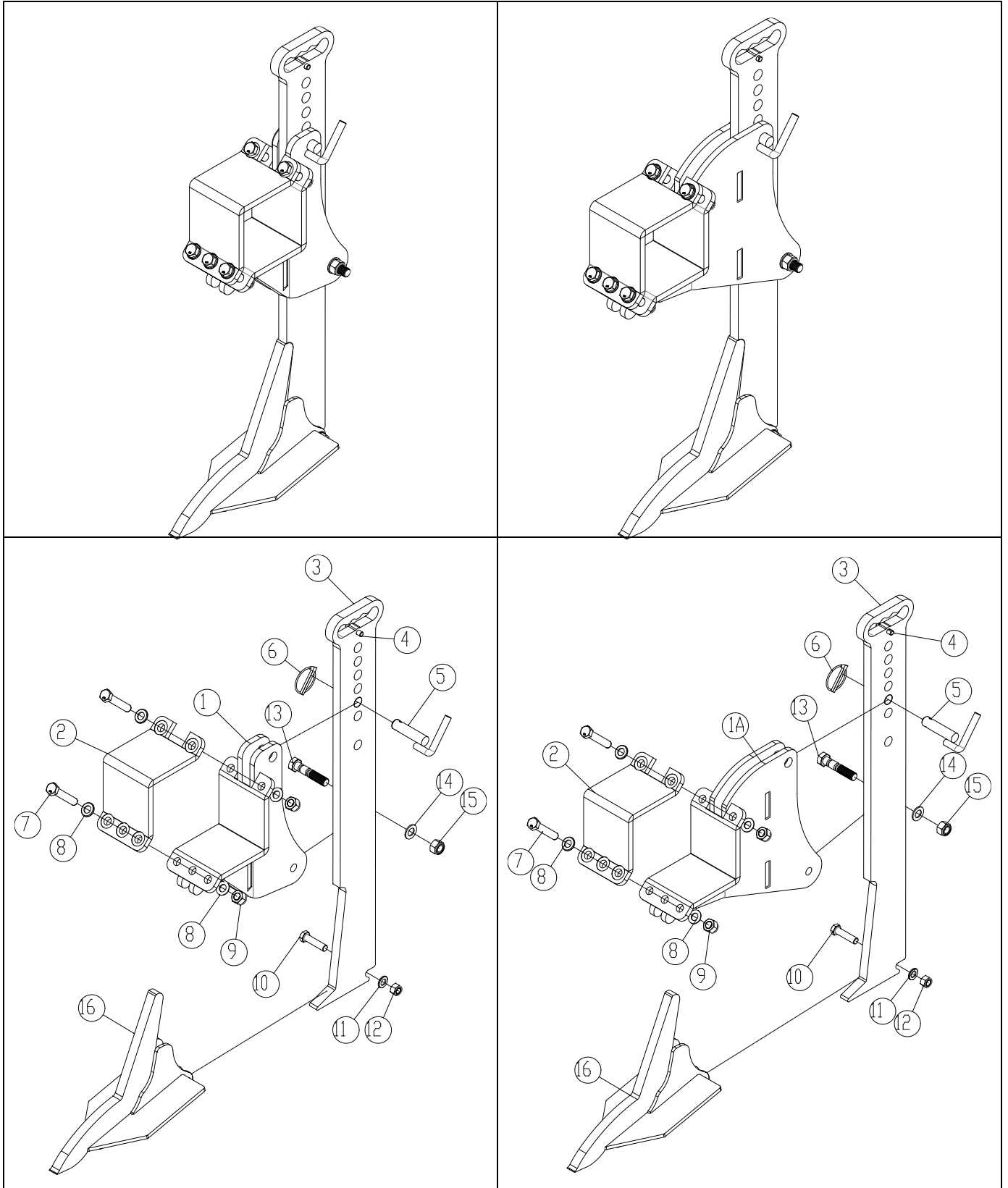
Frame



Pos.	Item no.	Designation	2,5m	3,0m	3,5m	4,0m
1	645100140	Frame 2,5 – 3,0m	1	1		
1	645100160	Frame 3,5m			1	
1	645100170	Frame 4,0m				1
2	69532129B	Pin Ø32 L=129 Pin for top link CAT III	2	2	2	
3	69537129B	Pin Ø37 L=129 Pin for lift arm CAT III	2	2	2	2
4	690134008	Ring pin Ø11,5mm	4	4	4	4
5	690110109	U-bolt M16x180x180x180	2	2	2	2
6	690117013	Facet plate Ø16	6	6	6	6
7	690113008	Self-locking nut M16	5	5	5	5
8	645100149	Brackets for support stand	1	1	1	1
9	645100153	Support stand	1	1	1	1
10	690103137	Bolt M16x120 8.8	1	1	1	1
11	69516094A	Pin Ø16 L=94 45°	1	1	1	1
12	690134001	R-clip Ø 4,5mm	1	1	1	1

Tine

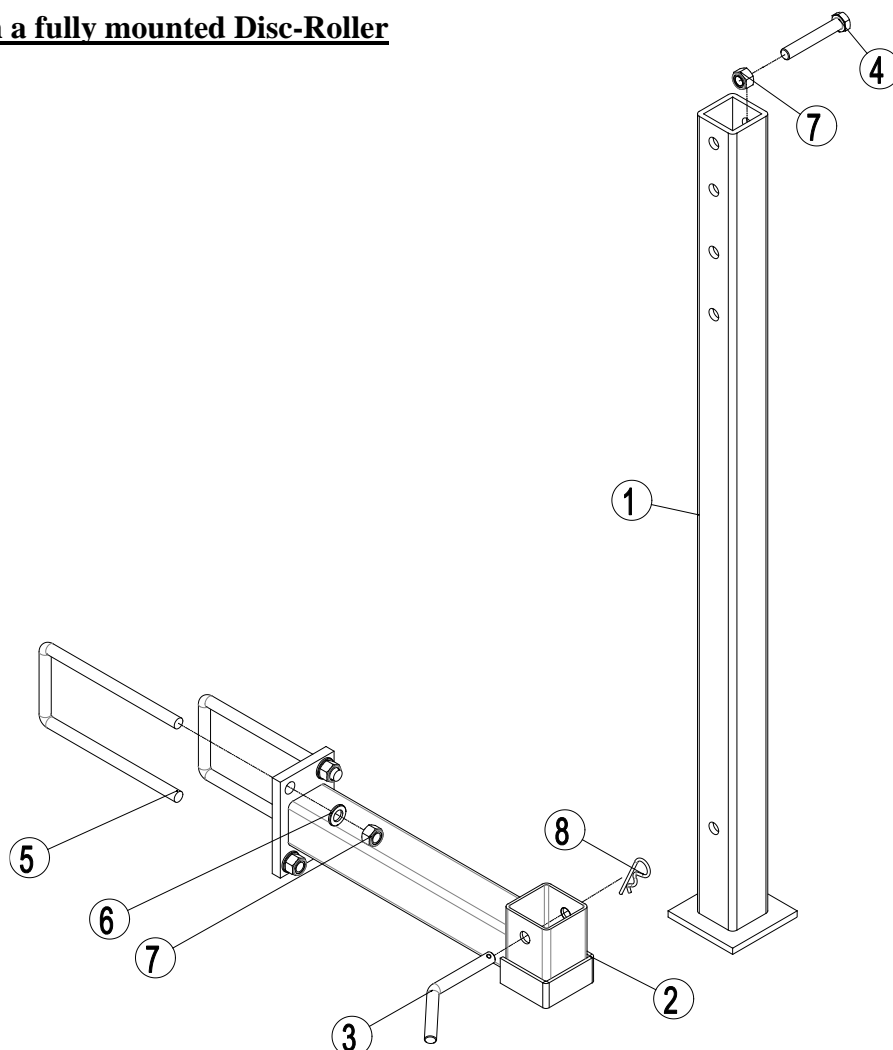
w/removable brackets



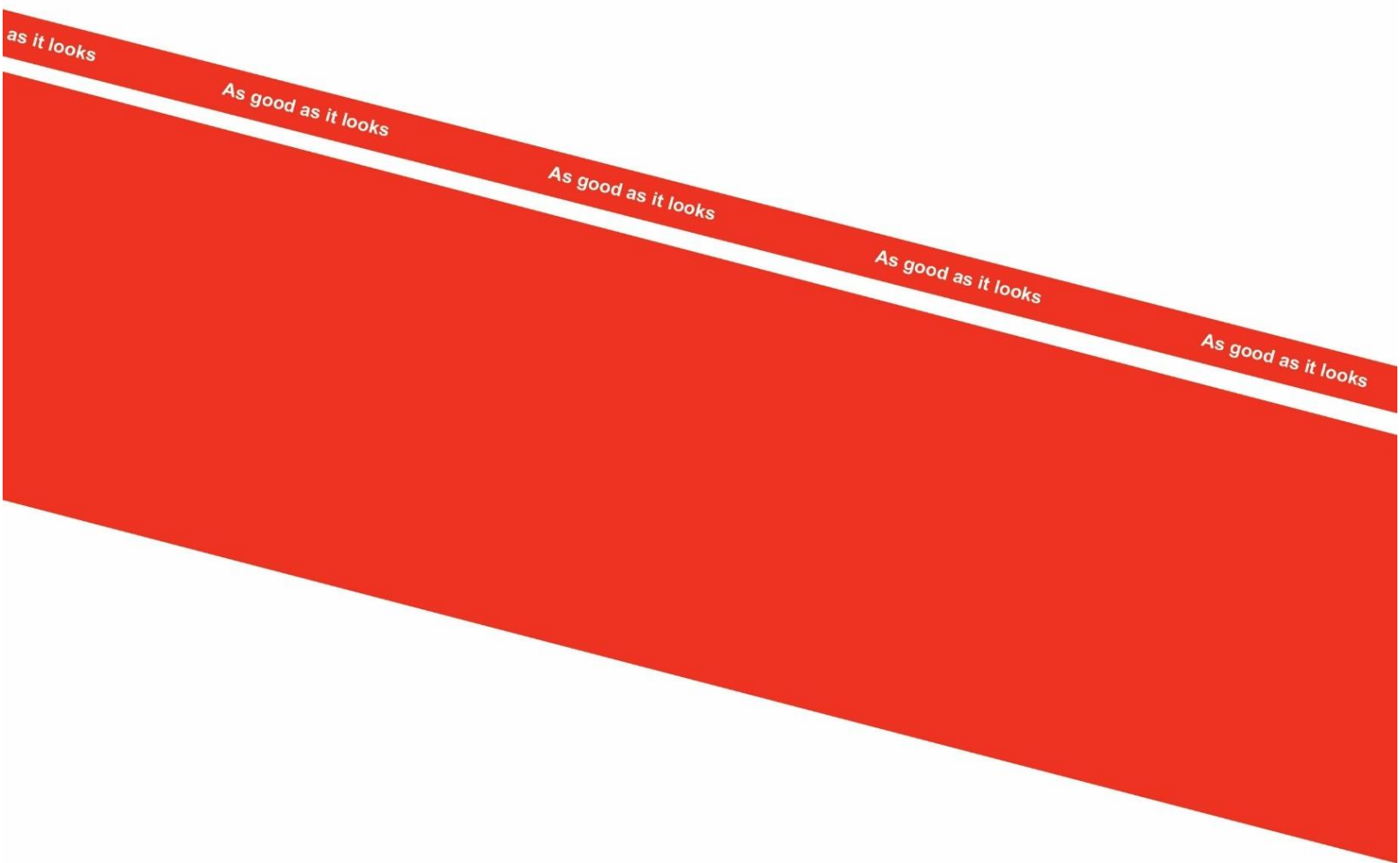
Pos.	Item no.	Designation	per tine
1	645100121	Short Bracket	1
1A	645100120	Long Bracket	1
2	645100119	Bracket	1
3	645100073	Tine	1
4	690130169	Pin Ø12x50, galvanized (for security)	1
5	69525063B	Pin for tine	1
6	690134008	Ring pin	1
7	690103324	Bolt M18x100 10.9	5
8	690117015	Facet plate Ø18	9
9	690113016	Self-locking nut M18	5
10	690103190	Bolt M16x65 8.8	1
10	0235852	Bolt M16x65 (specialbolt) from maschinenr. 200971	1
11	0272290	Facetplate Ø16	2
12	0264090	Self-locking nut M16	1
13	690152045	Shear bolt M20x100 ST.10.9 (slotted)	1
14	690117005	Facet plate Ø20	1
15	690113009	Self-locking nut M20	1
16	645000044	Wearing point 200 mm w/wings	1
	64511-90	Complete tine, with short bracket (1-16)	
	64511-91	Complete tine, with long bracket (1A-16)	

Support leg

By linking with a fully mounted Disc-Roller



Pos.	Varenr	Betegnelse	Stk
1	630915258	Support leg	1
2	630915261	Support leg bracket	1
3	69516094A	Pin Ø16	1
4	690103284	Bolt M16x100 8.8	1
5	690110106	U-bolt M16x200x100x200	2
6	690117013	Facet plate Ø16	4
7	690134008	Self locking nut M16	5
8	690133005	Hairpin	1
9	630915260	Complete support leg (Pos 1 – 8)	1



The design is subject to modification without notice.