Ausgabe 536 00 902/3

Operating Instructions

Chopper Trailer

Mega - Trailer II / II DO

09/06

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EC – Declaration of Conformity

according to EC Directive 89/392/EWG

We, the company B. Strautmann & Söhne GmbH & C. KG

Bielefelder Str. 53

D-49196 bad laer

Declare in sole responsibility that the product

Mega - Trailer II / II DO

To which this declaration refers, fulfils the safety standards and respective safety and health regulations of EC Directive 89/392/EWG at the time of issue.

To comply with the safety and health requirements of the named EC Directive, the following standard(s) and/or technical specification(s) was(were) used as a reference.

EN 292

Bad Laer, September 29th 2006

Dipl. Kfm. W. Strautmann
Managing Director

R. Kleine - Niesse
Senior Manager, Construction
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Dr. K.-P. Strautmann
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1. Foreword

Dear Customer

We thank you for the confidence you have show in us.

You have purchased a top-quality product which will enable you to improve your operating results.

Strautmann's many years of experience guarantee you optimum performance, quality and ease of operation.

Safety

Before putting the machine into operation, please read these operating instructions and observe the regulations and advice on safety!

Throughout these operating instructions all points which relate to your safety have been marked by a warning triangle. Please pass all safety instructions on to other users.

The hazard-warning and safety-advice signs provide important information on safe operation. Observing them is in the interests of your own safety.

Due to the many different types of machines and special features available, not every variation described here is to be found on your machine.

Should you have any further questions, please do not hesitate to contact your Strautmann representative or the factory.

Machine Data: This information should always be to hand. Please quote when ordering spare parts.

Please therefore copy down the machine data from the vehicle identification plate of your new trailer onto the space provided below:

VEHICLE ID. NO. MODEL YEAR OF MANUFACTURE

2. Proper Use

The Strautmann chopper trailer has been designed for exclusive use in agricultural work. Its intended function is the transport and spreading of chopped forage material.

Any use beyond this will be considered as improper.
The manufacturer will not be held responsible for any damage resulting thereof. The user will solely bear the risk.

Adherence to all operating, servicing and maintenance conditions specified by the manufacturer will also be part of 'proper use'.

The vehicle may only be operated, maintained and serviced by people who are acquainted with the said vehicle and its equipment and have been instructed as to the dangers involved.

Any unauthorized modifications carried out on the machine will invalidate the product liability and the manufacturer's liability for any damage resulting thereof.

Any costs arising from modifications or malfunctions due to peculiarities of the tractor or carelessness on the part of the operator will not borne by the Strautmann Company.

Only genuine Strautmann spare parts may be used!

3. Accident Prevention Information

For your safety and accident prevention

Most farming accidents are caused by non-observance of the simplest safety rules. Careful observance of the following suggestions and rules helps prevent accidents from the very outset.

3.1 General and hazard-warning pictograms

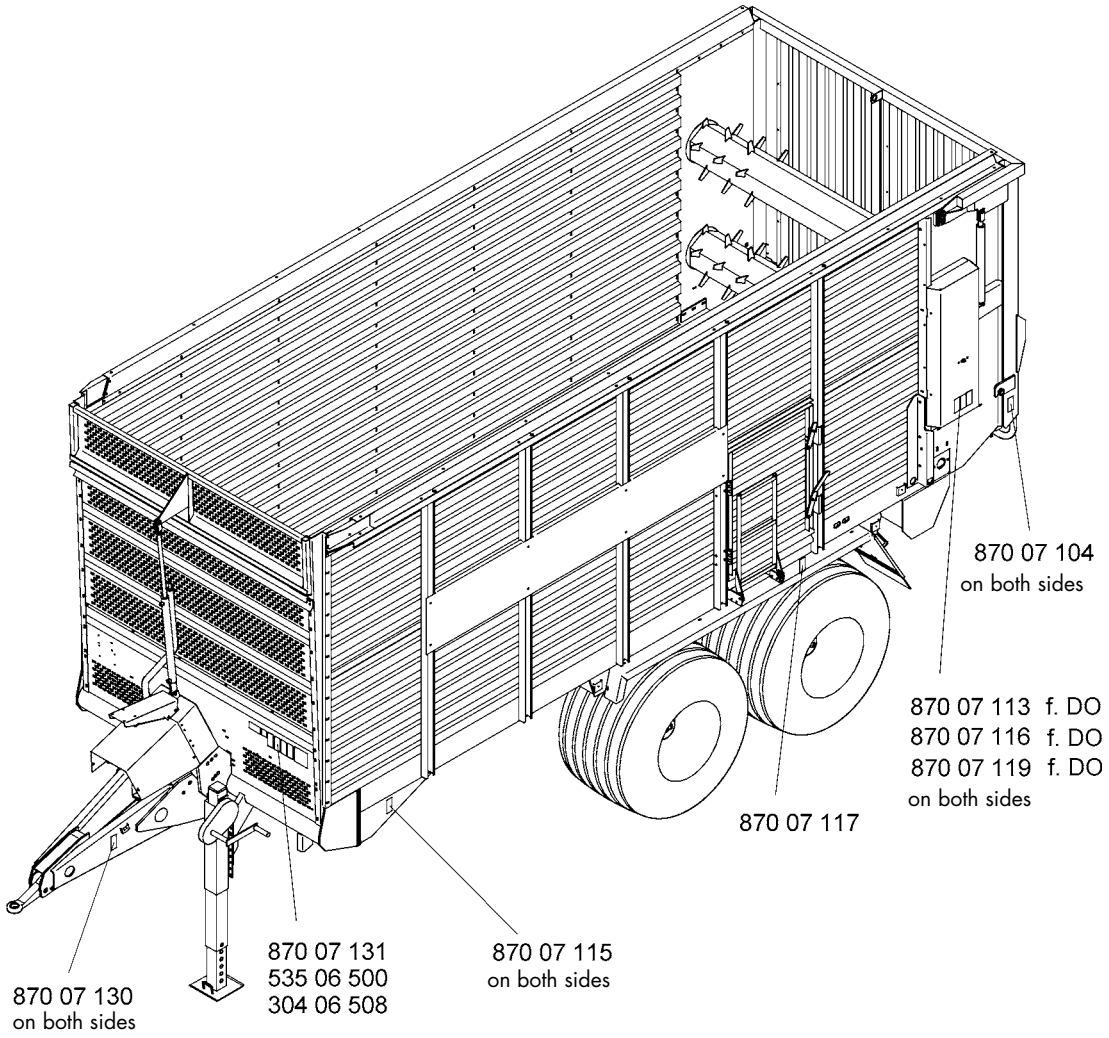

Fig. 1

Attention: Torn-off or unreadable signs or pictograms must be replaced immediately by new ones. Pictograms or signs can be procured from specialist stores or directly from Strautmann's spare-parts warehouse (Tel.:+49(0)5424/ 802-31).

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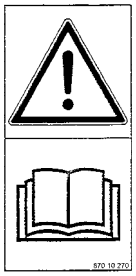


Please observe the general accident prevention regulations in addition to the information given in these operating instructions; any other generally recognized safety, industrial medicine and traffic regulations are to be complied with.
Familiarize yourself with all the equipment, actuating elements and their functions before beginning work on the unit.

When you have already started work it will be too late!

870 07 119

The machine is designed for single-handed operation. The operator may only operate the machine and actuate its functions when there are no other persons in the danger zone (please pay particular attention to children).

870 07 116

Foreign objects in the forage can be slung out during discharge by the spreader drums.

All safety guards must be properly mounted at all times.
Never open or remove safety guards while the motor is running.

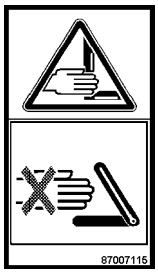
870 07 117

Do not enter the loading area while the P.T.O. shaft/hydraulic system is connected and the motor is running.

870 07 113

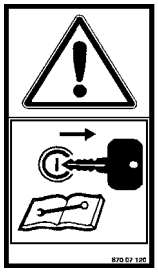
Do not reach into the discharge opening while the P.T.O. shaft is connected and the motor is running.
Never try to clear blockages while the motor is running.

870 07 115



Never take hold of the moving floor conveyor rails (risk of fingers/hand being crushed).
Before every machine start-up, put the hydraulic controls and electro-hydraulic switches to zero position.

870 07 120

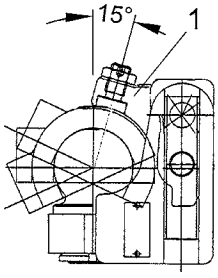


Before carrying out any work (e.g. maintenance and repairs) on the machine, switch off the motor and remove the ignition key.

3.2 Linkage and Traction Mode

Vehicle brake system:
The trailer can be equipped with various types of brake system (acc. to the relevant national regulations).
a) Compressed air brake (two-line air brake system)
b) Hydraulically operated brake system
The tractor brake system must match the relevant trailer brake system.
Before starting up, make sure that all road safety and operating safety regulations have been complied with and that the brake system and lighting function correctly.
Where compressed air brake systems are used, check that the brake power control is correctly positioned. (see note 19.2)

Hitch the vehicle to the tractor in the prescribed manner. Be particularly careful during hitching and unhitching!
Ensure that the tractor hitch has been approved to take the hitch eye fitted to the trailer.
If a ball hitch 80 is being used take particular care that the crop guard to ball clearance is adequate when driving on stacks.
To attain greater freedom of movement on the tractor-side “Scharmüller ball head hitch”, use the shorter crop guard 1 (Scharmüller order no. 02481316).



Damaged or bent hitching equipment is a threat to safety and should not be used again.
Before every start-up or drive make sure that there is no-one in the danger zone. Watch out in particular for children.
When reversing make sure you have a good all-round view. You may need an additional person to guide you.
After hitching or unhitching is completed, adjust the support stand as required and secure.
Before loading check that the back panel and/or inspection door is/are closed. Fold up the inspection ladder.

870 07 126

Do not put down loaded vehicles onto supports.
Before unhitching make sure the support stand is in a stable position. Secure vehicle against rolling (parking brake, chocks).

870 07 130

Independent braking must be prevented (lock pedals) on all runs with trailers.

Do not go between tractor and trailer while the engine is running.

870 07 104

Observe permitted axle loads, tongue loads and laden weights, in particular the maximum tongue load which the trailer hitch can take on.
It is forbidden to go within the chute rotation range of the hydraulically swivelled back panel. When maintenance and repair work is being carried out with the back panel open, the latter must be secured by closing the stop cock.

Keep an eye on the reactions of your tractor on the road when the load is unevenly distributed due to loading and auxiliary parts.
Always adapt your driving speed to the prevailing local conditions. When driving up and down steep hills as well as across hills avoid sudden cornering.

Ensure adequate steering and braking performance.

Single and tandem axle vehicles with tongue load are in danger of tipping over if they have been unevenly loaded, especially during hitching or in uncoupled condition. Ensure sufficient tongue load!

870 07 119

Please take care during driving and unloading on the stack that the vehicle is kept stable. (danger of tipping over)
When driving over stacks with soft sides keep to the middle as the danger of tipping over is particularly high. Take care to stay at a safe distance from anyone in the vicinity!

Lock the steering axle when driving across slopes and over stacks.

This is recommended for driving on public roads.

If the steering axle is not locked, cornering at high speeds is not permitted.

3.3 P.T.O. Operation (only with discharge unit)

Observe the operating instructions of the drive shaft manufacturer.
Only use the drive shafts specified by the manufacturer.
Mount and dismount the drive shaft only when the engine has been switched off and the ignition key removed.
Only use the drive shaft with the proper safety guards and in good condition as well as making sure the protective tubes are secured against twisting.
Ensure sufficient tube overlapping on the drive shaft.
When cornering and with overrunning brake, keep to the permitted bending range and ensure adequate drive shaft leeway.

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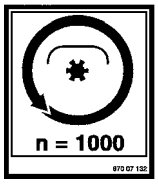


Before switching on the P.T.O. shaft make sure that the selected speed and sense of rotation of the tractor P.T.O. corresponds to the permitted speed and sense of rotation of the machine.

Before every drive shaft start-up check that the locking mechanisms have locked into place properly.

Never switch on the drive shaft with the engine switched off.

If drive shafts with overload or free wheel clutch are used, these types of clutch must be mounted on the trailer side.

After the P.T.O. shaft has been switched off, the unit driven by it can run on.
Stay out of the danger zone until all the equipment has come to a standstill.

3.4 Wheels, Tyres, Brakes

To ensure operation safety, wheels, tyres and brakes are subject to special checks.

Retighten wheel nuts after a short period of use and after every 50 hours of operation (see note 11.3)

Check air pressure regularly (see note 5)

Check tyres as well as wheels and brakes regularly for wear and tear. Check brake lines regularly for leaks and good general condition.

Connect brake system properly before start-up.
Adjustments and repairs to the brake system are only to be carried out by authorized brake service centres or qualified personnel.

Fitting tyres and wheels requires specialist knowledge and equipment.
If you wish to use a different tyre size, please consult the vehicle manufacturer first.

3.5 Hydraulics

Check the hydraulic lines and hose as well as fittings and parts for damage and leaks regularly. Hydraulic hoses should be replaced every 6 years. Only use spare parts that meet the manufacturer's requirements.
Ensure that the hydraulic hoses never bend or rub.

When connecting to tractor, make sure the hydraulic system is depressurised both on the tractor and machine side and make sure the hydraulic connections do not get mixed up (accident risk due to reversed functions). Keep the hydraulic couplings clean.

Attention: The hydraulic system is under high pressure. Before carrying out any maintenance or repair work, always depressurise the system.

Liquids (hydraulic oil) escaping under pressure can penetrate the skin causing serious injuries and infections.

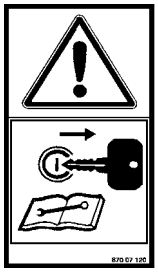
870 07 123

Never try to block leaks with your fingers.

If injuries occur, consult a doctor or medical services immediately.

3.6 Maintenance – General

870 07 120



Any repair, maintenance, cleaning and conversion work and the clearing of malfunctions is only to be carried out with the drive system switched off, the hydraulic system depressurised, the electrical system de-energised and the tractor engine stopped!
Remove the ignition key!
Check regularly that nuts and bolts have not loosened and retighten if necessary.
Observe and maintain the correct torque settings!
Check and mount safety guards!
Dispose of oils, greases and filters according to regulations.
Ensure adequate, safe support and stability.

Attention!

If work is being carried out under the hydraulic back panel, the latter must additionally be protected by the stopcock on the vehicle front panel.

3.7 Road Traffic Regulations for Germany

In the case of exported vehicles, the road traffic regulations in force in the relevant country shall apply.

1. Registration (§ 18)

Trailers running at a speed of over 25 km/h are always subject to registration.

2. TÜV – Re-examination (§ 29)

Trailers with an admissible maximum speed of 40 km/h are subject to this examination by the TÜV every 24 months.
Trailers with an admissible maximum speed of over 40 km/h are subject to this examination every 12 months.
Trailers with an admissible gross weight of over 10 tons must also undergo a safety test every 6 months or, in the case of vehicles on the road for the first time, starting with the initial test after 24 months.

3. Brakes (§ 41)

The chopper trailer is fitted ex-works with a properly functioning brake system (two-line air brake system).
Please have any readjustment or initial adjustment of brakes done by a renowned brake service centre.

4. Registration Number Plate (§ 18)

Trailers over 25 km/h require their own registration number plate.

5. Obligatory Insurance (§ 29)

Trailers over 25 km/h require a third-party insurance.

6. Driving Licence (§ 4 and 5 or driving permit – ordinance – FeV)

Lof vehicles and vehicle combinations up to a maximum speed of 60 km/h may be driven with a class T driving license. However over 40 km/h a minimum age of 18 years is required.

(If the vehicle is to be driven with a licence class L, a sign showing 25 km/h (§ 58, STVZO traffic regulations) must be displayed on the rear of the vehicle.

4. Technical Data

Machine Type		**Mega -Trailer**	**Mega -Trailer II DO**
Perm.veh.gross weight, acc.to tyres used	kg	18000 / 20000	18000 / 20000
Perm. axle load, acc. to tyres used	kg	16000 / 18000	16000 / 18000
Perm. tongue load	kg	2000	2000
Unladen weight with tyres 22.5"/26.5"	kg	5100/5400	5400/5700
Capacity	m^3	32	32
Overall length	m	8,50	8,50
Overall width	m	2,63	2,63
Overall height with tyres 22.5"/26.5"	m	3,67 / 3,82	3,67 / 3,82
Track width	m	2,03	2,03
Wheel base	m	1,32	1,32
Loading area length	m	6,35	6,35
Loading area width	m	2,25	2,25
Loading area height	m	2,20	2,20
P.T.O. shaft speed	rpm	540	
Max. hydr. operating pressure	bar	210	
Oil flow rate	l/min.	30 - 70	
Required hydr. connections		a single-acting control unit + free return or a double acting control unit	
Min. power requirement	KW PS	74 100	74 100

With bottom hitch the tongue load and permissible overall gross weight increases by 1000 kg. Diagrams, technical data and weights may be altered from time to time due to technical advancement and are therefore not binding for every delivery.

5. Tyre Pressure Chart

		18 tons	20 tons	max.
600/50 - 22,5 12PR	bar	2,0	-	2,7
700/40 - 22.5 12PR	bar	1,5	1,7	2,3
710/45 - R 22.5 165D	bar	1,5	1,8	4,0
600/55 - R 26.5 165D	bar	1,5	1,8	4,0
700/50 - 26.5 12PR	bar	-	1,5	2,5
700/50 - R 26.5 163D	bar	-	1,5	2,7
710/50 - R 26.5 170D	bar	-	1,5	4,0
800/40 - R 26.5 172D	bar	1,5	1,8	4,0

If the vehicle width exceeds 2.55m. due to wide tyres,
The German traffic(StVZO) regulations permit a max.
a tyre inner pressure of max. 1.5 bar.
1 bar = 14.5 psi

6. Hydraulic System

Every hydraulic function is directly connected with and controlled from the tractor.
The tractor requires a double- or single-acting control valve with free return (red = supply; blue = return) for the floor conveyor drive.

A free return direct to the hydraulic oil tank is preferable as it involves less tailback pressure.
A double-acting control valve on the tractor is required for each of the following functions: Tailgate, steering axle, hydr.upper front panel or hydr. stand. The control valve requires a floating position for the steering axle.

As a special feature, an electro-hydraulic remote control is available for controlling. The hydraulic block is constructed in modular design so that optional equipment can be fitted at a later date by simply extending the hydraulic block. The flow regulator for the neutral circuit, the pressure relief valve and the floor conveyor valve are to be found in the pump inlet plate. Speed adjustment for consumers other than the floor conveyor is regulated from the adjusting screw on the intermediate plate.

6.1 Regulating the floor conveyor

All Mega-Trailers (with or without discharge unit) are equipped with hydraulic floor conveyor drive. The floor conveyor speed can be variably adjusted infinitely by turning knob 4 fig.3 (on the left, vehicle rear).
The floor conveyor return can be actuated by pressing button 8.

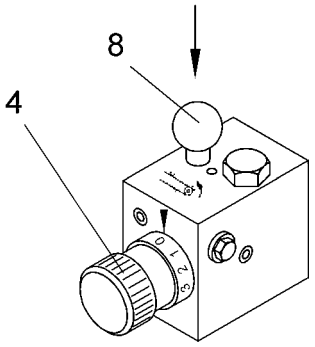


Fig. 3

Attention: Only reverse floor conveyor briefly

The fast run floor conveyor speed (special feature) can be switched on from the toggle switch on the control box.

6.2 Electro-hydraulics (special feature)

The hydraulic system can be driven as an open system with max. 80 l. /min. The tractor requires a double- and a single-acting control valve with free return (red=supply;blue(thick hose)=return for the hydraulic connection.
A free return directly to the hydraulic oil tank is preferable as it involves less tailback pressure. The flow regulator for the neutral circuit and the speed adjuster for the small consumers such as pick-up, the articulated drawbar, tailgate etc. are to be found in the pump inlet plate. The speed adjustment for consumers other than floor conveyor and cross conveyor is regulated from the adjusting screw (1). The flow rate can be set from 1 – 16 l. / minute.

If the tractor control valve is actuated, oil flows through the hydraulic system.

(Attention: Always ensure correct flow direction!)

The tractor control valve lever should always be locked in place so that it does not have to be held onto constantly. The functions required can now be selected directly from the control box using the toggle switches.
Attention: Before depressurising the hydraulic system again via the tractor control valve, the toggle switches on the electrical control box must be put to zero position.

High accident risk!

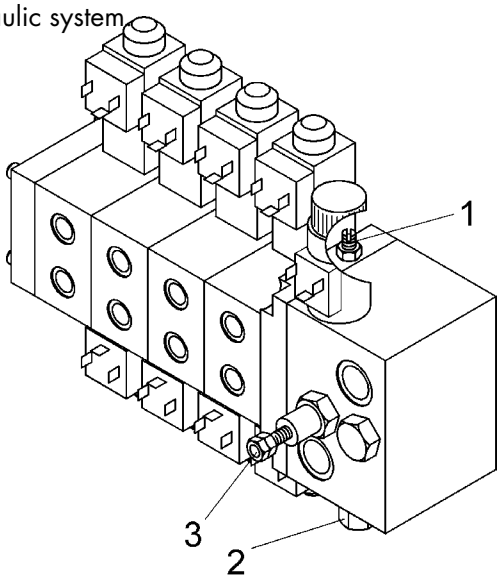
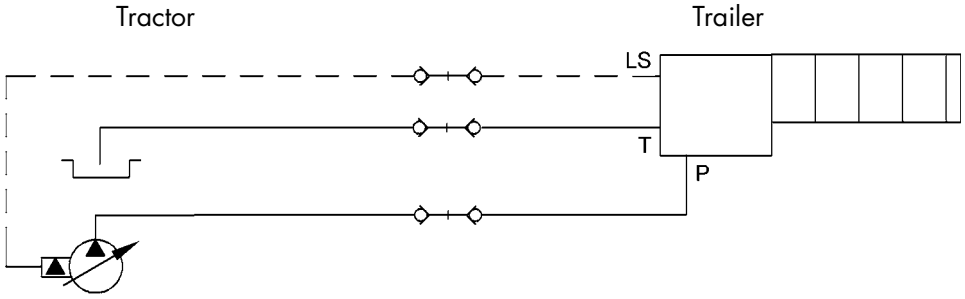


Fig. 3.1

6.3 LS – Connection



The self-loading trailer hydraulic system can be regulated with the tractor LS system. (The hydraulic pump's pressure and delivery rates are adjusted to current need).
For this purpose the LS connection on the tractor is connected up to the LS connection (2) fig. 3.1 on the self-loading trailer control valve.
The supply is connected directly to the hydraulic pump.(Not via the tractor control valve).
Attention: Never use the pressure connection without the LS connection.
The pressure regulator must be blocked by screwing in the bolt (3) fig. 3.1 as far as it will go. The regulating current cut-off must be set to open system.
Attention: If connecting via the tractor control valve, the bolt (3) will have to be screwed out again as far as it will go.

7. Operation

The Strautmann “Mega Trailer” chopper is equipped with an electric control box.
In the electric control box, which is mounted in full view of the driver, you will find the switches and check lights (acc. to model) which the tractor driver has to operate and/or control.
Wherever necessary the toggle switches are fitted with a ‘locked’ position so that they do not have to be continually held.

7.1 Electric Control Box (standard)

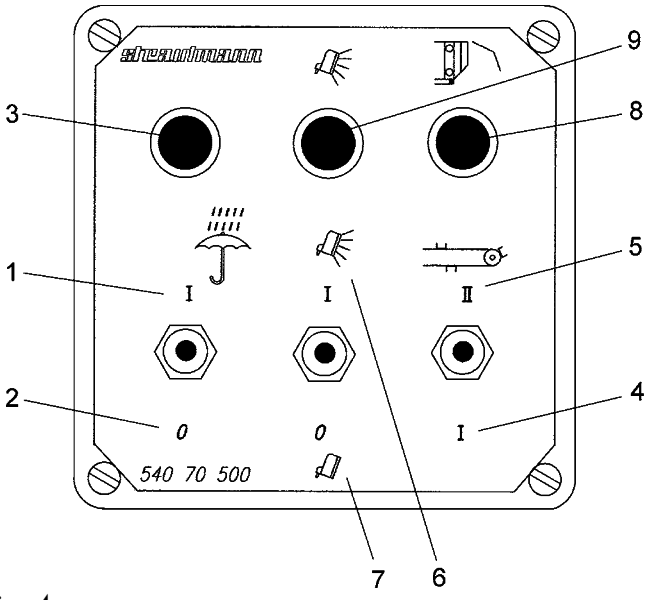


Fig. 4

1. Control: on
2. Control: off
3. Check light: control on
4. Floor conveyor speed: level I
5. Floor conveyor speed: level II
6. Work lights: on (not permitted on public roads)
7. Work lights: off
8. Check light: tailgate open
9. Check light: work lights: on

7.2 Electric Control Box (optional equipment)

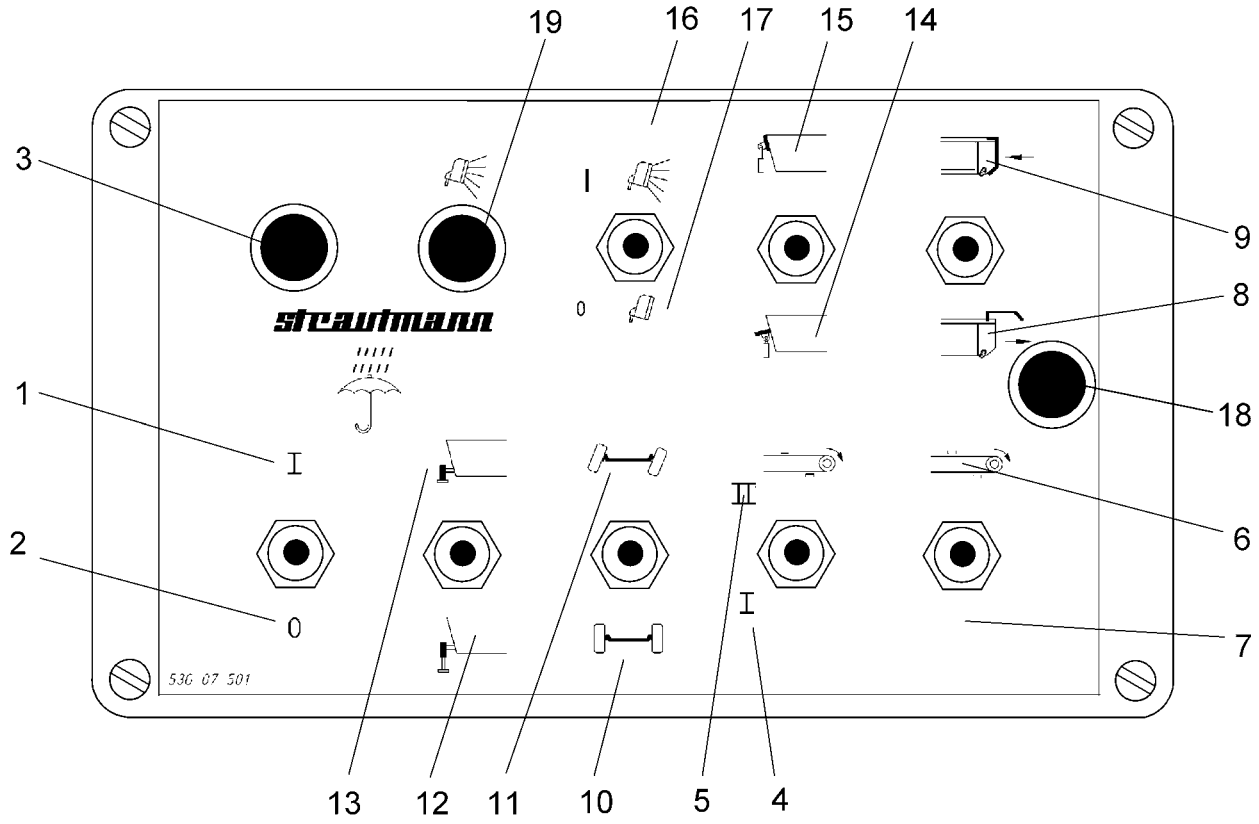
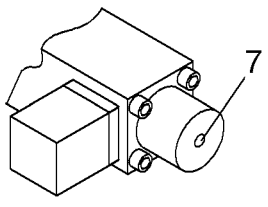


Fig. 5

1. Control: on
2. Control: off
3. Check light: control on
4. Floor conv. speed: level I
5. Floor conv. speed: level II
6. Floor conveyor: on
7. Floor conveyor: off
8. Tailgate: open
9. Tailgate: closed
10. Steering axle: locked
11. Steering axle: free
12. Hydr. stand: down
13. Hydr. stand: up
14. Front panel grid: open
15. Front panel grid: closed
16. Work lights: on
    (not permitted on public roads)
17. Work lights: off
18. Check light: tailgate open
19. Check light: work lights on



In case of power failure, it is possible to actuate the control valve by pressing the starter (7) on the solenoid.

8. Technical Data and Notes on practical Usage

1. The system can only be operated at 12 volts
2. Connecting terminal 15 / 30 – plus; 31 – minus
3. Hydraulic system maximum flow rate 70 l/min.
4. Hydraulic system maximum pressure 210 bar
5. Supply SN 16 (marked red)
6. Return SN 20 (marked blue)
7. Tailback pressure at tractor must not exceed 10 bar
8. Hydraulic block torque setting 25 – 28 Nm.
9. Control light bulb can slip out of its holder if not handled carefully.
10. Every unit must have an emergency hand-operated actuator. If the electrical system breaks down, the magnets can be actuated with a sharp object.
11. When hitching, make sure that the hydraulic couplings are perfectly clean. If dirt gets into the hydraulic system, malfunctioning is likely to occur.
12. The hydraulic couplings on the trailer must match those of the self-loading or discharge trailer. On certain types of trailer, for example, John Deere, Ford or Fiat, the hydraulic couplings are fitted with a ball. If this kind of coupling is used, tailback pressure or complete closure of the coupling can occur.
13. Protect the control box against humidity.
14. When driving for longer periods on the road, it is advisable to switch off the tractor hydraulic system. This prevents the system from heating up unnecessarily.
15. During long downtimes the self-loading and discharge trailer electrical systems should be switched off as otherwise the consumers connected up to it will cause the tractor battery to discharge completely.

9. Hitching to Trailer

Install electric switch box on the trailer and plug into socket.

Attention: If it is not already fitted, a 3-pin socket must be mounted for the electrical remote control.

- Connect hydraulic hoses (supply and return) correctly.
- Connect up lighting to tractor socket and test correct functioning.
- Hitch up vehicle to tractor properly.
- Check that the hitch to hitch eye combination (drawbar) complies with the relevant national road traffic regulations/laws (do not forget tongue load).
- Push on drive shaft and adjust lengths if necessary. Mount the drive shaft slip clutch on the machine side.

Attention: Even if the position is unfavourable, a minimum overlap of 1/3 of the lemon tubes must be reached. Please follow the operating instructions of the drive shaft manufacturer.

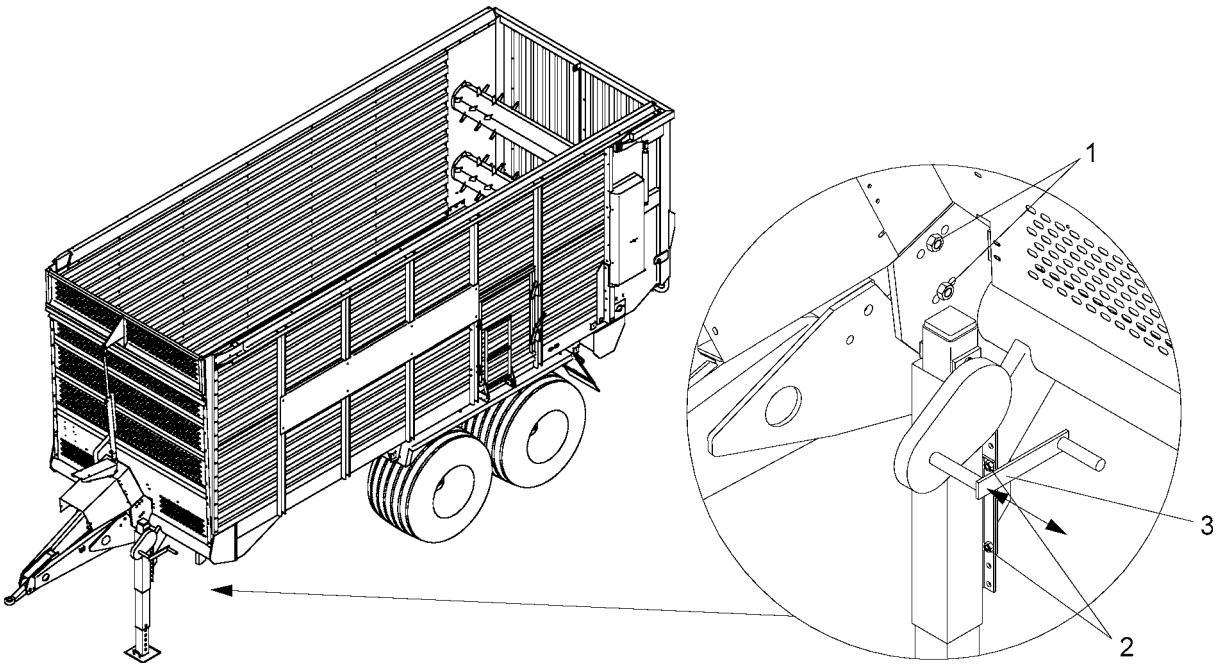
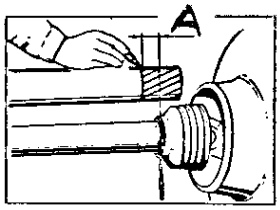


Fig. 6

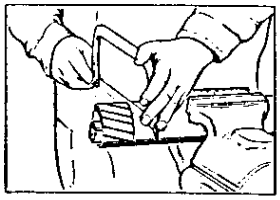
The height of the drawbar can be adjusted by moving the cross carrier at the bolt points or by removing the modules dia. 150 on the rubber buffers.
The support winch can be adjusted by means of the 4 screws (2). The support winch is fitted with a two-speed transmission.
Crank (3) pushed in = 1st gear, pulled out = 2nd gear

Please note:
Always depressurise the hydraulic system before unhitching the trailer. When the trailer is unhitched, put all the plugs with quick release couplings in the holders provided.
Close compressed air hose coupling heads and place in blank couplings

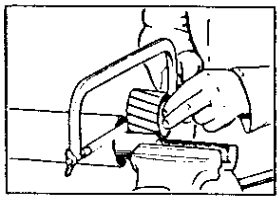
9.1 Universal Drive Shaft Adjustment



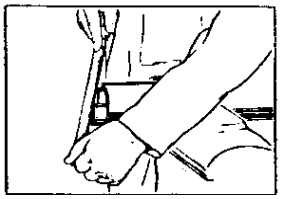
For length adjustment slip on the drive shaft halves on both sides in the shortest operating position. Hold them side by side and mark them. A=approx. 110-120 mm.



Shorten the inner and outer tubes equally.



Shorten the inner and outer slide-in sections by the same length as the protective tube.



Deburr the cutting edges and remove the filings carefully.

Fig.7

9.2 Forced Steering (only with bottom hitch)

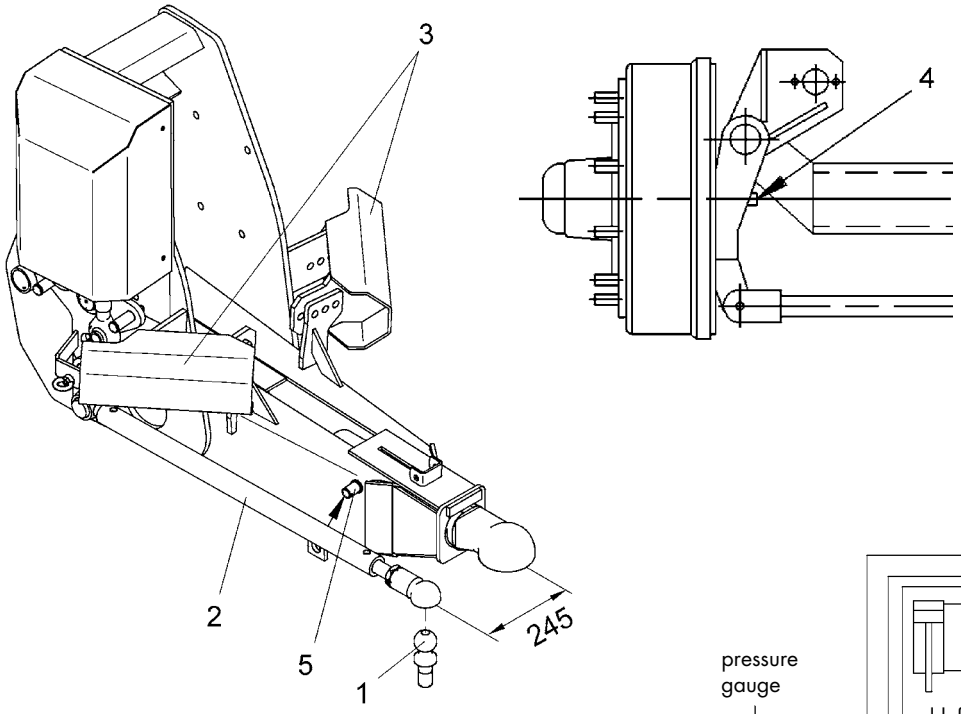


Fig. 8

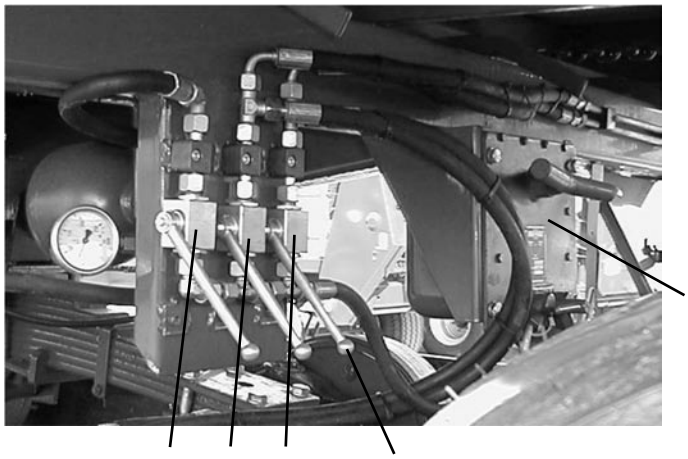


Fig. 9 1 2 3 closed

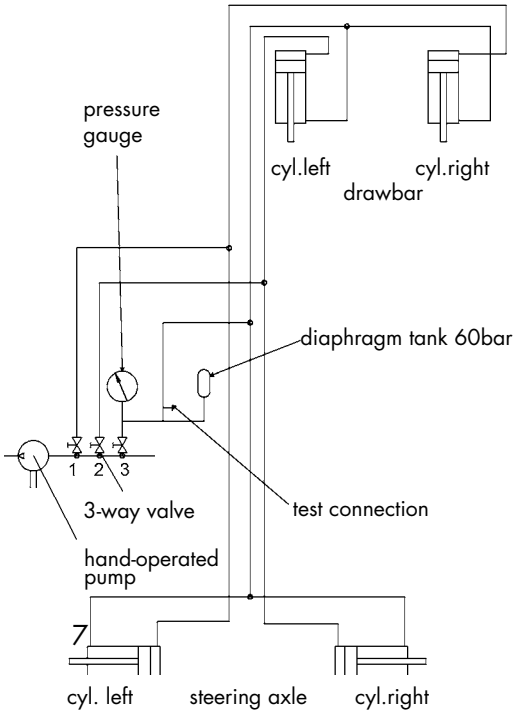


Fig. 10

Installing Forced Steering

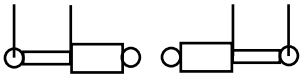
- Ball-, hitch hook- or piton-fix towing mechanisms are all suitable for use with forced steering. To ensure that the forced steering functions properly the hitch eye must be positioned over the bolt with as little play as possible.

- Attach the coupling ball (1/fig.8) for the steering rod (2) to the tractor securely at a distance of 245 mm from the hitch eye.

- The coupling ball is to be attached at the same height and at right angles to the towing mechanism. Misalignment of levels can result in different steering angles.
- After the steering rod has been fitted, swing round the tractor steering to its limit until the tractor wheels touch the collision guard (3). The swing limit (4) must not restrict the axle. At the maximum steering angle, the cylinders should still have at least another 10 mm way remaining. If this is not the case, the collision guards will have to be adjusted by the customer.
  Check all free space and possible steering angles for collision.
- Use the eye (5) fig. 8 to secure the steering rod when manoeuvring the machine.
- After fitting is completed, open the stopcocks 1-3 fig. 9 under the vehicle completely for track-adjustment of steering. Pump up the steering system to 60 bar with the pump (7) which is mounted on the vehicle.
- After driving 20 metres straight ahead, close the cocks. The system is now ready for operation.
- Check the pressure in the system regularly. If there is any deviation, repeat the above procedure.
- Use the bolt (5) to secure the steering rod before manoeuvring the machine.
  The towing mechanism shown here is only one example of the many types of hitch to be found on tractors so that in everyday practice a different method of mounting the towing device can be used to suit the situation. However to ensure correct functioning of the steering, the main points given in the above description should be taken into consideration.

Bleeding the Forced Steering

1. Check the oil level in the pump container and refill as needed (Hydr.-oil VG 46)
2. Two persons are required to bleed the forced steering.
3. Uncouple the steering rod from the tractor. Do not lock.
4. Screw out all the sealing plugs on all the hydraulic cylinders. Two master cylinders on the drawbar and two steering cylinders on the steering axle.
5. Open ball cock no. 1
6. Pump oil into the system with the pump until bubble-free oil emerges from the openings on the piston crown side of the cylinder mounted on the left in direction of travel on the steering axle and the right-hand cylinder on the drawbar.
7. Screw in the sealing plugs again on the piston crown side of the cylinders and open ball cock no. 1. ATTENTION: Continue to pump while the screws are being closed.
8. Open ball cock no. 2
9. Pump oil into the system with the pump until bubble-free oil emerges from the openings on the piston crown side of the cylinder mounted on the right in direction of travel on the steering axle and the left-hand cylinder on the drawbar.
10. Screw in the sealing plugs again on the piston crown side of the cylinder and then close ball cock no. 2. ATTENTION: Continue to pump while the screws are being closed.
11. Open ball cock no. 3.
12. Pump oil into the system with the pump until bubble-free oil emerges from the openings on the connecting rod side of all four mounted cylinders.
13. Screw in sealing plugs again on the connecting rod side of the cylinders and then close ball cock no. 3. ATTENTION: Continue to pump while the screws are being closed.
14. Raise the steering axle until the wheels no longer touch the ground.
15. Bring the steering cylinder to the same level and drop the axle again.



16. Check that the master cylinders have been run out to the same degree. If this is not the case, continue with step no. 17.
17. To adjust the master cylinders, open the ball cock which releases the oil supply to the piston side of the shorter master cylinder and open the sealing plug on the steering cylinder on the piston crown side (do not completely unscrew) which is connected to the piston crown of the second master cylinder.
18. Pump slowly until both master cylinders reach the same length. Close ball cock and sealing plugs again.
19. Open all the ball cocks, preload system to 60 bar and close the ball cocks again.

10. Practical Usage

Loading
To front-load onto the vehicle during forage harvesting, the upper part of the front panel can be swivelled down hydraulically (available as optional extra).

Unloading
- Fully open hydraulic tailgate.
- Switch on hydraulic floor conveyor.
- Do not switch to floor conveyor level 2 before the vehicle has half emptied.
- In the case of Mega-Trailer DO, switch on the shredder drums via the tractor P.T.O. shaft.
Switch on the hydraulic floor conveyor.
- Adjust your driving over the stack so that forage does not pile up behind the trailer.

Practical Tip
To discharge the last forage remaining in the vehicle, we recommend switching off the drive shaft together with the shredder drums and running the trailer empty on the hydraulic floor conveyor.

11. Maintenance and Care
Check all nuts and bolts regularly and re-tighten as required.

11.1 Floor Conveyor Chains

The floor conveyor chains are self-tensioning. If the maximum tension way of this automatic system has become overstretched after long periods of use, 2 or 4 links will have to be removed from each round steel chain.
When repair work is to be carried out, loosen the lock nut (1) fig. 8 and screw out the adjusting screw (2) to slacken chain tension.
Release the catch (3) first by tightening nut (4).
After completion of repairs re-tighten and check correct functioning of catch.

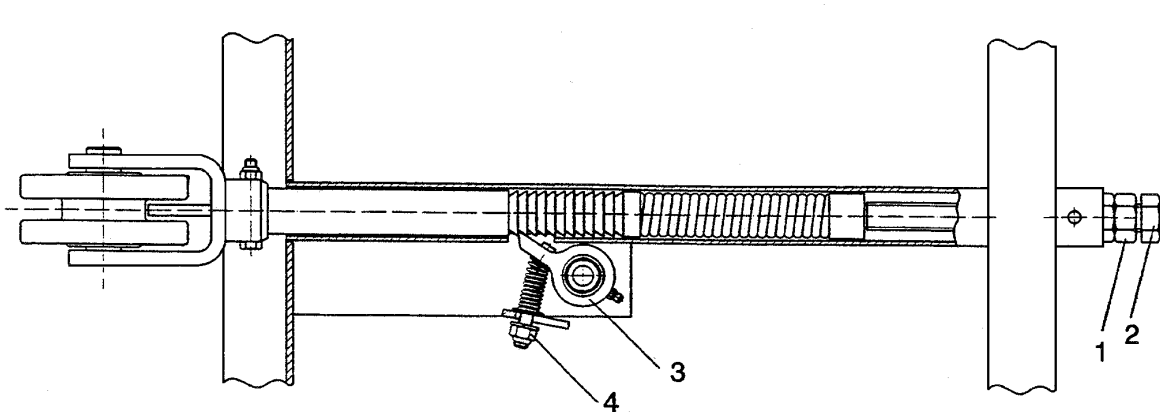


Fig. 11

11.2 Hydraulic Oil Filter (for electro-hydraulic system)

The filter element (1) must be replaced after approx. 250 hours of operation.
Thereafter as required, but at least every 1000 hours of operation.
Check the O-ring (2) for damage.
Clean the filter hood (3). The filter element cannot be cleaned.
Soiled filters cause the oil to overheat.
Filter element order no. 870 01 773 (for filter HD 069 – 168)
O – ring dia. 53.6 x 3.5 order no. 870 08 702

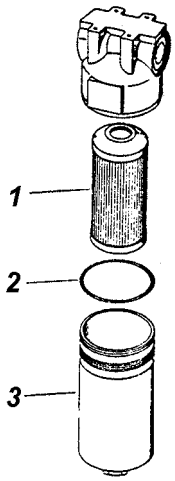


Fig. 12

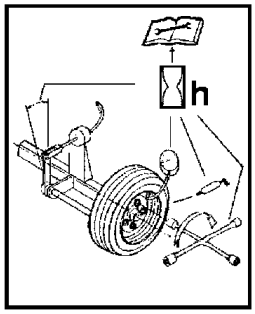
11.3 Axles

Never overload axles. Overloading shortens the service life of the bearings and causes damage to the axles. In addition the following may cause unnecessary wear etc. and should be avoided: Hitting kerbs, driving too fast. Wheel brakes must always be set correctly to maintain operational safety.

Maintenance Schedule: Axles

After first working runs:	Check state of wheel nuts. If necessary, retighten wheel nuts (M 22 x 1.5 = Md 630Nm). Check leeway of wheel hub bearing.
After 50 service hours:	Check leeway of wheel hub bearing.
Every 100 service hours:	Grease brake camshaft bearing (not applicable with nylon bushings). Check brake lever setting and adjust if necessary.
Every 500 service hours:	Check leeway of wheel hub bearing: remove dust cap and split pin, tighten axle nut until hub run almost stops and loosen up again to next split pin hole. Fix the nut by split pin and test run.
Every 1000 service hours:	Lubricate wheel hub bearing with roller bearing grease. Check brake linings for wear. If necessary fit new brake linings.

This maintenance schedule has been designed for medium axle loading and brake wear. With heavier use, and in particular higher demands on the brakes, shorten the maintenance intervals accordingly.



Check air pressure regularly. (see note 5)

11.3 Tyres

Good tyre economics is a question of regular checks and driving with the correct tyre pressure. If you follow the advice given below, your will gain the most benefit from your investment.

1. Check the tyre pressure every 2 weeks at least. If the machine hasn't been used for a longer period of time, check the tyre pressure before driving off. Always make sure that the tyre pressure is correct and adapted to the load and type of work, which the vehicle in question generally carries out.
2. Never overstrain the tyres.
3. Make sure the caps are on the valves and have been tightened.
4. It is best to check the tyres during operation for "folds" or other abnormal deformation. Remove any stones, gravel, nails and other foreign objects caught up in the tyres before they work themselves further in. Deep tears should be repaired as soon as possible.
5. If the tyres are not to be used for a longer period of time, remove load to prevent deformation. 'Loose' tyres should be kept in a dark place, out of the way of oil and other chemicals. Do not put tyres near electric motors otherwise the ozone generated by this equipment will dry out the rubber.

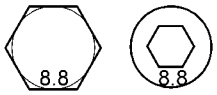
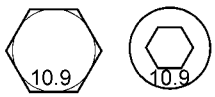
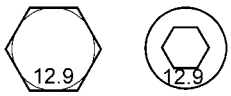
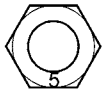
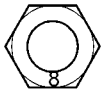
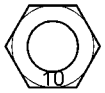
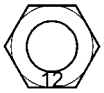
Effects of different Tyre Pressures in use on Farm and Meadow Land

The power required to draw a wheel over a field is called 'rolling resistance'. This increases considerably if the tyres burrow or sink into the ground. Low tyre pressures increase the contact surface of the tyres in comparison to high pressures. By using wide tyres with low tyre pressure the tyres stay on the surface better and the rolling resistance decreases. Drawing the vehicle or equipment then requires less power, fuel consumption falls and time is saved. In addition less wheel imprints are left, thus avoiding destructive soil compaction. A larger contact surface enables more effective power transfer. Unnecessary damage to ground structure is avoided and fuel consumption reduced. The load is carried by the air in the tyres. This is why it is very important to choose the right size of tyres and the right tyre pressure for each vehicle and job. A tyre with low pressure is softer and therefore causes less damage to the ground surface. The softness also makes driving more comfortable. The wear on tyres varies according to the tyre pressure and the type of surface driven on. A simple rule is: soft tyres for soft surfaces and hard tyres for hard surfaces. A quick look at a tyre will soon tell you how the tyre has been used. If the tyre is worn mainly on the shoulder, then it was most probably used at too low a pressure – the side walls of the tyre then carry too much of the weight of the load. If the tyres are worn mainly in the middle of the driving surface, they most probably have been used with tyre pressures that are too high.

Effects of different tyre pressures on roads

If the vehicle is mainly used on tarred roads, and yard surfaces, the tyres can be run at the max. admissible pressure. Tyre wear is then at its lowest.

11.5 Torque values for metric screws

classification and marking of screw heads	4.8 	8.8 	10.9 	12.9 
classification and marking of nuts				

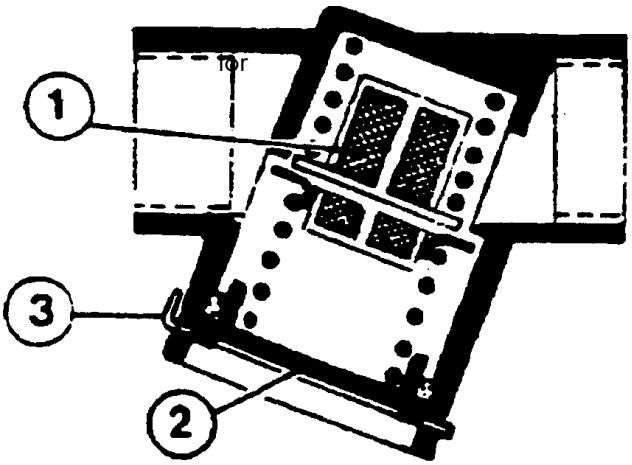
size	class. 4.8				class. 8.8				class. 10.9				class. 12.9			
	lubric.*		dry°		lubric.*		dry°		lubric.*		dry°		lubric.*		dry°	
	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft	Nm	lb-ft
M 6	4,8	3,5	6	4,5	9	6,5	11	8,5	13	9,5	17	12	15	11,5	19	14,5
M 8	12	8,5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	190
M16	100	73	125	92	190	140	240	175	275	200	350	255	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1300	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

The torque values shown in this chart are guide values and do NOT apply when a different torque is quoted in this manual for particular screws and nuts. Check that screws and bolts fit tightly regularly. Shear bolts are designed to shear off at a certain load level. Shear bolts must be replaced with bolts of the same standard. When replacing nuts and bolts, make sure that replacements are always of the same standard or higher. Torque nuts and bolts of a higher standard to the same value used for the original parts.
Check that the threads are clean and the bolts correctly inserted. This will prevent damage when they are being tightened.
Tighten lock nuts (not the screws) with plastic inserts and flared steel lock nuts with approx. 50% of the "dry" value shown in the chart. Tighten toothed and castellated nuts with the full torque value.

** "lubricated" means that the bolts are lubricated with, for example, engine oil or that phosphate coated or oiled bolts are being used.*
°"Dry" means that normal or galvanised bolts without any lubrication are being used.

12. Compressed Air Brake System

The most important components of the twin-circuit – compressed air brake system(see fig. 14)



1. Service line hose coupler (supply) red
2. Service line hose coupler (brake) yellow
3. Air filter
4. Trailer brake valve with brake pressure regula-
5. Trailer brake valve with release valve (ALB)
6. Piston brake cylinder (for 25 km/h)
7. Diaphragm brake cylinder
8. Compressed air vessel
9. Drain valve
10. Test connection compressed air vessel
11. Test connection front axle
12. Test connection rear axle
13. Test connection ALB
14. ALB regulator
15. Pressure differential valve
16. Parking brake
17. Release valve (ALB)

Fig. 13

12.1 Coupling to Tractor

- The compressed air brake system of the tractor must be compatible with that of the trailer.
- Couple the two service line hose couplers to the tractor as follows

  Red coupler = Supply

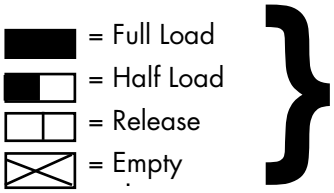
  Yellow coupler = Brake
- Take care that the hoses are correctly positioned and the couplers correctly fitted
- Stopcock for compressed air system on the tractor must be open
- Carry out brake test

12.2 Brake System Components

- Both service line hose couplers must be correctly connected and close tightly.
- The air filters, i.e. the filter elements (1) fig. 13 in both pipelines must be cleaned at regular intervals. If this is not carried out, the correct functioning of the components (valves) down-line has no protection. The pipelines must be depressurised before cleaning the air filters. Push in the floor cover (2) and release the retaining slide (3), then the filter element can be removed and cleaned. The system remains in working condition even if the filter element is blocked.
- The trailer brake valve (5) is protected against impurities by the air filter and requires no special maintenance.
- The trailer brake valve is controlled via the brake line (yellow hose coupler) with the aid of regulated pressure from the trailer control valve on the tractor side. The trailer compressed air vessel (8) is filled via the supply line (red hose coupler). The brake pressure regulator (4) flanged to the trailer brake valve can be manually adjusted to the respective load situation on the trailer.

The adjustment data for the ALB regulator (14) can be found next to the type plate on the front right-hand side of the vehicle.

The brake pressure regulator can be set to Full Load, Half Load, Empty and Release. The Release position enables the uncoupled vehicle to be manoeuvred into place.



Graphic symbols on hand lever of brake pressure regulator

On self-loading trailers with ALB regulators, the brake is released by pressing the release valve fig. 14.
The **compressed air vessel** (8) (capacity 30 l.) is design-tested. Modifying or welding any part is not permitted. The **drain valve** (9) on the underside of the vessel must be activated after approx. 20 operating hours.
The **brake cylinder** (6) piston must pull back completely when the brakes are released, i.e. the piston rod must make contact with the piston bottom.

12.3 Compressed Air Brake Plan (General)

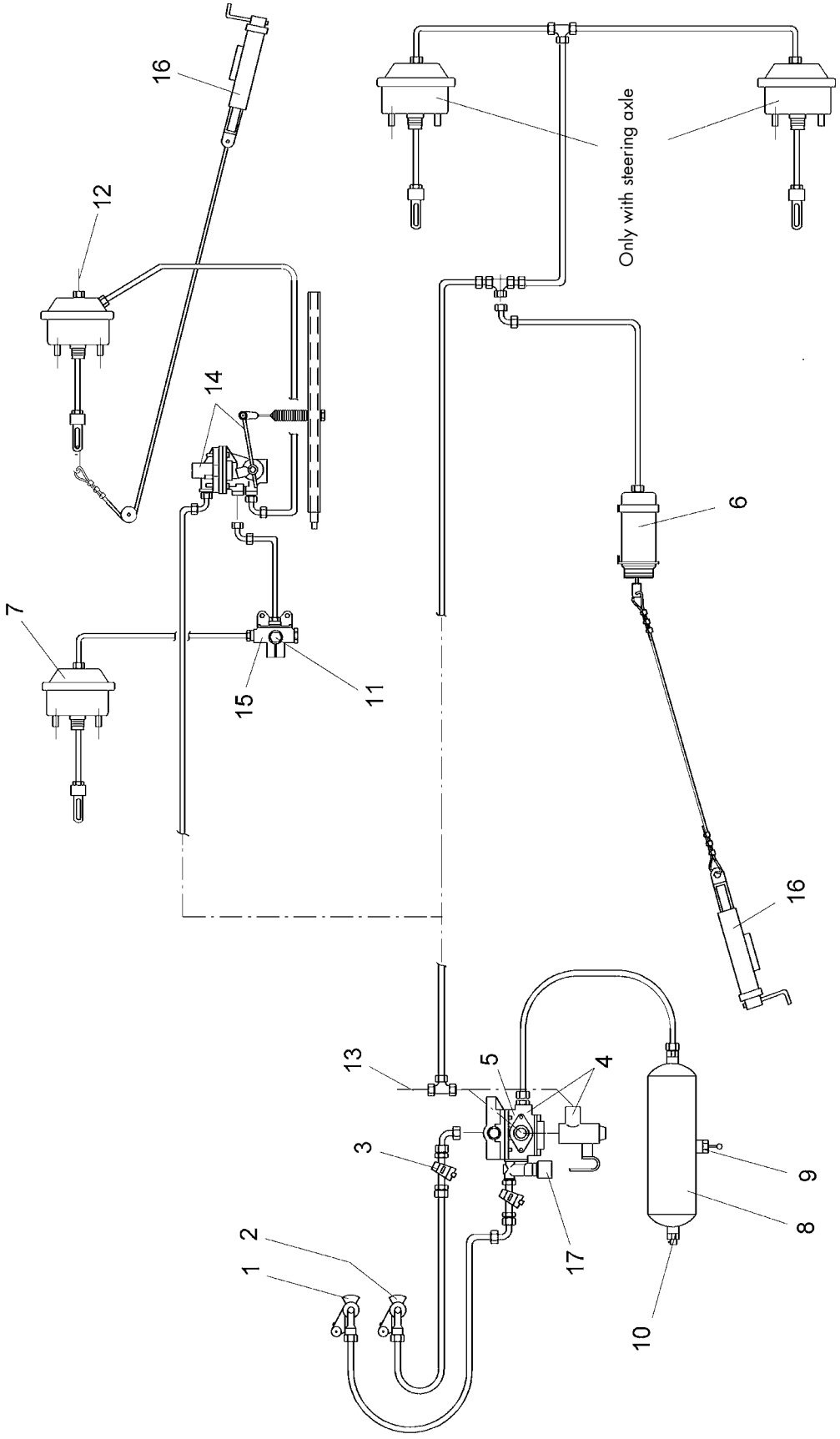


Fig. 14

13. Lubrication

Attention: Do not use lubricants with graphite additives!
Where lubricants could penetrate fodder or soil, only use biodegradable oils and greases.
Check with your agricultural supplies dealer for further information!

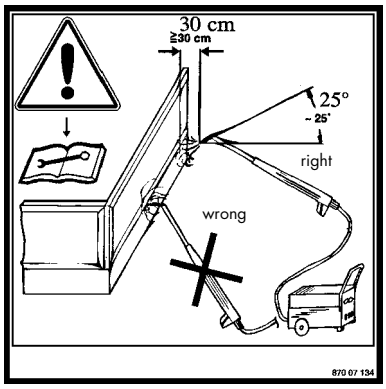
Lubricate all bearing points in accordance with the lubrication chart. Before you start, remove the dirt from the lubrication nipples

Oil filling capacity for gearbox

Fill the spur drive gearbox with 0.75 l liquid grease.
Fill the angular gear for the shredder drum drive with 1.2 l. gear oil VG 320.
Check oil levels once a year.

After long Downtimes

Clean vehicle thoroughly, lubricate, oil and grease. Touch up damaged paintwork.

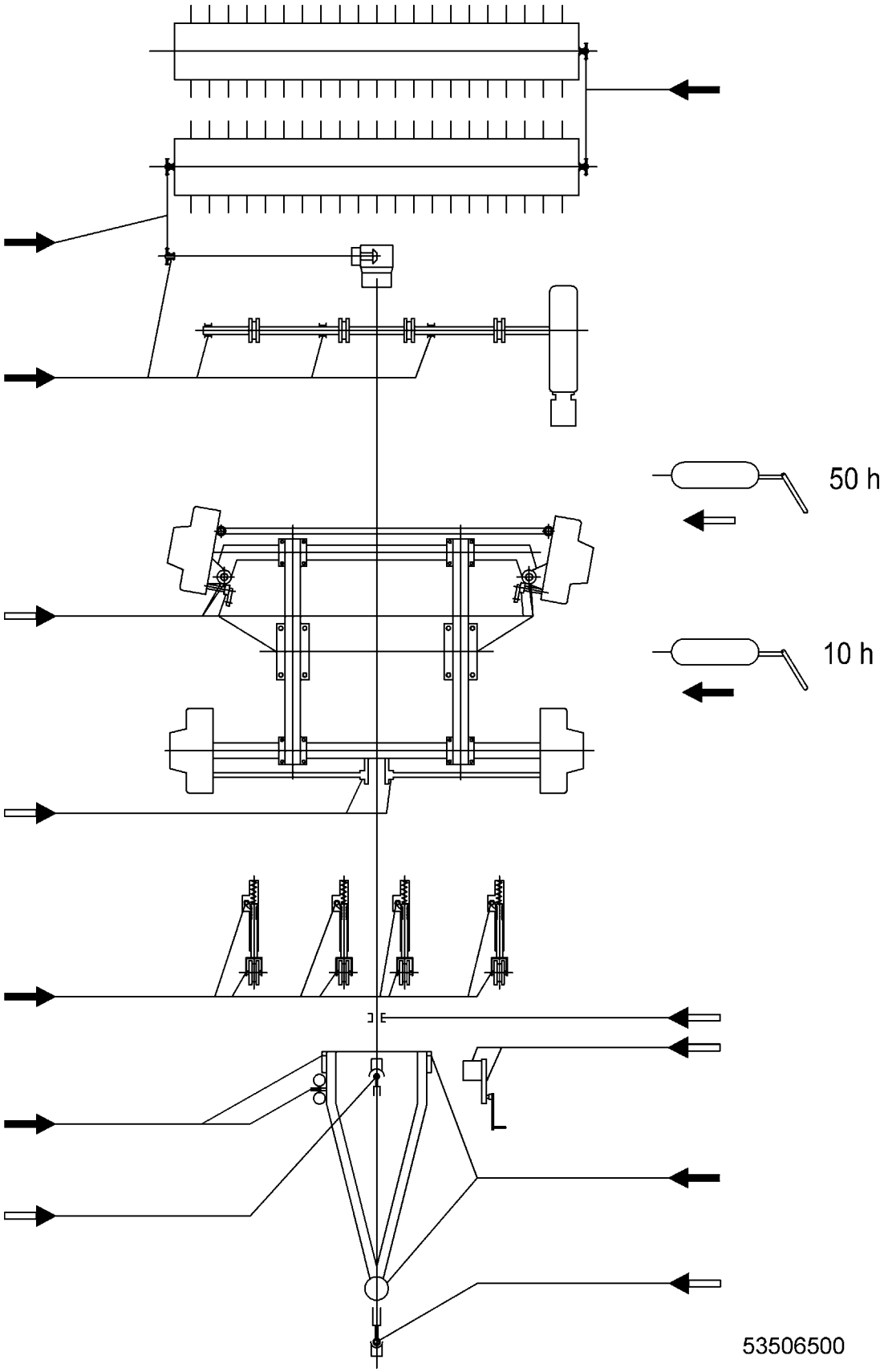


Take special care when using high-pressure cleaning units right

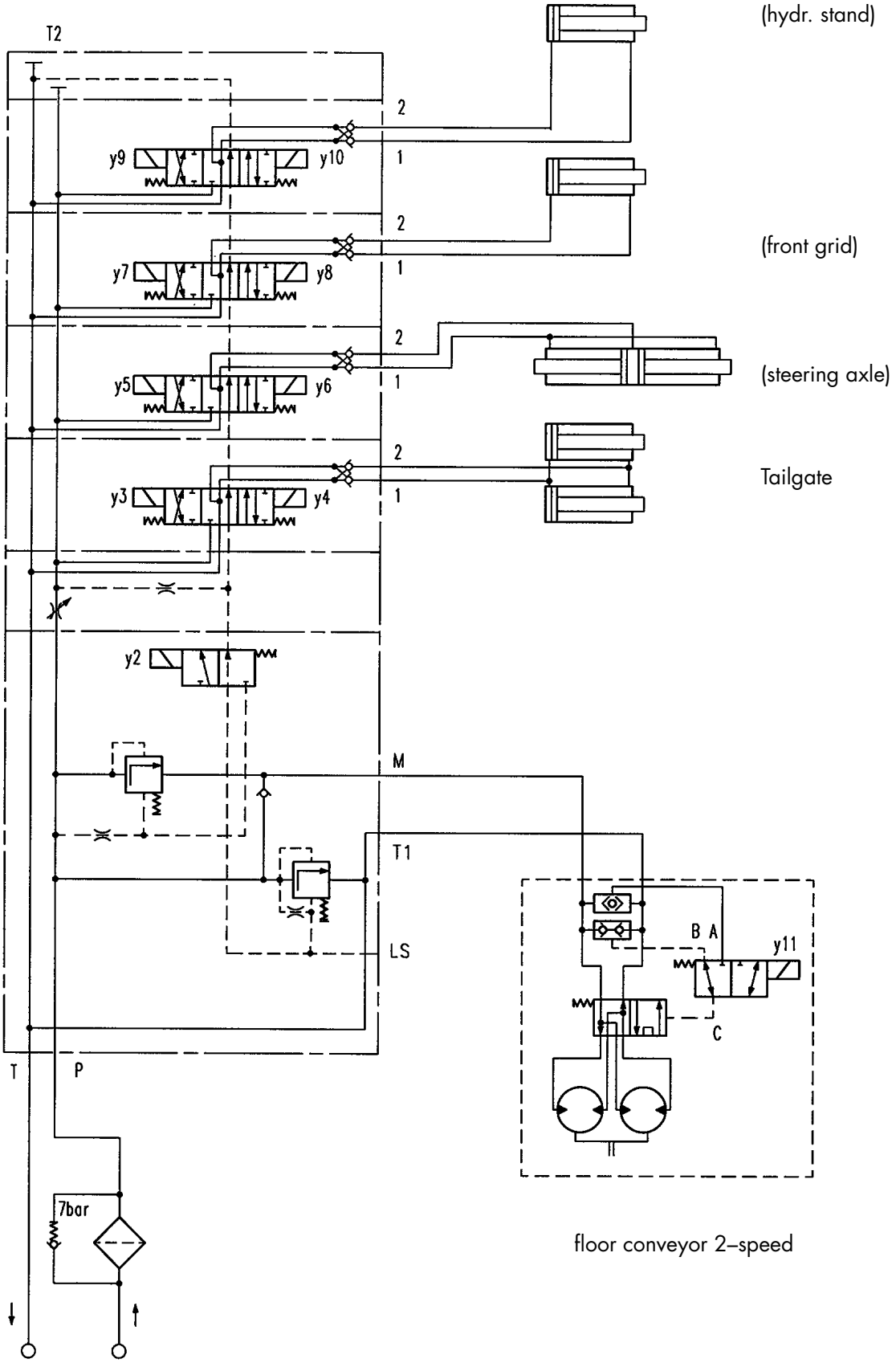
1. Minimum distance of spraying nozzle to vehicle 30 cm
2. Minimum spraying angle to vehicle at least 25°
3. Maximum spraying pressure 80 bar
4. Maximum water temperature 60°
5. No chemical additives allowed

Attention: Grease vehicle before and after each wash

13.1 Lubrication Chart

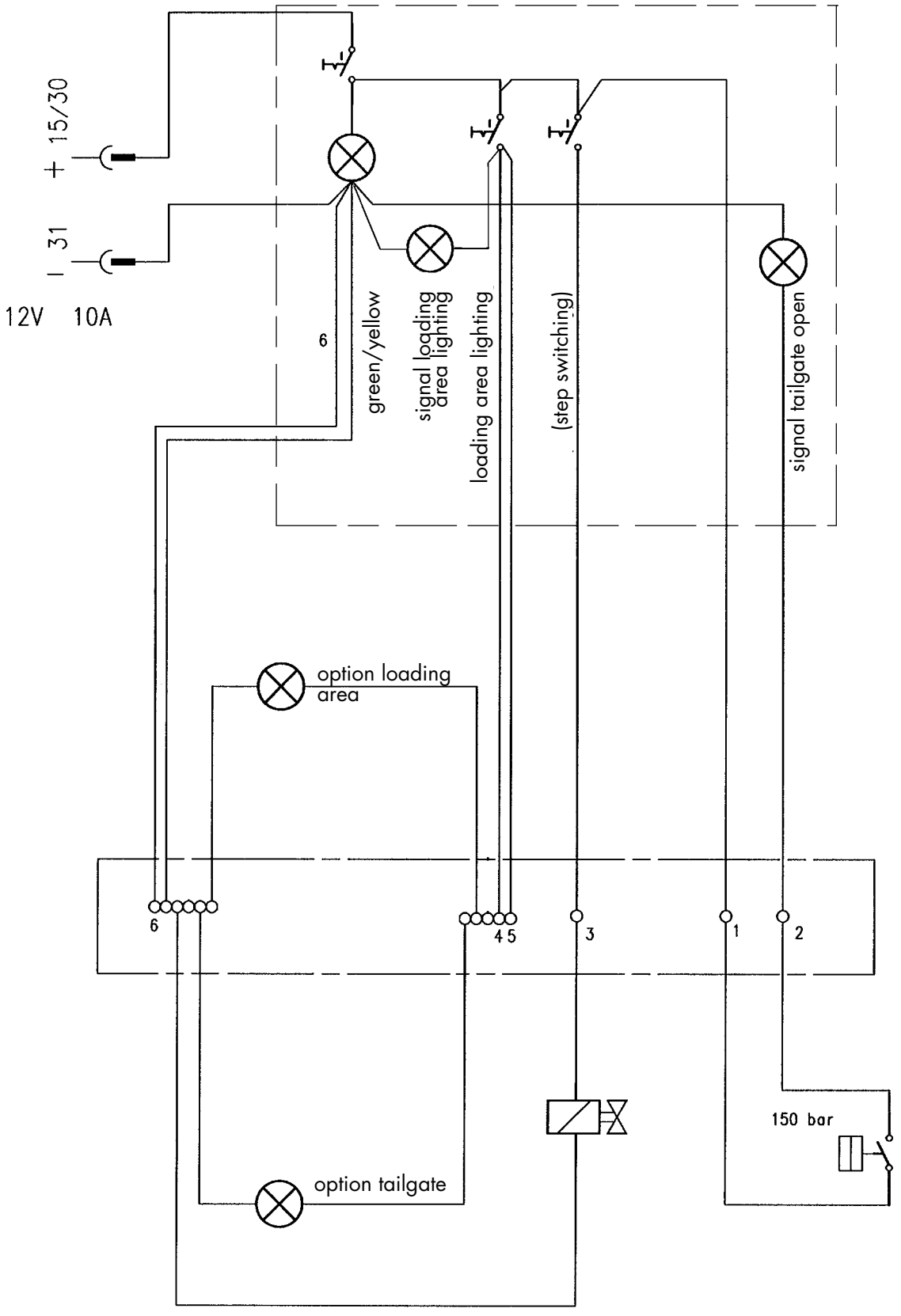


14. Hydraulic Circuit diagram

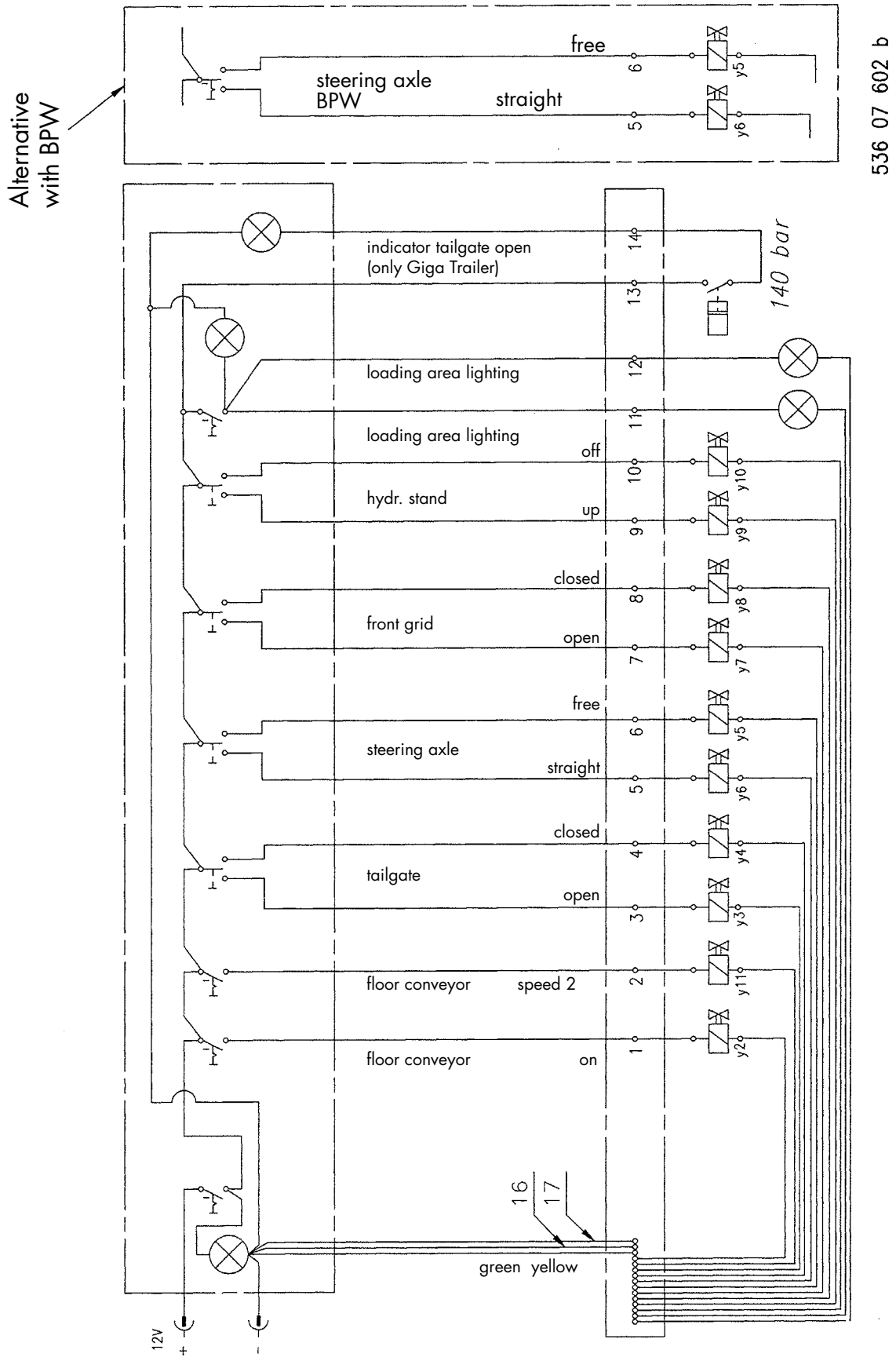


15. Electric Circuit diagrams

15.1 Electric circuit diagram (standard)



15.2 Electric Circuit Diagram (optional extra)



16. List of malfunctions – Hydraulics

Malfunction	Cause	Remedy
No silo-trailer Functions	break in oil flow	Check quick-release coupling. Switch tractor control unit to pressure.
All functions run out (cylinders) but not back in	no return to tractor	Check control unit on tractor
	hydraulic plug worn	replace hydraulic plug
forward drive only running occasionally	control piston (floor conveyor valve) sticking	Clean control piston and check play during installation
	pilot piston (floor conveyor valve) sticking	clean pilot piston and check play during installation
Tailgate closes, but opens a little again during loading	leaky cylinder	re-seal cylinder
	piston in cylinder leaking	re-seal cylinder piston
	oil pre-stressing too low	actuate toggle switch a little longer
tailgate sags during operation	cylinder leaking	Seal cylinder
Control block leaking	O-rings defective	Replace O-rings
	connecting bar not tight	Tighten connecting bar to 25 – 28 Nm
	Screw plugs leaky	Seal screw plugs with Loctite or sealing tape.

17. List of malfunctions – Electric

Malfunction	Cause	Remedy
No function working	no 12 V voltage at control box.	Ensure 12 V voltage at tractor
	fuse defective	Replace fuse
	loose connection in socket	repair loose connection
	ON – OFF switch not switched to ON	Set switch to ON
Fuse often defective	fuse too weak	install 10 A fuse
Fuse constantly defective	cable damaged	replace cable
	switch defective	replace switch
	terminal strip defective	replace terminal strip
forward drive cannot be regulated	no 12 V voltage at tractor or trailer	Ensure 12 V voltage
	Cable cross-section of supply line too small	select larger cable cross-section
forward drive not running	forward drive magnet defective	replace magnet
2 or more functions operating at same time	Cable damaged, 2 magnets activated at same time	replace cable
	terminal strip defective	replace term. Strip
function not operating although 12 V voltage available at magnet	magnet defective	replace magnet
green signal lamp not lighting up	lamp bulb defect lamp bulb not making proper contact in holder	replace lamp bulb press lamp bulb into holder properly