

## **Operating and Maintenance Manual**

### **Front loader tool**

### **Wrapped bale handler SH-90AG**





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## **Dear Customer**

We are pleased that you decided to purchase a front loader from our company. Before using the front loader please read this operating and maintenance manual carefully so that you can enjoy this product for a long time and are aware of any possible dangers that may arise when using the product.

If you have any questions about these operating and maintenance instructions, please contact your dealer.

If you need additional copies, you can download them online at [www.stoll-germany.com/download](http://www.stoll-germany.com/download).

Thank you.

Your Wilhelm STOLL Maschinenfabrik GmbH

## 1 Introduction

### 1.1 About this operating and maintenance manual

This operating and maintenance manual is a component of the respective vehicle with front loader attachments and must always be carried in the vehicle when the front loader is used. If the operating and maintenance manual is lost or no longer complete, please contact your dealer.

This operating and maintenance manual contains information that is valid and state of the art at the time of delivery. We reserve the right to make changes to the construction and data of the front loader and its components in the course of technical developments.

Directions refer to the forward direction of travel, unless otherwise specified.

### 1.2 Symbols in this operating and maintenance manual

The symbols used in these operating and maintenance instructions indicate particular hazards associated with the use of a front loader or provide you with useful information.



#### **Warning!**

Texts with this symbol indicate possible risks of accident or injury, which can cause serious injury or death.



#### **Caution!**

Texts with this symbol indicate a risk of accident and injury that may result in minor injuries.



#### **Attention!**

Texts with this symbol indicate potential hazards that can cause damage to the equipment.



#### **Note**

Texts with this symbol contain additional information and tips on dealing with the front loader.

## 2 Use

### 2.1 Intended use

The wrapped bale handler is built exclusively as a loading tool for the usual areas of work: to lift, load, transport and stack bales.

The front loader tool may only be used and serviced by persons who have carefully read and understood the operating and maintenance instructions and are informed in particular about the hazards present when dealing with the front loader and mounted front loader tools.

When the front loader tool is passed on to another party, it must be delivered with the operating manual.

The front loader may not be used for lifting operations that require the presence of people near the front loader and the raised load. There is a danger, in the event of the failure of the hydraulic loader, that people may be crushed in between the lifted load and the ground or components. For any work with such tools, the front loader is equipped with a safety device and this must be enabled.

- Note all the information and especially the safety instructions in this operating and maintenance manual, as well as the operating and maintenance manual of the front loader, before performing any work with the front loader tool.

### 2.2 Improper use

An improper use occurs when actions are taken that contradict the information specified in this operating and maintenance manual.



#### **Warning!**

The improper use of the product can cause dangers resulting from the front loader tool.

The manufacturer is not liable for damages that are caused by the improper use of the tool.

## 3 Safety instructions

### 3.1 General safety instructions



#### **Warning – Risk of accident and injury!**

- For all work carried out with the front loader, you must adhere to the accident prevention regulations and the safety, health and road traffic regulations of the respective country.
- Never undertake any unauthorised modifications to the front loader or the front loader tool.
- Regularly check the tightening torque of all connections, see section 15.2 on page 19.

### 3.2 Safe handling of front loader tools



#### **Warning – Risk of accident and injury!**

- Before starting work familiarise yourself with all the equipment and controls as well as their function.
- Never drive with a loaded bucket on public roads
- Before each use of the respective front loader tool, put the hydraulic control devices on the tractor in the neutral position.
- Due to the higher loading on the tyres and axles, the maximum permissible speed with the front loader and mounted tool is 25 km/h for travelling on roads and 10 km/h with loading work.
- Make sure that the pressure of the tyres, especially the front wheels of the tractor, complies with the requirements for the higher wheel load of the manufacturer of the tyres and the tractor.
- Never jerk the vehicle when the front loader is in the highest loading position and the tool is fully loaded.
- Never drive across a slope with a raised loader.
- Always slide the load material together downhill and load the material in the basin.
- If necessary, enlarge the track width of the tractor and also never work under a normal track with an adjustable axle.

- Always check the inclination of the tool.
- Never repair, clean or lubricate components when the loader arm is raised. Lower the loader arm when the tractor is turned off, otherwise you can dismantle it.



Fig. 1:  
Person at risk by the increasing  
angle of the tool



### **Warning – Risk of accident and injury!**

The lifting, stacking, storage and retrieval of large objects (bales, logs, crates....) are dangerous. For tractors without a closed driving cab or 4-post rollover protection structure do not raise the front loader any higher than the height of the rocker's pivot point when performing this kind of work!

- You must respect the safety regulations of the country you are in!
- Install additional protective devices on tractors without a closed cab or 4-post rollover protection structures.





## Warning – Risk of accident and injury!

People or animals that are in the work area of the front loader can be seriously injured by the front loader, the tool and falling load.

- Make sure that nobody is in the work area of the front loader.
- Only work in conditions of good visibility, keep the windscreen of the tractor clean and light up the work area if necessary.

Fig. 2:  
Person at risk in the work area  
of the front loader



Fig. 3:  
Person at risk if lifted by the front loader.



Figure 4:  
Risk of injury from leaking hydraulic oil.



**Warning – Risk of accident and injury!**

The lifting and transporting of persons with the front loader is extremely dangerous and it is prohibited.



**Warning – Risk of accident and injury!**

Hydraulic oil escaping under high pressure can penetrate the skin and cause serious injury.

- Never look for leaks with your fingers.
- Use the appropriate tools.
- Seek immediate medical care for injuries.



## Warning – Risk of accident and injury!

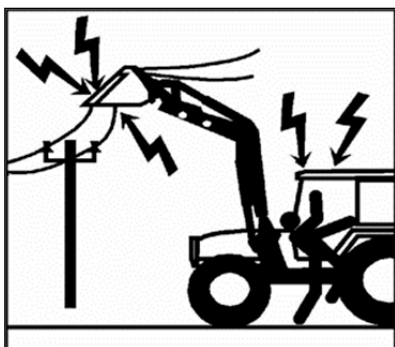
Careless handling at high pressures can lead to serious injury.

- Switch off the hydraulic pressure and turn off the engine before coupling or uncoupling the hydraulic system.
- Check the hydraulics lines and connections for wear and leaks. Observe the safety regulations or the regulatory body that are applicable to your work.
- Replace worn, outdated or leaking hydraulic lines.
- Repair or replace leaky hydraulic cylinders. You will need special tools for repairs to the hydraulic cylinders. Let your authorised dealer repair defective cylinders.

Fig. 5:

Avoid high pressures when uncoupling.

Stoll Order no. 3430510



## **Warning - Risk of death by electric shock!**

If the front loader or the tool come into contact with electrical lines, there is a risk of death from the electric shock, see Fig. 6.

- Always maintain sufficient distance from electrical lines.
- Familiarise yourself with the working area and the terrain.

Fig. 6:

Life-threatening electric shock from live electric wires



## **Caution - risk of damage to components**

Only drive directly towards the material to be loaded. The steering must not be impacted.

### **3.3 Special safety instructions for the wrapped bale handler**



## **Warning – Risk of accident and injury!**

To automatically lock the tool, it may only be raised up to a maximum height of 1.5 m for it to lock securely. An unsecured tool may fall down and cause serious injury to people in the work area of the front loader

- In any case, check that the tool is securely attached on the removable frame.



## **Warning – Risk of accident and injury!**

- Never carry large bales on public roads and paths. This is forbidden.
- Never carry two or more bales at the same time.

## 3.4 Safety labels

When working with the wrapped bale handler, note the following the safety labels. By working safely, you can prevent serious injury to people and damages to equipment.

The following labels are attached to the wrapped bale handler:



This label indicates that you must read and understand these instructions completely before working with the wrapped bale handler.



This label indicates that you are not permitted to raise two or more bales at the same time. There is a risk that bales will fall and may injure people.

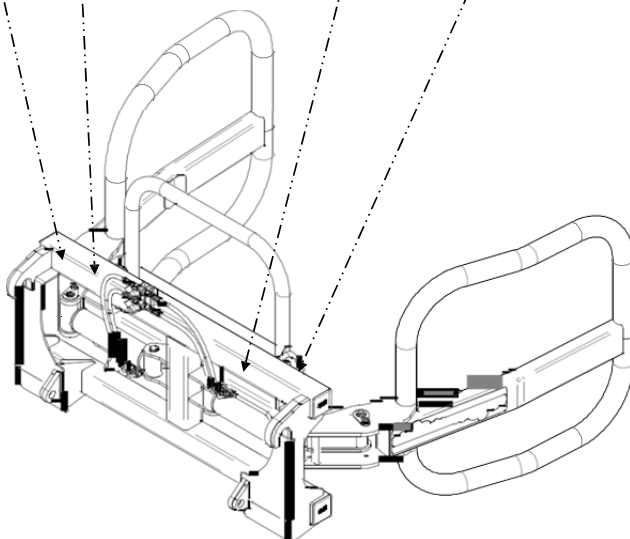


This label indicates the risk of injury from hydraulic leaks. Hydraulic oil escaping under high pressure can penetrate the skin and cause serious injury. In case of injuries contact a doctor immediately!

Use suitable tools to search for leaks, e.g. a piece of cardboard, not your hands!

## 3.5 Position of the safety labels

Replace missing or damaged labels!



## 4 Description of the wrapped bale handler

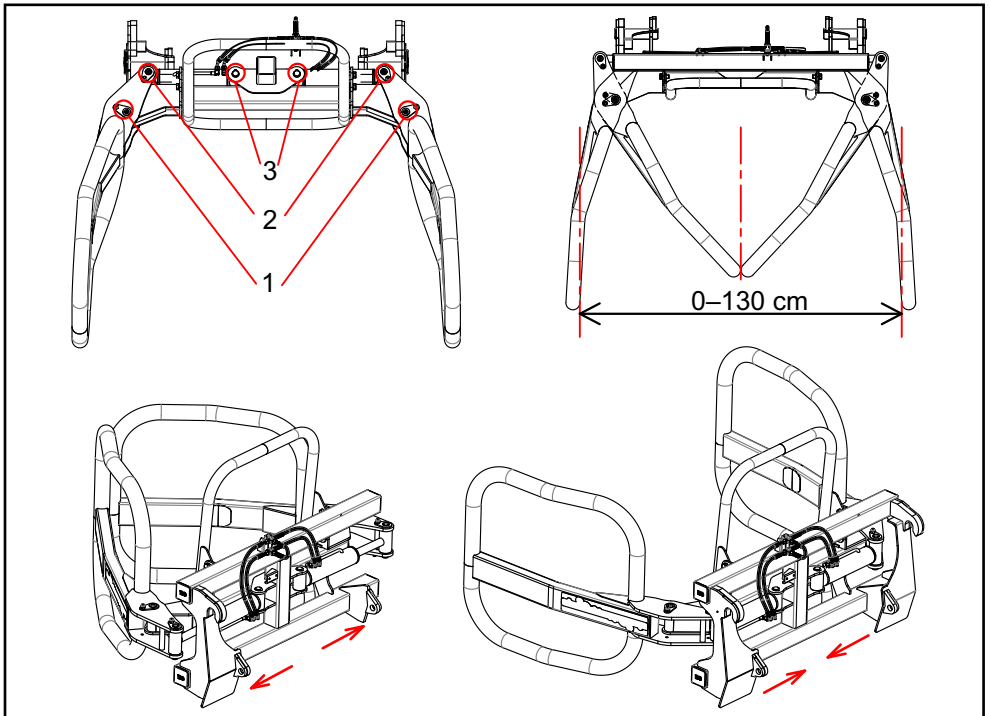
The wrapped bale handler is suitable for loading foil-wrapped silage bales. Of course, even highly compressed bales of all standard shapes and sizes that are not wrapped can also be loaded. The bales gripped with tongs must not be transported on public land.

### 4.1 Construction

The grippers of the bale tongs are each mounted with a pivot pin (1) on the frame. The two hydraulic cylinders are each mounted with a pivot pin (2) on the gripper and in the middle of the frame (3).

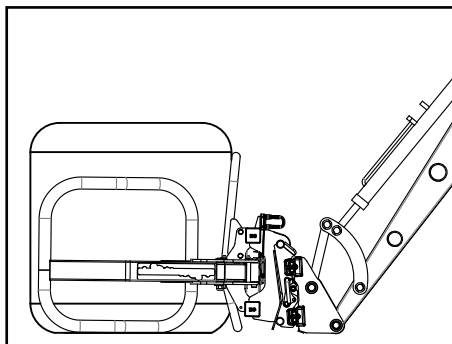
The tongs are opened or closed by means of the cylinder controlled by the tractor's hydraulic system.

The maximum permissible load is 1,100 kg and the maximum opening width is 130 cm.



## 4.2 General information

- Compress the silage bales as tightly as possible to improve their transportability.
- Press the bales, which have secondary fermentation and are very soft, repeatedly together with the tongs before transporting them, as these bales are too prone to collapsing and can slip out of the tongs if the drive is a particularly bumpy one.
- Make sure that the bale is on the inside of the support frame when gripping and transporting it, because this guarantees the safe handling of the bale.
- Always wrap the bales in the area of the final storage location. The delicately wrapped bales can be damaged after longer trips.
- You can pick up, transport, set down or stack the foil-wrapped bales with bale handler both in the upright and horizontal position.
- For a secure hold, grip the bales at the *bottom*, see picture below.



- Close the bale handler completely for road travel, the vehicle then shifts around less.

## 4.3 Startup

Follow the operating instructions of the front loader!

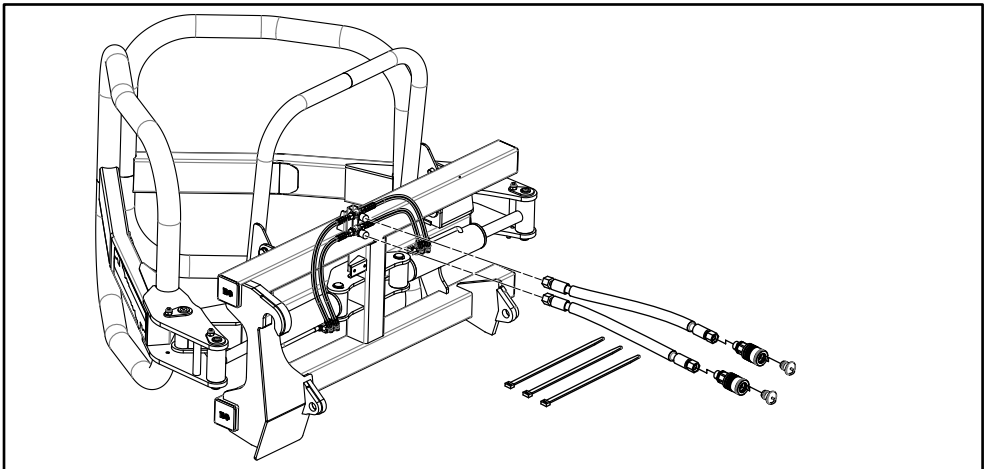
Before the first startup check that all the screw connections are tight!

The factory assembles the bale handler so that it is ready for use. Only the two hydraulic connections are sealed with plastic caps and the supply lines are enclosed in a bag.



## Mount the supply lines

- Remove the two plastic caps on the hydraulic cylinder and turn the screw socket firmly into place.
- Then screw on the two hydraulic hoses as shown in the figure with the mounting boss and attach the coupling sleeves onto them at the other end.
- Attach the red cap on the coupling sleeve on the upper hose ("Open" function) and the black cap on the lower hose ("Gripping" function).
- Finally, bundle the individual hoses together with the aid of cable ties.



## Mounting of the front loader rocker

- Mount the quick-change frame under the hook of the bale handler.
- Then lock this in place by tilting the quick-change frame.

## Connect the hydraulics

- Connect the hydraulic hoses for the drive of the bale handler to the terminals of the front loader's 3rd control circuit.
- Check that it works properly. To do this, open and close the bale handler several times.

## 5 Maintenance

### 5.1 Safety instructions



Fig. 7:  
Protective equipment



#### **Warning – Risk of accident and injury!**

The use of inappropriate parts can lead to accidents and injuries.

- Only use original spare parts that are approved by the manufacturer for your type of tool.



#### **Warning – Risk of accident and injury!**

The following points must be observed in any case before the start of the maintenance work:

- Put on suitable protective equipment (protective clothing, gloves, safety glasses, safety shoes).
- Always lower the front loader to the ground for maintenance and repairs.
- Leave the front loader coupled to the tractor when it is being serviced.
- Depressurise the hydraulics and its connections.
- Allow the engine to cool to below 55°C.
- Make sure the lighting is good.

## 5.2 Screw connections



### Warning – Risk of accident and injury!

Screw connections must be tight at all times, otherwise components may loosen and endanger people in and on the tractor.

- Tighten all screws after 5 operating hours.
- Check that the screw connections are tight every 100 operating hours.
- Tighten loose screw connections immediately.

Tightening torques for screws					
Strength class 8.8 and 10.9 – Average friction coefficient $\mu$ 0.12					
Screws	Tightening torque (Nm)		Screws	Tightening torque (Nm)	
	8.8	10.9		8.8	10.9
M 8	23	33	M 20	380	530
M 8x1	25	35	M 20x2	400	560
M 10	46	65	M 20x1.5	420	590
M 10x1.25	49	69	M 22	510	720
M 12	80	110	M 22x2	540	750
M 12x1.5	84	118	M 22x1.5	560	790
M 12x1.25	88	123	M 24	630	890
M 14	130	180	M 24x2	680	950
M 14x1.5	138	190	M 27	930	1310
M 16	190	270	M 27x2	995	1400
M 16x1.5	210	290	M 30	1260	1770
M 18	270	380	M 30x2	1370	1930
M 18x2	280	400			
M 18x1.5	300	420	5/8"UNC(Normal)	175	245
			5/8" UNF(Fine)	200	280
			3/4"UNC(Normal)	380	530
			3/4" UNF (Fine)	420	590

## 5.3 Hydraulics

**Observe the safety instructions in chapter 3.2 on page 7.**

The instructions and regulations of tractor hydraulics apply to the maintenance and care of the hydraulic system.

A load weight in the three-point linkage is also recommended for front loader work with four-wheel drive.

## 5.4 Regular maintenance work

Regular maintenance continues for the entire service life of the unit and keeps it in a condition that it is safe to use.

Only use original spare parts!

*Every 10 operating hours:*

- Lubricate the bearings and rotating parts.
- Visual inspection for damage.

Lubrication points:

Swivel tongs: 2

Hydraulic cylinder bearings: 2

*Every 100 operating hours:*

- Check screw connections for tightness.
- Check the hydraulic for leaks and damage to the hoses.

*Before putting into storage:*

- Thorough cleaning
- Visual inspection for damage.
- Do not store the tool for long periods outdoors!

## 6 Declaration of Conformity



### Certificate of conformity with the following European Directives

Registered No.:  
**K5464/M13**


**Machinery Directive 2006/42/EC**

Reference of applicant	Date of application	File reference	Test report No.	Date of issue
-	14.02.2013	KP-13-055	K6778/M13	22.02.2013

This is to certify that the following products comply to the essential requirements (Annex 1) of the above mentioned European Directive and the following standards, taking into account the German national deviations:

**Product:** Bale Handler  
**Type designation:** SH-90AG  
**Applicant:** SONG HYUN Co., Ltd.  
3763, Yeongsan-ro, Hakgyo-myeon, Hampyeong-gun,  
Jeollanam-do 525-813 Korea  
**Standard(s):** EN ISO 12100:2010  
EN ISO 4413:2010

This Certificate of conformity is based on the evaluation of samples of the product. It does not imply an assessment of the production and it does not permit the use of a mark of conformity or of a safety mark of the TÜV NORD CERT. The holder of this certificate may use this Certificate together with his EC-Declaration of Conformity.

  
Certification Body for Product Safety

TÜV NORD Korea Ltd.  
Tel.: +82-2-6000-4222  
Fax: +82-2-6000-4223  
E-mail: tnk@tuv-nord.com

CE The CE marking can be affixed on the product if all relevant and effective Directives are complied with. CE

## **7 Notes**

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**Address of the dealer**

# **STOLL**

**Production number:**