

# 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-Roller

Trailed: 4,5 m - 6,3 - 8,2 m

Manual no. 8000391-10 110225



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## **EC DECLARATION OF CONFORMITY**

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

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

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

The declaration comprises the following machine:

Grass – Roller 4,5m - 6,3m – 8,2m

Nykøbing the 29th December 2009



Villy Christiansen

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

## **Delivery check**

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

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

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

### **Instructions regarding unloading and placing.**

The machine is delivered in completely mounted condition. Our specially trained driver will help with the unloading of the machine.

The machine should be unloaded from the lorry using a tractor and the ramps as instructed by the driver.

The machine should then be placed on level, firm ground.

### **Machine description**

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



## Technical specifications

| <b>Grass-Roller</b>            |      | <b>4,5 m</b> | <b>6.3 m</b> | <b>8.2 m</b>            |
|--------------------------------|------|--------------|--------------|-------------------------|
| Working width                  | Cm   | 450          | 630          | 820                     |
| Max. legal speed               | Km/h | 25           | 25           | 25                      |
| Total weight                   | Kg   | 1560         | 3050         | 4210                    |
| Total weight with water        | Kg   | 2830         | 5280         | 6420                    |
| Axle pressure                  | Kg   | -            | 1980         | 3094                    |
| Axle pressure with water       | Kg   | -            | 3650         | 4720                    |
| Towing eye pressure            | Kg   | -            | 810          | 1116                    |
| Towing eye pressure with water | Kg   | -            | 1550         | 1700                    |
| Total length                   | Cm   | 409          | 409          | 550                     |
| Width in total                 | Cm   | 222          | 242          | 244                     |
| Roller volume                  | L    | 3 x 420 L    | 3 x 770 L    | 1 x 770 L<br>2 x 1130 L |
| <b>Front harrow</b>            |      |              |              |                         |
| Tine spacing                   | Cm   | 9            | 9            | 9                       |

## Technical requirements

| <b>Tractor</b>    |         | <b>4,5 m</b> | <b>6.3 m</b> | <b>8.2 m</b> |
|-------------------|---------|--------------|--------------|--------------|
| Motor performance | kW (HP) | 70 - 120     | 100 - 140    | 120 - 160    |

### **Electric system**

|                 |   |           |           |           |
|-----------------|---|-----------|-----------|-----------|
| Battery voltage | V | 12        | 12        | 12        |
| Plug for lights |   | 7 - poles | 7 – poles | 7 – poles |

### **Hydraulic system all models**

|                       |       |        |        |        |
|-----------------------|-------|--------|--------|--------|
| Max. working pressure | Bar   | 220    | 220    | 220    |
| Pump effect           | L/min | Min 15 | Min 15 | Min 15 |

Oil type

|                                          |                      |                      |
|------------------------------------------|----------------------|----------------------|
| Hydro Texaco<br>HD32                     | Hydro Texaco<br>HD32 | Hydro Texaco<br>HD32 |
| Specifikation DIN 51524-3/ISO 11158 L-HV |                      |                      |



## **Safety instructions**

### **General information**

Do not start-up the machine if there are persons in exposed **positions**<sup>1</sup> within a **hazardous area**.<sup>2</sup>

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

The machine must be lowered to firm ground.

The hydraulics must be relieved.

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

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

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.

### **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 checked. Check that the front axle is sufficiently loaded. As a minimum, the front axle load must be 20% of the tractor weight. Permitted axle load and permitted total weight for the tractor must always be observed.

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

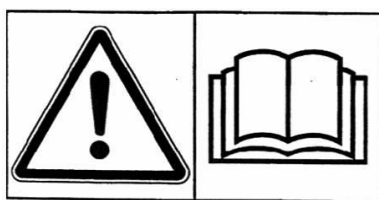
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<sup>1</sup> Persons in exposed positions: Any person who is staying wholly or partly within a hazardous area.

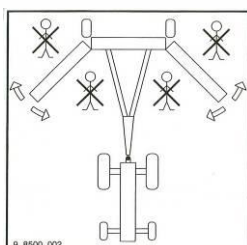
<sup>2</sup> Hazardous area: On and under the machine within a distance of 4 m from the machine.



## Safety – and other markings on the machine



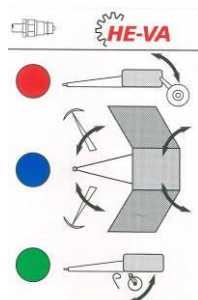
Study the Operating Instructions thoroughly before any operation of the machine and observe all safety instructions.



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.

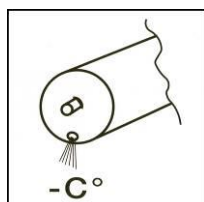


Indication label for the machine's hydraulic systems:

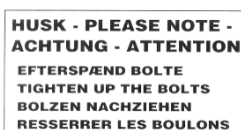
**Red:** Tip-hydraulics (Lifting of middle section)

**Blue:** Wing-hydraulics (Folding and weight transfer system)

**Green:** Extra equipment



Empty the rollers of water, before the temperature is below 0 C°. If this is not observed, our guarantee obligations will no longer apply.



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

| Maximum torque according to ISO 898-1 in Nm. w/lubricated thread |             |              |              |
|------------------------------------------------------------------|-------------|--------------|--------------|
| Metric thread                                                    | Quality 8.8 | Quality 10.9 | Quality 12.9 |
| M10                                                              | 38          | 54           | 63           |
| M12                                                              | 66          | 95           | 110          |
| M14                                                              | 105         | 150          | 176          |
| M16                                                              | 164         | 235          | 274          |
| M18                                                              | 233         | 323          | 377          |
| M20                                                              | 331         | 458          | 535          |
| M22                                                              | 450         | 622          | 727          |
| M24                                                              | 572         | 791          | 925          |
| Hub bolts M18x1,5 fine thread                                    |             | 360          |              |
| Hub bolts M22x1,5 fine thread                                    |             | 550          |              |



## Operating Instructions

### Attachment

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

**Important:**

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

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

The roller requires two double-acting hydraulic outlets.

The hoses for the tip cylinder are provided with **red** cable straps.

The hoses for the wing cylinder are provided with **blue** cable straps.

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

Power plug and control box for weight transfer protection are putted into the cabin (8.2m models)

### Unfolding and folding

of the machine, notice no. 2 and 6 are only for 6,3m

1. Check that the male quick couplings mounted from the factory fit the tractor's female quick couplings.
2. Contact on the control box for weight transfer protection activated (diode lights up)
3. Now pressurise the tip-cylinder (red), so that the side sections are lifted free of the transport cradle.
4. Then the wing-cylinders are pressured (blue), so that the side sections are folded out as much as possible, the hydraulic rams being fully closed.
5. Now relieve the pressure of the tip-cylinder (red), and the roller will tip forward, down to working position. When the bottom has been reached, let go of the hydraulic handle.
6. Contact on the control box for weight transfer protection de-activated (diode off)
7. Now the wing-cylinders are pressured (blue), so that the side sections are pressed down against the ground and the manometer is showing the hydraulic pressure according to the schedule on the next page in order to obtain the correct weight transfer between the middle section and the side sections.

### Change-over from working to transport position, notice no. 8 and 13 are only for 6,3m

8. Contact on the control box for weight transfer protection activated (diode lights up)
9. First the side sections are lifted free of the ground by pressurising the wing-cylinders (blue).
10. The roller is tipped completely backwards and is locked by pressurising the tip-cylinder (red).
11. Now pressurise the wing-cylinders (blue), so that the side sections are turning forwards, towards the stop on the transport fittings of the drawbar.
12. When both side sections are parallel with the drawbar, they are lowered down into the transport cradle by relieving the tip-cylinder (red). This is to be performed with care.
13. Contact on the control box for weight transfer protection de-activated (diode off)
14. All hydraulic hoses are relieved, and the machine is ready for transport.

**Important: It is not permitted to pressurise any cylinders in transport position.**



## Settings and adjustment

### Weight transfer

The weight transfer is adjusted dependent on the water quantity in the rollers. The weight transfer is adjusted by pressurising the hydraulic system (blue).

The pressure is read on the machine's manometer.

| Water level / Bar | 4,5 m | 6,3 m | 8,2 m |
|-------------------|-------|-------|-------|
| 1/1               | 15    | 30    | 40-45 |
| 3/4               | 15    | 30    | 40-45 |
| 1/2               | 15    | 30    | 40-45 |
| 1/4               | 15    | 30    | 40-45 |

**NOTE:** The weight transfer system can be loaded with max. **100 bar**.

### Long finger harrow

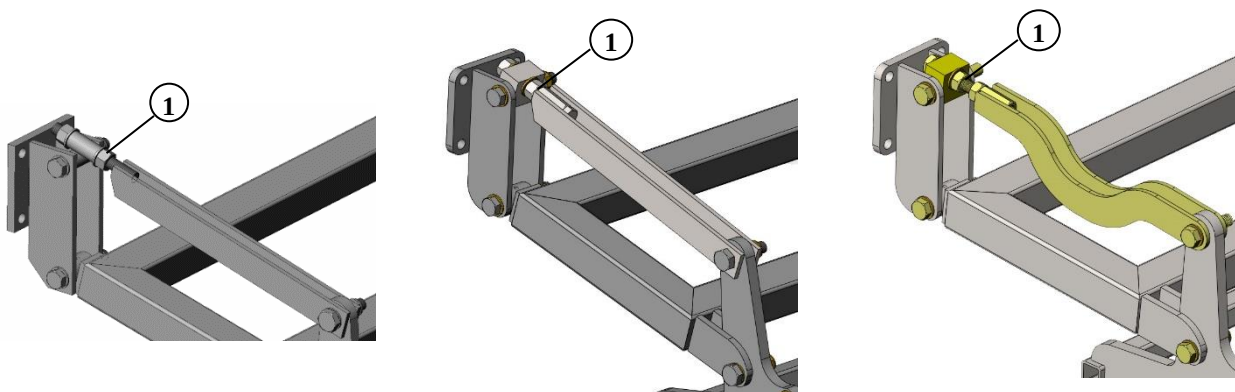
The long finger harrow is raised and lowered with the hydraulic system, which is marked with the **green** colour.

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

**Recommended harrow depth:** 25 mm below the roller.

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

Each tine can be worn approx. 200 mm. However, they will be less flexible and maybe there is a need for an earlier replacement.

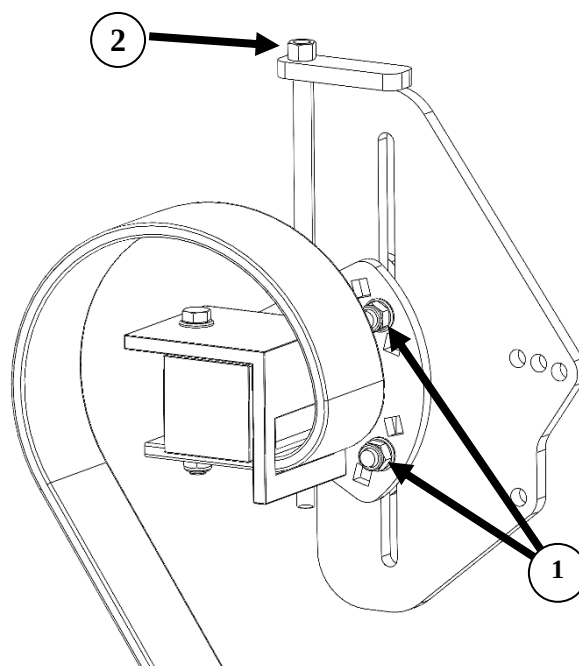


From machine number 341717

### Levelling board

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

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



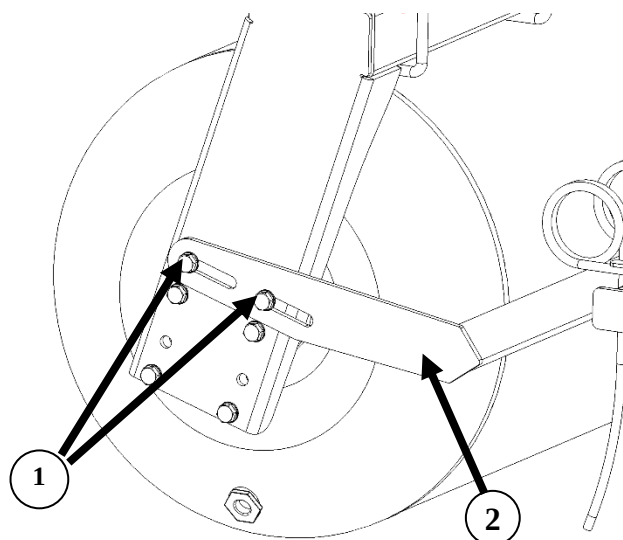
### Roller scraper

#### **6.3 m**

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

#### **8.2 m**

The scrapers are adjusted in the same way as for 6.3 m. In the middle of the side sections 2 bolts are placed, which are to be loosened too.



## **Maintenance**

### **Lubrication**

**Important:**

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

After every approx. 10 working hours all movable parts in the side sections are to be lubricated as well as the 3 lubricating points on the wing cylinder. After every 30 working hours the tip cylinder's pins and the 3 pins in the drawbar are to be lubricated.

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

**Important:**

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

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

**Important:**

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

### **Repairs**

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



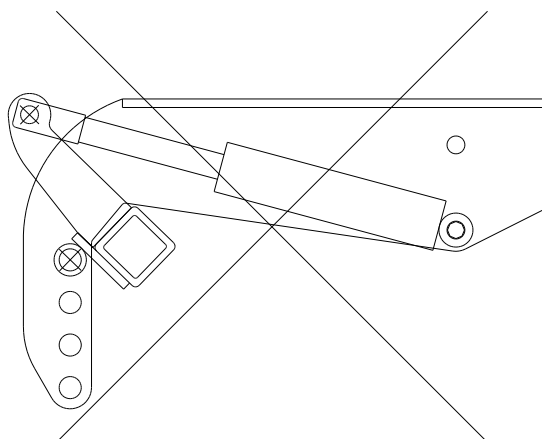
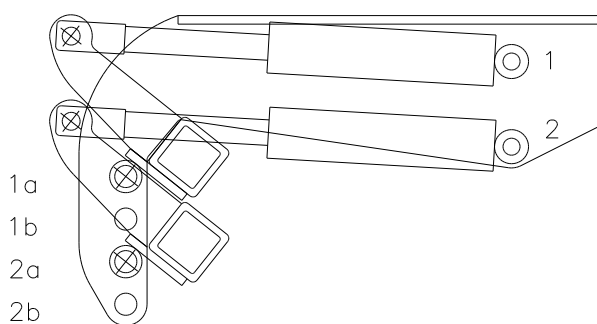
## **Spring-Board**

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

### **Mounting of cylinder on Spring-Board**

The hydraulic cylinders are mounted as shown below. It is important that the mounting is performed properly to get the correct force on the cylinders.

On the Grass-Roller the cylinders for Spring-Board must be mounted in hole 2 and 2b. Moreover, the tine points of the Spring-Board tines are placed completely down, so that they are bolted in the lower holes.

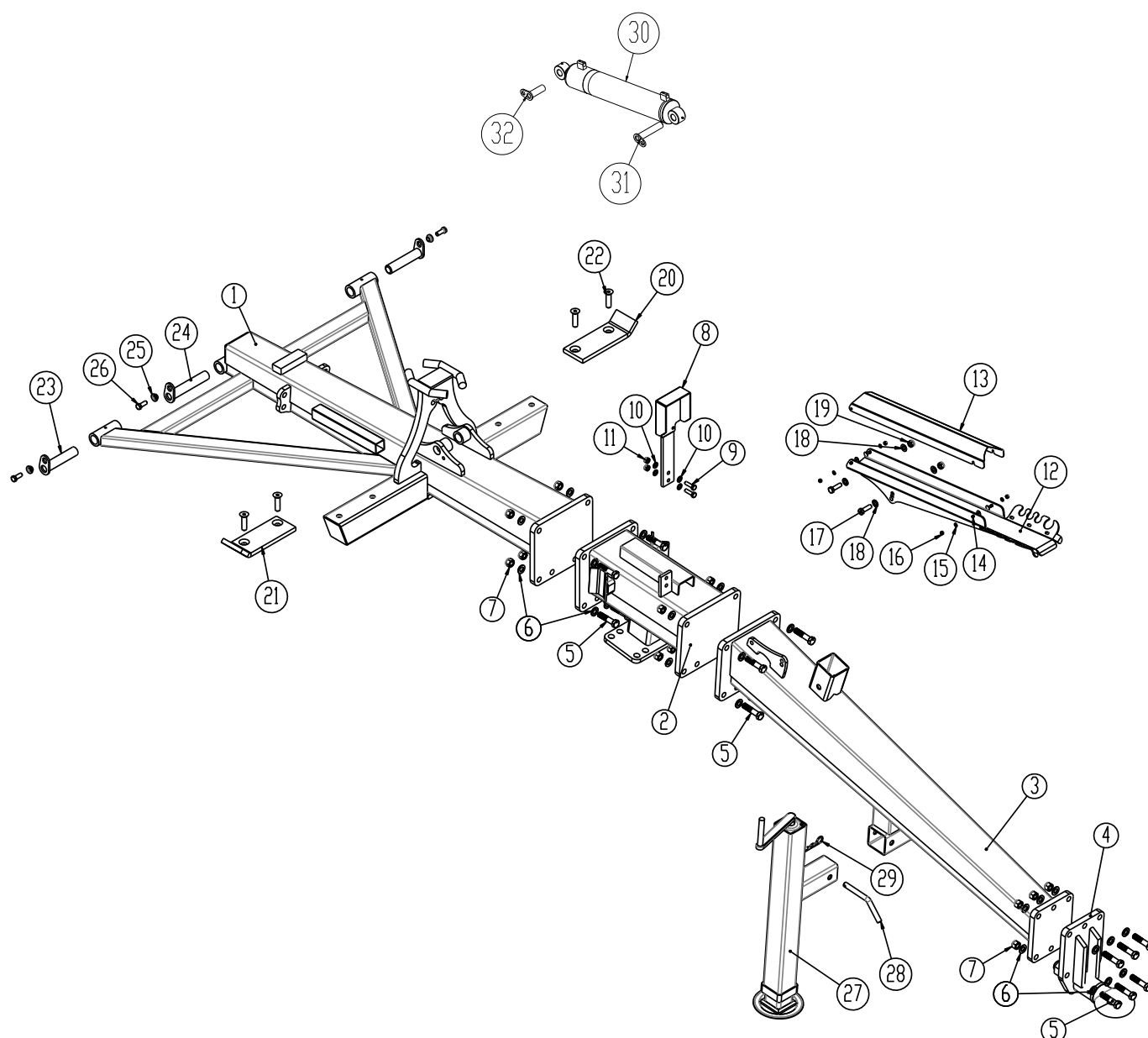


## Spare parts list

### How to read the Spare parts list

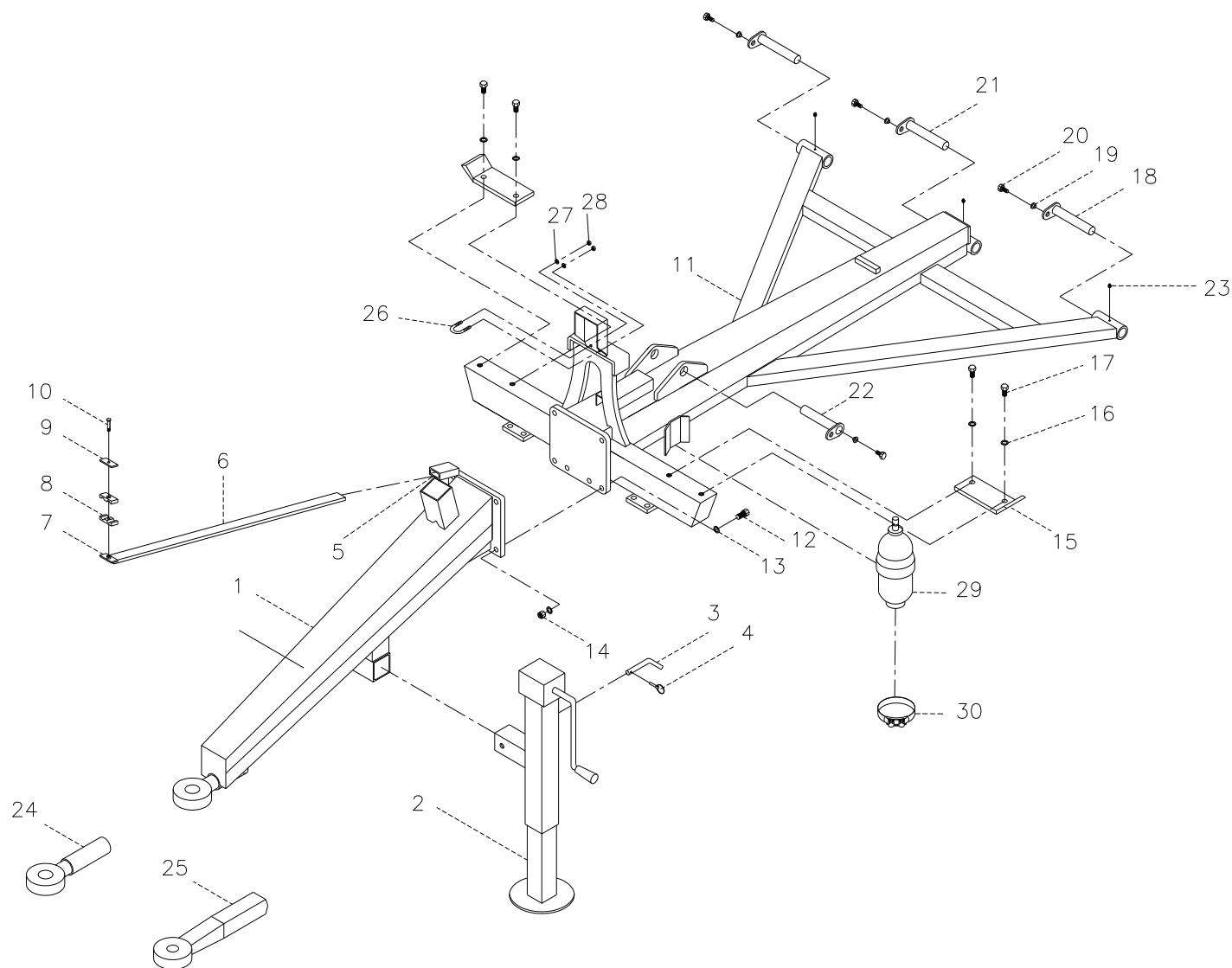
The exploded drawings are always ahead of the belonging parts table. Pay attention to some part tables which are continued to the next page. Also, some drawings are on two pages, one after the other.

### Front - and back drawbar 4,5 m



| Pos. | Item no.  | Designation                       | 4,5m |
|------|-----------|-----------------------------------|------|
| 1    | 630536200 | Back drawbar                      | 1    |
| 2    | 630286135 | Drawbar extension 500 mm          | 1    |
| 3    | 630757032 | Drawbar                           | 1    |
| 4    | 630757028 | Towing eye complete               | 1    |
| 5    | 690103130 | Bolt M16x70 10.9                  | 18   |
| 6    | 0272290   | Faceted washer Ø16 DIN 125B       | 36   |
| 7    | 0264090   | Self-locking nut M16              | 18   |
| 8    | 630941066 | Manometer bracket                 | 1    |
| 9    | 0235060   | Set bolt M10x35 8.8               | 2    |
| 10   | 0272260   | Faceted washer Ø10 DIN 125B       | 4    |
| 11   | 0264060   | Self-locking nut M10              | 2    |
| 12   | 7345001   | Hose parking main part            | 1    |
| 13   | 7345003   | Hose parking upper part           | 1    |
|      | 7345010   | Hose parking complete             |      |
| 14   | 0246060   | Carriage bolt M6x16 Fzb DIN 603   | 4    |
| 15   | 0272240   | Faceted washer Ø6 Fzb             | 4    |
| 16   | 0264040   | Self-locking nut M6               | 4    |
| 17   | 0235360   | Set bolt M12x40 8.8               | 2    |
| 18   | 0272270   | Faceted washer Ø12 Fzb DIN 125B   | 4    |
| 19   | 0264070   | Self-locking nut M12              | 2    |
| 20   | 630762045 | Transport bracket left            | 1    |
| 21   | 630762048 | Transport bracket right           | 1    |
| 22   | 0229000   | Bolt M16x60 countersinck DIN 7991 | 4    |
| 23   | 69430140G | Pin Ø30 L=140                     | 2    |
| 24   | 69430170G | Pin Ø30 L=170                     | 1    |
| 25   | 630532600 | Lock bushing for pinhead          | 2    |
| 26   | 0235340   | Bolt M12x30 8.8 Fzb               | 3    |
| 27   | 690141095 | Support leg                       | 1    |
| 28   | 69216094A | Pin Ø16 L=94                      | 1    |
| 29   | 0377400   | R-clip Ø4                         | 1    |
| 30   | 690200109 | Tip-Cylinder 100/50x600 Hydraflex | 1    |
|      | 690200284 | Gasket set 100/50 mm Hydraflex    |      |
| 31   | 69430150G | Pin Ø30 L=150                     | 1    |
| 32   | 69430090G | Pin Ø30 L=90                      | 1    |

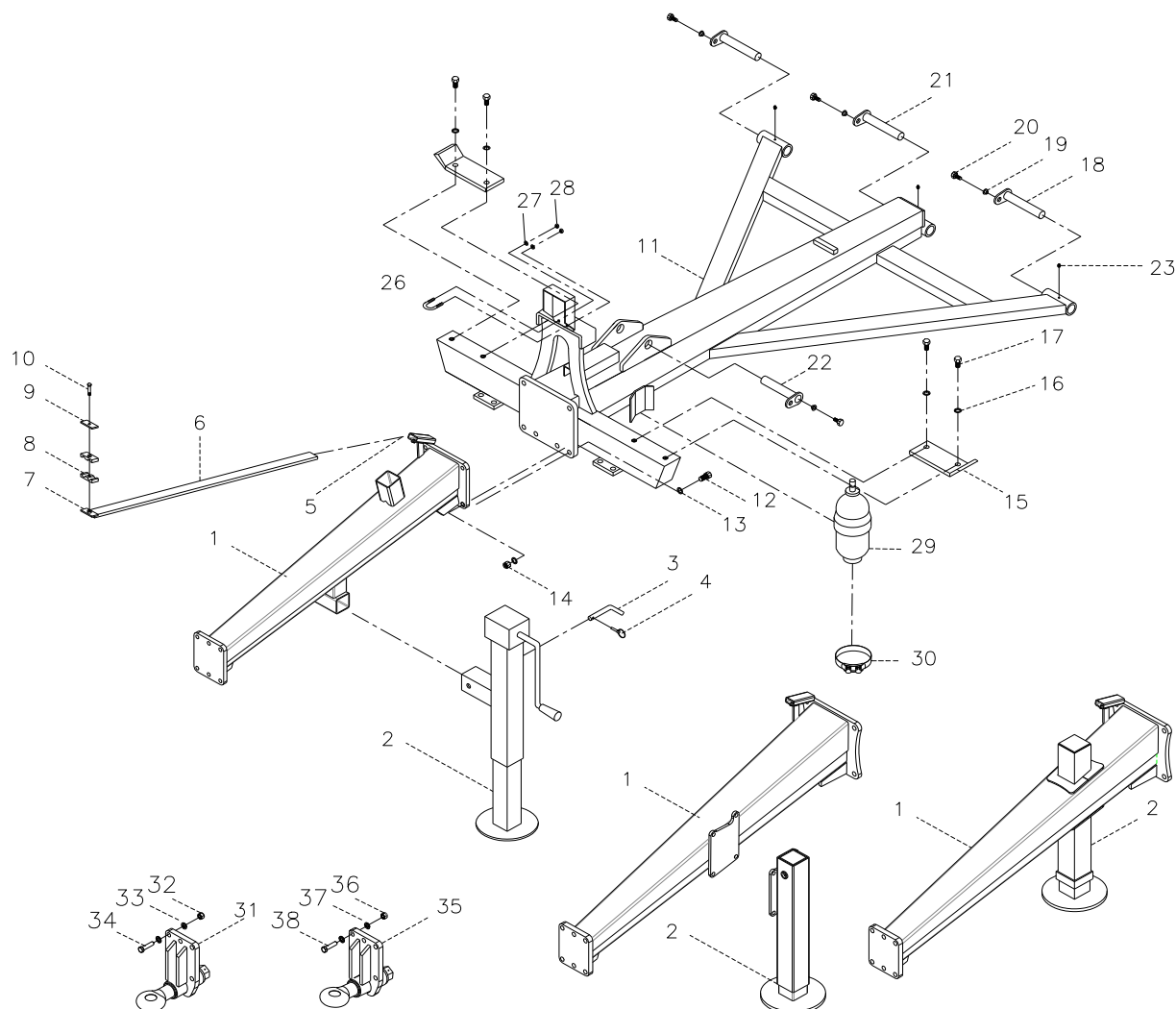
**Front and rear drawbar 6,3 - 8,2m before May 2010, before machine no. 341713**



| Pos. | Item no.  | Designation                           | 6.3m | 8.2m |
|------|-----------|---------------------------------------|------|------|
| 1    | 630771010 | Front drawbar                         | 1    | 0    |
| 1    | 630831000 | Front drawbar                         | 0    | 1    |
| 2    | 690141102 | Supporting leg 6000 kg                | 1    | 1    |
| 3    | 69516094A | Pin Ø16 L=94                          | 1    | 1    |
| 4    | 690133005 | R-clip Ø4                             | 1    | 1    |
| 5    | 690103075 | Bolt M10x25                           | 1    | 1    |
| 6    | 630771200 | Parking device for hose               | 1    | 1    |
| 7    | 690210212 | Welding plate for tube-support double | 1    | 1    |
| 8    | 690210210 | Tube-support double Ø14/Ø14           | 2    | 2    |
| 9    | 690210211 | Top plate for tube-support double     | 1    | 1    |
| 10   | 690210213 | Screw for tube-support double         | 1    | 1    |
| 11   | 630327110 | Back drawbar                          | 1    | 0    |
| 11   | 630347500 | Back drawbar                          | 0    | 1    |
| 12   | 690103190 | Bolt M16x65                           | 1    | 0    |
| 12   | 690103173 | Bolt M20x70 10.9                      | 0    | 1    |
| 13   | 0272290   | Facet plate Ø16                       | 1    | 0    |
| 13   | 0272310   | Facet plate Ø20                       | 0    | 1    |
| 14   | 0264090   | Self-locking nut M16                  | 1    | 1    |
| 14   | 0264110   | Self-locking nut M20                  | 0    | 1    |
| 15   | 630762045 | Transport bracket, left               | 1    | 1    |
| 15A  | 630762048 | Transport bracket, right              | 1    | 1    |
| 16   | 690119008 | Spring washer Ø16                     | 2    | 2    |
| 17   | 690103127 | Bolt M16x50                           | 2    | 2    |
| 18   | 69435175G | Pin Ø35 L=175                         | 2    | 2    |
| 19   | 630532600 | Lock-bush for pin head                | 4    | 4    |
| 20   | 690101101 | Bolt M12x25                           | 4    | 4    |
| 21   | 69435185G | Pin Ø35 L=185                         | 1    | 1    |
| 22   | 69435175G | Pin Ø35 L=175                         | 1    | 1    |
| 23   | 0432510   | Lubricating nipple M8                 | 3    | 3    |
| 24   | 690141211 | Towing eye (Danish)                   | 1    | 1    |
| 25   | 690105003 | Towing eye (German)                   | 1    | 1    |
| 26   | 690110003 | U-bolt M8x60xØ35                      | 1    | 1    |
| 27   | 0272250   | Facet plate ø8                        | 2    | 2    |
| 28   | 0264050   | M8 Self-locking nut                   | 2    | 2    |
| 29   | 690206403 | Accumulator H700R 15 bar              | 1    | 1    |
| 29a  | 690206410 | Accumulator H700R 40 bar              | 1    | 1    |
| 30   | 690206511 | Clamp for accumulator                 | 2    | 2    |



# Front drawbar from june 2010 Machine number 341713

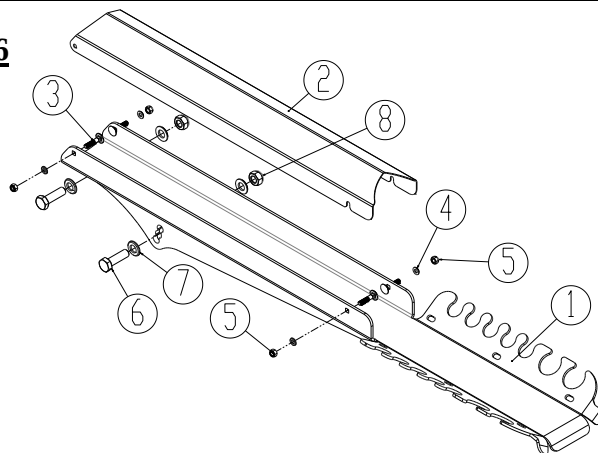


| Pos.                  | Item no.  | Designation                                                                     | 6,3m | 8,2m |
|-----------------------|-----------|---------------------------------------------------------------------------------|------|------|
| 1                     | 630771000 | Front drawbar                                                                   | 1    | 0    |
| 1                     | 630771020 | Front drawbar <b>from machine number 344524</b>                                 | 1    |      |
| 1                     | 630831015 | Front drawbar <b>from machine number 341713</b>                                 | 0    | 1    |
| 1                     | 630831021 | Front drawbar w/centre mounted supporting leg <b>from machine number 342015</b> |      | 1    |
| 1                     | 630831027 | Front drawbar w/centre mounted supporting leg <b>from machine number 359540</b> |      | 1    |
| 2                     | 690141102 | Supporting leg 6000 kg                                                          | 1    | 1    |
| 2                     | 690141099 | Supporting leg hydraulic <b>from machine number 341713</b>                      |      | 1    |
| 2                     | 690141098 | Supporting leg hydraulic <b>from machine number 342015</b>                      |      | 1    |
| 2                     | 690141109 | Supporting leg hydraulic <b>from machine number 359540</b>                      |      |      |
| 3                     | 69516094A | Pin Ø16 L=94                                                                    | 1    | 1    |
| 4                     | 0377400   | R-clip Ø4                                                                       | 1    | 1    |
| 5                     | 690103075 | Bolt M10x25                                                                     | 1    | 1    |
| 6                     | 630771200 | Parking device for hose                                                         | 1    | 1    |
| 7                     | 690210212 | Welding plate for tube-support double                                           | 1    | 1    |
| The tabel continues → |           |                                                                                 |      |      |



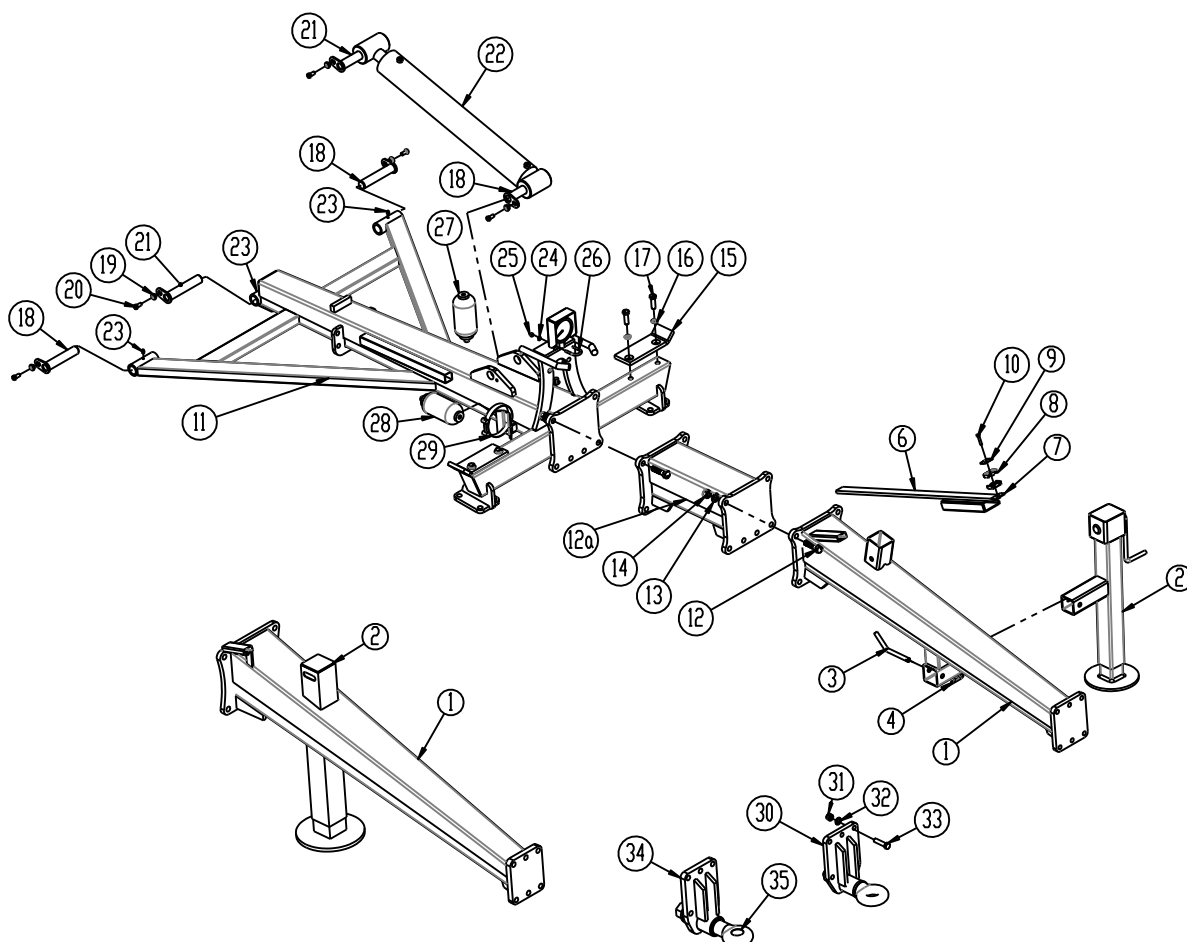
|     |           |                                                        |    |    |
|-----|-----------|--------------------------------------------------------|----|----|
| 8   | 690210210 | Tube-support double Ø14/Ø14                            | 2  | 2  |
| 9   | 690210211 | Top plate for tube-support double                      | 1  | 1  |
| 10  | 690210213 | Screw for tube-support double                          | 1  | 1  |
| 11  | 630327110 | Back drawbar                                           | 1  | 0  |
| 11  | 630327515 | Back drawbar <b>from machine number 344524</b>         | 1  | 0  |
| 11  | 630347500 | Back drawbar                                           | 0  | 1  |
| 12  | 0235851   | Bolt M16x65 10.9                                       | 6  | 0  |
| 12  | 690103173 | Bolt M20x70 10.9 <b>from machine number 344524</b>     | 6  |    |
| 12  | 690103173 | Bolt M20x70 10.9                                       | 0  | 6  |
| 13  | 0272290   | Facet plate Ø16                                        | 12 | 0  |
| 13  | 0272310   | Facet plate Ø20 <b>from machine number 344524</b>      | 12 |    |
| 13  | 0272310   | Facet plate Ø20                                        | 0  | 12 |
| 14  | 0264090   | Self-locking nut M16                                   | 6  | 6  |
| 14  | 0264110   | Self-locking nut M20 <b>from machine number 344524</b> | 6  |    |
| 14  | 0264110   | Self-locking nut M20                                   | 0  | 1  |
| 15  | 630762045 | Transport bracket, left                                | 1  | 1  |
| 15a | 630762048 | Transport bracket, right                               | 1  | 1  |
| 16  | 690119008 | Spring washer Ø16                                      | 2  | 2  |
| 17  | 690103127 | Bolt M16x50                                            | 2  | 2  |
| 18  | 69435175G | Pin Ø35 L=175                                          | 2  | 2  |
| 19  | 630532600 | Lock-bush for pin head                                 | 4  | 4  |
| 20  | 690101101 | Bolt M12x25                                            | 4  | 4  |
| 21  | 69435185G | Pin Ø35 L=185                                          | 1  | 1  |
| 22  | 69435175G | Pin Ø35 L=175                                          | 1  | 1  |
| 23  | 0432510   | Lubricating nipple M8                                  | 3  | 3  |
| 26  | 690110003 | U-bolt M8x60xØ35                                       | 1  | 1  |
| 27  | 0272250   | Facet plate ø8                                         | 2  | 2  |
| 28  | 0264050   | M8 Self-locking nut                                    | 2  | 2  |
| 29  | 690206403 | Accumulator H700R 15 bar                               | 1  | 1  |
| 29a | 690206410 | Accumulator H700R 40 bar                               | 1  | 1  |
| 30  | 690206511 | Clamp for accumulator                                  | 2  | 2  |
| 31  | 630757028 | Drawbar cpl.Ø50 pivotal M16 bolte                      | 1  | 0  |
| 31a | 690141211 | Towing eye Ø50 pivotal M16 bolts                       | 1  |    |
| 32  | 0264090   | Self-locking nut M16                                   | 6  | 0  |
| 33  | 0272290   | Facet plate Ø16                                        | 12 | 0  |
| 34  | 0235851   | Bolt M16x65 10.9                                       | 6  | 0  |
| 35  | 630757017 | Drawbar cpl.Ø50 pivotal M20 bolte                      | 0  | 1  |
| 35a | 690105006 | Towing eye Ø50 pivotal M20 bolte                       |    | 1  |
| 36  | 0272310   | Self-locking nut M20                                   | 0  | 6  |
| 37  | 690113011 | Facet plate Ø20                                        | 0  | 12 |
| 38  | 690103069 | Bolt M20x80 10.9                                       | 0  | 6  |

## Hose parking from may 2016



| Pos. | Item no. | Designation                     | 6.3-8,2m |
|------|----------|---------------------------------|----------|
| 1    | 7345006  | Hose parking large model        | 1        |
| 2    | 7345003  | Hose parking upper part         | 1        |
| 3    | 0246060  | Carriage bolt M6x16 Fzb DIN 603 | 4        |
| 4    | 0272240  | Faceted washer Ø6 Fzb           | 4        |
| 5    | 0264040  | Self.-locking nut M6            | 4        |
| 6    | 0235360  | Set bolt M12x40 8.8             | 2        |
| 7    | 0272270  | Faceted washer Ø12 Fzb DIN 125B | 4        |
| 8    | 0264070  | Self-locking nut M12            | 2        |

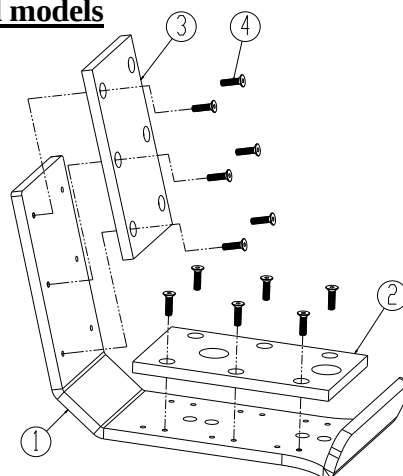
## Front- and back drawbar, From machine no. 347534



| Pos. | Item no.  | Designation                                                                    | 6.3m | 8.2m |
|------|-----------|--------------------------------------------------------------------------------|------|------|
| 1    | 630771020 | Front drawbar                                                                  | 1    | 0    |
| 1    | 630831021 | Front drawbar                                                                  | 0    | 1    |
| 1    | 630831027 | Front drawbar w/centre mounted supporting leg<br>From serial no. number 359540 |      | 1    |
| 2    | 690141102 | Supporting leg 6000 kg                                                         | 1    | 0    |
| 2    | 690141098 | Supporting leg, Hydraulic                                                      | 0    | 1    |
| 2    | 690141109 | Supporting leg, Hydraulic<br>From serial no. number 359540                     |      |      |
| 3    | 69516094A | Pin Ø16 L=94                                                                   | 1    | 1    |
| 4    | 0377400   | R-clip Ø4                                                                      | 1    | 1    |
| 5    | 690103075 | Bolt M10x25                                                                    | 1    | 1    |
| 6    | 630771200 | Parking device for hose                                                        | 1    | 1    |
| 7    | 690210212 | Welding plate for tube-support double                                          | 1    | 1    |
| 8    | 690210210 | Tube-support double Ø14/Ø14                                                    | 2    | 2    |
| 9    | 690210211 | Top plate for tube-support double                                              | 1    | 1    |
| 10   | 690210213 | Screw for tube-support double                                                  | 1    | 1    |
| 11   | 630330001 | Back drawbar<br>From serial no. 347070                                         | 1    | 0    |
| 11   | 630367136 | Back drawbar,<br>From serial no. 347534                                        | 0    | 1    |
| 12   | 690103173 | Bolt M20x70 10.9                                                               | 12   | 12   |
| 12a  | 690779020 | Drawbar extension 500mm                                                        | 1    | 1    |
| 13   | 0272310   | Faceted washer Ø20                                                             | 12   | 12   |
| 14   | 0264110   | Self-locking nut M20                                                           | 12   | 12   |
| 15   | 630762045 | Transport bracket Right                                                        | 1    | 1    |
| 15   | 630762048 | Transport bracket Left                                                         | 1    | 1    |
| 16   | 690119008 | Spring washer Ø16                                                              | 2    | 2    |
| 17   | 690103127 | Bolt M16x50                                                                    | 2    | 2    |
| 18   | 69435175G | Pin Ø35 L=175                                                                  | 3    | 3    |
| 19   | 630532600 | Lock-bush for pin head                                                         | 5    | 5    |
| 20   | 690101101 | Bolt M12x25 8.8                                                                | 5    | 5    |
| 21   | 69435185G | Pin Ø35 L=185                                                                  | 2    | 2    |
| 22   | 690200020 | Tip cylinder Ø100/50 x 700 mm, Ø35 mm<br>Replaced by 690200310                 | 1    |      |
|      | 690200285 | Gasket set, 100/50mm, Laizhou                                                  |      |      |
| 22   | 690200310 | Tip cylinder Ø110/50x700 mm, Ø35/Ø35 mm                                        | 1    |      |
|      | 690200311 | Gasket set, 110/50, Laizhou                                                    |      |      |
| 22   | 690200315 | Tip cylinder Ø110/60 x 1000 mm, Ø35/Ø35 mm                                     |      | 1    |
|      | 690200316 | Gasket set, 110/60, Laizhou                                                    |      |      |
| 23   | 0432510   | Lubricating nipple M8                                                          | 3    | 3    |
| 24   | 690110003 | U-bolt M8x60xØ35                                                               | 1    | 1    |
| 25   | 0272250   | Facet plate ø8                                                                 | 2    | 2    |
| 26   | 0264050   | Self-locking nut M8                                                            | 2    | 2    |
| 27   | 690206403 | Accumulator H700R 15 bar                                                       | 1    | 1    |
| 28   | 690206410 | Accumulator H700R 40 bar                                                       | 1    | 1    |
| 29   | 690206511 | Clamp for accumulator                                                          | 2    | 2    |
| 30   | 630757028 | Towing eye complete Ø50, turnable, M16 bolts                                   | 1    |      |
| 31   | 0264090   | Self-locking nut M16                                                           | 6    |      |
| 31   | 0264110   | Self-locking nut M20                                                           |      | 6    |
| 32   | 0272290   | Faceted washer Ø16                                                             | 12   |      |
| 32   | 0272310   | Facetwasher Ø20                                                                |      | 12   |
| 33   | 0235851   | Bolt M16x65 10.9                                                               | 6    |      |
| 33   | 690103173 | Bolt M20x70 10.9                                                               |      | 6    |
| 34   | 630757017 | Towing eye complete, Ø50, turnable, heavy duty, M20 bolte                      |      | 1    |
| 35   | 690141211 | Towing eye Ø50, turnable, heavy duty                                           |      | 1    |

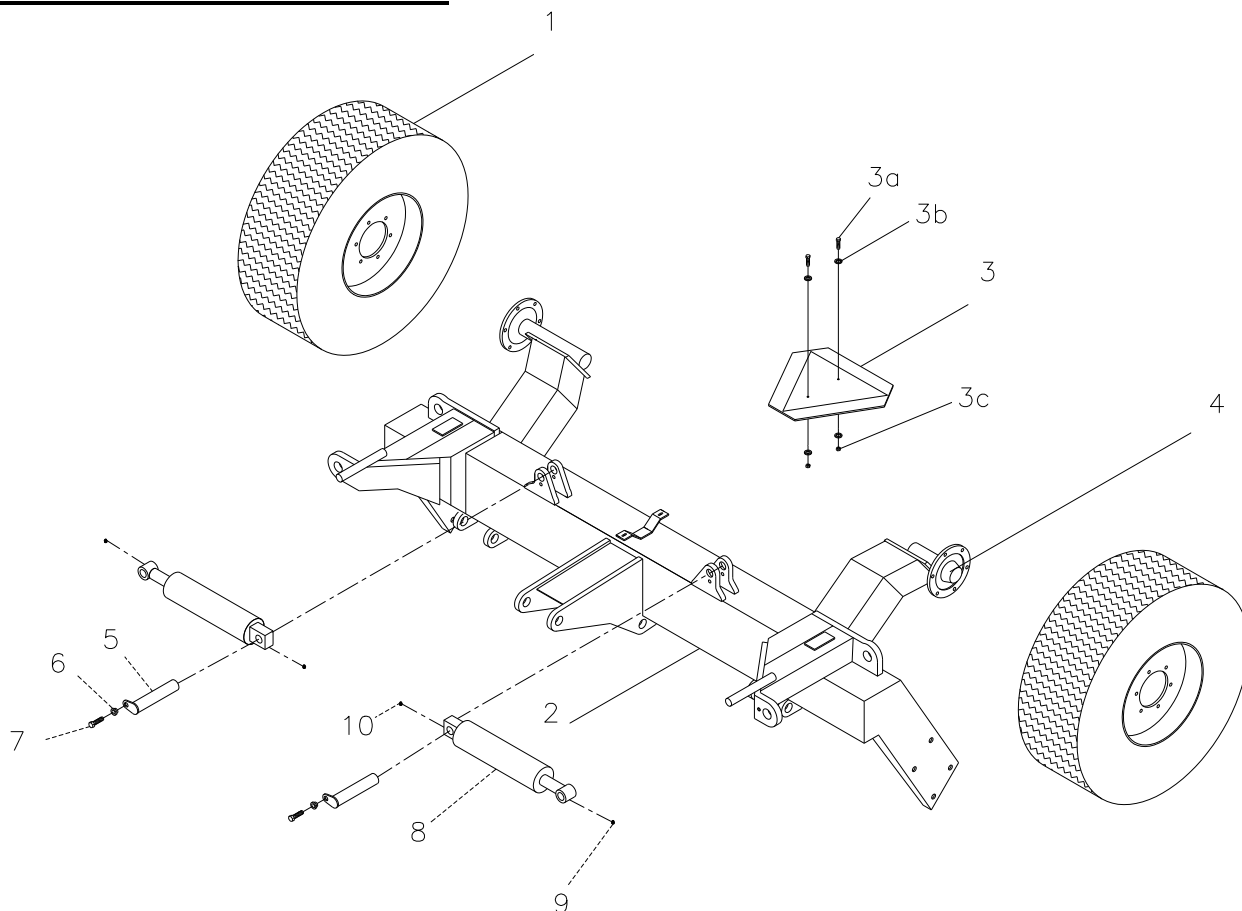


**Transport bracket, only when Starrings are mounted, all models**



| Pos. | Item no. | Designation                              | Qty. |
|------|----------|------------------------------------------|------|
| 1    | 1210334  | Transport bracket                        | 2    |
| 2    | 1210333  | Plastic PEHD-300 15 mm black, horizontal | 2    |
| 3    | 1210336  | Plastic PEHD-300 15 mm black, vertical   | 2    |
| 4    | 0228032  | Bolt countersunk M8x30 8.8 fzb DIN 7991  | 24   |

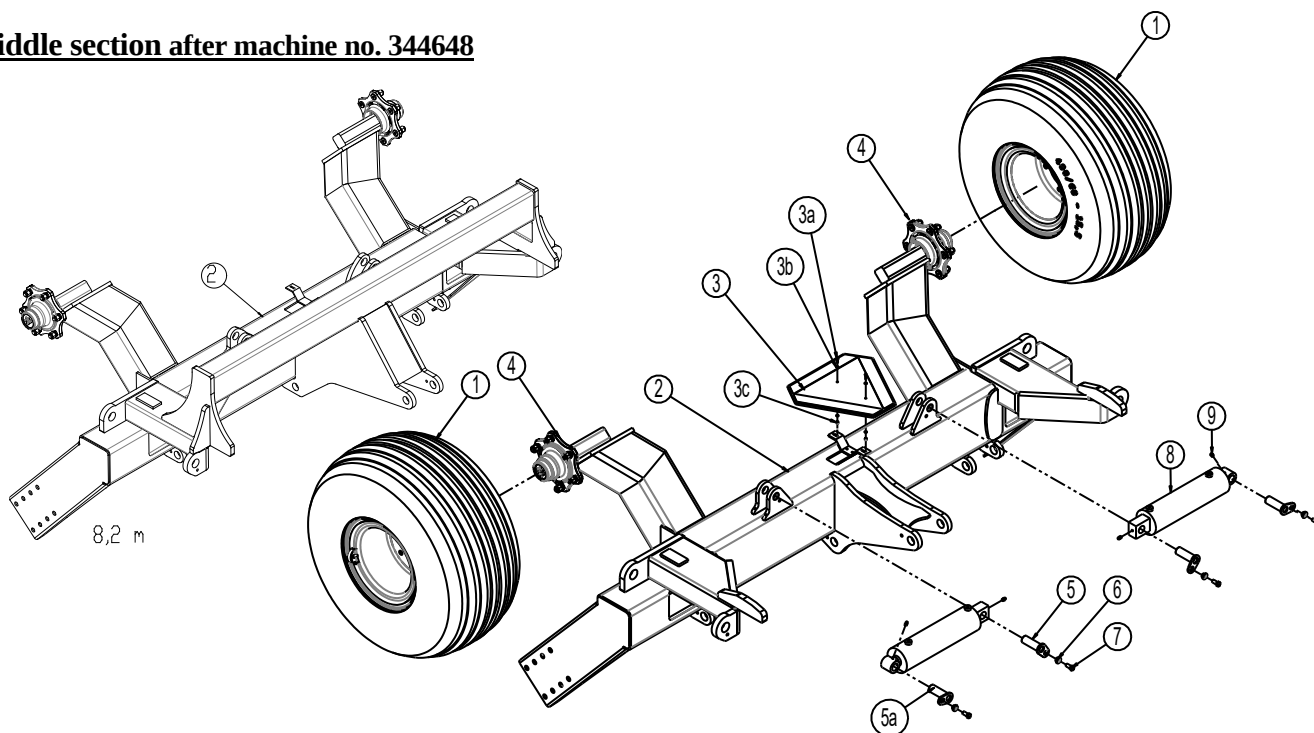
**Middle section before machine 344648**



| Pos. | Item no.  | Designation                                               | 4,5m | 6.3m | 8.2m |
|------|-----------|-----------------------------------------------------------|------|------|------|
| 1    | 690141310 | Wheel 10.0/75x15,3-10 ply,                                | 2    |      |      |
| 1    | 690141335 | Wheel 400 / 60 x 15,5 14 ply                              |      | 2    | 2    |
| 2    | 630536300 | Middle section <b>From machine no. 347231</b>             | 1    |      |      |
| 2    | 630327100 | Middle section                                            |      | 1    |      |
| 2    | 630347600 | Middle section                                            |      |      | 1    |
| 2    | 630347602 | Middle section <b>From machine no. 344648</b>             |      |      | 1    |
| 3    | 0521010   | Warning triangle                                          |      | 1    | 1    |
| 3a   | 0233860   | Bolt M5x20                                                |      | 2    | 2    |
| 3b   | 0272230   | Facet plate Ø5                                            |      | 4    | 4    |
| 3c   | 0264030   | Self-locking nut M5                                       |      | 2    | 2    |
| 4    | 690141025 | Hub 1700 kg - TVZ, see cover at hub for identification    | 2    |      |      |
| 4    | 0395440   | Hub 1700 kg - He-va, see cover at hub for identification  | 2    |      |      |
| 4    | 690141030 | Hub 2500 kg. - TVZ, see cover at hub for identification   |      | 2    | 2    |
| 4    | 0395442   | Hub 2500 kg. - He-va, see cover at hub for identification |      | 2    | 2    |
| 4    | 7297579   | Nav m/bremse 3700 kg TVZ                                  |      | 2    | 2    |
| 4a   | 690141039 | Hub bolt M18x1,5x49                                       |      | 12   | 12   |
| 4b   | 690141055 | Hub nut M18                                               |      | 12   | 12   |
| 4f   | 690141314 | Hub cover ø78 1700 kg hub - TVZ see cover for identtif.   | 2    |      |      |
| 4f   | 0395436   | Hub cover ø78 1700 kg hub - He-va see cover for identtif. | 2    |      |      |
| 4f   | 690141033 | Hub cover ø80 2500 kg hub - TVZ see cover for identtif.   |      | 2    | 2    |
| 4f   | 0395437   | Hub cover ø88 2500 kg hub - He-va see cover for identtif. |      | 2    | 2    |
| 5    | 69430090G | Pin ø30 L=90                                              | 1    |      |      |
| 5    | 69430100G | Pin ø30 L=100                                             |      | 2    | 2    |
| 6    | 630532600 | Lock bush for pin head                                    |      | 2    | 2    |
| 7    | 690101101 | Bolt M12x25                                               |      | 2    | 2    |
| 8    | 630286167 | Traverse cylinder ø70/ø40-600 (not shown)                 | 1    |      |      |
| 8a   | 690200068 | Gasket set 70/40 mm Laizhou                               |      |      |      |
| 8    | 630762047 | Traverse cylinder 90/40 - 280                             |      | 2    |      |
| 8a   | 690200274 | Gasket set 90/40                                          |      |      |      |
| 8    | 690200340 | Traverse cylinder 100/40 x 285                            |      |      | 2    |
| 8a   | 690200290 | Gasket set 100/40                                         |      |      |      |
| 9    | 0432100   | Lubricating nipple M6                                     |      | 2    | 2    |
| 10   | 0432510   | Lubricating nipple M8                                     |      | 2    | 2    |

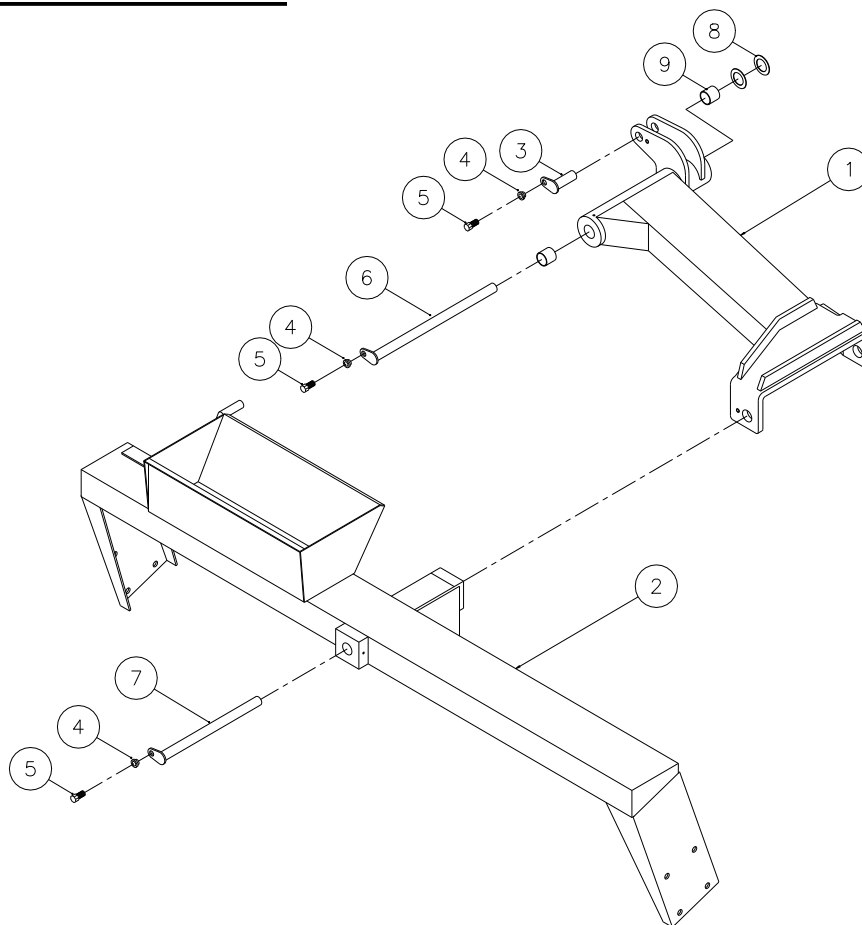


### Middle section after machine no. 344648



| Pos. | Item no.  | Designation                                               | 6,3m | 8,2m |
|------|-----------|-----------------------------------------------------------|------|------|
| 1    | 690141335 | Wheel 400 / 60 x 15,5 14 PLY                              | 2    | 2    |
| 2    | 630330065 | Middle section                                            | 1    |      |
| 2    | 630347602 | Middle section                                            |      | 1    |
| 2    | 630327615 | Middle section with brakes                                | 1    | 0    |
| 2    | 1200847   | Middle section with brakes                                | 0    | 1    |
| 3    | 0521010   | Warning triangle                                          | 1    | 1    |
| 3a   | 0233860   | Bolt M5x20                                                | 2    | 2    |
| 3b   | 0272230   | Faceted washer Ø5                                         | 4    | 4    |
| 3c   | 0264030   | Self locking nut M5                                       | 2    | 2    |
| 4    | 690141030 | Hub 2500 kg. - TVZ, see cover at hub for identification   | 2    | 2    |
| 4    | 0395442   | Hub 2500 kg. - He-va, see cover at hub for identification | 2    | 2    |
| 4    | 7297579   | Nav m/bremse 3700 kg TVZ                                  | 2    | 2    |
| 4    | 690141044 | Hub w/brakes 4500 kg - TVZ                                | 2    | 2    |
| 4a   | 690141039 | Hub bolt M18x1,5x49                                       | 12   | 12   |
| 4b   | 690141055 | Hub nut M18                                               | 12   | 12   |
| 4f   | 690141033 | Hub cap ø80 (2500 kg hub) - TVZ see cover for identif.    | 2    | 2    |
| 4f   | 0395437   | Hub cover ø88 2500 kg hub - He-va see cover for identtif. | 2    | 2    |
| 5    | 69430090G | Pin Ø30 L=90                                              | 2    |      |
| 5a   | 69430090G | Pin Ø30 L=90                                              | 2    |      |
| 5    | 69435100G | Pin Ø35 L=100                                             |      | 2    |
| 5a   | 69435105G | Pin Ø35 L=105                                             |      | 2    |
| 6    | 630532600 | Lock bush for pin head                                    | 2    | 2    |
| 7    | 690101101 | Bolt M12x25                                               | 2    | 2    |
| 8    | 630762047 | Traverse cylinder 90/40 – 280                             | 2    |      |
| 8a   | 690200274 | Gasket set 90/40                                          |      |      |
| 8    | 690200340 | Traverse cylinder 100/40x285 Ø35/Ø35                      |      | 2    |
| 8a   | 690200290 | Gasket set 100/40                                         |      |      |
| 9    | 690136029 | Lubricating nipple M8                                     | 2    | 2    |

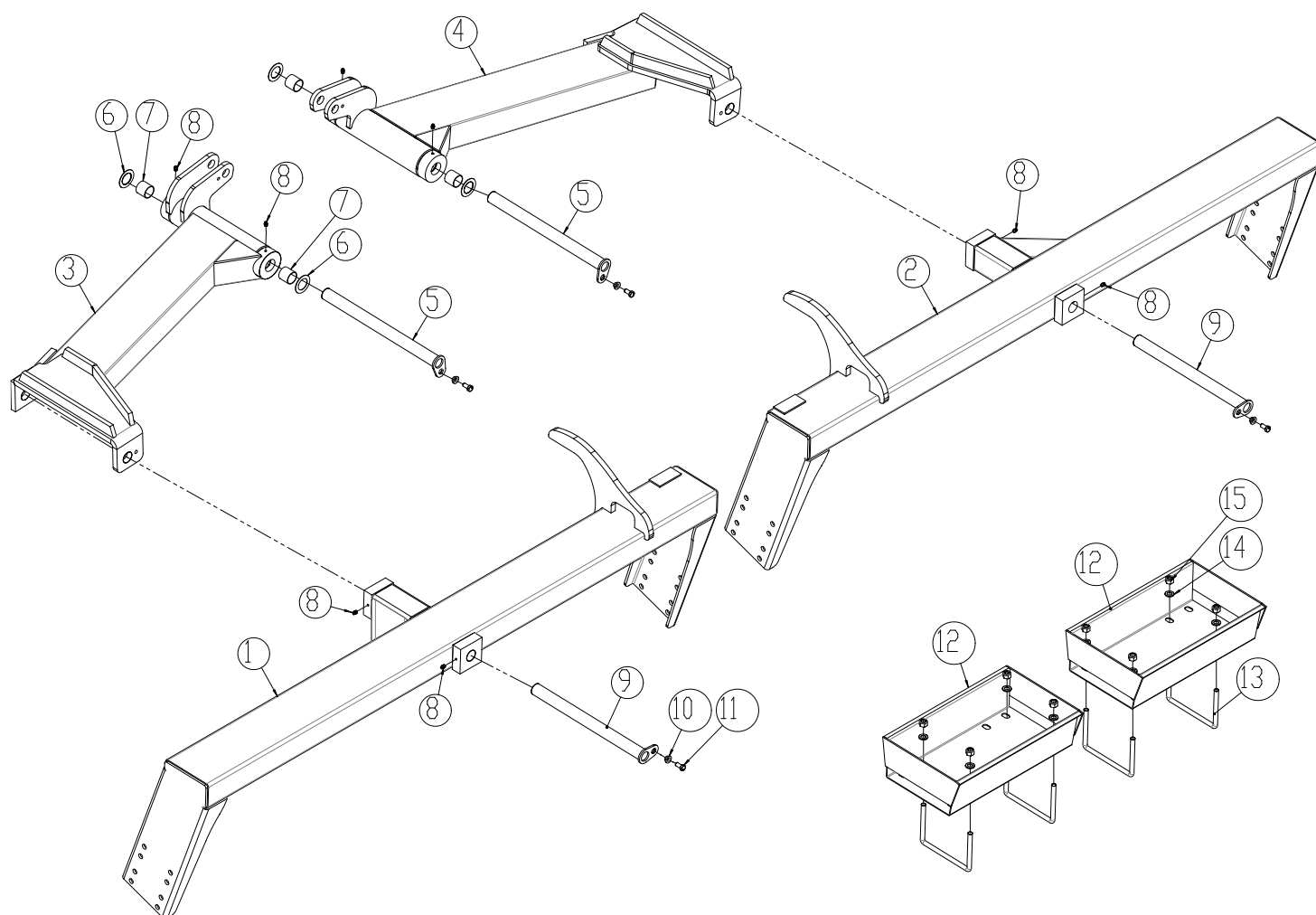
## Wing sections Before serial no. 347070



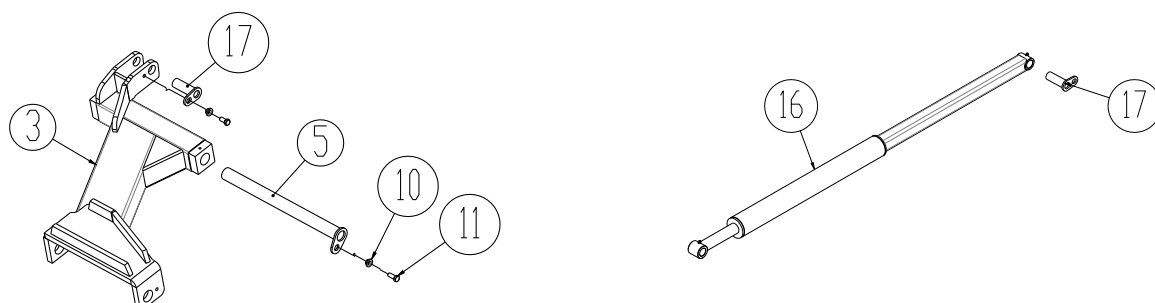
| Pos. | Item no.  | Designation                                            | 6,3m | 8,2m |
|------|-----------|--------------------------------------------------------|------|------|
| 1    | 630773000 | Wing suspension right                                  | 1    |      |
| 1    | 630773100 | Wing suspension left                                   | 1    |      |
| 1    | 630347710 | Wing suspension right <b>Before serial no. 344648</b>  |      | 1    |
| 1    | 630347712 | Wing suspension right <b>After serial no. 344648</b>   |      | 1    |
| 1    | 630347700 | Wing suspension left <b>Before serial no. 344648</b>   |      | 1    |
| 1    | 630347702 | Wing suspension left <b>After serial no. 344648</b>    |      | 1    |
| 2    | 630774000 | Wing section right <b>Before serial no. 347070</b>     | 1    |      |
| 2    | 630774100 | Wing section left <b>Before serial no. 347070</b>      | 1    |      |
| 2    | 630347810 | Wing section right <b>Before serial no. 347070</b>     |      | 1    |
| 2    | 630347800 | Wing section left <b>Before serial no. 347070</b>      |      | 1    |
| 3    | 69430090G | Pin $\varnothing 30$ L=90                              | 2    | 2    |
| 4    | 630532600 | Lock bush for pin head                                 | 6    | 6    |
| 5    | 0235330   | Bolt M12x25                                            | 6    | 6    |
| 6    | 69440525G | Pin $\varnothing 40$ L=525                             | 2    | 2    |
| 7    | 69440508G | Pin $\varnothing 40$ L=508                             | 2    |      |
| 7    | 69440550G | Pin $\varnothing 40$ L=550                             |      | 2    |
| 8    | 690140714 | Spacer disc $\varnothing 42/\varnothing 66 \times 1,5$ | 4    | 4    |
| 9    | 690140715 | Bushing $\varnothing 40/\varnothing 44$ L=40           | 4    | 4    |



**Wing section right / left After serial no. 347070**



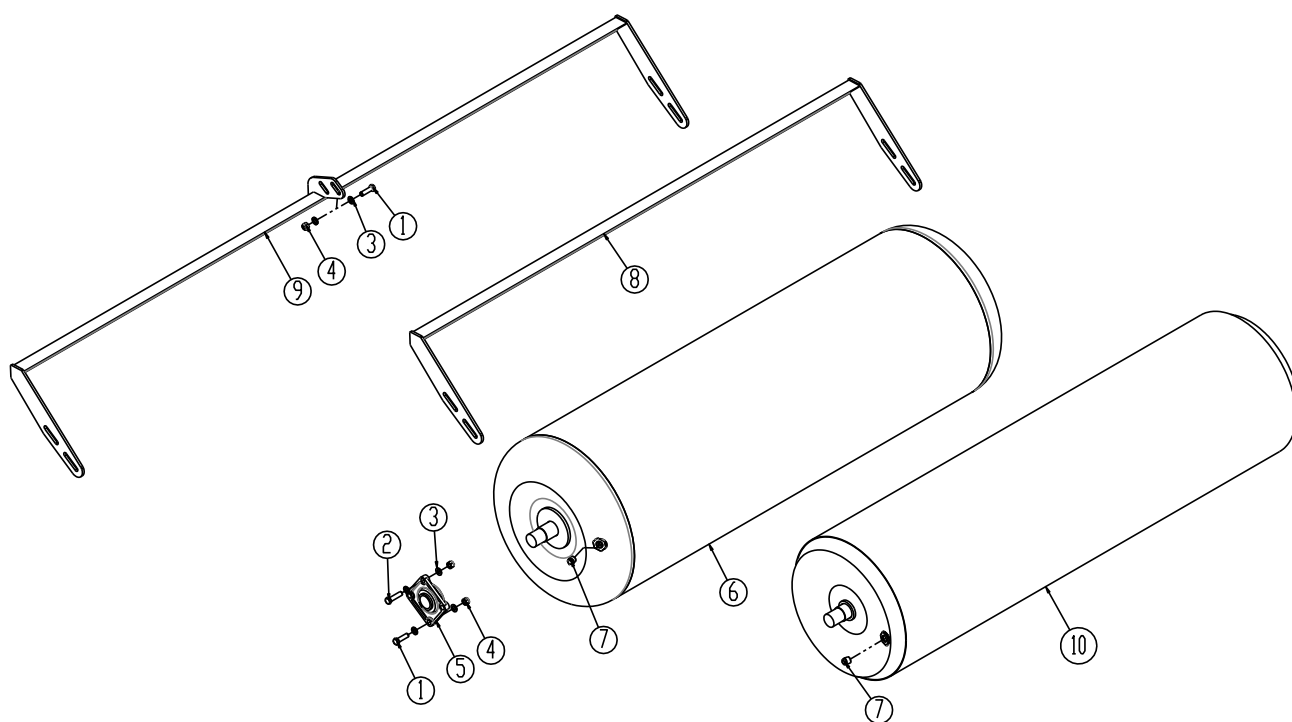
**Wing suspension and folding cylinder 4,5m**



| Pos. | Item no.  | Designation                                             | 4,5m | 6,3m | 8,2m |
|------|-----------|---------------------------------------------------------|------|------|------|
| 1    | 630286159 | Side section, right                                     | 1    |      |      |
| 1    | 630330062 | Side section, right <b>After serial no. 347070</b>      |      | 1    |      |
| 1    | 630367102 | Side section, right <b>After serial no. 347534</b>      |      |      | 1    |
| 2    | 630286146 | Side section, left                                      | 1    |      |      |
| 2    | 630330071 | Side section, left <b>After serial no. 347070</b>       |      | 1    |      |
| 2    | 630367101 | Side section, left <b>After serial no. 347534</b>       |      |      | 1    |
| 3    | 1201059   | Wing suspension, right                                  | 1    |      |      |
| 3    | 630773000 | Wing suspension, right                                  |      | 1    |      |
| 3    | 630347712 | Wing suspension, right                                  |      |      | 1    |
| 4    | 1201058   | Wing suspension, left                                   | 1    |      |      |
| 4    | 630773100 | Wing suspension, left                                   |      | 1    |      |
| 4    | 630347702 | Wing suspension, left                                   |      |      | 1    |
| 5    | 69440525G | Pin Ø40 L=525                                           | 2    | 2    | 2    |
| 6    | 690140714 | Spacer disc Ø42/Ø66 x 1,5mm                             | 4    | 4    | 4    |
| 7    | 690140715 | Bushing Ø40/Ø44 L=40                                    | 4    | 4    | 4    |
| 8    | 0432510   | Lubricating nipple M8                                   | 8    | 8    | 8    |
| 9    | 69440508G | Pin Ø40 L=508                                           | 2    | 2    |      |
| 9    | 69440550G | Pin Ø40 L=550                                           |      |      | 2    |
| 10   | 630532600 | Lock bush for pin head                                  | 4    | 4    | 4    |
| 11   | 690101101 | Bolt M12x25                                             | 4    | 4    | 4    |
| 12   | 630555015 | Stone boxes, incl U-bolts                               | 2    | 2    | 2    |
| 13   | 690110105 | U-bolt M16x100x200x100                                  | 4    | 4    | 4    |
| 14   | 0272290   | Faceted washer Ø16                                      | 8    | 8    | 8    |
| 15   | 0264090   | Self-locking nut M16                                    | 8    | 8    | 8    |
| 16   | 630286167 | Folding cylinder 4,5m - 70/40x600 welded with extension | 1    |      |      |
|      | 690200068 | Gasket set 70/40 Laizhou                                |      |      |      |
| 17   | 69430090G | Pin Ø30 L=90                                            | 2    |      |      |

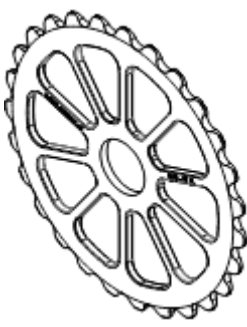


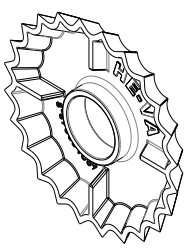
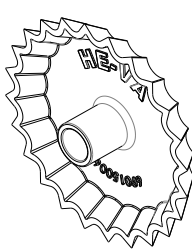
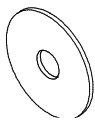
### Packer roller



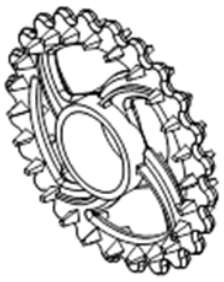
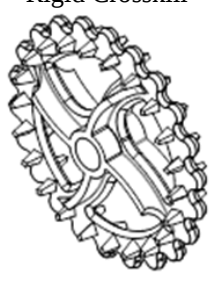
| Pos. | Item no.  | Designation                                        | 4,5m | 6,3m | 8,2m |
|------|-----------|----------------------------------------------------|------|------|------|
| 1    | 0235830   | Bolt M16x55 8.8                                    | 12   | 12   | 16   |
| 2    | 0235850   | Bolt M16x65 8.8                                    | 12   | 12   | 12   |
| 3    | 0272890   | Faceted washer Ø16                                 | 60   | 48   | 56   |
| 4    | 0264090   | Self-locking nut M16                               | 30   | 24   | 28   |
| 5    | 690140813 | Bearing UCF 211, ø55, 4-holes, ø60 shaft           | 6    | 6    | 6    |
| 6    | 630536600 | Valser f/sideled+midterled L=1500 / Ø610           | 3    |      |      |
| 6    | 630327207 | Roller f/wing section+middle section L=2370 / Ø710 |      | 3    | 1    |
| 6    | 630327239 | Roller f/side section L= 3283 / Ø710               |      |      | 2    |
| 7    | 690203321 | Plug ¾" RG-sort                                    | 6    | 6    | 6    |
| 7a   | 690203320 | welded nipple socket 1/2" x 3/4" RG, black         | 6    | 6    | 6    |
| 8    | 630536615 | Scraper bar middle section                         | 1    |      |      |
| 8    | 630762041 | Scraper bar                                        |      | 3    | 1    |
| 9    | 630536610 | Scraper bar side sections right/left               | 2    |      |      |
| 9    | 630327232 | Scraper bar for side section right/left            |      |      | 2    |
| 10   | 630330079 | Roller L=2370 / Ø610                               |      | 3    |      |

## Rings

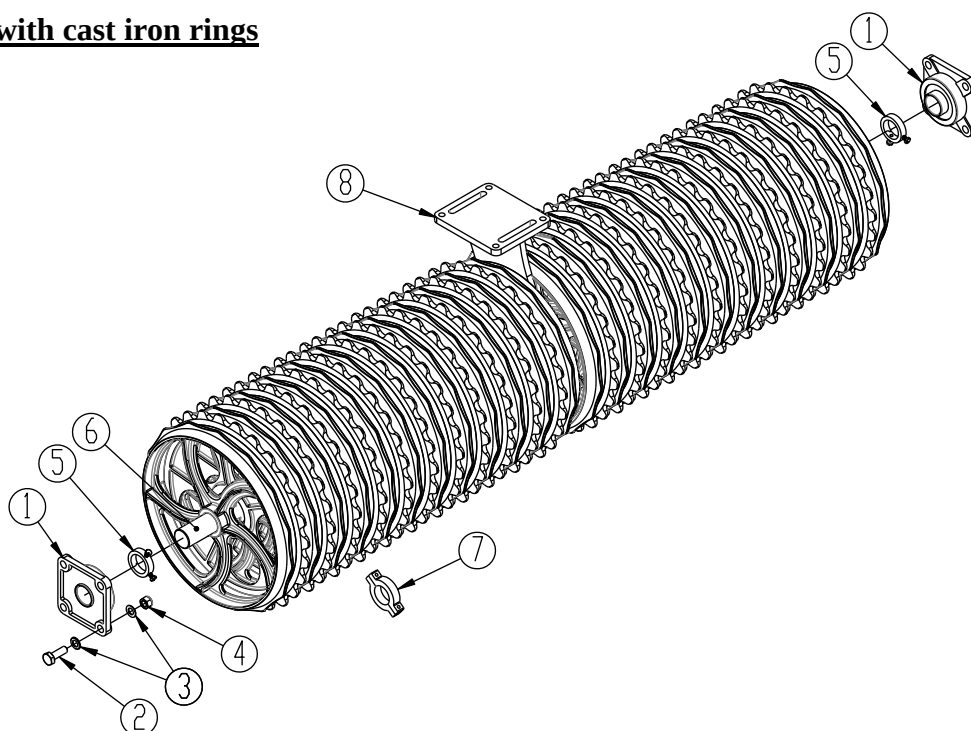
| Cambridge rings Ø620 mm                                                                                                    |                                                                                                                            | Description         | Quality | Part no.  |
|----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------|---------|-----------|
| Pos. 12 620 mm<br>Lenient (10 spokes)<br> | Pos. 13 620 mm<br>Breaker (10 spokes)<br> | Pos. 12 Hub 104 mm  | GG25    | 690150113 |
|                                                                                                                            |                                                                                                                            | Pos. 12 Hub 104 mm  | GGG50   | 7375016   |
|                                                                                                                            |                                                                                                                            | Pos. 12 Hub 80 mm   | GG25    | 690150111 |
|                                                                                                                            |                                                                                                                            | Pos. 12 Hub 80 mm   | GGG50   | 7375015   |
|                                                                                                                            |                                                                                                                            | Pos. 12 Hub 72 mm □ | GGG50   | 7375021   |
|                                                                                                                            |                                                                                                                            | Pos. 12 Hub 82 mm □ | GGG50   | 7375022   |
|                                                                                                                            |                                                                                                                            | Pos. 13             | GG25    | 690150067 |
|                                                                                                                            |                                                                                                                            | Pos. 13             | GGG50   | 690150116 |

| Star ring Ø450/Ø500 mm                                                                                  |                                                                                                         |                                                                                                          | Description            | Quality | Part no.  |
|---------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------|---------|-----------|
| Pos. 17<br>500 mm<br> | Pos. 18<br>450 mm<br> | Pos. 19<br>235 mm<br> | Pos. 17 Ø500/Ø135      | GGG50   | 690150063 |
|                                                                                                         |                                                                                                         |                                                                                                          | Pos. 18 Ø485           | GGG50   | 690150064 |
|                                                                                                         |                                                                                                         |                                                                                                          |                        |         |           |
|                                                                                                         |                                                                                                         |                                                                                                          | Pos. 19 Mounting plate |         | 690150112 |

| Star ring Ø550/Ø600 mm                                                                                   |                                                                                                          |                                                                                                          | Description            | Quality | Part no.  |
|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------|---------|-----------|
| Pos. 20<br>600 mm<br> | Pos. 21<br>550 mm<br> | Pos. 19<br>235 mm<br> | Pos. 20 Ø600/Ø135      | GGG50   | 690150065 |
|                                                                                                          |                                                                                                          |                                                                                                          | Pos. 21 Ø550           | GGG50   | 690150066 |
|                                                                                                          |                                                                                                          |                                                                                                          |                        |         |           |
|                                                                                                          |                                                                                                          |                                                                                                          | Pos. 19 Mounting plate |         | 690150112 |

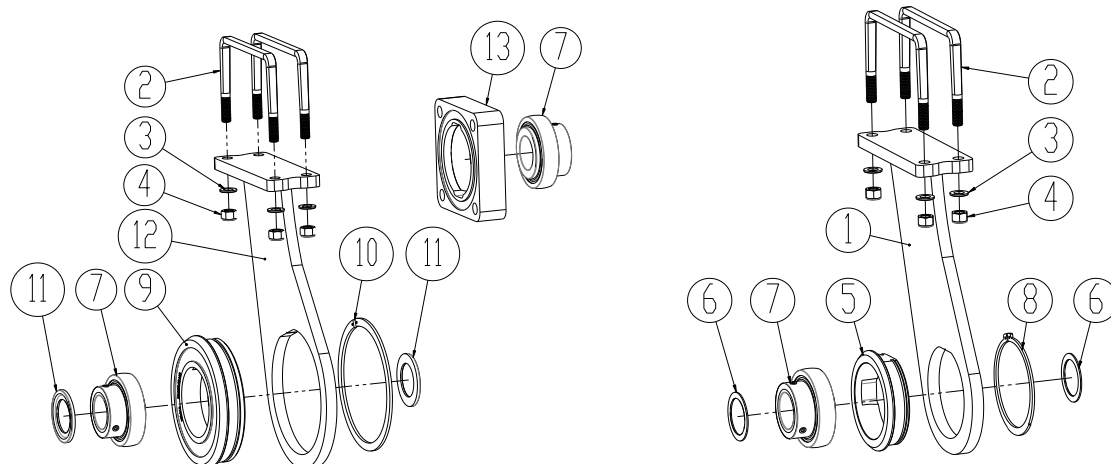
| Crosskill 550/600 mm                                                                                            |                                                                                                                 |                                                                                                     | Beskrivelse      | Quality | Part no.  |
|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|------------------|---------|-----------|
| Pos. 22<br>Loose Crosskill<br> | Pos. 23<br>Rigid Crosskill<br> | Pos. 24<br>Hub<br> | Pos. 22 600 mm   | GG25    | 690150075 |
|                                                                                                                 |                                                                                                                 |                                                                                                     | Pos. 23 550 mm   | GG25    | 690150074 |
|                                                                                                                 |                                                                                                                 |                                                                                                     | Pos. 24 Hub Ø104 |         | 690150076 |

### Roller section with cast iron rings



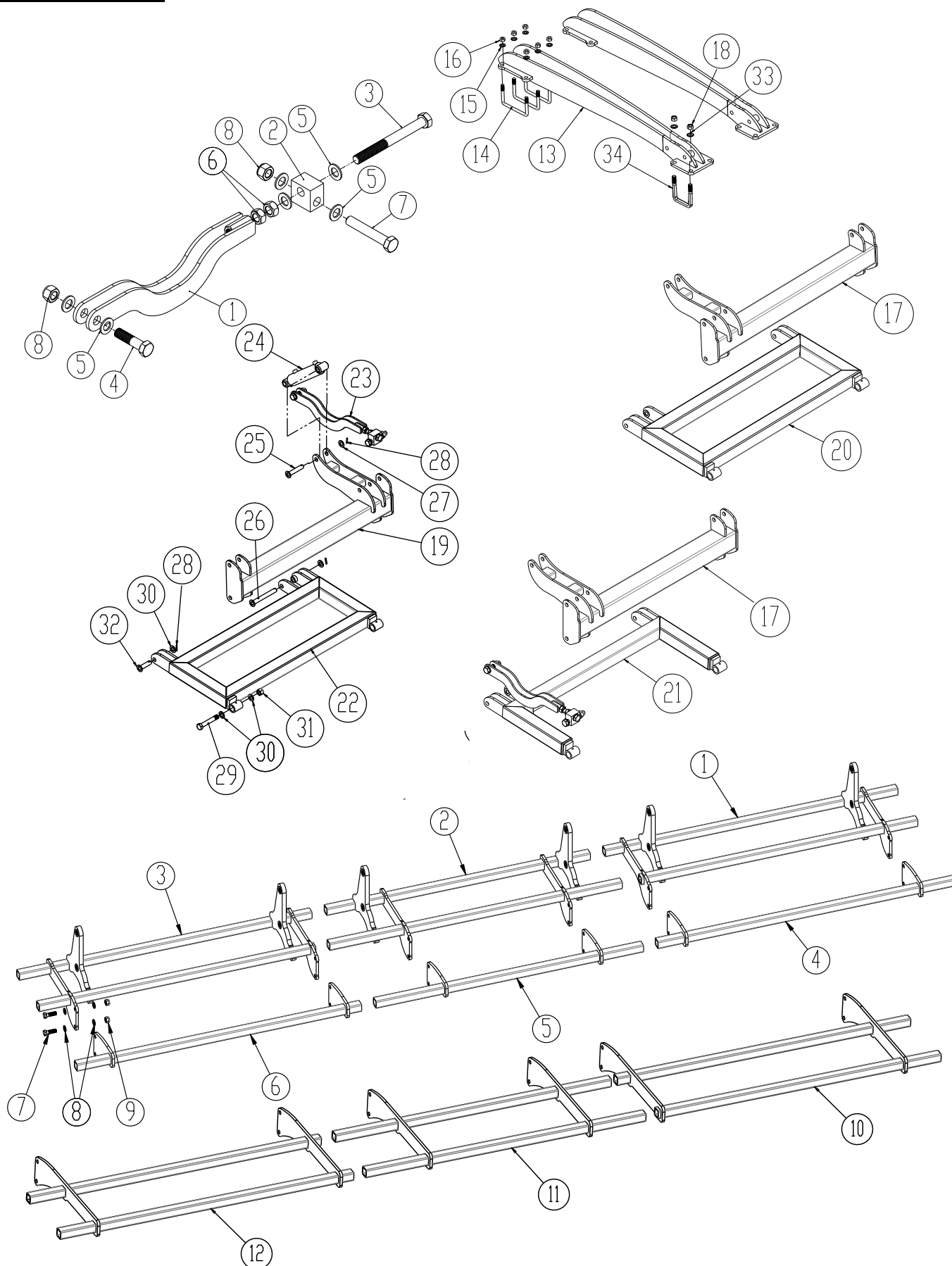
| Pos. | Art. No.  | Designation                                      | 4,5 | 6,3 | 8,2 |
|------|-----------|--------------------------------------------------|-----|-----|-----|
| 1    | 690140813 | Bearing UCF 211 ø55, complete bearing            | 6   | 6   | 6   |
| 2    | 690103197 | Bolt M16x50 8.8 fzb                              | 24  | 24  | 24  |
| 3    | 0272290   | Faceted washer Ø16 DIN125B                       | 48  | 48  | 48  |
| 4    | 0264090   | Self-locking nut M16                             | 24  | 24  | 24  |
| 5    | 671040400 | Stop bushing w/2 pc. M12 bolts (til Ø60 shaft)   | 3   | 3   | 5   |
| 6    | 678661736 | Axle for middle + side sections Ø60 ST70 L=1736  | 3   |     |     |
| 6    | 678692370 | Shaft f/middle section Ø60 CrNiMo6 L=2370        |     | 1   | 1   |
| 6    | 678662370 | Shaft f/side section Ø60 ST70 L=2370             |     | 2   |     |
| 6    | 678633283 | Shaft f/side section Ø60 ST60 L=3283             |     |     | 2   |
| 7    | 690150090 | Distancering 15mm                                |     |     |     |
| 7    | 690150099 | Distancering 20mm                                |     |     |     |
| 7    | 690150091 | Distancering 25mm                                |     |     |     |
| 8    |           | Support bearing, for side sections see next page |     |     | 2   |

## Support bearing



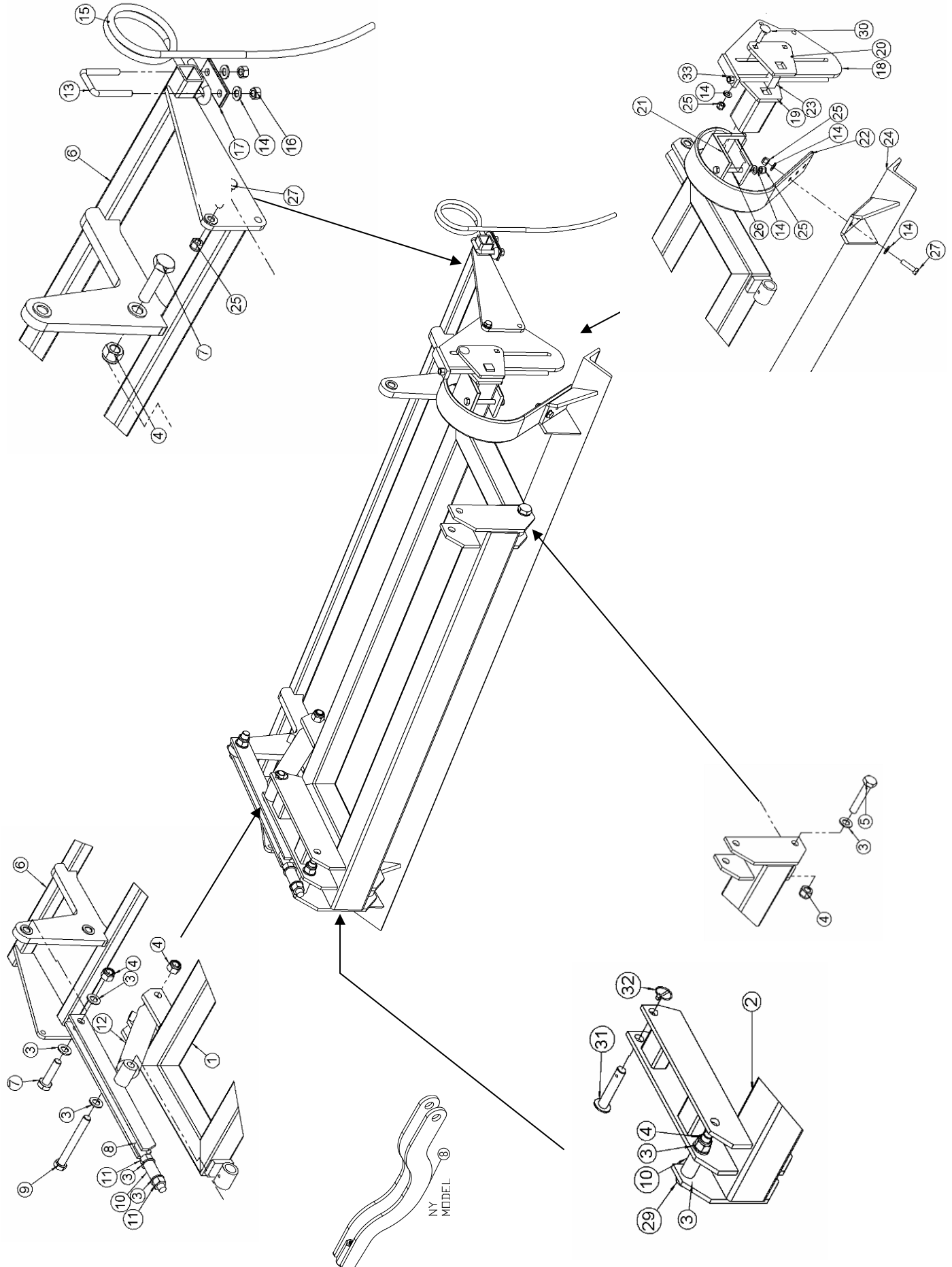
| Pos. | Art. No.  | Designation                                             | 8,2 |
|------|-----------|---------------------------------------------------------|-----|
| 1    | 630764006 | Console for bearing with Ø60 axle                       | 2   |
| 2    | 0382852   | U-bolt M16x100x200x100                                  | 4   |
| 3    | 0272290   | Faceted washer Ø16 DIN125B                              | 8   |
| 4    | 0264090   | Self-locking nut M16                                    | 8   |
| 5    | 630764008 | Housing for bearing                                     | 2   |
| 6    | 7355000   | Thrust plate, narrow f/ UCF312 hub                      | 4   |
| 7    | 690140116 | Bearing UC312 R6 (ø60)                                  | 2   |
| 8    | 691370150 | Seeger circlip ring Ø150 DIN471                         | 2   |
| 9    | 7355040   | Bearing housing UCRSC 312 w/molded PVC ring             | 2   |
| 10   | 691370220 | Seeger circlip ring Ø220 DIN471                         | 2   |
| 11   | 7355000   | Thrust plate, narrow f/ UCF312 hub                      | 4   |
| 12   | 1210139   | Console for rubber damped support bearing with Ø60 axle | 2   |
| 13   | 7355013   | Bearing housing UCRSF 312 w / molded PVC ring           | 6   |

## Harrow 4,5 meter



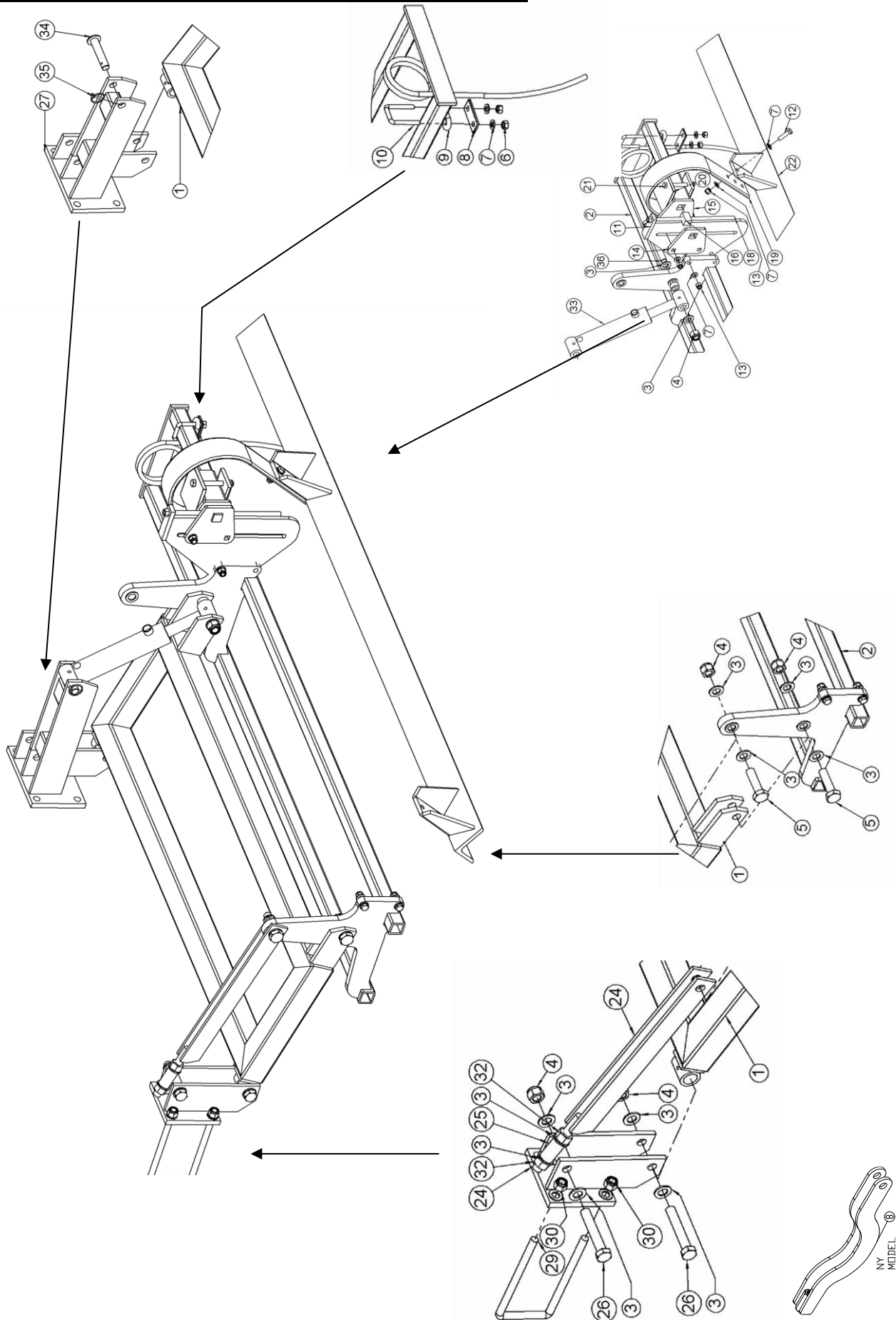
| Pos. | Item no.  | Designation                                 | 4,5m |
|------|-----------|---------------------------------------------|------|
| 1    | 630286141 | Harrow frame, left                          | 1    |
| 2    | 630286150 | Harrow frame, middle                        | 1    |
| 3    | 630286153 | Harrowframe, right                          | 1    |
| 4    | 1200223   | 1 additional harrow bar Grass-Roller left   | 1    |
| 5    | 1200224   | 1 additional harrow bar Grass-Roller middle | 1    |
| 6    | 1200225   | 1 additional harrow bar Grass-Roller right  | 1    |
| 7    | 0235810   | Bolt M16x50 8.8                             | 12   |
| 8    | 0272290   | Faceted washer Ø16                          | 24   |
| 9    | 0264090   | Låsemøtrik M16                              | 12   |
| 10   | 630286154 | 2 additional harrow bar Grass-Roller left   | 1    |
| 11   | 630286161 | 2 additional harrow bar Grass-Roller middle | 1    |
| 12   | 630286160 | 2 additional harrow bar Grass-Roller right  | 1    |
| 13   | 630286130 | Horn                                        | 4    |
| 14   | 690110102 | U-bolt M16x80x160x80                        | 12   |
| 15   | 0272290   | Faceted washer Ø16                          | 24   |
| 16   | 0264090   | Self-locking nut M16                        | 24   |
| 17   | 630286145 | Suspention for front harrow left and middle | 2    |
| 18   | 0264100   | Self-locking nut M18                        | 24   |
| 19   | 630286164 | Suspention for front harrow right           | 1    |
| 20   | 630286109 | Lifting frame frontharrow left              | 1    |
| 21   | 630286181 | Lifting frame frontharrow middle            | 1    |
| 22   | 630286110 | Lifting frame frontharrow right             | 1    |
| 23   | 630327523 | Parallel arm complete                       | 3    |
| 24   | 690200040 | Cylinder 50/30x155 Ø20,5/20,5               | 3    |
|      | 690200046 | Gasket set 50/30 mm (Laizhou)               |      |
| 25   | 69520087F | Pin Ø20 L=87                                | 3    |
| 26   | 69520155F | Pin Ø20 L155                                | 3    |
| 27   | 0272310   | Faceted washer Ø20                          | 9    |
| 28   | 0371395   | Roll pin Ø5x35                              | 9    |
| 29   | 0236200   | Bolt                                        | 6    |
| 30   | 0272310   | Faceted washer Ø20                          | 12   |
| 31   | 0264110   | Self-locking nut M20                        | 6    |
| 32   | 69520061F | Nagle                                       | 3    |
| 33   | 0272300   | Faceted washer Ø18                          | 24   |
| 34   | 0382900   | DragbåndM18x100x100x100                     | 12   |

**Harrow for middle section 6,3 - 8,2m before December 2014**



| Pos. | Item no.  | Designation                                                      | 6.3m | 8.2m |
|------|-----------|------------------------------------------------------------------|------|------|
| 1    | 630327182 | Lifting frame left + middle front harrow                         | 1    | 1    |
| 2    | 630327183 | Suspension f/harrow middle section                               | 1    | 1    |
| 2a   | 690110101 | U-Bolt M16x100x100x100 for mounting of 63027183                  | 4    | 4    |
| 2b   | 0272290   | Facetwasher Ø16                                                  | 8    | 8    |
| 2c   | 0264090   | Self-locking nut M16                                             | 8    | 8    |
| 3    | 0272310   | Facet plate Ø20                                                  | 24   | 24   |
| 4    | 0264110   | Self-locking nut M20                                             | 8    | 8    |
| 5    | 0236200   | Bolt M20x110 8.8                                                 | 2    | 2    |
| 6    | 630327178 | Harrow section middle section                                    | 1    | 0    |
| 6    | 630327226 | Harrow section middle section                                    | 0    | 1    |
| 7    | 0236170   | Bolt M20x80 8.8                                                  | 3    | 3    |
| 8    | 630327180 | Parallel rod f/front harrow                                      | 2    | 2    |
| 8    | 630327252 | Parallel rod f/front harrow <b>From machine number 341717</b>    | 2    | 2    |
| 8    | 630327521 | Parallelrod (new curved model) <b>From machine number 341717</b> | 2    | 2    |
| 8a   | 690112015 | Bolt M20 x 150 Set bolt <b>From machine number 341717</b>        | 2    | 2    |
| 9    | 0236265   | Bolt M20x180 8.8                                                 | 1    | 1    |
| 10   | 630327179 | Toggle joint at bracket on the harrow (ended)                    | 2    | 2    |
| 10   | 630327251 | Angle block for parallel rod <b>From machine number 341717</b>   | 2    | 2    |
| 11   | 0261410   | Nut M20                                                          | 4    | 4    |
| 12   | 690200040 | Cylinder 50/30x155mm Ø20/Ø20 mm                                  | 1    | 1    |
| 12a  | 690200045 | Gasket set 50/30                                                 |      |      |
| 13   | 690110050 | U-bolt M12 40x40x40                                              | 23   | 23   |
| 14   | 0272270   | Facet plate Ø12                                                  | 74   | 74   |
| 15   | 0426110   | Long finger tine ø12 x 100 curved                                | 23   | 23   |
| 16   | 690113013 | Self-locking nut M12 (all-metal) Quality 10                      | 46   | 46   |
| 17   | 1012520   | Clamping plate M12                                               | 23   | 23   |
| 18   | 630327192 | Height adjustment for levelling board                            | 2    | 2    |
| 19   | 630327193 | Clamping plate w/bar for height adjustment                       | 2    | 2    |
| 20   | 630327191 | Clamping plate for height adjustment                             | 2    | 2    |
| 21   | 0422390   | Clamp                                                            | 2    | 2    |
| 22   | 0422144   | Spring-Board tine 80x10mm – short                                | 2    | 2    |
| 23   | 630327199 | Threaded block for height adjustment of levelling board          | 2    | 2    |
| 24   | 630327196 | Levelling board – Middle section                                 | 1    | 0    |
| 24   | 630327237 | Levelling board – Middle section                                 | 0    | 1    |
| 25   | 690113019 | Self locking nut M12 (all-metal) Quality 8                       | 16   | 16   |
| 26   | 0235470   | Bolt M12x110 8,8                                                 | 2    | 2    |
| 27   | 0235380   | Bolt M12x50 8.8                                                  | 10   | 10   |
| 28   | 0236210   | Bolt M20x120 8.8                                                 | 3    | 3    |
| 30   | 0248680   | Bolt (carrier bolt) M12x50                                       | 4    | 4    |
| 31   | 69520087F | Pin Ø20 L=87                                                     | 1    | 1    |
| 32   | 0378200   | Ring pin Ø4,5 mm                                                 | 1    | 1    |
| 33   | 630327217 | Threaded rod for levelling board                                 | 2    | 2    |

**Harrow for side sections 6,3 - 8,2m before December 2014**



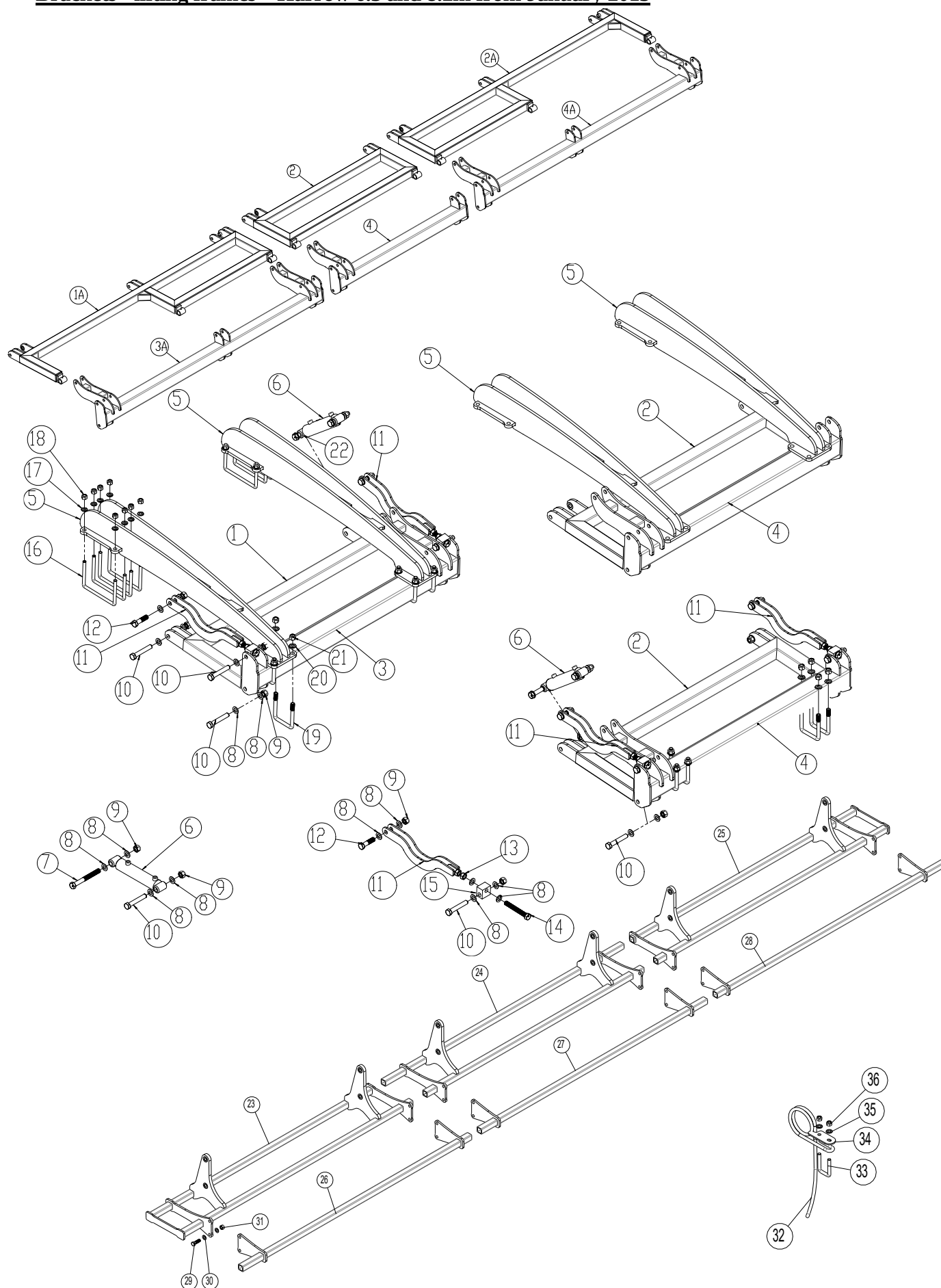
| Pos. | Item no.  | Designation                                                     | 6.3m | 8.2m |
|------|-----------|-----------------------------------------------------------------|------|------|
| 1    | 630327182 | Lifting frame left + middle front harrow                        | 1    | 0    |
| 1    | 630327181 | Lifting frame right                                             | 1    | 0    |
| 1    | 630327221 | Lifting frame left                                              | 0    | 1    |
| 1    | 630327220 | Lifting frame right                                             | 0    | 1    |
| 2    | 630327177 | Harrow frame left                                               | 1    | 0    |
| 2    | 630327176 | Harrow frame right                                              | 1    | 0    |
| 2    | 630327228 | Harrow frame left                                               | 0    | 1    |
| 2    | 630327227 | Harrow frame right                                              | 0    | 1    |
| 3    | 0272310   | Faceted washer Ø20                                              | 20   | 30   |
| 4    | 0264110   | Self-locking nut M20                                            | 8    | 12   |
| 5    | 0236180   | Bolt M20x90 8.8                                                 | 2    | 3    |
| 6    | 690113013 | Self-locking nut M12 (all-metal)                                | 48   | 62   |
| 7    | 0272270   | Faceted washer Ø12                                              | 76   | 88   |
| 8    | 1012520   | Clamp, M12                                                      | 24   | 31   |
| 9    | 0426110   | Long finger tine ø12 x 100 curved                               | 24   | 31   |
| 10   | 690110050 | U-bolt M12 40x40x40                                             | 24   | 31   |
| 11   | 630327192 | Height adjustment f/levelling board                             | 2    | 3    |
| 12   | 0235380   | Bolt M12x50 8.8                                                 | 10   | 15   |
| 13   | 690113019 | Self-locking nut M12 (all-metal)                                | 16   | 16   |
| 14   | 630327191 | Clamp for height adjustment                                     | 2    | 3    |
| 15   | 630327193 | Clamp with bar for height adjustment                            | 2    | 3    |
| 16   | 630327199 | Threaded block for height adjustment of levelling board         | 2    | 3    |
| 17   | 0248680   | Bolt (carrier bolt) M12x50                                      | 4    | 6    |
| 18   | 630327217 | Threaded rod for levelling board                                | 2    | 3    |
| 19   | 0422145   | Spring-Board tine 80x10 mm                                      | 2    | 3    |
| 20   | 0422390   | Clamp for Spring-Board tine                                     | 2    | 3    |
| 21   | 690103098 | Bolt M12x110 8.8                                                | 2    | 3    |
| 22   | 630327195 | Levelling board, left                                           | 1    | 0    |
| 22   | 630327194 | Levelling board, right                                          | 1    | 0    |
| 22   | 630327236 | Levelling board, left                                           | 0    | 1    |
| 22   | 630327235 | Levelling board, right                                          | 0    | 1    |
| 24   | 630327180 | Parallel rod f/front harrow                                     | 2    | 3    |
| 24   | 630327252 | Parallel rod (discontinued model) <b>From machine no 341717</b> | 2    | 3    |
| 24   | 630327521 | Parallel rod ( new curved model ) <b>From machine no 341717</b> | 2    | 3    |
| 24a  | 690112015 | Bolt M20 x 150 Set bolt 8 <b>From machine number 341717</b>     | 2    | 3    |
| 25   | 630327179 | Toggle joint at bracket on the harrow                           | 2    | 3    |
| 25   | 630327251 | Angle block for parallel rod <b>From machine number 341717</b>  | 2    | 3    |
| 26   | 0236210   | Bolt M20x120 8.8                                                | 4    | 6    |
| 27   | 630327185 | Left cylinder bracket f/side sections                           | 1    | 1    |

The tabel continues →



|     |           |                                                    |   |    |
|-----|-----------|----------------------------------------------------|---|----|
| 27a | 630327186 | Right cylinder bracket f/side sections             | 1 | 1  |
| 27b | 630327277 | Middle cylinder bracket, left side section         | 0 | 1  |
| 27c | 630327279 | Middle cylinder bracket, right side section        | 0 | 1  |
| 28  | 630327184 | Mounting bracket on side sections without cylinder | 2 | 2  |
| 29  | 690110106 | U-bolt M16x200x100x200                             | 4 | 6  |
| 30  | 0264090   | Self-locking nut M16                               | 8 | 12 |
| 31  | 0272290   | Faceted washer Ø16                                 | 8 | 12 |
| 32  | 0261410   | Nut M20                                            | 4 | 6  |
| 33  | 690200040 | Cylinder 50/30x155mm Ø20/Ø20 mm                    | 1 | 2  |
| 33a | 690200045 | Gasket set 50/30                                   |   |    |
| 34  | 69520087F | Pin Ø20 L=87                                       | 1 | 2  |
| 35  | 0378200   | Ring pin Ø4,5 mm                                   | 1 | 2  |
| 36  | 0236265   | Bolt M20x180 8.8                                   | 1 | 2  |

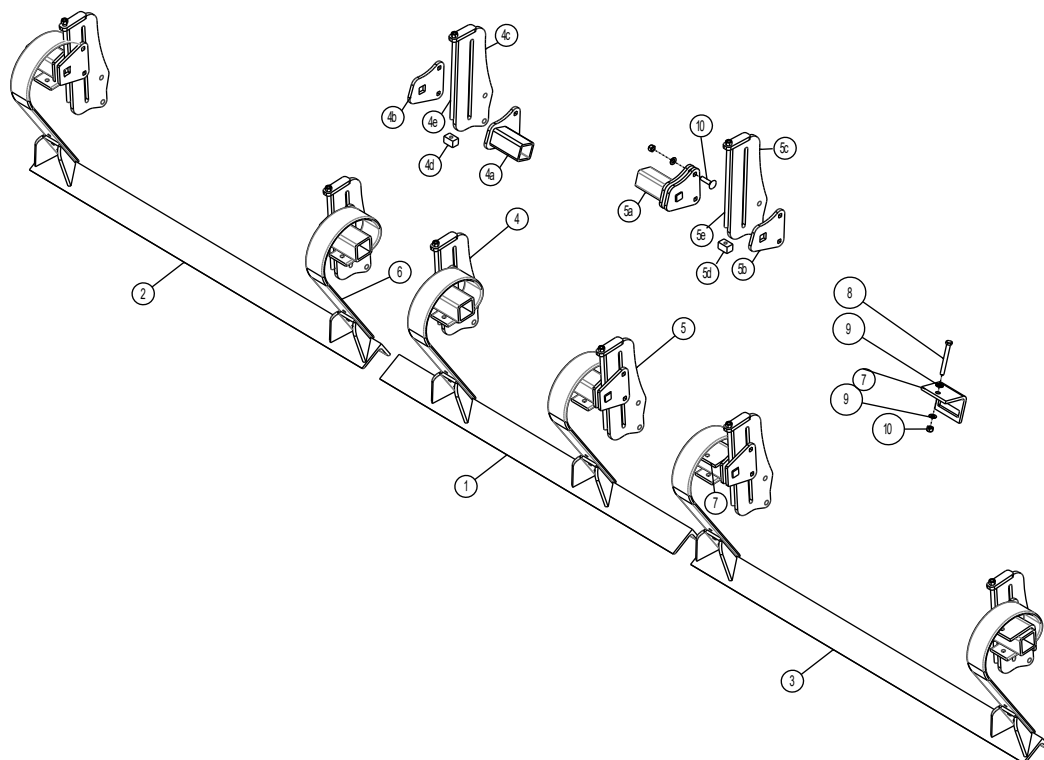
**Brackets - lifting frames – Harrow 6.3 and 8.2m from January 2015**



| Pos. | Vare nr.  | Betegnelse                            | 6,3m | 8,2m |
|------|-----------|---------------------------------------|------|------|
| 1    | 630327181 | Lifting frame, right                  | 1    |      |
| 1A   | 630367105 | Lifting frame, right                  |      | 1    |
| 2    | 630327182 | Lifting frame, left - middle          | 2    | 1    |
| 2A   | 630367124 | Lifting frame, left                   |      | 1    |
| 3    | 630330032 | Bracket, right                        | 1    |      |
| 3A   | 630367103 | Bracket, right                        |      | 1    |
| 4    | 630330059 | Bracket, left - middle                | 2    | 1    |
| 4A   | 630367125 | Bracket, left                         |      | 1    |
| 5    | 630330012 | Horn                                  | 4    | 6    |
| 6    | 690200040 | Cylinder 50/30x155mm Ø20/Ø20 mm       | 3    | 3    |
|      | 690200045 | Gasket set 50/30                      |      |      |
| 7    | 690103160 | Bolt M20x180 8.8                      | 3    | 3    |
| 8    | 0272310   | Faceted disc Ø20                      | 12   | 12   |
| 9    | 0264110   | Self locking nut M20                  | 18   | 20   |
| 10   | 0236210   | Bolt M20x120 8.8                      | 18   | 20   |
| 11   | 630327521 | Parallelarms                          | 6    | 8    |
| 12   | 0236265   | Bolt M20x180 8.8                      | 6    | 8    |
| 13   | 0261410   | Nut M20                               | 12   | 16   |
| 14   | 690112015 | Bolt M20x150 8.8 Sætbolt              | 6    | 8    |
| 15   | 630327251 | Angle block with parallel bar         | 6    | 8    |
| 16   | 690110105 | U-bolt M16x100x200x100                | 16   | 24   |
| 17   | 0272290   | Faceted disc Ø16                      | 32   | 48   |
| 18   | 0264090   | Self locking nut M16                  | 32   | 48   |
| 19   | 690110404 | U-bolt M18x100x100x100                | 8    | 12   |
| 20   | 0272300   | Faceted disc Ø18                      | 16   | 24   |
| 21   | 0264100   | Self locking nut M18                  | 16   | 24   |
| 22   | 0432100   | Lubricating nipple M6                 | 6    | 6    |
| 23   | 1200066   | Harrow frame, right                   | 1    |      |
| 23   | 630367161 | Harrow frame, right                   |      | 1    |
| 24   | 1200060   | Harrow frame, center                  | 1    |      |
| 24   | 630367157 | Harrow frame, center                  |      | 1    |
| 25   | 1200063   | Harrow frame, left                    | 1    |      |
| 25   | 630367160 | Harrow frame, left                    |      | 1    |
| 26   | 1200080   | Harrow 1 row, right                   | 1    |      |
| 26   | 1200756   | Harrow 1 row, right                   |      | 1    |
| 27   | 1200079   | Harrow 1 row, center                  | 1    |      |
| 27   | 1200760   | Harrow 1 row, center                  |      | 1    |
| 28   | 1200081   | Harrow 1 row, left                    | 1    |      |
| 28   | 1200758   | Harrow 1 row, left                    |      | 1    |
| 29   | 0235810   | Bolt M16x50mm, 8.8 fzg                | 12   |      |
| 30   | 0272290   | Faceted disc 16mm, fzb                | 24   |      |
| 31   | 0264090   | Self locking nut M16 DIN985           | 12   |      |
| 32   | 0426110   | Tine Ø12 x 100 buet                   |      |      |
| 33   | 690110050 | U-BoltM12x40x40x40 (pr.tine)          | 1    | 1    |
| 34   | 1012521   | Bracket for tine (pr. tine)           | 1    | 1    |
| 35   | 0272270   | Faceted disc Ø12 pr. tine)            | 2    | 2    |
| 36   | 0264070   | Self locking nut M12 DIN985 (pr.tine) | 2    | 2    |

## Levelling bar 4,5 – 6,3 – 8,2m

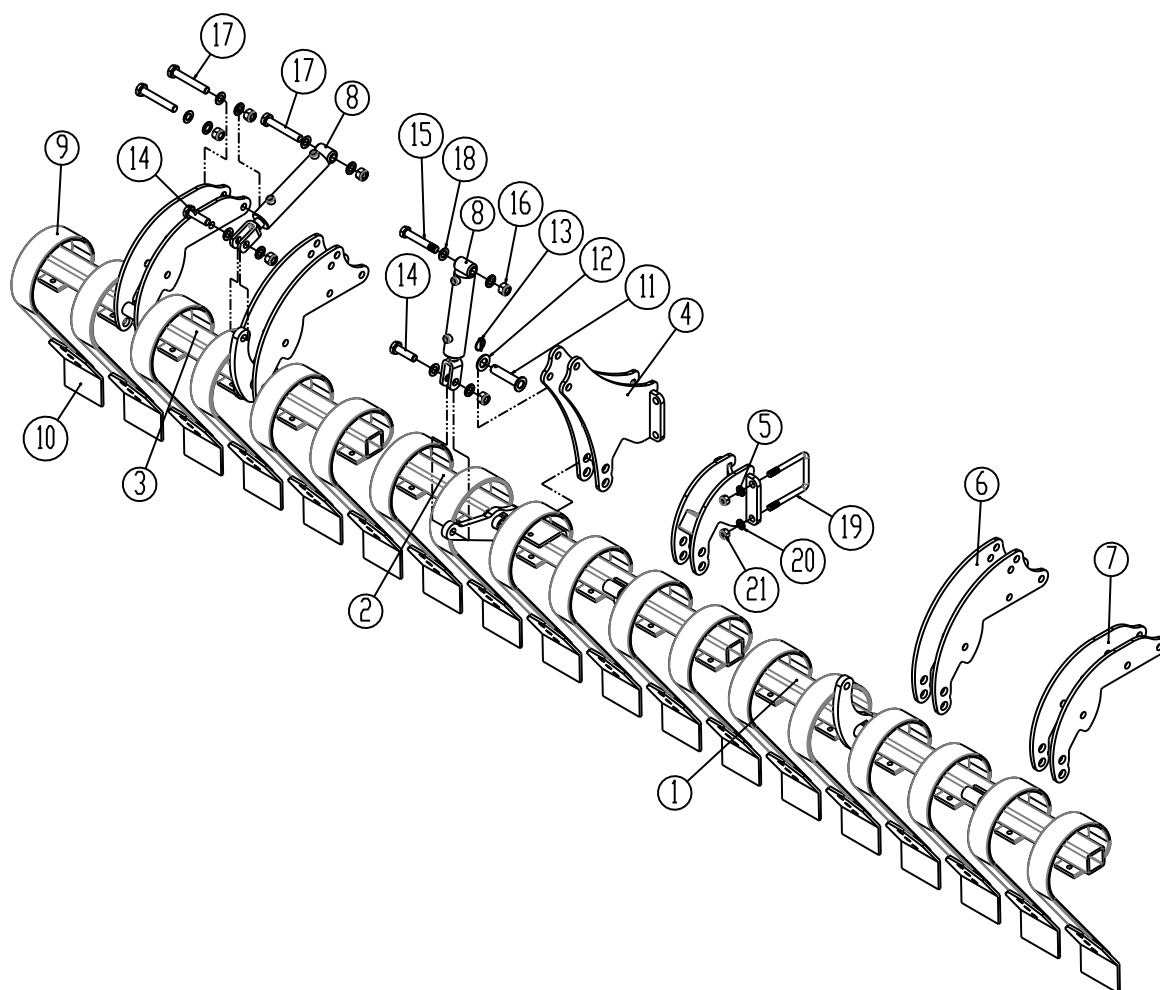
4,5m shown



| Pos. | Vare nr.  | Betegnelse                       | 4,5m | 6,3m | 8,2m |
|------|-----------|----------------------------------|------|------|------|
| 1    | 630286177 | Levelling bar, center            | 1    |      |      |
| 1    | 1200058   | Levelling bar, center            |      | 1    |      |
| 1    | 630367173 | Levelling bar, center            |      |      | 1    |
| 2    | 630286179 | Levelling bar, right             | 1    |      |      |
| 2    | 1200068   | Levelling bar, right             |      | 1    |      |
| 2    | 630367174 | Levelling bar, right             |      |      | 1    |
| 3    | 630286179 | Levelling bar, left              | 1    |      |      |
| 3    | 1200068   | Levelling bar, left              |      | 1    |      |
| 3    | 630367172 | Levelling bar, left              |      |      | 1    |
| 4    | 630286185 | Bracket for levelling bar        | 3    | 3    | 4    |
| 4a   | 630327167 | Clampingplate with tube          | 3    | 3    | 4    |
| 4b   | 630317165 | Clampingplate without tube       | 3    | 3    | 4    |
| 4c   | 630367171 | Leftturned bracket               | 3    | 3    | 4    |
| 4d   | 630327199 | Threaded block                   | 3    | 3    | 4    |
| 4e   | 630327217 | Threaded rod                     | 3    | 3    | 4    |
| 5    | 630367185 | Bracket for levelling bar        | 3    | 3    | 4    |
| 5a   | 630367169 | Clampingplate with tube          | 3    | 3    | 4    |
| 5b   | 630317165 | Clampingplate without tube       | 3    | 3    | 4    |
| 5c   | 630367170 | Rightturned bracket              | 3    | 3    | 4    |
| 5d   | 630327199 | Threaded block                   | 3    | 3    | 4    |
| 5e   | 630327217 | Threaded rod                     | 3    | 3    | 4    |
| 6    | 0422146   | Spring-Board tine 90x14mm        |      | 6    | 8    |
| 6    | 0422145   | Spring-Board tine 80x10mm        | 6    |      |      |
| 7    | 0422395   | Tandholder, tand 90x14           |      | 6    | 8    |
| 7    | 0422390   | Tandholder, tand 80x10           | 6    |      |      |
| 8    | 0235470   | Bolt M12x110 8.8                 | 12   | 12   | 16   |
| 9    | 0272270   | Faceted disc 12mm, fzb DIN 125B  | 24   | 48   | 48   |
| 10   | 690113019 | Self-locking nut M12 (all-metal) | 12   | 24   | 48   |
| 11   | 0248680   | Carriage bolt M12x50 8.8         | 12   | 12   | 16   |
| 12   | 0235380   | Bolt M12x50mm, 8.8 fzb           | 12   | 24   | 48   |

## Spare parts list Spring-Board

### Middle and side section to suit harrow mounting 4,5m

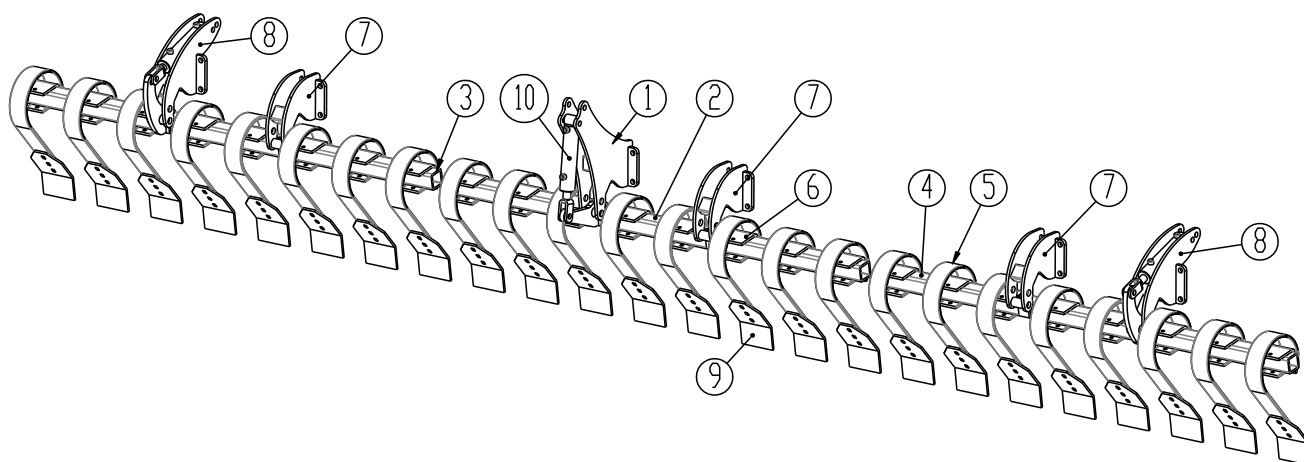


| Pos. | Item no.  | Designation                                           | 4,5m |
|------|-----------|-------------------------------------------------------|------|
| 1    | 630286173 | Spring-Board bar left                                 | 1    |
| 2    | 630286169 | Spring-Board bar middle                               | 1    |
| 3    | 630286176 | Spring-Board bar right                                | 1    |
| 4    | 630330022 | Suspention middle frame for cylinder                  | 1    |
| 5    | 630330021 | Suspention middle where non cylinder                  | 1    |
| 6    | 630286172 | Suspention Spring-Board side frame for cylinder       | 4    |
| 7    | 630286171 | Suspention Spring-Board side frame where non cylinder | 4    |
| 8    | 690200160 | Cylinder 50/30x155 Ø20,25/clevis                      | 3    |
| 8a   | 690200045 | Gasket set 50/30                                      |      |
| 9    | 0422145   | Tine 10x80                                            | 18   |
| 10   | 0422143   | Wearing point 8x150                                   | 18   |
| 11   | 69525095F | Pin Ø25 L=95                                          | 6    |
| 12   | 0272340   | Faceted washer Ø27                                    | 6    |

The table continues →

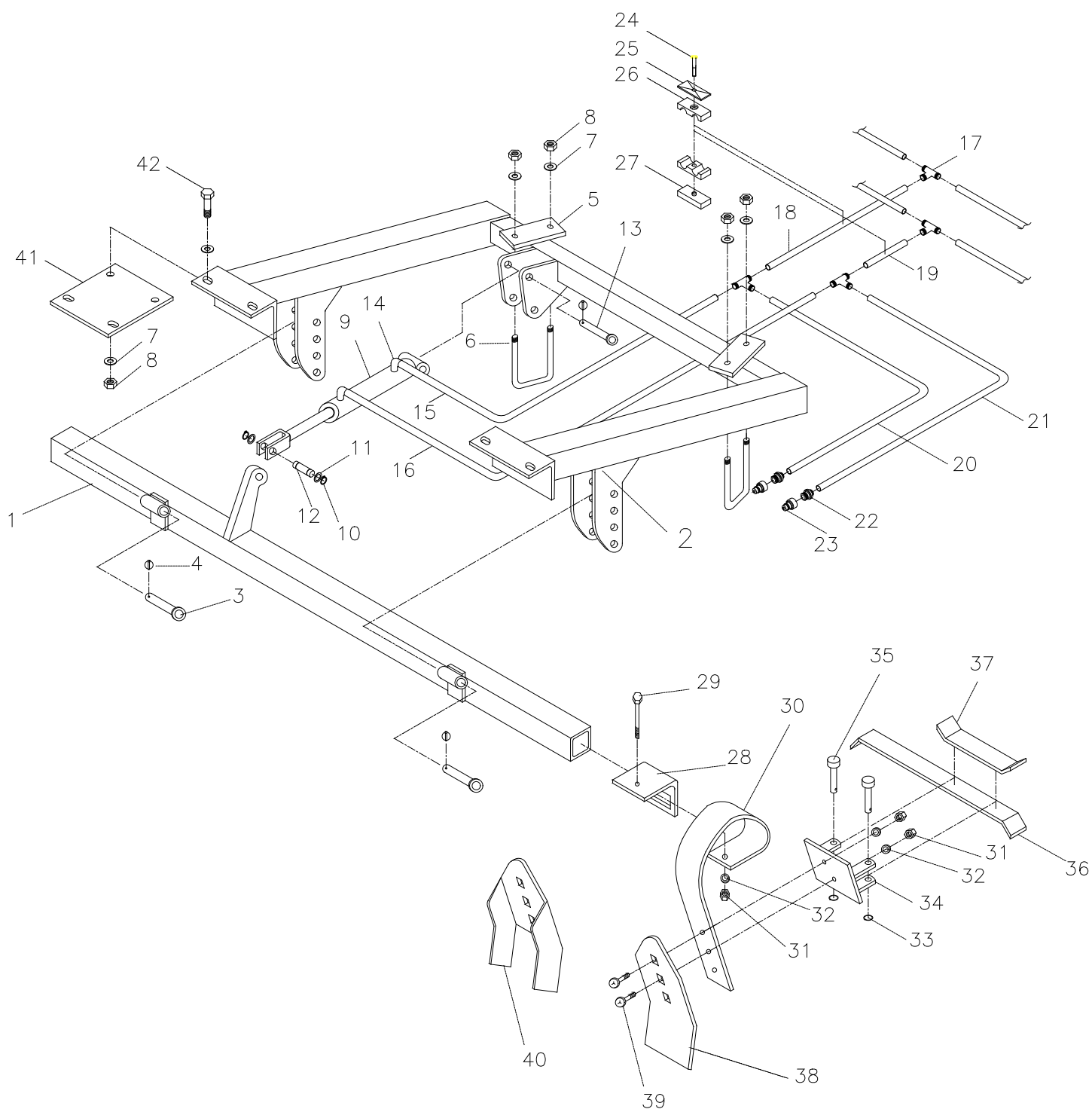
|    |           |                             |    |
|----|-----------|-----------------------------|----|
| 13 | 0378200   | Ring clip Ø4,5              | 6  |
| 14 | 0236150   | Bolt M20x70 8.8 fzb DIN931  | 3  |
| 15 | 0236210   | Bolt M20x120 8.8 fzb DIN931 | 1  |
| 16 | 0264110   | Self locking nut M20        | 14 |
| 17 | 0236220   | Bolt M20x130 8.8 fzb DIN931 | 10 |
| 18 | 0272310   | Faceted washer Ø20          | 28 |
| 19 | 690110101 | U-bolt M16 100x100x100      | 4  |
| 20 | 0272290   | Faceted washer Ø16          | 8  |
| 21 | 0264090   | Self locking nut M16        | 8  |

### Middle and side section to suit harrow mounting 6,3 - 8,2m



| Pos. | Item no.  | Designation                                      | 6,3m | 8,2m |
|------|-----------|--------------------------------------------------|------|------|
| 1    | 630330022 | Suspension middle section for cylinder           | 1    |      |
| 2    | 630330023 | Spring-Board bar middle                          | 1    |      |
| 2    | 630367117 | Spring-Board bar middle                          |      | 1    |
| 3    | 630330025 | Spring-Board bar right                           | 1    |      |
| 4    | 630330024 | Spring-Board bar left                            | 1    |      |
| 3+4  | 630367116 | Spring-Board bar right / left                    |      | 2    |
| 5    | 0422145   | Spring-Board tine 80x10 - long                   | 24   | 32   |
| 6    | 0422390   | Clamp for Spring-Board tine, 70x70 mm bar        | 24   | 32   |
| 7    | 630330021 | Suspension middle/side sections without cylinder | 3    | 3    |
| 8    | 630367120 | Suspension side sections with cylinder           | 2    | 5    |
| 9    | 633052100 | Wearing point Spring-Board 150x8                 | 24   | 32   |
| 10   | 690200160 | Cylinder 50/30x155 Ø20,25/clevis                 | 3    | 3    |
|      | 690200045 | Gasket set 50/30                                 |      |      |

**Middle section incl. hydraulics, when only Spring-Board 6.3 – 8.2m**



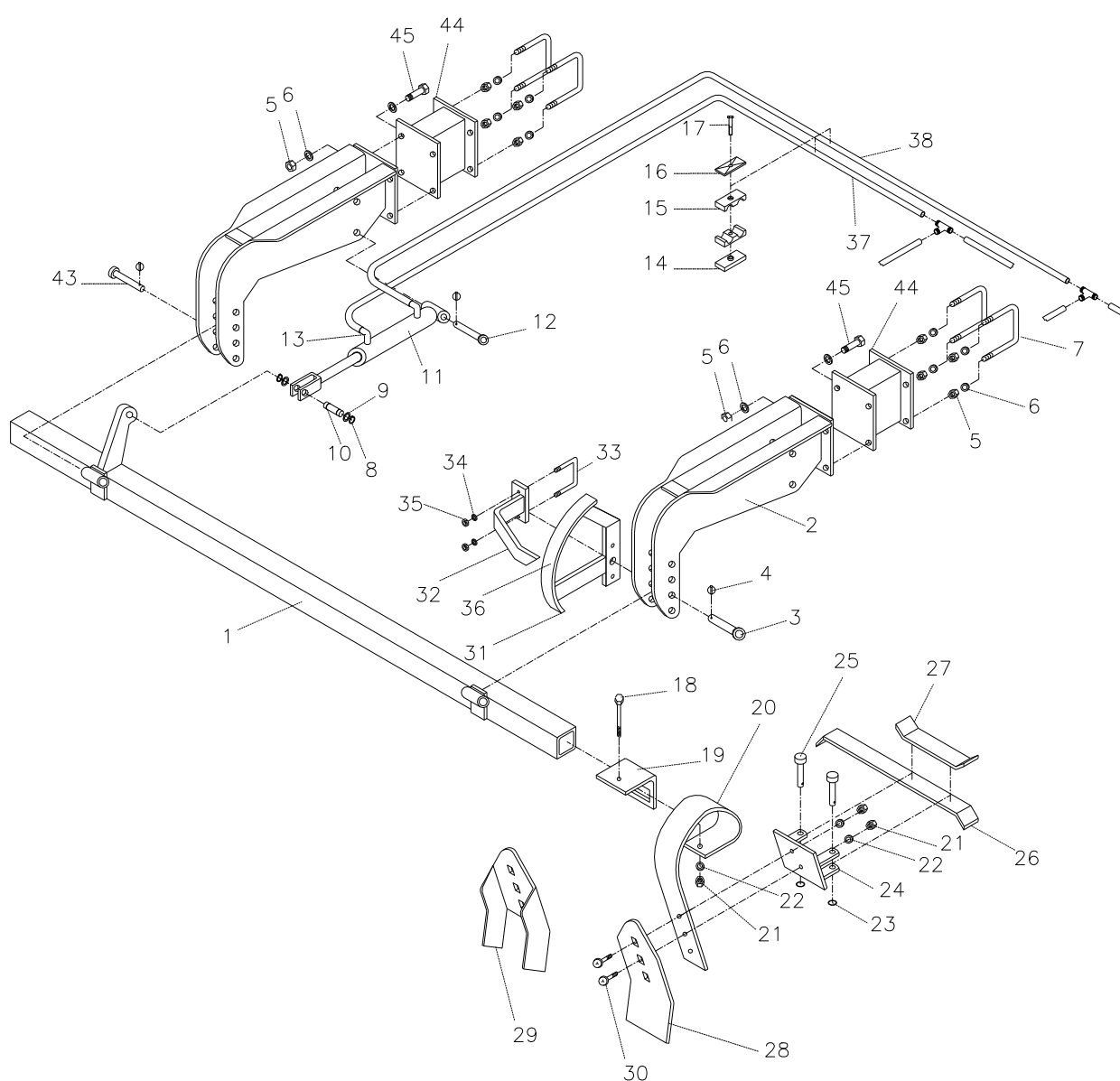
| Pos. | Item no.  | Designation                           | 6.3m | 8.2m |
|------|-----------|---------------------------------------|------|------|
| 1    | 635053020 | Bar for tines                         | 1    | 0    |
| 1    | 633073020 | Bar for tines                         | 0    | 1    |
| 2    | 635051000 | Suspension for middle section         | 1    | 0    |
| 2    | 633061000 | Suspension for middle section         | 0    | 1    |
| 3    | 69525087F | Pin Ø25 L=87                          | 2    | 2    |
| 4    | 0378200   | Ring pin Ø4,5                         | 3    | 3    |
| 5    | 670861100 | Flange                                | 2    | 2    |
| 6    | 690110101 | U-bolt M16x100x100x100                | 2    | 2    |
| 7    | 0272290   | Faceted washer Ø16                    | 8    | 8    |
| 8    | 0264090   | Self-locking nut M16                  | 6    | 6    |
| 9    | 690200160 | Cylinder 50/30x155                    | 1    | 1    |
| 9e   | 690200045 | Gasket set 50/30 mm                   | 1    | 1    |
| 10   | 691372020 | Seeger circlip ring Ø20 Din 471       | 2    | 2    |
| 11   | 690115010 | Washer Ø20/Ø28x1mm                    | 2    | 2    |
| 12   | 69520046D | Pin Ø20 L=46                          | 1    | 1    |
| 13   | 69520087F | Pin Ø20 L=87                          | 1    | 1    |
| 14   | 690203006 | Fitting 90angle 10 x 3/8" BSP         | 2    | 2    |
| 15   | 690201051 | Hydraulic hose 1/4" L=250 mm          | 1    | 1    |
| 16   | 690201059 | Hydraulic hose 1/4" L=350 mm          | 1    | 1    |
| 17   | 690203015 | Fitting T10                           | 4    | 4    |
| 18   | 690201032 | Hydraulic hose 1/4" L=1130 mm         | 1    | 1    |
| 19   | 690201053 | Hydraulic hose 1/4" L=1260 mm         | 1    | 1    |
| 20   | 690201038 | Hydraulic hose 1/4" L=4000 mm         | 1    | 0    |
| 20   | 690201047 | Hydraulic hose 1/4" L=4610 mm         | 0    | 1    |
| 21   | 690201006 | Hydraulic hose 1/4" L=3800 mm         | 1    |      |
| 21   | 690201047 | Hydraulic hose 1/4" L=4610 mm         |      | 1    |
| 22   | 690203003 | Fitting, straight 10 x 1/2" BSP       | 2    | 2    |
| 23   | 690203001 | Quick coupling (male) E402 1/2"       | 2    | 2    |
| 24   | 690210213 | Screw for tube-support double         | 5    | 5    |
| 25   | 690210211 | Top plate for tube-support double     | 5    | 5    |
| 26   | 690210210 | Tube-support double ø14/ø14           | 10   | 10   |
| 27   | 690210212 | Welding plate for tube-support double | 5    | 5    |
| 28   | 0422390   | Clamp for tine                        | 8    | 6    |
| 29   | 690103098 | Bolt M12x110                          | 8    | 6    |
| 30   | 0422145   | Tine (10x80)                          | 8    | 6    |
| 30a  | 633052000 | Tine complete                         | 8    | 6    |
| 31   | 0264070   | Self-locking nut M12                  | 24   | 18   |
| 32   | 0272270   | Facet washer ø12                      | 24   | 18   |
| 33   | 0431975   | Locking ring 30xø3                    | 16   | 12   |

The table continues →

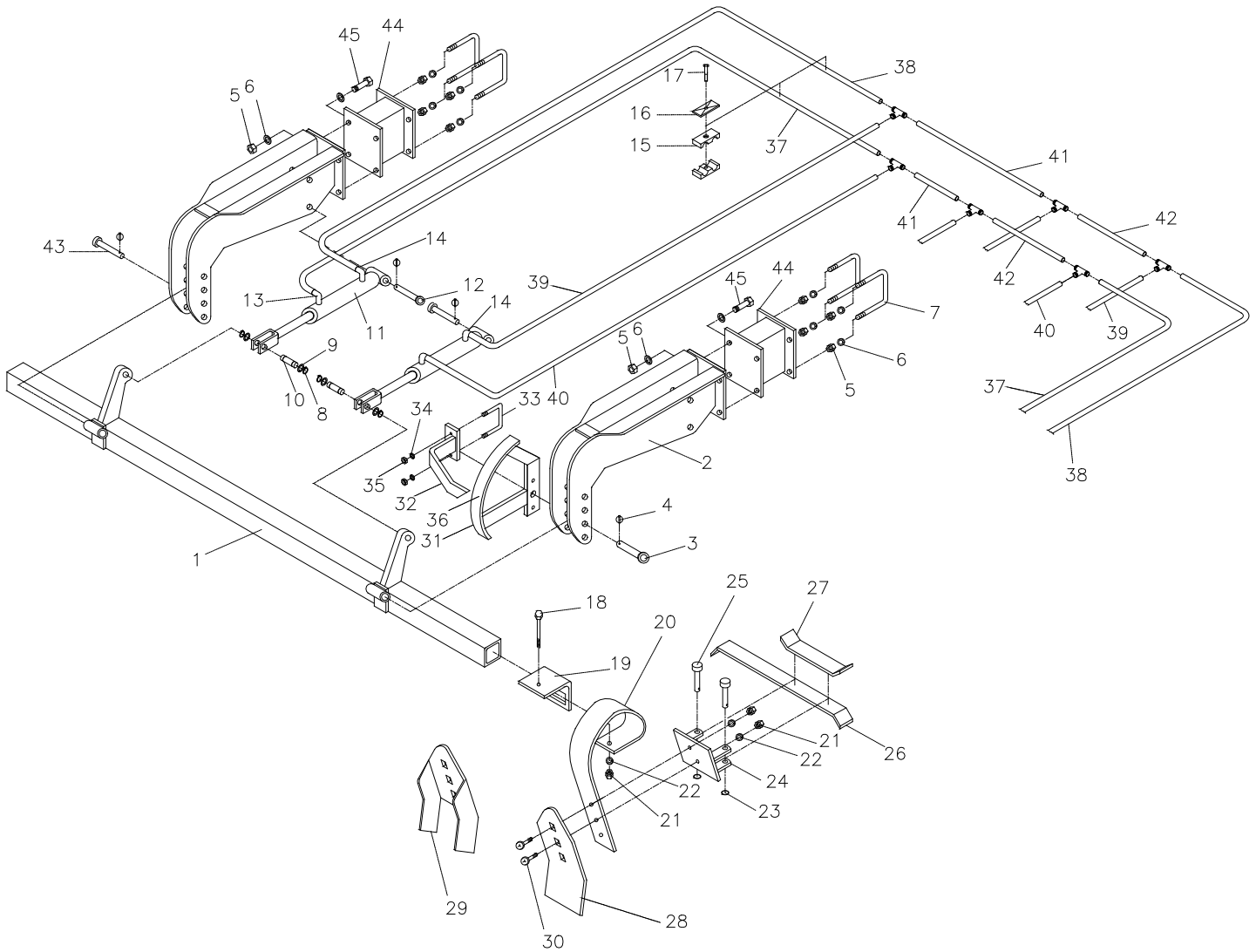


| Pos. | Item no.  | Designation                                     | 6.3m | 8.2m |
|------|-----------|-------------------------------------------------|------|------|
| 34   | 633055500 | Tine bracket for transverse locking system      | 8    | 6    |
| 35   | 69512040K | Pin Ø12,5x40                                    | 16   | 12   |
| 36   | 633055710 | Long locking bar for transverse locking system  | 7    | 5    |
| 37   | 633055700 | Short locking bar for transverse locking system | 2    | 2    |
| 38   | 0422143   | Tine point (8x150)                              | 8    | 6    |
| 39   | 0248670   | Bolt (carrier bolt) M12x45                      | 16   | 12   |
| 40   | 633052150 | Tine point (slicing plates)                     | 8    | 6    |
| 41   | 635055010 | Distance plate for mounting                     | 2    | 2    |
| 42   | 690103126 | Bolt M16x45                                     | 4    | 4    |

### Side section incl. hydraulics, when only Spring-Board (left shown) 6.3m



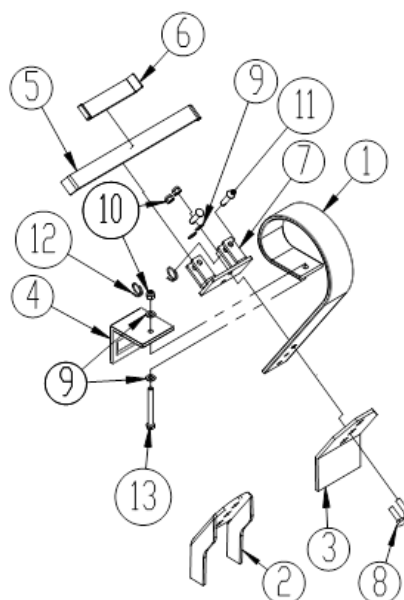
**Side section incl. hydraulics, when only Spring-Board (left shown) 8.2m**



| Pos.                  | Item no.  | Designation                                         | 6.3m | 8.2m |
|-----------------------|-----------|-----------------------------------------------------|------|------|
| 1                     | 635053010 | Bar for tines (right)                               | 1    |      |
| 1                     | 635053030 | Bar for tines (left)                                | 1    |      |
| 1                     | 633063010 | Bar for tines (right)                               |      | 1    |
| 1                     | 633063030 | Bar for tines (left)                                |      | 1    |
| 2                     | 635054500 | Horn                                                | 4    | 4    |
| 3                     | 69525095F | Pin Ø25 L=95                                        | 1    | 1    |
| 4                     | 0378200   | Ring pin Ø4,5                                       | 6    | 6    |
| 5                     | 0264090   | Self-locking nut M16                                | 32   | 32   |
| 6                     | 0272290   | Faceted washer Ø16                                  | 48   | 48   |
| 7                     | 690110106 | U-bolt M16x200x100x200                              | 8    | 8    |
| 8                     | 691372020 | Seeger circlip ring Ø20 Din 471                     | 4    | 8    |
| 9                     | 690115010 | Washer Ø20/Ø28x1mm                                  | 4    | 8    |
| 10                    | 69520046D | Pin Ø20 L=46                                        | 2    | 4    |
| 11                    | 690200160 | Cylinder 50/30 x 155                                | 2    | 4    |
| 11e                   | 690200045 | Gasket set 50/30 mm                                 | 2    | 4    |
| 12                    | 69520087F | Pin Ø20 L=87                                        | 2    | 4    |
| 13                    | 690203006 | Fitting, 90angle 10 x 3/8" BSP                      | 2    | 4    |
| 14                    | 690203002 | Fitting, straight 10 - 3/8" BSP                     | 2    | 4    |
| 15                    | 690210210 | Tube bracket double ø14/ø14                         | 16   | 20   |
| 16                    | 690210211 | Top plate for tube-support double                   | 8    | 10   |
| 17                    | 690210213 | Screw for tube-support double                       | 8    | 10   |
| 18                    | 690103098 | Bolt M12x110                                        | 16   | 26   |
| 19                    | 0422390   | Clamp for tine                                      | 16   | 26   |
| 20                    | 0422145   | Tine (10x80)                                        | 16   | 26   |
| 20a                   | 633052000 | Tine complete                                       | 16   | 26   |
| 21                    | 690112011 | Binding nut 12mm                                    | 32   | 52   |
| 22                    | 0272270   | Faceted washer Ø12                                  | 48   | 78   |
| 23                    | 0431975   | Locking ring 30xø3                                  | 32   | 52   |
| 24                    | 633055500 | Tine bracket for transverse locking system          | 16   | 26   |
| 25                    | 69512040K | Pin ø12,5x40                                        | 32   | 52   |
| 26                    | 633055710 | Long locking bar for transverse locking system      | 14   | 24   |
| 27                    | 633055700 | Short locking bar for transverse locking system     | 4    | 4    |
| 28                    | 0422143   | Tine point (8x150)                                  | 16   | 26   |
| 29                    | 633052150 | Tine point (slicing plates)                         | 16   | 26   |
| 30                    | 0248670   | Bolt (carrier bolt) M12x45                          | 32   | 52   |
| 31                    | 635151000 | Scale f/depth control                               | 1    | 1    |
| 32                    | 635152000 | Pointer f/depth control                             | 1    | 1    |
| 33                    | 690110020 | U-bolt M10x70x70x70 mm                              | 1    | 1    |
| 34                    | 0272260   | Faceted washer Ø10                                  | 2    | 2    |
| 35                    | 0264060   | Self-locking nut M10                                | 2    | 2    |
| 36                    | 698500018 | Label for scale for depth control                   | 1    | 1    |
| 37                    | 690201048 | Hydraulic hose 1/4" L= 3610 mm (right side section) | 1    | 0    |
| The tabel continues → |           |                                                     |      |      |

| Pos. | Item no.  | Designation                                         | 6.3m | 8.2m |
|------|-----------|-----------------------------------------------------|------|------|
| 37   | 690201006 | Hydraulic hose 1/4" L= 3800 mm (left side section)  | 1    | 0    |
| 37   | 690201022 | Hydraulic hose 1/4" L= 3140 mm                      | 0    | 2    |
| 38   | 690201044 | Hydraulic hose 1/4" L= 3460 mm (right side section) | 1    | 0    |
| 38   | 690201048 | Hydraulic hose 1/4" L= 3610 mm (left side section)  | 1    | 0    |
| 38   | 690201060 | Hydraulic hose 1/4" L= 3000 mm                      | 0    | 2    |
| 39   | 690201009 | Hydraulic hose 1/4" L= 355 mm                       | 0    | 2    |
| 40   | 690201069 | Hydraulic hose 1/4" L= 450 mm                       | 0    | 2    |
| 41   | 690201063 | Hydraulic hose 1/4" L= 1600 mm                      | 0    | 2    |
| 42   | 690201016 | Hydraulic hose 1/4" L= 1830 mm                      | 0    | 2    |
| 43   | 69525087F | Pin Ø25 L=87                                        | 3    | 3    |
| 44   | 635055000 | Connecting link                                     | 4    | 4    |
| 45   | 690103197 | Bolt M16x50                                         | 16   | 16   |

### Spring-Board tine with traverse locking system

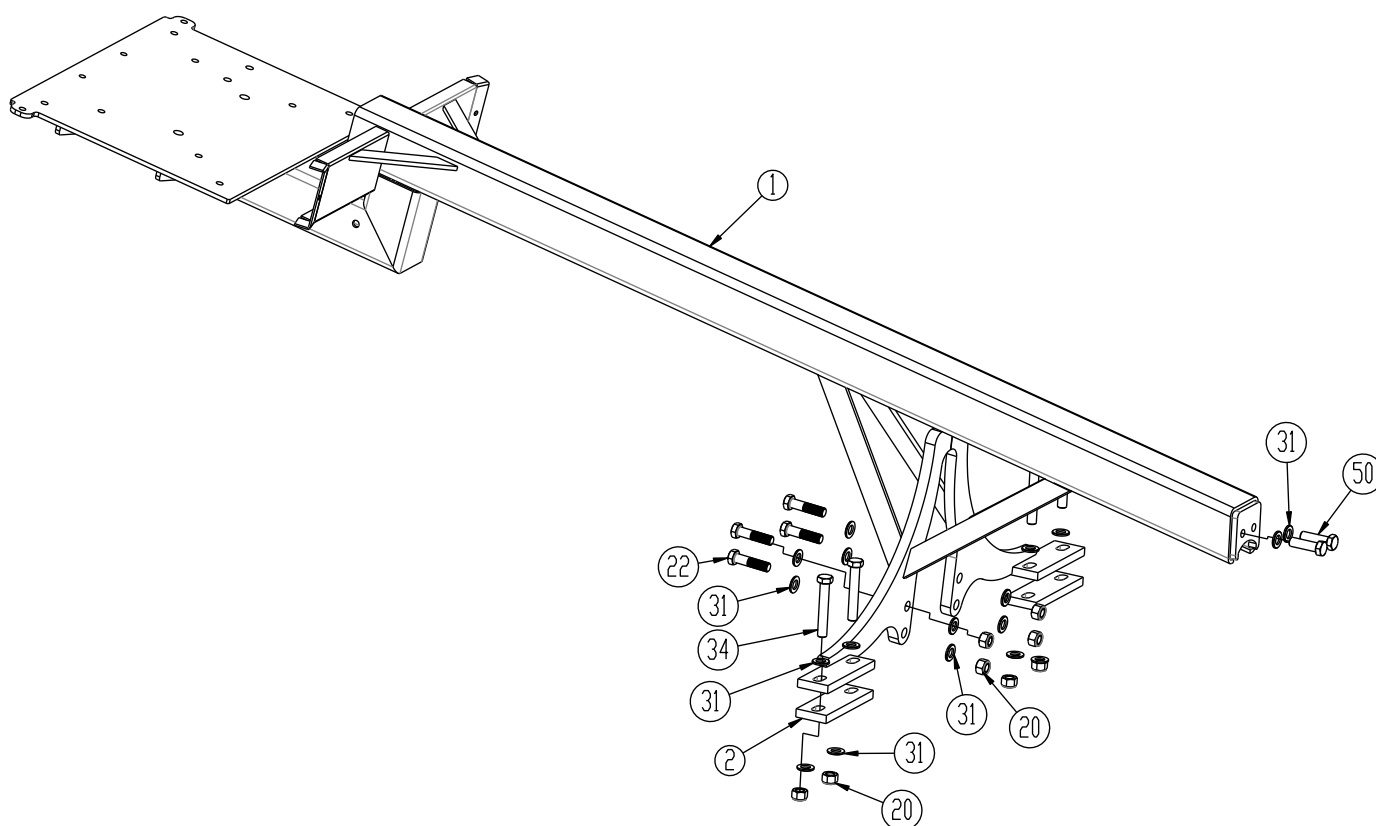


| Pos. | Item no.  | Designation                                      | Pcs. |
|------|-----------|--------------------------------------------------|------|
| 1    | 0422145   | Springboard tine 80x10 - lang                    | 1    |
| 2    | 633052150 | Slicing point ( crust breaker)                   | 1    |
| 3    | 0422143   | Wearing point for Spring-Board tine              | 1    |
| 4    | 0422390   | Clamp for Spring-Board tine                      | 1    |
| 5    | 633055710 | Traverse bar (long) for traverse locking system  | 1    |
| 6    | 633055700 | Traverse bar (short) for traverse locking system | 1    |
| 7    | 633055500 | Bracket for traverse locking system              | 1    |
| 8    | 0248670   | Carriage bolt M12x45 8.8                         | 2    |
| 9    | 0272270   | Faceted washer Ø12                               | 4    |
| 10   | 0264070   | Self locking nut M12                             | 3    |
| 11   | 69512040K | Pin Ø12,5 L = 40 St 52 Yellow Zink Plated        | 2    |
| 12   | 690134000 | Ring clip 30xø3 Galvanized                       | 2    |
| 13   | 690103098 | Bolt M12x110 10.9                                | 1    |

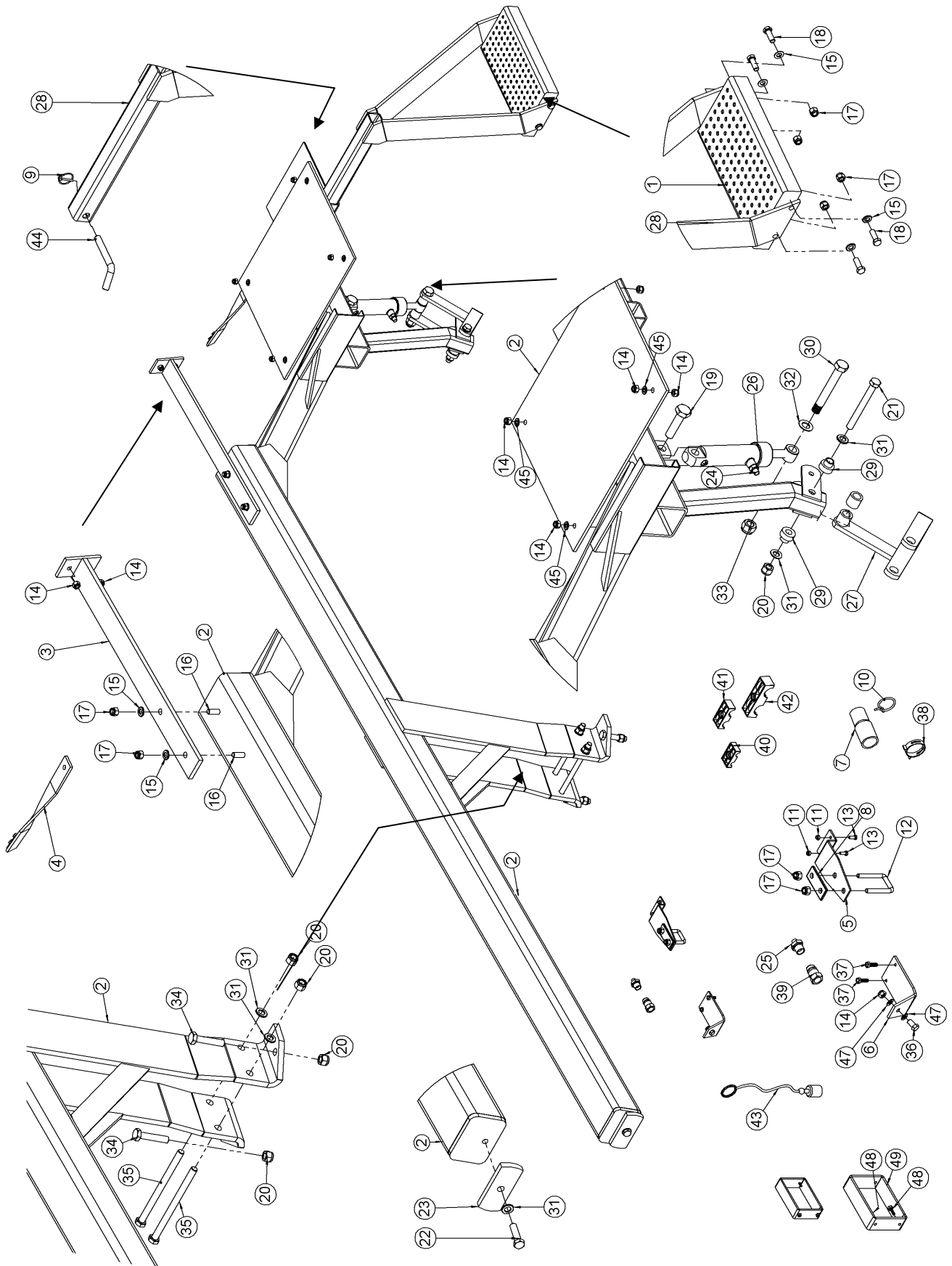
## Spare parts list – mounting of Multi-Seeder

Spare parts and wearing parts for HE-VA Multi-Seeder can be found in a separate operation instruction which also contains a spare parts list.

### 4,5 meter



**6,3 and 8,2 meter**



| Pos. | Item no. | Designation                              | 4,5m | 6.3m | 8.2m |
|------|----------|------------------------------------------|------|------|------|
| 1    | 0487007  | Step panel 200 x 400 x 45 mm             | 1    | 1    | 1    |
| 2    | 1132998  | Mounted frame for Grass-Roller           | 1    |      |      |
| 2    | 1131850  | Mounted frame for Grass-Roller           |      |      | 1    |
| 2    | 1131470  | Mounted frame for Grass-Roller           |      | 1    |      |
| 3    | 1131960  | Mounted fan bracket                      |      |      | 1    |
| 3    | 1131950  | Bracket for fan                          |      | 1    |      |
| 4    | 1131840  | Mounted cable bracket                    |      | 1    | 1    |
| 5    | 1131780  | Bracket for distribution plate           | 8    | 8    | 16   |
| 6    | 1131770  | Wide holder short                        |      |      | 8    |
| 7    | 0489020  | Rubber bellow for drill hose             |      |      | 8    |
| 8    | 1012520  | Clamping plate M12                       | 8    | 8    | 16   |
| 9    | 0378200  | Ring split, ø4.5 mm, galv. No.2045321    | 1    | 1    | 1    |
| 10   | 0435100  | Clamp for drilling tube 38/12            |      |      | 8    |
| 11   | 0264040  | Self-locking nut M6, fzb DIN985          | 16   | 16   | 32   |
| 12   | 0382120  | U-bolt M12                               | 8    | 8    | 16   |
| 13   | 0234280  | Steel set screw M6x16mm 8.8 fzb          | 16   | 16   | 32   |
| 14   | 0264060  | Self-locking nut M10, fzg DIN985         | 4    | 6    | 6    |
| 15   | 0272270  | Facet plate 12mm, fzg                    | 8    | 12   | 12   |
| 16   | 0235360  | Steel set screw M12x40mm,8.8 fzg         |      | 2    | 2    |
| 17   | 0264070  | Self-locking nut M12, fzb DIN985         | 20   | 21   | 37   |
| 18   | 0235350  | Steel set screw M12x35mm, 8.8 fzb        | 4    | 4    | 4    |
| 19   | 0236170  | Steel bolt M20x80mm, 8.8 fzg             |      | 1    | 1    |
| 20   | 0264090  | Self-locking nut M16, fzb DIN985         | 8    | 5    | 5    |
| 21   | 0235950  | Steel bolt M16x150mm, 8.8 fzb            |      | 1    | 1    |
| 22   | 0235840  | Steel bolt M16x60mm, 8.8 fzb             | 4    | 1    | 1    |
| 23   | 1131120  | Clamping flange                          |      | 1    | 1    |
| 24   | 0444500  | Hexagon nipple 1/4" Kon 01BK04           |      | 2    | 2    |
| 25   | 0444490  | Hexagon nipple 1/2"x1/4" 02BP0804        |      | 2    | 2    |
| 26   | 0468200  | Hydraulic cylinder 40/20 x99mm 2x1/4"    |      | 1    | 1    |
| 26a  | 0468270  | Gasket set 40/20                         |      |      |      |
| 27   | 1131130  | Mounted lifting bracket for wheel, short |      | 1    | 1    |
| 28   | 30551200 | Mounted bracket for step panel           | 1    | 1    | 1    |
| 29   | 1130290  | Bush                                     |      | 2    | 2    |
| 30   | 0236240  | Steel bolt M20x150mm, 8.8 fzb            |      | 1    | 1    |
| 31   | 0272290  | Facet plate 16mm, fzb                    | 18   | 11   | 11   |
| 32   | 0272310  | Facet plate 20mm, fzb                    |      | 4    | 4    |
| 33   | 0264110  | Self-locking nut M20, fzb DIN985         |      | 2    | 2    |
| 34   | 0235880  | Steel bolt M16x80mm, 8.8 fzb             |      |      | 2    |
| 34   | 0235900  | Steel bolt M16x100mm, 8.8 fzb            |      | 4    |      |

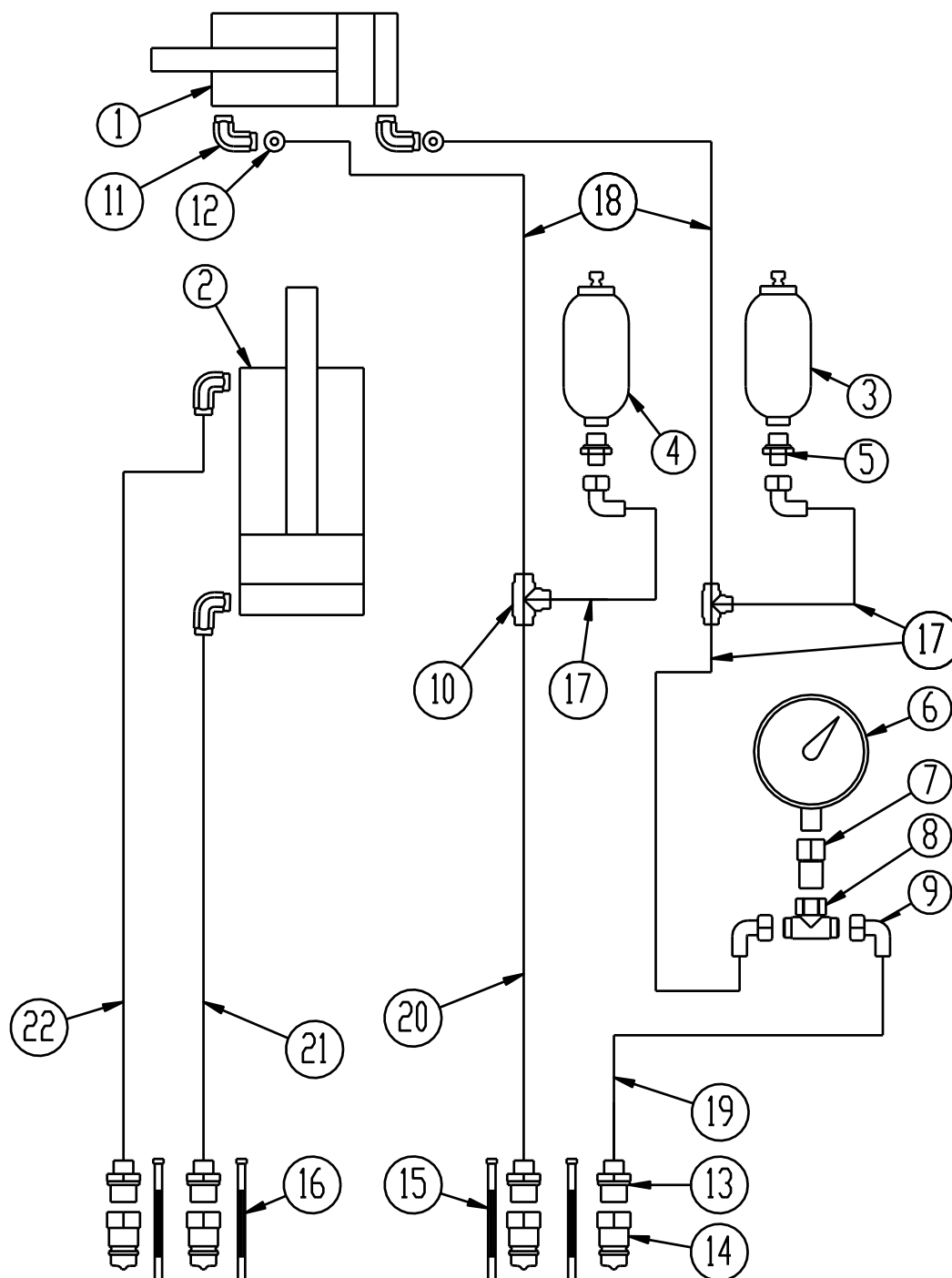
The tabel continues →



| Pos. | Item no.  | Designation                                           | 4,5m | 6.3m | 8.2m |
|------|-----------|-------------------------------------------------------|------|------|------|
| 35   | 0242760   | Machine bolt M16x240mm, 4.6 fzb                       |      |      | 2    |
| 36   | 0235030   | Steel set screw M10x20mm, 8.8 fzb                     |      | 8    | 8    |
| 37   | 0230825   | Screw Tapetite M8x25 6k.hov 211-08-025                |      |      | 16   |
| 38   | 0435110   | Clamp for tube 46/12                                  |      |      | 8    |
| 39   | 0444020   | Quick-coupling ½" Hanpart-kegle Sterling              |      | 2    | 2    |
| 40   | 0449430   | Tube-support double ø14-14mm green                    |      | 1    | 1    |
| 41   | 0449700   | Tube-support double ø22-22mm green (at hydraulic fan) |      | 1    | 1    |
| 42   | 0449730   | Tube-support double ø32-32mm green                    |      | 2    | 5    |
| 43   | 0449020   | Dust cap 1/2" Std., 1/2" C51                          |      | 2    | 2    |
| 44   | 1030280   | Pin for wing, ø16x150mm                               |      | 1    | 1    |
| 45   | 0235430   | Steel bolt M12x75mm, 8.8 fzb                          | 4    | 4    | 4    |
| 46   | 0230320   | Screw Tapetite M6x50 6k.hov 211-06-050                |      | 2    | 7    |
| 47   | 0272260   | Facet plate 10mm, fzb DIN125B                         |      | 8    | 18   |
| 48   | 0230290   | Screw Tapetite M6x20 6k.hov 211-06-020                |      | 4    | 4    |
| 49   | 630327242 | Hose bracket square                                   |      | 2    | 2    |
|      | 0455160   | Hydr. hose 1/4"x8000 mm                               |      |      | 1    |
|      | 0455060   | Hydr. hose 1/4"x6900 mm                               |      | 1    |      |
|      | 0454490   | Hydr. hose 1/2" x 1550mm                              |      | 0    | 1    |
|      | 0434450   | Clamp Ø22-32mm, 9 mm wide                             |      | 8    | 32   |
|      | 0434531   | Clamp Ø68-85mm, 9 mm wide                             |      |      | 2    |
|      | 0434531   | Clamp Ø68-85mm, 9 mm wide (at hydraulic fan)          |      | 2    |      |
| 50   | 0235830   | Bolt M16x55 8.8                                       | 2    | 2    |      |

## Spare parts list Hydraulics

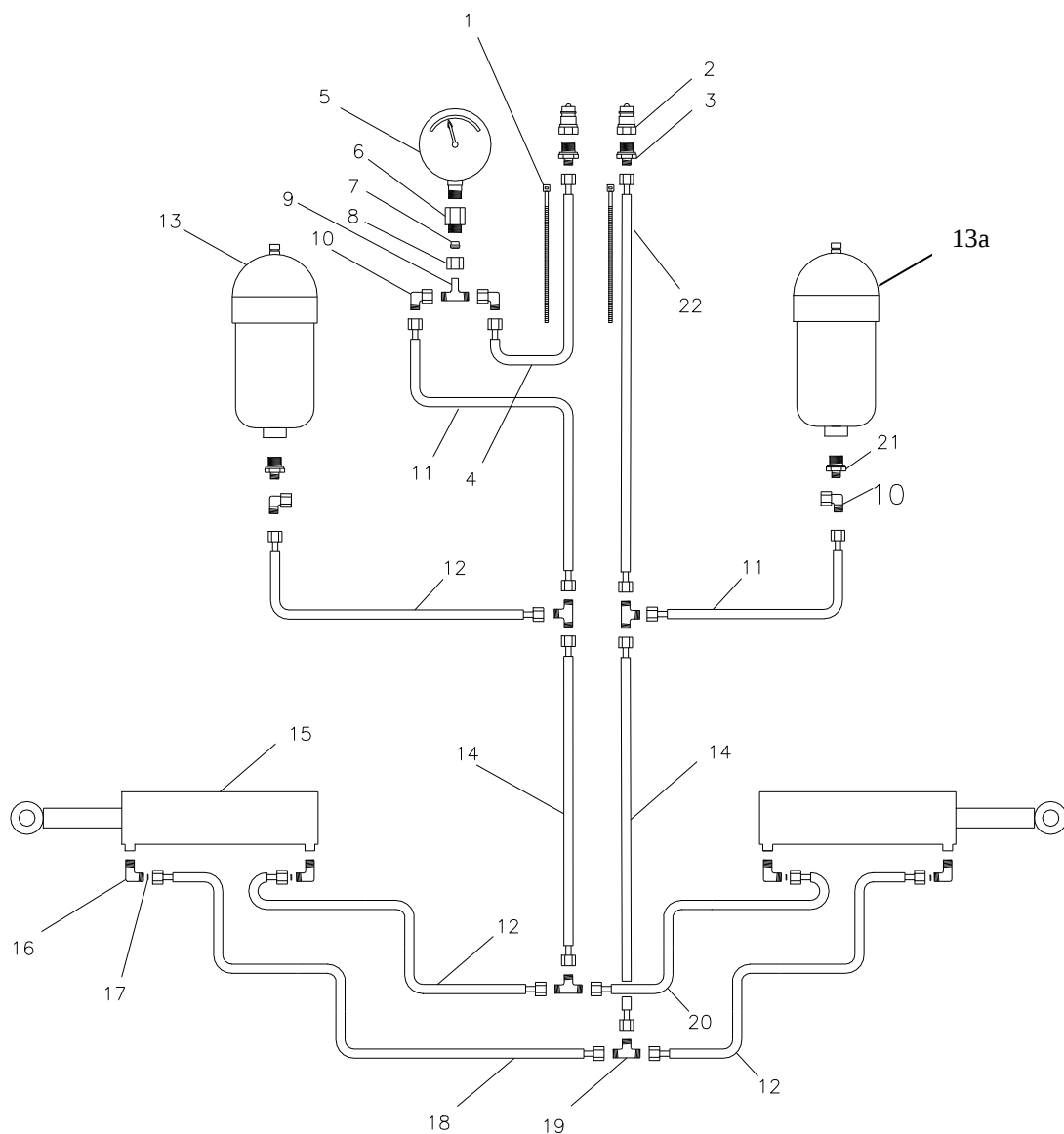
### Tip, Folding & weight transfer system red and blue 4,5m



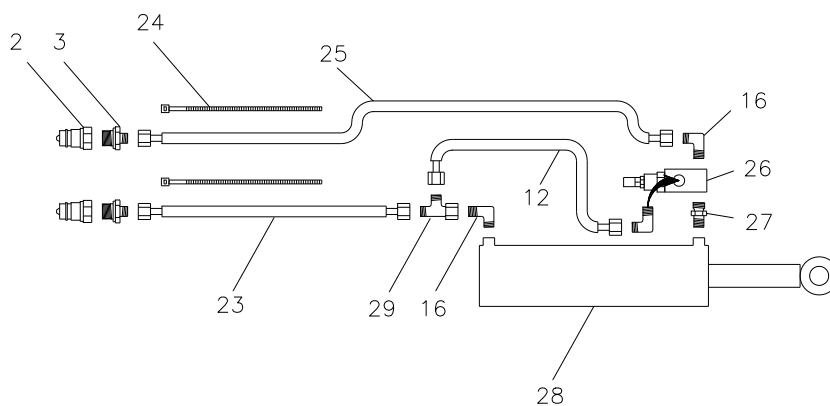
| Pos. | Item no.  | Designation                        | 4,5 m |
|------|-----------|------------------------------------|-------|
| 1    | 630286167 | Cylinder folding 70/40 x 600       | 1     |
| 1a   | 690200068 | Gasket set 70/40                   | 1     |
| 2    | 690200109 | Cylinder tip 100/50 x 500          | 1     |
| 2a   | 690200284 | Gasket set 100/50 Hydraflex        | 1     |
| 3    | 690206410 | Accumulator H700R. 40 bar          | 1     |
| 4    | 690206403 | Accumulator H700R 15 bar           | 1     |
| 5    | 690203096 | Fitting straight M18x1,5 / ø10     | 2     |
| 6    | 690206822 | Manometer 250 bar Ø100mm           | 1     |
| 7    | 690206823 | Manometer fitting 10- ½"           | 1     |
| 8    | 690203014 | Fitting T - 10 with union nut      | 1     |
| 9    | 0446678   | Fitting 90° Ø10                    | 4     |
| 10   | 690203015 | Fitting T - 10                     | 2     |
| 11   | 690203006 | Fitting, 90angle 10-3/8" Bsp       | 4     |
| 12   | 690207901 | Restrictor 1mm                     | 2     |
| 13   | 690203003 | Fitting, straight 10- ½" BSP       | 4     |
| 14   | 690203001 | Quick coupling, male E402 ½"       | 4     |
| 15   | 690119202 | Cable straps (blue)                | 2     |
| 16   | 690119203 | Cable straps (red)                 | 2     |
| 17   | 690201042 | Hydraulic hose L = 500 1/4" st/st  | 3     |
| 18   | 690201021 | Hydraulic hose L = 2300 1/4" st/st | 2     |
| 19   | 690201237 | Hydraulic hose L = 2800 1/4" st/st | 1     |
| 20   | 690201022 | Hydraulic hose L = 3140 1/4" st/st | 1     |
| 21   | 690201006 | Hydraulic hose L = 3800 1/4" st/st | 1     |
| 22   | 690201029 | Hydraulic hose L = 4300 1/4" st/st | 1     |



## Hydraulics for folding & weight transfer system (blue) 6.3m

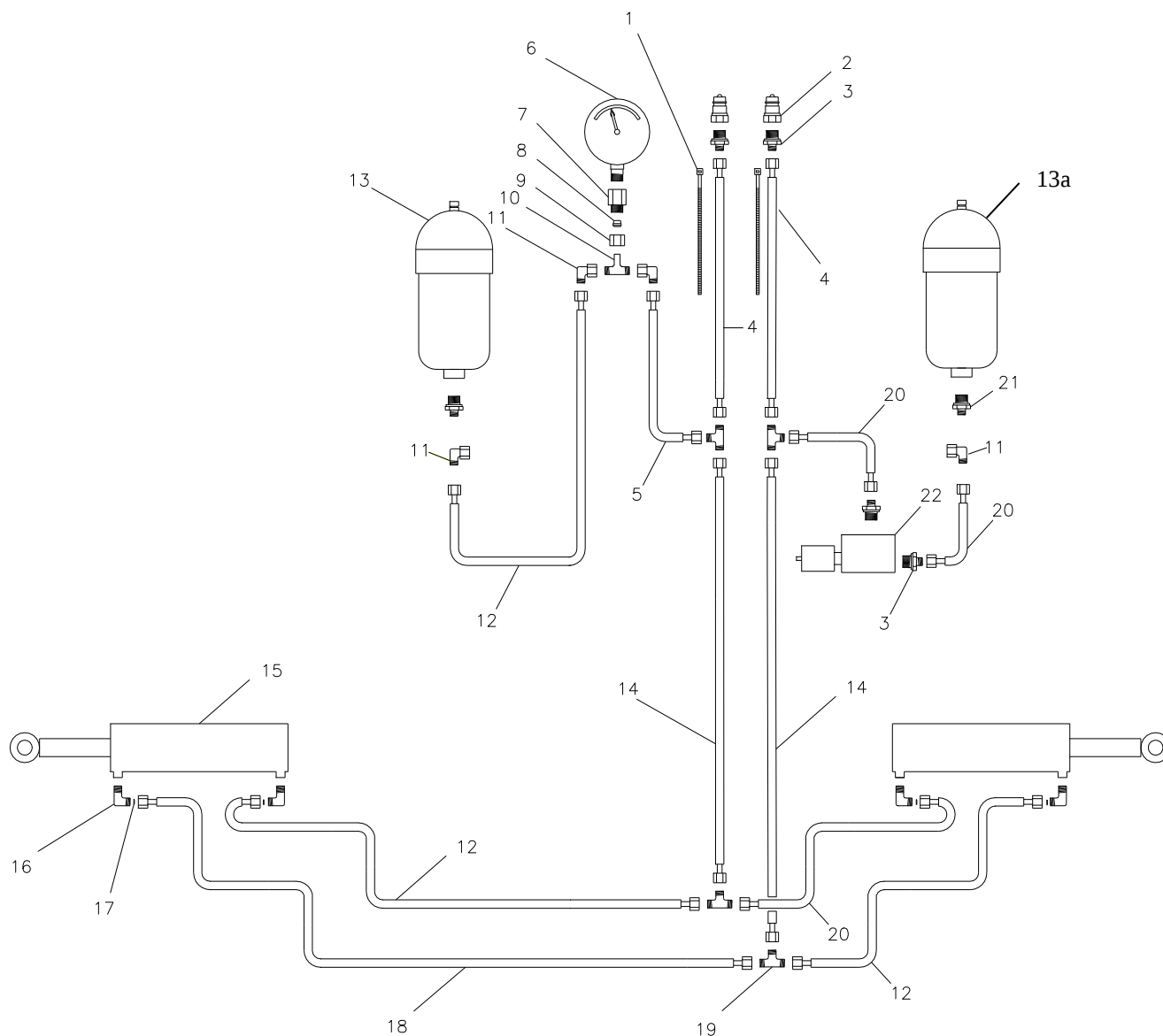


## Tip cylinder for middle section (red) 6.3m

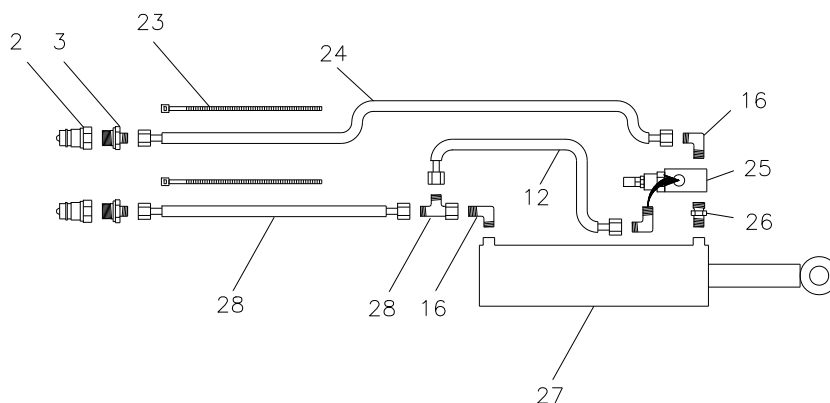


| Pos. | Item no.  | Designation                                     | 6.3 m |
|------|-----------|-------------------------------------------------|-------|
| 1    | 690119202 | Cable straps (blue)                             | 2     |
| 2    | 690203001 | Quick coupling, male E402 ½"                    | 4     |
| 3    | 690203003 | Fitting, straight 10- ½" BSP                    | 4     |
| 4    | 690201006 | Hydraulic hose 3800mm ¼" st/st                  | 1     |
| 5    | 690206822 | Manometer 250 bar Ø100mm                        | 1     |
| 6    | 690206823 | Manometer fitting 10- ½"                        | 1     |
| 7    | 690203010 | Cutting ring Ø10                                | 1     |
| 8    | 690203011 | Union nut Ø10                                   | 1     |
| 9    | 690203020 | Fitting EVT 10 L without union nut/cutting ring | 1     |
| 10   | 690203016 | Fitting 90angle 10mm                            | 4     |
| 11   | 690201042 | Hydraulic hose 500mm ¼" st/st                   | 2     |
| 12   | 690201015 | Hydraulic hose 710mm ¼" st/st                   | 4     |
| 13   | 690206410 | Accumulator H700R. 40 Bar                       | 1     |
| 13a  | 690206403 | Accumulator H700R 15 bar                        | 1     |
| 14   | 690201016 | Hydraulic hose 1830mm ¼" st/st                  | 2     |
| 15   | 630762047 | Cross cylinder 90/40x280mm (right + left)       | 2     |
| 15A  | 690200274 | Gasket set 90/40                                |       |
| 16   | 690203006 | Fitting, 90angle 10-3/8" Bsp                    | 7     |
| 17   | 690207901 | Restrictor 1mm                                  | 4     |
| 18   | 690201055 | Hydraulic hose 1010mm ¼" st/st                  | 1     |
| 19   | 690203015 | Fitting T10                                     | 4     |
| 20   | 690201059 | Hydraulic hose 350mm ¼" st/st                   | 1     |
| 21   | 690203012 | Fitting, straight M18x1,5x12mm w/joint ring     | 2     |
| 22   | 690201038 | Hydraulic hose 4000mm ¼" st/st                  | 1     |
| 23   | 690201029 | Hydraulic hose 4300mm ¼" st/st                  | 1     |
| 24   | 690119203 | Cable straps (red)                              | 2     |
| 25   | 690201045 | Hydraulic hose 4800mm ¼" st/st                  | 1     |
| 26   | 690207104 | Adjustable pressure control valve 3/8"          | 1     |
| 27   | 690202810 | Hexagon nipple 3/8"x 3/8" BSP-T                 | 1     |
| 28   | 690200020 | Tip cylinder Ø100/50 x 700mm, Ø35 mm            | 1     |
| 28a  | 690200028 | Gasketset 100/50                                |       |
| 29   | 690203004 | Fitting T10V                                    | 1     |

**Hydraulics folding & weight transfer system (blue) 8.2m (Before machine no. 352600)**

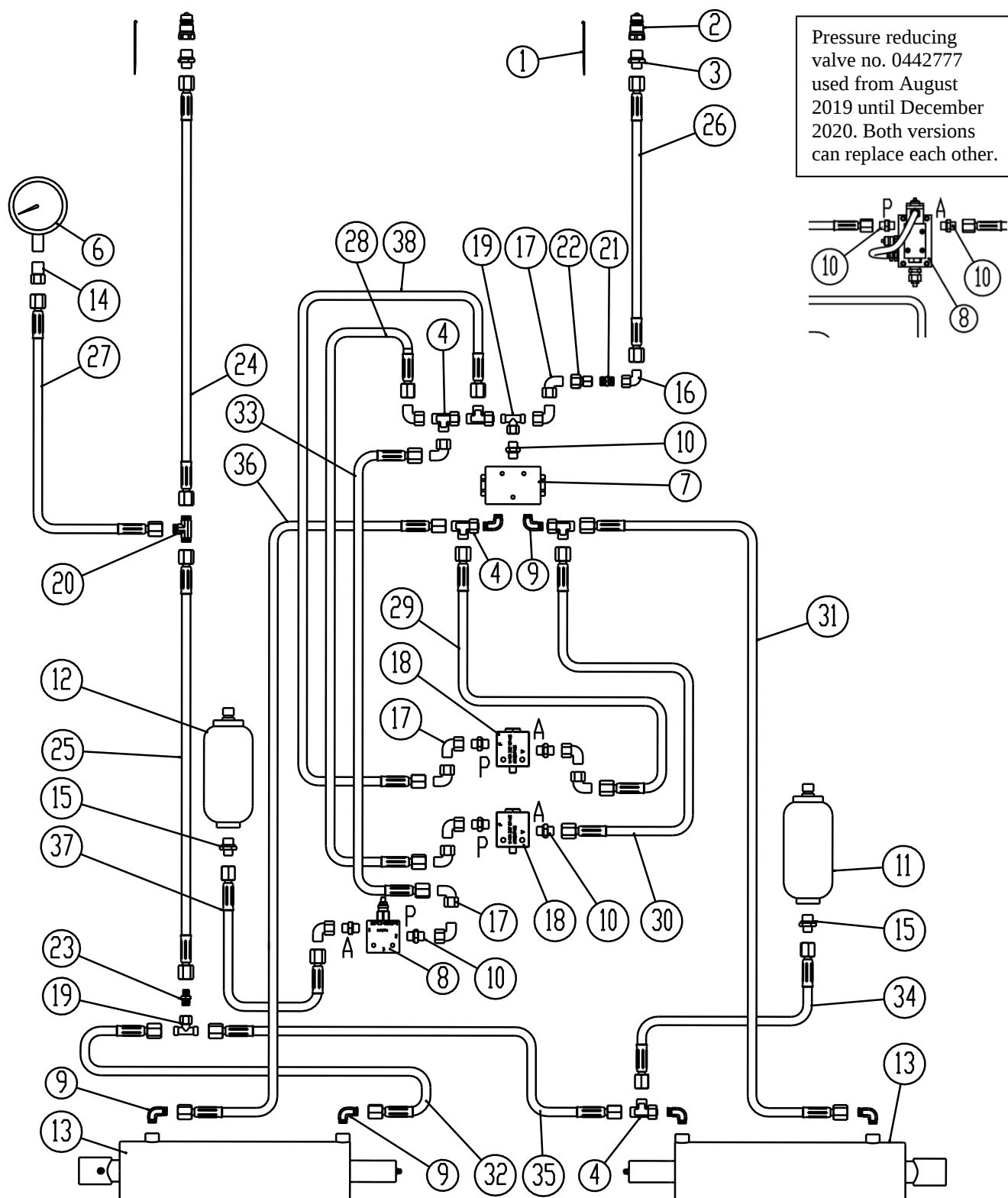


**Tip cylinder for middle section (red) 8.2m**



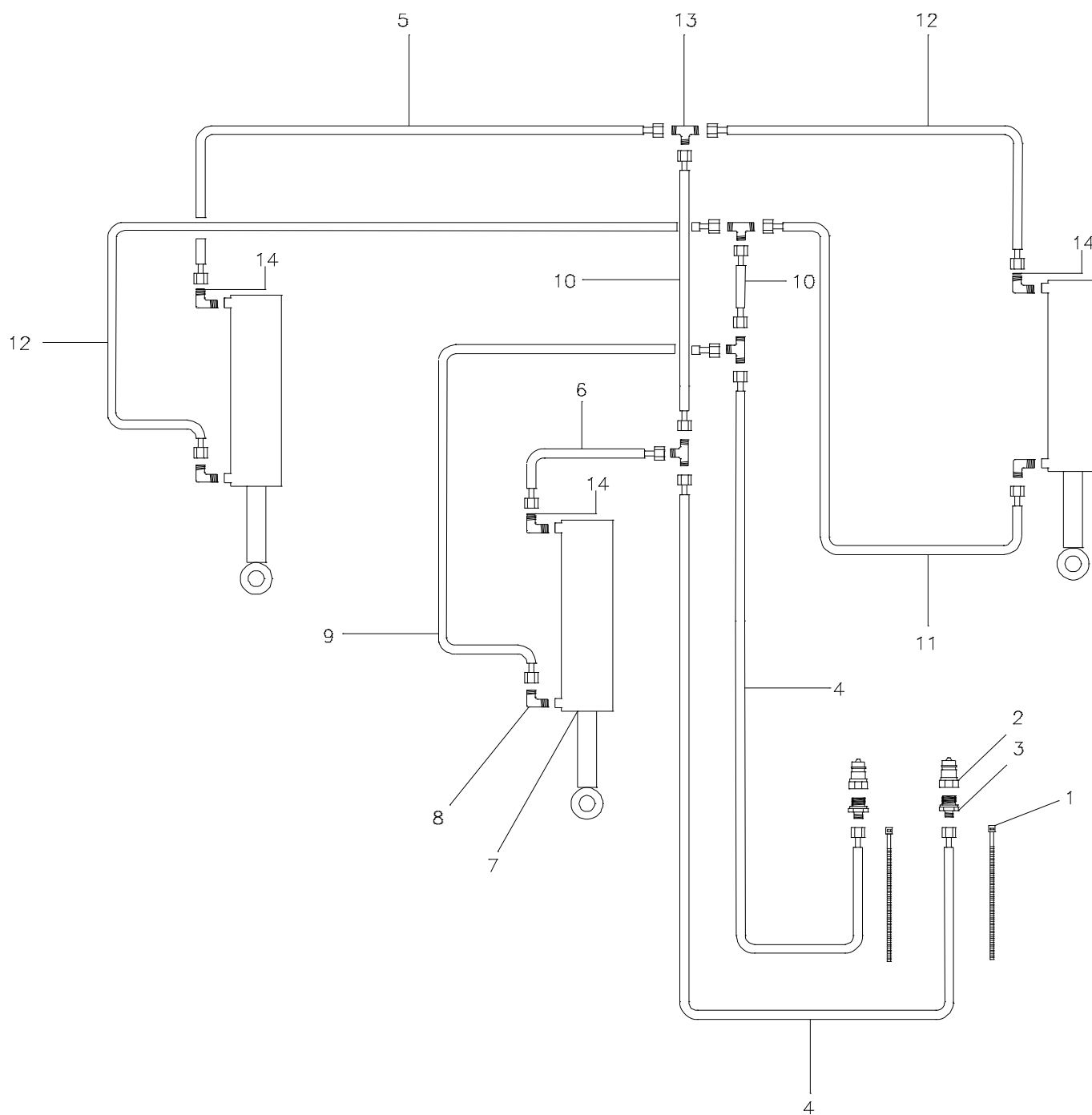
| Pos. | Item no.  | Designation                                       | 8.2m |
|------|-----------|---------------------------------------------------|------|
| 1    | 690119202 | Cable straps (blue)                               | 2    |
| 2    | 690203001 | Quick coupling, male E402 ½"                      | 4    |
| 3    | 690203003 | Fitting, straight 10- ½" BSP                      | 4    |
| 4    | 690201048 | Hydraulic hose 3610mm 1/4" st/st                  | 2    |
| 5    | 690201051 | Hydraulic hose 250mm ¼ " st/st                    | 1    |
| 6    | 690206822 | Manometer 250 bar Ø100mm                          | 1    |
| 7    | 690206823 | Manometer fitting 10- ½"                          | 1    |
| 8    | 690203010 | Cutting ring Ø10                                  | 1    |
| 9    | 690203011 | Union nut Ø10                                     | 1    |
| 10   | 690203020 | Fitting EVT 10 L without union nut / cutting ring | 1    |
| °11  | 690203016 | Fitting 90° angle 10mm                            | 4    |
| 12   | 690201055 | Hydraulic hose 1010mm 1/4" st/st                  | 3    |
| 13   | 690206410 | Accumulator H700R. 40 Bar                         | 1    |
| 13a  | 690206403 | Accumulator H700R 15 bar                          | 1    |
| 14   | 690201022 | Hydraulic hose 3140mm 1/4" st/st                  | 2    |
| 15   | 630762047 | Cross cylinder 90/40x280mm (right)                | 2    |
| 15a  | 690200274 | Gasket set 90/40                                  |      |
| 16   | 690203006 | Fitting, 90angle 10-3/8" Bsp                      | 4    |
| 17   | 690207901 | Restrictor 1mm                                    | 4    |
| 18   | 690201055 | Hydraulic hose 1010mm 1/4" st/st                  | 2    |
| 19   | 690203015 | Fitting T10                                       | 4    |
| 20   | 690201059 | Hydraulic hose 350mm 1/4" st/st                   | 3    |
| 21   | 690203012 | Fitting, straight M18x1,5x12mm w/joint ring       | 2    |
| 22   | 690209453 | Depth stop valve, electric                        | 1    |
| 23   | 690119203 | Cable straps (red)                                | 2    |
| 24   | 690201025 | Hydraulic hose 5640mm 1/4" st/st                  | 1    |
| 25   | 690207104 | Adjustable pressure control valve 3/8"            | 1    |
| 26   | 690202810 | Hexagon nipple 3/8"x 3/8" BSP-T                   | 1    |
| 27   | 690200014 | Tip cylinder Ø100/60 x 1000mm, Ø35 mm             | 1    |
| 27a  | 690200019 | Gasket set 100/60                                 |      |
| 28   | 690203004 | Fitting T10V                                      | 1    |
| 29   | 690201047 | Hydraulic hose 4610mm 1/4" st/st                  | 1    |

**Hydraulics folding & weight transfer system (blue) 8.2m (after machine no. 352600)**



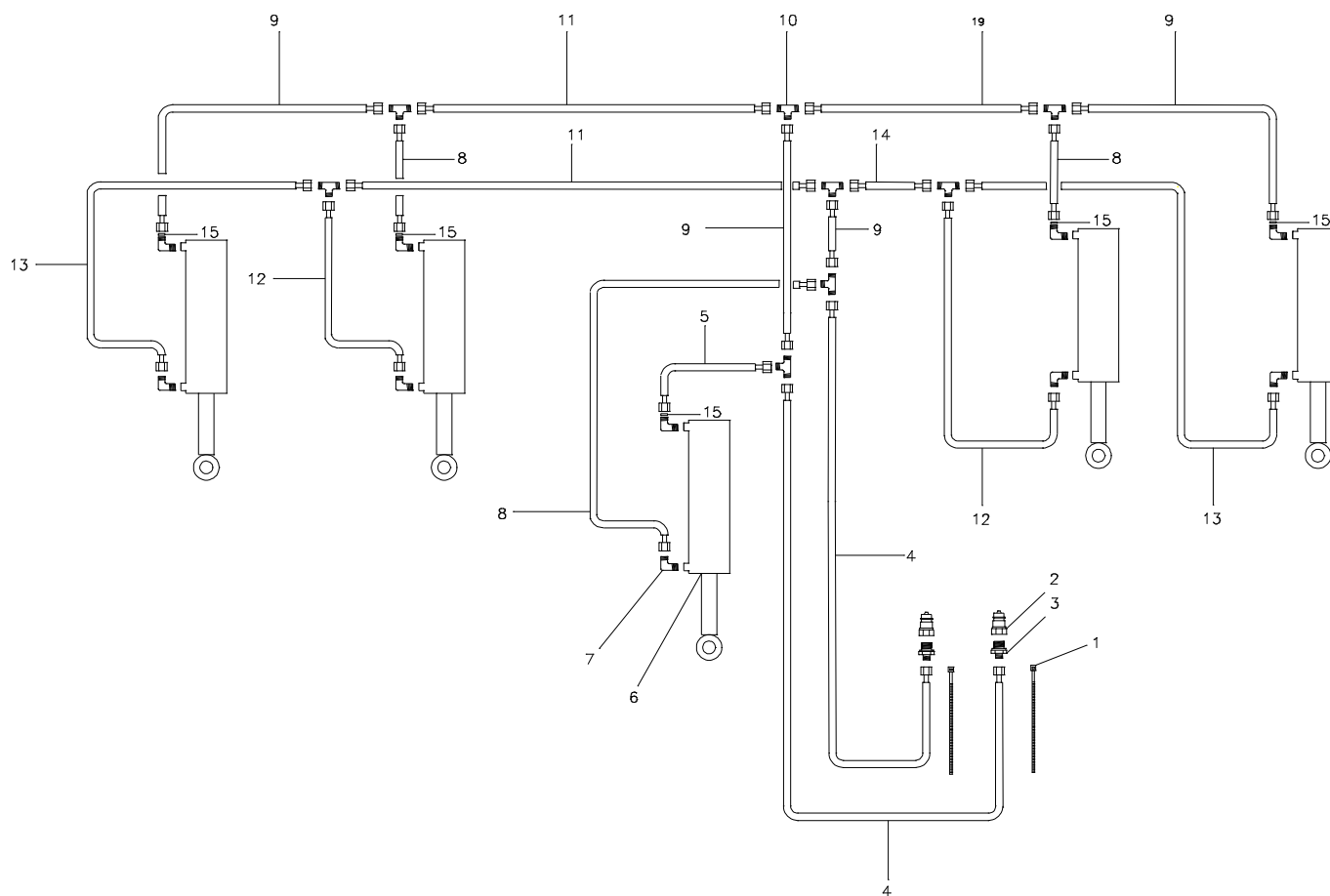
| Pos. | Item no.  | Designation                                                                                                                             | 8,2 m |
|------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1    | 690119202 | Straps (red)                                                                                                                            | 2     |
| 2    | 0444020   | Quick coupling, male E402 ½"                                                                                                            | 2     |
| 3    | 690203103 | Fitting, straight 10- ½" BSP                                                                                                            | 2     |
| 4    | 690203017 | Fitting T12, w/O-ring                                                                                                                   | 6     |
| 5    | 690203115 | Fitting T12                                                                                                                             | 2     |
| 6    | 690206822 | Manometer 250 bar, Ø100                                                                                                                 | 1     |
| 7    | 0442775   | Flowdivider 3/8" 50/50% 10-20 l/min                                                                                                     | 1     |
| 8    | 0442777   | Pressure reducing valve 3/8" <b>From August 2019 - December 2020</b>                                                                    | 1     |
| 8a   | 0442776   | Pressure reducing valve 3/8", set to 30 bar, Port 1 = A, Port 2 = P,<br>Notice: Can replace pos. 8 no. 0442777 <b>From January 2021</b> | 1     |
| 9    | 690203106 | Fitting 90° 12-3/8" BSP                                                                                                                 | 6     |
| 10   | 0446754   | Fitting straight, Ø12 x 3/8"                                                                                                            | 7     |
| 11   | 690206410 | Accumulator H700R 40 bar                                                                                                                | 1     |
| 12   | 690206403 | Accumulator H700R 15 bar                                                                                                                | 1     |
| 13   | 690200340 | Cylinder Ø100/40x285                                                                                                                    | 2     |
| 14   | 690206825 | Manometer Fitting Ø12 x ¼"                                                                                                              | 1     |
| 15   | 690203097 | Fitting straight M18x1,5x10 mm                                                                                                          | 2     |
| 16   | 0446678   | Fitting 90° adjustable Ø10                                                                                                              | 1     |
| 17   | 0446679   | Fitting 90° adjustable Ø12                                                                                                              | 13    |
| 18   | 690207108 | End stop valve V-101 3/8" DT NC                                                                                                         | 2     |
| 19   | 690203125 | Fitting T12 L adjustable w/O-ring                                                                                                       | 2     |
| 20   | 690203015 | Fitting T10                                                                                                                             | 1     |
| 21   | 690203018 | Fitting straight ø10-ø10                                                                                                                | 2     |
| 22   | 0447529   | Fitting straight ø12-ø10 w/2 x O-rings                                                                                                  | 2     |
| 23   | 0446755   | Fitting straight ø12-ø10                                                                                                                | 1     |
| 24   | 690201048 | Hydraulic hose 1/4" L = 3610 mm st/st                                                                                                   | 1     |
| 25   | 690201022 | Hydraulic hose 1/4" L = 3140 mm st/st                                                                                                   | 1     |
| 26   | 690201028 | Hydraulic hose 1/4" L = 6700 mm st/st                                                                                                   | 1     |
| 27   | 690201009 | Hydraulic hose 1/4" L = 355 mm st/st                                                                                                    | 1     |
| 28   | 0454172   | Hydraulic hose 3/8" L = 500 mm st/st                                                                                                    | 1     |
| 29   | 0454172   | Hydraulic hose 3/8" L = 500 mm st/st                                                                                                    | 1     |
| 30   | 0454172   | Hydraulic hose 3/8" L = 500 mm st/st                                                                                                    | 1     |
| 31   | 0454182   | Hydraulic hose 3/8" L = 600 mm st/st                                                                                                    | 1     |
| 32   | 0454182   | Hydraulic hose 3/8" L = 600 mm st/st                                                                                                    | 1     |
| 33   | 0454172   | Hydraulic hose 3/8" L = 500 mm st/st                                                                                                    | 1     |
| 34   | 1454160   | Hydraulic hose 3/8" L = 400 mm st/st                                                                                                    | 1     |
| 35   | 0454130   | Hydraulic hose 3/8" L = 310 mm st/st                                                                                                    | 1     |
| 36   | 0454234   | Hydraulic hose 3/8" L = 870 mm st/st                                                                                                    | 1     |
| 37   | 0454140   | Hydraulic hose 3/8" L = 350 mm st/st                                                                                                    | 1     |
| 38   | 0454182   | Hydraulic hose 3/8" L = 600 mm st/st                                                                                                    | 1     |

**Hydraulics, front harrow (green) 4,5 - 6.3m**



| Pos. | Item no.  | Designation                       | 4,5m | 6,3 m |
|------|-----------|-----------------------------------|------|-------|
| 1    | 690119204 | Straps (grøn)                     | 2    | 2     |
| 2    | 690203001 | Quick coupling, male E402 ½"      | 2    | 2     |
| 3    | 690203003 | Fitting Straight 10- 1/2" BSP     | 2    | 2     |
| 4    | 690201005 | Hydraulic hose 3300 mm 1/4" st/st | 2    |       |
| 4    | 690201038 | Hydraulic hose 4000mm 1/4" st/st  |      | 2     |
| 5    | 690201033 | Hydraulic hose 2500 mm            | 1    |       |
| 5    | 690201044 | Hydraulic hose 3460mm 1/4" st/st  |      | 1     |
| 6    | 690201042 | Hydraulic hose 500mm ¼ " st/st    | 1    |       |
| 6    | 690201064 | Hydraulic hose 820mm 1/4 " st/st  |      | 1     |
| 7    | 690200040 | Cylinder 50/30x155 Ø20,25/20,25   | 3    |       |
| 7    | 690200040 | Cylinder 50/30x155mm ø20/ø20      |      | 3     |
| 7a   | 690200045 | Gasket set 50/30                  |      |       |
| 8    | 690203006 | Fitting straight 10-3/8" Bsp      | 6    | 6     |
| 9    | 690201040 | Hydraulic hose 625mm              | 1    |       |
| 9    | 690201055 | Hydraulic hose 1010mm 1/4" st/st  |      | 1     |
| 10   | 690201020 | Hydraulic hose 1625 mm 1/4" st/st | 2    |       |
| 10   | 690201068 | Hydraulic hose 1950mm 1/4" st/st  |      | 2     |
| 11   | 690201237 | Hydraulic hose 2800mm ¼ " st/st   | 1    |       |
| 11   | 690201006 | Hydraulic hose 3800mm 1/4" st/st  |      | 1     |
| 12   | 690201060 | Hydraulic hose 3000 mm 1/4" st/st | 2    |       |
| 12   | 690201048 | Hydraulic hose 3610mm 1/4" st/st  |      | 2     |
| 13   | 690203015 | Connector T10                     | 4    | 4     |
| 14   | 690207901 | Restrictor 1mm                    | 3    | 3     |

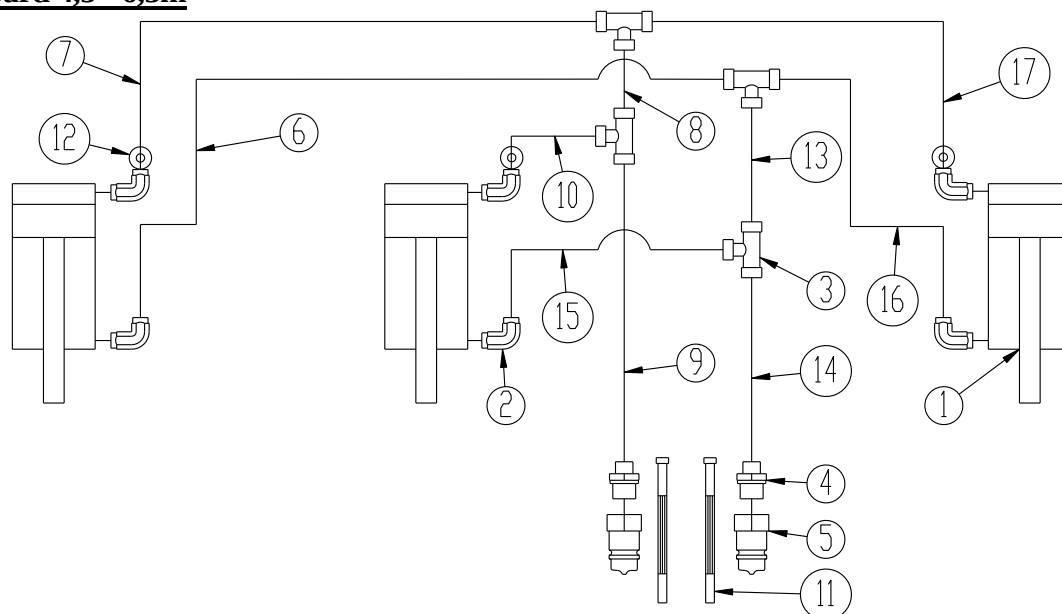
## Hydraulics, front harrow (green) 8.2m



| Pos. | Item no.  | Designation                       | 8.2m |
|------|-----------|-----------------------------------|------|
| 1    | 690119204 | Cable straps (green)              | 2    |
| 2    | 690203001 | Quick coupling, male E402 1/2"    | 2    |
| 3    | 690203003 | Fitting, straight 10- 1/2" BSP    | 2    |
| 4    | 690201045 | Hydraulic hose 4800mm 1/4 " st/st | 2    |
| 5    | 690201042 | Hydraulic hose 500mm 1/4 " st/st  | 1    |
| 6    | 690200040 | Cylinder 50/30x155mm ø20/ø20      | 5    |
| 6a   | 690200045 | Gasket set 50/30                  |      |
| 7    | 690203006 | Fitting, 90angle 10-3/8" Bsp      | 10   |
| 8    | 690201015 | Hydraulic hose 710mm 1/4 " st/st  | 3    |
| 9    | 690201068 | Hydraulic hose 1950mm 1/4 " st/st | 4    |
| 10   | 690203015 | Fitting T10                       | 8    |
| 11   | 690201237 | Hydraulic hose 2800mm 1/4 " st/st | 2    |
| 12   | 690201052 | Hydraulic hose 935mm 1/4 " st/st  | 2    |
| 13   | 690201021 | Hydraulic hose 2300mm 1/4 " st/st | 2    |
| 14   | 690201060 | Hydraulic hose 3000mm 1/4 " st/st | 2    |
| 15   | 690207901 | Restrictor 1mm                    | 5    |



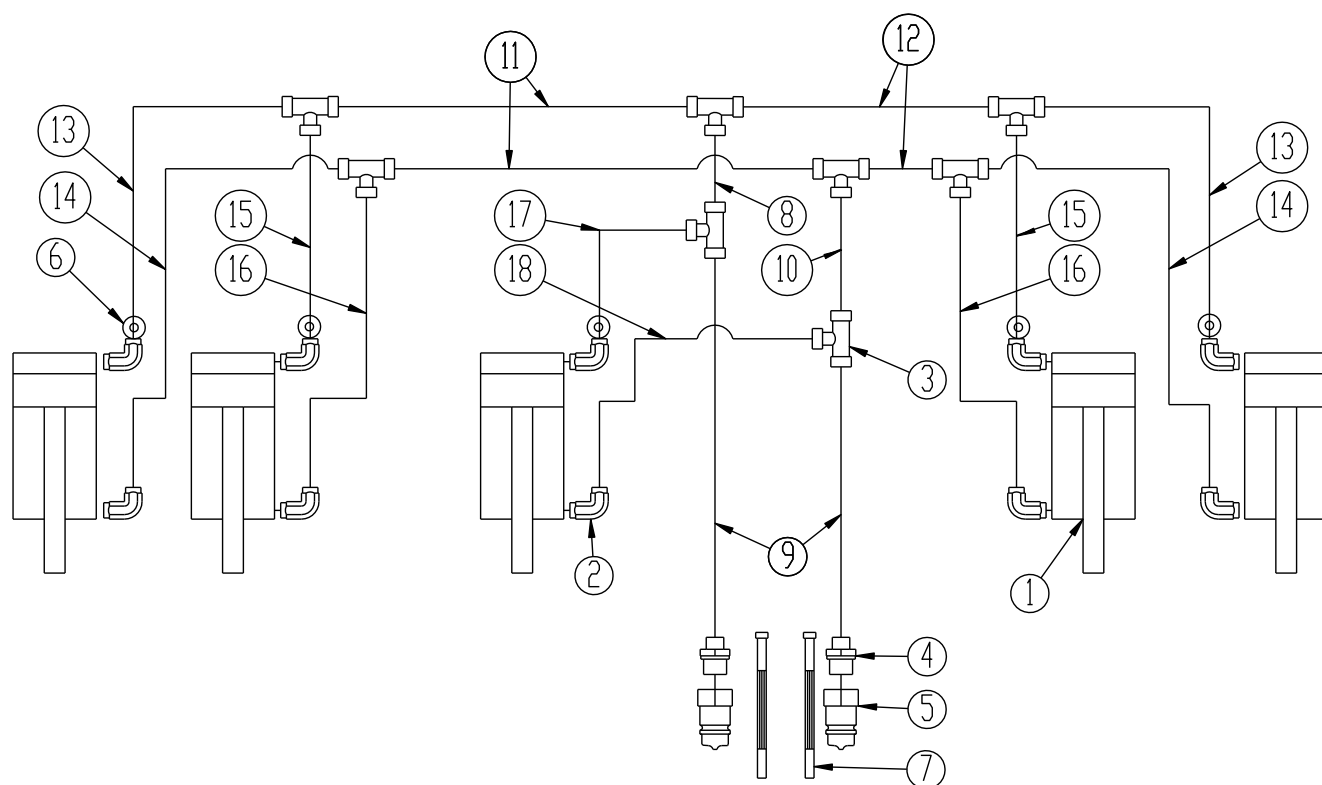
## Spring-Board 4,5 - 6,3m



| Pos. | Item no.  | Designation                                       | 4,5m | 6,3m |
|------|-----------|---------------------------------------------------|------|------|
| 1    | 690200160 | Cylinder 50/30x155 Ø20,25/Clevis                  | 3    | 3    |
| 1a   | 690200046 | Gasket set 50/30 Laizhou                          |      |      |
| 2    | 690203006 | Fitting, 90° 10-3/8" Bsp                          | 6    | 6    |
| 3    | 690203015 | Fitting T10                                       | 4    | 4    |
| 4    | 690203003 | Fitting straight 10- 1/2" BSP                     | 2    | 2    |
| 5    | 690203001 | Quick coupling, male E402 1/2"                    | 2    | 2    |
| 6    | 690201023 | Hydraulic hose 3160 mm 1/4" st/st (right section) | 2    |      |
| 6    | 690201048 | Hydraulic hose 3610 mm 1/4" st/st (right section) |      | 1    |
| 7    | 690201060 | Hydraulic hose 3000 mm 1/4" st/st (right section) | 1    |      |
| 7    | 690201044 | Hydraulic hose 3460 mm 1/4" st/st (right section) |      | 1    |
| 8    | 690201020 | Hydraulic hose 1625 mm 1/4" st/st                 | 1    |      |
| 8    | 690201032 | Hydraulikslange 1130 mm 1/4" st/st                |      | 1    |
| 9    | 690201005 | Hydraulic hose 3300 mm 1/4" st/st                 | 1    |      |
| 9    | 690201038 | Hydraulikslange 4000 mm 1/4" st/st                |      | 1    |
| 10   | 690201055 | Hydraulic hose 1010 mm 1/4" st/st                 | 1    |      |
| 10   | 690201051 | Hydraulikslange 250 mm 1/4" st/st                 |      | 1    |
| 11   |           | Straps, yellow                                    | 2    |      |
| 12   | 690207901 | Restrictor Ø1mm                                   | 3    |      |
| 13   | 690201020 | Hydraulic hose 1625 mm 1/4" st/st                 | 1    |      |
| 13   | 690201053 | Hydraulic hose 1260 mm 1/4" st/st                 |      | 1    |
| 14   | 690201005 | Hydraulic hose 3300 mm 1/4" st/st                 | 1    |      |
| 14   | 690201006 | Hydraulic hose 3800 mm 1/4" st/st                 |      | 1    |
| 15   | 690201055 | Hydraulic hose 1010 mm 1/4" st/st                 | 1    |      |
| 15   | 690201059 | Hydraulic hose 350 mm 1/4" st/st                  |      | 1    |
| 16   | 690201005 | Hydraulic hose 3300 mm 1/4" st/st (left section)  | 1    |      |
| 16   | 690201006 | Hydraulic hose 3800 mm 1/4" st/st (left section)  |      | 1    |
| 17   | 690201023 | Hydraulic hose 3160 mm 1/4" st/st (left section)  | 1    |      |
| 17   | 690201048 | Hydraulic hose 3610 mm 1/4" st/st (left section)  |      | 1    |

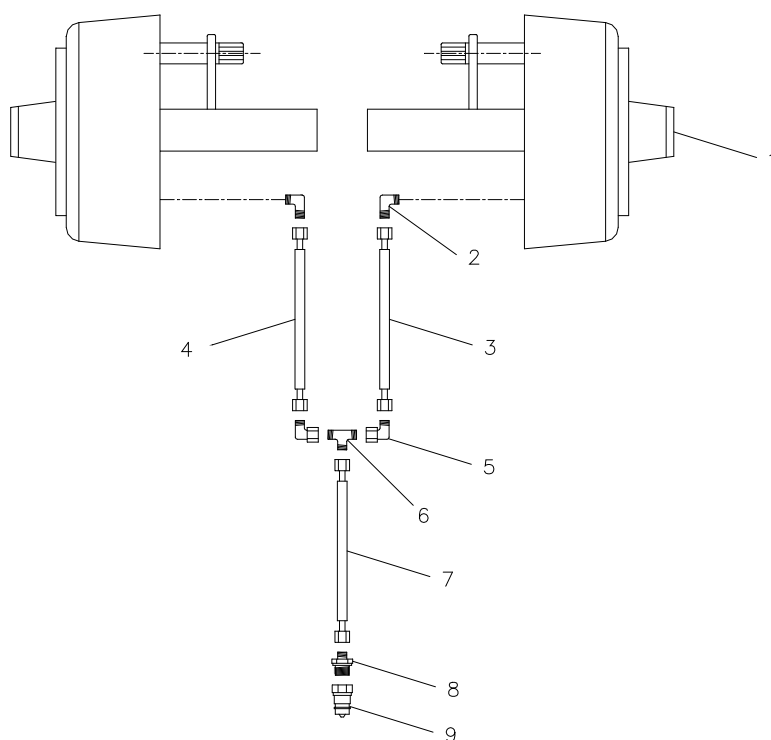


## Spring-Board 8,2m



| Pos. | Item no.  | Designation                       | 8,2m |
|------|-----------|-----------------------------------|------|
| 1    | 690200160 | Cylinder 50/30x155 Ø20,25/Clevis  | 5    |
| 1a   | 690200046 | Gasket set 50/30 Laizhou          |      |
| 2    | 690203006 | Fitting, 90° 10-3/8" Bsp          | 10   |
| 3    | 690203015 | Fitting T10                       | 8    |
| 4    | 690203003 | Fitting straight 10- 1/2" BSP     | 2    |
| 5    | 690203001 | Quick coupling, male E402 1/2"    | 2    |
| 6    | 690207901 | Restrictor ø1mm                   | 5    |
| 7    |           | Straps                            | 2    |
| 8    | 690201032 | Hydraulic hose 1130 mm 1/4" st/st | 1    |
| 9    | 690201047 | Hydraulic hose 4610 mm 1/4" st/st | 2    |
| 10   | 690201053 | Hydraulic hose 1260 mm 1/4" st/st | 1    |
| 11   | 690201063 | Hydraulic hose 1600 mm 1/4" st/st | 2    |
| 12   | 690201016 | Hydraulic hose 1830 mm 1/4" st/st | 2    |
| 13   | 690201060 | Hydraulic hose 3000 mm 1/4" st/st | 2    |
| 14   | 690201022 | Hydraulic hose 3140 mm 1/4" st/st | 2    |
| 15   | 690201009 | Hydraulic hose 355 mm 1/4" st/st  | 2    |
| 16   | 690201069 | Hydraulic hose 350 mm 1/4" st/st  | 2    |
| 17   | 690201051 | Hydraulic hose 250 mm 1/4" st/st  | 1    |
| 18   | 690201059 | Hydraulic hose 350 mm 1/4" st/st  | 1    |

## Hydraulic brakes

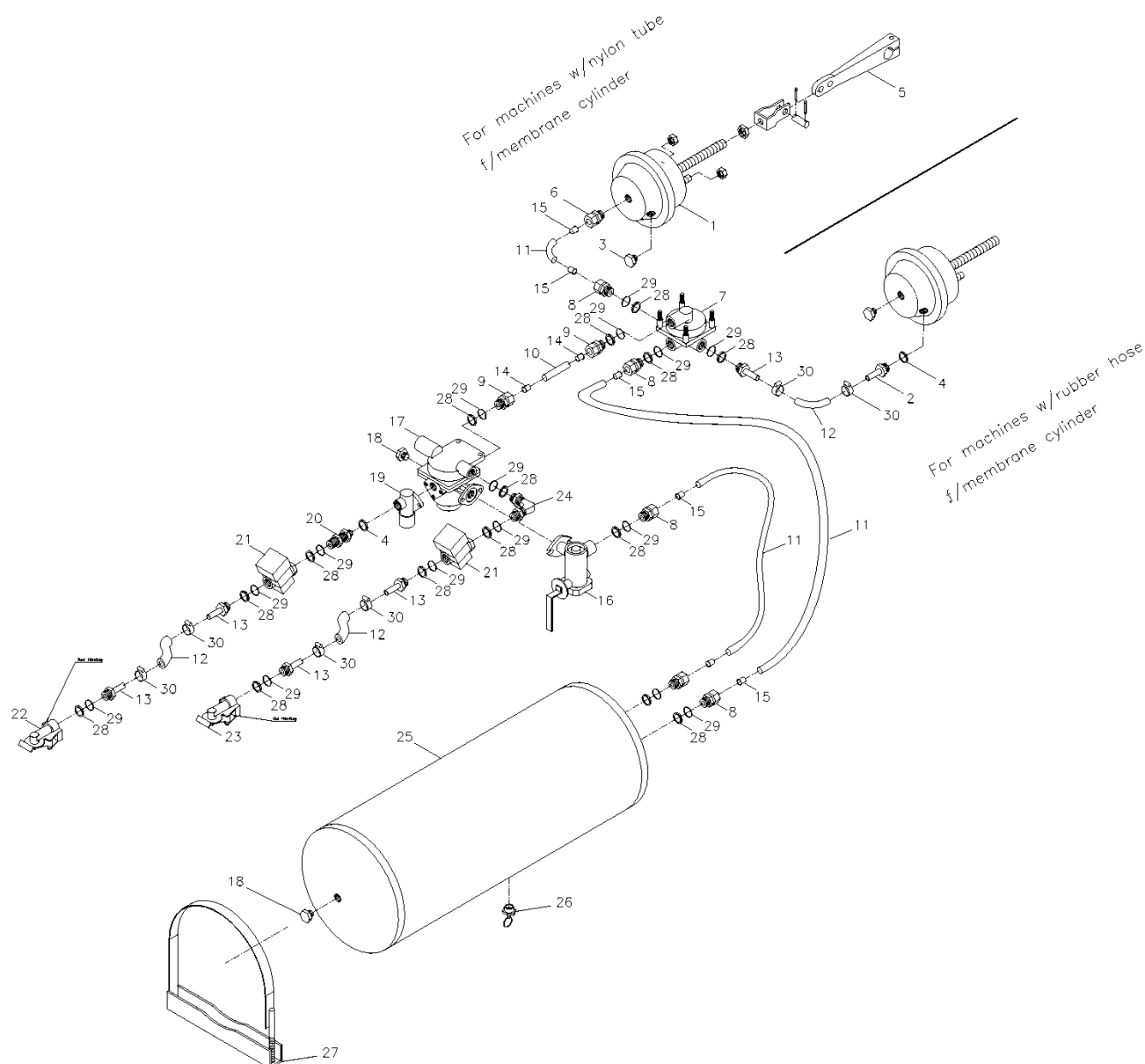
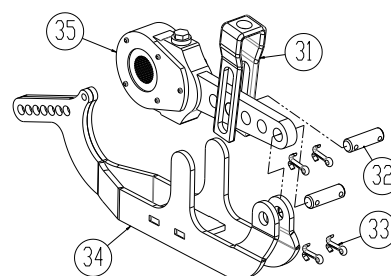


| Pos. | Item no.  | Designation                           | Pcs. |
|------|-----------|---------------------------------------|------|
| 1    |           | Look at pos. 4 page 24                | 2    |
| 2    | 690202921 | Fitting, 90angle 1/4"x 10 w/union nut | 2    |
| 3    | 690201018 | Hydraulic hose 1480mm 1/4" st/st      | 1    |
| 4    | 690201053 | Hydraulic hose 1260mm 1/4" st/st      | 1    |
| 5    | 690203016 | Fitting 90angle 10mm                  | 2    |
| 6    | 690203015 | Fitting T10                           | 1    |
| 7    | 690201012 | Hydraulic hose 6000mm 1/4" st/st      | 1    |
| 8    | 690203003 | Fitting, straight 10-1/2" BSP         | 2    |
| 9    | 690203013 | Quick coupling 1/2" female BSP ISO567 | 2    |



## Air brakes all models

New model brake arm and belongings  
See pos. 31 - 35



| Pos. | Item no.      | Designation                         | w/artificial tube<br>f/membrane cyl. | w/rubber hose<br>f/membrane cyl. |
|------|---------------|-------------------------------------|--------------------------------------|----------------------------------|
| 1    | 690190001     | Membrane cylinder 16"               | 2                                    | 2                                |
| 2    | 690190070     | Hose fitting M16x1,5 m/ Ø12 fitting | 0                                    | 2                                |
| 3    | 690190005     | Test fitting, straight M16x1,5      | 2                                    | 2                                |
| 4    | 690208102     | Bonded seal PP 45-12                | 1                                    | 3                                |
| 5    | 690190010     | Mounting set, short yoke            | 2                                    | 2                                |
| 6    | 690202930     | Fitting, straight M16x1,5, Ø15 hose | 2                                    | 0                                |
| 7    | 690190015     | Relay valve M22x1,5                 | 1                                    | 1                                |
| 8    | 690202941     | Fitting, straight M22x1,5, Ø15 hose | 6                                    | 4                                |
| 9    | 690202940     | Fitting, straight M22x1,5, Ø10 hose | 2                                    | 2                                |
| 10   | 690190080     | Artificial tube Ø10x1mm             | 1                                    | 1                                |
| 11   | 690190085     | Artificial tube Ø15x1,5mm           | 4                                    | 2                                |
| 12   | 690190105     | Hose Ø14,5x5mm                      | 2                                    | 4                                |
| 13   | 690190073     | Hose fitting M22x1,5, m/Ø12 fitting | 4                                    | 6                                |
| 14   | 690190090     | Support bushing for tube Ø10x1,5mm  | 2                                    | 2                                |
| 15   | 690190095     | Support bushing for tube Ø15x1,5mm  | 8                                    | 4                                |
| 16   | 690190020     | Brake power regulator M22x1,5       | 1                                    | 1                                |
| 17   | 690190025     | Trailer air brake valve M22x1,5     | 1                                    | 1                                |
| 18   | 690190026     | Plug                                | 2                                    | 2                                |
| 19   | 690190035     | Relief valve                        | 1                                    | 1                                |
| 20   | 690203420     | Fitting straight M16x1,5+M22x1,5    | 1                                    | 1                                |
| 21   | 690190040     | Filter M22x1,5                      | 2                                    | 2                                |
| 22   | 690190045     | Hose coupling M22x1,5 (red)         | 1                                    | 1                                |
| 23   | 690190046     | Hose coupling M22x1,5 (yellow)      | 1                                    | 1                                |
| 24   | 690190030     | V-Fitting M22x1,5                   | 1                                    | 1                                |
| 25   | 690190050     | Air receiver 40ltr                  | 1                                    | 1                                |
| 26   | 690190051     | Drainage valve                      | 1                                    | 1                                |
| 27   | 690190052     | Suspension for air receiver         | 2                                    | 2                                |
| 28   | 690190060     | Pressure ring M22x1,5               | 15                                   | 15                               |
| 29   | 690190065     | O-ring M22x1,5                      | 15                                   | 15                               |
| 30   | 690109305     | Clamp 15-24 mm                      | 4                                    | 8                                |
| 31   | 7297510       | Connection clamp, new model         |                                      | 2                                |
| 32   | 690190010-003 | Pin ø14x45                          |                                      | 4                                |
| 33   | 690190010-002 | Split pin ø4x40 galvanized          |                                      | 8                                |
| 34   | 7297582       | Brake arm adjustable, new model     |                                      | 2                                |
| 35   | 7297597       | Brake arm for handbrake, new model  |                                      | 2                                |







as it looks

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The design is subject to modification without notice.