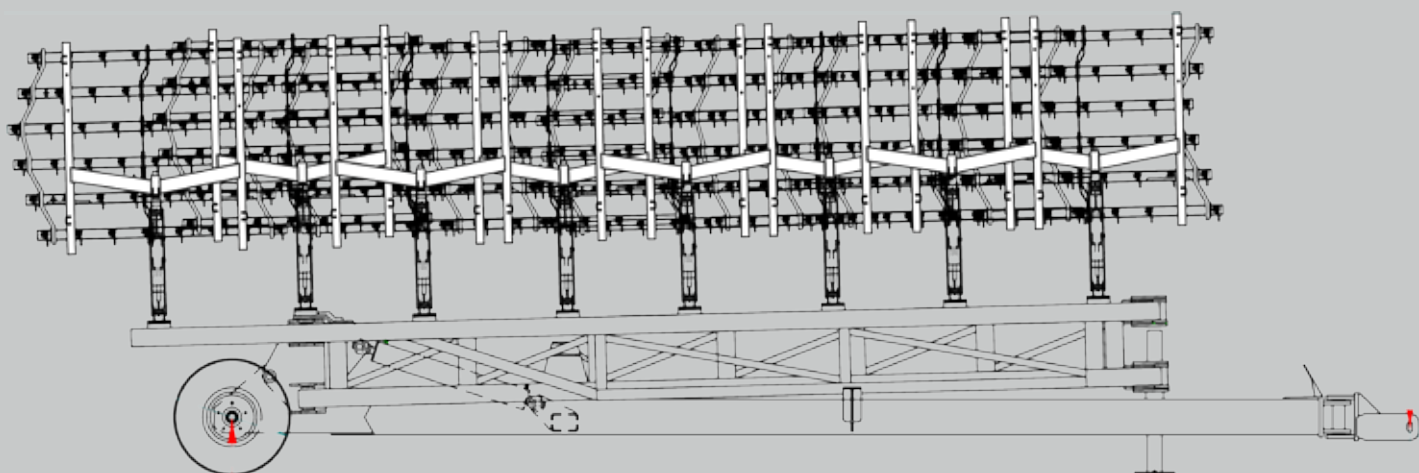




Manual and spare parts catalogue

Pull type harrow 15m, 18m, 24m



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2014



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EG Declaration of Conformity

The manufacturer: **Thomas Hatzenbichler**
Agro-Technik GmbH
Fischering 2
A-9433 St. Andrä
Phone: +43 (0) 4358/2287

declares that the following product:

Product: Pull type Harrow

Working width _____

Serial number: _____

Year of building _____

all relevant provisions of the Machinery Directive (2006/42/EC).

To properly implement the EG directives specified in the safety and health requirements of the following standards and / or specifications have been used.

DIN EN ISO 4254-1 Agricultural machinery - Safety - Part 1: General requirements

DIN EN ISO 12100 Safety of machinery - Basic concepts -
Risk assessment and risk reduction

DIN EN 60204-1 Safety of machinery - Electrical equipment of machines Part 1:
General requirements

Fischering, 02.04.2014
Date



Director

2nd. Safety information:



Before starting,
read the instruction manual
and note.



The transport of the ma-
chine is prohibited!



When attaching the
machine and during
operation of the hydraulic
folding ensure that no one
is in between.



Never reach into the
crushing area as long as
parts may move!



Stay clear of swinging ran-
ge folding machine parts!

Only operate in the hyd-
raulic lift drop zone if hy-
draulic cylinder is suppor-
ted by a machnical stay.



Beware of high
pressure fluid
escaping!



3rd. Intended Use

Dear Customer!

We are pleased to congratulate you on your buying decision and wish you much fun and success in working with this device.

Please read necessarily before using this product all the instructions in this manual carefully.

This will avoid, reduce risks, downtime and repair costs, increase reliability and service life of your machine.

With illustrations and information on technical data and dimensions in this manual the manufacturer reserves the right to make changes.

The machine is equipped with state of the art and the recognized security safety rules. Nevertheless, results from the use injury to the user or third parties. Take care of the machine may not cause.

Use the machine in perfect working condition for its intended purpose, safety and risk of danger with respect to user manual!

In particular, problems that can affect safety must be corrected immediately.

The machine may only be used maintained and repaired by individuals who are familiar with and aware of the danger.

Hatzenbichler cannot take responsibility for installation of modification of the machine effecting safety of man or machine.

The machine is designed for normal use for cultivation in the agricultural sector.
Any other or additional use is considered improper.

Shall not be liable for damages resulting from Hatzenbichler.
The risk is borne entirely by the user.

Intended use also includes compliance with the instruction manual and the adherence to the manufacturer's instructions for operation, maintenance and maintenance requirements.

4th. Accident prevention

- The General accident prevention regulations of each country are taken into account.
- When is arrival and uncoupling the machine to the hitch of the tractor injury.
- The unit must be secured to prevent accidental switching off when rolling.
- The device may only be used by anyone on the regulations for public transport streets know.
- The attached machine before hanging off the ground.



5th. Transport on public roads (main provisions)

- For transport on public roads set the stop valve on the cylinders to shut off this will ensure no accidentally opening of the machine.
- The axle load and total weight of the tractor must not be exceeded.
- The attachment must match films with warning signs or red and white diagonal bar (according to DIN, or relevant standards) are identified.
- Transport hazardous or dangerous parts must be covered and also with warning signs or sheets be identified.
- Warning signs or slides to max. be 1.50 m above the roadway while driving.
- Illumination devices of the tractor must not be obscured by the unit, otherwise illumination must be attached to the attachment also.
- The ability to steer the tractor may not be impaired or diminished.
- The device may only be used on the public highway by someone who knows the regulations fully.
- For transport on public roads with a max. 25 km/h.

6th. Warranty

Check unit immediately upon acceptance for possible shipping damage. Subsequent complaints from transit damage can not be accepted.

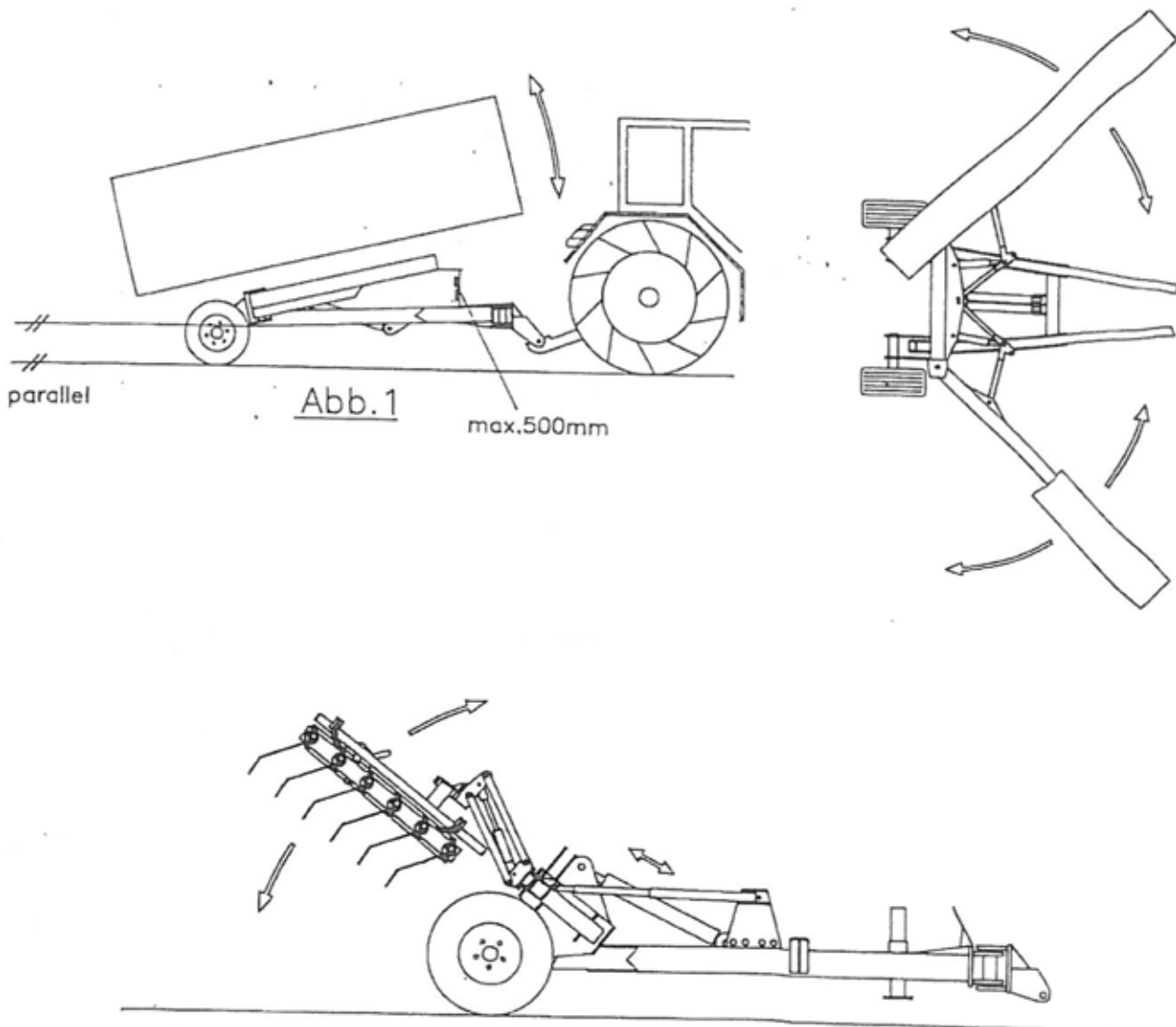
We give a one year warranty from date of shipment (your invoice or delivery note as proof of valid). This warranty is valid in the case of material or construction failure and does not cover parts that are damaged by normal-or excessive wear.

The warranty is void

- if damage is caused by external forces
- when an operation error
- if the specified KW/horsepower limit is exceeded
- if the device is changed without our consent, extended, or is equipped with foreign parts.

7th Attaching the Harrow on the tractor

- The air pressure in the tractor rear tyres should be sufficient for use
- Under difficult operating conditions wheel weights might be advantageous. See also operating instructions of the tractor manufacturer.
- Enhance tractor's front equipment with sufficient ballast to ensure the steering and braking ability.
- Tractor lift arms must be adjusted left and right at the same height.
- Attach Heavy Duty Grass Harrow to the 3-point hitch of the tractor.
- Connect the hydraulic hoses (for devices with hydraulic folding) connected to a double-acting valve.
Note when connecting to the tractor and machine hoses are depressurized.
- **COLLORS FOR HYDRAULIC CONNECTION CAP:**
 - White:** for hydraulic tine adjustment
 - Yellow or Blue:** for parallelogram adjustment
 - Red:** to fold side arms
 - Black:** for excavation
- Folding the machine. **Attention!** Only 500 mm lift, otherwise deformation of the 4-point brace





8th Operation of the Harrow:

The Hatzenbichler harrow is used for mechanical weed control for more than 30 years in almost all soil cultures, as for example corn , canola , soy , beans, peas, corn, grassland etc.

By vibrating tines the bottom crust is broken and the soil aerated again .

The water balance is regulated and the tilth is maintained.

The tine aggressiveness can be adjusted mechanical or hydraulical.

The tines are made oil-tempered hardened spring wire , therefore very durable and sturdy . Due to the vibration of the tines in conjunction with the traveling speed an extensive editing is achieved.

Due to its sheltered a spring coil to nick the crop peaks is prevented.

On each harrow bed are six rows tine bar mounted (10 settings see page before) .

Each harrow bed is with two wheel bearing is individually suspended on chains on the special form tubular frame . This best ground and extreme adaption the whole set. As additional equipment and a hydraulic leveler can be mounted .

The support wheels are infinitely adjustable in height by means of spindle adjustment .

The transport position is done hydraulically. The devices with shear retraction are equipped with 2 piece double acting cylinder (you need the tractor a double- acting control unit) .

9. Tips on using the harrow in different cultures

Winter weed:

Autumn	1. Work use	Blind harrowing (means harrowing before the seed starts growing) <u>Effect:</u> - Breaking the soil crust and give air to the soil - Destroy small weed
	2. Work use	With early sowing easier to use in 2 - to 3-leaf stage.
Spring	3. Work use	once the vegetation begins, medium setting <u>Effect:</u> - Soil loosening - stimulate plant growth - Enhancement of plant
	4. Work use	At 30-40cm grew in height <u>Effect:</u> - Late seedling combat - nutrient mobilization - Creation of balanced growth conditions
	5. Work use	with Hatzenbichler weed inter row cultivator (if inter row crop)

Summer weed:

1. Work use	Blind harrowing after seeding
2. Work use	Harrowing at the 3-leaf stage, medium setting
3. Work use	At 30-40cm grew in height
	In spring barley, it is particularly important in adolescence as possible efficiently to groom, as occurs in the spring stronger weed pressure.
4. Work use	with Hatzenbichler weed inter row cultivator (if inter row crop)

Corn:

1. Work use	Blind harrowing
2. Work use	at 8 to 15cm grew in height
	With a plant height of 8-15 cm, the harrow can be over the whole area Insert. The flexible zinc tools that the static Pressure of the corn plant to dodge, is a whole-area achieve weed control. Stops water is knitted in this growth stadium on warm days when the corn plants by the Solar heat softer and not bend it.
3. Work use	with Hatzenbichler corn inter row cultivator or rollstar cultivator

Sugarbeet:

1. Work use	Bling harrowing, gentle setting
2. Work use	3-4cm grew in height
3. Work use	with Hatzenbichler sugarbeet inter row cultivator



Raps:

Autumn	1. Work use	at ca. 20cm grew in height gentle seeting <u>Effect:</u> - Soil loosening - Improve nutrient availability - Destroy of the not yet visible autumn germinator
Spring	2. Work use	once the vegetation begins middle seeting <u>Effect:</u> - Soil loosening - branching conveying

Soy:

1. Work use	Blind harrowing, gentle setting
2. Work use	at 3-4 leaf stage, medium setting
3. Work use	depending on weed growth, strong setting
4. Work use	work shortly before the series concludes working with Hatzenbichler inter row cultivator

Faba bean:

1. Work use	Blind harrowing, strong setting
2. Work use	in the 8-leaf stage, medium setting
3. Work use	at 15-20cm grew in height <u>Effect:</u> - Loosening the soil before the series circuit of the plant - optimum soil aeration to harvest
4. Work use	with Hatzenbichler inter row cultivator

Pea:

1. Work use	Blind harrowing
2. Work use	8 leaf stage

Potatoes:

1. Work use	Blind harrowing, middle seeting
2. Work use	3-4 leaf stage, followed by earthing up with Hatzenbichler rollstar cultivator

Vegetable:

1. Work use	Seeds - plant height at 4-5cm, gentle setting Seedlings - about 14 days after planting, gentle setting
2. Work use	depending on weeds and soil conditions
3. Work use	with Hatzenbichler special vegetable inter row cultivator

Grassland:

Harrow in conjunction with side plates for leveling mole hills, cow dung, grinding of dung, liquid manure and aeration of the turf. Uniform processing even on uneven surfaces by adjusting the mobile field and the geferderten tines with high clearance - no clogging.



10th The small 1x1 of harrowing

The success of a Hatzenbichler Harrows for weed control is 30% about through the spilling of weeds in the bud stage and only about 70 % by a gentleman pulling the weeds. From this fact , various conditions for good success of the curry comb insert can be derived :

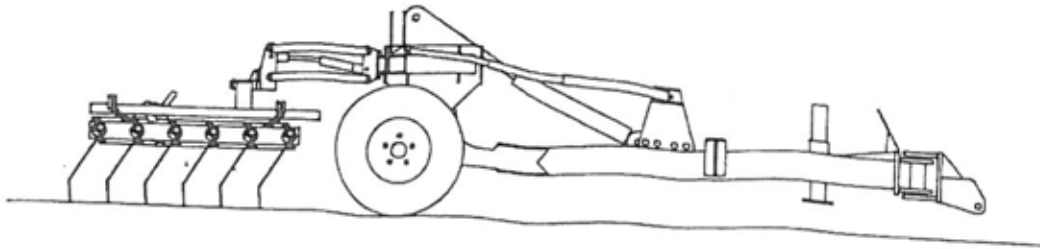
- The soil should be as even and free flowing . Why must especially on clay and silty Soils that are prone to crusting , agree to the PH- value in the upper crumb layer . On critical (hours) floors , for towing in the spring and the blind harrowing are relativ lightweight devices with large working widths of light tugs possible to track damage to minimize . When towing and reactive harrowing it depends on good ground following. devices with portable design or as many as possible , self- twistable individual fields , show it the best Results . Depending on soil conditions you have work with lower or higher tine pressure.
- The seedbed of harrowing areas surfaces must be ordered coarsely in the fall to the spring also to have still pourable floor.
- Is driven faster during grooming , the greater the power and the Control measures.

11th Hitting the right growth stage

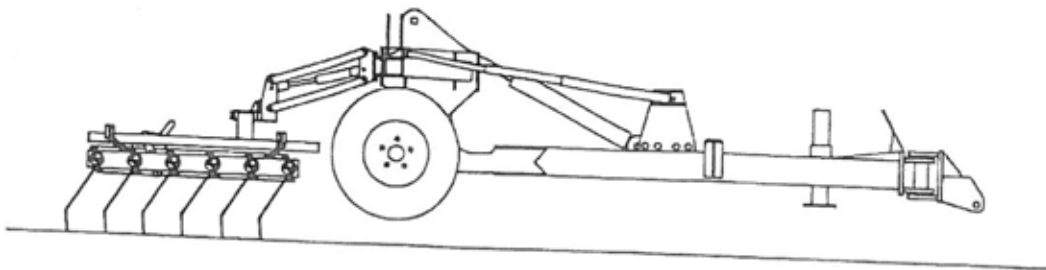
Specificities are effective measures that take place before the emergence of the cultures. Weed control must therefore be matched as closely as possible to the time of tillage and sowing.

- Wherever possible, the seed and the blind harrowing should be tried and true „Towing“ precede, to a whole generation of weeds in the top seedbed layer time to germinate to stimulate.
- The Blind harrowing (before the crop starts growing) often causes very good success. It can be up to the tips of the grain (stage EC to EC 10 07) according to.
- Especially in the bud stage or small-leaf stage of the weeds of the largest combat success (up achieved to 80%) by spillage or exposure.
- The time-optimal harrowing date (piercing of the weed seeds by the seed bed) can help with launched a window pane can be determined. When the first seed leaves appear, should the Harrow be used.
- In rye, winter barley and wheat in early seeded cereal rich rotations the autumn germinator windgrasses and field foxtail (Ackerfußschwanz) often make the most problems. In rye and winter barley harrowing success depends on a timely use before winter starts. In wheat, the harrow time is extended due to the later sowing and thus the weed pressure is lowered.
- Are the weeds reached via the cotyledon stage also in the small rosette stage, is the Fight harder: Here you have sharper (more tine pressure or steeper pitch of the tines) be harrowing because the weeds can hardly be torn out and survive even the Spillage.
- Is particularly effective harrowing on sunny and windy days late morning. exposed Weed seedlings dry up then have until the afternoon.

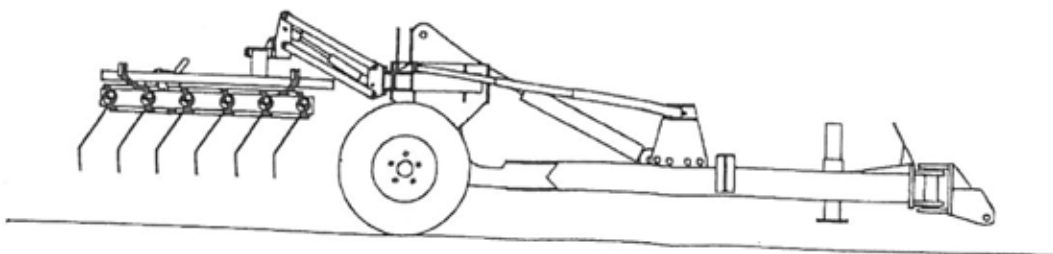
12th Setting work adjustments



→ **Use without pressure:** In the floating position of the tractor hydraulic the weight of the trailer does not rest on the harrow sections.



→ **Use with pressure:** If more pressure is applied on the harrow sections, the trailer will lift off the ground, therefore additional pressure is applied on the harrow sections.



→ By turning in the field always lift up the harrow sections

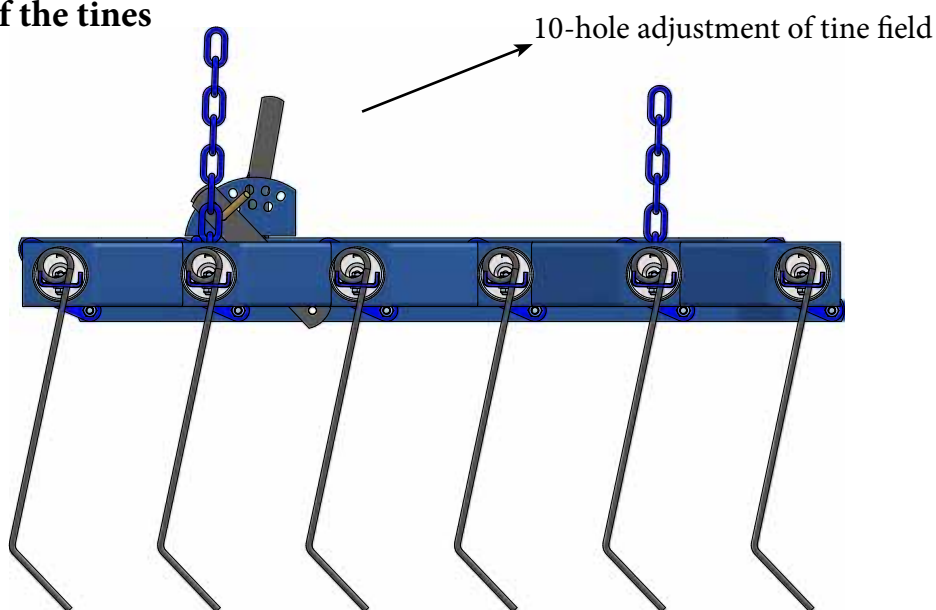
13th setting options for tine aggressiveness

The setting of the aggressiveness of tines are noted below, according to drawings by means of central adjustment lever.

There are 10 settings, shallow to be aggressive.

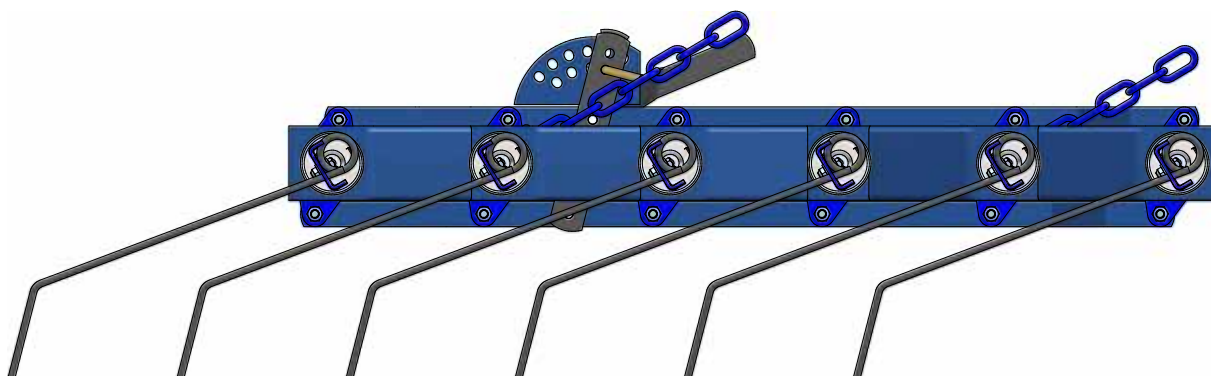
NOTE: Each harrow bed must be located in the via pin and clip hole.

Attack angle of the tines



Aggressive recruitment of tines

- for aggressive harrowing the soil



shallow setting

- for not aggressively working the soil



14th Care and Maintenance

- For maintenance and service work mount the machine on level and stable ground to prevent from rolling away.
- **After cleaning, all hydraulic lines for leaks and loose connections check (About every 50 hours, the hydraulic power packs and hoses checked).**
- **Check damage or wear. Any defects rectified immediately.**
- **Check nuts and bolts regularly for tightness and tighten if necessary. (On new units every 3 hours and again after 20 hours.)**
- The lubrication points on the joints and bearings greased regularly (approximately every 10 hours).
- **Do not use high pressure washers for cleaning bearings and hydraulic parts used.**
- During the winter, protect the equipment with environmentally friendly means against rust.
- **When taking machine off protect from weather and ensure no unnecessary pressure on machine part (tines, etc).**

15th Adjustment / operation

When coupling may ensure there are no people between the tractor and machine.

Attach the machine:

- The machine, depending on the equipment at the three-point
- Hydraulic lines connect
- Connect the plug for the lights and functioning
- Lift the machine.
- Remove the jack stand (if any)
- Fold sides (for transport) or fold out for the working position.

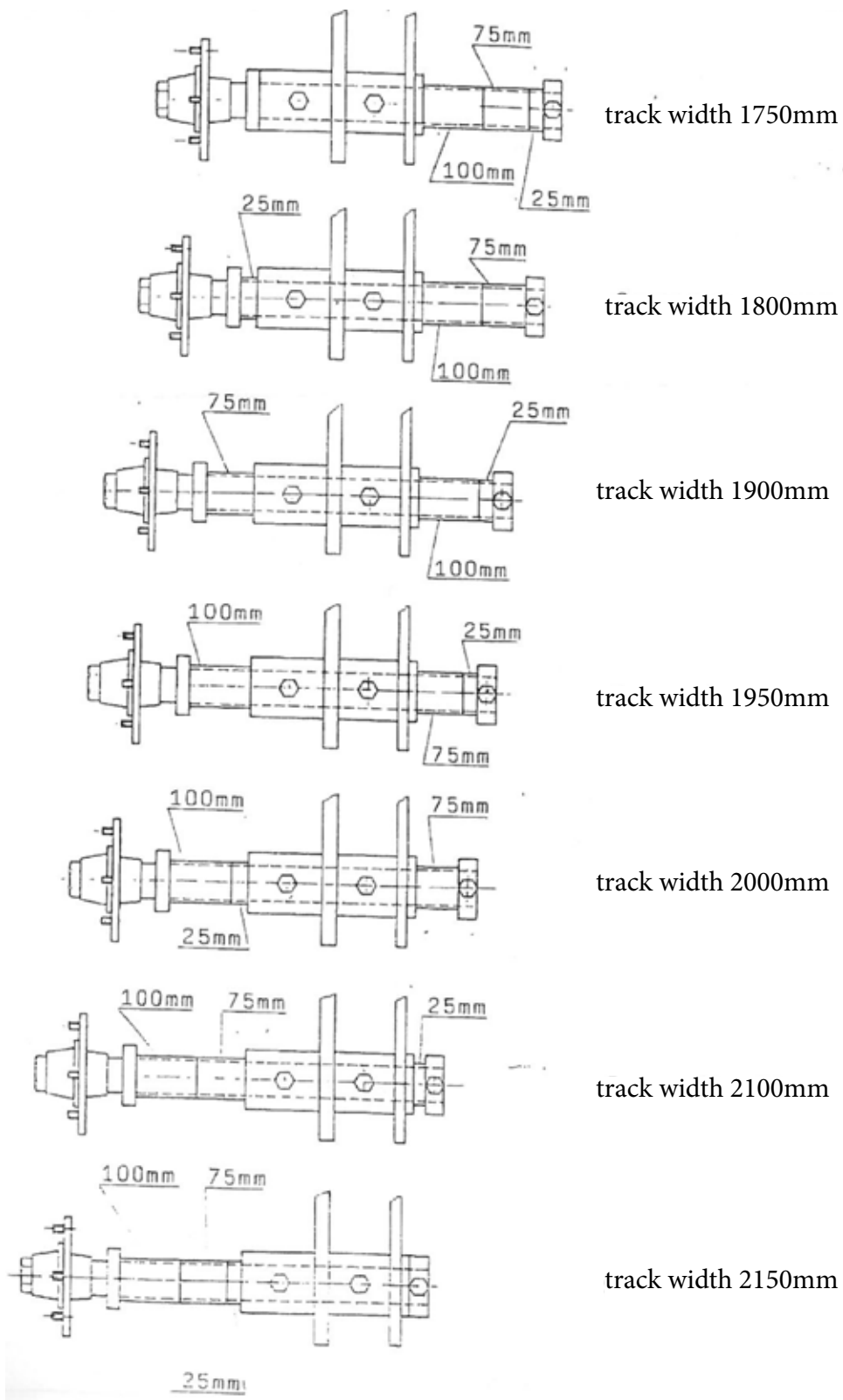
16th Technical details:

Working width:	15m, 18m, 24m
Weight approx. kg:	1900kg
Transport width:	2,24m
Transport high:	2,6m
HP:	150-200
Tine diameter:	6mm, 7mm oder 8mm
Tine lenght:	380mm up to 450mm

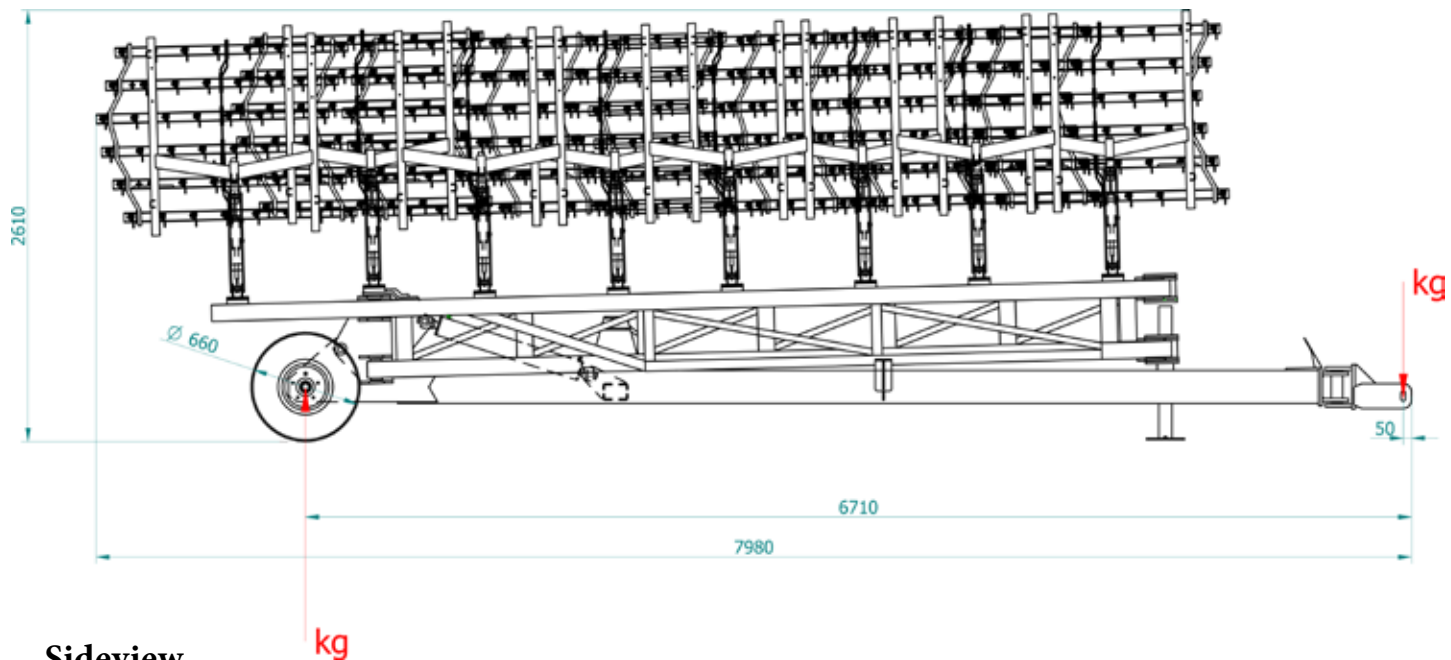
17th Adjustment of the track width:

When the wheels are lifted up the track width can be adjusted.

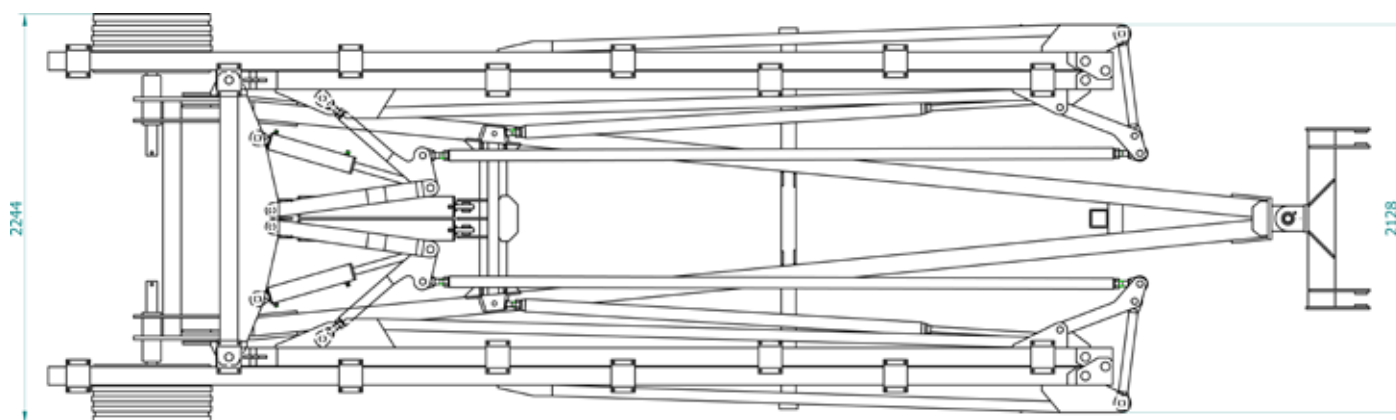
The track width can be between 1750mm and 2150mm. With the distance bushes (100mm, 75mm and 25mm) you can adjust all the track width below.



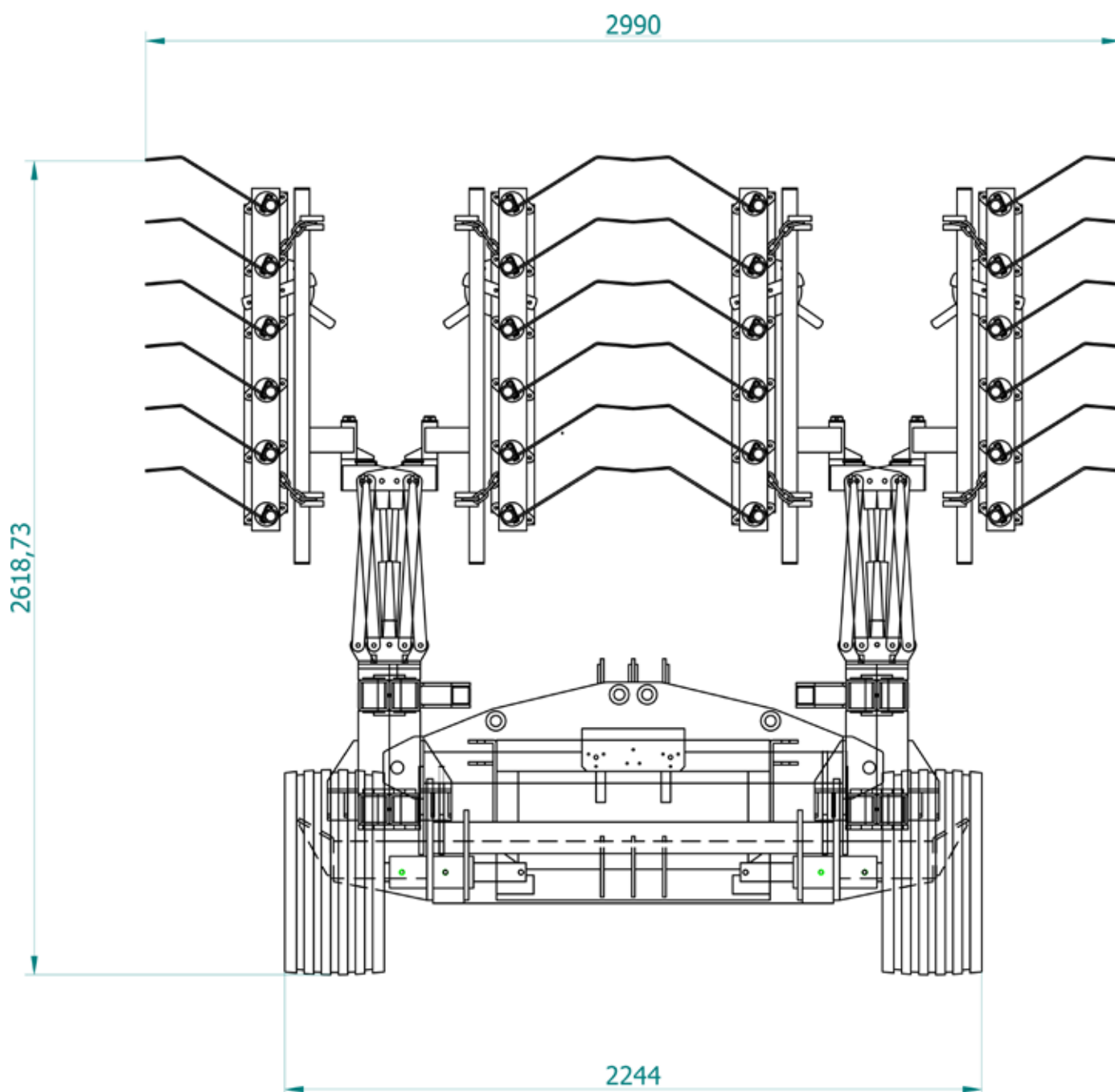
18th Views pull type harrow:



Sideview



Top view



Rear view

19th Connect the hydraulics:

Hydraulic connect only when the machine is hydraulic and unit pressure.

Throttling for all hydraulic movements controller before stop of the machine parts (minimise hydraulic speed).

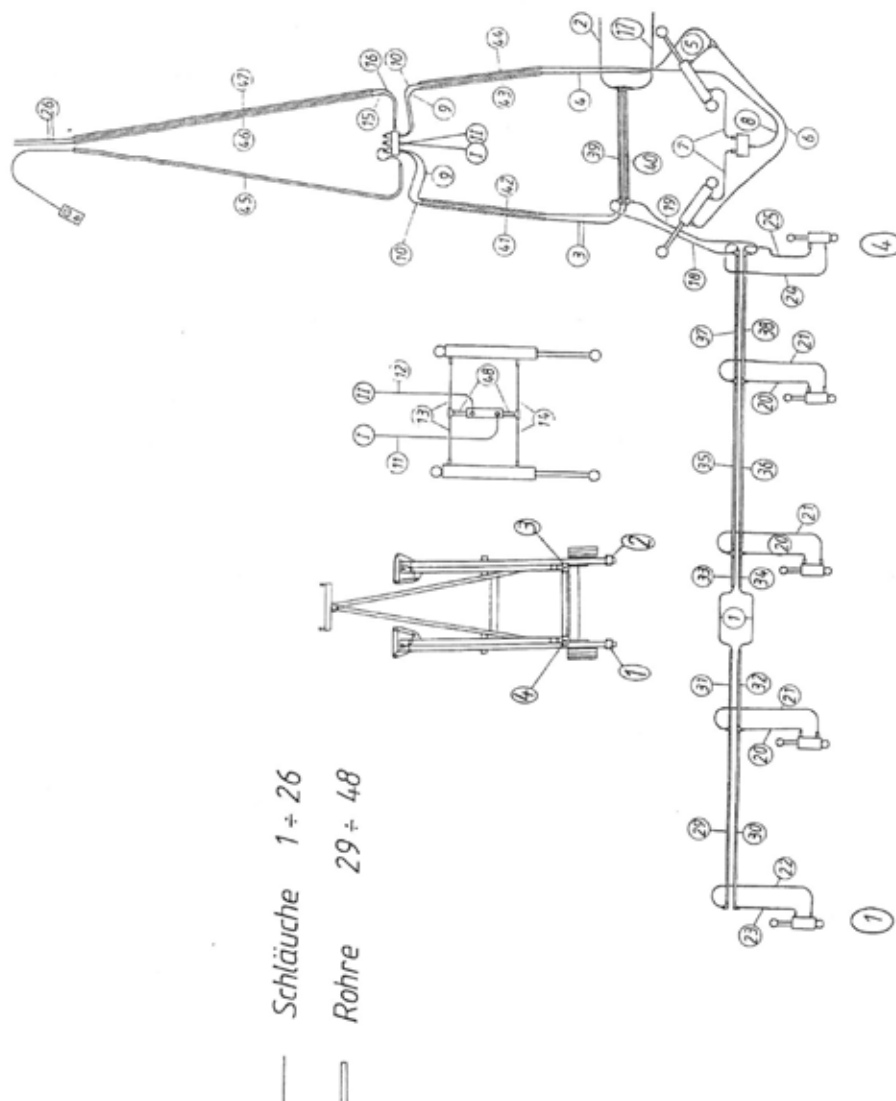
To set the device to fold it must be connected to a double-acting control device.

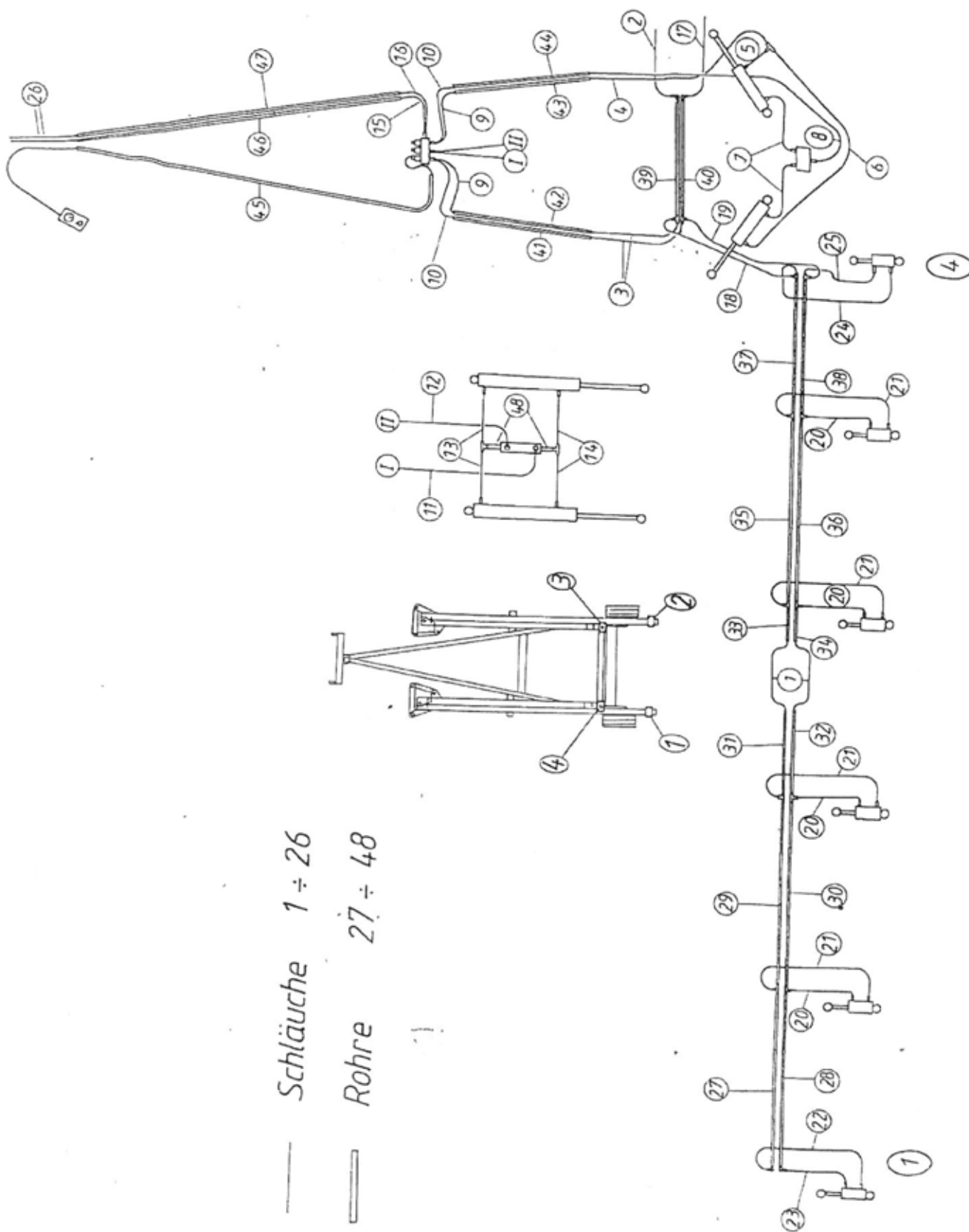
Fold only on solid level ground.

When folding movement of the side wings always keep in mind - Warning Danger of tipping!

The side wings fold up until all parts have reached the stop - with the shut-off valve secure side wings.

Hydraulic connection for 15m pull type harrow

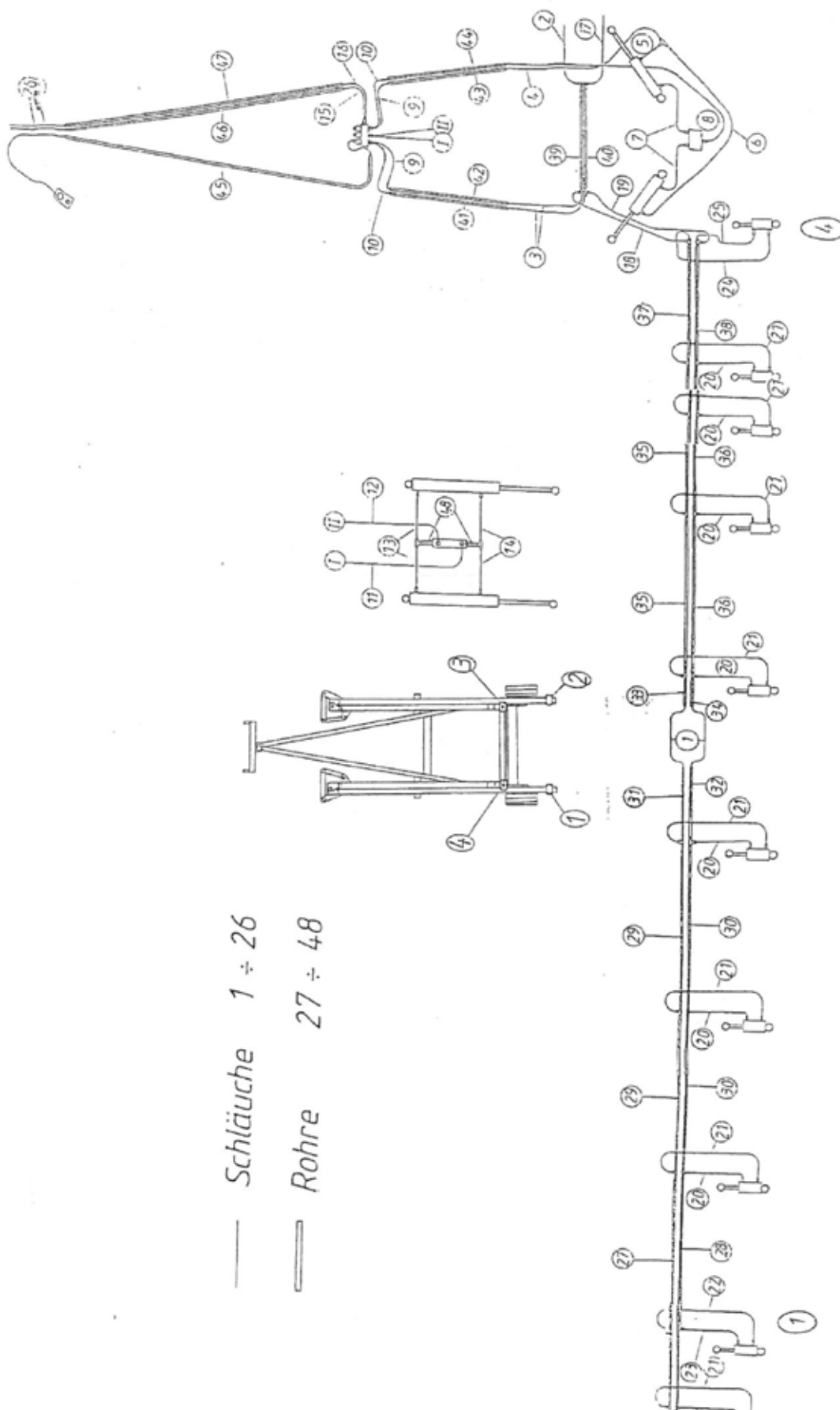




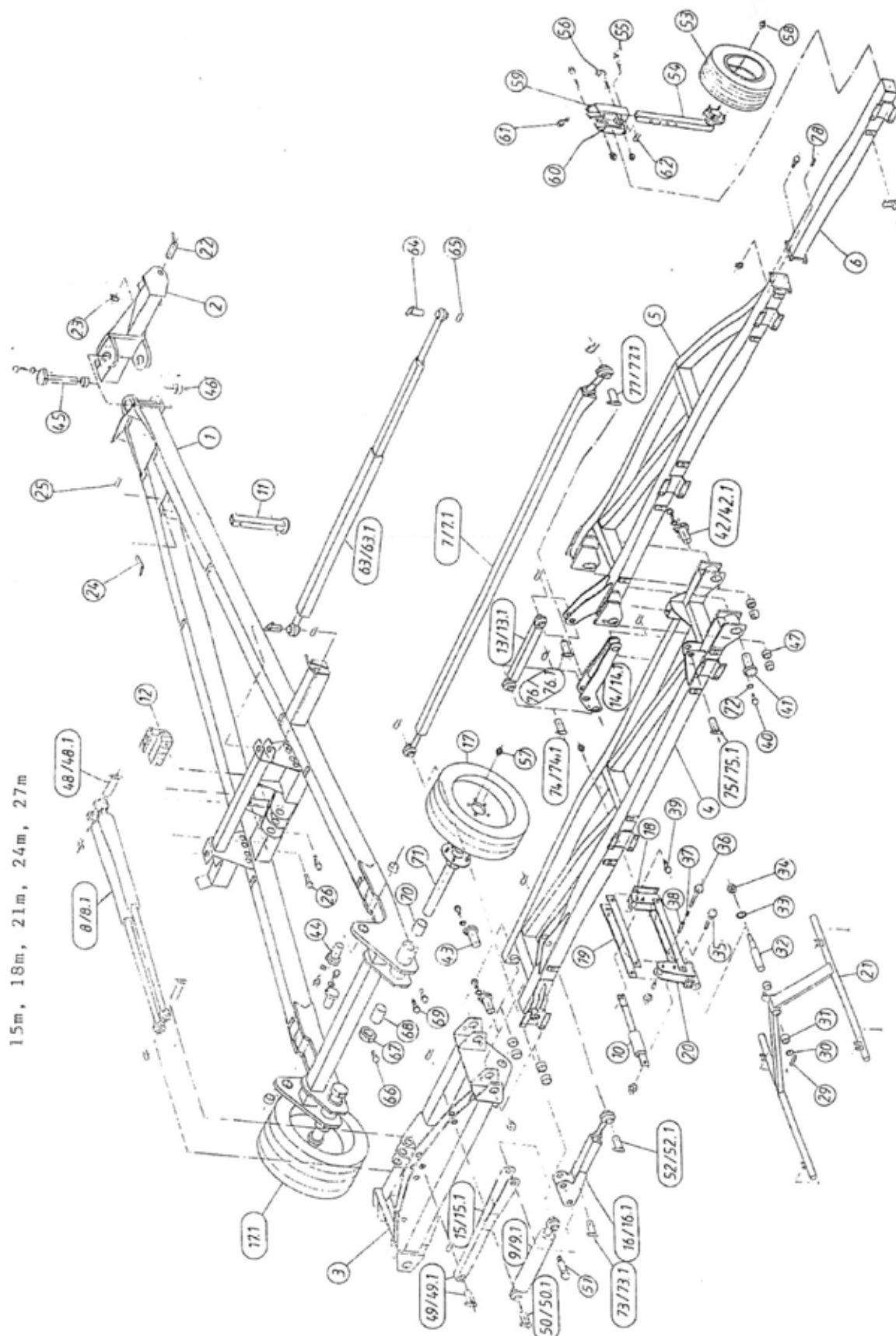
Hydraulic connection for 27m pull type harrow

— Schläuche 1 ÷ 26

— Rohre 27 ÷ 48



20TH SPARE PARTS FOR PULL TYPE HARROW

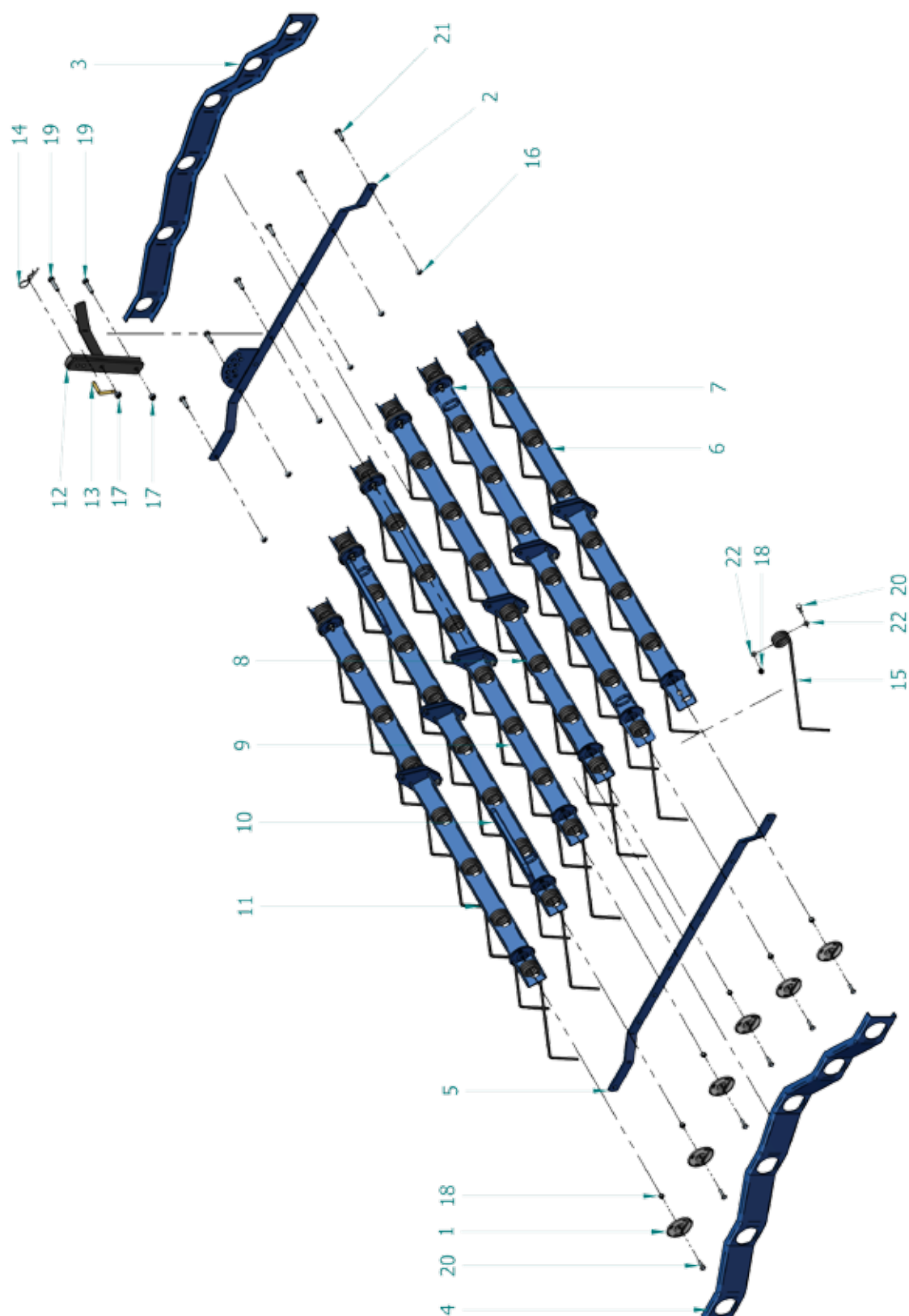


<u>POS. NO.</u>	<u>DESCRIPTION</u>
1	Chassis
2	2-point attachment
3	Main frame – center part
4	Main frame – side arm I left, right
5	Main frame – side arm II left, right
6	Extension part for comb harrow 18m
7	Support bar
7.1	Support bar for comb harrow 24m
8	Hydraulic ram cylinder
8.1	Hydraulic ram cylinder for comb harrow 24m
9	Hydraulic ram cylinder
9.1	Hydraulic ram cylinder for comb harrow 24m
10	Hydraulic ram cylinder
11	Stand
12	Solenoid
13	Folding arm
13.1	Folding arm for comb harrow 24m
14	Folding arm
14.1	Folding arm for comb harrow 24m
15	Folding lever
15.1	Folding lever for comb harrow 24m
16	Folding lever adjustable
16.1	Folding lever adjustable for comb harrow 24m
17	Wheel
17.1	Wheel for comb harrow 24m
18	Parallelogram front part
19	Parallelogram connection
20	Parallelogram rear part
21	Carrier for harrow bed
22	Lower link pin 28mm diameter
23	Lynch pin
24	Pin 14mm diameter
25	Spring cotter pin
26	Hex. Bolt M10x16
27	Hex. Bolt M8x10
28	Clamp
29	Roll pin 8x50
30	Washer
31	Glacier bush
32	Carrier pin
33	Washer
34	Hex. Nut M20
35	Hex. Bolt M12x80 with nut

<u>POS. No.</u>	<u>DESCRIPTION</u>
36	Hex. Bolt M12x100 with nut
37	Glacier bush
38	Distance bush
39	Hex. Bolt M12x30 with nut
40	Hex. Bolt M12x25
41	Pin diameter 40mm, 185mm long
42	Pin diameter 40mm, 145mm long
42.1	Pin diameter 40mm, 185mm long for comb harrow 24m
43	Pin diameter 40mm, 170mm long
44	Pin diameter 40mm, 100mm long
45	Pin diameter 40mm, 280mm long
46	Spring bush 50 X 40 X 60
47	Spring bush 50 X 40 X 40
48	Pin diameter 25mm 195mm long
48.1	Pin diameter 35mm, 220mm long for comb harrow 24m
49	Pin diameter 25mm, 115mm long
49.1	Pin diameter 35mm, 130mm long for comb harrow 24m
50	Pin diameter 25mm, 115mm long
50.1	Pin diameter 35mm, 130mm long for comb harrow 24m
51	Pin diameter 40mm with nut M36
52	Pin diameter 25mm, 115mm long
52.1	Pin diameter 35mm, 130mm long for comb harrow 24m
53	Wheel with rim
54	Wheel hub with rod
55	Pin diameter 14mm
56	Hex. Bolt M16x110 with nut
57	Hex. Nut M16
58	Hex. Nut M12
59	Holder for support wheel
60	Clamp
61	Hex. Bolt M12x20
62	Spring cotter pin
63	Support bar
63.1	Support bar for comb harrow 24m
64	Pin diameter 25mm, 95mm long
65	Spring cotter pin
66	Hex. Bolt M16x120
67	Ring
68	Distance bush
69	Hex. bolt M16x40
70	Distance bush
71	Axle
72	Spring washer
73	Pin diameter 25mm, 95mm long
73.1	Pin diameter 35mm, 130mm long for comb harrow 24m
74	Pin diameter 25mm, 95mm long
74.1	Pin diameter 35mm, 105mm long for comb harrow 24m
75	Pin diameter 25mm, 95mm long
75.1	Pin diameter 35mm, 130mm long for comb harrow 24m
76	Pin diameter 25mm, 95mm long
76.1	Pin diameter 35mm, 130mm long for comb harrow 24m
77	Pin diameter 25mm, 95mm long
77.1	Pin diameter 35mm, 105mm long for comb harrow 24m
78	Roll pin 8x20

HARROW FIELD COMPLETE 1,50M:

complete: 0110050001





HARROW FIELD COMPLETE 1,50M:

Art. Nr.	Pos. Nr.	Bezeichnung	Menge
0110010002	1	disc for harrow field	12
0110010003	2	Flat iron for adjustment with multi-hole	1
0110010004	3	side profile for Harrow field right	1
0110010005	4	side profile for harrow field right	1
0110010006	5	Flat iron for adjustment below	1
0110010012	6	tine profile Nr. 6	1
0110010011	7	tine profile Nr. 5	1
0110010010	8	tine profile Nr. 4	1
0110010009	9	tine profile Nr. 3	1
0110010008	10	tine profile Nr. 2	1
0110010007	11	tine profile Nr. 1	1
0110010013	12	adjusting for harrow field	1
1903030009	13	Bolts for field adjustment harrow	1
1904020002	14	linch pin Ø=4mm	1
1909030008	15	tine Ø=8mm	48
1902010005	16	hexagonal nut M10	12
1902010005	17	hexagonal nut DIN 982-M10	2
1902010002	18	hexagonal nut DIN 982-M8	13
1901010031	19	hexagonal screw DIN 933 M10x40	2
1901010032	20	hexagonal screw DIN 933 M8x25	13
1901010025	21	hexagonal screw M10x30	12
1908010004	22	disc DIN 125 -A8,4	2