

HORSCH

Farming with passion

Operating Instructions Joker 3 - 6 CT



Art.: 80740203 en
Issue: 05/2014

Read carefully prior to starting up!
Keep operating instructions in a safe place!

Please cut off and return to HORSCH Maschinen GmbH or hand it over to the employee from HORSCH Maschinen GmbH during the instruction course.

Machine Registration

No warranty claims will be accepted if this machine registration form is not returned !

To
HORSCH Maschinen GmbH
Postfach 10 38
D-92401 Schwandorf
Fax: +49 (0) 9431 / 41364

| | | |
|------------------------|--------------------------|--|
| Type of machine: | <input type="checkbox"/> | Demonstration machine – initial use |
| Serial number: | <input type="checkbox"/> | Demonstration machine - relocation |
| Delivery date: | <input type="checkbox"/> | Demonstration machine final sale - use |
| | <input type="checkbox"/> | New machine final sale – initial use |
| | <input type="checkbox"/> | Customer's machine - relocation |

Operating instructions: 05/2014

80740203 Joker 3-6 CT en

I hereby confirm receipt of the operating instructions for the above mentioned machine.
I have been instructed by a HORSCH service technician or authorised dealer in the operation and functions of the machine, as well as in the safety requirements.

.....
Name of the service technician

Dealer

Name:

Street:

Postal code:

Place:

Tel.:

Fax:.....

E-mail:

Customer No. :

Customer

Name:

Street:

Postal code:

Place:

Tel.:

Fax:.....

E-mail:

Customer No. :

I am aware that a warranty claim will only be valid if this form has been fully completed, signed and returned to HORSCH Maschinen GmbH, or has been given to the Service Technician, immediately after first instruction.

.....
Place, date of first instruction

.....
Buyer's signature

- Translation of the Original Operating Instructions -

Machine Identification

The corresponding data is to be entered into the list below upon receiving the machine:

Serial number:
Machine type:
Year of construction:
Initial installation:
Fittings:
.....
.....
.....

Publication date of Operation Manual: 05/2014
Latest change:

| | | |
|----------------------|---------------|-------|
| Address of Retailer: | Name: | |
| | Road: | |
| | Town/City: | |
| | Tel.: | |
| | Customer No.: | |
| | Retailer: | |

| | | |
|--------------------|--------------------------------|-----------------------|
| Address of HORSCH: | HORSCH Maschinen GmbH | |
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| | HORSCH: | |

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Introduction

Foreword

Before operating the machine, read and strictly comply with the operating instructions. In doing so, you will avoid accidents, reduce repair costs and downtime and increase the reliability and service life of your machine. Pay attention to the safety notices!

HORSCH will not assume liability for any damage or malfunctions resulting from failure to comply with the operating instructions.

These operating instructions will assist you in getting to know your machine and in using it correctly for its intended purposes.

The operating instructions must be read and strictly adhered to by all persons working on or with the machine e.g.:

- Operation (including preparation, fault rectification during work, servicing)
- maintenance (maintenance and inspection)
- transport

Together with the operating instructions, you also receive an acknowledgement of receipt. The trained personnel of our service and sales partners will train and instruct you in the operation and maintenance of your machine. After this you or the sales or service partner should return the receipt back to HORSCH. This confirms your formal acceptance receipt of the machine. The warranty period starts with the date of delivery.

We reserve the right to alter illustrations as well as technical data and weights contained in these operating instructions for the purpose of improving the machine.

The illustrations in these operating instructions show different versions of the implement and different equipment variants.

Notes on representation

Warning notes

These operating instructions differentiate between three different types of warning notes.

The following **signal words with warning symbols** are used:



Highlights a danger that will lead to death or severe injury, if it is not avoided.



Highlights a danger that **can lead** to death or severe injury, if it is not avoided.



Highlights a danger that can lead to injury, if it is not avoided.

Please read the warning notes given in these operating instructions!


Instructions

In the operating instructions all instructions for actions are identified by arrow heads

- ...
- ...

If compliance with a certain sequence is required, the steps of actions are successively numbered.

1. ...
2. ...
3. ...
- ...

 Identifies important notes.

The designations "right", "left", "front" and "rear" apply as seen in travel direction.

Consequential damage

The machine has been manufactured by HORSCH with greatest care. However, damage can also occur if put to unintended use, e.g. in the following cases:.

- damage caused by external influences
- inappropriate or incorrectly adapted rotary, working and travel speeds
- incorrect attachment or wrong equipment settings
- failure to comply with the operating instructions.
- no or inadequate care and maintenance
- missing, worn or broken cultivation tools

You should therefore check the correct function and setting of the machine before and also during each use.

Compensation claims for damages which have not been caused by the machine, are excluded. Any liability for consequential damage resulting from driving or operating mistakes is excluded.

Safety and accident prevention

The following warnings and safety instructions apply to all sections in these operating instructions.

The machine has been built in accordance with latest technical standards and generally accepted safety regulations. However, risks for life and limb of the operator or third parties and impairment of the machine or other material assets can occur during use.

Please read and comply with the following safety notes, **before** you start to use the machine!

Intended use

The machine is intended for normal use in soil cultivation in accordance with agricultural practice. The machine is hitched to the tractor with a three-point hitching facility and is operated from the tractor. Any other use or use beyond the limitations of intended use, like e.g. using the machine for persons to ride on is considered unintended use and can lead to persons being severely or fatally injured.

HORSCH will not assume liability whatsoever for damage resulting from unintended use. The risk will be borne solely by the user.

- The respective accident prevention regulations of the agricultural liability associations and other generally recognised safety-related, occupational medical and road traffic regulations are to be adhered to.
- The machine must only be operated in a technically perfect condition and in a safety and danger conscious manner! Faults, particularly those which impair safety, must be remedied immediately.

The machine must only be operated, serviced and repaired by persons who are familiar with it and have been made aware of the dangers involved, see "Permitted operators".

Spare parts

Genuine spare parts and accessories from HORSCH have been specially designed for this machine.

Other spare parts and accessories have not been tested or approved by HORSCH.

Installation or use of non-original HORSCH products may have a detrimental effect on specific design features of the machine and impair the safety of machine operators and the machine itself.

HORSCH will not assume liability whatsoever for damage resulting from the use of non-original parts and accessories.

If the component to be replaced is marked with a safety sticker, these stickers must also be ordered and attached to the spare part.

Operating Instructions

Observance of these operation manual and compliance with the operating, maintenance and repair instructions specified by the manufacturer belong to intended usage.

The operating instructions are a component part of the machine.

The machine is solely intended for use as described in the operating instructions. Failing to comply with the operating instructions can result in severe or even fatal physical injuries.

- Read and follow the corresponding sections in the operating instructions before starting work.
- Store the operating instructions and keep for future use.
- Pass the operating instructions on to a later user.

Authorised operators

Unintended use of the machine can lead to severe or even fatal physical injuries. In order to prevent accidents, each person involved in work with the machine must meet the following minimum requirements:

- The person is physically able to control the machine.
- The person is able to perform work with the machine safely within the scope of these operating instructions.
- The person is acquainted with the function of the machine within the scope of its work and is able to assess and avoid any work related dangers.
- The person has read and understood the operating instructions and is able to implement the information given in the operating instructions accordingly.
- The person is fully familiar with the safe operation of vehicles.
- The person knows all applicable road traffic regulations and is in possession of a valid driving permit for road travels.
- The **operator** is obliged to make the operating instructions available for the operating person.
- The **operator** must make sure that the operating person has read and understood the operating instructions.

Endangered children

Children are not able to assess dangers and may behave unpredictably. Children are therefore especially endangered:

- Keep children away from the machine.
- Especially when starting to drive and before triggering machine movements you must make sure that the danger zone is free of children.
- Shut down the tractor before leaving it.
Children can trigger dangerous machine movements. An insufficiently secured machine parked without being attended poses a danger for playing children!

Danger zone

The danger zone around the machine poses the following endangerments:

- Accidental operation of the hydraulic system can trigger dangerous movements of the machine.
- Defective or not correctly fastened electric lines can cause fatal electric shocks.
- With the drive still running, machine parts may rotate or swing out.
- Hydraulically raised machine parts can lower slowly and unnoticed.

Failing to pay attention to the danger zone can result in severe or even fatal physical injuries.

- Do not stand under lifted loads. Lower such loads to the ground first.
- Instruct persons to leave the danger zone around machine and tractor.
- Before working in the danger zone of the machine or between machine and tractor: **Shut down the tractor.**
This also applies for short-term inspection work.
Many accidents are caused by carelessness and running machines!
- Pay attention to the information in all operating instructions.

Personal protective outfit

Missing or incomplete protective outfit increases the risk of health damage. Personal protective outfit includes, e.g.:

- tight fitting clothes / protective clothing, possibly a hair net
- safety shoes
- safety gloves

- Determine the personal protective outfit for the corresponding work place.
- Provide effective protective equipment in proper condition.
- Never wear rings, bracelets or other jewellery.

Safety in traffic

- Pay attention to the permissible transport widths and heights. Pay attention to the transport height when passing under bridges and low hanging overhead power lines.
- Do not exceed the permissible axle loads, tyre carrying capacities and total weights, in order to ensure sufficient steering and braking capabilities. The front axle must be loaded with at least 20 % of the tractor weight.
- Lock the machine in transport position before starting road transport.
- Clean soil from the folding areas before folding up. Otherwise there could be damage to the mechanics.
- Assemble lighting, warning and protective equipment and check the function.
- Before driving on roads clean the entire machine from picked up dirt.
- Please remember, that working implements will affect the travel behaviour of the machine. Pay particular attention to the wide overhang and the centrifugal mass of the working implement when cornering.

- When transporting along public roads pay attention to the permissible top speed specified in the type approval.
- Always match the travel speed to the road conditions to avoid accidents and damage to the undercarriage.
- Consider your personal abilities, carriage way, traffic, sight and weather conditions.

Safety in operation

Commissioning

The operational safety of the machine cannot be guaranteed without an orderly performed commissioning. This can lead to accidents with severe or even fatal physical injuries.

- The machine must only be put into operation after receiving instructions by employees of the authorized dealer or a HORSCH employee.
- The machine registration form must be completed and returned to HORSCH.
- All protective features and safety equipment, such as detachable protective devices, must be correctly in place and reliably functioning before the machine is put into operation.
- Check nuts and bolts, especially the ones on wheels and cultivation tools regularly for tight fit and retighten if necessary.

Damage to the machine

Damage to the machine can impair the operational safety of the machine and cause accidents. This can lead to severe or even fatal physical injuries.

The following machine parts are particularly important for safety:

- Hydraulic system
- Connecting features
- Protective features
- Lighting

If in doubt about the safety relevant status of the machine, e.g. in case of leaking out operating fluids, visible damage or unexpected changes in travel behaviour:

- Immediately shut down and secure the machine.
- If possible locate and rectify the faults by following these operating instructions.
- Rectify possible causes for damage (e.g. remove coarse dirt and tighten loose screws).
- Have damage, that could affect safety and that cannot be rectified by yourself, rectified by a qualified expert workshop.

Hitching and unhitching

Faulty hitching up of the machine to the pulling tool of the tractor causes dangers, which could result in severe accidents.

- Follow the instructions given in these operating instructions.
- Pay attention to the operating instructions for the tractor.
- Be extremely careful when driving with the tractor in reverse. It is not permitted to stand between tractor and machine.
- Only park the machine on a firm and level surface. Before unhitching the machine, lower it to the ground.
- Secure the machine against rolling away.

Hydraulic system

The hydraulic system is under high pressure. Hydraulic oil escaping under pressure can penetrate the skin and cause serious injuries. In the event of injury, consult a doctor immediately.

The machine's hydraulic system has several functions, which can cause injury to persons or damage to the machine, if operated incorrectly.

- Do not connect hydraulic hoses to the tractor, before both hydraulic systems on machine and tractor are de-pressurised.
- Check all lines, hoses and screwed connections regularly for leaks and any visible external damage!

- Use only appropriate means when searching for leaks. Repair any damage immediately! Oil sprays can cause injuries and fire!
- Power sockets and connectors on the hydraulic connections should be marked in order to exclude operating errors.
- Secure and lock control units on the tractor, if not in use!

Pressure accumulator

The hydraulic system is equipped with a pressure accumulators.

- Do not open or work (welding, drilling) on pressure accumulators. Even when empty, the accumulator is still preloaded by gas pressure.

The hydraulic system must be depressurized before maintenance!

Technical limiting values

If the technical limiting values of the machine are not observed, the machine may get damaged. This can lead to accidents with severe or even fatal physical injuries.

The following technical limiting values are of particular importance for safety:

- permissible total weight
- maximum axle loads
- maximum drawbar load
- top speed

See chapter „Technical data“.

Use in the field

- Check the area around the machine (for children!) before setting off and starting operation of the machine. Ensure sufficient visibility.
- Do not remove any of the prescribed and supplied protective devices.
- Make sure that there are no persons in the slewing area of hydraulically operated parts.
- Use accessing aids and steps only at standstill. During operation it is not permitted to **ride on the machine as a passenger!**
- Do not drive in reverse with the machine lowered. The components have only been designed for forward travel in the field and may be damaged when reversing.

Changing equipment / wear items

- Secure the machine or the tractor against unintended rolling away.
- Secure raised frame parts you have to work under with suitable supports.
- Keep an eye on protruding parts (e.g. coulters). Danger of injuring.
- Do not use packer tyres or other rotating parts to climb on the machine. These may rotate and cause danger of falling off and injuring.

Environmental protection

Operating materials such as hydraulic oil, lubricants, etc. can damage the environment and the health of persons.

- Do not allow operating materials to drain out into the environment.
- Take up drained out operating materials with absorbent material or sand, fill it into a leak tight container and dispose of in accordance with statutory regulations.

Retrofits

Structural changes and extensions can adversely affect the functionality and the operational safety of the machine. This can lead to severe or even fatal physical injuries.

- Structural changes and extensions must only be made by a authorized expert workshop.
- Comply with country specific instructions for weights, weight distribution and dimensions.
- For equipment influencing the weight or weight distribution one must check and comply with the regulations concerning towing facilities, support and axle loads.
- In case of changes concerning data mentioned on the type plate, a new type plate with updated data must be attached.

Care and maintenance

Inappropriate care and maintenance puts the operational safety of the machine at risk. This can lead to accidents with severe or even fatal physical injuries.

- Conform with prescribed schedules for repetitive tests or inspections.
- Service the machine according to the maintenance plan, see chapter "Care and maintenance".
- Only perform the work described in these operating instructions.
- Before starting maintenance and service work park the machine on level and firm ground and secure it against rolling away.
- De-pressurise the hydraulic system and lower or support the implement.
- Prior to working on the electrical system, disconnect it from the electric power supply.
- Before cleaning the machine with high pressure cleaning equipment cover all openings, which should stay clear of water, steam or cleaning agents for reasons of safety or operation. Do not aim the water jet directly at electrical or electronic components and bearings.
- When cleaning with high pressure or steam cleaning equipment keep a distance of at least 50 cm to machine components.
- After cleaning, check all hydraulic lines for leaks and loose connections.
- Check for chafing and signs of other damage. Remedy any faults immediately!
- Screw connections loosened for the purpose of maintenance and service work must be retighten.
- **Any other maintenance and repair work** must only be carried out by an authorized expert workshop.
- Do not clean new machine with a steam jet of a high pressure cleaner. The paint takes approx. 3 months to cure and could thus be damaged if this time has not yet expired.

Safety stickers

Safety stickers on the machine warn of endangerments at dangerous points and are an important part of the safety equipment of the machine. Missing safety stickers increase the risk of severe or even fatal physical injuries.

- Clean soiled safety stickers. Clean dirty parts
- Damaged or illegible safety stickers must be replaced immediately.
- Provide spare parts with the specified safety stickers.

No passengers are allowed to ride on the machine!



00380054

Stay clear of swinging area of retractable and extendible machine parts!



00380135

Before starting operation of the machine you should read and follow the operating instructions.



00380055

When hitching up the drill and when operating the hydraulic system, no persons should be between the machines!



00380299

Take care of emerging high pressure fluid! Follow the commissioning instructions!



00380133

Do not climb on rotatable parts. Use mounting steps provided for this purpose!



00380299

Never reach into areas where there is a risk of crushing, as long as parts could still be moving!



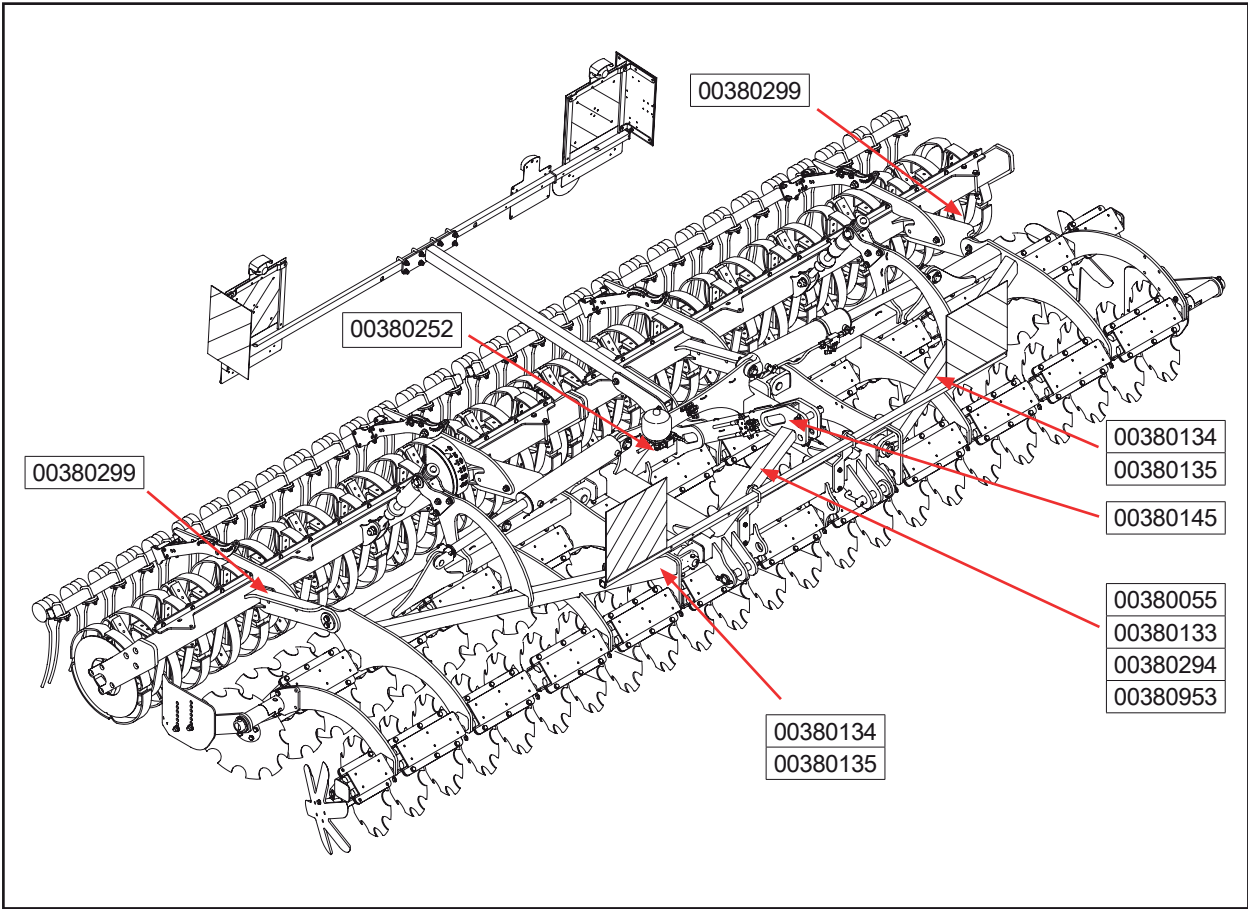
00380134

The pressure accumulator is charged with gas and oil pressure. Dismantle and repair only in strict compliance with the instructions in the technical manual.

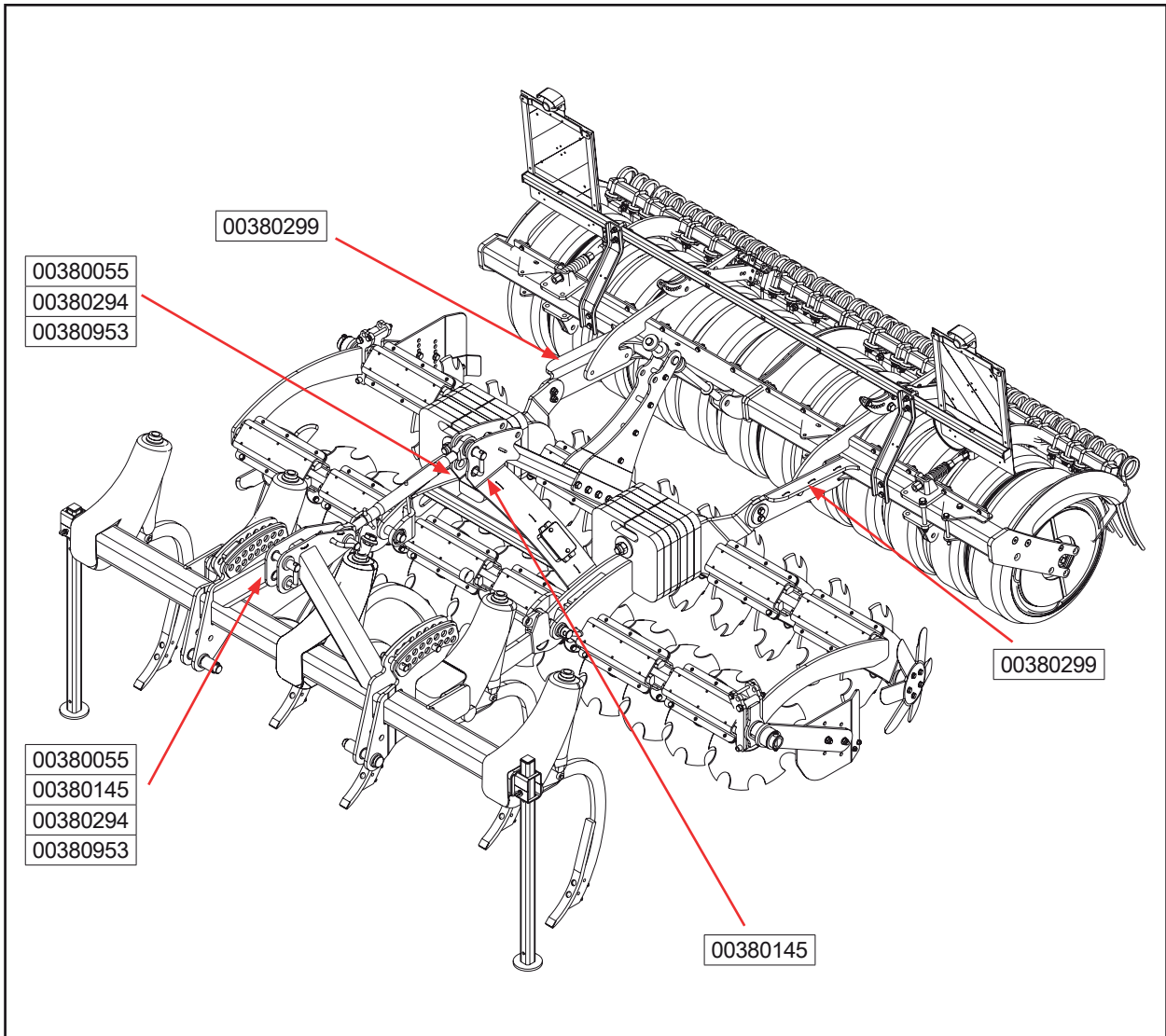


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Position of safety stickers



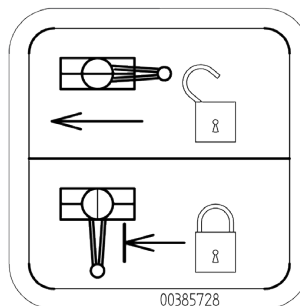
Joker CT, foldable



Joker CT, not foldable

Stickers

Shut-off valve open / closed



00385728
00385728

Transport / installation

Higher danger of accidents can happen during initial installation. Please pay attention to the notes in the corresponding chapters.

Delivery

The machine with implements is normally delivered completely assembled on a low loader.

If parts or modules had to be disassembled for transportation purposes, these will be assembled locally by our distributor or field engineer.

Depending on the design of the low loader the machine can be unloaded with a tractor, or needs to be lifted off with suitable lifting gear (forklift truck or crane). Sufficient load bearing capacity of lifting gear and lifting tackle must therefore be assured.

Lifting and lashing points are identified by labels. When using other lifting points pay careful attention to the centre of gravity and the weight distribution. These points must, in any case, only be on the frame of the machine.



Lifting points

Installation

Instruction of the operator and initial installation of the machine will be carried out by our service engineers or distributors.



Before the instruction session and initial installation any use of the machine is prohibited!

The machine can only be released for operation after the instruction session conducted by our service engineer / distributor and after the operating instructions have been read.

WARNING

Higher danger of accidents can happen during installation and maintenance. Before performing installation and maintenance work you should become acquainted with the machine and read the operating instructions.

Depending on scope of equipment:

- Take loosely delivered parts off the machine.
- Check all important screw connections.
- Lubricate all grease nipples.
- Check all hydraulic connections and hoses for correct fastening and function.
- Immediately rectify any occurring damage or have it corrected!
- Calculate the ballasting and equip the tractor accordingly.

Calculation of ballasting

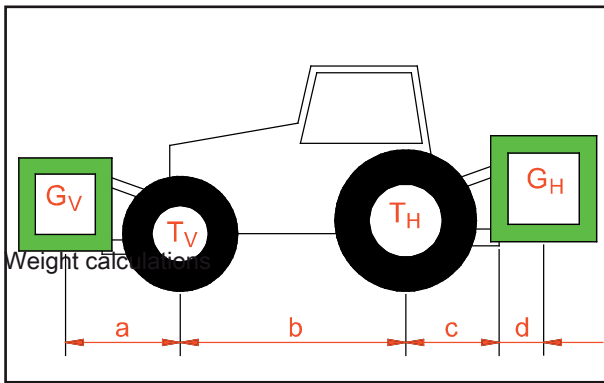
The permissible total weight, the permissible axle loads and the load bearing capacity of the tyres must not be exceeded when attaching implements in the three-point linkage at front and rear.

The front axle of the tractor must always be loaded with at least 20 % of the curb weight of the tractor.

- Before transportation on public roads you must make sure that the tractor is not overloaded and suitable for this implement.
- Weigh the implement separately. Since different equipment variants are possible, the weight of the implement must be determined by weighing.

Data for calculation:

All specified weight in (kg)
All specified dimensions in (m)



- T_L Curb weight of tractor
- T_V Front axle load of empty tractor
- T_H Rear axle load of empty tractor
- G_H Total weight of rear implement
- G_V Total weight of front mounted implement

- a Distance from centre of gravity of front implement (front ballast) to middle of front axle
- b Tractor wheel base
- c Distance from middle of rear axle to middle of tractor link arm ball
- d Distance from middle of tractor link arm ball to centre of gravity of rear mounted implement (rear ballast)
- x Information of tractor manufacturer for minimum rear ballasting. If no information is available, enter 0.45.

1. Calculation of minimum front ballasting with rear implement:

$$G_{V \min} = \frac{G_H \cdot (c + d) - T_V \cdot b + 0.2 \cdot T_L \cdot b}{a + b}$$

Enter the result into the table.

2. Calculation of minimum rear ballasting with front implement:

$$G_{H \min} = \frac{G_V \cdot a - T_H \cdot b + x \cdot T_L \cdot b}{b + c + d}$$

Enter the result into the table.

3. Calculation of the real front axle load

$$T_{V \text{tat}} = \frac{G_V \cdot (a + b) + T_V \cdot b - G_H \cdot (c + d)}{b}$$

Enter the result of the calculated actual front axle load and the permissible front axle load from the operating instructions of the tractor into the table.

4. Calculation of the actual total weight

$$G_{\text{tat}} = G_V + T_L + G_H$$

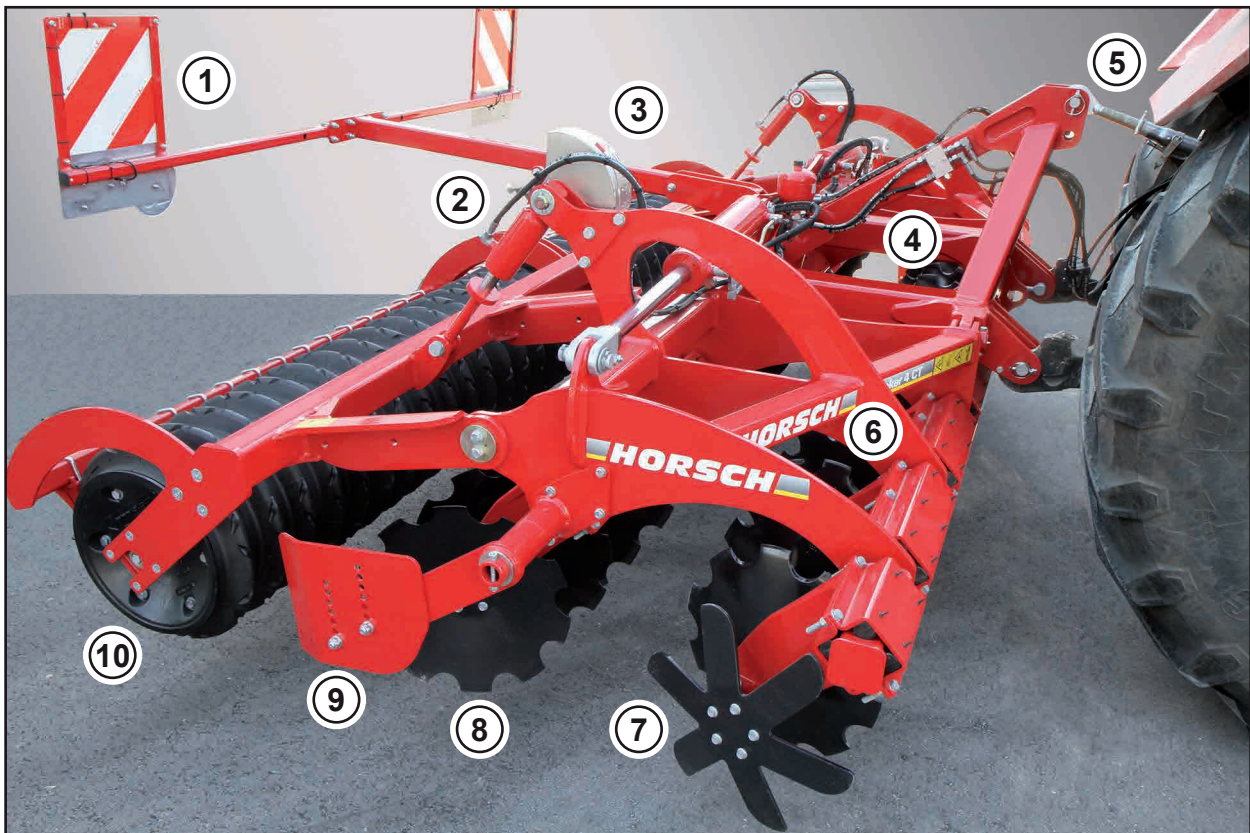
Enter the result of the calculated total weight and the permissible total weight from the operating instructions of the tractor into the table.

5. Calculation of the real rear axle load:

$$T_{H \text{tat}} = G_{\text{tat}} - T_{V \text{tat}}$$

Enter the result of the calculated actual rear axle load and the permissible rear axle load from the operating instruction of the tractor into the table.

Description



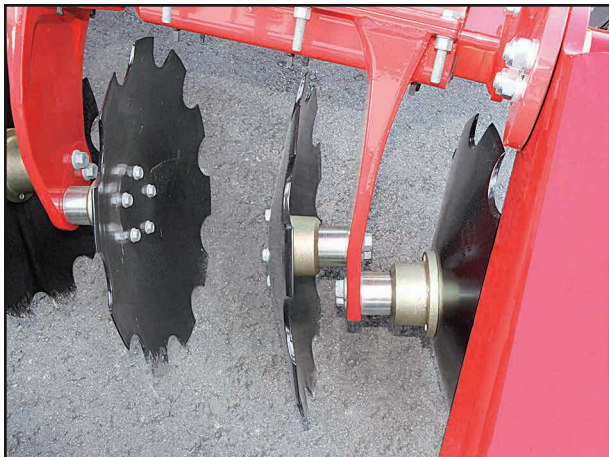
Overall view (e.g. Joker 4 CT)

- 1 Warning plates with illumination
- 2 Depth setting (e.g. hydraulic)
- 3 Indication of working depth
- 4 Center frame
- 5 Three-point hitching
- 6 Side frame, foldable
- 7 Spade disc
- 8 Disc
- 9 Side limitation
- 10 Packer

The disc harrow Joker CT is a rear mounted implement with three-point hitching facility for tractors.

Only the depth setting is to be used as working position. The low number of lubrication points and the maintenance free disc bearings ensure easy maintenance.

The two-row arrangement of the serrated discs with fixed disc angle ensure shallow and intensive mixing of soil. The arrangement of discs in pairs with large throughpass and open frame structure ensures blockage free work.



Discs with bearings

The two rows of the serrated discs cut through the harvest residues and the soil and mixes the harvest residues in down to working depth. Lateral spade discs and optional side limitations counteract the formation of ridges along the adjoining track.



Spade disc and side limitation

A packer for consolidating soil is arranged behind the disc rows.

The disc harrow Joker CT is available in different working widths.

- Joker 3 CT (with rigid frame)
- Joker 3.5 CT (with rigid frame)
- Joker 4 CT (with hydraulically foldable side frame)
- Joker 5 CT (with hydraulically foldable side frame)
- Joker 6 CT (with hydraulically foldable side frame)

The equipment variants enable the adaptation of the different working width especially to the purpose of use:

- The working width can optionally be set hydraulically or mechanically.
- Different packer versions are alternatively installed (see section "Packer").
- An optional harrow loosens and levels the surface.
- With optional weights the machine weight can be increased to 400 kg.
- Joker 3 CT/3,5 CT: For deeper loosening the soil, the cultivator Mono TG can be flanged between tractor and disc harrow.
- Joker 4 CT/5 CT/6 CT: Optional three-point mounting; spreading dimension and pin diameter of the lower ling-arm fastening points correspond with category 3, optional mounting with balls of category 4 is possible.
- Joker 4 CT/5 CT/6 CT: Optional liquid manure preparation consisting of distributor bracket and liquid manure outputs is possible.

Type plate

Type plate and machine serial number can be found on the middle frame.



Type plate and machine serial number (e.g. Joker 4 CT)

Technical data

Machine

NOTE

The weight of the implement used depends on the equipment. For calculating the ballasting you must determine the actual weight by weighing.

The permissible transport heights and transport width for transport on public roads may differ from country to country. Comply with the national approval regulations.

Joker 3 CT

Working width: 3.00 m
 Transport width: 3.00 m
 Transport height: 1.90 m
 Length: 2.50 m

Weight (with RollFlex packer): ... from 1,400 (kg)
 Number of discs: 24
 Hitching: Cat. 2/3
 Power requirements: 65 to 90 kW

Optional equipment Mono TG

Weight with Mono TG: 2,160 kg
 Number of tines: 5
 Hitching: Cat. 3

Joker 3.5 CT

Working width: 3.50 m
 Transport width: 3.50 m
 Transport height: 1.90 m
 Length: 2.50 m

Weight (with RollFlex packer): ... from 1,650 (kg)
 Number of discs: 28
 Hitching: Cat. 2/3
 Power requirements: 75 to 100 kW

Optional equipment Mono TG

Weight with Mono TG: 2,540 kg
 Number of tines: 6
 Hitching: Cat. 3

Joker 4 CT

Working width: 4.00 m
 Transport width: 2.95 m
 Transport height: 2.80 m
 Length: 2.90 m

Weight (with RollFlex packer): ... from 2,500 (kg)
 Number of discs: 32
 Hitching: Cat. 3/4
 Power requirements: 90 to 120 kW

Joker 5 CT

Working width: 5.00 m
 Transport width: 2.95 m
 Transport height: 3.25 m
 Length: 2.90 m

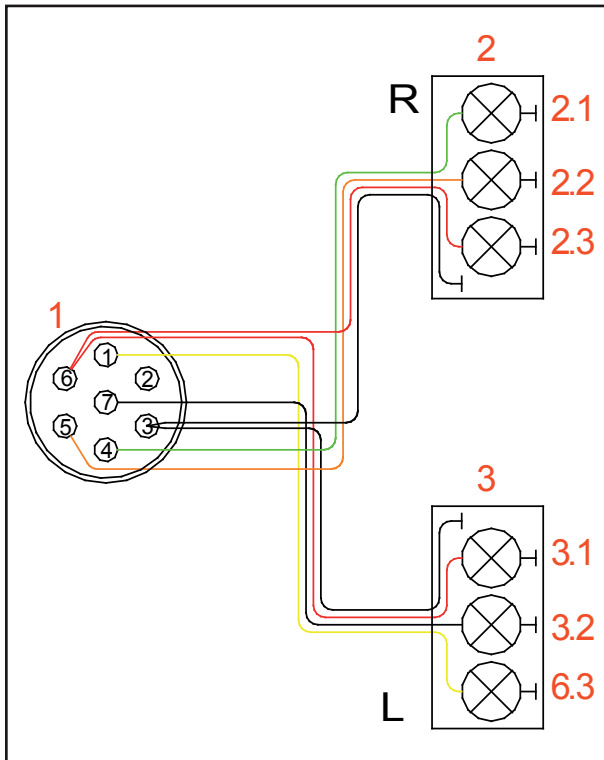
Weight (with RollFlex packer): ... from 3,000 (kg)
 Number of discs: 40
 Hitching: Cat. 3/4
 Power requirements: 110 to 150 kW

Joker 6 CT

Working width: 6.00 m
 Transport width: 2.95 m
 Transport height: 3.70 m
 Length: 2.90 m

Weight (with RollFlex packer): ... from 3,350 (kg)
 Number of discs: 48
 Hitching: Cat. 3/4
 Power requirements: 130 to 175 kW

Lighting



Lighting

- 1. 7-pin plug
- 2. Rear-light, right
- 2.1 Lamp, indicator
- 2.2 Lamp, tail-light
- 2.3 Lamp, brake light
- 3. Rear-light, left
- 3.1 Lamp, brake light
- 3.2 Lamp, tail-light
- 3.3 Lamp, indicator

Plugs and cable assignment

| No. | Design. | Colour | Function |
|-----|---------|--------|------------------|
| 1. | L | yellow | Indicator left |
| 2. | 54g | --- | --- |
| 3. | 31 | white | Earth |
| 4. | R | green | Indicator right |
| 5. | 58 R | brown | Rear light right |
| 6. | 54 | red | Brake light |
| 7. | 58 L | black | Taillight left |

WARNING

Check lighting equipment at regular intervals, to prevent other road users being endangered through negligence!

Operation and adjustments

Hitching-up the machine

⚠ DANGER

There is a possibility that persons may become crushed and severely or fatally injured between machine and tractor!

Instruct persons to leave the area between tractor and machine.

Persons may only enter the area between tractor and machine to couple the upper link and to close the securing features for the tractor link arm only after the tractor link arm has been hooked in and the tractor engine is running.

⚠ WARNING

Danger of accident caused by collision of the machine. Pay attention to the transport height, especially when driving through gates or when passing under bridges and low hanging power lines.

⚠ WARNING

Unintended hydraulic movements and hydraulic movements initiated by other persons, (children, passengers) can cause severe accidents. Secure and lock control units on the tractor, if not in use or in transport position!

1. Make sure that the hitching facilities on tractor and machine match.
2. Hitch the machine to the three-point of the tractor. The upper link can optionally be coupled to one of two possible hitching points.
3. If necessary lock the tractor link arms against sideways movement.
4. If present: Connect hydraulic lines for folding and hydraulic depth setting to the tractor. The hydraulic lines are bundled and marked per hydraulic circuit.
5. Connect the road lighting equipment plug and check the function.

6. Lift the machine and fold in the wings against the end stops.

Joker 3 CT/3,5 CT:

The distance of the tractor link arm coupling points corresponds with category 2 and category 3. The bolt diameter corresponds with category 3.

Joker 4 CT/5 CT/6 CT:

The distance of the tractor link arm coupling points corresponds with category 3. The bolt diameter corresponds with category 3. Simple conversion enables hitching as per category 4.

Joker 4 CT/5 CT/6 CT: Conversion for hitching as per category 4 (with spreading measurement acc. to category 3)




Hitching cat. 3

1. Pull out the cotter pin.
2. Pull out the bolt, remove spacer and ball (cat. 3).
3. Assemble the ball (cat. 4) with bolt but without spacer.
4. Secure the bolt with the cotter pin.

Parking the machine

WARNING

Danger of injury by the machine rolling away or tipping. Only park the machine on a firm and level surface.

 Park disc harrows with the foldable frame (Joker 4 CT/5 CT/6 CT) in unfolded condition.

1. If present: Disconnect the hydraulic couplings.
2. Unplug the lighting equipment plug.
3. Unhitch the machine.

Preparing for transport / road travel


WARNING


Dropping / lowering machine parts can cause severe crush injuries etc.! Instruct persons to leave the danger zone. Comply with the accident prevention instructions.

WARNING

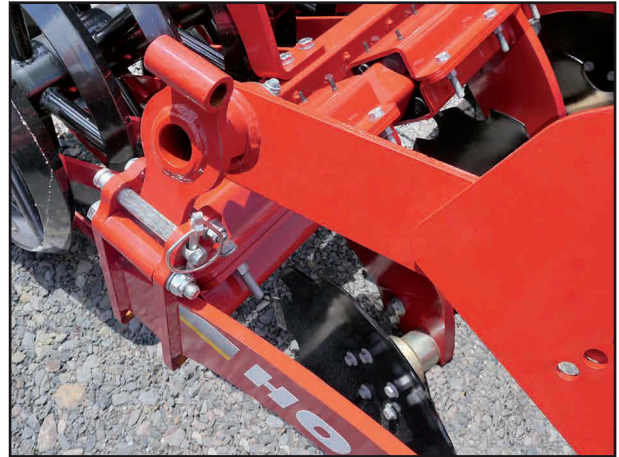
Joker 3 CT/3,5 CT: During road transport the side limitation protrudes over the permissible transport width and could thus cause damage and accidents.

Always fold the side limitation in for road transport.

 Perform folding movements only with a fully raised machine and on level and firm ground! Always fold the wings in or out against the end stops.

 Before folding in you should always clean the areas around the folding hinges and cylinders. Earth or stones could become trapped and damage parts of the machine when folding in.


1. Clean all soil off the machine before driving on public roads.
2. Check warning signs and lighting.
3. Check function of lighting system.
4. Lift the machine.
5. Joker 3 CT/3,5 CT: Fold in the side limitation and secure with bolt.



Joker 3 CT/3,5 CT: Side limitation folded in

6. Joker 4 CT/5 CT/6 CT: Fold in the wings.

Settings for operation

 When in use, the machine must not be driven in reverse. Always lift the machine out before reversing.

Depth setting

In working position the packer carries the weight of the machine. The working depth is adjusted on the packer.

The horizontal position of the machine is adjusted at the front on the upper link.

The depth setting takes place mechanically or (optionally) hydraulically. With hydraulic depth setting, the adjusted depth is indicated on a scale.

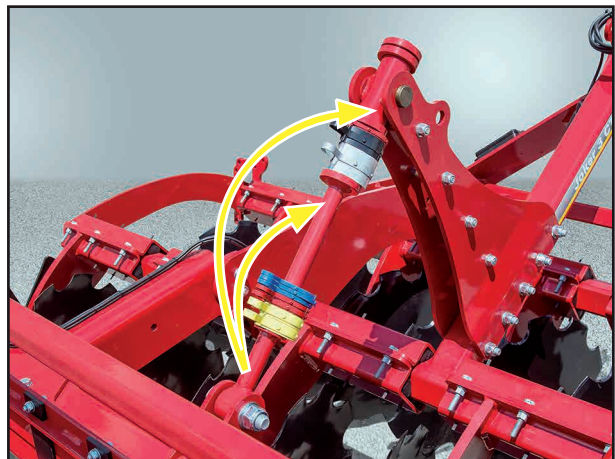


Scale for depth setting #


Mechanical Setting

Plug in or remove aluminium clips from the supports to adjust the working depth.

1. Lower the machine in the field.
2. Switch the control unit for tractor link arm hydraulics to float position.
3. Align the machine horizontally with the upper link.
4. If necessary remove or insert aluminium clips at the support, until the required working depth is reached.
5. Align the machine horizontally again with the upper link.
6. To limit the downwards movement of the packer (e.g. when lifting out): Insert aluminium clips at the top of the support.



Support on packer with aluminium clips

 Always insert the same amount of aluminium clips on each adjustable support. The aluminium clips on both supports must be of identical thickness.

Hydraulics Adjustment

With the hydraulic depth setting one can adjust the working depth in the field and during use. The hydraulic depth setting is ideally combined with a hydraulic upper link arm.

1. In the field lower the machine and switch the tractor link arm to float position.
2. Align the machine horizontally with the upper link.
3. In working position use the additional control unit to adjust the packer height, until the desired working depth is reached. The scale shows the working depth.
4. Then level the inclination of the machine by the upper link arm.

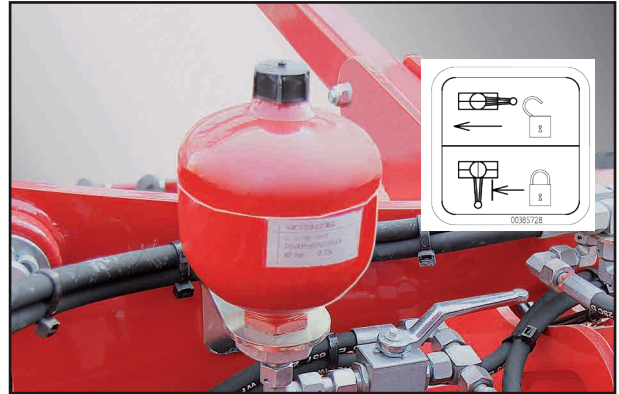


Hydraulic depth setting

As a measure to avoid erratic behaviour of the machine under certain operating conditions, the hydraulic depth setting is equipped with a pressure accumulator.

WARNING

The hydraulic system is under high pressure. Hydraulic oil escaping under pressure can penetrate the skin and cause serious injuries. In the event of injury, consult a doctor immediately.



Pressure accumulator with lock valve

The vibration damping can be switched off by the lock valve.

Side limitation

If necessary, adjust the working height of the side limitation:

1. Disassemble the limitation plate.
2. Fasten the limitation plate with two screws at the required height,



Adjusting the side limitation



In case of wear re-adjust or replace the side limitation.

Optional equipment

The packer is available in different designs. One must assemble a packer for operation with the Joker CT.

Harrow, Mono TG, hydraulic depth setting, additional weights, preparation kit for liquid manure and side limitation are optional accessories. The Joker CT can be operated without these accessories.


The description of the accessories also contains a description of the related maintenance.

Packer

In the working position the machine runs on the packer. Due to the weight of the machine a high consolidation and a fine crumbly, level surface is achieved.

The packer may be available as tyre packer, cage roller, steel disc packer, RollFlwex packer and RollCut packer.

With cohesive soils the packers may become blocked with soil and thus become considerably heavier. This may overload machine components. Roads may be soiled during transport.

 Clean packer, which pick up soil, regularly during work. Generally clean the packer before starting road travel.

Maintenance:

- Check packer bearings for tight fit.
- Check packer shafts for free rotation
- Lubricate the packer bearings at regular intervals.
- Check packer segments for wear, deformation and breakage.

Only for tyre packers:

- Check wheels for tight fit.
- Check air pressure before use.

Only for SteelDisc packers:

- Adjust the scrapers as necessary.

Tyre Packers

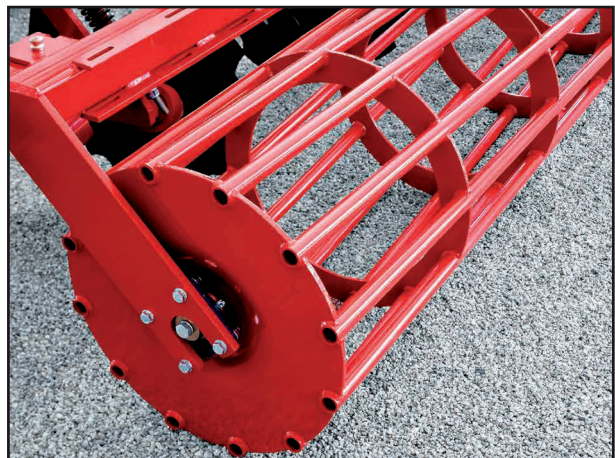


Tyre Packers

Tyres 185/65-15 AS. Particularly suitable for very light soils with low load bearing capacity. With the AS-tread it leave a very good, erosion reducing surface structure.

Not recommended for stony soils.

Cage roller



Cage roller

Depth guidance with moderate consolidation. Particularly recommendable for very light soils or if the Joker CT is to be kept as light as possible - e.g. when connecting a liquid manure wagon.

SteelDisc Paker



SteelDisc Paker

The heavy SteelDisc packer enables excellent consolidation on heavy, dry soils and a good cutting effect, it is particularly suitable for stony soils.

FarmFlex Packer



FarmFlex Packer

Rubber roller with excellent consolidation on medium soils. Leaves a wavy profile. As DoubleDisc packer insensitive to wetness. Particularly suitable for stony soils,

RollFlex Packer



RollFlex Packer

Excellent self-cleaning under moist conditions. Consolidation in strips with high mixing effect and a very high levelling potential.

RollCut Packer



RollCut Packer

Cutting blade roller with good cutting and consolidation effect on heavy loam and clay soils. The aggressiveness of the blades between the packer rings can be adjusted. Not recommended for stony soils.

Harrow

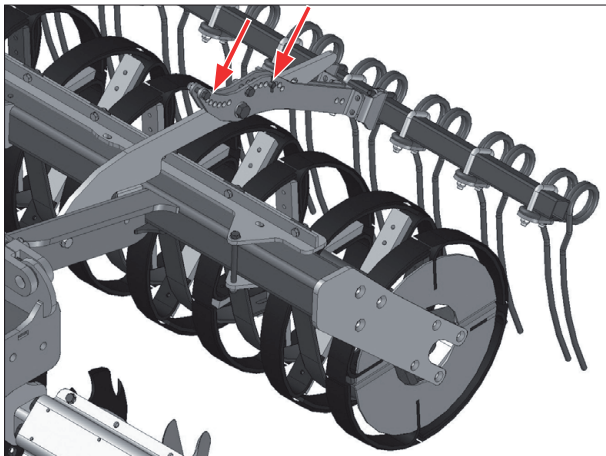
The Joker can be equipped with a harrow at the rear (option).

The harrow loosens and levels the surface and distributes existing harvest residues.

With the two bolts (see arrow) in front of and behind the pivot point the harrow movement can be limited upwards and downwards.

The front bolt limits the upwards movement and determines the pressure on the harrow. The rear bolt limits the downwards movement, e.g. when lifting out.

The correct setting must be found in the field. The harrow should thereby not be loaded more than necessary.



Harrow

Maintenance:

The harrow is maintenance free.

- The bolts on the tool carrier must be checked for tightness after the first 10 operating hours and before the start of the season.

Mono TG

Joker 3 and 3.5 CT can be equipped with the optional Mono TG.

The Mono TG is hitched up to the three-point of the Joker.



Joker CT with Mono TG

The Mono TG is equipped with TerraGrip tines. They are very robust and most suitable for deep soil cultivation. The soil is thereby not moved upwards.

The tines are equipped with a spring loaded trip release system. With a triggering pressure of approx. 500 kg on each tine the trip-release system prevents damage to tines, tine holders and coulters.

The tripping characteristic keeps the tine steady in the soil for a long time. Once the tripping force is reached the tines may retract up to 30 cm upwards.



TerraGrip tines

The tines are equipped with narrow LD-coulters.


Operation

Installation

Joker CT and Mono TG can be parked when hitched together, or as individual units.

When joining the machines and hitching them to the tractor one must strictly comply with the safety regulations that also apply for hitching the Joker CT to the tractor.

- After hitching the machine push both jacks up and lock them in place.
- Before lowering the machine lower the jacks again to parking position.

 If the Mono TG is subsequently mounted to the Joker, the upper link arm must be assembled to the Joker to support the packer.

CAUTION

Danger of injury by the machine tipping. If the Mono TG is parked without the Joker CT, the Mono TG must be secured against tipping over.

Road and transport travel

Combined with the Mono TG the machine is considerably heavier.

The safety regulations for safe operation and road safety must be strictly complied with.

- Ballasting of the front axle must be checked and corrected, if required.

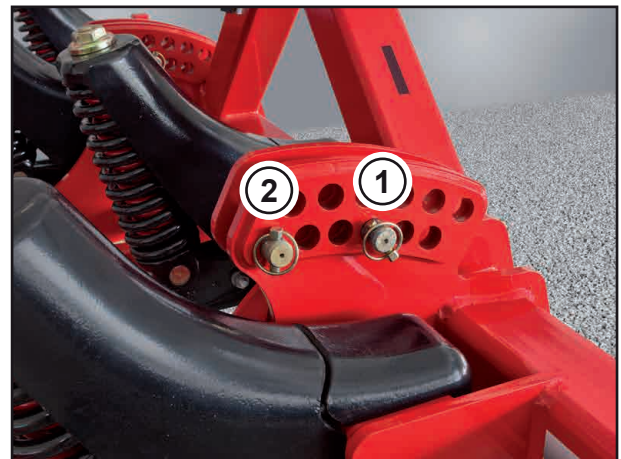
Depth setting

During use the Mono TG is supported by the upper link arms on the packer of the Joker.


The tractor link arms on the tractor are shifted to floating position.

The front bolts on the Mono TG rest against the tractor link arms on the Joker. The further the bolts (1) are moved towards the front, the deeper the Mono TG will work in front of the Joker.

The rear bolt (2) serves as stop for the Joker when the machine is lifted out. The further back the bolt is inserted, the later the Joker will be lifted.



Depth setting Mono TG


 When adjusting, always adjust both sides identically.

Maintenance:

The tine is maintenance free.

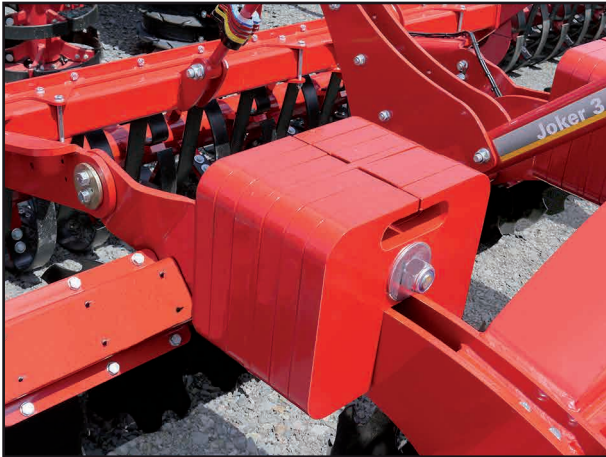
- The bolts on the tool carrier must be checked for tightness after the first 10 operating hours and before the start of the season.

Hydraulic depth setting

 See chapter "Settings for operation"

Additional weights

The Joker CT can be equipped with additional weights.



Additional weights

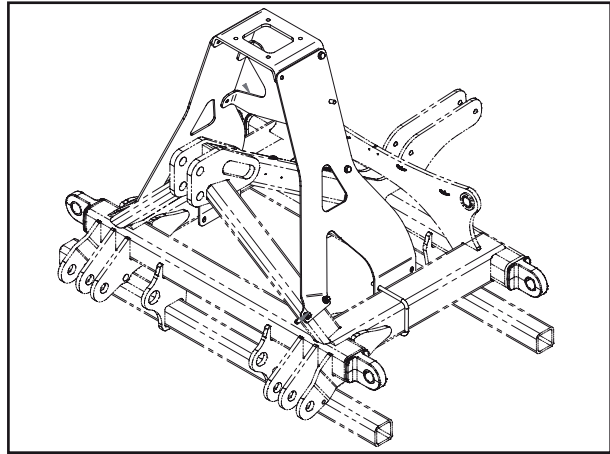
Maintenance:

The additional weights are maintenance free.

- Check the fastening of the additional weights for tight fit.

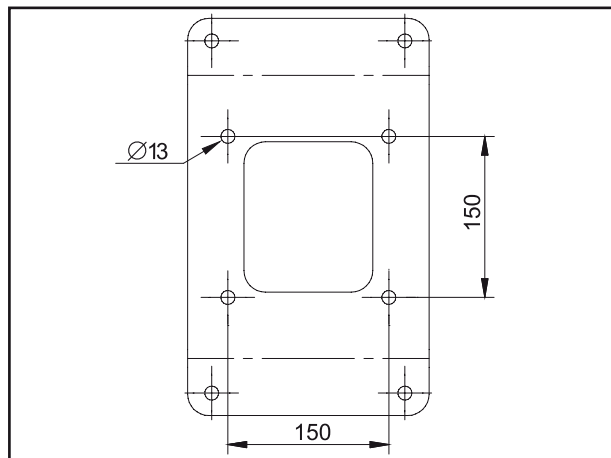
Preparation set for liquid manure installation

The Joker CT can be equipped with a bracket for fastening a liquid manure spreading system.



Liquid manure distributor

The following illustration shows the dimensions of the flange plate for the liquid manure distributor.



Flange plate for liquid manure distributor

Maintenance:


- Check the fastening of the liquid manure distributor for tight fit.


Side limitation

The side limitation has the function to prevent the formation of a barrier at the adjoining track. The side limitation is adjustable in height and must be adapted to the conditions in the field.



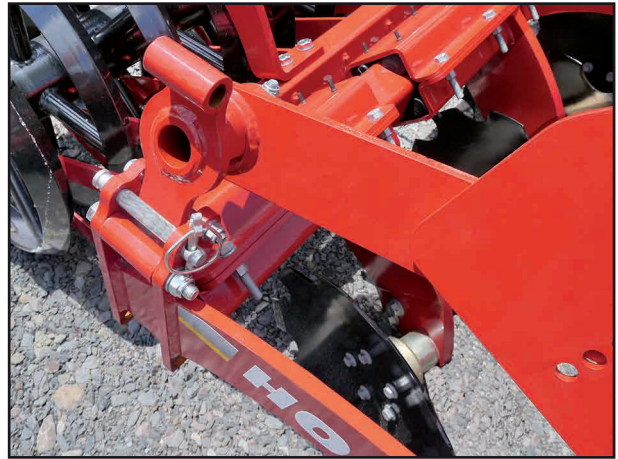
Side limitation (not foldable)

 In case of wear re-adjust or replace the side limitation.

 On the Joker 3 CT the side limitation must be folded in for transport on public roads. The side limitation protrudes over the permissible transport width and could thus cause damage and accidents.

Joker 3 CT: Folding in the side limitation

- Remove the bolt.
- Fold the side limitation up.
- Secure the side limitation with the bolt.



Side limitation (foldable)

Maintenance:

- Check the bracket arm regularly.

Care and maintenance

Please observe the safety notes on care and maintenance.

The machine has been designed and built to offer maximum performance, economy and operator friendliness under a vast variety of operating conditions.

Before delivery the machine was examined in the factory and by the authorized dealer to make sure that it is in optimal condition. For trouble free operation it is very important to carry out the necessary work for care and maintenance in the recommended intervals (see maintenance schedule).

Cleaning

Perform regular cleaning and maintenance work in order to maintain the operability of the machine and to achieve optimal performance.



Do not clean hydraulic cylinders and bearings with a high pressure cleaner or a direct water jet. Seals and bearings are not water proof under high pressure.

The mechanical seals on disc bearings are highly sensitive against the entering of water and subsequent longer storage periods.

This can cause corrosion and both mechanical seal rings may stick together. The mechanical seal rings will then rotate around the O-ring and damage it. Oil will leak out and the bearing will be damaged after a short while.

- Do not clean bearings with high pressure cleaning equipment.
- Before longer periods of rest spray bearing locations with rust dissolver or similar.
- Before taking back into service turn the discs by hand and check for free rotation.

Lubricating the machine



Lubricants and mineral oil products are no threat to health, as long as they are used as instructed. However, you should strictly avoid longer skin contact or the inhalation of vapours.

- Lubricate the machine regularly and after each pressure cleaning.
This ensures operability and reduces repair costs and downtimes.

Lubrication grease specification: DIN 51825 KP/2K-40

Storage

If the machine is to be shut down for a longer period of time:

- If possible store the machine under a roof.
- Protect the machine against corrosion. For spray coating use only biodegradable oils (e.g. rape seed oil).
- Protect the hydraulic cylinder piston rods against corrosion



Do not spray plastic and rubber parts with oil or corrosion protection agent. These parts would become brittle and break.

Maintenance intervals

The maintenance intervals are determined by various factors.

Different application conditions, weather influences, working speeds and soil conditions have an influence on the maintenance intervals. But also the quality of the lubricants and cleaning agents affect the time to the next maintenance work.

The specified maintenance intervals therefore only serve as a reference.

In case of deviations from normal operating conditions the intervals for the necessary maintenance tasks must be adapted accordingly.

Regular maintenance is the basis for a fully operable machine. Properly serviced machines reduce the risk of failing and ensure economical use and operation of the machines.

Maintenance schedule

| Maintenance schedule Joker 3 - 6 CT | | |
|--|--|--|
| Maintenance location | Work instructions | Interval |
| After 10 operating hours | | |
| | Check all screw and plug-and-socket-connections for tight fit (see torque table) | Once |
| In use | | |
| Hydraulic hoses | Check the for damage Replace damaged hoses immediately or have them replaced | Before use |
| Hydraulic system and components | Check for leak tightness, fastening and chafing | Before use |
| Road lighting equipment and warning plates | Check condition, function and cleanliness | Before use |
| Warning and safety labels | Check that they are in place and legible | Before use |
| Side limitation | Lubricate | Daily and after each pressure cleaning |
| Tractor link arm bearings | Lubricate | Daily and after each pressure cleaning |
| Discs | Check condition, tight fit and wear, oil bath support for leaks and wear | Daily |
| Frame and connecting elements | Check condition and tight fit (see torque table) | Daily |
| Hinge bolts (from 4 m) | Lubricate | 40 hrs. and after each pressure cleaning |
| Packer | Check condition, bearings and fastening (see torque table) | 40 hours |
| At the end of the season | | |
| Complete machine | Check all screw and plug-and-socket-connections for tight fit (see torque table) | After the season |
| Replace the | Check the for damage Replace damaged hoses immediately or have them replaced | After the season |
| Hydraulic system and components | Check for leak tightness, fastening and chafing | After the season |
| Frame and connecting elements | Check condition and tight fit (see torque table) | After the season |
| Piston rods | Spray with corrosion protection agent | After the season |



The maintenance work and intervals for accessory parts are specified in the section "Accessories".

Maintenance schedule Joker 3 - 6 CT

Hydraulic hoses

- Check the hydraulic hoses regularly for damage (cuts, chafing, etc.)
- Replace damaged and faulty hoses immediately.
- Hydraulic hoses must be replaced after 6 years. For this purpose pay attention to the manufacturing date on the hose line (year/month) and on the hose (quarter/year):



Hose line

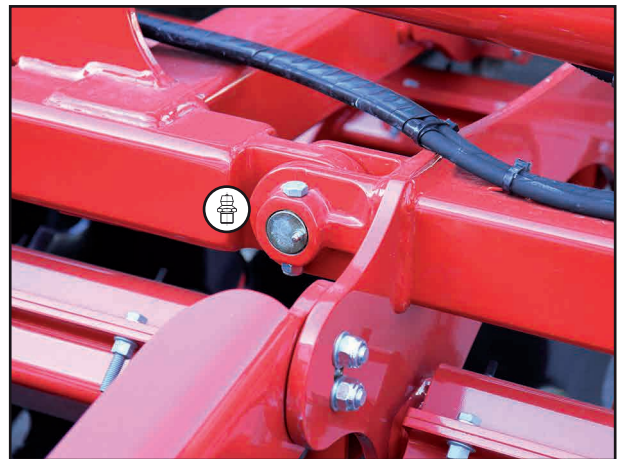
Hose

- Depending on the conditions of use (e.g. weather influences) or in case of higher strains on the machine the hoses may need to be replaced earlier.
- Have the hydraulic system checked by an expert at least once every year.
- In addition follow the country specific regulations and directives.

Lubrication points



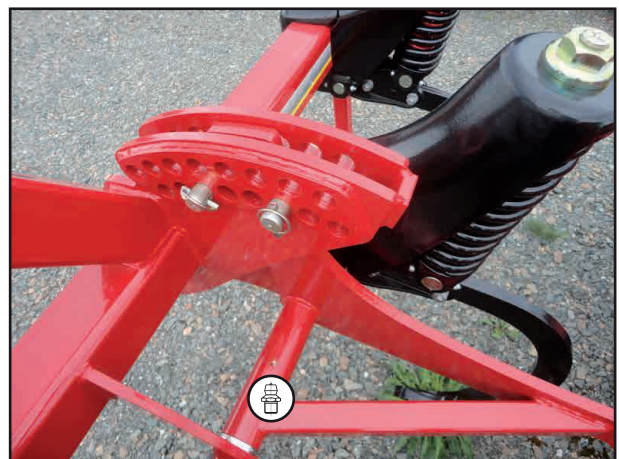
Safety pins (front)



Safety pins (rear)





Mounting of side limitation



Tractor link arm Mono TG (option)

Tightening torques

 The tightening torques only serve as guidelines and are generally valid. Actual data given at the corresponding points in the operating instructions have priority.

 Screws and nuts must thereby not be treated with lubricant, since this would change the friction value.

Metric screws

| Tightening torques - metric screws in Nm | | | | | | | |
|--|-------------|---------------------------------|------|------|------|------|------------|
| Size ø mm | Pitch mm | Screw design - strength classes | | | | | wheel nuts |
| | | 4.8 | 5.8 | 8.8 | 10.9 | 12.9 | |
| 3 | 0.50 | 0.9 | 1.1 | 1.8 | 2.6 | 3.0 | |
| 4 | 0.70 | 1.6 | 2.0 | 3.1 | 4.5 | 5.3 | |
| 5 | 0.80 | 3.2 | 4.0 | 6.1 | 8.9 | 10.4 | |
| 6 | 1.00 | 5.5 | 6.8 | 10.4 | 15.3 | 17.9 | |
| 7 | 1.00 | 9.3 | 11.5 | 17.2 | 25 | 30 | |
| 8 | 1.25 | 13.6 | 16.8 | 25 | 37 | 44 | |
| 8 | 1.00 | 14.5 | 18 | 27 | 40 | 47 | |
| 10 | 1.50 | 26.6 | 33 | 50 | 73 | 86 | |
| 10 | 1.25 | 28 | 35 | 53 | 78 | 91 | |
| 12 | 1.75 | 46 | 56 | 86 | 127 | 148 | |
| 12 | 1.25 | 50 | 62 | 95 | 139 | 163 | |
| 14 | 2.00 | 73 | 90 | 137 | 201 | 235 | |
| 14 | 1.50 | 79 | 96 | 150 | 220 | 257 | |
| 16 | 2.00 | 113 | 141 | 214 | 314 | 369 | |
| 16 | 1.50 | 121 | 150 | 229 | 336 | 393 | |
| 18 | 2.50 | 157 | 194 | 306 | 435 | 509 | |
| 18 | 1.50 | 178 | 220 | 345 | 491 | 575 | 300 |
| 20 | 2.50 | 222 | 275 | 432 | 615 | 719 | |
| 20 | 1.50 | 248 | 307 | 482 | 687 | 804 | |
| 22 | 2.50 | 305 | 376 | 502 | 843 | 987 | |
| 22 | 1.50 | 337 | 416 | 654 | 932 | 1090 | 510 |
| 24 | 3.00 | 383 | 474 | 744 | 1080 | 1240 | |
| 24 | 2.00 | 420 | 519 | 814 | 1160 | 1360 | |
| 27 | 3.00 | 568 | 703 | 1000 | 1570 | 1840 | |
| 27 | 2.00 | 615 | 760 | 1200 | 1700 | 1990 | |
| 30 | 3.50 | 772 | 995 | 1500 | 2130 | 2500 | |
| 30 | 2.00 | 850 | 1060 | 1670 | 2370 | 2380 | |

Inch screws

| Tightening torques - inch screws in Nm | | | | | | | |
|--|------|------------------|-------------|-----------------|-------------|-----------------|-------------|
| Screw diameter | | Strength 2 | | Strength 5 | | Strength 8 | |
| | | No marks on head | | 3 marks on head | | 6 marks on head | |
| Inch | mm | Coarse thread | Fine thread | Coarse thread | Fine thread | Coarse thread | Fine thread |
| 1/4 | 6.4 | 5.6 | 6.3 | 8.6 | 9.8 | 12.2 | 13.5 |
| 5/16 | 7.9 | 10.8 | 12.2 | 17.6 | 19.0 | 24.4 | 27.1 |
| 3/8 | 9.5 | 20.3 | 23.0 | 31.2 | 35.2 | 44.7 | 50.2 |
| 7/16 | 11.1 | 33.9 | 36.6 | 50.2 | 55.6 | 70.5 | 78.6 |
| 1/2 | 12.7 | 47.5 | 54.2 | 77.3 | 86.8 | 108.5 | 122.0 |
| 9/16 | 14.3 | 67.8 | 81.3 | 108.5 | 122.0 | 156.0 | 176.3 |
| 5/8 | 15.9 | 95.0 | 108.5 | 149.1 | 169.5 | 216.0 | 244.0 |
| 3/4 | 19.1 | 169.5 | 189.8 | 271.1 | 298.3 | 380.0 | 427.0 |
| 7/8 | 22.2 | 176.3 | 196.6 | 433.9 | 474.5 | 610.0 | 678.0 |
| 1 | 25.4 | 257.6 | 278.0 | 650.8 | 718.6 | 915.2 | 1017 |
| 1 1/8 | 28.6 | 359.3 | 406.8 | 813.5 | 908.4 | 1302 | 1458 |
| 1 1/4 | 31.8 | 508.5 | 562.7 | 1139 | 1261 | 1844 | 2034 |
| 1 3/8 | 34.9 | 664.4 | 759.3 | 1491 | 1695 | 2414 | 2753 |
| 1 1/2 | 38.1 | 881.3 | 989.8 | 1966 | 2237 | 3128 | 3620 |

Service

The company HORSCH would be pleased, if your machine and our services would meet your expectations.

If you encounter any problems, please feel free to contact your sales partner.

The service staff of our sales partners and the service employees at Horsch will always be available for assistance.

In order to be able to solve technical problems as quickly as possible, we ask you kindly to support us.

Please help the service personnel by providing the following information to avoid unnecessary queries.

- Customer number
- Name of customer representative
- Name and address
- Machine model and serial number
- Purchasing date and operating hours or area performance
- Type of problem

Warranty claim processing

Warranty claim forms must be submitted to HORSCH through your local HORSCH sales partner.

HORSCH

Farming with passion



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All details on technical specifications and pictograms are approximate and for information only. Subject to technical product revisions.