



STOLL

Operating instructions

Front loader **buckets**

for the ProfiLine and Solid model series



ROBUST U
ROBUST M
ROBUST S
ROBUST T
Light weight bucket

Status: 12/2022

Company details**Wilhelm STOLL Maschinenfabrik GmbH**

PO box 1181, 38266 Lengede

Bahnhofstr. 21, 38268 Lengede

Phone: +49 (0) 53 44/20 -222

Fax: +49 (0) 53 44/20 -182

E-mail: info@stoll-germany.com

Web: www.stoll-germany.com

Spare Parts Order

Phone: +49 (0) 53 44/20 -144 and -266

Administration

Phone: +49 (0) 53 44/20 -145 and -146

Fax: +49 (0) 53 44/20 -183

E-mail: parts@stoll-germany.com

Copyright

© Wilhelm STOLL Maschinenfabrik GmbH

Reproduction of these instructions, both completely and in excerpts, is only allowed with approval from Wilhelm STOLL Maschinenfabrik GmbH. Any infringement shall entail full compensation of damages and can be punishable by law.

The original instructions were written in the German language.

Instructions in other languages were translated from German.

Contents

1	About these operating instructions	4
1.1	Documentation overview	4
1.2	Use and purpose of the operating instructions	5
1.3	Rating plate	5
1.4	Validity of the operating instructions	5
1.5	Storage of the documents	6
1.6	Other applicable documents	6
1.7	Design tools	6
1.8	Nomenclature of the footer	7
2	Safety	8
2.1	Explanation of safety and warning notices	8
2.2	Representation and layout of warning notices	8
2.3	Danger grading of warning notices	8
2.4	EC Conformity	8
2.5	Proper use	9
2.6	Foreseeable misuse	10
2.7	Operational limits	10
2.8	Basic safety information	10
2.9	Danger zones	15
2.10	Safety equipment	15
2.11	Safety stickers	16
2.12	Personnel requirements	16
2.13	Behaviour in case of emergency	16
2.13.1	Behaviour if the tractor tips or falls over	16
2.13.2	Behaviour in case of flashovers from electrical power lines	17
3	Structure and description	17
4	Start-up	18
4.1	Initial operation	18
4.2	Check before each start-up	18
4.3	Mounting the implement	18
5	Operation	19
5.1	Levelling in reverse	19
5.2	Clearing work (especially clearing snow)	20
5.3	Earthwork and excavation work	21
5.4	Putting down the implement	21
6	Troubleshooting	22
7	Servicing	24
7.1	Cleaning and care	25
7.2	Service	25
7.3	Repairs	25
8	Decommissioning	26
8.1	Temporary decommissioning	26
8.2	Recommissioning	27
8.3	Final decommissioning and disposal	27

9	Spare parts and customer service	27
9.1	Spare parts	27
9.2	Customer service	27
10	Technical specifications	28
10.1	Dimensions and weights	28
10.1.1	ROBUST U	28
10.1.2	ROBUST M	28
10.1.3	ROBUST S	29
10.1.4	ROBUST T	29
10.1.5	Light weight bucket	30
10.2	Noise emissions	30
10.3	Tightening torques for screws	31
11	Declaration of Conformity	32
	Index	34

1 About these operating instructions

1.1 Documentation overview

There are various instructions and technical documentation for the front loader, mounting kit and accessories. Most documents are available in multiple languages.

If a set of instructions is missing or required in a different language:

- Order the instructions through a dealer.
- Download instructions free of charge from the Internet at www.stoll-germany.com.

Installation instructions for the front loader mounting kit



The installation of the mounting kit as well as the hydraulic and electric equipment may only be performed by an authorised specialised workshop.

The installation instructions describe how to install the front loader mounting kit and the hydraulic and electrical equipment up to the initial start-up of the front loader. They are intended for the specialist workshop.

The installation instructions have been specially compiled for this tractor model. They do not contain any information that is already included in the operating instructions.

The installation instructions contain information on spare parts for the tractor-specific mounting parts and equipment.

Operating instructions of the front loader

These operating instructions describe the safe use of the front loader from the initial operation to its disposal. They are intended for the operator and the user of the front loader.

The operating instructions are compiled specifically for the front loader series, they can therefore only take tractor-specific equipment into account to a limited extent.

Spare parts list

The spare parts list of the front loader lists all the information required for ordering spare parts, the front loader series and their options. Special adaptations for the tractor are not taken into account.

In addition, spare parts lists are available for front loader implements.

Operating instructions for front loader implements

The operating instructions describe the implements available for the specified front loader series.

Other documents

In addition to the above instruction manuals, there may be installation and operating instructions as well as other Technical Information that deal with special additional equipment and extensions, which are not included in the other documentation.



When you pass on the front loader or the tractor with a front loader attached, please also hand over all the relevant documents. The next owner needs the information.

1.2 Use and purpose of the operating instructions

The present operating instructions contain important information on the safe operation and for faultless, proper, and economical operation of front loader implements from Wilhelm STOLL Maschinenfabrik GmbH. It is intended for the operator and user of the front loader implement and should help to prevent risks, damage and downtimes as well as ensure and increase the service life of the implements.

Before start-up of the implement, the operating instructions must be read and understood.

For better readability, Wilhelm STOLL Maschinenfabrik GmbH will be called "STOLL" in the following.

1.3 Rating plate

The implements are identified with a rating plate.

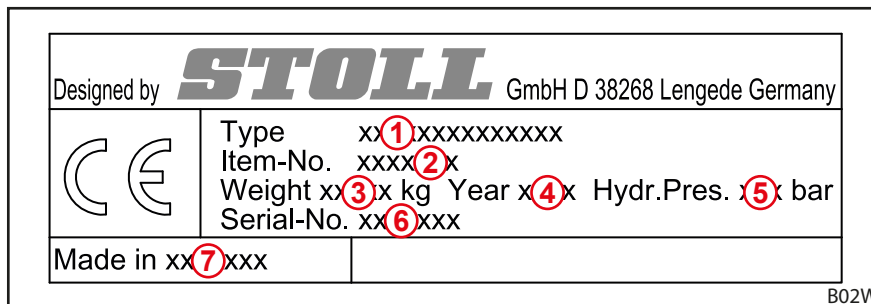


Fig. 1 Rating plate on the implement

Legend

- 1 Type of implement (e.g. round bale cutter)
- 2 Identification number
- 3 Weight
- 4 Year of manufacture
- 5 Permissible hydraulic pressure (not for all implements)
- 6 Serial number
- 7 Country of manufacture (e.g. ROK Republic of Korea)

1.4 Validity of the operating instructions

The operating instructions are valid only for the STOLL buckets listed under 2.5 *Proper use*, called "implement" in the following. The implement type can be found on the rating plate.

The operating instructions covers all of the components and functions of the model.

1.5 Storage of the documents

The operating instructions are a part of the machine. The entire documentation, consisting of these operating instructions as well as all other additional instructions supplied, must always be kept accessible, safe and dry on or in the vehicle. When lending or selling the front loader, the entire documentation must also be handed over.

1.6 Other applicable documents

In conjunction with these operating instructions, the following additional documents also apply:

- Operating instructions of the tractor
- Operating instructions of the front loader

When handling the implement and for all service work, please also observe:

- The recognised technical regulations for safe and professional work,
- The legal regulations for accident prevention,
- The legal regulations for health and environmental protection,
- The national regulations that apply in the country of the operator / user of the implement,
- The specifications that are relevant for the status of the technology,
- The road traffic regulations.

1.7 Design tools

The operating instructions contain the following different symbols and markings in the text:



Warning symbol that is used for warning notices and is graduated based on the danger (see 2 *Safety*)


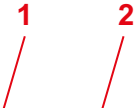




Additional information and tips

- List points
- ➔ Requirement for a sequence of actions
- ✂ Required tools
- (1) Numbered action step
- ✓ Result of an action or sequence of actions
- Unnumbered action step

Moreover, stylised drawings are used. For better understanding, some of the figures are exemplary, simplified or with dismantled parts for better representation and explanation.

- Please observe the following:
 - Dismounting is not always absolutely required for the respective description.
 - No different equipment variations are shown in the figures, unless otherwise specified.
 - The associated descriptive text always applies to the figures.
 - The following representation rules and elements apply:

Representation	Meaning
	Elements represented in yellow highlight the components for the respective operating situation.
	Item numbers designate assemblies or components. In each figure, there is always an explanatory legend for the item numbers.
	Magnifying glasses serve to focus on individual parts and details.
	Arrows indicate a direction of movement or action to be performed.

1.8 Nomenclature of the footer

The footer consists of the following parameters:

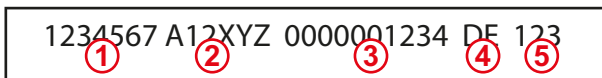


Fig. 2 Nomenclature of the footer

Legend

- 1 Document number (order number)
- 2 Type of instructions
- 3 Internal system number
- 4 Language identifier
- 5 Version

2 Safety

2.1 Explanation of safety and warning notices

The basic safety information comprises instructions that always apply for safe operation or to maintain the safe condition of the front loader and the front loader implements.

The action-related warning notices warn against residual dangers and are placed in front of dangerous action sequences.

2.2 Representation and layout of warning notices

Warning notices are action-related and are designed according to the following principle:

DANGER

Type and source of danger!

Explanation of the type and source of danger.

- ▶ Measures to prevent the danger.
-

2.3 Danger grading of warning notices

Warning notices are graded according to their level of danger and are represented as follows with the corresponding signal words and warning symbols:

DANGER

Immediate lethal danger or serious injuries.

WARNING

Possible lethal danger or serious injuries.

CAUTION

Possible slight injuries.

NOTICE

Damage to the implement or the surroundings.

2.4 EC Conformity

STOLL implements comply with Machinery Directive 2006/42/EC.

2.5 Proper use

The implements described are solely intended for use on agricultural or forestry tractors with a front loader and are intended for:

- mounting and use on tractors with STOLL front loaders from the ProfiLine and Solid model series as well as on tractors with front loaders approved by STOLL,
- use according to the usual purpose (see below),
- use and operation within the defined limits (see *10 Technical specifications*),
- control from the driver's seat.

The information for its correct use and technical data in the operating instructions of the front loader apply in all other respects.

The implements may only be operated when they are in perfect condition. If faults impair safety, these must be promptly repaired by an authorised specialist workshop.

The implements may not be used in work processes that require the presence of people close to the load when the front loader is in the raised position! This kind of work is permitted only if the front loader is equipped with an anti-lowering guard (see front loader operating instructions).

The front loader and its implements must not be operated simultaneously with other hydraulic equipment on the tractor.

Proper use also includes reading and observing the operating instructions, the associated additional instructions, the other applicable documents as well as the safety information. To ensure operational safety, prescribed maintenance work as well as intervals and conditions for care and service must also be observed. Any use other or beyond those described in the manual is considered as improper use.

Purpose of the buckets

The buckets are intended for picking up, transporting, and unloading different loads.

The following overview shows the purpose of different types of buckets:

Suitable for:	Bucket type				
	ROBUST				Light weight bucket
	U	M	S	T	
Loading of light to medium-weight material on level, solid ground	•	•	•	•	•
Loose bulk materials with low weight (e.g. cereals, loose silage, wood chips, bark mulch, fertiliser)	•	•	•	•	•
Heavy, sticky loads (e.g. gravel, mixed minerals, soil)	–	–	•	•	–
Earthwork	–	–	•	•	–
Work in solid ground	–	–	•	•	–

• = suitable, – = not suitable

The buckets are intended for mounting on a Euro change frame.

2.6 Foreseeable misuse

Avoid the following:


- Use of the implements on a wheel loader or farm loader
- Exceeding of the permissible axle load and the permissible total weight of the tractor
- Use outside of the conditions and prerequisites that are specified in the technical manuals and documents
- Transport of persons
- Transport of loads that do not correspond to the purpose of the implements
- Transport of loads in road traffic
- Transport of unsecured loads (e.g. stone pallets)
- Use of the implements for demolition work

2.7 Operational limits

- The following operating conditions and requirements on the operational environment must be observed:
 - If applicable, temperature range for proper operation of the tractor (see operating instructions of the tractor)
 - Sufficient load capacity of the tires and the front axle of the tractor

2.8 Basic safety information

The basic safety information comprises all safety measures grouped by theme and is applicable at all times. In addition, the information is presented as warning notices at the corresponding positions in these operating instructions.

 The implements are intended for use with STOLL front loaders from the ProfiLine or Solid model series. Observe the safety instructions in the front loader operating instructions.

Basic dangers



Mortal danger exists when persons are lifted or carried with the front loader. The front loader is not equipped with the necessary safety equipment to be used as a work cage.

- It is forbidden to lift or transport people with the front loader.

Mechanical dangers



There is a risk of crushing and impact of the upper and lower limbs due to projecting or protruding frame parts and moving components of the machine.

- Personnel must be instructed in the proper use of the machine and in the location and types of danger.
- Instruct persons to exit the danger and movement areas of the machine.
- Wear suitable protective gear, if necessary, when performing service tasks.



There is a lethal risk of crushing and injury due to accidental movements of the tractor, the front loader, and the implements.

- Instruct persons to exit the danger and action area of the machine.
- Do not allow other people to assist in any way (e.g. holding of pasture fence posts if they are to be pressed into the ground with the front loader) and instruct people to exit the working area of the machine.
- Assistance from a second person for loading activities should only be allowed when the front loader is lowered, provided that an anti-lowering guard is not installed.
- For loading work as well as when mounting and dismounting the front loader, ensure that the tractor is standing on level and solid ground.
- Only operate the front loader from the driver's seat of the tractor. Operating elements outside of the tractor must not affect the front loader! In particular, the operating elements of the front linkage must not affect the front loader!
- The front loader must only be operated by one person.

There is a lethal risk of injury due to exceeding of the maximum permissible load or with improper use of the front loader resulting in breaking of the front loader or its components.

- Observe the load limits specified in the technical data.
- When transporting loads or levelling, do not drive faster than 10 km/h.
- When clearing, do not drive faster than 6 km/h.
- Work only with mounted and locked implement.
- Observe the load capacity of the tyres and the front axle of the tractor.

Electrical dangers



There is lethal danger due to power surges when touching live machine parts, e.g. due to short circuits in the on-board network of the tractor.

- Installation and service tasks on the electrical system should only be performed by an electrician.
- Observe the operating instructions of the tractor.



There is lethal danger due to collision of the raised front loader with high-voltage lines.

- Do not raise the front loader higher than 4 m when driving on roads.
- Keep a safe distance away from electrical lines.
- If you do not know the rated voltage, stay at least 4 m away from electrical lines.

Danger due to emissions



With long-lasting normal operation of the machine, hearing damage can be caused by the noise level of the tractor and the hydraulic system.

- Always wear personal hearing protection.
- Observe special regulations for road operation and for operating machines in open spaces.

Dangers during packaging and transport



There is a risk of injury due to crushing, impacts or pinching if the implement tips over or falls from the lifting gear.

- During all preparatory work and during transport, always ensure a secure stand of the machine.
- Assisting persons must be instructed to exit the immediate danger area under the implement.

There is a risk of accidents during transport of the implement if it is not correctly loaded and secured.

- The implement must be correctly secured and transported.

Dangers during installation for start-up



There is a risk of injury when lifting and handling heavy machine parts as well as bulky components of the implement.

- Heavy and bulky machine parts may only be lifted with the assistance of a second person.
- Avoid back injuries by lifting correctly.

Dangers when picking up and putting down implements



There is a risk of serious injury and lethal danger due to implements falling down or uncontrolled lowering of the front loader when unsuitable implements are used or if the used implements are overloaded.

- Check that the implements are suitable before use.
- Check that the implement is locked correctly by repeatedly putting the implement down on the ground.
- Perform a visual check on the locking device.
- Only perform the hydraulic locking of the implement up to a height of 1.5 m.
- Check the proper functioning of the implements one time without load before beginning work.

Dangers during excavation work



There is lethal danger and a risk of explosion during excavation work due to collision with cables buried in the ground.

- Before performing excavation work, ensure that there are no electric cables in the ground.
- Before performing excavation work, ensure that there are no gas lines in the ground.

Dangers during loading work



There is a risk of serious injury and mortal danger when loading and transporting loads, if the front loader is operated from one side, the load is raised too far over the driver's seat or if unsuitable implements are used.

- If not equipped, check for retrofitting a cab and/or a FOPS (falling objects protection structure) / ROPS (roll-over protection structure) within the framework of work safety regulations.
- If there is no cab or safety equipment, never lift loads over the driver's seat.
- Only use suitable implements, which prevent e.g. rolling back and falling on the driver's seat.

Dangers when operating the front loader



There is a risk of serious injury or lethal danger due to tipping of the tractor when working on slopes, when going around bends, when the load on the rear axle is too low, and when driving into the bulk to be lifted at a skewed angle.

The risk increases when the front loaders are raised up high because of the higher centre of gravity.

- Drive carefully when working on slopes. Never travel with a raised load across a slope.
- Ensure that the ground is level enough.
- When driving in curves, reduce the speed and lower the load.
- Never start driving abruptly with the front loader raised high and fully loaded.
- Observe and comply with the maximum load of the tractor.
- Always use sufficient counterweights at the rear of the tractor.
- In case of instability or tipping, lower the front loader and remain in the driver's cab.
- Drive towards the load in a straight line and do not steer while driving into the load.
- Use the safety belts.
- Connect the brake pedals.
- Switch off the front axle suspension.
- On tractors with adjustable track width: set the maximum possible track width.

When driving on roads, there is a risk of serious injury and lethal danger for the operator as well as for other road users if the tractor and the front loader are not correctly prepared and operated for road traffic.

- Only drive on roads without a load.
- Before driving on roads, switch off the hydraulic system and lock it.
- Raise the front loader.

Dangers due to falling loads



There is mortal danger due to raised loads falling down on the driver's seat. There is a particularly high risk when lifting loads above the driver's cab and when working on slopes. Even the standard protection systems (roll-over protection structure ROPS, falling objects protective structures FOPS) do not provide fully adequate protection.

- When working on slopes, reduce the implement filling and lower the load.
- Check the inclination of the implement. Do not scoop too far with the implement.
- Use implements that are designed such that they prevent loads from falling onto the driver's seat.
- Compensate for the increased angle on front loaders without parallel motion when lifting by "dumping" with the implement.
- Do not operate the front loader without parallel motion while driving in reverse.
- On tractors without a cab or 4-post roll-over protection system, do not lift large bulks any higher than the pivot point of the beam.
- Watch the load as you are lifting. Do not lift the load when reversing.

Dangers during maintenance



Improperly performed maintenance work (care and cleaning, service, repairs) impair the safety of the implements.

- Check the implements regularly for defects.
- Care and cleaning work must be carried out correctly.
- Only have repair work performed by authorised qualified personnel.

2.9 Danger zones

On and around the front loader, there are the following areas with increased risk to safety of the operator or safety of other persons:

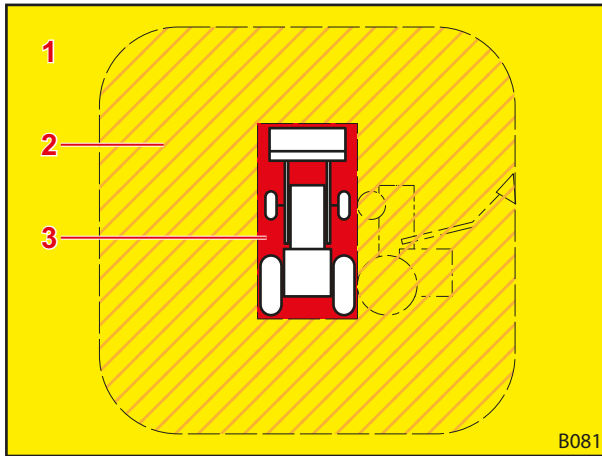


Fig. 3 Top view (from above)

Legend

- 1 Work area (yellow)
- 2 Outer danger zones (hatched in orange)
- 3 Inner danger zones (red)

Danger zone	Description	Danger
Work area	Overall possible movement area of the tractor incl. the front loader during loading work.	<ul style="list-style-type: none"> ● Standing in the working area represents a risk.
Outer danger zone	Overall field of action of the tractor and front loader as well as the area in which the tractor or front loader could tip over in case of accident: <ul style="list-style-type: none"> ● On the sides (left and right): height of the tractor with the front loader raised as far as it goes (incl. implement) ● Front and rear: half the height of the tractor with the front loader raised as far as it goes (incl. implement) 	<ul style="list-style-type: none"> ● When the tractor tips over or when loads fall down, people can be seriously injured.
Inner danger zone	Area on and around the tractor and front loader, especially between the wheels of the tractor, directly in front of and behind the tractor as well as on and under the front loader.	<ul style="list-style-type: none"> ● Persons can be pinched in between the wheels of the tractor. ● Persons can be overseen by the tractor driver and run over. ● Moving machine parts can move uncontrollably and thereby crush and injure people.

- Observe the danger zones and instruct unauthorised persons out of these areas.

2.10 Safety equipment

Depending on the type, the implements have the following protective and safety equipment:

Protective/safety equipment	Function
Safety stickers	Safety stickers warns against hazards at danger points (see 2.11 Safety stickers).

2.11 Safety stickers

Safety stickers warn of hazards at danger points and are an important part of the safety equipment of the front loader.

- Clean safety stickers if they are soiled.
- Replace damaged or illegible safety stickers (see 9.1 *Spare parts*).
- If necessary, equip new spare parts with the corresponding safety stickers.

2.12 Personnel requirements

In the operating instructions, a distinction is made between the following persons:

- Operators
- Qualified personnel
- Specialised tradesmen

All person groups must have read and understood the operating instructions. The table lists the other respective qualifications and responsibilities.

Personnel	Qualification/responsibility
Operators	<ul style="list-style-type: none"> • are responsible for the proper operation of the front loader • instruct qualified personnel on how to handle the front loader • ensure regular inspection and service of the front loader in a specialised workshop
Qualified personnel	<ul style="list-style-type: none"> • are responsible for the proper operation of the front loader • are physically able to control the front loader and the tractor • ensure regular service of the front loader • know the relevant road traffic regulations • are in possession of the prescribed driving license • are familiar with driving tractors safely
Specialised tradesmen	<ul style="list-style-type: none"> • perform maintenance work (service and repairs) • have a recognised training certificate or specialised knowledge that is required to observe the existing specifications, regulations, and directives



Work on electrical components of the machine may only be performed by an electrician according to the electro-technical regulations.

Welding work may only be performed in an authorised workshop.

2.13 Behaviour in case of emergency

- Initiate the following measures to avoid further damage in cases of emergency:
 - (1) Secure the accident site correctly.
 - (2) Provide first aid (if necessary).
 - (3) Call rescue workers, describe the situation briefly and concisely. Wait for feedback.
 - (4) Inform the employer or operator.

2.13.1 Behaviour if the tractor tips or falls over

- If the tractor tips or falls over with the front loader, observe the following instructions:
 - (1) Lower the load.
 - (2) Stay in the driver's cab until professional help arrives.

2.13.2 Behaviour in case of flashovers from electrical power lines

In the vicinity of electrical power lines, flashovers can happen quickly that cause high electrical voltage on the outside of the tractor. This results in large voltage differences on the ground around the machine.

In the case of a flashover:

- Do not exit the driver's cab.
- Do not touch any metal parts.
- There must be no connection to the earth.
- Warn any persons standing around against coming closer.
- Have the power switched off.
- Wait for professional rescue workers.

If it is still necessary to exit the driver's cab, e.g. due to the threat of fire:

- Jump away from the tractor and be sure not to touch it.
- Take small steps to move away from the tractor.

3 Structure and description

The implement consists of the following components:

- 1 bucket body

The bucket body is equipped with a lifting eye at the top rear, on which the implement can be transported (e.g. with a crane).

The rear side of the bucket body is equipped with 2 support hooks and 2 support lugs for the Euro change frame.

Depending on the model, the front edge of the bucket body can be equipped with teeth.

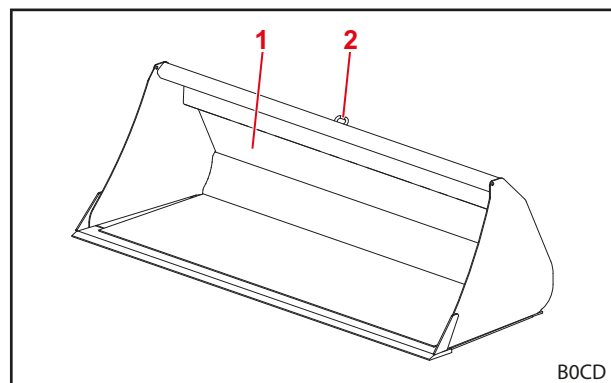


Fig. 4 Structure of the bucket – front view (example: ROBUST U)

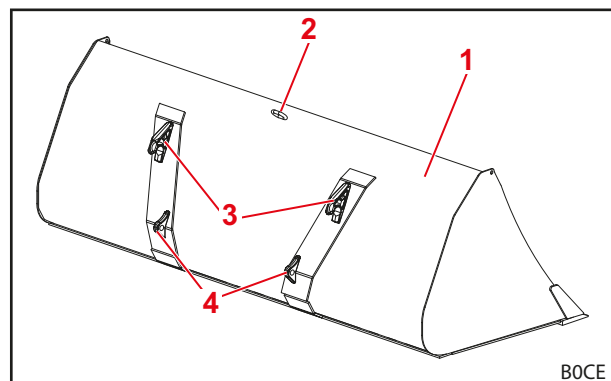


Fig. 5 Structure of the bucket – rear view (example: ROBUST U)

Legend

- 1 Bucket body
- 2 Lifting eye
- 3 Support hooks for change frame
- 4 Support lugs for pins of the change frame

4 Start-up

4.1 Initial operation

The initial operation is performed at a specialist workshop. This also includes mounting of the implement as well as a functional check.

- Obtain instruction from the specialised workshop and ask questions if necessary.
- Read the operating instructions before initial use.
- Check all of the implement functions without a load.
- Check proper functioning of the implement under all operating states.

4.2 Check before each start-up

- Before each start-up, check all of the points on the checklist.
- Fix any observed defects in a safe position and location.
- Use the implement only if proper and safe operation is ensured.

	Checks	See also	Completed
<i>Before mounting the implement</i>			
	Is the correct counterweight mounted on the rear?	see front loader operating instructions	
	Visual check performed on the implement for damage (e.g. cracks, corrosion)?		
<i>After mounting the implement</i>			
	Is the locking mechanism for the implement locked properly?	see front loader operating instructions	
	Ensured that the implement cannot collide with the front loader in any position?		

4.3 Mounting the implement

The implement is intended for mounting on a Euro change frame.

- In doing so, observe the description and warnings for mounting implements and operation of the implement locking mechanism in the front loader operating instructions.

5 Operation

Picking up and unloading loads:

→ Before beginning operation, check that the implement functions properly and safely without a load.

- (1) Lower the front loader to the desired height.
- (2) Position the implement horizontally.
- (3) Drive straight into the load.



The implement can be filled most effectively when it is driven horizontally into the load.

To make it easier to fill the implement, slightly raise the front loader when driving into the load.

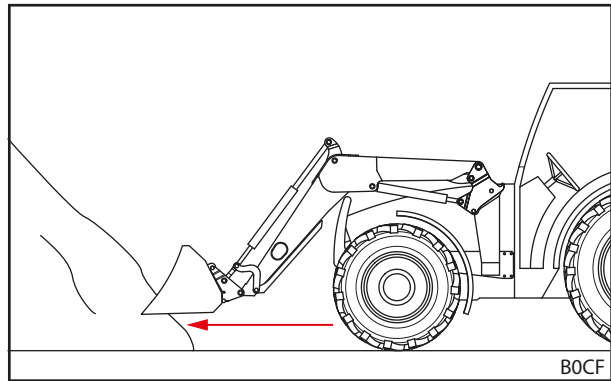


Fig. 6 Driving straight into the load

- (4) Tip the implement to the rear with the *scooping* function.
 - (5) Drive away from the load in reverse.
 - (6) Drive the load to the target site.
 - (7) Unload the load from the implement with the *dumping* function.
- ✓ The load has been picked up and unloaded.



For big piles, take the material from the top.

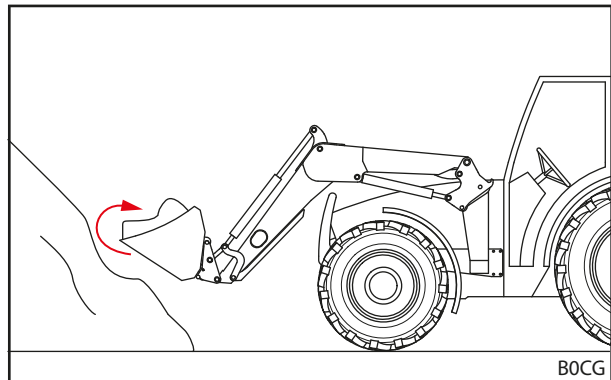


Fig. 7 Tipping the implement to the rear and picking up the load

5.1 Levelling in reverse

NOTICE

Material damage due to improper levelling!

If the implement is not correctly used for levelling, the implement and the front loader can be overloaded and damaged.

- ▶ Level only with the front edge of the bucket.
- ▶ Maintain a maximum angle of 45° between the bottom edge of the bucket and the ground.
- ▶ Only drive in reverse with the bucket in this position.
- ▶ Do not exceed a speed of 10 km/h.

With a bucket implement, the front loader can perform light levelling work.

Levelling in reverse:

- (1) Lower the front loader.
 - (2) Use the *dumping* and *scooping* function (see front loader operating instructions) until the angle between the bottom edge of the bucket and the ground does not exceed 45°.
 - (3) Slowly drive in reverse.
- ✓ The ground is levelled.

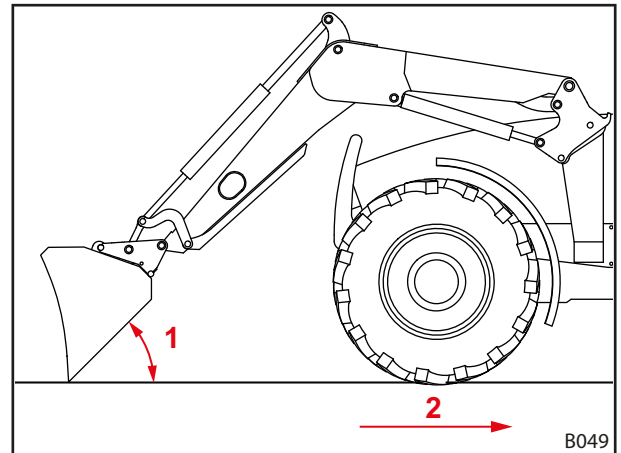


Fig. 8 Levelling in reverse

Legend

- 1 Maximum angle of 45° between the bottom edge of the bucket and the ground
- 2 Maximum speed of 10 km/h

5.2 Clearing work (especially clearing snow)**NOTICE****Material damage due to improper clearing!**

Obstacles (e.g. manhole cover, kerbs) under the material to be cleared (e.g. snow) can strongly damage the implement, front loader, mounting parts, and the tractor in case of collision.

- ▶ Only clear obstacle-free terrain.
- ▶ Do not exceed a speed of 6 km/h.

With a bucket implement, the front loader can perform light clearing work.

Clear an area:

- (1) Set the bucket vertically.
 - (2) Lower the front loader until the edge of the bucket touches the ground.
 - (3) Activate the float position (see front loader operating instructions).
 - (4) Drive forwards at max. 6 km/h.
- ✓ The area has been cleared.

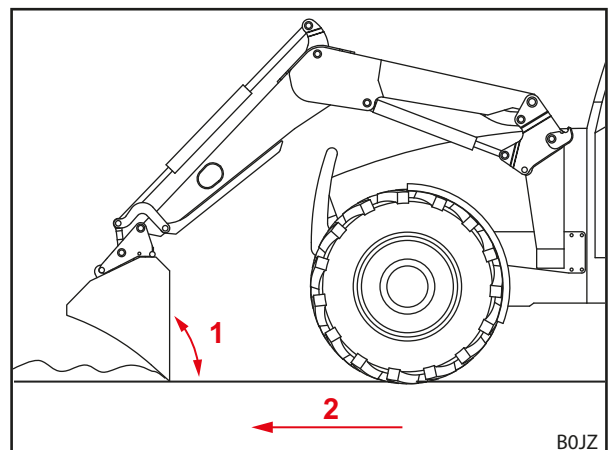


Fig. 9 Clearing

Legend

- 1 Angle of 90°
- 2 Maximum speed of 6 km/h

5.3 Earthwork and excavation work

⚠ DANGER

Lethal danger and a risk of explosion during excavation work due to collision with cables buried in the ground!

When performing excavation work, the front loader can collide with electric lines or gas lines. This represents a lethal danger for the driver and persons in the surrounding area.

- ▶ Before performing excavation work, ensure that there are no electric cables in the ground.
- ▶ Before performing excavation work, ensure that there are no gas lines in the ground.

Excavating soil:

- (1) Position the implement horizontally and lower the front loader until it is just above the ground.
 - (2) Tip the implement forwards until the implement touches the ground.
 - (3) Drive forwards, lower the front loader and excavate the soil with the *scooping* function.
 - (4) Drive the load to the target site.
 - (5) Unload the load from the implement at the target site with the *dumping* function.
- ✓ The soil has been excavated.

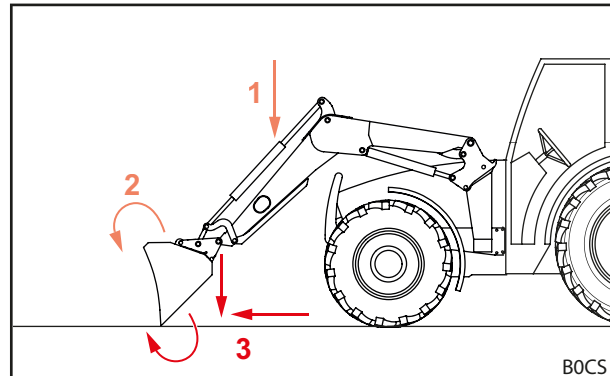


Fig. 10 Excavating soil

5.4 Putting down the implement

- see 8.1 *Temporary decommissioning*

6 Troubleshooting

WARNING

Mortal danger and material damage due to lack of safety!

Improperly performed troubleshooting and repair work can impair the safety of the implement.

- ▶ Necessary repair work should only be performed by an authorised specialised workshop.

Faults on the implement are frequently caused by factors that are not a result of a malfunction of the implement or front loader.

In case of faults, first check:

- Is there enough oil in the hydraulic tank of the tractor?
- Has the correct oil been used?
Only use oil types specified in the tractor operating instructions. The wrong oil can cause foam to build up and leaks.
- Is the hydraulic oil clean and free of moisture?
You may need to change the oil and filter.
Install an additional filter in the hydraulic system if necessary.
- Are the hoses and connections mounted correctly?
The connections must be locked in place.
- Are the hoses and connectors undamaged, not clamped or twisted?
- Have the cylinders of the front loader been moved several times into their end positions to remove the air from the lines and the cylinders?
- Have you taken the low outside temperatures into consideration?
Is the oil at operating temperature already?

If these points do not resolve the problem, the following table will help to localize and correct the fault.



Incorrect repairs can lead to safety risks. That is why the repair work must only be carried out by suitably qualified personnel!

STOLL recommends that the repair work be performed at a specialised workshop.

Description of the fault	Cause	Rectifying the fault
Front loader and/or implements work in the wrong direction to the operating lever.	Hydraulic connection is not connected properly.	Check the hydraulic connections, correct if necessary.
	Bowden cables are mounted incorrectly.	Check the connection of the Bowden cables and adjust if necessary.
	Operating lever not aligned correctly.	Check the installation position, and change the connection of the Bowden cables if necessary.

Description of the fault	Cause	Rectifying the fault
The front loader, implement and implement with hydraulic function, such as a top loading grip, move too slowly or not at all.	Not enough oil in the hydraulic system.	Check oil level and refill if necessary.
	Hydraulic couplings are not connected correctly.	Check the connections.
	Tractor pump is worn.	Check the tractor pump, replace if necessary.
	Insufficient oil flow.	Check the tractor hydraulic system.
	Engine speed too low.	Increase engine speed.
	Hydraulic fluid too cold.	Warm up the hydraulic system to operating temperature.
	Too big load in the implement.	Reduce load.
	Hydraulic coupling defective.	Check couplings, replace if necessary.
	Internal leaking in the hydraulic cylinder.	Check the cylinders, repair or replace defective cylinders.
	Pressure relief valve is set incorrectly.	Check the setting of the pressure relief valve.
	Internal leakage in the control block.	Check the control block, replace if necessary.
	Operating lever not adjusted correctly.	Correct the settings of the operating lever.
	The top loading grip valve does not switch.	Check the magnet and shutters, replace if necessary.
Insufficient lifting and tear-out force.	Insufficient oil pressure.	Check the tractor hydraulic system.
	Internal leaking in the hydraulic cylinder.	Check the cylinders, repair or replace defective cylinders.
	Too big load in the implement.	Reduce load.
	The primary or secondary pressure relief valve is incorrectly set or defective.	Check the settings of the pressure relief valve and replace if necessary.
	Internal leakage in the control block.	Check the control block, replace if necessary.
Air in the hydraulic fluid (recognizable by the foamy hydraulic fluid).	The hydraulic pump sucks in air.	Check the lines between the hydraulic pump and tank for loose or defective connections.
	The hydraulic filter is dirty.	Check the hydraulic filter, replace if necessary.
	Low oil quantity in the tank.	Check the oil level, refill if necessary.
	Mixed oil types.	Only use recommended oils.
	Discharging of returning oil.	Connection for returning oil according to the specifications.
Leakage on the hydraulic couplings of the front loader or the 3rd or 4th control circuit.	Leaks caused by infiltrated dirt.	Clean the coupling, replace if necessary. If the front loader or the 3rd or 4th control circuits are not used, seal the hydraulic couplings with the protective caps, or close the cover of the Hydro-Fix.
	Couplings are worn or damaged.	Replace the couplings.
Front loader, implement and implement with hydraulic function is blocked during lifting or lowering movement.	Coupling not completely closed.	Check the hydraulic coupling.
	The coupling is defective.	Replace the defective coupling halves.
	Hydro-Fix, multi-coupler and Implement-Fix not fully closed.	Check the locking lever for deformation. Check the couplings for firm seating, fasten if necessary.
The front loader rocks when lowering the load.	Lowering speed too high.	Reduce the lowering speed.
Unstable implement on FS rapid emptying front loaders (implement tilts away backwards).	Rapid emptying activated without dumping. This causes a vacuum in the hydraulic system.	Only activate the rapid emptying during the dumping process. Increase the engine speed in order to deliver enough oil.

Description of the fault	Cause	Rectifying the fault
The implement cylinder are extended, but are not retracted again.	Piston seal in the implement cylinder is defective, so that the surface of the piston and the ring are stuck together.	Check each cylinder separately for leaks and if necessary replace any defective cylinders.
	Seat valve does not return to starting position after turning on the rapid emptying.	Remove seat valve and check for debris, if necessary, replace.
	Insufficient oil flow.	Check the tractor hydraulic system.
	The double pressure relief valve of the front loader control block does not close.	Clean the double pressure relief valve and replace if necessary.
The front loader is raised when scooping from a lowered position.	Oil shortage on the piston rod side of the lifting arm cylinder.	Increase the engine speed when lowering.
		Lower without float position.
The front loader is raised when scooping from a lowered position, and when subsequently dumping, the front loader is lowered very fast.	Oil shortage on the piston crown side of the lifting arm cylinder.	After the previous error, only actuate the <i>lifting</i> function until the front loader is raised and the implement can be carried in a parallel position.

7 Servicing

WARNING

Serious risk of injury due to uncontrolled lowering of the front loader!

During service and repair work, a raised front loader can be lowered unexpectedly and crush and injure nearby persons.

- ▶ Only perform maintenance work when the front loader is completely lowered.

WARNING

Risk of injury due to hydraulic fluids under high pressure!

Even when the tractor is switched off or the front loader has been removed, the hydraulic system can still be under pressure. If the service work is not carried out correctly, oil can spurt out at high pressure and cause serious injury to persons standing nearby.

- ▶ Before opening the couplings or dismantling hydraulic components, depressurize the hydraulic system.
- ▶ Always used suitable auxiliary materials when searching for leaks.
- ▶ Never search for leaks using your fingers.

CAUTION

Risk of burns by hot machine parts!

Hydraulic components as well as other parts of the front loader and tractor can get very hot during operation. This can cause burns to the skin when performing maintenance work.

- ▶ Allow the machine and components to cool down to under 55 °C before performing maintenance work.

Repairs help to maintain proper functioning of the implement and prevent premature wear. A distinction is made between the following measures:

- Cleaning and care
- Service
- Repairs

7.1 Cleaning and care

NOTICE

Possible material damage due to unsuitable cleaning agents!

Unsuitable cleaning agents can damage surfaces and safety devices as well as destroy gaskets.

- ▶ Only use cleaning agents that are compatible with the machine surfaces and seal materials.

- Clean the implement with water and a mild cleaning agent.
- Lubricated surfaces of the implement must be re-greased after cleaning.

7.2 Service

The implement is maintenance-free.

7.3 Repairs

⚠ WARNING

Mortal danger and material damage caused by repair work carried out incorrectly!

Repair work carried out incorrectly can impair the safety of the front loader and can lead to serious accidents and injuries.

- ▶ Repair work should only be performed by an authorised specialised workshop.

Repairs involve the replacement and repair of components. This is only necessary if components are damaged after wear or due to external circumstances.

The specialised workshop must:

- Perform all required repair work professionally and complying with the applicable regulations and according to the rules of engineering.
- Worn or damaged parts should never be provisionally repaired.
- Only use original or approved spare parts for repairs (see 9.1 *Spare parts*).
- Replace the gaskets.

8 Decommissioning

8.1 Temporary decommissioning

⚠ WARNING

Risk of injury due to implement tipping over!

If the implement is not in the required position to be safely put down, the implement can tip over. This can cause injuries to persons.

- ▶ Observe the instructions for putting down the implement in the respective chapter for the implement.
- ▶ Ensure that the implement is stable.

Putting down the implement:

- (1) Lower the front loader close to the ground and position the implement horizontally on the ground or place on a secure rack.



Do not completely lower the front loader onto the ground.

- (2) Switch off the tractor.
 - Apply the parking brake.
 - Stop the engine.
 - (3) Open the implement locking mechanism (see front loader operating instructions).
 - (4) Switch on the tractor.
 - (5) Lower the implement to the ground.
 - (6) Unhook the change frame from the implement hooks.
 - Use the *dumping* function until the upper cross bar is positioned under the implement hook.
 - (7) Slowly drive the tractor away in reverse.
 - (8) Check that the implement is in a stable position.
 - (9) If applicable, cover the implement with a protective tarp.
- ✓ The implement is put down.

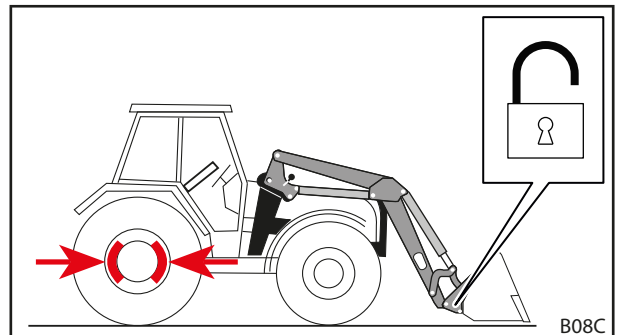


Fig. 11 Opening the implement locking mechanism

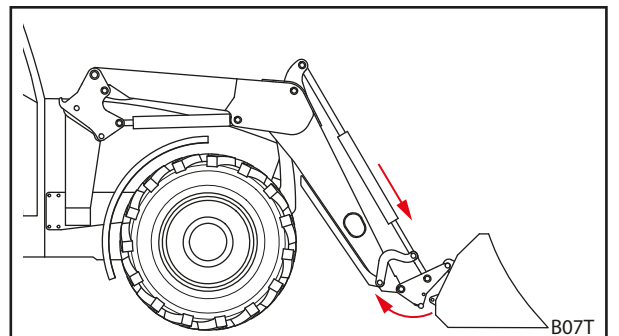


Fig. 12 Unhooking the change frame

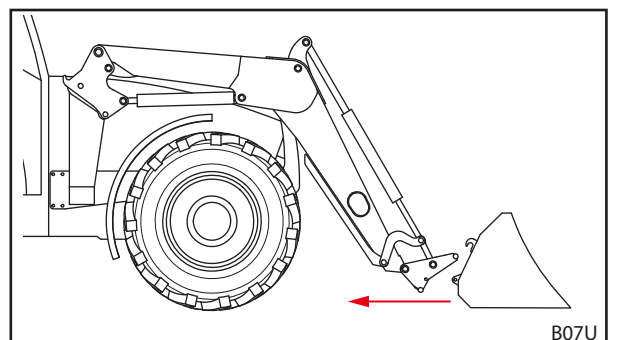


Fig. 13 Driving away

8.2 Recommissioning

Recommissioning the implement:

- (1) If necessary, take the protective tarpaulin off of the implement.
- (2) Clean the implement if necessary.
- (3) Perform a "Check before each start-up" (see 4.2 *Check before each start-up*).
- (4) Check all of the implement functions.
 - ✓ The implement is ready for operation again.

8.3 Final decommissioning and disposal

NOTICE

Environmental damage due to improper disposal!

The implements consist essentially of components made of steel and hydraulic components, which may contain, among other things, rubber and plastics which must be disposed of separately. Improper disposal can harm the environment.

- ▶ Observe the national and local regulations and environmental legislation for the disposal.
- ▶ Hand the implement over to the dealer or a specialised company for disposal.

The implement does not have a limit on its service life. In case of disposal, the implements must be decommissioned and disposed of correctly.

- Also observe the safety instructions for service and maintenance.

9 Spare parts and customer service

9.1 Spare parts

⚠ WARNING

Risk of injury and material damage due to using the wrong spare parts!

The use of non-approved spare parts can impair the safety of the implement and results in expiry of the operating permit.

- ▶ Only use original spare parts or those approved by STOLL.

Original spare parts and fitting accessories are listed in separate spare part lists.

- Download spare part lists at www.stoll-germany.com.

9.2 Customer service

For further questions regarding your front loader, please contact your dealer.

10 Technical specifications

10.1 Dimensions and weights

10.1.1 ROBUST U

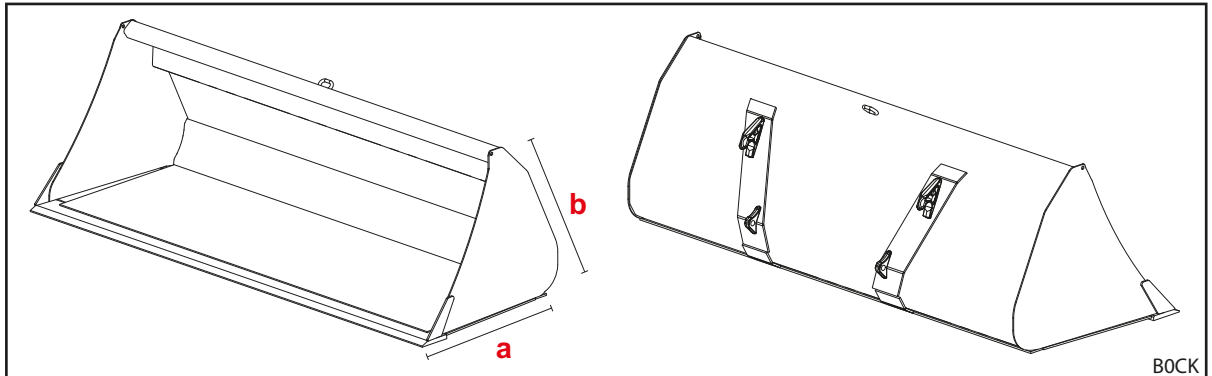


Fig. 14 ROBUST U

Id. no.	Width [mm]	Dimension a [mm]	Dimension b [mm]	Volume heaped [m ³]	Volume level heap [m ³]	BRINELL 500 HB cutting edge	Weight [kg]
3428170	1150	880	760	0.47	0.41	110x16	130
3428180	1300	880	760	0.51	0.44	110x16	132
3428190	1500	880	760	0.60	0.52	150x16	161
3428200	1700	880	760	0.68	0.59	150x16	176
3428210	1900	880	760	0.76	0.66	150x16	211
3428220	2050	880	760	0.82	0.71	150x16	225
3428230	2200	880	760	0.89	0.77	150x16	269
3461720	2400	880	760	0.94	0.82	150x20	310

10.1.2 ROBUST M

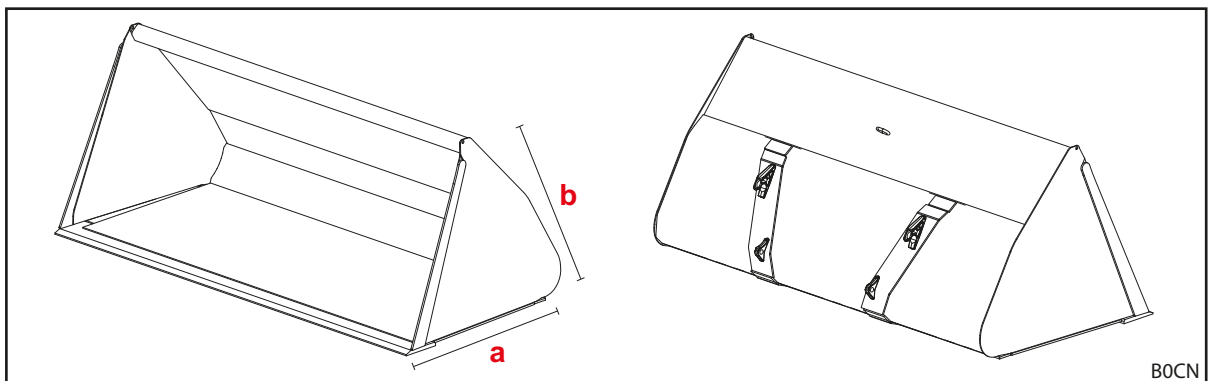


Fig. 15 ROBUST M

Id. no.	Width [mm]	Dimension a [mm]	Dimension b [mm]	Volume heaped [m ³]	Volume level heap [m ³]	BRINELL 500 HB cutting edge	Weight [kg]
3428330	2050	1090	980	1.45	1.13	150x16	320
3429920	2200	1090	980	1.56	1.22	150x16	384
3429930	2400	1090	980	1.70	1.33	200x20	432
3429940	2600	1090	980	1.86	1.45	200x20	462

10.1.3 ROBUST S

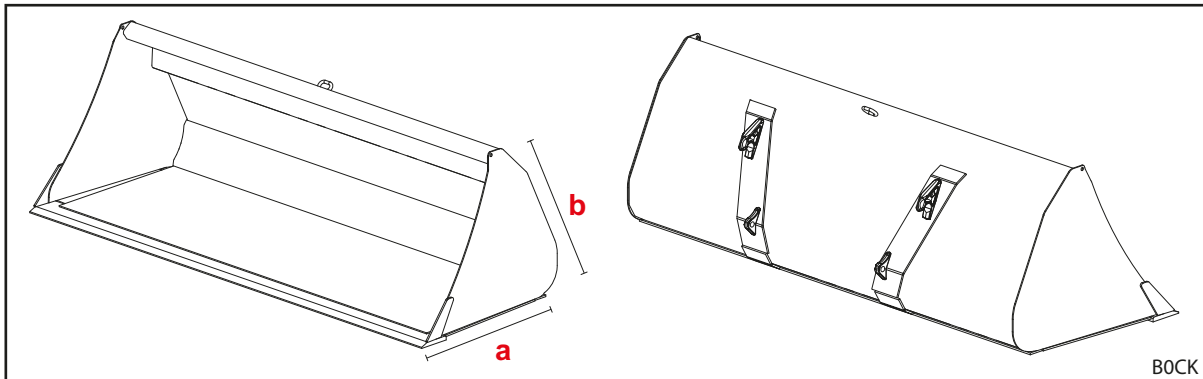


Fig. 16 ROBUST S

Id. no.	Width [mm]	Dimension a [mm]	Dimension b [mm]	Volume heaped [m ³]	Volume level heap [m ³]	BRINELL 500 HB cutting edge	Weight [kg]
3428260	1500	880	760	0.60	0.52	150x16	172
3428270	1700	880	760	0.68	0.59	150x16	190
3428280	1900	880	760	0.74	0.64	150x20	242
3428290	2050	880	760	0.81	0.70	150x20	258
3428300	2200	880	760	0.87	0.76	150x20	308
3428310	2400	880	760	0.94	0.82	200x20	351
3459310	2600	880	760	1.01	0.88	200x20	376

10.1.4 ROBUST T

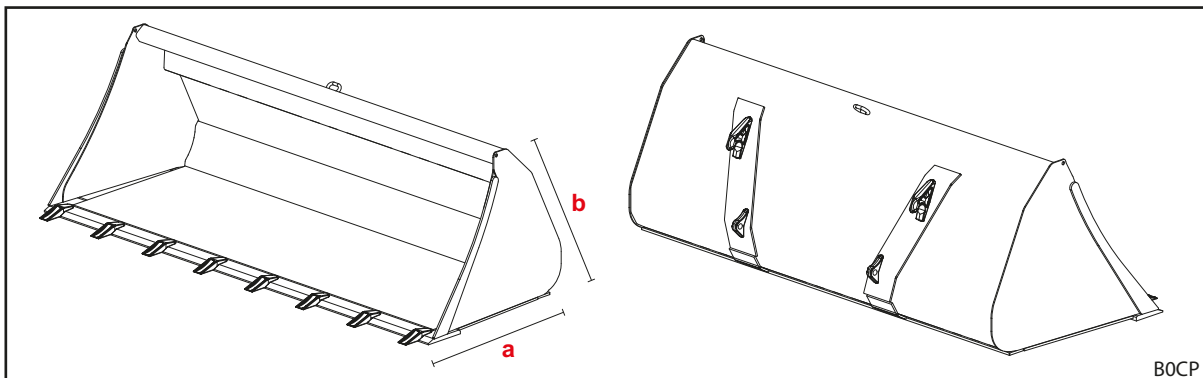


Fig. 17 ROBUST T

Id. no.	Width [mm]	Dimension a [mm]	Dimension b [mm]	Volume heaped [m ³]	Volume level heap [m ³]	BRINELL 500 HB cutting edge	Weight [kg]	Number of teeth
3436990	1500	880	760	0.60	0.52	150x16	177	5
3437000	1700	880	760	0.68	0.59	150x16	196	6
3437010	1900	880	760	0.74	0.64	150x20	249	6
3437020	2050	880	760	0.81	0.70	150x20	266	7
3437030	2200	880	760	0.87	0.76	150x20	316	7
3437040	2400	880	760	0.94	0.82	200x20	359	8
3459300	2600	880	760	1.01	0.88	200x20	385	8

10.1.5 Light weight bucket

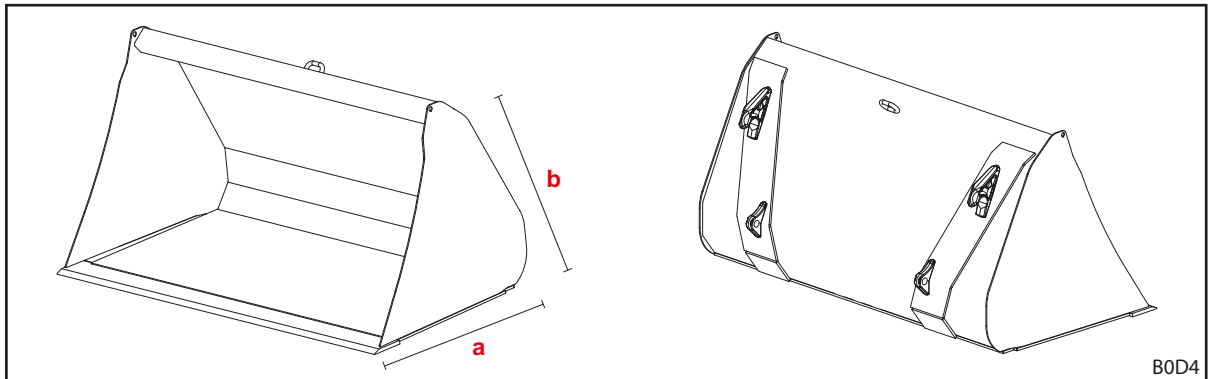


Fig. 18 Light weight bucket

Id. no.	Width [mm]	Dimension a [mm]	Dimension b [mm]	Volume heaped [m ³]	Volume level heap [m ³]	Weight [kg]
3550490	1400	730 mm	695 mm	0.45	0.36	99
3550500	1600	730 mm	695 mm	0.52	0.41	109
3550510	1850	730 mm	695 mm	0.61	0.48	131
3550520	2100	730 mm	695 mm	0.70	0.55	171

10.2 Noise emissions

The emission sound pressure level is less than 70 dB(A) (depending on the tractor).

10.3 Tightening torques for screws

Tightening torque for screws						
Thread	Strength category					
	8.8		10.9		12.9	
	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft
M4	3	2	4.5	3	5	4
M6	11	8	15	11	17	13
M8	27	20	36	27	42	31
M8x1	29	21	38	28	45	33
M10	54	40	71	52	83	61
M10x1.25	57	42	75	55	87	64
M12	93	69	123	91	144	106
M12x1.5	97	72	128	94	150	111
M12x1.25	101	74	133	98	155	114
M14	148	109	195	144	229	169
M14x1.5	159	117	209	154	244	180
M16	230	170	302	223	354	261
M16x1.5	244	180	320	236	374	276
M18	329	243	421	311	492	363
M18x2	348	257	443	327	519	383
M18x1.5	368	271	465	343	544	401
M20	464	342	592	437	692	510
M20x2	488	360	619	457	724	534
M20x1.5	511	377	646	476	756	558
M22	634	468	807	595	945	697
M22x2	663	489	840	620	984	726
M22x1.5	692	510	873	644	1022	754
M24	798	589	1017	750	1190	878
M24x2	865	638	1095	808	1282	946
M27	1176	867	1496	1103	1750	1291
M27x2	1262	931	1594	1176	1866	1376
M30	1597	1178	2033	1499	2380	1755
M30x2	1756	1295	2216	1634	2594	1913
5/8" UNC (normal)	230	170	302	223		
5/8" UNF (fine)	244	180	320	236		
3/4" UNC (normal)	464	342	592	437		
3/4" UNF (fine)	511	377	646	476		



Make sure that the threads are clean! The specified tightening torques are valid for screws and threads that are clean, dry and free of grease.

11 Declaration of Conformity

(in accordance with EC Directive 2006/42/EC, Appendix II 1.A)

Wilhelm STOLL Maschinenfabrik GmbH
Bahnhofstrasse 21
38268 Lengede, Germany

hereby declares that the machine in its state on delivery complies with the directives and harmonised standards listed in the following, and will be made available on the market:

Designation:	Implement
Type:	<p>Bucket ROBUST U, ID numbers 3428170, 3428180, 3428190, 3428200, 3428210, 3428220, 3428230, 3461720</p> <p>Bucket ROBUST M, ID numbers 3428330, 3429920, 3429930, 3429940</p> <p>Bucket ROBUST S, ID numbers 3428260, 3428270, 3428280, 3428290, 3428300, 3428310, 3459310</p> <p>Bucket ROBUST T, ID numbers 3436990, 3437000, 3437010, 3437020, 3437030, 3437040, 3459300</p> <p>Light weight bucket, ID numbers 3550490, 3550500, 3550510, 3550520</p>
Machine no.:	5400000 to 5999999
With the intended use/ function:	As a mounted implement, the implement is "interchangeable equipment" as defined by the Machinery Directive 2006/42/EC. The implement is mounted on front loaders on agricultural and forestry tractors using a change frame, and serves to perform processes and tasks in the agricultural and forestry sector. Further information on the intended use with the operating conditions, the description, the function and other technical data for the implement can be found in the operating instructions.

The machine complies with all relevant and applicable provisions of the

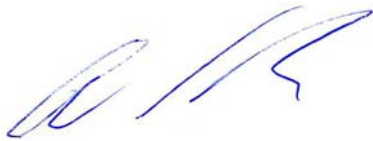
- Council Directive 2006/42/EC on machinery,
- Directive 2014/30/EU of the European Parliament and the Council for Electromagnetic Compatibility (EMC).

The technical documentation was produced according to Annexe VII A of Directive 2006/42/EC, and is the responsibility of the development manager at Wilhelm STOLL Maschinenfabrik GmbH, Bahnhofstrasse 21, D-38268 Lengede.

The design and manufacturing of the implement observed the following harmonised standards that are also published in the EU official gazette:

Harmonised standards	Date	Title of the standard
DIN EN ISO 4254-1	2016-09	Agricultural machinery - Safety - Part 1: General requirements
DIN EN 12525	2011-02	Agricultural machinery - Front loader safety
DIN EN ISO 12100	2011-03	Safety of machinery - Basic terms, General principles for design for the safety of machinery - General principles for design - Risk assessment and risk reduction
DIN EN ISO 13857	2020-04	Safety of machinery - Safety distances to prevent hazard zones being reached by upper and lower limbs
EN ISO 14982	2009-12	Agricultural and forestry machines - Electromagnetic compatibility - Test methods and acceptance criteria

Lengede, 17.07.2020



Guido Marenbach
Managing Director



Peter Gotthard
Head of Development and Quality Management

Index

B		P	
Behaviour in case of emergency	16	Protective and safety equipment.	15
C		Putting down the implement.	26
Check before each start-up	18	R	
Cleaning.	25	rating plate	5
Clearing work.	20	Recommissioning.	27
D		Repairs	24, 25
Danger areas.	15	ROBUST M.	9, 17, 28
Danger due to emissions.	12	ROBUST S.	9, 17, 29
Dangers during installation for start-up .	12	ROBUST T.	9, 17, 29
Dangers during loading work	13	ROBUST U.	9, 17, 28
Dangers during maintenance	14	S	
Dangers during packaging and		Safety and warning notifications	8
transport.	12	Safety stickers.	16
Dangers when operating the front		Spare parts.	27
loader.	13	T	
Dangers when picking up and putting down		Tightening torques for screws	31
implements	12		
Disposal.	27		
Documentation overview	4		
E			
EC conformity	8		
Electrical dangers.	11		
F			
Faults.	22		
H			
Hydraulic dangers.	10, 14		
I			
Initial operation	18		
L			
levelling	19		
Light weight bucket	9, 17, 30		
M			
Mechanical dangers.	10		
O			
Operational limits	10		

Address of the dealer

Stick or write down the serial number here



Wilhelm STOLL Maschinenfabrik GmbH

PO box 1181, 38266 Lengede

Bahnhofstr. 21, 38268 Lengede

Phone: +49 (0) 53 44/20 222

Fax: +49 (0) 53 44/20 182

E-mail: info@stoll-germany.com

STOLL on the Internet:

www.stoll-germany.com

www.facebook.com/STOLLFrontloader

www.youtube.com/STOLLFrontloader