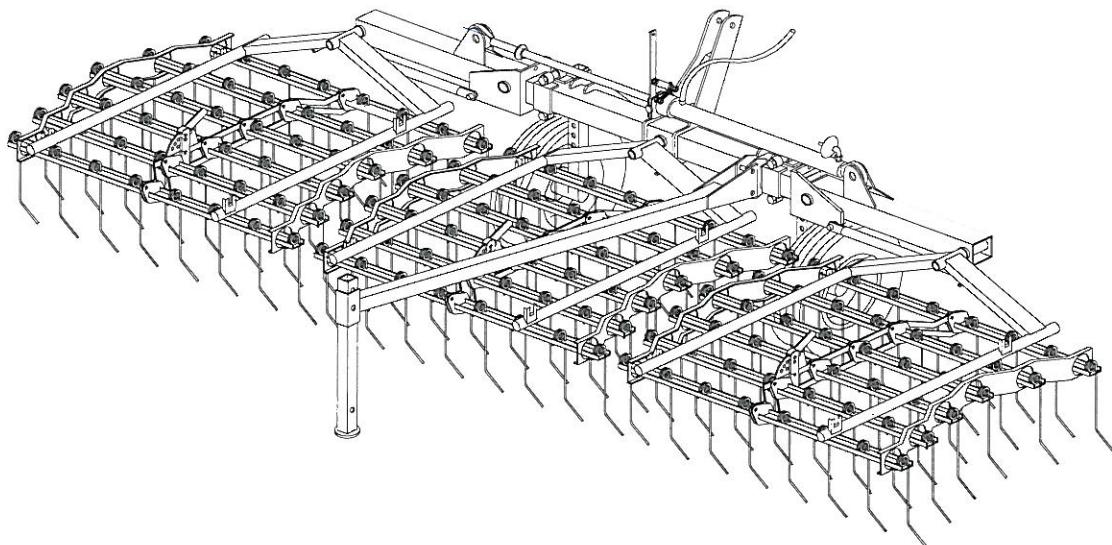




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# *Operating Instruction*

## *Spring tine harrow*



*working width 6,00m (3x2m)  
(narrow version)*

*Quality from HATZENBICHLER  
OUR ADVANTAGES ARE LYING IN THE DETAIL*

*2008*



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# *Contents for*

## ***Spring tine harrow***

1. Declaration of EU conformity
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## *EU-Declaration of Conformity*

We, Thomas Hatzenbichler & Sohn  
Fischering 2  
A-9433 St. Andrä  
Austria

Declare that the new machine described hereafter

Make, model: **Comb harrow** working width **m** \_\_\_\_\_

Serial number: \_\_\_\_\_

Conforms to the relevant essential health and safety requirements of the Directive 2006/42/EC.

- DIN EN 292-1, Safety of machines, tools and equipment
- DIN EN 292-2, Safety of machines, tools and equipment
- DIN EN 294, Safety of machines, tools and equipment
- DIN EN 708, Safety of agricultural machinery and soil tillage equipment
- ÖNORM V 5223, Safety of agricultural trailers

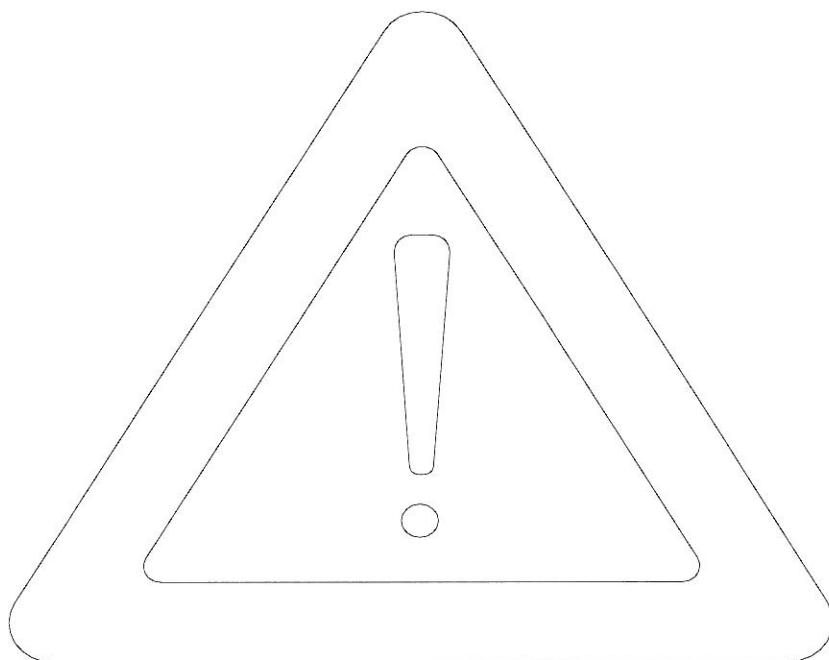
➤ \_\_\_\_\_

➤ \_\_\_\_\_

Date \_\_\_\_\_

Thomas HATZENBICHLER  
Director

## ATTENTION!!! very important!!!



### Safety instructions

- Do not remain in the working area of the implement
- It is prohibited to remain in the folding area of the implement during the process of folding – danger of being crushed
- Put a mechanical support to prevent the implement from lowering, if you do repair or maintenance work under the implement in the raised position on the tractor
- Riding on the implement is not allowed, either during transport or during work
- Lower the tractor linkage and machine when leaving the tractor seat (either in folded or unfolded position)
- Take extra care when crossing or driving on slopes

### 3. Harrow assembly instructions

- A. Fit the support wheels, support beam and parking stand, secure with pins
- B. Attach the tractor lower links and top link to the harrow, adjust the top link until the harrow frame is horizontal, adjust the tractor lower link stabilisers so the machine is held stable and rigid
- C. Fit the hydraulic hose coupling (hydraulic folding models only) into the tractor hydraulic service, remove the safety pin on the auto lock mechanism, pull the auto lock handle, operate the tractor spool valve to unfold wings, lower fully to the ground
- NOTE: Single acting hydraulic cylinders are fitted with an accumulator pressurised at 8-10 bar (116-145 psi) when in the working position**
- D. Fit the carrier forks for the harrow sections Ref. Fig. 2, securing with washer and roll pin.
- E. Hang the harrow beds onto the carrier fork with chains on the outside of the carrier tube using the last chain link and secure with safety pins
- F. Fit the stabiliser bars between adjoining carrier frames, adjust so the carrier frame is horizontal and secure with safety pins. Failure to fit the stabiliser bars will result in poor machine performance and damage to the machine
- G. Raise the tractor lift arms to lift the machine clear of the ground
- H. Lift up the rear support stand and depth wheels, secure with pins
- I. Operate the tractor spool valve to fold the wings to the upright transport position. The auto lock mechanism needs to be operated every time a hydraulic model is unfolded.
- J. Re-tighten all nuts and bolts after initial use

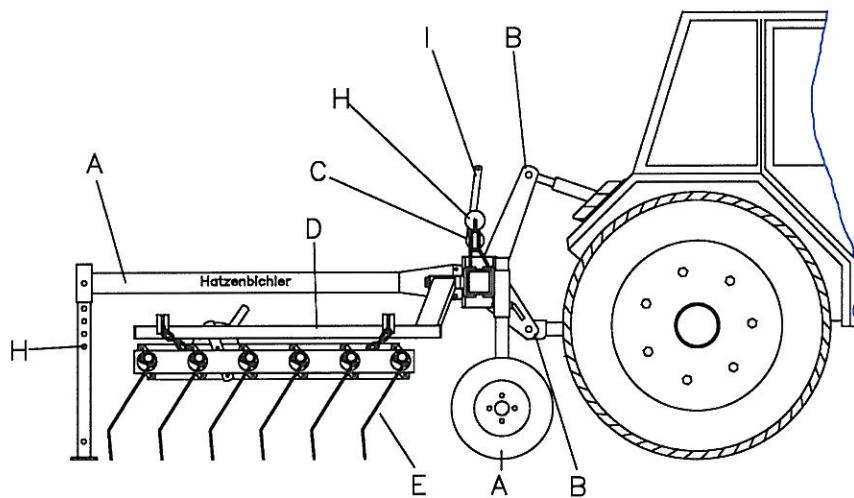
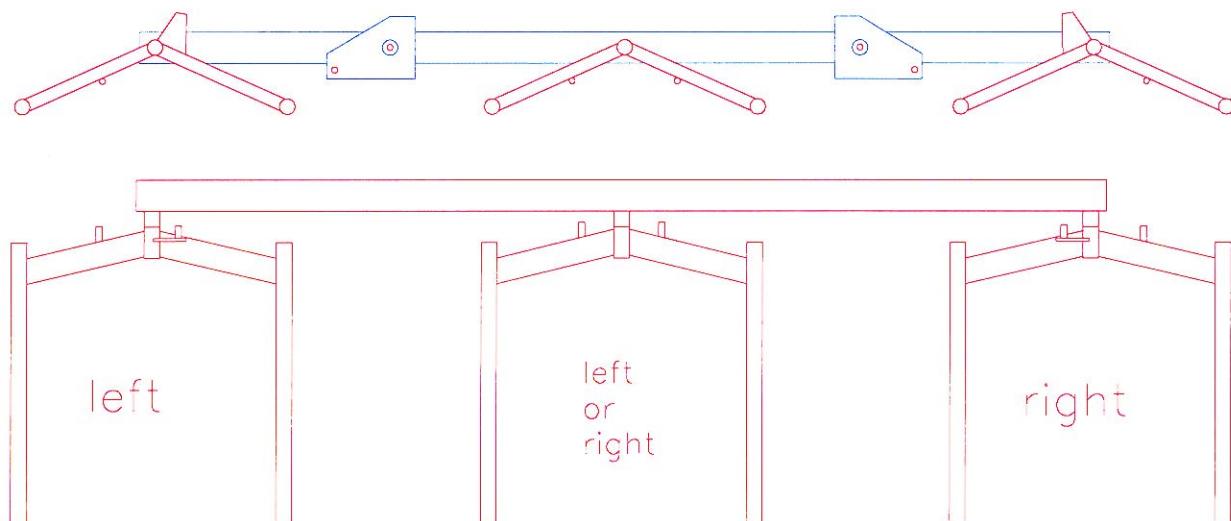


Fig. 1

## Placement of carrier forks

It is important that the carrier frames are fitted in the correct position, with left and right hand forks positioned as shown in Fig. 2

If the carrier forks are incorrectly mounted the stabiliser bars will not fit or operate correctly when the machine is folded into the transport position



Comb-harrow (working width 6m)

Fig. 2

## 4. Working Instructions

### 4.1) Basic harrow adjustments

#### Tine angle

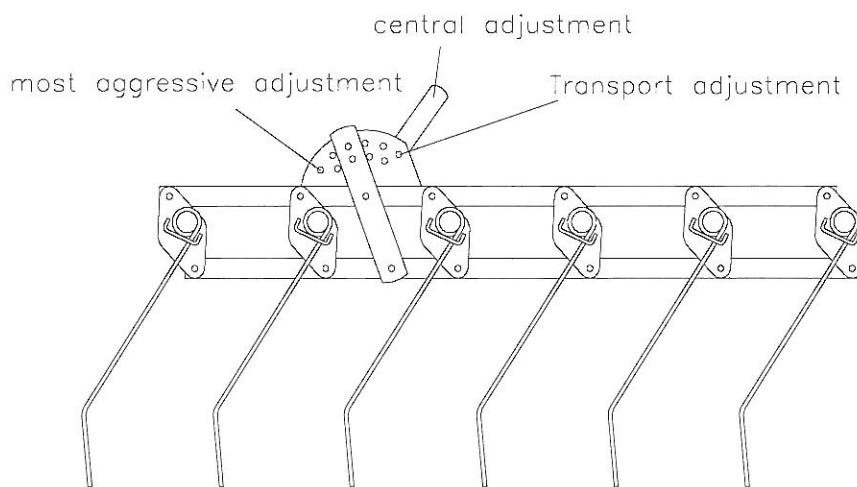


Fig. 3

1. Raise the machine clear of the ground
2. Remove the locking pin Ref. A Fig. 3 at the base of the adjusting handle
3. Operate the adjusting handle Ref. B Fig. 3 to increase / decrease the aggressiveness of the tines, there are ten possible settings. The flatter adjustment will produce less vigorous weeding than the steeper adjustment.
4. Carry out the above operation on each individual harrow bed section. (Ensure that each section is adjusted to the same setting)

#### Height setting

1. Park the machine on a flat area
2. Lower the machine until tine contact with the ground is made, adjust the top link to ensure the harrow bed is horizontal and tines are in even contact with the ground
3. Set the depth wheels using the locking pin to suit the required effect, this will depend on crop, soil type & moisture and operating conditions
4. The more aggressive tine setting required, the higher the wheels should be set



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## 4.2) Work in the field

Spring tine harrow weeders can be used in a wide range of crops, including grassland, maize, winter and spring cereals, winter and spring pulses, potatoes and some vegetables crops. Different weed control strategies will be needed for different weeds, with the effectiveness of the harrow being dependent on the individual weed species present and their growth stage. Weeding timing, the number of passes and the intensity of weeding needs to be specific to the weed type present, the crop and soil conditions

## 4.2) Work in the field (cont)

### 1. Use of the spring tine harrow:

- Mechanical weed control
- Aerating the soil structure
- Activates natural nitrogen
- To maintain optimum soil condition
- Stimulating crop tillering
- Scarifying the soil surface

### 2. Blind Harrowing:

- Use to flush the weed bank prior to drilling this will improve crop establishment by reducing weed competition. Use immediately before or after planting to break soil cap and remove germinating weeds
- For breaking soil caps, use the strongest pressure settings

### 3. Grassland:

- For effective grassland management, use to rip out moss and dead thatch, open up the soil surface, improve aeration and encourage new growth. Improve manure dispersal and incorporation
- A medium to strong pressure setting should be used for a single pass in grassland, to loosen weeds, remove dead thatch and scarify the ground surface. A second pass may be required depending on conditions

### 4. Maize:

- Use to germinate weed seed in stale seedbeds and perform weed strikes pre drilling. Harrow pre-emergence to 'blind harrow'. Spring harrowing when maize plants are between 10-30cm
- A less vigorous, flatter setting

### 5. Winter Cereals:

- Use to germinate weed seed in stale seedbeds and perform weed strikes pre drilling. Weed pre-emergence & 6-7 days after sowing. When soil conditions allow, cereal crops should be autumn weeded at the 2-leaf stage (growth stage



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13) onwards. Weeding in the spring should take place at the tillering stage (growth stage 22-30).

- A medium to strong pressure setting should be used for a single pass in cereals (to loosen weeds), followed by second pass at a lower pressure setting

#### 6. Spring Cereals:

- Use to germinate seeds in stale seedbeds and perform weed strikes pre drilling. Weed pre-emergence 6-7 days after sowing. Early spring weed at the 2<sup>nd</sup> leaf stage (growth stage 13) followed up with a second weeding at tillering stage (growth stage 22-30)
- A medium to strong pressure setting should be used for a single pass in cereals (to loosen weeds), followed by second pass at a lower pressure setting

#### 7. Field Beans:

- Use to germinate weed seed in stale seedbeds and perform weed strikes pre drilling. Early autumn or spring weeding at 8-leaf stage
- A light harrow pressure setting to minimise crop damage

#### 8. Vegetables & Root crops:

- Pre-drilling, stale seedbed weed strikes (may knock edges of beds). Post emergence in-row weeding. Brassicas pre-emergence to germinate weed seed in stale seedbeds and perform weed strikes, three weeding passes up to 6 weeks after planting, with a maximum of 10 days gap between weeding
- A low to medium setting

### 4.3) Safe use of the harrow

1. Fully lower the machine to the ground, ensure the carrier fork is pressurising the harrow bed via the wear pads. Do not allow the harrow bed to operate loose, this will cause premature wear on the carrier chains and damage the machine
2. The harrow is set up correctly when the tines vibrate vigorously from side to side as the harrow moves forward. This produces the most effective weeding & scarifying action.
3. Operating speed will vary dependant on the type of work and conditions, the harrow operates best between 6-12 km/h (3.5-7.5 m.p.h)
4. The machine should be lifted clear of the ground when turning
5. Do not reverse the tractor when the machine is in contact with the ground



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## 5. Maintenance

### 5.1) Daily

1. Check all frame nuts and bolts are tight
2. Check hydraulic hoses for damage
3. Check tine condition & tine bolts

### 5.2) Weekly

1. Lubricate all grease points on the machine
2. Maintain a maximum tyre pressure of 2.5 bar (35 psi) [16x6.50-8]
3. Check wheel nuts are tight

### 5.3) Storage

1. While out of use park on parking stands
2. Ensure that the tines are not under any pressure / loading and are free floating
3. Clean the machine thoroughly, and paint any bare metal
4. Check for any oil leaks on hydraulic hoses and rams
5. Grease hydraulic ram piston rod (if left unfolded)
6. Oil / grease all pivots
7. Check harrow section for ware and/or breakage

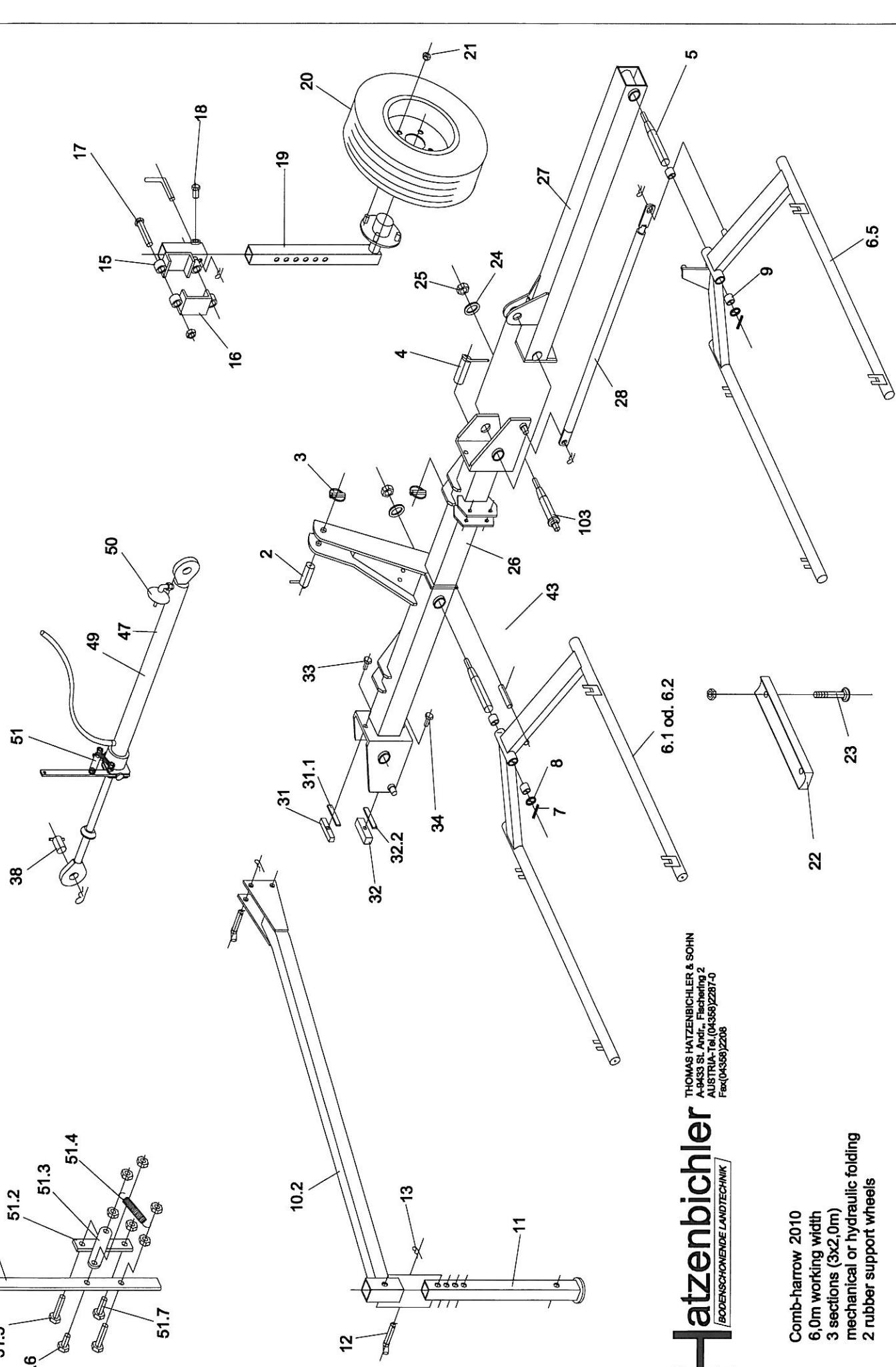
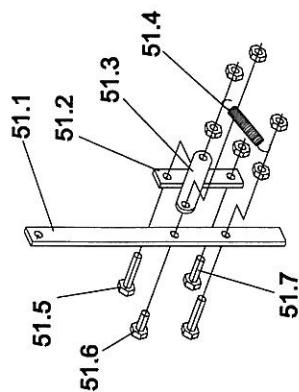


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*Spare part list  
for  
Harrow*

*for 6,00m (3x2m) working width  
(narrow version)*

**(51)** folding lock



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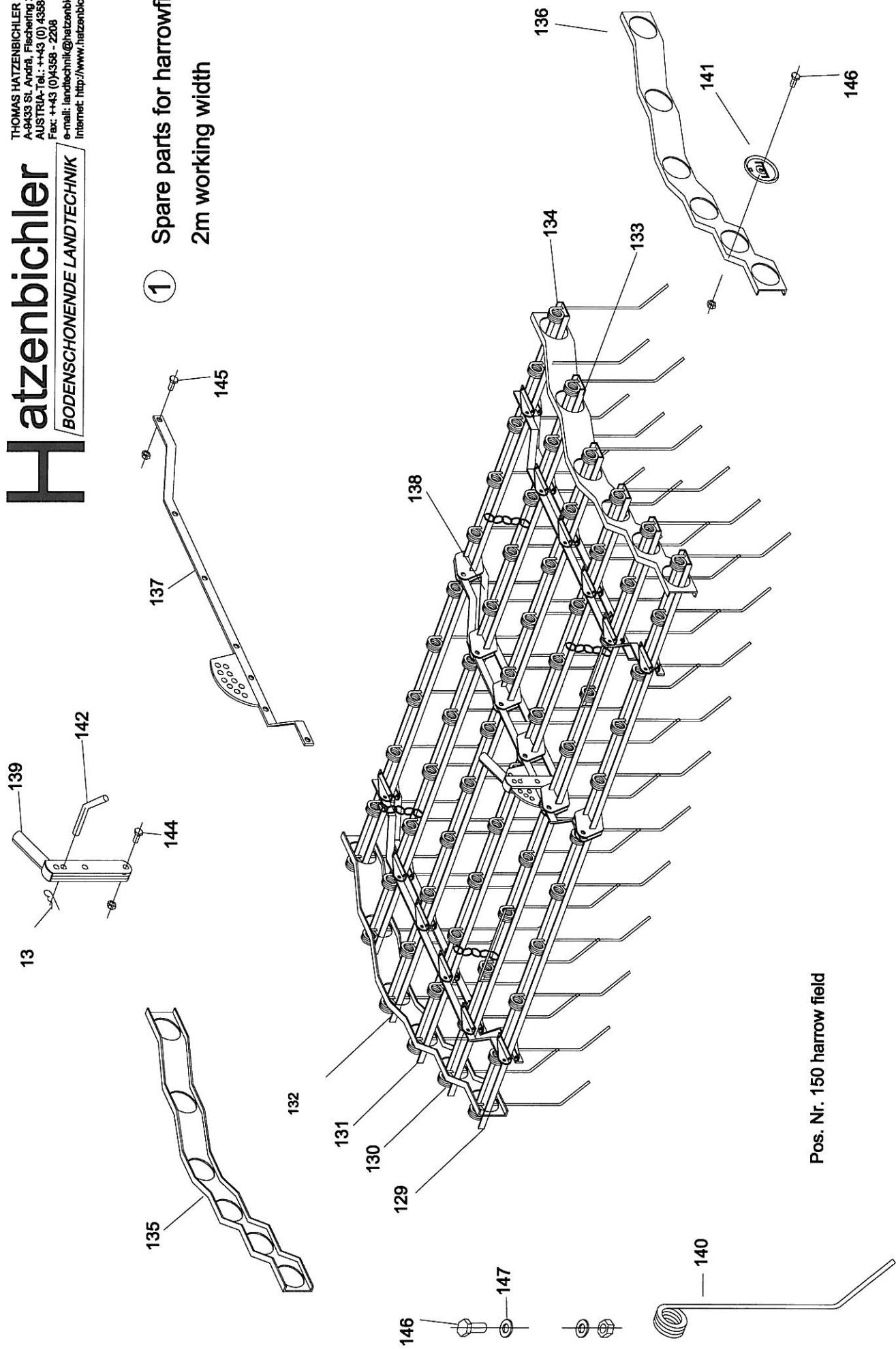
Comb-harrow 2010  
6,0m working width  
3 sections (3x2,0m)  
mechanical or hydraulic folding  
2 rubber support wheels

# Hatzenbichler

BODENSCHONENDE LANDTECHNIK

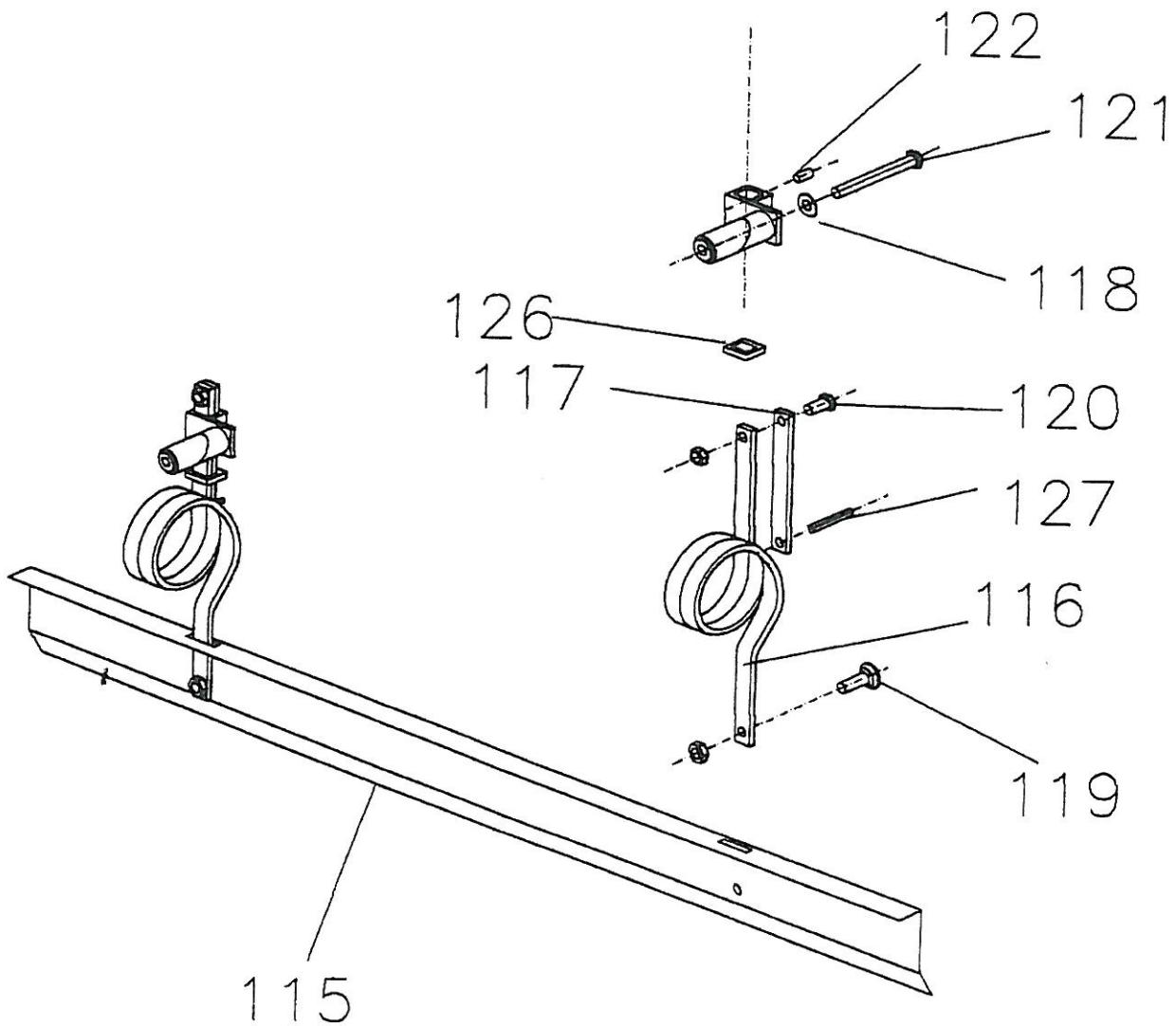
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① Spare parts for harrowfield  
2m working width





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Spare parts list for:

**COMB - HARROW 6m working width**

| Pos. Nr.: | Art. Nr.: | Description  |
|-----------|-----------|--|
| 1         | 93572     | centre part for 3,0m   |
| 2         | 9345      | top link pin d=25mm w. lynch pin d=10mm                                    |
| 3         | 930225    | lynch pin d=10mm   |
| 4         | 9346      | lower link pin d=28mm w. lynch pin   |
| 5         | 9327 H    | threaded pin - short (295mm), M20 w. nut                                   |
| 6         |           | CARRIER FOR HARROW SECTION   |
| 6,1       | 93062     | carrier for harrow section with pin - right                                |
| 6,2       | 93061     | carrier for harrow section with pin - left                                 |
| 6,3       | 93066     | carrier for harrow section with pin - above right                          |
| 6,4       | 93065     | carrier for harrow section with pin - above left                           |
| 6,5       | 93063     | carrier for harrow section with pin right, (tree - nurseries) - above left |
| 6,6       | 93064     | carrier for harrow section with pin left, (tree - nurseries) - above right |
| 6,7       | 93067     | carrier for harrow section with stop pin                                   |
| 7         | 930222    | roll pin 8x50  |
| 8         | 930223    | washer disc A35  |
| 9         | 9326      | glacier - bush 35x39x20  |
| 10        |           | CARRIER FOR SUPPORT  |
| 10,1      | 931610    | carrier for support - straight   |
| 10,2      | 93161     | carrier for support - bent   |
| 10,3      | 931612    | carrier for support - long f. 13,5m  |
| 11        | 9316      | support  |
| 12        | 93609     | pin d= 14x100 w. spring pin  |
| 13        | 930224    | spring pin d=4mm   |
| 14        | 9303      | flat iron 8x40   |
| 15        | 93202     | CLAMP FOR SUPPORT WHEEL COMPL.-EXTENDED                                    |
| 15,1      | 93200     | Clamp for support wheel  |
| 15,2      | 932001    | counter clamp  |
| 16        | 93201     | CLAMP FOR SUPPORT WHEEL COMPL.   |
| 16,1      | 9320111   | Clamp for support wheel  |
| 17        | 93021     | hex. bolt M16x110 w. nut   |
| 18        | 93022     | hex. bolt M12x25   |
| 19        | 9315      | wheel hub with rod f. rubber support wheel                                 |
| 20        |           | RUBBER SUPPORT WHEEL   |
| 20,1      | 9313      | rim with tyre 16x6,5-8   |
| 21        | 930226    | wheel nut M12  |
| 22        | 9340      | PVC wearing part w. nuts   |
| 23        | 9424TOR   | cup spare bolt 8x70 w. nut   |
| 24        | 930227    | washer A20   |
| 25        | 93023     | hex. nut M20   |
| 26        | 93573     | centre part for 6,0m   |
| 27        |           | SIDE ARM FOR 6,0m (3x2m) WORKING WIDTH                                     |
| 27,1      | 94177     | side arm f. 6,0m (3x2m) working width right                                |
| 27,2      | 9417700   | side arm f. 6,0m (3x2m) working width left                                 |



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Spare parts list for:

**COMB - HARROW 6m working width**

| Pos. Nr.: | Art. Nr.: | Description   |
|-----------|-----------|---|
| 28        | 941702    | folding rods for 6,0m (3x2m)                            |
| 29        | 93222     | folding pin threaded                                    |
| 30        | 94179     | folding rods for 6m and 9m rigid                        |
| 31        | 93610     | threaded piece (quadratic) 20x20                        |
| 31.1      | 91162     | additional shim 1.5mm                                   |
| 32        | 93611     | threaded piece (quadratic) 30x30                        |
| 32.1      | 91169     | additional shim 5mm                                     |
| 33        | 93024     | hex. bolt M12x30  |
| 34        | 93025     | hex. bolt M12x40  |
| 35        | 93500     | hydr. ram w. folding lock 4,5 and 5m                    |
| 36        | 9300      | FOLDING LOCK - COMPLETE f. 4,5 a. 5m on the ram         |
| 36.1      | 93000     | lever for folding lock f. 4,5 a. 5m on the ram 25x8x400 |
| 36.2      | 93001     | flat iron f. 4,5 a. 5m on the ram 25x8x115              |
| 36.3      | 93002     | flat iron f. 4,5 a. 5m on the ram 30x6x100              |
| 36.4      | 93003     | spring d=2mm, l=85mm                                    |
| 36.5      | 93026     | hex. bolt M8x50 w. 2 nuts                               |
| 36.6      | 9318S     | hex. bolt M8x25 w. nut                                  |
| 36.7      | 93027     | hex. bolt M8x35 w. nut                                  |
| 37        | 93205     | pressure container small                                |
| 38        | 93606     | pin d=25mm, l=65mm f. hydr. folding w. cotter 6,3x50    |
| 38.1      | 93605     | pin d=25mm, l=95mm f. hydr. folding w. cotter 6,3x50    |
| 39.1      | 935001    | MECHANICAL FOLDING FOR COMB HARROW 4,5m AND 5m          |
| 39.2      | 935011    | MECHANICAL FOLDING FOR COMB HARROW 6m                   |
| 39.3      | 935002    | mounting head f. mechanical folding                     |
| 39.4      | 93028     | hex. bolt M12x30 w. nut                                 |
| 39.5      | 935003    | outer tube f. mec. folding, 49/49/4 l=495mm             |
| 39.6      | 935004    | inner tube f. mec. folding, 30/30/3 l=410mm             |
| 39.7      | 935005    | fastening f. mec. folding, thread M16x70                |
| 39.8      | 935006    | holder for spring with tube mec. Folding                |
| 39.9      | 935007    | spring f. mec. folding l=377mm                          |
| 39.11     | 93029     | adjusting bolt M16x60 w. counter nut                    |
| 39.12     | 930210    | counter nut M16   |
| 39.13     | 935010    | pin d=25mm, l=75mm m. cotter 6,3x50                     |
| 39.14     | 93605     | pin d=25mm, l=95mm m. cotter 6,3x50                     |
| 39.15     | 935008    | holder for spring - mec. Folding                        |
| 40        | 93574     | centre part f. 5m working width                         |
| 41        |           | SIDE ARM FOR 5m WORKING WIDTH                           |
| 41.1      | 9417710   | side arm right f. 5m working width                      |
| 41.2      | 9417711   | side arm left f. 5m working width                       |
| 42        | 941806    | folding rods f. 5m                                      |
| 43        | 9302      | pin d=16mm with roll pin 5x28                           |
| 44        | 93575     | centre part f. 6m                                       |
| 45        |           | SIDE ARM FOR 6m WORKING WIDTH                           |
| 45.1      | 9417712   | side arm f. working width 6m right                      |
| 45.2      | 9417713   | side arm f. working width 6m left                       |



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Spare parts list for:

**COMB - HARROW 6m working width**

| Pos. Nr.: | Art. Nr.: | Description  |
|-----------|-----------|--|
| 46        | 941794    | folding rods f. 9m rigid and 12m                                 |
| 47        | 91200     | seal kit for hydr. ram (Pos.Nr.:49)                              |
| 48        | 9328      | threaded pin long (330mm) w. nut M20                             |
| 49        | 93501     | hydr. ram w. folding lock (6; 7,5; 8; 9 rigid)                   |
| 50        | 93206     | pressure container - big   |
| 51        | 9306      | FOLDING LOCK - COMPLETE f. 6m - 9m rigid on the ram              |
| 51.1      | 93100     | lever for folding lock f. 6m - 9m rigid on ram 32x10x400         |
| 51.2      | 93101     | flat iron f. 6m - 9m rigid on ram 32x20x145                      |
| 51.3      | 93102     | flat iron round f. 6m - 9m rigid on ram 30x6x135                 |
| 51.4      | 93003     | spring f. 6m - 9m rigid on ram d=2mm, l=85mm                     |
| 51.5      | 93026     | hex. bolt M8x50 w. 2 nuts  |
| 51.6      | 9318S     | hex. bolt M8x25 w. nut   |
| 51.7      | 93027     | hex. bolt M8x35 w. nut   |
| 52        | 93576     | centre part for 7,5m and 8m working width                        |
| 53        |           | SIDE ARM FOR 7,5m working width                                  |
| 53,1      | 9417714   | side arm f. 7,5m working width right                             |
| 53,2      | 941777    | side arm f. 7,5m working width left                              |
| 55        | 941793    | folding rods f. 7,5m to 9m rigid, 10,5m to 13,5m working width   |
| 56        | 93605     | pin d=25mm, l=95mm   |
| 57        |           | SIDE ARM FOR 8m working width                                    |
| 57,1      | 9417725   | side arm f. 8m working width left                                |
| 57,2      | 9417726   | side arm f. 8m working width right                               |
| 58        | 93301     | folding rods short f. 8m   |
| 59        | 93577     | centre part f. 9m working width, rigid                           |
| 60        |           | SIDE ARM FOR 9m working width, rigid                             |
| 60,1      | 941772    | side arm f. 9m working width right, rigid                        |
| 60,2      | 941771    | side arm f. 9m working width left, rigid                         |
| 61        | 93578     | centre part f. 9m working width, scissors folding                |
| 62        |           | SIDE ARM FOR 9m working width, SCISSORS FOLDING, inner part      |
| 62,1      | 941773    | side arm f. 9m working width, sciss. left (inner part)           |
| 62,2      | 941774    | side arm f. 9m working width, sciss. right (inner part)          |
| 63        |           | SIDE ARM FOR 9m working width, SCISSORS FOLDING, outer part      |
| 63,1      | 941775    | side arm f. 9m working width left, outer part, scissors folding  |
| 63,2      | 941776    | side arm f. 9m working width right, outer part, scissors folding |
| 64        | 93400     | folding rods - bent f. 9m scissors folding                       |
| 65        | 93607     | bolt w. safety device 30x200 w. thread M20                       |
| 66        | 93405     | holder for 2 way valve   |
| 67        | 934051    | HOLDER FOR 2 WAY VALVE   |
| 67,1      | 934052    | holder for manometer (single acting ram)                         |
| 67,2      | 934053    | holder for manometer (double acting ram)                         |
| 68        | 930212    | hex. bolt M12x30 w. nut  |
| 69        | 930214    | hex. bolt M12x30   |
| 70        | 934054    | 2 way valve with lock  |
| 71        |           | HYDR. RAM W. FOLDING LOCK (SCISS.)                               |
| 71,1      | 93502R    | hydr. ram w. folding lock (sciss.) right                         |
| 71,2      | 93502     | hydr. ram w. folding lock (sciss.) left                          |



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Spare parts list for:

**COMB - HARROW 6m working width**

| Pos. Nr.: | Art. Nr.: | Description  |
|-----------|-----------|--|
| 72        | 935041    | FOLDING LOCK 9-13.5m working width SCISSORS FOLDING COMPLETE |
| 72,1      | 935042    | lever for folding lock - bent, 9-13.5m sciss. on ram         |
| 72,3      | 935044    | flat iron 9-13,5m sciss. on ram 32/10/145                    |
| 72,4      | 935045    | spring 9-13,5m sciss. on ram d=2mm, l=85mm                   |
| 72,5      | 93026     | hex. bolt M8x50 w. 2 nuts                                    |
| 72,6      | 93027     | hex. bolt M8x35 w. nut                                       |
| 72,7      | 9318S     | hex. bolt M8x25 w. nut                                       |
| 73        | 93600     | CLAMP FOR SUPPORT WHEEL COMPL. - SCISSORS FOLDING            |
| 73,1      | 936001    | clamp for support wheel - scissors folding                   |
| 73,2      | 936002    | counter clamp - scissors folding                             |
| 74        | 93700     | rods f. folding the wheels - adjusting piece f. 9m           |
| 75        | 93701     | rods f. folding the wheels - inner part bent f. 9m           |
| 76        | 930213    | hex. bolt M12x40 w. nut                                      |
| 77        | 93706     | mounting head f. foldable support wheel 9m                   |
| 77,1      | 93707     | mounting head f. foldable support wheel 12m                  |
| 78        | 93800     | rods for scissors folding f. 9m                              |
| 79        | 93801     | flat iron piece - bent f. scissors folding                   |
| 80        | 93802     | flat iron piece 40/6/200                                     |
| 81        | 930211    | hex. bolt M12x50 w. nut                                      |
| 82        | 930215    | hex. bolt M12x40 w. nut                                      |
| 83        | 930214    | hex. bolt M12x20   |
| 84        | 930216    | hex. bolt M12x40 w. nut                                      |
| 85        | 93579     | centre part f. 10,5m working width                           |
| 86        |           | SIDE ARM FOR 10,5m working width INNER PART                  |
| 86,1      | 9417715   | side arm f. 10,5m working width left, inner part             |
| 86,2      | 9417716   | side arm f. 10,5m working width right, inner part            |
| 87        |           | SIDE ARM FOR 10,5m working width OUTER PART                  |
| 87,1      | 9417717   | side arm f. 10,5m working width left, outer part             |
| 87,2      | 9417718   | side arm f. 10,5m working width right, outer part            |
| 88        | 93803     | rods for scissors folding f. 10,5m                           |
| 89        | 93302     | folding rods short f. 10,5m                                  |
| 90        | 93403     | folding rods - bent f. 10,5m                                 |
| 91        | 93151     | wheel hub with rod   |
| 92        |           | rim with tyre (18 x 8,5)                                     |
| 92,1      | 93133     | rubber support wheel w. rim 18x8,5-8                         |
| 92,2      | 93136     | wheel without rim 18x8,5-8                                   |
| 92,3      | 93137     | inner tube 18x8,5-8  |
| 92,4      | 93138     | rim f. rubber support wheel 18x8,5-8                         |
| 93        | 93702     | rods f. folding the wheels - inner part bent f. 10,5m        |
| 94        | 93703     | rods for folding the wheels, adjustment part 10,5m           |
| 95        | 935710    | centre part f.12m working width                              |
| 96        |           | SIDE ARM FOR 12m working width INNER PART                    |
| 96,1      | 9417719   | side arm f. 12m working width left, inner part               |
| 96,2      | 9417720   | side arm f. 12m working width right, inner part              |
| 97        |           | SIDE ARM FOR 12m working width OUTER PART                    |
| 97,1      | 9417721   | side arm f. 12m working width left, outer part               |



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Spare parts list for:

**COMB - HARROW 6m working width**

| Pos. Nr.: | Art. Nr.: | Description  |
|-----------|-----------|--|
| 97,2      | 9417722   | side arm f. 12m working width right, outer part        |
| 98        | 93304     | folding rods short f. 12m                              |
| 99        | 93704     | rods f. folding the wheels - inner part bent f.12m     |
| 100       | 93705     | rods f. folding the wheels, adjustment part f. 12m     |
| 101       | 93804     | rod for scissors folding f. 12m                        |
| 103       | 9417732   | folding pin, threaded with attachment for folding rods |
| 106       | 93900     | bracket for parallelogram behind                       |
| 107       |           | BRACKET FOR PARALLELOGRAM FRONT                        |
| 107,1     | 93901     | bracket for parallelogram front with pin right         |
| 107,2     | 93902     | bracket for parallelogram front with pin left          |
| 107,3     | 93903     | bracket for parallelogram with pin above right         |
| 107,4     | 93904     | bracket for parallelogram with pin above left          |
| 108       |           | SUPPORT FOR PARALLELOGRAM                              |
| 108,1     | 93905     | support for parallelogram short                        |
| 108,2     | 939051    | support for parallelogram long                         |
| 109       |           | HYDRAULIC RAM CYLINDER                                 |
| 109,1     | 93906     | hydraulic ram cylinder short                           |
| 109,2     | 939061    | hydraulic ram cylinder long                            |
| 110       | 9414      | glacier bush 20/23/15                                  |
| 111       | 93908     | distance tube 20/4, l=64mm                             |
| 112       | 930217    | hex bolt M12x100 with nut                              |
| 113       | 930218    | hex bolt M12x80 with nut                               |
| 114       | 93909     | manometer  |
| 115       |           | LEVELLING BAR  |
| 115,1     | 9353      | levelling bar 1,5m                                     |
| 115,2     | 9354      | levelling bar 2m                                       |
| 116       | 93931     | levelling bar spring                                   |
| 117       | 93932     | support for spring                                     |
| 118       | 93933     | clamp for spring                                       |
| 119       | 9424TOR   | cup square bolt M8x30 w. nut                           |
| 120       | 9316S     | hex. bolt M8x30 w. nut                                 |
| 121       | 930219    | hex. bolt M12x30                                       |
| 122       | 930220    | threaded piece   |
| 123       |           | SIDE ARM FOR 13,5m working width INNER PART            |
| 123,1     | 9417723   | side arm f. 13,5m working width left, inner part       |
| 123,2     | 9417724   | side arm f. 13,5m working width right, inner part      |
| 124       | 93805     | rods for scissors folding f. 13,5m                     |
| 125       | 93571     | centre part for 2m                                     |
| 126       | 93004     | roll pin   |
| 127       | 930221    | roll pin 6x25  |
| 128       | 93005     | flat iron bent   |
| 129       | 933016    | tine profile without tine 2,0m working width; 1.1      |
| 130       | 933116    | tine profile without tine 2,0m working width; 1.2      |
| 131       | 933216    | tine profile without tine 2,0m working width; 1.3      |



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Spare parts list for:

**COMB - HARROW 6m working width**

| Pos. Nr.: | Art. Nr.: | Description                                       |
|-----------|-----------|---|
| 132       | 933316    | tine profile without tine 2,0m working width; 1.4 |
| 133       | 933416    | tine profile without tine 2,0m working width; 1.4 |
| 134       | 933516    | tine profile without tine 2,0m working width; 1.4 |
| 135       | 93203     | side profile f. harrow field left                 |
| 136       | 932031    | side profile f. harrow field right                |
| 137       | 932013    | flat iron w. punch                                |
| 138       | 932113    | flat iron without punch                           |
| 139       | 9362      | lever f. harrow field                             |
| 140       |           | COMB HARROW TINE                                  |
| 140,1     | 9309380   | comb harrow tine 6mm, l=380mm                     |
| 140,2     | 9312      | comb harrow tine 7mm, l=450mm                     |
| 140,3     | 9310      | comb harrow tine 8mm, l=450mm                     |
| 140,4     | 9310STROH | comb harrow tine 8mm, straight "straw"            |
| 141       | 93204     | washer disc f. harrow field bearings              |
| 142       | 936011    | pin d=10mm, spring pin d=4mm                      |
| 143       | 936012    | spring pin d=4mm                                  |
| 144       | 930228    | hex. bolt M10x35 w. nut                           |
| 145       | 930229    | hex. bolt M10x30 w. nut                           |
| 146       | 9309S     | hex. bolt M8x25 w. disc a. nut                    |
| 147       | 930230    | washer disc A8                                    |
| 148       |           | HARROW FIELD EXTENSION LEFT                       |
| 148,1     | 93081     | harrow field extension left without tine          |
| 148,2     | 930810    | harrow field extension left, 6mm tine             |
| 148,3     | 930812    | harrow field extension left, 7mm tine             |
| 148,4     | 930814    | harrow field extension left, 8mm tine             |
| 149       |           | HARROW FIELD EXTENSION RIGHT                      |
| 149,1     | 93082     | harrow field extension right without tine         |
| 149,2     | 930811    | harrow field extension right, 6mm tine            |
| 149,3     | 930813    | harrow field extension right, 7mm tine            |
| 149,4     | 930815    | harrow field extension right, 8mm tine            |
| 150       |           | HARROW FIELD COMPLETE                             |
| 150,7     | 9307      | harrow field 2,0m, 6mm tine                       |
| 150,8     | 9338      | harrow field 2,0m, 7mm tine                       |
| 150,9     | 9308      | harrow field 2,0m, 8mm tine                       |
| 151       |           | CHAIN FOR HARROW FIELD                            |
| 151,1     | 932020    | chain for harrow field 9 chain links              |
| 151,2     | 932021    | chain for harrow field 7 chain links              |