Users manual for frontloader

ROBUST F HDPM
# STOLL ROBUST F HDPM

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1. Before operating

Prior to operating frontend loader please read and observe the operator's manual and all safety instructions!

In this operating instruction booklet we have marked all paragraphs which refer to your safety with this sign. Pass on all safety advices also to other users.

Operation in accordance with specifications!

The STOLL frontend loader is built solely for normal agricultural use (operated in accordance with specifications). It may only be operated with tools especially provided by STOLL for this purpose. It may only be attached to field tractors and other tractive machines for which it is designed and offered by STOLL (intended use).

Use of frontend loader Robust F for any other purpose than defined above is considered as operation which is not in accordance with specifications and is undertaken as such at the owner's risk.

Observation of operation and maintenance instructions specified by manufacturer shall also be taken to the part of operation in accordance with specifications. The frontend loader Robust F may only be operated, serviced and repaired by personnel who are familiar with these functions and who have been instructed of the inherent dangers.
It is forbidden to approach within reach of this machinery while in use.

All relevant accident prevention, safety, health and street regulations must be observed according general or local regulations of user country.

--- ▲ -- DANGER -- ▲ ---

--- ▲ -- CAUTION -- ▲ ---

STOLL must regretfully decline responsibility for damage resulting from unauthorised changes to loader or equipment and any misuse.

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2. General safety information and prevention of accidents

Most accidents which occur in agricultural enterprises are the result of safety rules being disregarded by personnel.

Safety precautions
A careful operator is the best operator. Most accidents can be avoided by observing certain precautions.

To help prevent accidents, read and take the following precautions before working or operating with the frontloader or servicing it. Equipment should be operated only by those who are responsible and instructed to do so. Safety decal 3449070a has to be affixed in drivers visibility!

Throughout this manual you will recognize text in italics, preceded by the words NOTE, ATTENTION, IMPORTANT, CAUTION, WARNING or DANGER. Such text has the following significance:

Machine safety

|-- !-- NOTE -- !--
This text stresses a correct operating technique or procedure.

|-- !-- ATTENTION -- !--
This text warns the operator of potential machine damage if a certain procedure is not followed.

|-- ▲ -- IMPORTANT -- ▲ --
This text informs the reader of something that he needs to know to prevent minor machine damage if a certain procedure is not followed.
Personal Safety

-- ▲ -- CAUTION -- ▲ --

The word CAUTION is used where a safe behavioural practice, according to operating and maintenance instructions and common safety practices will protect the operator and others from accident involvement.

-- ▲ -- WARNING -- ▲ --

The word WARNING denotes a potential or hidden hazard which could possibly cause serious injury. It is used to warn operators and others to exercise due care and attention to avoid a surprise accident with machinery.

-- ▲ -- DANGER -- ▲ --

The word DANGER denotes a forbidden practice in connection with a serious hazard.

Failure to follow the CAUTION, WARNING and DANGER instructions may result in serious bodily injury or even death.

-- ▲ -- CAUTION -- ▲ --

1. Front loaders may only be attached to tractors equipped with a lockable hydraulic system, otherwise it becomes necessary to install a shut-off valve.

-- ▲ -- CAUTION -- ▲ --

2. The hydraulic system must be locked during travel on public roads and while the tractor is parked.
3. Never convey or raise people in a bucket or other attachment!

4. The maximum roadspeed with attached load beam is 25 km/h, the maximum working speed is 10 km/h. Check front tyres for correct loader operation air pressures according tractor user manual!

5. Never carry out repair, cleaning or lubricating jobs with raised load beam! Lower or remove beam. Lower load beam after completion of work.
6. Never drive the tractor off with a jerk if the attachment is fully loaded or in its highest position. Drive downhill when pushing together or collecting material, whenever possible load in a trough or dip; never drive across a gradient with raised load beam; increase rear track width of the tractor as necessary and never drive with a narrower than standard front track width, even with tractors equipped with an adjustable width front axle.

7. Do not turn the tractors steering wheel when driving into the material to be loaded.

8. Operate the front loader only with its own approved attachments. Never carry out jobs with implements not designed for the work. The tool and the loader arm/loader unit may only be installed and removed by the operator.

9. Lifting pallets or bales over the cab creates an increased risk of the load falling onto the operator when the tractor is moving. The roll-over protection structure (ROP) can only ensure a partial protection from objects falling onto the driving position.
Special tools such as pallet forks or bale handling tools are designed in a way that prevents the load from falling down onto the tractor. Stacking of bales is not allowed because of the risk that upper bales could fall down and injure persons.

The tip angle of the tool for loader without selfleveling (HD typ) or if selfleveling is deactivated (HDP type special function) will be increase when raising up the liftarm. The user has to compensate this increase manually with joystick to eliminate the risk of goods falling down and of injuring persons.

--- ▲ -- DANGER -- ▲ ---

10. Sojourn within the working range (3m) is prohibited. Stay clear away of raised loader arms or unsecured loads. Please recognize and follow relevant machine safety regulations for loader work according DIN EN 12525/A1:2006.
11. Travel with loaded bucket on public streets is prohibited!

12. Rules for prevention of accidents issued by the professional associations and organisations as well as the regulations applying to construction and use of any legally prescribed protective devices must be observed at all times. For transport and travelling on public roads local country street regulations have to be maintained.

13. Always store the loader on a solid area and with the tool installed. Be sure the prop stands are locked in a safe position.

14. Good visibility is essential during frontloader operation (clean cab windows; no risk of dazzling; sufficient lighting of the work area in the dark).

15. Ensure that the front loader is a safe distance away from overhead power lines. Danger to life in case of contact!
-- ▲ -- DANGER -- ▲ --

16. Liquids leaking under high pressure (Diesel fuel, hydraulic oil) can penetrate the skin and cause severe injury. When injured see a doctor immediately! Danger of infection!

-- ▲ -- CAUTION -- ▲ --

17. Before the first use of the loader and then at least once a year all hoses must be checked by an expert worker for their operational safety and replaced if required. The time of use of the hoses should not exceed six years including a maximum storage time of two years. The replacement hoses and pipings must meet with the implement manufacturer’s technical standards!

-- ! -- ATTENTION -- ! --

Installation Instruction!
Hydraulic pipes (pipes and screwed joints) are ex works only unassembled pre-mounted.
After final laying of pipes at the tractor all screwed joints must be tightened and retightened after first 5 working hours.!

-- ▲ -- CAUTION -- ▲ --

18. When searching for leaks appropriate aids should be used because of the danger of injury.

-- ! -- ATTENTION -- ! --

19. If there is installed any equipment at the tractor, which may interfere with loaderarm, tool or any attachment, it has to be removed before executing loader work.
2.1 Safety decal

(<=> 2007)

**-- ! -- ATTENTION -- ! --**

3377500a

**Do not remove loader from the tractor unless an implement is fitted!**

**Danger of severe injury Only remove the loader if a tool is fitted**

**-- ! -- ATTENTION -- ! --**

3377570a

**Danger in the working area!**

Do not allow anybody to come within the machine’s working area, particularly if the equipment is raised.
2.2 Safety decal

(2007 =>)

-- ! -- ATTENTION -- ! --

3310350a

Danger of severe injury Only remove the loader if a tool is fitted

-- ! -- ATTENTION -- ! --

3431550a

Danger in the working area
Do not allow anybody to come within the machine's working area, particularly if the equipment is raised.
Instructions for HYDRO-FIX hydraulic connections
Method to be used for connection and removal of HYDRO-FIX devices.

--- CAUTION ---

Danger from high pressure!
Stop the engine and discharge residual pressure from the system.

--- NOTE ---

Lifting points - Connection points to be used when lifting the loader without front tools

--- ATTENTION ---

Functions selector
Select O = rapid unloading
Select I = hydraulic 3rd service

Control for hydraulic selflevelling (only for loader type HDP)

--- ATTENTION ---

Tool coupling control
Sticker applied to the tool coupling bar; coupling is safe when side “A” is level with the tool holder bush.
3. Technical data ROBUST Fxx HDPM

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>WILHELM STOLL Maschinenfabrik GmbH Postfach 3, 38266 Lengede Bahnhofsstraße 21, 38268 Lengede</th>
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|              | Telephone +49 (5344)20-0  
|              | Telefax +49 (5344)20-182 |
| Spare parts  | Telephone +49 (5344)20-266  
|              | Telefax +49 (5344)20-183 |
| Service      | Telephone +49 (5344)20-131  
|              | Telefax +49 (5344)20-137 |
| Dealer       |                                                                                               |

Tractor

Type plate

Wilhelm Stoll Maschinenfabrik GmbH D 38268 Lengede

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Robust F 30.01 30F1HMSEFAMC100

Made in Germany / Fabriqué en Allemagne

Performance data

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<td>59 - 96 kW (80 - 130 PS)</td>
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<td>&gt; 82 kW (110 PS)</td>
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<tr>
<td>&lt; 185 kW (250 PS)</td>
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suitable for loader
4. Description

THE RANGE OF "STOLL" FRONT LOADERS, SERIES "ROBUST F"
Types 4 HDPM - 71 HDPM are DRIVE-IN FRONT LOADERS, they are absolutely uniform for all makes of tractor and consist of:

The loader unit, completely assembled by the manufacturers, ready for installation (boom with quick-change frame, hydraulic implement actuation, hydraulic rams, hydraulic lines, parking legs and drive-in pillars), tractor attachment components, front protection and various hook implements, mainly for agricultural and forestry use.

Loader main components:
- Lifting arms
- Implement coupling
- Implement

Explanation:
Front loader type HDPM Hydraulic implement actuation, double-acting tipping rams and mechanical parallel guidance.
The liftarms are manufactured in a box section construction according to the principle of a beam with identical moment of resistance.

A quick-change frame for the effortless installation and removal of the implements is part of the standard delivery range of the boom.

The complete unit is secured to the attachment components by means of a tensioning wedge.

The parking support legs are required for installation and removal of the loader unit.

Installation or removal can be accomplished by one person without bodily effort in 2 to 4 minutes.

--- ! -- ATTENTION -- ! --

You must have changed empty weight of the tractor registered by the relevant Technical Control Board!

As the front loader mounting parts are rigidly fitted to the tractor, they involve a change of the tractor empty weight which is subject to registration according to C.&U.R. It is therefore essential that the increased empty weight of the tractor (without front loader) is registered by the local authority in the vehicle documents (registration certificate).
5. Practical Application

5.1 Operation

General
The usual tractor driver skill and a pronounced empathy with the function of the front loader suffice for first-class, fault-free operation. Good front loader work soon becomes habit.

Nearly all front loader jobs can be carried out in genuine one-man-operation.

--- ▲ --- DANGER --- ▲ ---
Sojourn within the working range is prohibited.
Stay clear away of raised unsecured loads.
(Machine safety >> DIN EN 12525/A1:2006)

Adequate space should be available for loading operations in the yard.
In the field the front loader/tractor requires well-supporting ground, in the yard a paved surface.

--- ▲ --- CAUTION --- ▲ ---
The maximum roadspeed is 25 km/h, the maximum working speed during loading work with installed implements is 10 km/h.
-- ! -- ATTENTION -- ! --

Do not turn the steering wheel while driving into the material to be loaded, rather drive-in straight ahead!

Avoid too rapid lowering and especially re-arresting a load, which may result in shock loads being imposed onto the front axle.

Beyond that, all accident prevention regulations laid down by the agricultural insurance association and the rules of the C.&U.R. must be complied with.

5.1.1 Operation decal (=> 2007)
Installation
1. Unlock hand lever
2. Drive tractor forward
3. until the pins contact the glide rail jaw
4. Stop the tractor and apply the parking brake.
5. Relieve hydraulic system pressure (see tractor operators manual) and connect Multi Quick coupler and electrics.
6. Raise the loader until the loader arm retaining pins are fully registered in the jaw
   Attention! Do not operate the bucket or attachment cylinders until the loader arms are securely locked.
7. Raise the loader and fold up the prop stands
8. move the hand lever downwards to the locked position

Removal
1. Apply the tractor parking brake and lower the loader until it is resting on the ground.
2. unlock the hand lever
3. lower the parking stands
4. Continue to lower the loader until the rear pins are resting on the glide rails.
5. Disconnect the MultiQuick coupler and electrical connections.
6. Reverse the tractor away from the loader assembly.
   Attention! Check the tightness of the locking mechanism at regular intervals, adjust if required.
5.2 Hydraulic system

Front loaders may only be attached to agricultural tractors which are equipped with a lockable hydraulic control unit. Otherwise it becomes necessary to provide a shut-off valve between control unit and the hydraulic line, leading to the loader beam.

--- ▲ --- CAUTION --- ▲ ---

When traveling on roads, doing maintenance or when loader is detached the safety locking of control lever (Z) have to be moved to the blocked position, or the required hydraulic valve (shut-off valve or Hydro-Fix) should be closed.
5.3 Attaching of drive-in loader unit

(figs. LHO1002A and LHO1003A)

--- ▲ --- DANGER --- ▲ ---

The loader arm/loader unit may only be installed and removed by the operator.

(Fig. LHO1002A)
Unlatch gripping lever (1) and drive the tractor forward into the parked loader beam, until the pins (2) of the pillars contact the stop in the arresting hook. Brake the tractor in this position by applying the handbrake. Connect the hydraulic line by means of the couplings (Fig. LHO1005A) resp. Hydro-Fix (Fig. LHO1004A).

Connection hydraulic pipes with hydraulic flexible tubes:
1 Loader arm lower
2 Loader arm raise
3 Implement scoop
4 Implement dump
Move control valve lever to position “Raise”, until the pins (2) contact the arresting hooks completely at both sides. Lift the loader beam, until the bucket clears the ground completely. Use gripping lever to lock. Fold the prop stands swiftly against the loader arm and allow the locking cam to catch into the slot of the prop stand.

--- ! --- ATTENTION -- ! --

After initial installation adjust locking device (see fig. LHO1003A) as follows: Loosen nut (4), adjust bolt (5) to ensure the tensioning process commences in position (b) of the gripping lever, which should be noticeable pre-loaded in position (c). Tighten locknut (4). Bleed the hydraulic rams by lifting and lowering the loader beam several times.

The locking mechanism has to be checked at each attachment and removal as well as occasionally if the frontloader remains mounted on the tractor for a longer period. Correct the setting if necessary.
5.4 Removal of the drive-in front loader

(Figs. LWP1076A and LHO1007A)

--- ▲ --- DANGER --- ▲ ---

The loader arm/loader unit may only be installed and removed by the operator

--- ▲ --- DANGER --- ▲ ---

Do not park loader beam without attached bucket or other implement, otherwise danger of tipping over!

Lower balance beam without pressure up to the ground.
Unlock gripping handle (1) and fold prop stands down onto the ground.
Drive forward slightly, allow control unit thereby to remain in position “Lower” until the pins (2) glide out from the arresting hooks and lie on the glide path (A). (Driving forward is omitted in the case of double-acting hydraulic rams, because the pins (2) will slip out of the arresting hook through the retraction of the hydraulic cylinders).
Drive backwards until the prop stands engage and the pillar take off from the glide.

Disconnect the hydraulic lines at the couplings (see fig. LHO1025A resp. LHO1026A) and at the electric cable. Fit dust cap and blanking plug. Drive tractor out.

--- ▲ --- IMPORTANT --- ▲ ---

Loading and lightly raising the front loader attachment as well as thorough lubrication of the glide path A (see fig. LHO1006A) will facilitate loosening the tensioning wedge (see fig. LHO1003A).
Unfolding the prop stands

To fold out the prop stands, move their feet sideways towards the tractor and at the same time press them downward until the locking cams come loose from the slots. Then unfold the prop stands down to the ground.

Prop stands are automatically locked in this position by the spring-loaded support struts. Be sure that the ground is solid enough.

Folding up the prop stands

To fold up the prop stands use one hand to pull up the support strut against the resistance of the integrated torsion spring in the direction of arrow A and at the same time push the prop stand in the direction of arrow D to prevent the support strut from locking into engagement. Pull the prop stand out of the locking area and then move it swiftly against the loader arm.
When handling the prop stand there is a danger of injury by pinching. Keep hands clear of the area between prop stand and loader.
Fold up the prop stand until it is locked by the rubber spring catch. Grease the rubber spring catches occasionally.

When installing and removing the loader arm follow the instructions of the decal placed on the loader arm pillar.

Hydro-Fix

It is essential that the male and female connectors of the Hydro-Fix hose couplers are clean when the hoses are coupled. Relieve all pressure from the hydraulic system before coupling the hoses. Damage to the seals could result if the hoses are coupled under pressure.
5.5 Mechanical single lever control unit SLV (option available)

Assembly instruction see A874-english
Stoll-ID-Nr: 3330580b.pdf

5.5.1 Type

EHS NIMCO WK-200 or compatible

Equipment EHS DW / DW Single lever control unit for FL with double-acting beam-cylinders and double-acting implement cylinders.

Extend of supply Items may depend from customer order

On special request partner solutions are available, implementing other joystick and bowden cable variants or combined valve stets.

Please find reference information on partner service manual for technical details and service parts informations which may variate from Stoll specifications.

To combine lift arm and tractor monted bracket sets from different build years with different electric sockets the following kits are available:
Stoll-ID 3447220 KIT EL. 2-pol > 7-pol with plug for liftarm side.
Stoll-ID 3447230 KIT EL. 2-pol > 7-pol with 7-pol socket and adapter bracket for tractor side
Later chapters (or Stoll document A1877 in KIT) showing all relevant electric harness diagrams for these alternatives. Please allow only qualified service personal to do these assembly work.

### 5.5.2 Definition of working directions

![Diagram of frontloader](image)

### 5.5.3 Definition of actuating directions

All hydraulic functions can be operated with one hand only.

The entire ROBUST-series can, as an option, be equipped with the single lever control for the frontloader. High comfort of operation, simple but also precise and safe control of the loader arm – all this united in a single handy lever. The unit consists of the control lever in the cab and the control valve with its Bowden cables fitted outside to the frontloader mounting. The four hydraulic couplings of the control valve are situated in line which has several advantages: The valve can be kept flat, it takes little room and it doesn’t obstruct view to the front axle.

5 Grundfunktionen:

- **A** frontloader - lift
- **B** frontloader - lower
- **C** attachment - scoop
- **D** attachment - discharge
- **S** frontloader - floating position

3 combined functions:

- A-D lift + discharge
- B-C lower + fill
- B-D lower + discharge
5.5.4 Additional functions joystick buttons

Two electric switches are integrated into the control lever which, according to the hydraulic equipment of the frontloader, actuates the following functions:

>> To operate 3rd service rams in tools (such as silage forks, bale forks etc)

Robust F HDPM Loader - Button 1: 3rd Auxiliary circuit
Robust F HDPM Loader - Button 2: 4th Auxiliary circuit

Robust F HD Loader - Button 1: 3rd Auxiliary circuit/
Bucket Rapid Discharge function

Robust F HDP Loader - Button 1: Suspend Bucket Self Levelling action

>> for optimized handling and filling with loose bulk cargo

Robust F HDP Loader - Button 2: 3rd Auxiliary circuit/
Bucket Rapid Discharge function.
Robust F HDP Loader - Button (3): 4th Auxiliary circuit

>> additional button(3) will be delivered only with customer order

--- ! --- NOTE --- ! ---

For HYDRO-LOCK option (hydraulic implement lock) there is a separate switch box in delivery.

--- ▲ --- DANGER --- ▲ ---

ACHTUNG: NEVER use any free joystick button for HYDRO-LOCK function!
5.6 Quick installation and removal of attachments

--- ♦ --- CAUTION --- ♦ ---

The loader arm/loader unit may only be installed and removed by the operator.

Pick-up of implements
1. Tilt the quick-change frame approximately 15 degrees forwards by means of the hydraulic implement control (Fig. LHO1011A).

2. Pull out the handle for the sliding pin on the left hand side of the quick change frame. Turn handle to the right until the bushing bottoms against the lower end of the slotted hole. This will prevent the handle sliding back out of its unlocked position (Fig. LHO1011A).

3. Drive tractor and loader beam with shaft under the implement hooks and raise in direction F, until the shaft fully contacts the hooks. The attachment will swivel with the lugs into the quick-installation frame (Fig. LHO1011A).

4. Tilt the quick-change frame backwards until the sliding pins engage in the lugs (Fig. LHO1012A). The implement is now rigidly connected to quick-attachment frame and loader beam.
Before any use of the front loader, make a visual check to be sure that the pins of the locking bar are in position and the tool is correctly and safely secured to the loader arm (fig. LHO1013A).

5. After taking up the implement, adjust the visual indicator in such a way that the top ends of guide tube (2) and connecting rod (1) stay flush if the implement is horizontal. The guide tube can be adjusted by moving the clip (3) on the cylinder barrel.

Removing the tools is a reversal of the mounting procedure.

5.7 Hydraulic implement control

Shown decal at hydraulic cylinder of hydraulic implement lock marks the open (inner) and locked (outer) position of hydraulic implement lock.
Before any use of the front loader, make a visual check to be sure that the Switch is in position and safely secured to the loader arm.

Advantages of work with hydraulic implement control

1. Tipping the bucket at ground level considerably increases the break-out force, the material to be loaded is loosened from the subsoil and the loading process is facilitated and speeded up.

2. Optimal filling of the bucket by correct positioning at ground level

3. Precisely graduated discharge through step-less tipping and tilting of the bucket - best utilisation of the load space available.

4. A jolting facility eases emptying the tool when handling sticky material.

Hydraulic operation of the tool (i.e. variation of its tilt) is controlled by a synchronous hydraulic cylinder which forms an integral part of the rods for the parallel motion.

Synchronous cylinders include an additional connecting rod (1) in the rear chamber (see "a" in fig. LHO1015A). The resulting decrease of the chamber volume reduces the required oil quantity, thus speeding up tipping of the tool (= unloading).
Both cylinder chambers are protected against overload by pressure relief valves (see piping diagrams of the hydraulic system). If overload occurs the corresponding pressure relief valve responds causing the tool to tip down.

To dump the load set the control unit to "dumping" and increase the engine speed to such an extent that sufficient oil is fed from the tractor hydraulics to the "dumping" side of the tool cylinder.

When using a four-position control unit, never leave the hydraulic system in floating position when dumping.

If these instructions are not observed, a vacuum max form in the tool operating cylinders which will involve "hunting" of the tool during the next working cycle.
5.8 Hydraulic diagramm HDPM

HDPM (standard – basic version)

A Liftarm
B Attachment

Hydraulik diagramm
Robust F HDPM

1 lowering
2 Lifting
3 Pouring
4 Scooping
5.9 Mechanical parallel motion

If the arm is lifted or lowered, the tool is controlled by the guide rods in such a way that it describes an parallel movement over the whole lifting range.

The bottom part of the guide rods for the mechanical parallel movement is formed by the synchronous cylinders located at the tool side.

The horizontal tool position can easily be checked at every stage of the lifting cycle thanks to the standard visual indicator.

With fully lowered arm the tool can be tipped upwards up to an angle of abt. 45°.

During the subsequent lifting this angle decreases slightly which can easily be compensated by retracting the tool cylinders again.

--- CAUTION ---

*When traveling on roads, doing maintenance or when loader is detached the safety locking of control lever (Z) have to be moved to the blocked position, or the required hydraulic valve (shut-off valve or Hydro-Fix) should be closed.*
5.10 3rd and 4th control circuit

Tools with integral hydraulic cylinders such as silage crocodile fork or bale grabs can be operated via a 3rd or 4th control circuit even if your tractor does not include an additional double acting control unit. Change-over from the 2nd control circuit (tool operation) to a 3rd or 4th control circuit is by means of push button S1 (S2) which acts on an electrically operated hydraulic valve (solenoid valve).

If the push buttons S1 or S2 are not operated, the control lever can be used to tip the tool up and down.

Operating at the same time the control lever and one of the push buttons S1 or S2 will feed hydraulic pressure to the respective tool cylinder.
5.11 Hydraulic diagramm HDPM

HDPM with 3rd control circuit

Hydraulic diagram Robust F HDPM

A Liftarm
B Attachment
C 3. Control service
Z Ignition

1 lowering
2 Lifting
3 Pouring
4 Scooping
5.12 Hydraulic diagramm 3rd and 4th control circuit
HDPM (full equipped version)

A Liftarm
B Attachment
C 3. Control service
D 4. Control service
W hydraulic attachment lock
Z Ignition

Hydraulik diagramm Robust F HDPM
S3 3rd Control service on
S4 4th Control service on
SW hydraulic attachment lock off
1 lowering
2 Lifting
3 Pouring
4 Scooping
5.13 Electrical Equipment HDPM

5.13.1 HDPM with 3rd and 4th control wiring

Attachment of switches at the control unit lever necessary differs for the different makes of tractors. Individual solution’s must be found. Modify as necessary.

La Fixation du bouton sur le levier du distributeur doit être résolu cas par cas.

Die Anbringung des Schalters an dem Steuergerätehebel ist bei allen Schlepperfabrikatoren unterschiedlich und muß individuell gelöst werden.

Die gegebenenfalls Änderungen vornahmen.

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La Fixation du bouton sur le levier du distributeur doit être résolu cas par cas.

see page regarding electro valve
voir page à l'égard du soupape de com.

version with 7-pole socket
6. Ballasting the tractor during front loader operation

To ensure operational and road traffic safety it is necessary to equip the tractor with an additional weight at the rear hydraulic linkage.

Steerability must thereby not be detrimentally affected and it is also necessary to make sure the minimum braking efficiency is not affected, even during front loader operation.

Do not overload the tractor by selecting too heavy a ballast weight.

Remove all front ballast weights from the tractor before setting the frontloader to work.

The values listed in the following table must not be exceeded.

<table>
<thead>
<tr>
<th>Tractor kW (HP)</th>
<th>Loader Size</th>
<th>Max. Ballast Weight at a Distance of 1.1 m in Front of the Rear Axle Centre Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 - 56 (40 - 75)</td>
<td>4 HD, 5 HD</td>
<td>300 – 400 kg</td>
</tr>
<tr>
<td>44 – 70 (60 - 95)</td>
<td>10/15 HD/HDP</td>
<td>600 – 700 kg</td>
</tr>
<tr>
<td>&gt; 59 (&gt; 80)</td>
<td>30/31 HD/HDP, 35/36 HD/HDP, 50/51 HD/HDP</td>
<td>700 – 800 kg</td>
</tr>
</tbody>
</table>
7. Service and maintenance

--- ▲ --- DANGER --- ▲ ---

Liquids leaking under high pressure (Diesel fuel, hydraulic oil) can penetrate the skin and cause severe injury. When injured see a doctor immediately!
Danger of infection!

--- ▲ --- DANGER --- ▲ ---

Never carry out repair, cleaning or lubricating jobs with raised load beam! Lower or remove beam. Lower load beam after completion of work.

The instructions and guidelines published by the tractor manufacturer apply to the service and maintenance of the hydraulic system.

Scrupulous cleanliness is essential when working on the hydraulic system. Use of clean hydraulic oil is imperative and necessary for the troublefree function of the hydraulic system.

--- ▲ --- CAUTION --- ▲ ---

Grease loader beam, implement and hydraulic ram bearings and pivots all 20 operating hours. Previously relieve load on the bearings.

We recommend suspension of a ballast weight from the three-point linkage during front loader operation, even on four-wheel drive tractors.
-- ▲ -- CAUTION -- ▲ --

It is very important to retighten all fastening bolts after 5 operating hours! Check all bolted connections for tightness after a further 100 operating hours and retighten as necessary.

(Non-adherence to this recommendation can cause damage to tractor and loader, resulting from setting of the bolted connections, due to the intermittent additional forces generated by the loader operation vibrations).

-- ▲ -- DANGER -- ▲ --

Before starting maintenance work, make sure you are wearing the personal protections (protective overalls, gloves, goggles, protective footwear, etc.).

-- ▲ -- CAUTION -- ▲ --

Never perform maintenance with the arms raised
Avoid carrying out maintenance operations if lighting is insufficient.

Only carry out maintenance if the machine is at a temperature of below 55°C

If normal maintenance of the tractor is to be performed, disconnect the loader so as to allow safe access to the parts to be checked, replaced or adjusted.

Maintenance of the loader must be carried out when the loader is connected to the machine.
Before performing maintenance operations on the loader, clean it carefully and, if necessary, wash the parts to be lubricated (greasing nipples); this applies above all when carrying out controls on the hydraulic circuit.

Before inspecting the hydraulic equipment and connections, drain residual pressure completely.

This section indicates the timing and operations that relate to the loader; for those relating to the machine, please refer to the specific user manual.

The timing indicated is valid for normal use; if the loader is subjected to severe use, the time between maintenance operations should be reduced.

The intervention times are indicated in actual working hours of the machine complete with loader.

The oil level in the gearbox must be checked on a flat surface, with the bucket or other implement resting on the ground.

--- IMPORTANT ---

According legal requirements related to loader application on public roads, owner and/or user of frontloader are responsible of regular leakage checks on single lever valve, hoses and lift cylinders.

Your qualified service partner will find the limiting values in STOLL loader service manual.

Same regular based checks have to be applied on mechanical locking system of single lever joystick!

--- NOTE ---

Please follow Stoll service training manual A 1676 for details on maintenance work!

--- WARNING ---

Any usage or transport of loader is prohibited, if any of above safety locking devices has been deactivated or if measured resulting internal and external leakage values will exceed limit value class mentioned above.
8. Safety and Prevention of Accidents

8.1 Driving on public roads

The following applies to travel on public streets:
The horizontal distance between the front edge of the front loader and the centre of the steering wheel must not exceed 3.5 m. The front loader bucket or fork may have to be removed if necessary.

The front-loader-beam must be raised in an adequate position, thus detrimentally affecting the tractor-drivers field of view as little as possible and also in order to ensure, that the forward edge of the implement is at a minimum height of 2 m above ground level.

--- ▲ --- CAUTION --- ▲ ---

Before any travel on public roads be sure that the locking lever of the single-lever control unit is moved to locking position.

When travelling on the road with the front loader lifted, the control lever must be locked against lowering. If the tractor is fitted with a single-lever control unit, be sure that the locking lever is in the locking position.

--- ▲ --- DANGER --- ▲ ---

Travel with loaded bucket on public streets is prohibited!
8.2 Allowed maximum load capacity of pallet fork tines

The allowed maximal values of load-bearing capacity per pallet fork tine (scheme) need not to be passed.

Maximal allowed lifting height for throughout payload $N_2$ by observance of the maximal distance of 450 mm.

<table>
<thead>
<tr>
<th>Type</th>
<th>Pay load $N_2$ [kg] without attachment</th>
<th>Overloading height (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robust F 5</td>
<td>876</td>
<td>3246</td>
</tr>
<tr>
<td>Robust F 8</td>
<td>1310</td>
<td>3246</td>
</tr>
<tr>
<td>Robust F 10/15</td>
<td>1350/1700</td>
<td>3545</td>
</tr>
<tr>
<td>Robust F 30/31</td>
<td>1570</td>
<td>3874</td>
</tr>
<tr>
<td>Robust F 35/36</td>
<td>1800</td>
<td>3874</td>
</tr>
<tr>
<td>Robust F 50</td>
<td>2400</td>
<td>4052</td>
</tr>
<tr>
<td>Robust 71</td>
<td>2200</td>
<td>4436</td>
</tr>
</tbody>
</table>

8.3 Comfort - Drive

Please observe the following instructions if your frontloader is fitted with a Comfort Drive system:

1. Preferably switch on the Comfort Drive system when travelling on the road or during long travel on bumpy ways (shut-off tap must be opened).

   Any shockload transmitted by the frontloader arm will then considerably be damped by “Comfort-Drive”.

   -- ! -- ATTENTION -- ! --

2. Before performing any heavy loading work, e.g. earth moving, the shut-off tap located between the LIFTING side of the loader arm cylinders and the respective “Comfort Drive” pressure accumulator must be closed.
If the front loader is used under maximum load with the shut-off tap not closed, the constantly alternating stress and the resulting peak pressures could be detrimental to the diaphragm of the pressure accumulator.

--- ATTENTION ---

If the shut-off tap is not closed, the peak pressures can lead to the destruction of the diaphragm.

What is more, a certain “hunting” effect could be originated by the pressure accumulator.

The shut-off tap of the Comfort Drive system should also be closed before the use of a pallet fork to preclude a possible “hunting” effect when pallets are taken up or put down.

1) Gas pressure inside the accumulators
2) elastic diaphragm
3) Shut-off tap open
4) Pressure fluctuations caused by road travelling.
5) to the tractor control valve
9. Decalcomania

9.1 Decalcomania frontend loader
Robust F "right"
(=> 2007)

3435500a & 3435620a: electro-hydraulic attachment lock
3343590a: mechanical attachment lock
3341782bEN.pdf: Decals (english)
9.2 Decalcomania frontend loader
Robust F "left"
(=> 2007)
9.3 Decalcomania frontend loader
Robust F "right"
(2007 =>)
9.4 Decalcomania frontend loader
Robust F "left"
(2007 =>)

3431570c.pdf Grey-Red
3432020c.pdf Anthracite-Red
3432010c.pdf Grey-Yellow
<table>
<thead>
<tr>
<th>Description of malfunction</th>
<th>Cause</th>
<th>Trouble Shooting</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Small lift and tearout Force.</td>
<td>Insufficient oil pressure.</td>
<td>Check the tractor hydraulic.</td>
</tr>
<tr>
<td>b) Control lever difficult to operate.</td>
<td>Bowden cables hardly to operate.</td>
<td>Check routing and movability of the bowden cables. If necessary oil or replace bowden cables.</td>
</tr>
<tr>
<td>c) Loader and attachment move slowly or not at all.</td>
<td>1) Insufficient oil in the hydraulic system.</td>
<td>Check Oil level and refill oil if necessary.</td>
</tr>
<tr>
<td></td>
<td>2) Hydro-couplers connection incorrect.</td>
<td>Check and correct couplers.</td>
</tr>
<tr>
<td></td>
<td>3) Defect hydro-coupler.</td>
<td>Check coupler and replace if necessary.</td>
</tr>
<tr>
<td></td>
<td>4) Insufficient oil flow.</td>
<td>Check the tractor hydraulic.</td>
</tr>
<tr>
<td></td>
<td>5) Pressure relief valve of the loader sticks in position open.</td>
<td>Check system pressure.</td>
</tr>
<tr>
<td>d) Loader and/or attachment operate in wrong direction relative to control lever.</td>
<td>1) Couplers connected incorrectly.</td>
<td>Check and correct couplers.</td>
</tr>
<tr>
<td></td>
<td>2) Bowden cables connected incorrectly</td>
<td>Check and correct bowden cables connection.</td>
</tr>
<tr>
<td>e) Slow speed or sticking lift function of the loader.</td>
<td>1) Insufficient oil in hydraulic system.</td>
<td>Check Oil level and refill oil if necessary.</td>
</tr>
<tr>
<td></td>
<td>2) Engine R.P.M. to slow.</td>
<td>Increase engine speed.</td>
</tr>
<tr>
<td></td>
<td>3) Cold hydraulic fluid.</td>
<td>Allow hydraulic system to warm up to operating temperature.</td>
</tr>
<tr>
<td></td>
<td>4) Load to high.</td>
<td>Reduce load.</td>
</tr>
<tr>
<td></td>
<td>5) Defect hydro-coupler.</td>
<td>Check coupler and replace if necessary.</td>
</tr>
<tr>
<td></td>
<td>6) Internal leakage of hydraulic cylinder.</td>
<td>Check cylinder, replace defect cylinder if necessary.</td>
</tr>
<tr>
<td></td>
<td>7) Pressure relief valve incorrect adjusted.</td>
<td>Check setting of the pressure relief valve.</td>
</tr>
<tr>
<td></td>
<td>8) Internal leakage of control valve.</td>
<td>Check control valve, replace if necessary.</td>
</tr>
<tr>
<td>f) Insufficient lift power.</td>
<td>1) Internal leakage in hydraulic cylinder.</td>
<td>Check cylinder, replace defect cylinder if necessary.</td>
</tr>
<tr>
<td></td>
<td>2) Load to high.</td>
<td>Reduce load.</td>
</tr>
<tr>
<td></td>
<td>3) Pressure relief valve setting incorrect.</td>
<td>Check setting of the pressure relief valve.</td>
</tr>
<tr>
<td></td>
<td>4) Internal leakage of control valve.</td>
<td>Check control valve, replace if necessary.</td>
</tr>
<tr>
<td>g) Air in the hydraulic system. (Indicated by foamy fluid.)</td>
<td>1) Hydraulic pump sucks air.</td>
<td>Check lines between hydraulic pump and tank for loose or defect connections.</td>
</tr>
<tr>
<td></td>
<td>2) Hydraulic filters are dirty</td>
<td>Check hydraulic filters and replace if necessary.</td>
</tr>
<tr>
<td>h) Leaking couplers of the loader or 3rd or 4th control circuit.</td>
<td>Leakage by penetrated dirt.</td>
<td>Clean the coupler and replace as required. When not using the loader and/or the 3rd and 4th control circuit lock the couplers with protective caps and keep the cover of the Hydro-Fix closed.</td>
</tr>
<tr>
<td>i) Loader arm or attachment is locking after a certain lifting movement.</td>
<td>1) The coupling is not completely closed.</td>
<td>Check the hydro-coupler.</td>
</tr>
<tr>
<td></td>
<td>2) The coupling is defect.</td>
<td>The defect coupling half must be replaced.</td>
</tr>
<tr>
<td>j) Attachment is tilting to the rear.</td>
<td>1) Relief valves misadjusted or defect.</td>
<td>Examine relief valves, if necessary exchange.</td>
</tr>
<tr>
<td></td>
<td>2) Handling error: Engine speed too small.</td>
<td>Increase engine speed.</td>
</tr>
<tr>
<td>DE</td>
<td>Wir erklären in alleiniger Verantwortung, daß das Produkt:</td>
<td>NL</td>
</tr>
<tr>
<td>EN</td>
<td>declare under our sole responsibility, that the product:</td>
<td>IT</td>
</tr>
<tr>
<td>PT</td>
<td>declaramos com responsabilidade própria que o produto:</td>
<td>ES</td>
</tr>
<tr>
<td>FI</td>
<td>ilmoitamme yksin vastaavamme, että tuote:</td>
<td>DE</td>
</tr>
<tr>
<td>EL</td>
<td>Εν προσωπική ευθύνη δήλωσα ότι το προϊόν:</td>
<td>NO</td>
</tr>
<tr>
<td>DA</td>
<td>nummer:</td>
<td>PT</td>
</tr>
<tr>
<td>EN</td>
<td>number:</td>
<td>ES</td>
</tr>
<tr>
<td>NL</td>
<td>nummer:</td>
<td>PT</td>
</tr>
<tr>
<td>IT</td>
<td>numero:</td>
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<td>FR</td>
<td>numéro:</td>
<td>PT</td>
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<tr>
<td>FI</td>
<td>merkki:</td>
<td>ES</td>
</tr>
<tr>
<td>DE</td>
<td>Typ:</td>
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</tr>
<tr>
<td>NL</td>
<td>type:</td>
<td>PT</td>
</tr>
<tr>
<td>IT</td>
<td>modello:</td>
<td>DA</td>
</tr>
<tr>
<td>ES</td>
<td>modelo:</td>
<td>PL</td>
</tr>
<tr>
<td>PT</td>
<td>marca:</td>
<td>FI</td>
</tr>
</tbody>
</table>

| DE | Wilhelm Stoll Maschinenfabrik GmbH | NL | Typ: |
| EN | Lengede, 15.02.2007 i.A. Uwe Ockert | IT | Frontlader |
| PT | Lengede, 15.02.2007 i. V. Frank Schmelzer | ES | HD 5 / 8 / 10 / 15 / 30 (31) / 35 (36) / 50 (51) |
| FR | E 3312120 | ES | xx F x x NS xF A x Cx xx |
| NL | 3312120 | PL | EK-S 4 / 5 / 8 / 10 / 15 / 30 (31) / 35 (36) / 50 (51) / 71 |
| IT | 3312120 | PL | xxx F x x MS xF A x Cx xx |
| ES | 3312120 | | |
| PT | 3312120 | | |
| FR | 3312120 | | |
| FI | 3312120 | | |


Lengede, 15.02.2007 i.A. Uwe Ockert
Konstruktion (Loader Design)

Lengede, 15.02.2007 i. V. Frank Schmelzer
Produktionsleiter (Loader Manufacturing)