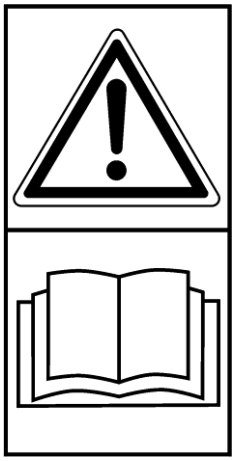
Issue: 2111

MULTIFOREST

Instruction Manual and Maintenance Directions

FORESTRY TRAILER
MF650, MF850, MF950
MF1050, MF1050BS, MF1202



Important!
Read the Instruction Manual
thoroughly before use

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CE

■ LIST OF CONTENTS

SAFETY SYMBOLS

NOTE! You will find this general warning symbol throughout this Instruction Manual to make you aware of safety instructions concerning yourself, your employees and other persons coming into contact with the machine. Neglecting these instructions may lead to serious injury and even death.

This symbol has the following meaning:

WARNING!
LOOK OUT!
YOU ARE IN DANGER!

Warning Labels

Be aware of the warning text **WARNING!** and **NOTE!** (NOTE!) in safety texts. These words have been chosen based on the following guidelines:

Warning!
Warns of dangerous situations which, unless avoided, could lead to serious injury or even death. This also includes dangers that can occur when protective equipment and/or protective screens are removed. Warning labels can also be used to warn of hazardous use.

NB!
Highlight risky situations where slight or minor injuries can result if they are not avoided. Used also to warn of machine damage that can arise if the directions are not followed.

Dear customer,

Thank you for choosing a Trejon Multiforest product – we hope you will be pleased.

Reading this manual and following its recommendations will ensure you get the longest possible service life and an efficient use of the machine.
We have produced this manual to give you a good overview of how the machine works and what safety and maintenance directions that must be followed when working with it.
If any questions should arise in its use or when reading this manual, you are always welcome to contact us.

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Website: www.trejon.se

Dear Dealer,

In order for the warranty to come into force and all legal requirements to be met, we would like you to complete the warranty certificate together with the customer and register at trejon.se

The warranty will come into force on the same day as the machine is transferred to the customer.

Checklist on receipt and delivery inspection:

Check for any transport damage. Report to carriers	
Inspect the machine thoroughly before use and make sure all packing material has been removed. Dispose of all packing materials in an environmentally responsible manner.	
Check that the delivery is complete in accordance with the machine order/packing note.	
Check tyre pressure. **Refer to section 4.5**	
Check the tightening of the wheel nuts, these shall also be re-tightened by the user after the first hours of operation. **Refer to section 4.5**	
Check tightening of the bolted joints between the trolley and the crane turret (**M20 – 420 Nm**) (if applicable)	
Check that the PTO shaft is supplied and has the correct length (if applicable)	
Own hydraulics - Gear PTO-Pump correct assembly - **Refer to section 6.1.1**	
Make sure the machine has been lubricated as described **under section 4 - Service and Maintenance**	
Check all the machine's functions.	
Give instructions concerning the correct PTO speed (in options for trolley or with own hydraulics). **Refer to section 6.1.1**	
With the assistance of the Instruction Manual, run through and explain commissioning, use and maintenance of the machine with accessories for the customer.	
Instruction Manual handed over to customer.	
Fill in **the Warranty certificate / Proof of transfer** together with the customer and register the machine on www.trejon.se or www.trejon.se/enu	

Enter the serial number of the machine in the field on the right	S/N:

1 Introduction

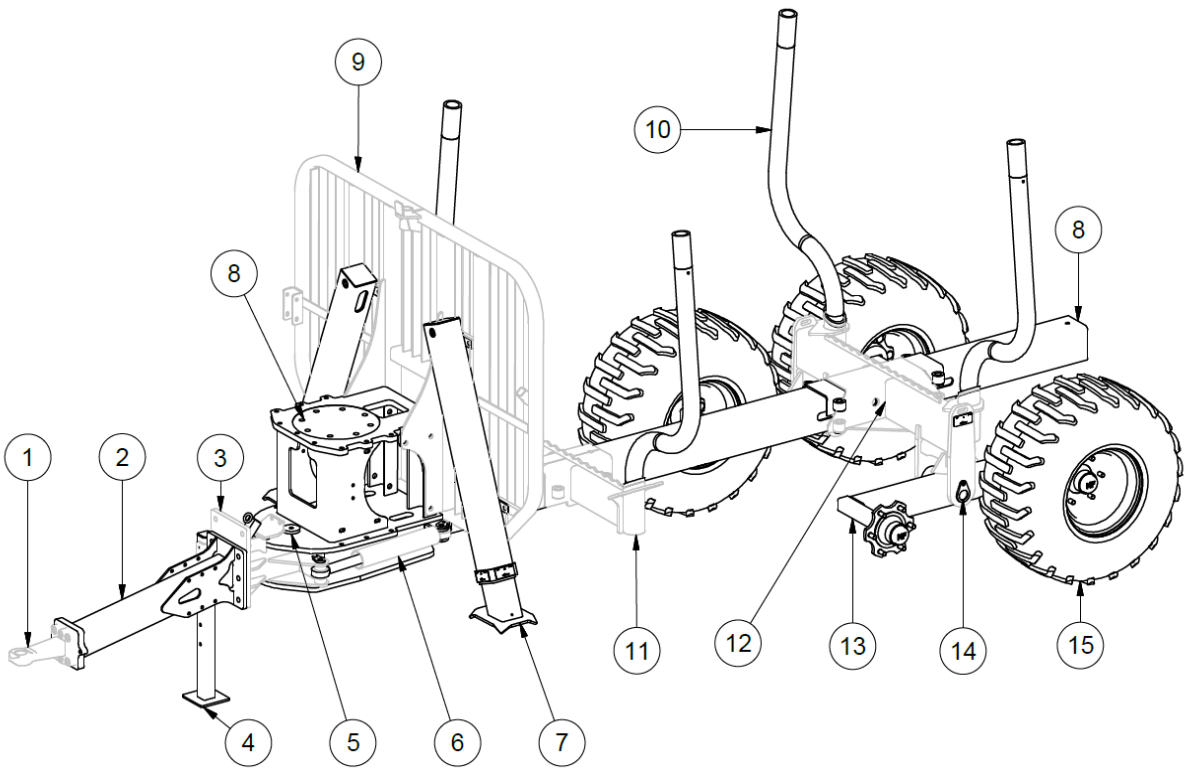
1.1 Getting Started

Thank you for choosing this TREJON MULTIFOREST forestry trailer. We have concentrated on making a powerful and good machine that will serve you for many years. As the service life of the machine does not wholly depend on us, but also you, the user, we have compiled an instruction manual in which we describe its correct care and use. So read through these directions thoroughly. Always get in touch with the dealership where you bought your machine when ordering spares or other service. The dealer is your natural service partner. When ordering spares, always specify the correct model, type and serial number (found on the name plate on the chassis).

1.2 Description

MULTITRAILER is a series of well-built forestry trailers in the TREJON MULTIFOREST family. Together with the TREJON MULTIFOREST cranes, it forms an easy-to-drive and versatile forestry combination for use with your tractor. The trailers are available in sizes from 6.5-10.5 tonnes total weight. Due to the programme's range, there are models to suit everything from small and older tractors, to new, large towing vehicles. The comprehensive standard equipment includes e.g. a safety gate, frame steering and hydraulic outriggers (standard on MF650, MF850, MF950, MF1050 and MF1202). The MF1050BS is a trailer with bogie control. The accessories include: radio-controlled winch, hydraulic hub operation, brakes, oil tank, own hydraulic system (PTO), crossover props, driving lights, etc. The largest model, the MF1202, is a trailer with a double frame.
Always check the current range of accessories on Trejon's website www.trejon.se or www.trejon.se/enu

1.3 Detailed Description



1. Towing eye	9. Gate
2. Towbar	10. Struts
3. Fixing plate, towbar	11. Bunk (attachment for struts)
4. Parking support	12. Bogie frame
5. Frame steering axle	13. Bogie cradle
6. Cylinder-Frame Steering	14. Bogie axle
7. Hydraulic outriggers	15. Wheels
8. Centre frame with crane pallet	

1.4 Technical Data

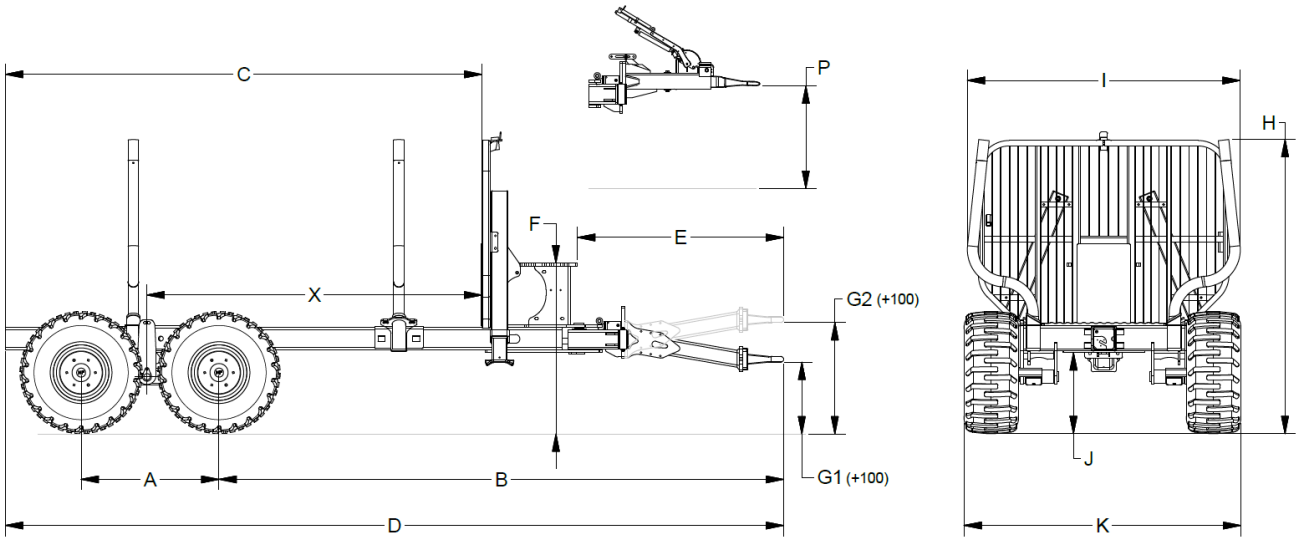
Model	**MF650**	**MF850**	**MF950**	**MF1050**	**MF1050BS**	**MF1202**
Total weight - unbraked	6.5	8.5	9.5	10.5	10.5	12
Total weight - inertia brake	5.9	8	8	—	—	—
Total weight - braked	5.8	8.5	9.5	10.5	10.5	12
Maximum permitted speed km/h*	25	40	40	40	40	40
Loading area , m^2	1.43	2.0	2.15	2.3	2.5	2.5
Frame, type	Central	Central	Central	Central	Central	Double
Frame, mm	120x120x8	160x160x8	160x160x8	160x160x8	160x160x8	200x100x6
Brakes	**O**	**O**	**O**	**O**	**O**	**O**
Bunks with struts (pair)	2	2	2	2	2	4
Hydraulic outriggers Telescopic / Carriage	— / ●	● / —	● / —	● / —	● / —	● / —
Trailer control	—	Framework	Framework	Framework	Bogie	Frame
Frame Steering – angle	—	±45º	±45º	±45º	—	±45º
Frame Steering - cylinders	—	1	1	1	—	2
Bogie deflection	±25º	±28º	±28º	±28º	±28º	±18º
Sliding bogie	—	●	●	●	—	—
Axles	60x60	70x70	70x70	70x70	70x70	70x70
Standard wheels	300/80–15.3	300/80–15.3	400/60–15.5 TRAC	400/60–15.5 TRAC	400/60–15.5 TRAC	520/50–17 TRAC
Weight (basic design), kg	880	1,230	1,425	1,490	1,520	2200 kg

* - for unbraked forestry trailers, for braked trailers contact Trejon

Due to a policy of continuous development, the technical data specified in our document is not binding and may be changed without prior notice. Information specified in the table above may also show equipment that is not standard.
The equipment level may vary depending on user country.

● : Standard **O** : Option — : Missing

Dimensions

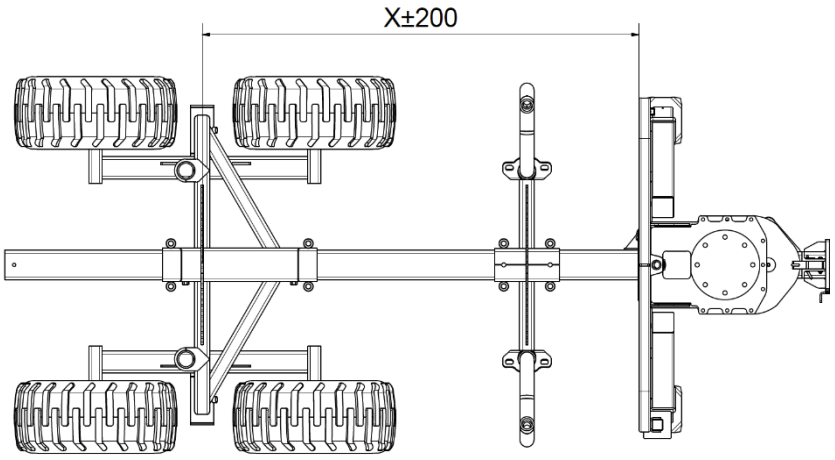


Model	A	B	C	D	E	F	G1	G2	H	I	J	K	P [1]	X
MF650	990	3010	3050	4680	1270	1225	445	730	1770	1720	530	1710	685	1900
MF850	990	4050	3420	5600	1460	1150	500	785	1940	1960	580	1905	740	2400[2]
MF950	990	4050	3420	5600	1460	1160	500	785	2090	1960	580	2005	740	2400[2]
MF1050	1180	3950	3420	5600	1500	1160	500	785	2090	2060	520	2030	-	2400[2]
MF1050BS	990	3940	3620	5800	1500	1170	500	785	2060	2090	530	2280	-	2300
MF1202	1260	4250	4115	6240	1500	1280	550	830	2190	2210	610	2390	-	2750

All measurements are stated in mm for trailers with standard wheels. The towbar's height measurements G1 and G2 can be adjusted by +100 mm on all trailers.

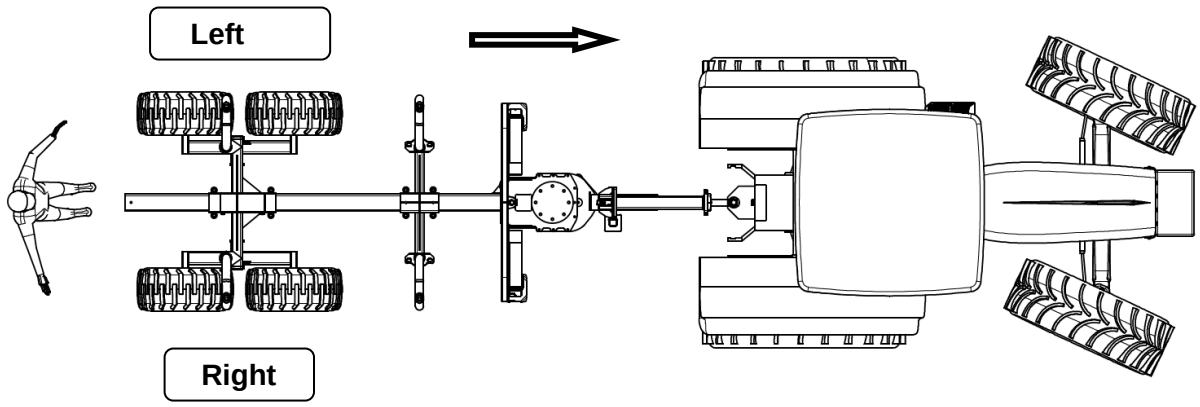
[1] - P measurements for the trailer with inertia brake
[2] - X measurements can be adjusted by max. ±200 mm

Warning!
You may move the bogie max ±200 mm from its original position, as shown below.



1.5 Right and Left Hand

In this Instruction Manual, the terms right and left hand apply as looking toward the rear of the tractor, i.e. as seen from behind in the direction of travel of the machine.



2 Safety Instructions

2.1 Safety Regulations

Read the manual. All machine operators should read and understand the entire contents of this manual and the safety regulations so there is no uncertainty as to the use of the machine/tool before it is taken into service. Get in touch with your dealer if you have any questions.
Use of the machine is strictly forbidden if the operator is not aware of the risks involved in conjunction with the use of the machine and cannot act correctly if a risk situation should arise.

Read, observe and understand the meaning of all safety, operating, warning and positioning decals on the machine and in the manual.

Actions may occur when using this equipment that cannot be prevented in its design or with the use of mechanical protection.
Unfortunately, human carelessness may cancel the function of our integrated safety features. Accordingly, the prevention of accidents and operating safety features are dependent on the responsible use of the equipment and its integrated safety features.
Only trained personnel should use this equipment. TREJON is not liable for any injury or loss caused by misuse or improper, careless or inappropriate use of the machine.
Only trained personnel should use this equipment.

The machine is intended for outdoor use only.

Operation. Learn and practise the machine's working methods and controls before it is used.

Coupling the Machine. Connect the machine in the correct manner and keep away from the area between the tractor and the machine when coupling.
Make sure the equipment is correctly mounted, adjusted and in working order.

Safe Work Area. Keep unauthorized persons, especially children, away from the working zone of the machine or when it is being repaired. Make sure you are in control of the entire work area.

The Machine's Safety Equipment. The machine may only be used if all the manufacturer's original safety equipment for moving mechanisms are positioned correctly and in working order. Ensure all safety and operating decals are in good order and affixed in the correct manner and replace them if necessary. Write the model and serial number when ordering.

Moving Parts. Keep arms, legs and other body parts as well as clothing away from any moving parts of the machine. Do not wear loose fitting clothes.
Leave the machine to work on its own and do not insert hands or fingers in an attempt to give assistance.

Power Take-Off (PTO) shaft. When changing tractors, always check the length of the power take-off shaft. If too long, it may damage both tractor and machine.
The use of incorrect power take-off shafts that do not meet with specifications is strictly forbidden.
Ensure power take-off guards are correctly mounted and in good order and firmly fixed to the tractor.
The use of damaged or defective power take-off guards is strictly forbidden

Purchase a new power take-off guard if the old one is defective.

Lifting and lowering of the machine.
Be careful when lifting and lowering the machine/machine part.

Stability. The machine must not be operated with a tractor that does not weigh enough over the front/rear axle so that tractor stability is affected. At least 20% of the tractor weight shall rest on the front axle to ensure tractor steering and braking ability.
Mount ballast weights if necessary, see tractor instruction manual.
When working with the grapple loader first load the smallest and closest logs so that the trailer attains good stability before starting to load the heaviest logs.

Operating the Machine. Take great care when working on uneven ground conditions, close to ditches and fences, look out for hidden dangers and adapt your working rate.
Great care should be observed when working on steep slopes:
Try to drive in the same direction as the incline and not across it.
Avoid fast starts and heavy braking when driving the machine up and down inclines.
If it is absolutely necessary to drive across steep inclines then reduce your speed and watch out for unevenness, avoid sudden turns and be aware of the shift in centre of gravity that occurs when lifting mounted tools.
Hold onto the steering wheel tightly if the tractor should overturn.

Operating at Night. The work area must be illuminated when working in the dark.

Driver. Operators who are tired, intoxicated, drugged or under the influence in any other way so that they cannot control their movements must not use the machine.
The machine may only be operated by one person sitting in the tractor, no passengers are allowed.
It is forbidden for people without a tractor driving licence to use the machine.

Personal protective equipment. Protective equipment such as helmets, protective goggles, protective shoes and gloves are recommended for personnel during assembly, operation, adjustment and maintenance. Keep the tractor door and windows closed when working in dusty conditions.

Protective Cab. The machine should only be driven by a tractor equipped with an approved protective cab. Keep doors and windows close while working.
All moving parts, including engine, must be stationary and the handbrake applied before the tractor driver leaves the cab. The rear window and the rear side windows of the cab must be made of safety glass or be equipped with protective bars when working with a grapple loader.
When travelling on ice-covered water the roof hatch must be kept open.

Maintenance. Inspect, adjust and maintain the machine according to the directions. It is forbidden to work with a damaged or defective machine.

Regular Inspection. Inspect the entire machine regularly. Locate any loose, worn and damaged components and leaks.

Safety During Maintenance and Service. The machine must be standing on firm, even ground for maintenance and adjustment.
The tractor engine must be shut off, all moving parts stationary, the machine lowered to the ground and the handbrake applied during all cleaning, inspection, adjustment, maintenance and repair work.
Clean the machine thoroughly before repair and storage.
Bearing and hydraulic components should not the cleaned with high-pressure jets.
If excessively high pressure is used for general cleaning, this may damage the paint.
After cleaning, the machine must be lubricated according to the lubrication schedule and a short test run carried out.

Vibration. If any vibration should occur in the machine, it must be shut down immediately and the cause located. Change any damaged parts.

Electric Main Switch. Stop the machine immediately if it should hit an obstruction. Shut off the engine, remove the key, check for and repair any damage before recommencing work.
Make yourself aware of how emergency stops work on the tractor and the tool, and be prepared of how they work in an emergency situation.

Hydraulic Hoses. Hydraulic hoses on the machine contain oil at very high pressure. Do not touch hoses and hydraulic components if the system is pressurised. In case of leaks, oil at high pressure may penetrate the skin and cause serious injury. In the event of an accident, contact a doctor immediately.
Check the condition of hydraulic hoses with respect to damage. Chafed and leaking hoses should be replaced immediately with new that meet the manufacturer's technical requirements.

When changing tractor, always check the length of hoses. Hoses that are too long or too short may be damaged.
The use of incorrect hydraulic hoses that do not meet with specifications is strictly forbidden.
Hydraulic motors and hoses can get extremely hot while in operation with risk for burn injuries. Do not loosen hoses while the oil is hot, wait for it to cool down.

Hydraulic hose life can be difficult to determine, we therefore recommend that all hoses are replaced after 5years.

Welding. Protect bearings, hydraulics and electronic components if welding is being carried out. Before welding commences, electronic components must be disconnected and the welder's ground clamp placed as close to the welding site as possible.

Fire Risk. If overheating of machine parts should occur, the cause must be located and the machine shut down. Forest residue is very flammable, remove wood remains and dirty oil.
Keeping a fire extinguisher nearby is recommended.
Smoking in the vicinity of the machine is forbidden.

Electrical Lines. Take great care when working close to electrical lines, maintain a safe distance with good margin.
If an accident should occur and the crane comes into contact with live lines.

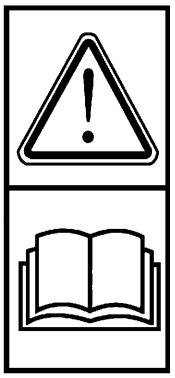
- Keep calm, act rationally so as not to worsen the situation and do not touch any metal parts.
- Warn people in the vicinity and make sure they stay outside the risk zone.

Spare Parts. Use only original spare parts on the machine.
If you should have any questions concerning the machine or its function, please get in touch with your dealer or Trejon AB

2.2 Safety symbols

All warning decals must be clean and legible.
Lost or damaged decals must be replaced. Order new decals from your dealer.

The symbol on the right shows the following:

	Warning! Study the instruction manual carefully before use, so that the user is very familiar with the machine.	
	Machine name plate with CE marking. This includes the machine's serial number, weight, total weight, year of manufacture and model number.	

3 Using the Machine

3.1 Goods receipt of the trailer

NOTE!
Ensure no-one is inside the risk area when lifting.

Take care with straps and wires when they are removed as they are tensioned very hard. They can also be very sharp. If the machine is dismantled on delivery, assembly and resetting must be performed correctly (see table for correct tightening torques).

3.2 Coupling the machine to the tractor

Warning!
Crush risk. Do not stand between machine and tractor when coupling. Always apply the brake on the tractor when leaving the cab during all coupling and uncoupling.

The machine may only be coupled to a tractor if there is sufficient weight over the front and rear axles respectively so that steering and brakes function when the machine is coupled. Use ballast weights as necessary, see the tractor's instruction manual.

Use only the original PTO supplied with the machine. Carefully read the instructions provided with the PTO shaft. The instructions contained in this manual do not replace the information in the manufacturer's manual.

NOTE!
Check the speed and direction of rotation of the tractor's PTO so that it corresponds to that specified on the machine.

If the hydraulic hoses are not connected to the tractor in the prescribed order (return hose plugs IN first, and OUT last) then there is a risk of damage to the seals in the valve package.

Max. 150 bar. If a higher hydraulic pressure is used, damage to the braking system can occur.

- The machine must be coupled on an even and flat surface.
- Stop the tractor and apply the handbrake.
- The trailer must be connected to a tractor with lockable hitch.

- Always connect the hydraulic package's **return hose** first (female) to a unpressurised return outlet and then the delivery hose (male) to the hydraulic system's pressure outlet (that must be depressurised during connection). Uncouple in reverse order, i.e. first uncouple the **pressure hose** (male) and then the return hose (female). Ensure the couplings are cleaned well before connecting.

- The forestry trailers can be equipped with service brakes. Connection of hydraulic brakes according to section 4.7.1. Connection of pneumatic brakes according to section 4.7.2. The brakes shall be checked and maintained according to the instructions in the maintenance section.

- Adjust the PTO shaft to the correct length. Pull the shaft apart and fasten each part to the machine and tractor. Make sure that the shaft does not bottom out in the shortest position (at least 30 mm play – if not, cut the shaft) and that the shaft halves' overlap is large enough (at least 300 mm). Refer to the instructions supplied with the shaft. Strive to achieve the greatest possible overlap.
  (alternatively for axes shorter than 1000mm, half of the maximum overlap)

- Lubricate and mount the PTO shaft. Make sure the locking pins on the shaft lock properly. Fasten the protection tubes of the PTO shaft with the chains so that they do not rotate.

- Connect the power supply to the traffic lights to the 7-pole socket on the rear of the tractor. The operating voltage is 12 V.

- Make sure that the machine and its hoses move freely from the tractor and that there are no crushing injuries in all possible work situations.

3.3 Before starting the machine

Before using the machine, check the following items on the machine:

- All screws and nuts must be tight (check and retighten screws and nuts after the first 4 hours of operation and then after every 40 hours). Including wheel nuts. For correct torque settings refer to the tables in section 4.1, 4.2 and 4.5.

- Ensure all guards are in place.

- Lubricate the machine (refer also to section 4 – Service and Maintenance).

- Tyre wear

- Air pressure in tyres (refer to Technical Data, section 4.5).

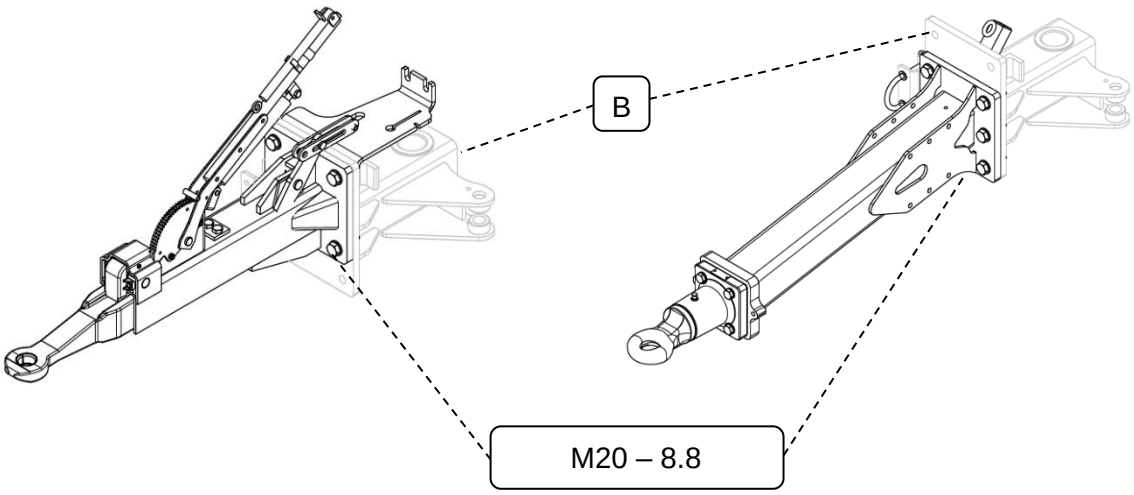
- Check the lighting and signal lamps (brake and blinkers)

- Check the function of the braking system.

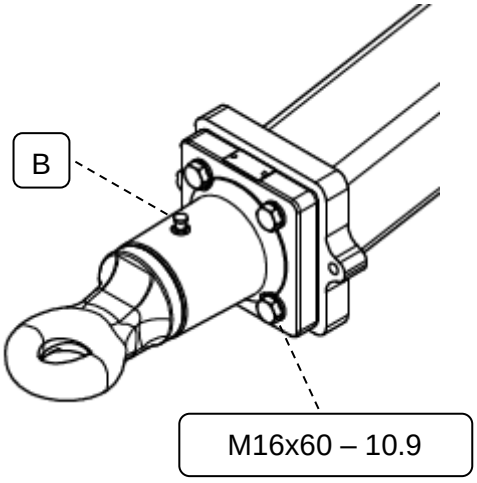
- Make sure that the machine is in good condition.

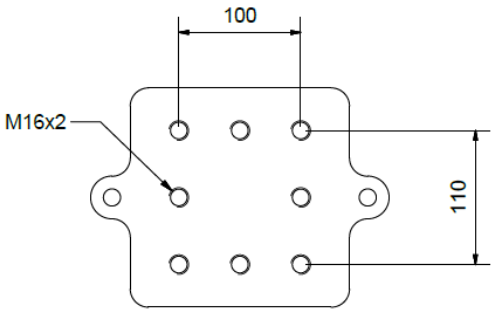
- Check the towbar's fastening to the trailer.

  Towbar on forestry trailers MF650, MF850, MF950, MF1050 and MF1050BS is anchored with M20 class 8.8 screws to the fixing plate (B) – refer to the example below. It is important to check the towbar's screw unions after first use and then at regular intervals ... – refer to the tables in sections 4.1 and 4.2.

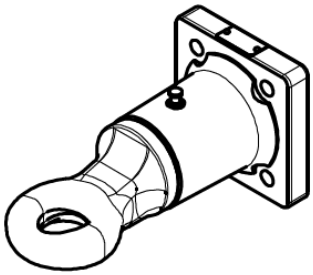


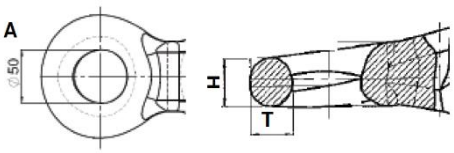
- Check the fastening and lubrication of the towing eye.
  On many models, a towbar with screw-in towing eyes are used. Trejon uses hole pattern DIN 100x110 with 8 threaded (M16) holes – refer to the image below. It is important to check their screw unions when changing or during use (example, refer to fig. below). Check the table. The eyes are equipped with lubrication nipples (B). Lubricate the towing eye at regular intervals – refer to the table in section 4.2. Lubrication is important for the towing eye to work properly and to reduce wear on it.





- Check the wear of the towing eye. If damage to the towing eye has been caused, the towbar must be replaced immediately. It is necessary for the towing eye to be checked for defects and wear-measurements prior to every use of the trailer. Checking is the responsibility of the user.
- Towing eye Hitch D50 (Scandinavian) – Trejon art.no. 400398.

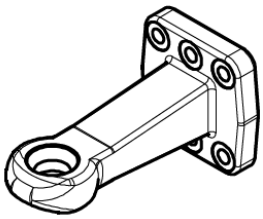


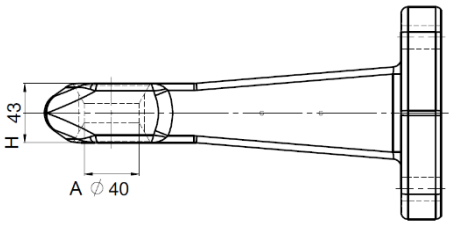


Dimensions	Description	Nominal dimensions [mm]	Wear dimensions [mm]
A	Inner diameter of eye	ø50	ø52.5
H	eye height	35	32.5
T	eye thickness	32	29.5

Change the towing eye immediately if any of the above nominal dimensions reaches the wear dimension limit.

- Towing eye DIN D40 – Trejon art.no. 400399

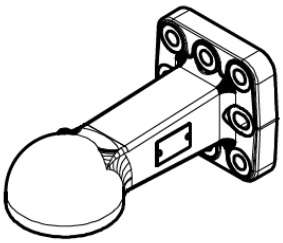


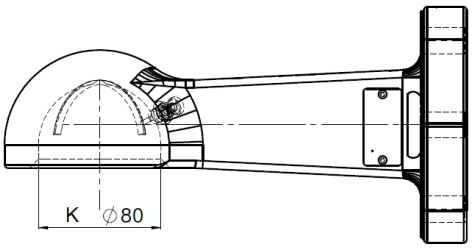


Dimensions	Description	Nominal dimensions [mm]	Wear measurements [mm]
A	Inner diameter of eye	Ø40	Ø41.5
H	eye height	43	35

Change the towing eye immediately if any of the above nominal dimensions reaches the wear dimension limit.

- Towing eye K80 – Trejon art.no. 400400

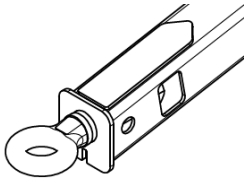


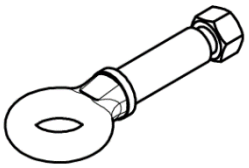


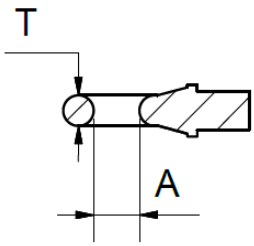
Dimensions	Description	Nominal dimensions [mm]	Wear measurements [mm]
K	Inner diameter of eye	Ø80	Ø82

Change the towing eye immediately if the K nominal dimensions reaches the wear dimension limit.

- Towing eye hitch D50 (Scandinavian) for MF650 – Trejon art.no. 200400



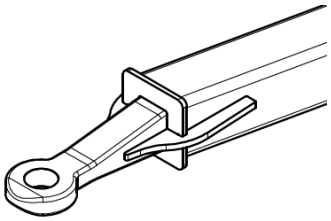


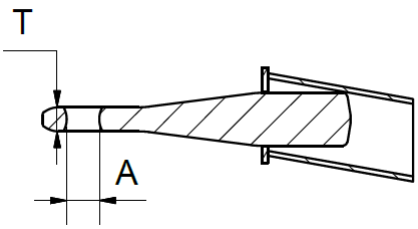


Dimensions	Description	Nominal dimensions [mm]	Wear measurements [mm]
A	Inner diameter of eye	Ø50	ø52.5
T	eye thickness	30	24

Change the towing eye immediately if any of the above nominal dimensions reaches the wear dimension limit.

- Towing eye DIN D40 for MF650 – integrated (welded) with the towbar.

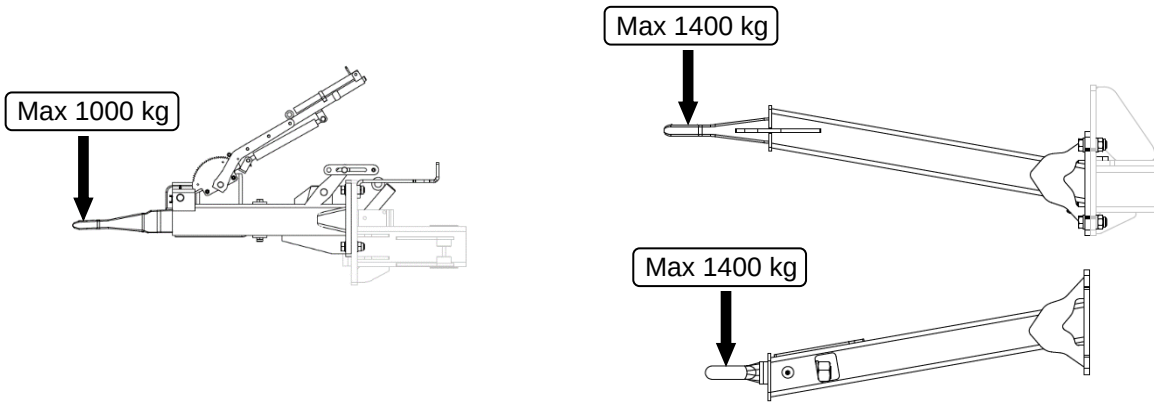




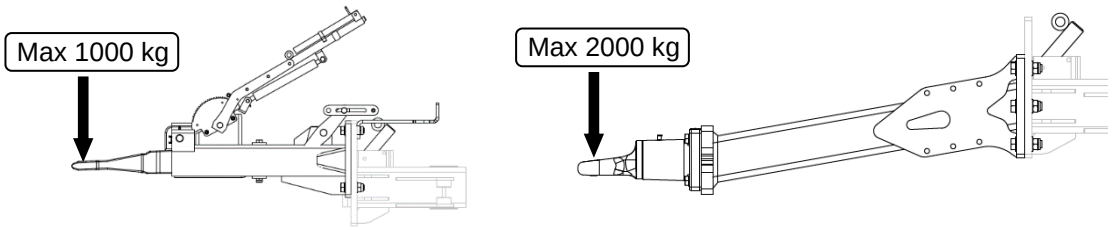
Dimensions	Description	Nominal dimensions [mm]	Wear measurements [mm]
A	Inner diameter of eye	Ø40.5	Ø42
T	eye thickness	30	24

In this case, **the entire towbar needs to be replaced** (Trejon art.no. 400313) immediately if any of the above nominal dimensions reaches the wear dimension limit.

- Maximum load on towing eye for speeds ≤ 25 km/h for MF650.



- Maximum load of towbar for speeds ≤ 40 km/h for MF850, MF950, MF1050, MF1050BS and MF1202.



NOTE!
It is important not to vertically overload the towing eye on the drawbar. It is the driver who is responsible for checking that this is adhered to.

3.4 Operating the machine

Warning!
No person or animal is allowed to stay closer than 25 m from the machine when it is in operation.
Make sure you are in control of the entire work area.
The machine must NOT be cleaned while in operation.

NOTE!
A doubling of the work rate means the tool is exerted to 4x the stress. Do not operate the machine faster than is necessary.

Retighten all bolts after the first 4 hours of operation, including wheel bolts.

If the trailer is overloaded, the product warranty is invalidated (refer to max loading capacity for each model)

Use the tractor's parking brake when loading.

Stability test
Information concerning the performance of your tractor and its compatibility with trailer and crane is available from your dealer. The table below taken from sales information shows what crane and trailer combinations are recommended:

Rec. crane for forestry trailer	MF650	MF850	MF950	MF1050	MF1050BS	MF1202
V4800	X					
V5500		X	X	X	X	
V6500		X	X	X	X	X
V7300				X	X	X

A stability test must be performed to ensure the trailer, crane and basic vehicle are compatible and that it is safe to work with the crane with respect to its performance properties. The stability test also gives the user a chance to get acquainted with the limits of the combination. The basic vehicle, crane and trailer combination is stable when a lift can be performed of a weight corresponding to the maximum load plus 10 % without any of the trailer supports lifting from the ground. Lateral stability can be increased by widening the track width and/or increasing the weight of the rear axle, e.g. with wheel weights.

Example:
The normal condition of the basic vehicle during the test is unladen with a 5° incline in the direction of fall. The surface must be able to bear the wheel weight or greater loads originating from another support point.

The test is performed at maximum range with 10% overload. The test is performed under normal conditions but requires special attention. The 5° incline of the basic vehicle can be attained by adding a lifting component to one of the rear wheels (when mounting the crane on the tractor's three-point hitch) or the trailer's wheel when mounting on a trailer. The height can be calculated in the following way:

h = necessary height of lifting component
z = basic vehicle width, wheel centre to wheel centre of vehicle.

h = 0.087 x z

Example:
z = 120 cm
h = 0.087 x 120 cm = 15 cm

The specified equations and calculation examples in this Instruction Manual are based on the SFS 4677 standard.

Warning!
If the stability test indicates the vehicle combination cannot be classed at stable, great care must observed, especially while working with the crane on an empty trailer.

- When driving on public roads, the traffic regulations in the country concerned apply. The traffic directives and the regulations of the country concerned must be complied with. **The vehicle owner is responsible for ensuring that the vehicle is in a condition that meets the directives.**
- Ensure that the machine is in a safe condition, especially as regards the working condition of the braking system, fully functional lighting along with the required marking (including LGF-plate) and air pressure in the tyres.
- Working lights must be switched off while driving on the road. The working light must be used so that it cannot dazzle other road users.
- Before moving the machine, the power supply must always be switched off to prevent unintentional crane movements.
- **Allowed values for the total weight must be followed! – Refer to the type plate of the trailer.**
- Do not load outside the edges of the safety gate
- When loading short logs, make sure they are supported by at least two pairs of struts
- Carefully follow the load limits specified by the manufacturer of a particular trailer
- The driving, steering and braking properties differ depending on whether the trailer is loaded or not. The driver must act according to changing driving properties.
- The centre of gravity of the trailer moves upwards due to the weight of the load, resulting in a greater tipping risk, compared with the unladen trailer.

- A laden trailer is significantly more difficult to drive on roads and in terrain than an unladen trailer. The braking distance is significantly longer, due to greater mass, compared with the unladen trailer.

- Before transport driving, the outriggers must be fully retracted and remain in that position during the entire transportation time. When loading, it is recommended that the outriggers be used to provide better stability. When loading, the outriggers must be used to provide better stability. Make sure you do not to put anyone at risk when lowering the outriggers.

- If the driver cannot see the area behind the vehicle, he/she must ask for instructions from another person before reversing. The assistants must remain within the driver's field of vision and not between the tractor and the machine.

- Transport driving must take into account the overall height of the trailer. Therefore, the height clearance must be strictly observed, e.g. when driving under viaducts, bridges, trees or power lines.

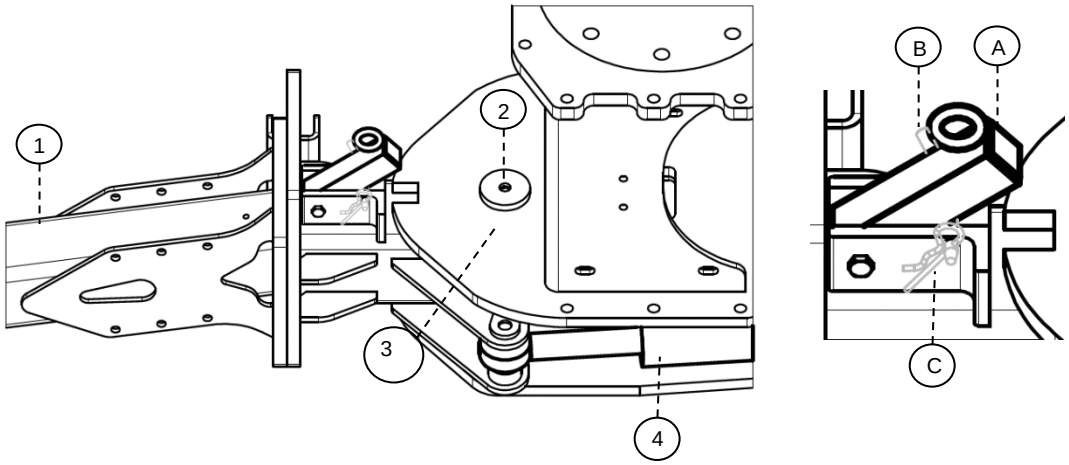
We recommend using only the trailer in a temperature range of -30 °c up to + 40 °c.
Keep in mind that work in both low and high temperatures increases wear and tear and stress on seals and hoses.
The durability of the steel also deteriorates and cracks can occur. When working in low temperatures, be sure to allow the oil to circulate freely in the system for a few minutes.
Then run each function a few times so that the seals and tubing are softened before full pressure is applied. In extremely hot periods, be careful with the oil temperature. Temperatures over 80 degrees destroy oil properties and damage seals and hoses.

Moving the machine from a soft surface
If the trailer is jammed in a soft surface, it can only be pulled out in the direction of travel. The towing eye of the trailer is used as the attachment point.
The machine must not be pulled out from a soft surface in a backwards direction, as the rear and sides of the machine do not have appropriate attachment points

3.5 Frame steering

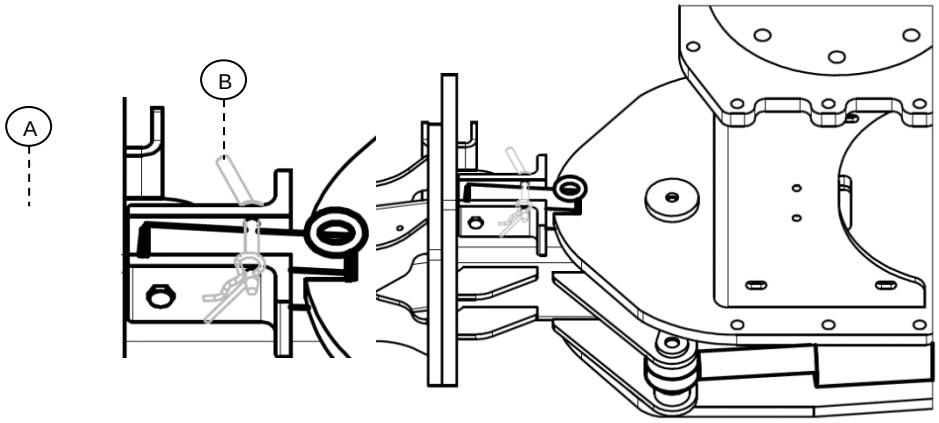
To provide a further improved adaptation of our forestry trailers, all models can be equipped with frame steering – (refer to the image below), which means that the towbar (1) is articulated (2) under the crane base (3) and hydraulically operated via a hydraulic cylinder (4).

Locking device – (refer to the image below on the right) for frame steering consists of locking block (A), pin (B) and R-pin (C). When using frame steering, unlock the locking block (A) as shown below.



Hydraulic connections to frame steering

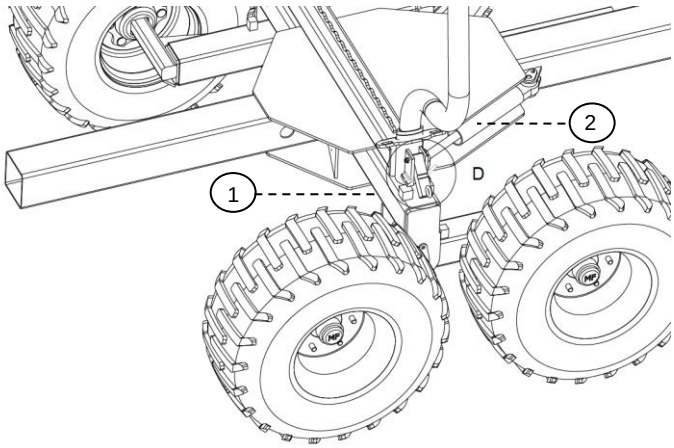
Warning! During road transport the frame steering must be disabled by the mechanical locking device. Lower the locking block (A) and lock with the pin (B) as shown below.

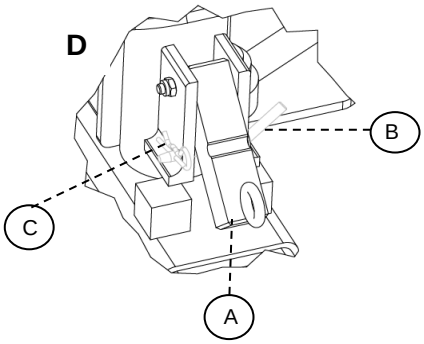


3.6 Bogie control

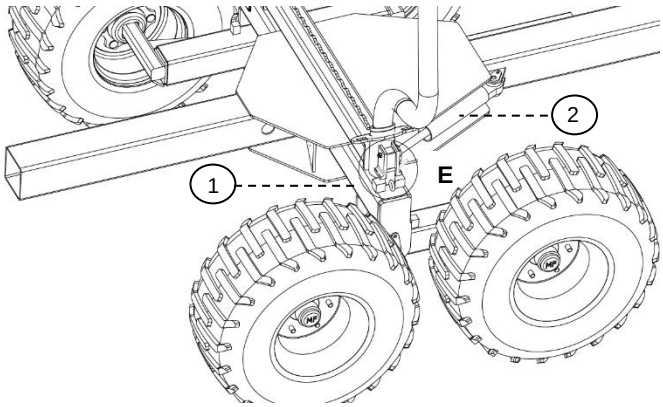
As an alternative to frame steering, the Trejon Multiforest MF1050BS forestry trailer with bogie control is available – refer to the image below. In this case, the entire bogie(1) is controlled by a hydraulic cylinder(2) via a double-acting hydraulic socket from the tractor.

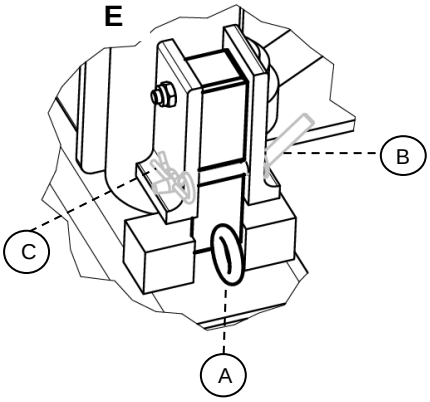
Locking device – (refer to image D) for bogie control consists of locking block (A), pin (B) and R-pin (C).





Warning! During road transport, the bogie control must be disabled by the mechanical locking device. Lower the locking block (A) and lock with the pin (B) as shown in image E.





3.7 Braking systems

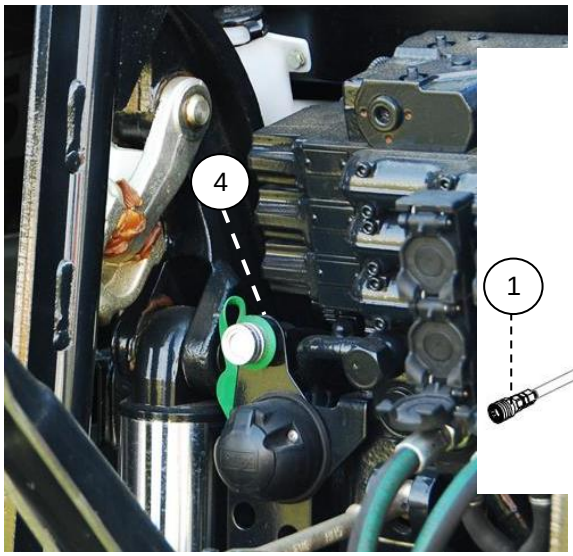
The trailers can be equipped with different types of braking operating systems.
The structure and maintenance for each type are set out below.

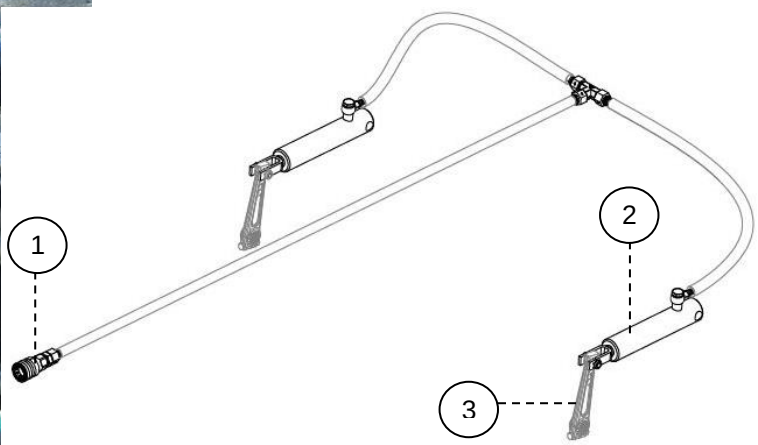
3.7.1 Brakes, hydraulically operated

In hydraulic brakes the wheel brakes are activated by the cylinders
which in turn are controlled from the tractor's hydraulic brake socket (ISO-5676).

Max pressure hydraulic braking system 150 bar.

Always connect the quick coupling (1) to the tractor’s brake socket (4).



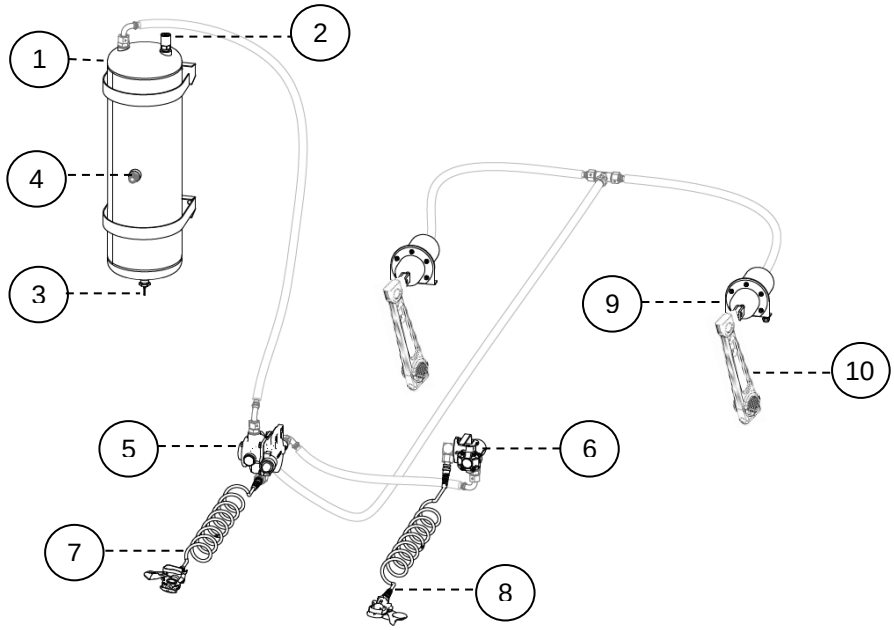


Detailed description
1. Quick coupling compliant with ISO-5676
2. Brake cylinder
3. Brake key
4. Brake socket

NOTE!
Make sure that the braking system’s components and wiring are kept clean. Failure to do so may impair or block braking function.

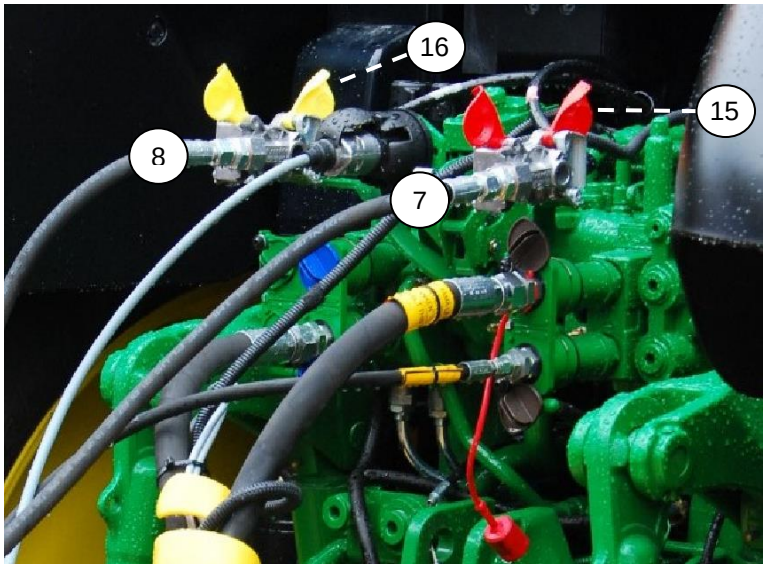
3.7.2 Brakes, compressed-air operated

In this case, the brakes are activated by a double circuit compressed air system. The structure of the compressed air system is shown in the figure below. **Max pressure - airbrake system 8 bar**

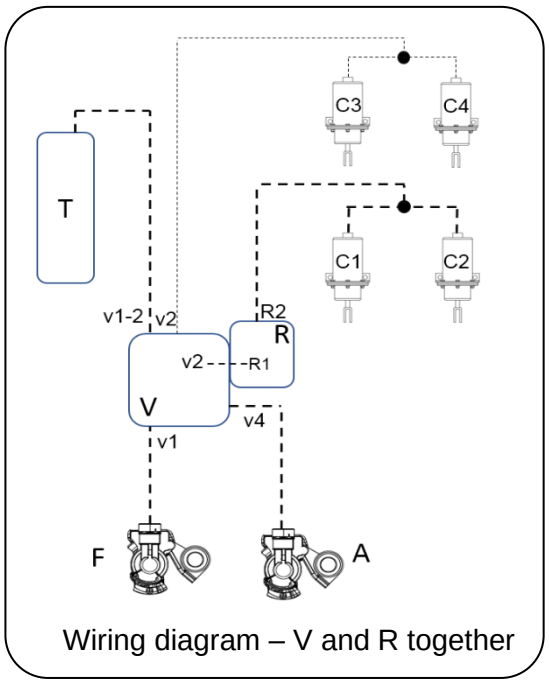


Detailed description	
1. Air tank (T)	6. Braking force regulator (R)
2. Safety valve	7. Compressed air hose – Feeder, Red (F)
3. Drain valve	8. Compressed air hose – Steering, Yellow (A)
4. Testing socket	9. Brake cylinder (C)
5. Brake valve (V)	10. Brake key

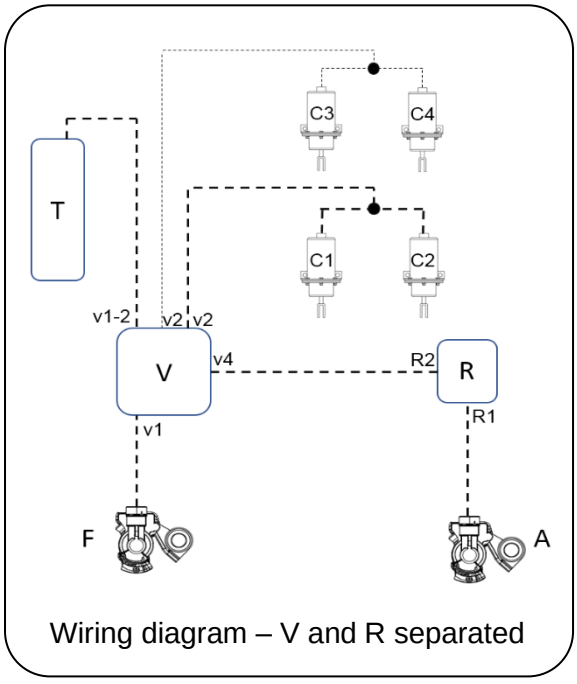
Always connect the compressed air hose (7-red) to the tractor's compressed air brake socket (15-red). Then connect the compressed air hose (8-yellow) to the tractor's compressed air brake socket (16-yellow) – refer to example in the image below.



The image below shows the wiring diagram of air braking systems for Trejon Multiforest forestry trailers.

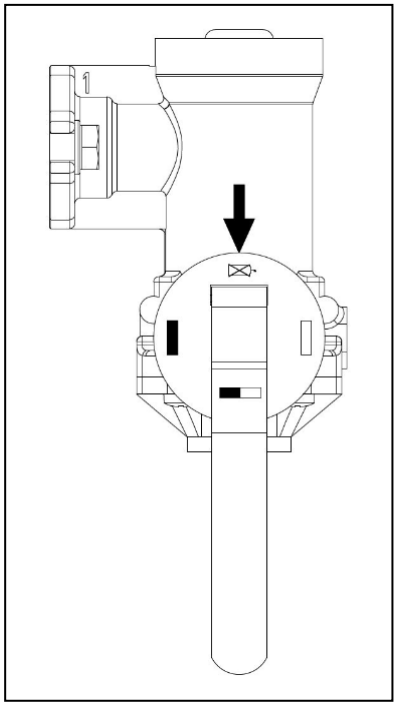


Wiring diagram – V and R together

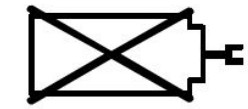


Wiring diagram – V and R separated

The braking force regulator (R) is an important component in the braking system. In order to obtain optimum braking power, the knob of the braking force regulator should be manually adjusted to the current load on the trailer (refer to the image below). The braking force is lowest in position 1 and highest in position 3 – refer to the table below.



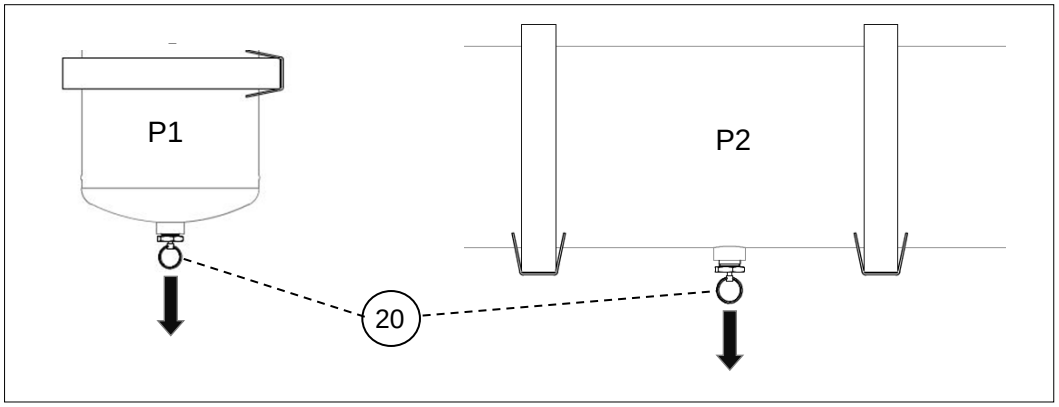
Braking force regulator (R)

Symbol	Function
	1. - Regulator mode for empty trailer
	2. - Regulator mode for half-loaded trailer
	3. - Regulator mode for full-laden trailer
	4. - Brakes freed

Maintenance

- The tightness of the compressed air system, including wiring and connections, is checked daily. Any leakage must be rectified immediately.

- The compressed air tank is drained at least once a week by pulling the drain valve eye (20) – refer to image below. Even in the case of horizontal mounting (P2) of the tank, the drain valve is located at the lowest point of the tank.



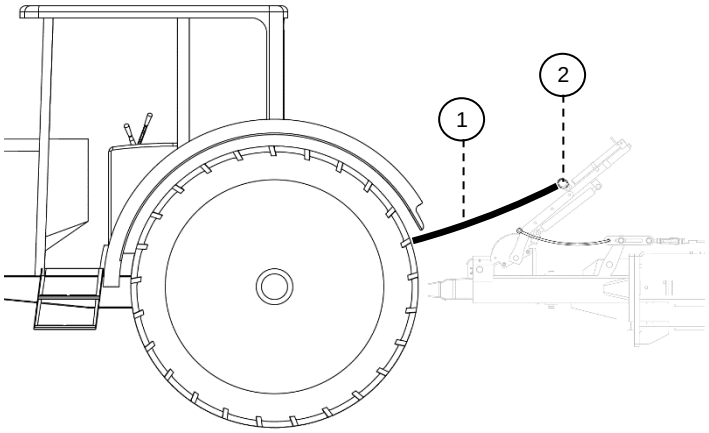
NOTE!
The compressed air system components and wiring are kept clean of oil, grease and other petroleum products. Failure to do so may impair or block braking function.

3.7.3 Brakes, inertia operated

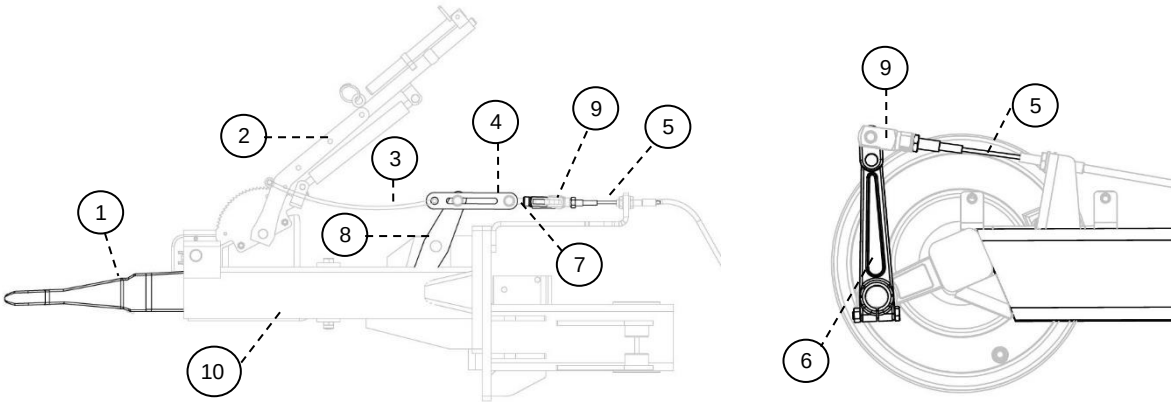
Inertia operated brakes work fully automatically, and the brakes are activated when the tractor brakes and the trailer's load exerts force (pushing) on the towing eye – refer to the next page for a more detailed description.

NOTE!
In order to ensure the operation of the braking system, the brake cables must be protected against external influences, e.g. grapples or objects in the terrain. Damaged brake cables are NOT covered by any warranty.

Before starting to use a trailer with inertia brakes, it is important to always procure and then connect a safety line (1) between the tractor and the eye (2) that is located the handbrake lever – refer to the image below. This is known as an emergency brake and brakes the forestry trailer in the event it detaches from the tractor during transport.



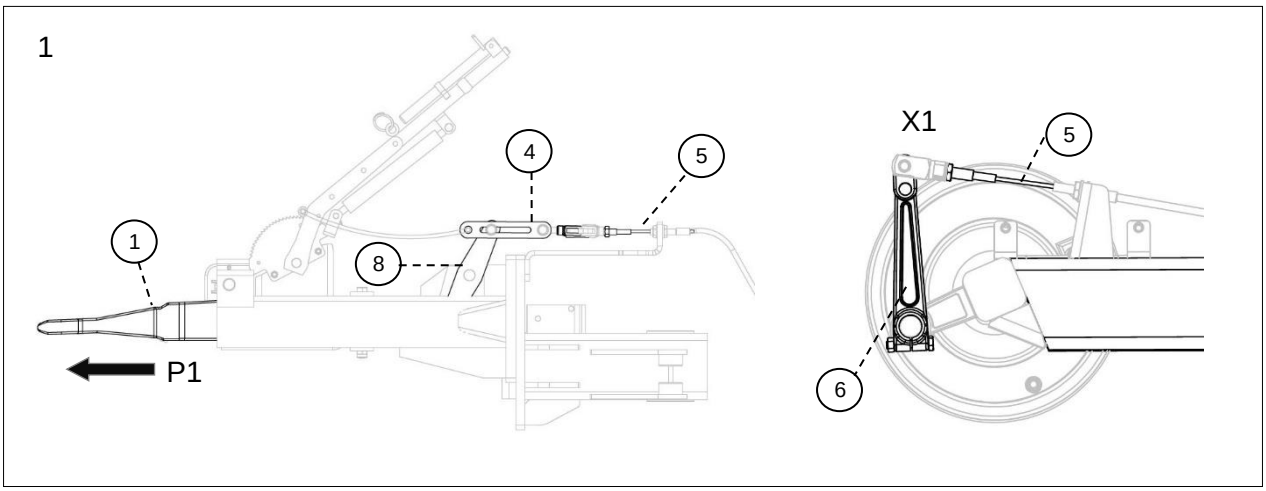
The structure of the inertia braking system can be seen from the image below.



Detailed description	
1. Towing eye	6. Brake key
2. Handbrake lever	7. Turnbuckle
3. Handbrake line	8. Brake arm
4. Link	9. Fork link
5. Brake cable	10. Towbar

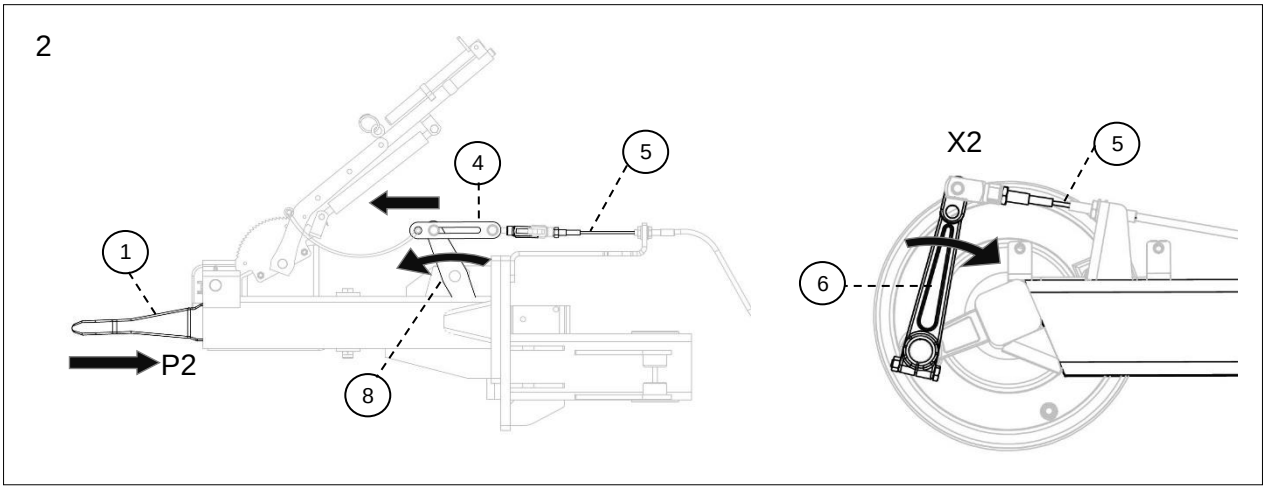
Neutral mode P1 - X1

In neutral mode, the towing eye (1) is pulled out and does not affect the brake arm (8), link (4) and brake cable (5) – refer to the image below.



Active mode P2 - X2

Inertia brakes are also known as collision brakes due to the way they work. The system can be said to use the weight of the trailer to activate the brakes. This occurs when the tractor brakes or the trailer starts rolling faster than tractor P2. The towing eye (1) is pushed in and affects the brake arm (8). The brake arm (8) pulls out the link (4), which is connected by the brake cable (5). The brake cable (5) affects (pulls in) the brake key (6) – X2. The brake is applied.



It is very important to check and, if necessary, adjust the inertia brake's mechanical components — refer to section 3.7.4.

3.7.4 Inertia brake cable – inspection and adjustment

The inertia brake system includes several mechanical components – refer to the table on page 32. When used, normal wear occurs to the brake shoes and the cable lengthens, affecting the previous adjustment of the brake cables. It is therefore important to perform regular inspections and, if necessary, to make adjustments.

As a first step, the dimensions of the brake cables V1, V2 and V3 need to be checked – refer to the table below. If any of these deviates, an adjustment needs to be performed.

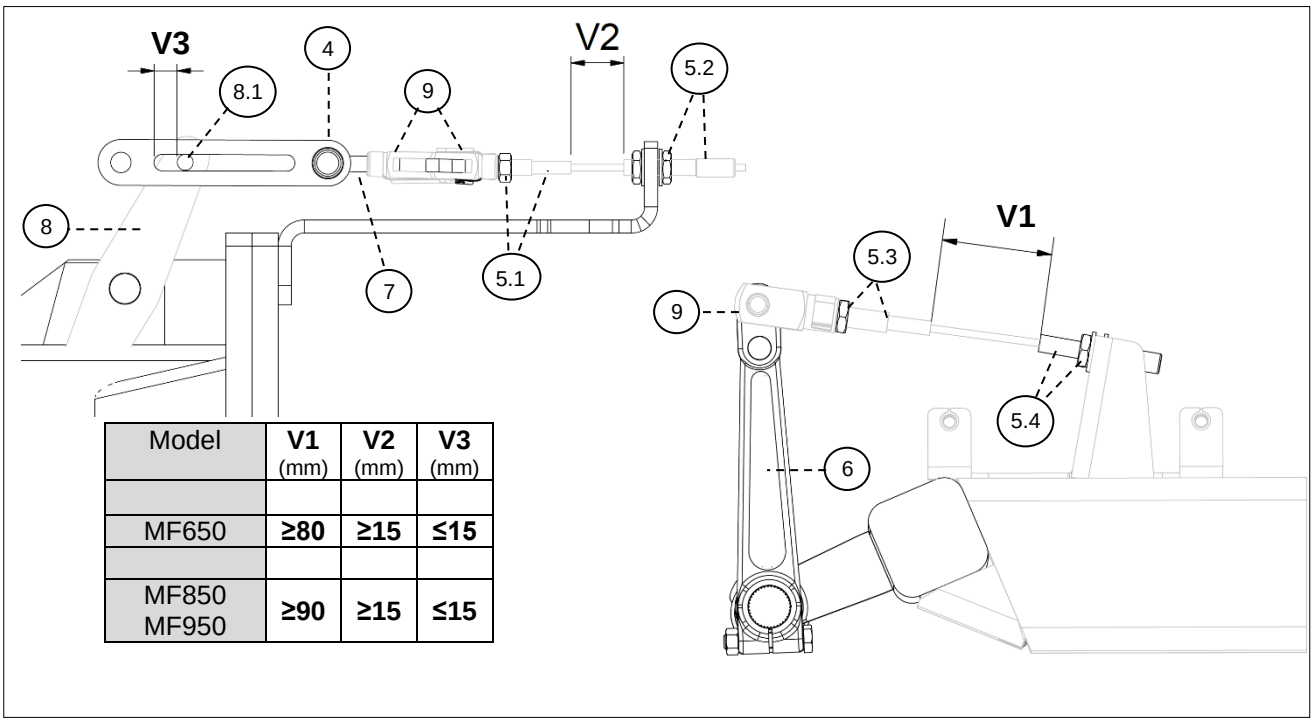
Adjustments should be carried out in neutral – refer to image 1 on page 33.

V1 – check the dimensions of V1 (visible cable length). Any adjustments can be carried out by changing the position of the cable's outer sheath (5.4). If this dimension is not achieved, position (5.3) can also be adjusted.

V2 – check the dimensions of V2 (visible cable length). Any adjustments can be carried out by changing the position of the cable's outer sheath (5.2). If this dimension is not achieved, position (5.1) can also be adjusted.

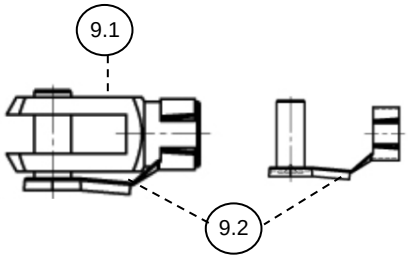
V3 – check the dimensions of V3 (play between link (4) and the brake arm's pin (8.1)). Any adjustments can be carried out by unlocking the fork link (9) and screwing in or unscrewing the turnbuckle (7).

Adjustment of the inertia brake cable must never affect the setting of the axle's brake shoes and the brake key (6). To check and adjust these, refer to section 4.6.4.



Model	V1 (mm)	V2 (mm)	V3 (mm)
MF650	**≥80**	**≥15**	**≤15**
MF850 MF950	**≥90**	**≥15**	**≤15**

NOTE!
Always replace the fork link lock (9.2) on the fork link (9.1) after completing adjustment.



3.7.5 Inertia brake - service and maintenance

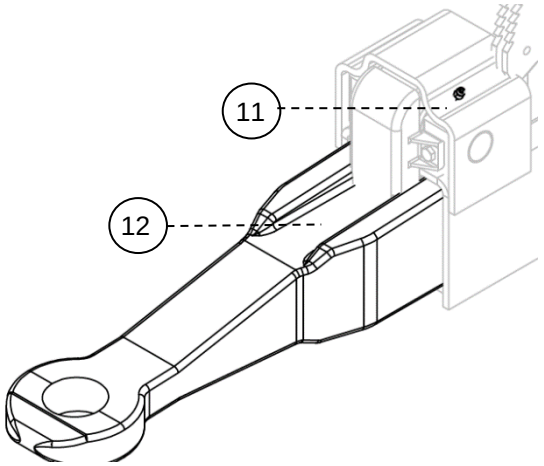
The inertia braking system includes several mechanical components. It is therefore important to carry out regular service and maintenance.

On each brake cable (5) there are 2 rubber boots (5.5). The purpose of the rubber boot is to prevent dirt and water from entering the cable. A damaged boot may cause the cable to jam or break. Make sure that grease is applied to the cable under the rubber boot.

Certain types of brake cables are equipped with lubrication nipples in order to apply grease inside the sheath (5.6).

Replace damaged rubber boot (5.5) Trejon art.no. IN10012

The inertia brake's towbar is equipped with a lubrication nipple (11). It is important to apply grease (interval – refer to section 4.2) in order to prevent the towing eye's slide path (12) being blocked.



NOTE!
In order to ensure the operation of the braking system, the brake cables must be protected against dirt and water. Always replace damaged rubber boots.

Warning!
The forestry trailer must not be used with damage to the brake cable or any other part of the inertia brake's mechanical components.

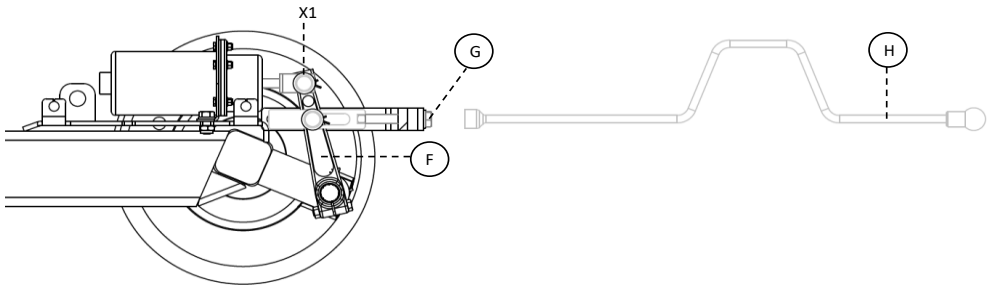
3.8 Transporting and uncoupling

NOTE!
Do not disconnect the hydraulic hoses from the tractor before the hydraulic system has been depressurised by, for example, setting the hydraulic lever in the "float mode" position. Otherwise, it may be difficult to connect the hoses next time due to pressure in the hoses.

Preferably, the machine should be kept under cover. If the machine is to stand outdoors for a period longer than 1 month, the piston rods must, after completion of the work, be cleaned and then greased for protection. All to prevent rust damage.

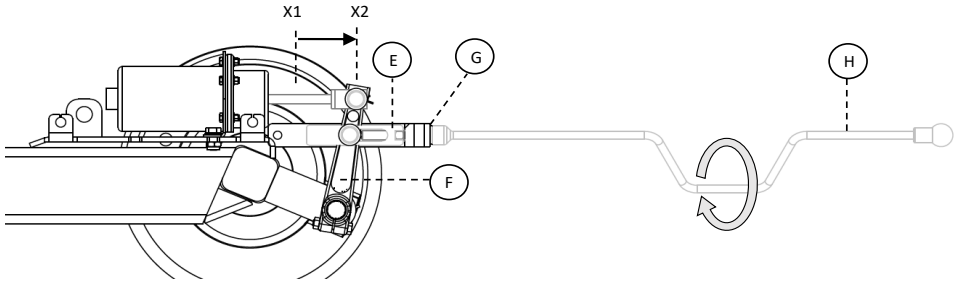
3.8.1 Parking brake – hydraulic and pneumatic brakes

When disconnecting the trailer, start by applying the parking brake.



Activate / apply the parking brake.

Use the supplied crank (H) to activate / apply the parking brake. By placing the crank (H) on the screw (G) (NV19) and then rotating this **clockwise**, the brake key (F) will be pulled out (from X1 to X2) and the brakes are applied. Rotate the crank (H) using only hand force until it stops.



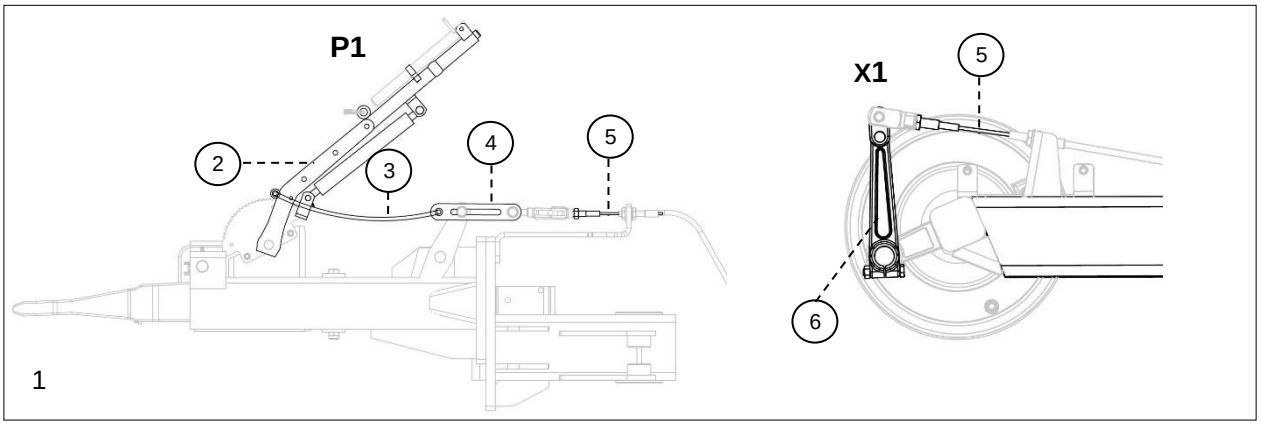
Free / release the parking brake.

Use the supplied crank (H) to free / release the parking brake. By placing the crank (H) on the screw (G) (NV19) and then rotating this **anti-clockwise**, the brake key (F) will be pushed in and the brakes are released. Rotate the crank (H) using only hand force until it presses the brake key back to Pos X1.

NOTE! Do not forget to release the parking brake before the machine is used again after disconnection.

3.8.2 Parking brake – inertia brake

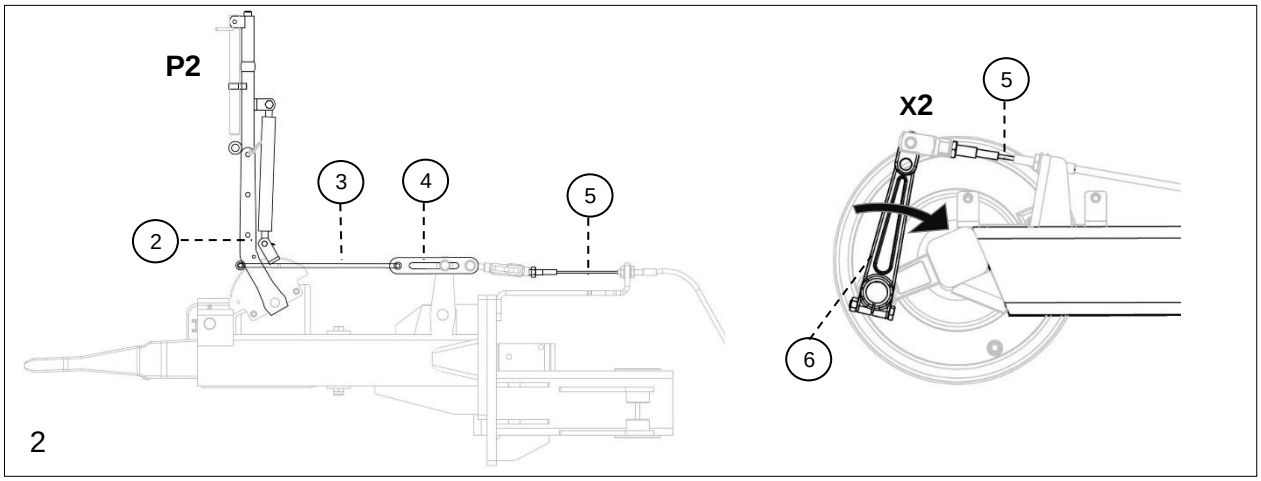
When disconnecting the trailer, always start by applying the parking brake.
Image 1 shows the parking brake's components in neutral mode **P1 – X1**.



1

Activate / apply the parking brake P2 – X2.

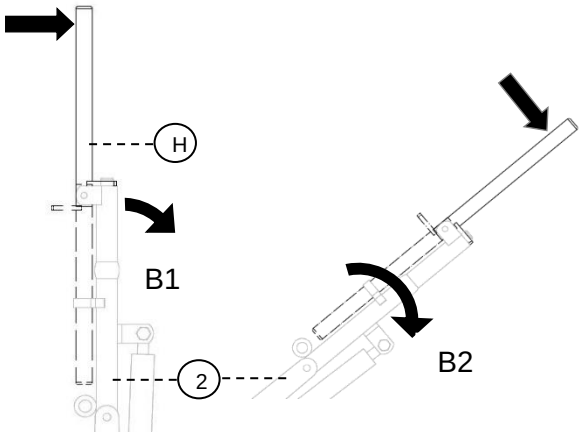
By pulling up the handbrake lever (2) to the vertical position **P2,** this affects the handbrake line (3). The handbrake line (3) pulls out the link (4), which is connected by the brake cable (5). The brake cable (5) affects (pulls in) the brake key (6) to position **X2**. The parking brake is applied. Refer to image 2.



2

Free / release the parking brake B1 – B2.

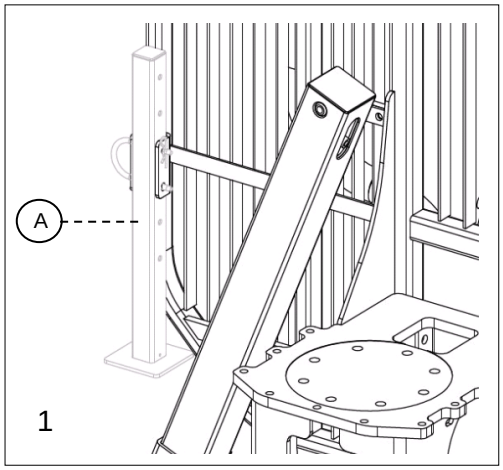
Fold out the handle (H) located on the handbrake lever (2) – B1. Press down the handle (H) to free the catch, then continue pressing down the handle so that the handbrake lever passes dead centre and returns to its neutral position – B2.

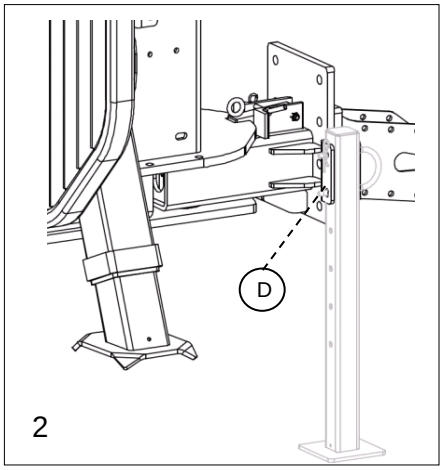


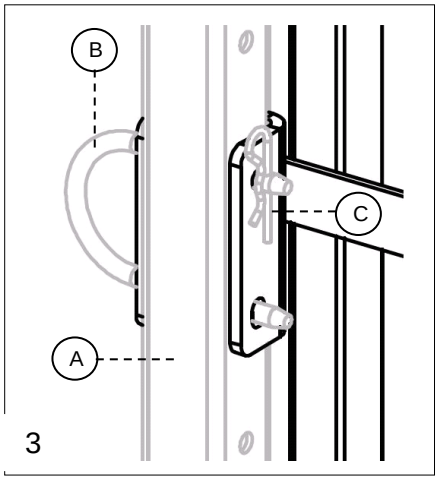
NOTE! Do not forget to release the parking brake before the machine is used again after disconnection.

3.8.3 Parking support

When switching off the forestry trailer, use the parking support (A) located on the safety gate (refer to image 1) to lock with the fixing plate (D) at the towbar (refer to image 2). Attachment is performed with a U-bracket (B) and R-pin (C) (see image 3).





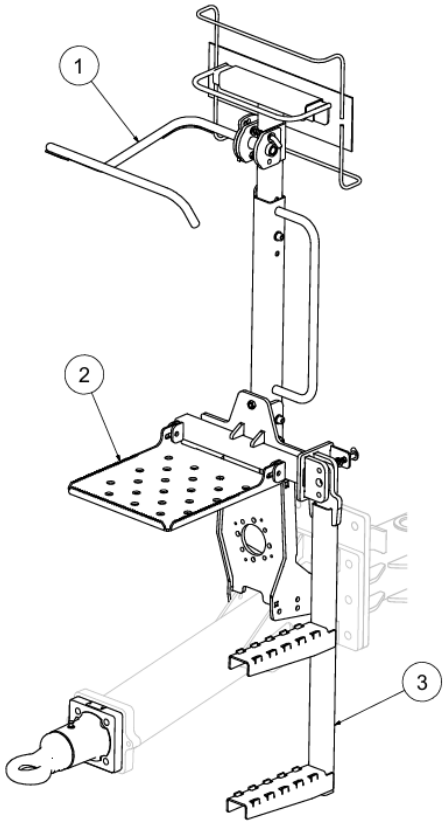


When working and while the trailer is attached to the tractor, the parking support A is attached to the appropriate position on the safety gate as shown in image 1. Attachment is performed with a U-bracket (B) and R-pin (C) (image 3).

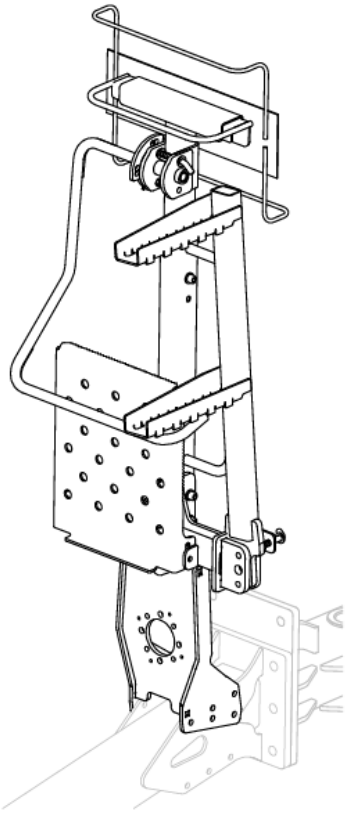
NOTE!
Do not forget to release the parking brake before the machine is used again after disconnection.

3.9 Standing platform

The trailers can be equipped with various standing platform variants. Prior to use, always ensure that the roll bar (1), platform (2) and ladder (3) are in the locked position. When moving, the roll bar and the platform must be folded together and the ladder must be folded up to reduce the risk of injury/collision.



Lowered position



Raised position

4 Service and Maintenance

Warning!
When some form of cleaning, maintenance, repair or service is to be carried out on the machine, make sure the machine has been lowered to the ground and the tractor engine turned off. Remove the key from the ignition switch.

Before starting work on the hydraulic system, it must be depressurised! If the machine's hydraulic system is connected to the tractor, the engine of the tractor must be switched of and the tractor's hydraulic system shall be depressurised. Warning! Brakes and hydraulics can become very hot during normal operation, so allow the machine to cool down before starting service work.

Never rely entirely on the tractor's lifting device, but support the tool properly on axle stands or similar so that it cannot fall down. Always use protective equipment such as goggles and gloves when carrying out maintenance.

In order to prevent personal injury, never use your fingers to explore narrow openings.

It is absolutely necessary to renew worn and damaged protective details (e.g. protective guards, shaft guards, etc.) in good time.

Make sure there is nobody in the vicinity that can be injured.

4.1 General

Carefully maintain the machine in order to obtain a cost-efficient operation, long service life and retained machine value. Use only high quality, effective lubricants that are fit for purpose. All work being performed under a raised machine must be done after securing the machine with axle stands. Use only effective hand tools. Keep the machine clean under the chassis for good functionality and to prevent corrosion. Never use high-pressure jets when cleaning bearings, electronics and hydraulic components. After cleaning, lubricate the machine according to the lubrication schedule and test run for a brief period.

Use the table below to see the correct tightening torques for screw unions on the machine.

Table 1 - Tightening torques for screw unions

Diameter	Quality 8.8		Quality 10.9	
	Nm	lb.ft.	Nm	lb.ft.
M8	25	18	35	26
M10	50	37	70	52
M12	90	66	125	92
M14	140	103	200	148
M16	215	155	305	225
M18	295	217	420	309
M20	420	302	590	438
M22	520	380	730	535
M24	670	490	940	690
M30	1350	990	1850	1350
Increase tightening torque by 5 % when a lock nut is used.				

4.2 Maintenance schedule

After the first 4 hours of operation:

- Check and if necessary retighten screw joints on the machine.

After the first 8 hours of operation:

- Perform the 8 hours service and maintenance according to the schedule below.

Service point	Interval	*Action	Lubricant	Remark
PTO universal joints	8th hr	K	Grease NLGI 2	Refer to the instructions for the PTO shaft
PTO profile joints	8th hr	K	Grease NLGI 2/Oil 10w30	Refer to the instructions for the PTO shaft
Hydraulic oil tank	First 100h, 500h/1 time per year	B	Refer to sticker on tank	Onboard hydraulic system Refer to section 6.1
Return filter hydraulic tank	During oil change and when the indicator shows > 1.5 bar	B	-	Onboard hydraulic system Refer to section 6.1.2
PTO-gear hydraulic pump	First 100h, 500h/ 1 time per year	B	ISO VG220 SAE 80W/90	Onboard hydraulic system
Screw unions	40h	C/A		Turret M20 – 420 Nm
Bogie bearing	40h	K	NLGI 2 grease	Lift one side of the trailer at a time.
Brakes	Initially 4h, then every 100h	C/A	NLGI 2 grease	Refer to section 4.6.4
Inertia brake	Initially 4h, then every 40h	C/A	NLGI 2 grease	Refer to sections 3.7.4 and 3.7.5
Wheels/tyres	40h	K		Air pressure, refer to table in section 4.5.
Towing eye	40h	K	Grease NLGI 2	Check wear, replace if necessary.
Towing eye, screw unions	40 h	K		M16 10.9 – 300Nm
Wheel bolts	The first 4h, thereafter every 40h	K		Wheel bolts - torque, refer to the table in section 4.1
Wheel bearings	100h	C/A		Refer to section 4.6.3
Wheel bearings, regreasing	500h	C/A/R	Long-term wheel bearing grease	Refer to section 4.6.3
Bearing, frame steering	40h	K	NLGI 2 grease	
Cylinders frame steering/bogie control	40h	K	NLGI 2 grease	
Locking device frame steering/bogie control	40h	K		Bolt and function, refer to section 3.5
Winch incl. cable	40th hr	K		Damage, Battery (in handset)

***Action codes: A=Adjust, C=Check, Cl=Clean, R=Replace**

Use NLGI 2 grease with EP features of good quality and which can withstand low temperatures for lubrication. Do not use graphite grease on ball bearings. Compressed air driven grease guns must not be used to lubricate sealed bearing as the seal may come loose or be damaged. Clean the grease nipples before applying the grease gun.
These intervals apply to normal operation, continuous operation requires more frequent lubrication. Always lubricate after cleaning with water.

Lubrication instruction
Pump the grease into the bearing until it comes out at the side of the layer, wiping off the excess.
Turn the joint (if possible) 180 degrees, repeat point 1. This ensures a good distribution of the lubricant.

When lubricating the bogie bearing, it must be supported from the ground for grease to end up on both sides of the spigot.

Some known brands of grease that can be used:

Shell	SRS 4000
Esso	Thermo 30150
Statoil	Grease Way CAH92
Hydro Texaco	Hydex EP2

4.3 Before season start

All the above points shall be performed. If the machine is serviced well, it will have a considerably longer service life and more carefree use.

4.4 At End of Season

the machine must be thoroughly cleaned and then lubricated and serviced. Replace worn or damaged parts. When dry, we recommend applying a thin coat of oil to places on the machine where the paint has been worn away.
The piston rods on the hydraulic cylinders must be cleaned and then greases to prevent rust damage.
The machine should ideally be stored under cover in a dry area.

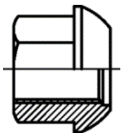
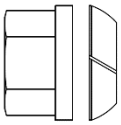
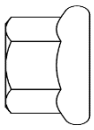
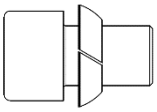
4.5 Wheels and tyres

- To ensure the best operational reliability, the machine's wheels and tyres must be checked regularly.
- It should be ensured that all tyres have the correct air pressure. The correct air pressure, intended for specific tyre types/sizes are listed in the table below.

Wheel options

Tyres	Max load Tyres (kg)	Maximum speed (km/h)	Air pressure at max load (bar)
300/80-15.3	2000	40	3.4
400/60-15.5	2900	40	3.6
520/50-17	3750	40	3.6
400/55-22.5	3350	40	3.5

- Wheel rims must be checked regularly for any damage. If the condition of tyres or wheels no longer allows full operational reliability, tyres or wheels must be replaced.
- The fastening of the wheels must be checked (refer to section 4.2) and retightened – refer to the table below. If this does not happen, the wheel rims/axles will be damaged, which is not covered by any warranty.

Type							
	Nut with spherical cone		Nut with spherical washer		Nut with flat flange		Screw MC6S with spherical washer
Size	M18x1.5	M20x1.5	M18x1.5	M20x1.5	M18x1.5	M20x1.5	M18x1.5
							BB4 wheel drive
Torque (Nm)	**330**	**490**	**270**	**360**	**260**	**350**	**383**

- When using tyres other than factory fitted or the factory-offered tyres, the machine's warranty will be void.

Wheel change

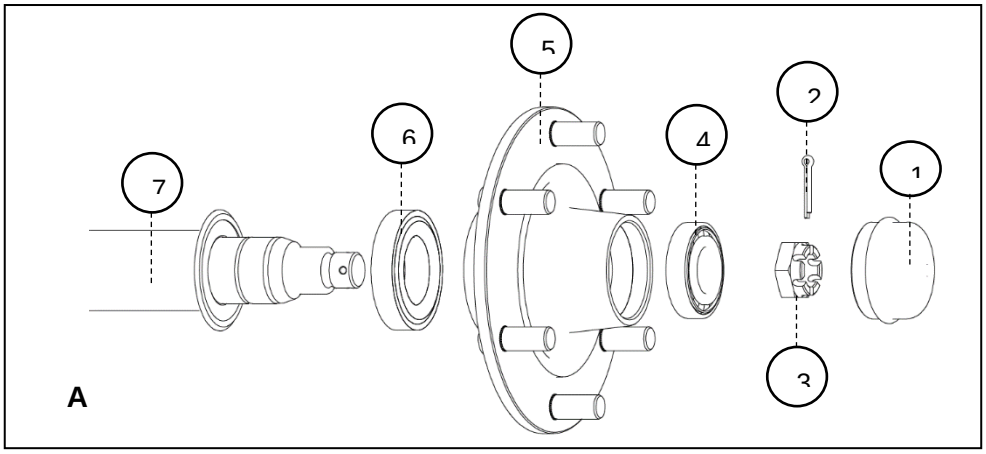
NOTE!
If the lifting device sinks into the ground or substrate that cannot bear the weight of the machine, it may pose a danger or risk of injury to people!

For wheel change, the trailer must be lifted by means of a hydraulic jack at such a height that it is possible to remove the broken wheel from the hub. The hydraulic jack shall be placed beneath the shaft directly behind the broken wheel.
Please note that the machine shall stand on a sufficiently strong surface to bear the actual weight of the axle outside the lifting device.

4.6 Axles

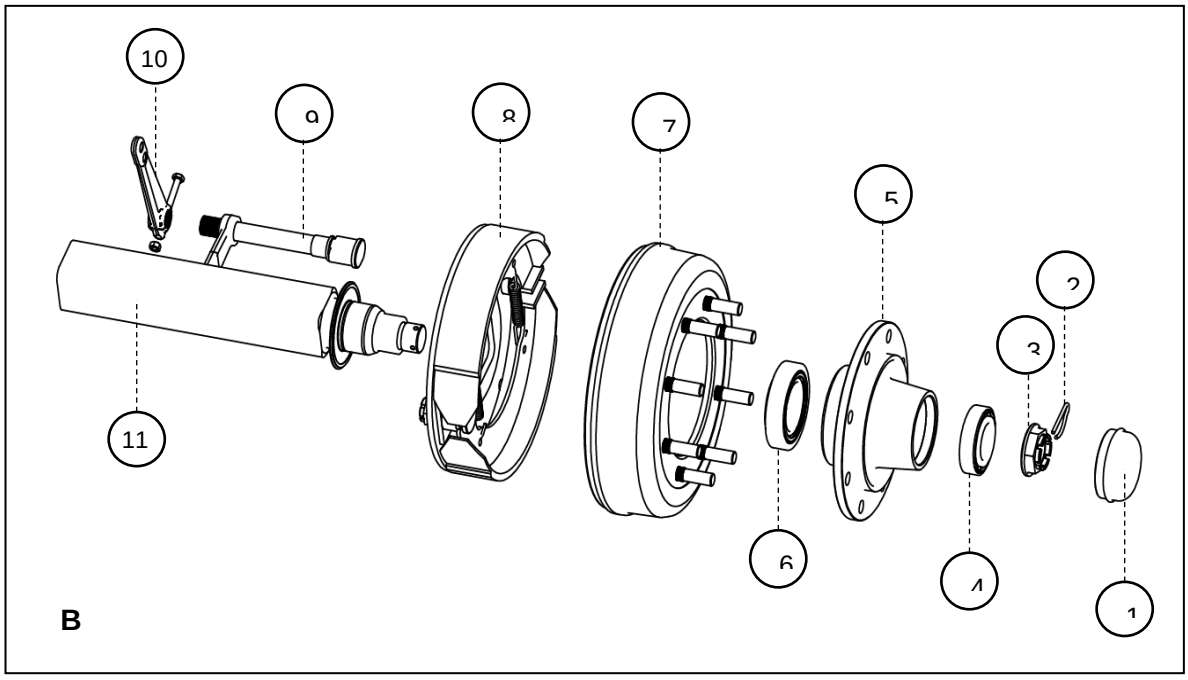
4.6.1 Unbraked axles

The image below (A) shows an exploded view diagram of an unbraked axle. An axle consists of: (1) hub cap, (2) cotter pin, (3) crown nut, (4) outer bearing, (5) hub, (6) inner bearing, (7) axle



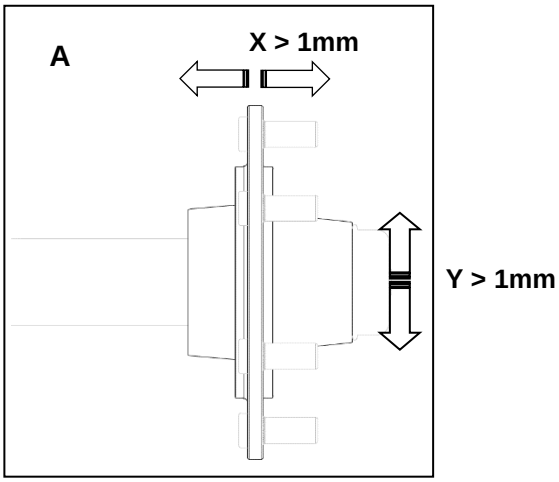
4.6.2 Braked axles

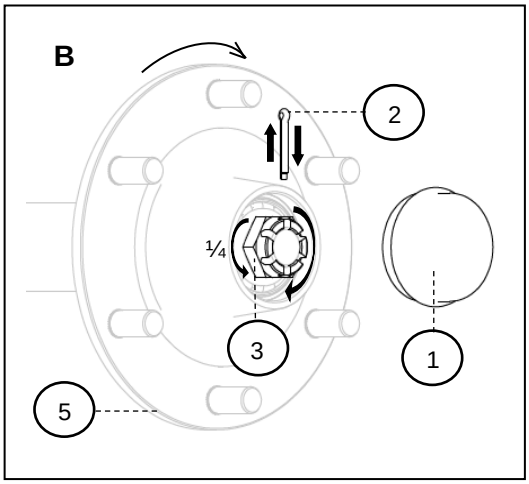
The image below (A) shows an exploded view diagram of a braked axle. An axle consists of: (1) hub cap, (2) cotter pin, (3) crown nut, (4) outer bearing, (5) hub, (6) inner bearing, (7) brake drum, (8) brake shoes, (9) brake axle, (10) brake key, (11) wheel axle



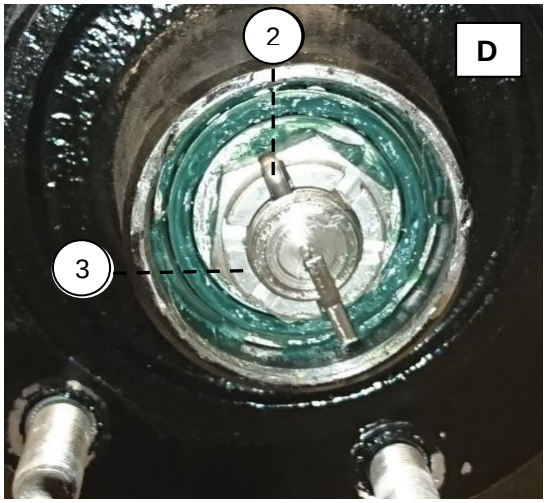
4.6.3 Axles – adjustment and regreasing of wheel bearings

Adjustment of wheel bearings:
When an axial X or radial Y gap arises - image A, the wheel bearings shall be adjusted. Raise the bogie so that the wheels can rotate freely from the ground. Disassemble the hub cap (1) without damaging it, then the cotter pin (2) from the crown nut (3) – image B. Tighten the nut (3) so that the bearing is in contact without any play. Rotate the wheel to re-check the play. Spin the wheel, if it rotates heavily, the crown nut (3) must be loosened so that the hole in the axle matches one of the recesses in the crown nut. Install a new cotter pin (2) and refit the cover (1).



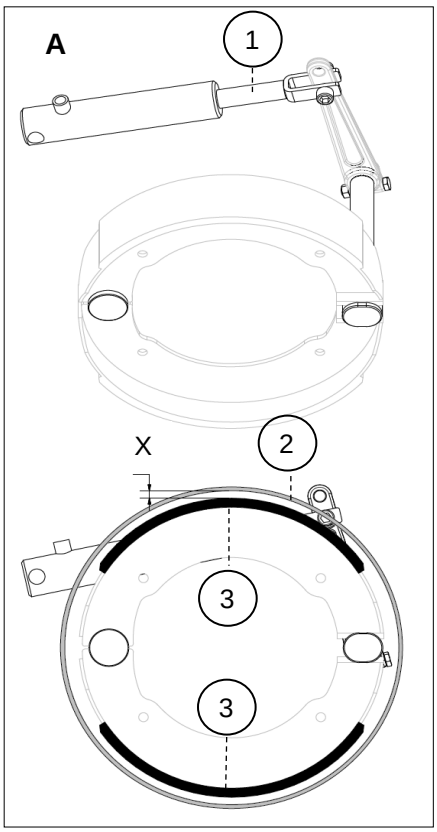


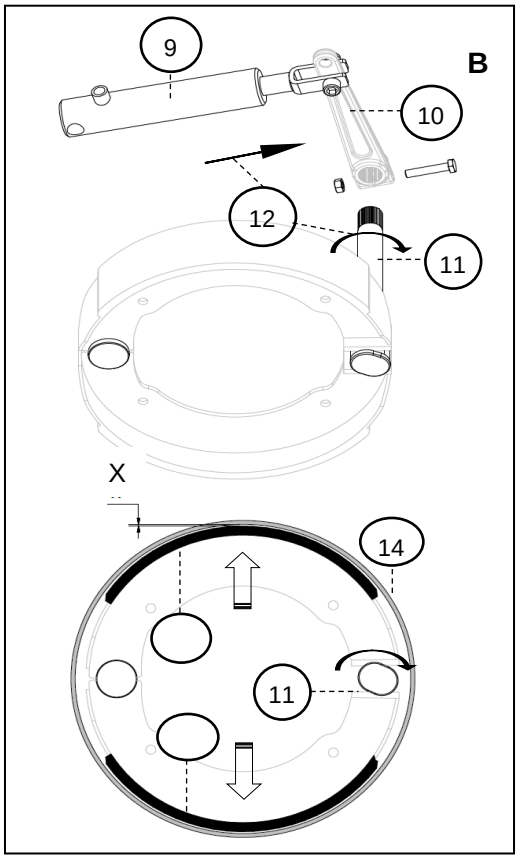
Regreasing wheel bearings:
Raise the bogie so that the wheels can rotate freely. Remove the wheel from the hub. Remove the hub cap (1) and then the cotter pin (2) from the crown nut (3). Remove the crown nut (3) and hub (5) – refer to image A or B above. Use a suitable puller and tap with a hammer lightly on the hub/brake drum to dismount it.
A damaged wheel hub or brake drum is NOT covered by any warranty.
Remove the outer bearing and hub/brake drum from the wheel axle.
Clean the parts with Brakleen™/brake cleaner or suitable degreasing agent.
Inspect all parts of brakes, hubs, bearings, shafts, etc. with respect to wear, play and cracks etc.
Replace damaged and worn out parts.
Pack grease (NLGI 2 with EP properties NLGI Class 2, lithium based) in the bearings using your fingers while rotating them – image C. Fill grease even behind the bearings in the hub. **For braked axles, always check the wear on the brake shoes – refer to section 4.6.4.**
Reassemble all parts and adjust the bearings according to the above instructions. Use a new cotter pin (2) to lock the crown nut (3) – image D.



4.6.4 Axles – brake shoes – control and adjustment

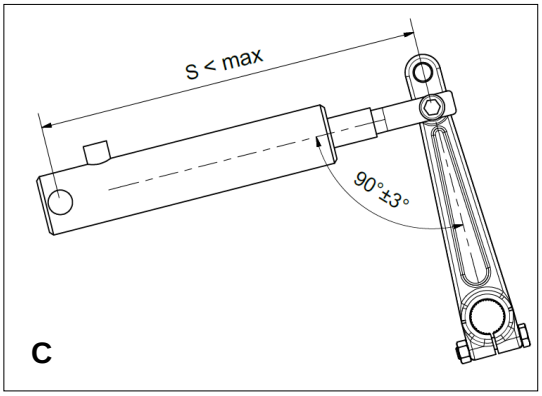
If the brake cylinder (1) reaches its end position during braking and the forestry trailer's braking effect is poor, i.e. the distance X between the brake drum (2) and the brake shoes (3) is too large (refer to image A), the brake(s) need to be adjusted (*the same principle applies to airbrakes and inertia braking systems*): Raise up the wheels so they rotate freely from the ground. Loosen and disassemble the brake key (10). Turn the brake shaft (11) against a new cog in the brake key (10). The brake shaft (11) must be rotated in the same direction as the brake cylinder (9) is pushed out (12) (or the inertia brake cable is pushed in). This reduces the distance X between the brake shoes (13) and the brake drum (14) – refer to image B. Refit. Check after adjusting that the wheel can rotate freely and that the brake is not applied on the wheel that has been raised.

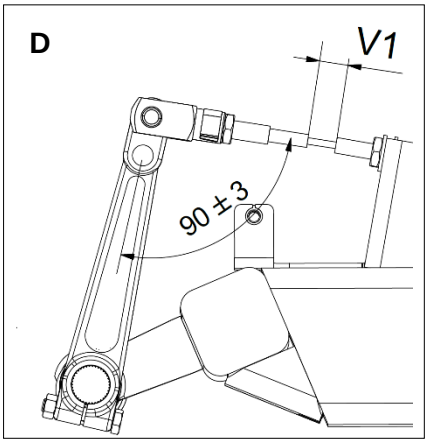




NOTE!

After adjustment, check that the angle between the cylinder and the brake shaft is 90 ° ± 3 ° and cylinder is not in the end position (S < max) when the brakes are activated – refer to image C.

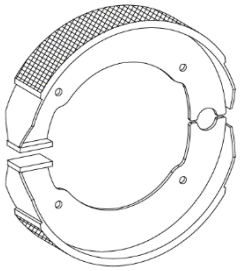




NOTE!

After adjustment, check that the angle between the brake cable and the brake shaft is 90° ± 3° and that dimension V1 ≥ 20mm when the brakes are activated – refer to image D. Then check and, if necessary, adjust the brake cable – refer to section 3.7.4.

NOTE!
When the brake shoes are worn out, these must be replaced otherwise the brake drum and hub will be destroyed.



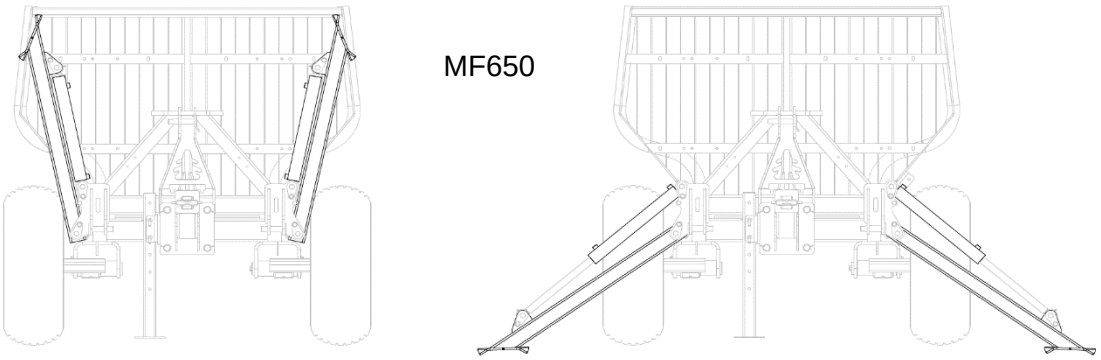
NOTE!
When some form of cleaning, maintenance, repair or service is to be carried out on the machine, make sure the machine has been lowered to the ground and the tractor engine turned off. Remove the key from the ignition switch.

In the case of a tractor fault, the tractor must never be towed along with the forestry trailer.
In the case of a tractor fault, the service brake will no longer operate.
In the case of a tractor fault, the tractor must be replaced by a functioning vehicle before the operation can be continued.

5 Hydraulic outriggers

5.1 Carriage type

To increase the stability of the MF650 trailer, it is fitted with carriage type outriggers – refer to the image below. The outriggers are operated and controlled via the crane's hydraulics and controls.



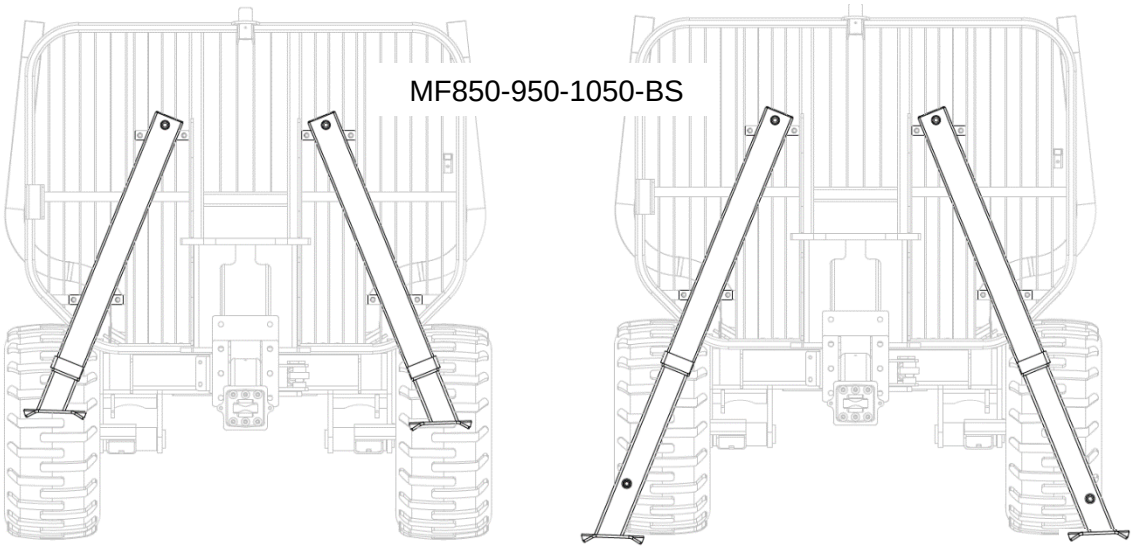
MF650

Before the trailer is moved in the forest or during transport, the outriggers must be fully retracted. If this is not done, there is a risk that the outriggers will catch on the ground or foreign objects and be damaged.

Damaged hydraulic cylinders or bent outriggers are NOT covered by any warranty.

5.2 Telescopic type

To increase the stability of the MF850-950-1050-BS-MF1202 trailers, they are fitted with telescopic outriggers – refer to the image below. The outriggers are operated and controlled via the crane's hydraulics and controls.



MF850-950-1050-BS

Before the trailer is moved in the forest or during transport, the outriggers must be fully retracted. If this is not done, there is a risk that the outriggers will catch on the ground or foreign objects and be damaged.

Damaged hydraulic cylinders or bent outriggers are NOT covered by any warranty.

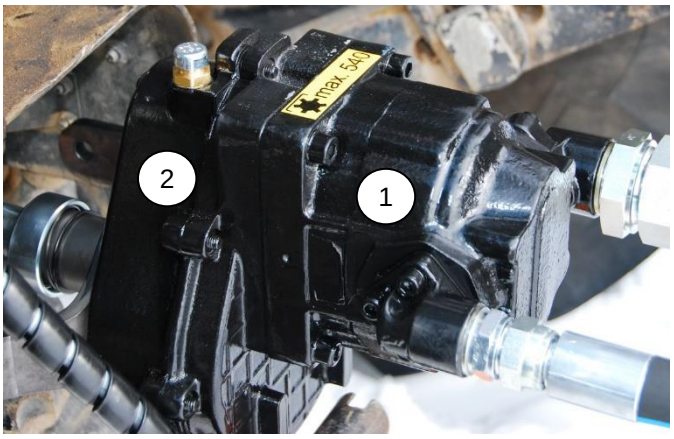
6 Accessories

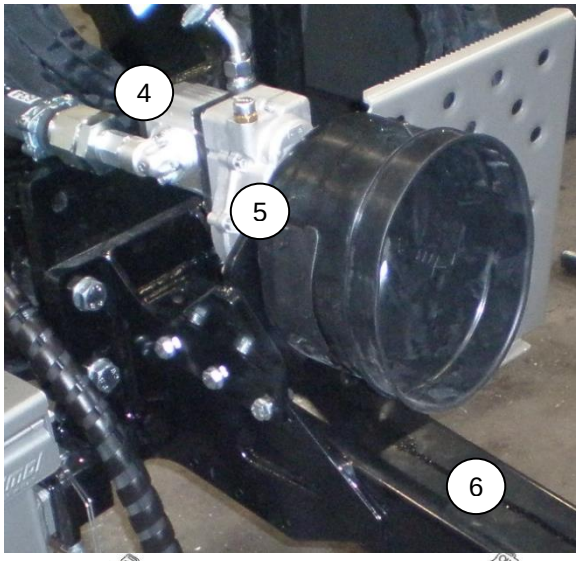
6.1 Onboard hydraulic system

In cases where the towing vehicle (tractor) does not have a hydraulic system capable of supporting the trailer's/crane's functions, the trailers can be equipped with their own hydraulic system.
The system consists of a pump kit and oil tank.

6.1.1 Pump kit

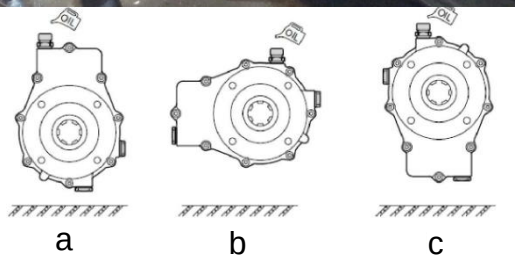
The pump kit consists of a pump (1) operated via a gear (2) that is mounted on the tractor's PTO pin, or via a PTO shaft to the gear (5) and pump (4) located on the trailer's towbar (6) – refer to images below.

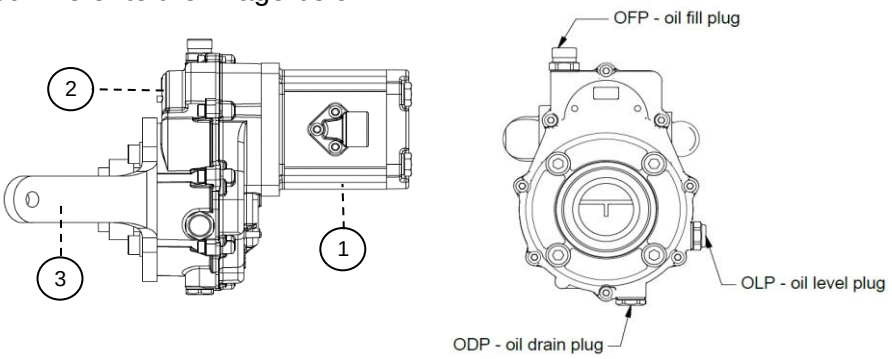




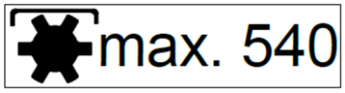
The gear (2) with pump (1) is affixed to the tractor so that it is prevented from rotating. The gear (2) is supplied with a universal mount (3) which, in some cases, must be modified. The bracket is bolted or anchored to, for example, a chain.

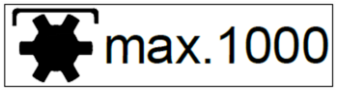
In some cases, it is necessary to rotate the gear with the pump so that it can be mounted to the tractor's PTO pin (a, b, c). If this is the case, the location of the filling plug (OFP) and drain plug (ODP) have to be swapped. The level plug/sight glass (OLP) may also be needed to be moved – refer to the image below .





There are two versions of the gear (2, 4), 540 rpm and 1,000 rpm. Refer to the marking on the hydraulic pump's gear. Suitable speeds are 400-540 rpm and 800-1000 rpm respectively. These speeds must not be exceeded.





NOTE!
The tractor's power take-off (PTO) must always be switched off when the trailer's/crane's hydraulic functions are not being used, e.g. during transport. Failure to do this may cause the oil temperature to rise and damage hydraulic components.

NOTE!
When adapting to tractor PTO, the oil level must be checked before starting to use the machine.

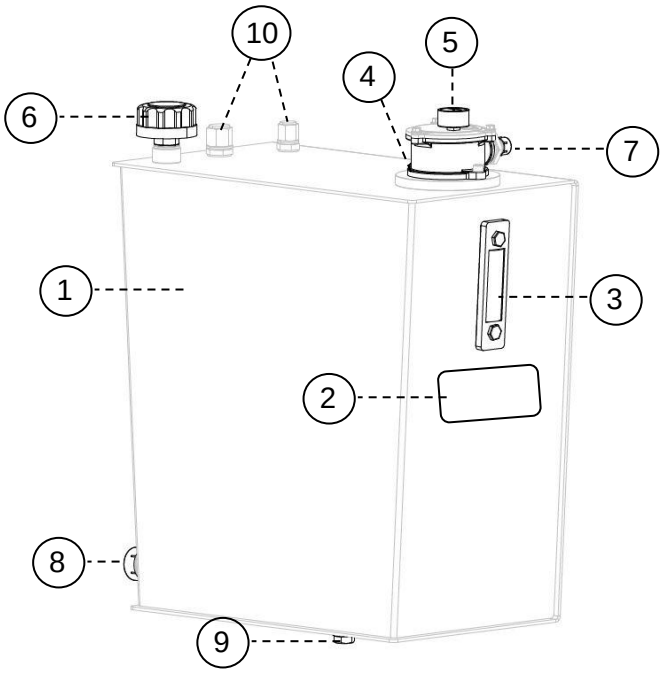
NOTE!
When adapting to tractor with PTO shaft, this must be adjusted to the correct length. If the PTO shaft is too long, this will damage the gear or tractor.

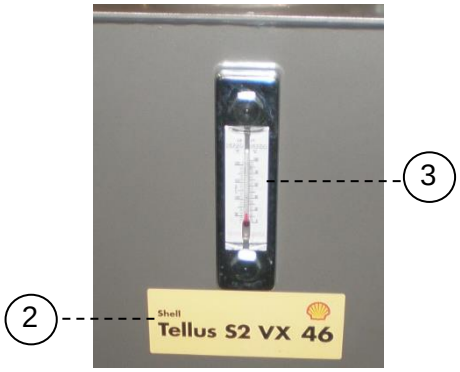
6.1.2 Oil tank

Trejon Multiforest trailers use two different oil tanks:

- An oil tank for MF650 – 30 litre volume.
- An oil tank for MF850-MF1050BS – 80 litre volume – refer to the image below.

On all oil tanks there is a decal (2) showing the type of oil to be used. Each tank (1) is equipped with an oil level indicator (3) integrated with a thermometer. The oil tank consists of e.g.: oil tank base (1), decal (2), oil level indicator (3), return filter (4), pressure indicator (5), filling cap (6), adapter (7 return-line), adapter (8 suction-line), magnetic plug (9), adapters (10 drainage-line).





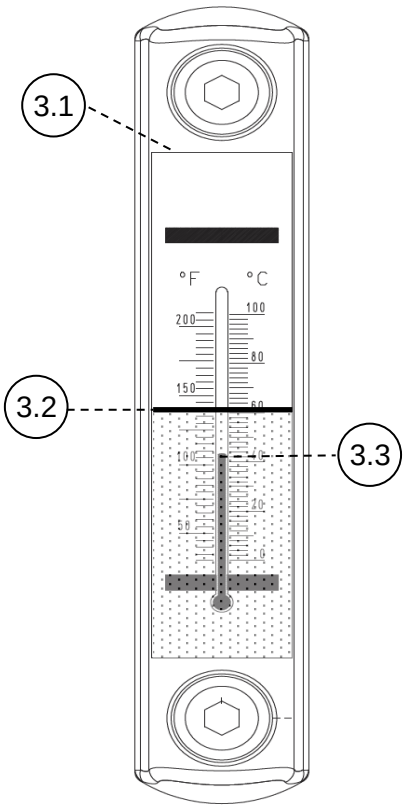
Intervals for oil and filter changes, refer to section 4.2

When filling the oil you have to clean the surfaces around the filling orifice to prevent dirt and debris from entering the tank.

You should never mix mineral based oils with biological oils. When changing the oil, make sure that the oils are compatible with each other if you are using another brand.

Oil level:

Retract the crane and place the grapple facing the gate. The oil level (3.2) should now be in the middle of the sight glass (3.1).



Oil temp:

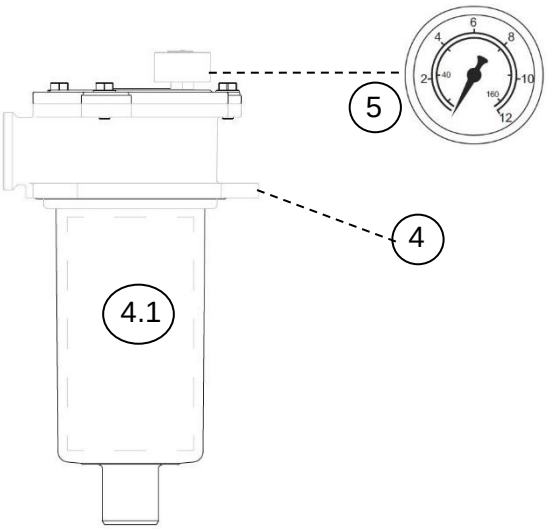
A thermometer is built into the oil level indicator – refer to the image alongside. It is important to check the oil temperature. The oil temperature (3.3) can easily be read on a scale – from 0°C to 100°C. The oil temperature should NOT exceed 80°C. At higher oil temperatures, switch off the tractor's PTO and wait until the oil temperature drops to 40–50°C.

Return filter:

The return filter (4) has an replaceable insert (4.1), which must be replaced at all oil changes or when the pressure indicator (5) shows max 1.5 bar

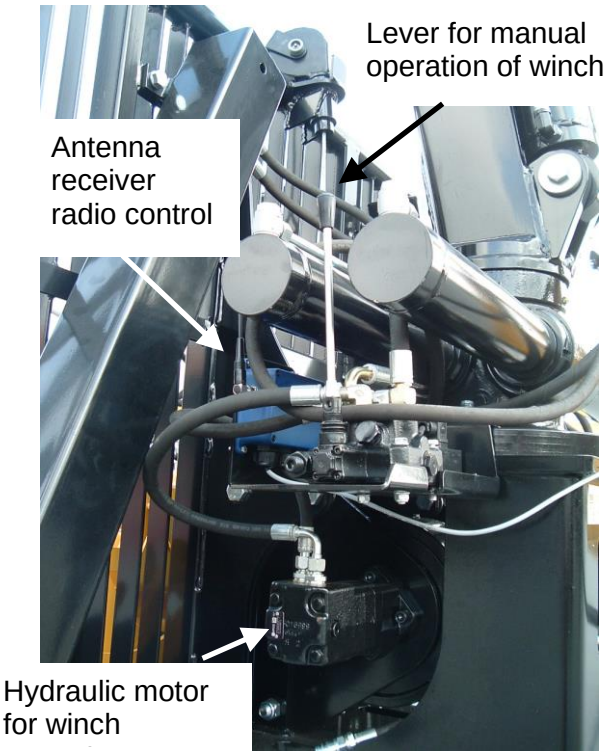
Trejon art.no. for insert 4.1:

- **HR10038** – 30l oil tank
- **HR10039** – 80l oil tank



6.2 Winch

The radio-controlled winch is an accessory on all Trejon Multiforest trailers. The winch is mounted in a well-protected location on the crane base. The oil flow to its hydraulic motor and electricity to the radio control are obtained via the crane's connections.
It is also possible to mount the winch on the crane boom.



Winch mounted in trailer

Handset (radio control) winch with buttons: on/off, in and out

Power supply via 2 x 1.5 V batteries of type: AA Alkaline (battery change once/year in the case of normal use).

Deflection pulley 19-234 for mounting on crane arm.

NOTE!
The winch cable must not be connected through deflection pulley 19-234 during crane work. Risk of damage to the machine.

Warning!
The winch may cause the grapple loader trailer to tip over when pulling high loads via the crane.

Inspect the cable and winch before use. Every day, before working with the winch, check that it is in working order. Repair visible damage. Particular attention must be paid when checking the cable and choker chain.
A broken line that flies out can result in serious personal injury.

Before starting winching, check that the tractor and trailer are on a firm and flat surface. During all winching work, consider the risk of overturning. For better stability, lower the outriggers and position the crane appropriately. Take particular care when working on slopes and when winching from the side. Use a deflection pulley to avoid winching sideways.
Check that the winching track is free and that the tractor's parking brake is applied.

Do not use the winch cable for towing or lifting cargo or another vehicle.
Always use a chain around the log and load the timber onto the trailer with the crane.

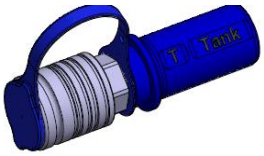
Keep people, especially children, away from the winch's working area. The risk zone for winching is 50 m.
Connect close to the end of the log so that it is not ejected if it gets stuck.
When using a deflection pulley, bear in mind the danger triangle, which represents the risk zone within which it is forbidden to remain when the winch is in use.

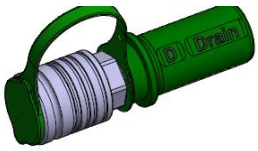
6.3 Hub operation

To increase accessibility in difficult conditions, the **MF1050** forestry trailer can be equipped with hub operation. The hub operation consists of hydraulic radial piston motors mounted in the wheel hubs. This type of operation is the most energy-saving solution and also provides high torque and high traction.
These motors can be operated from the tractor's hydraulic system or via the trailer's onboard hydraulic system. In the latter case, a greater traction is obtained because this hydraulic system works with a higher hydraulic pressure than an agricultural tractor.

NOTE!
When the hub operation is connected and switched on, the tractor must NOT be operated at a higher speed than the hub motors can operate the trailer. If this happens, a "snapping" sound comes out of the motors, which is directly harmful to the motors.

Hub operation connected to the tractor's hydraulic system must always be connected/disconnected during any form of movement of the trailer. The free return line and drain line must be connected to the tractor, if this is NOT done, the motors will be damaged.





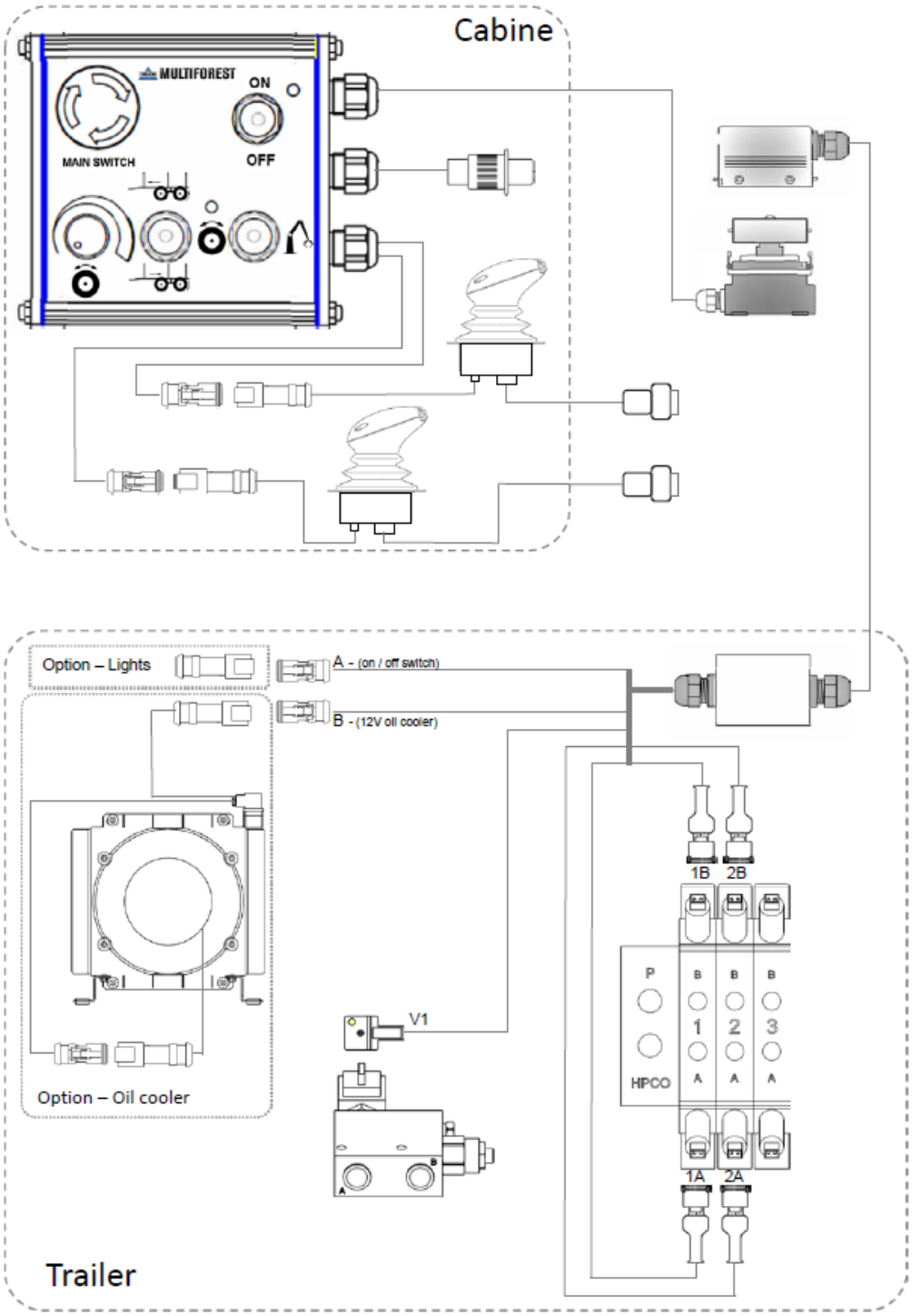
Driving with hub operation
When using these hub motors, no manual switch-on/off is required on the hubs.
Hub operation comes in two versions:

1. **Tractor delivers oil to the operation**
   The operation requires a single-acting hydraulic socket, a separate free return from the motors and a separate drain line.

2. **The trailer has an onboard hydraulic system**
   The tractor operates a PTO-driven hydraulic pump. There are two versions: 540 rpm and 1000 rpm. Refer to the marking on the hydraulic pump gear. Suitable speeds are 400-540 rpm and 800-1000 rpm respectively.

On the trailer there is an external oil tank with a capacity of 80 l. The oil tank has a sticker showing the type of oil it contains.

Electrical connection in

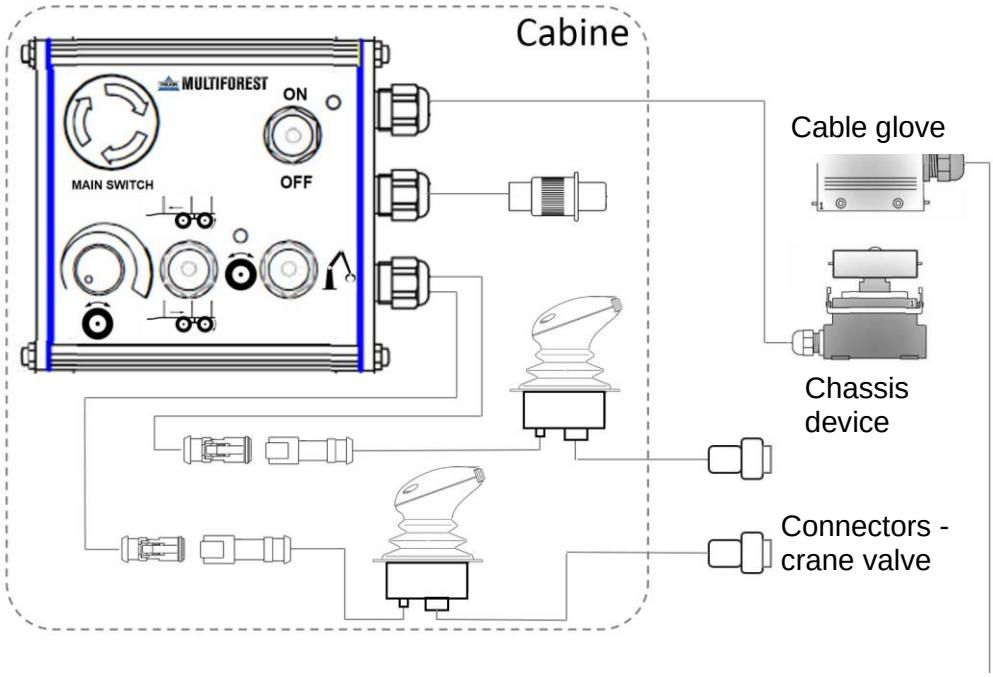


The trailer's electrical system is intended to be connected to +12 V and negative earth. The electrical system consists of two cable trunks and is prepared for two joysticks used to operate the crane. Connector B is a constant 12v and must be connected to the oil cooler's thermostat if used. Connector A is operated from the switch marked ON/OFF and supplies 12 V to, for example, work lighting. Inside the control box there are 10A fuses to protect these outputs.

The connectors are of type Deutsch DT04-2p and DT06-2s. Pin 1 is +12v and pin 2 is –.

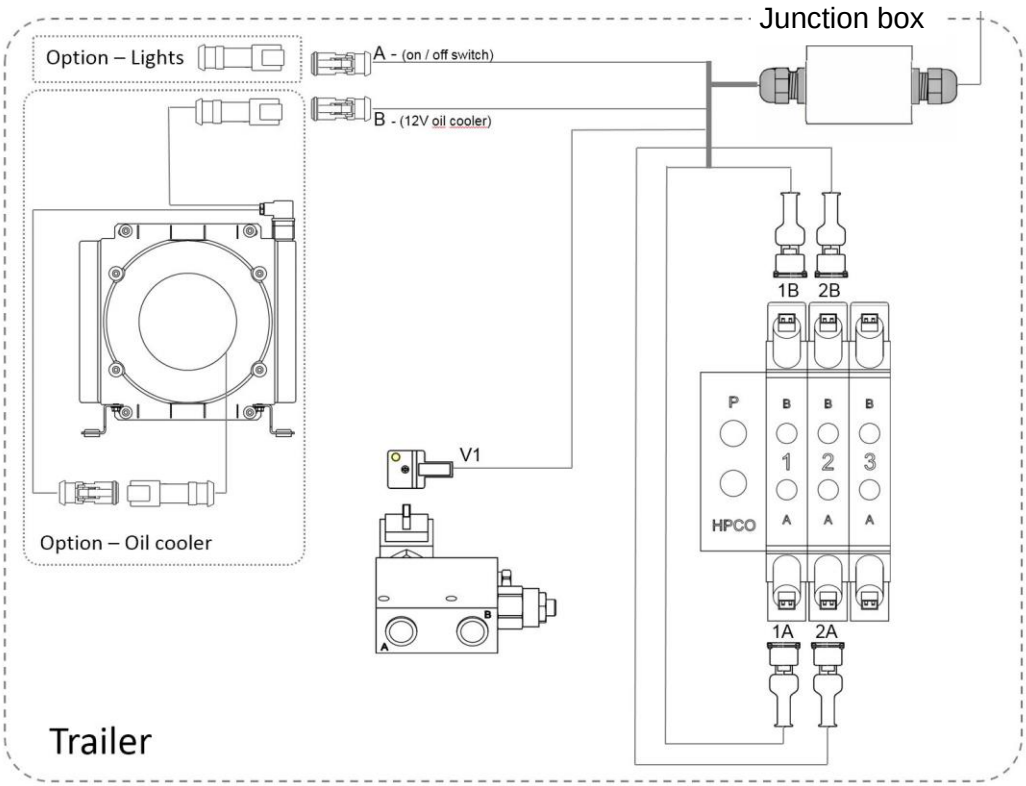
Cable trunk for tractor

The chassis device is screwed onto the outside of the tractor cab in a protected place and the cables are firmly anchored so that they cannot be pinched.
NOTE! Make sure the correct joystick is connected to the correct cable. If this is NOT done, the previous calibration will NOT match.



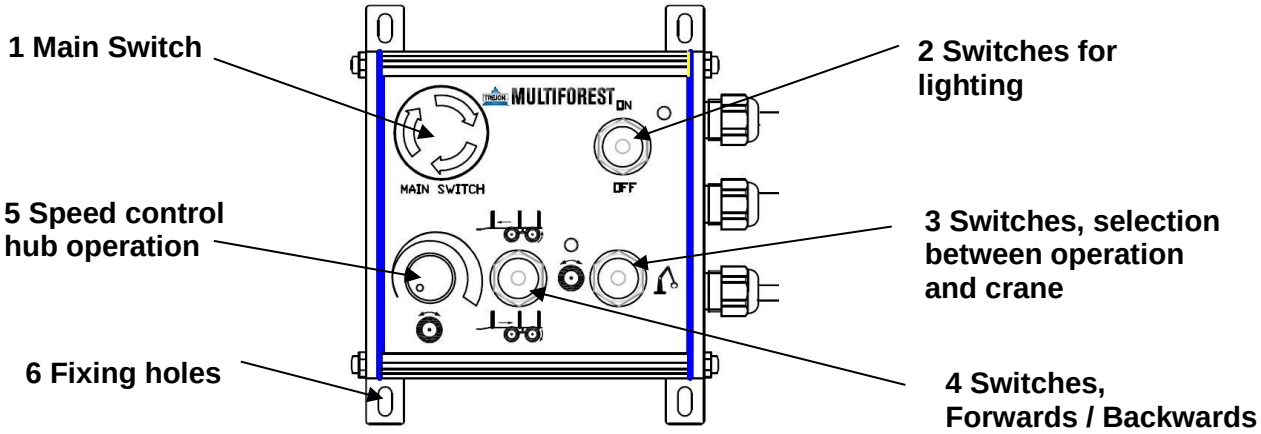
Cable trunk for trailer

Ensure to protect the cables from mechanical impact or direct water pressure



Control box

With the Trejon Multiforest control box, you can easily select the functions for the crane and trailer. Mount the control box in the tractor cab so that it is secured by attaching it to the four (**6**) mounting holes.



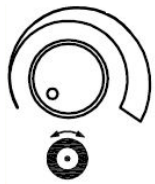
1. Activating the control box:
Turn the red main switch clockwise until it "jumps" up.
Now the box is activated and can control the trailer and crane functions.

1. Deactivating the control box:
Press the red main switch. Now all the features of the crane and wagon are disconnected.
When leaving the tractor, this button must be pressed in.

2. Work light switch (Optional extra)
This switch activates the working lights on the crane.
The working light is connected to the connector labelled A.
This output is protected with a 10A fuse inside the control box.

a. **3. Switch for selection between trailer operation and crane**
Set the switch to drive wheel - to activate the trailer hub operation
Green LED lights up. Set the switch to crane - to activate the joystick and operation of crane functions.
When this function is selected, it is necessary to wait for 1 second for the joystick to start up. ***If you extend the joystick too quickly, it will NOT start up.*** Set the switch back to 0 mode, select crane mode, wait 1 sec, and the joystick is ready for use.

4. Switch for selecting Forwards – Neutral – Back
Switch up - the trailer will be driven forward
Switch in centre - operation is in neutral
Switch down - the trailer will be driven backwards



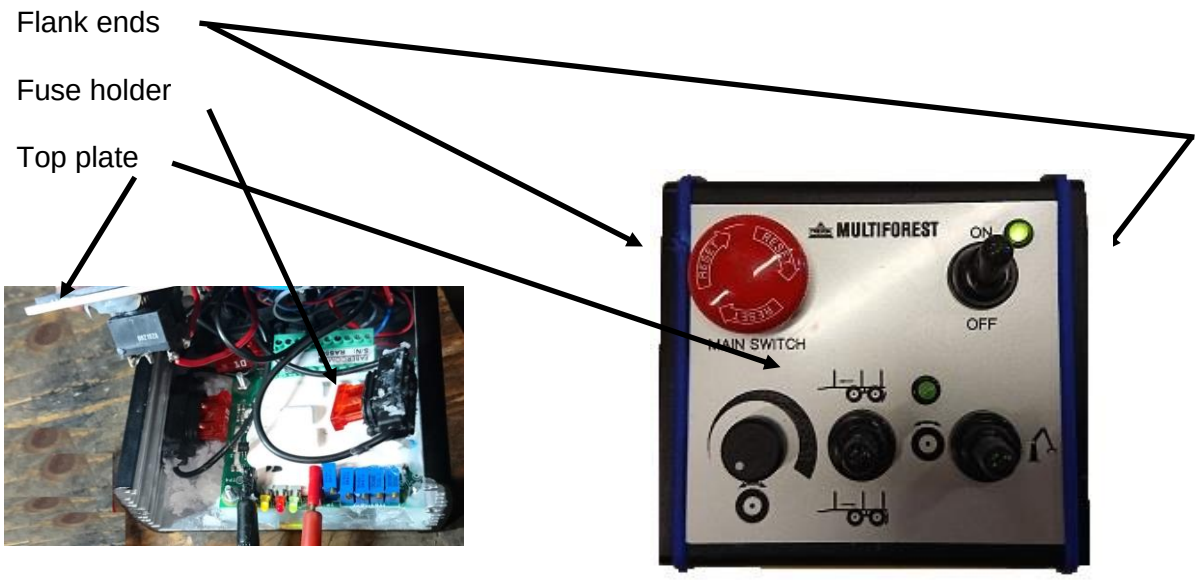
5. Operational speed control
With this knob-potentiometer the trailer speed can be changed when operational mode is connected. Turning the knob clockwise will increase the speed. The speed is also dependent on the hydraulic flow from the tractor/PTO pump. If you want to stop the trailer you should instead use the switch for **Forwards – Neutral – Back** instead.

Changing fuses

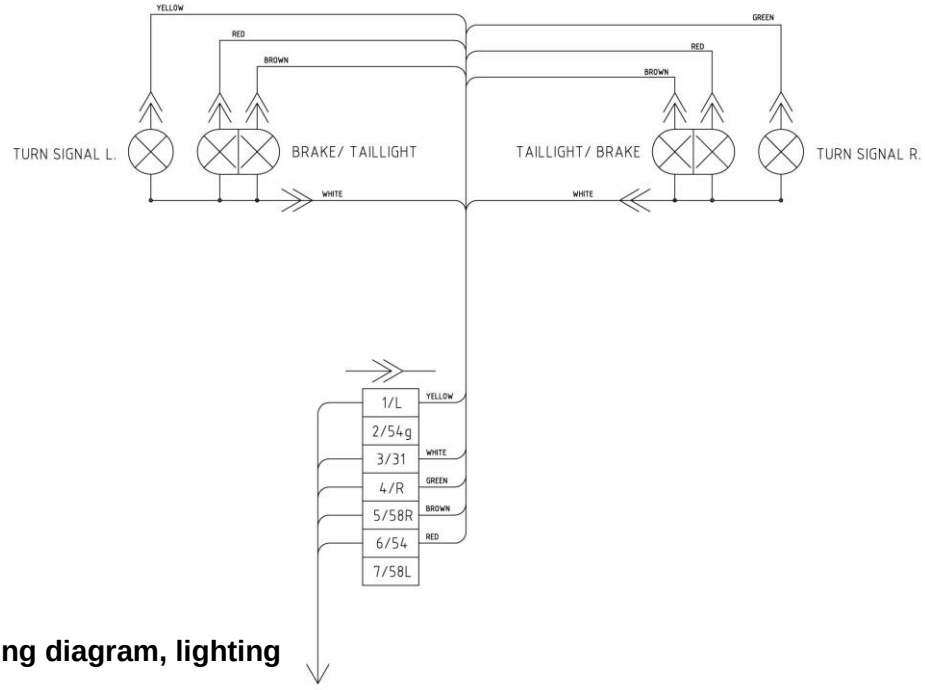
To replace these fuses, good technical knowledge is required. If there is uncertainty, please contact the nearest service centre.

To change the fuse, loosen the Torx screws holding both ends in place. To release the top plate, the aluminium profile must be widened and the top plate lifted up. The top plate sits in a groove in the profile.

NOTE! You must NOT pull the top plate sideways, as this will damage the electrical components.



6.4 Wiring diagram, lighting



Wiring diagram, lighting

7 Spare Parts

7.1 Use original spare parts

You are faced with the choice of “original” and “copy”!
The choice often depends on the price. A “cheap” purchase can often end up being expensive.

Some reasons for choosing TREJON’s original spare parts:

- Quality and fit
- Reliable function
- Longer life and thereby better economy
- Guaranteed availability through TREJON’s sales partners

TREJON original spare parts and accessories are designed especially for these machines. The fitting and/or use of non-original spare parts and accessories can negatively change the technical features of your machine. The manufacturer’s warranty will not apply to any damage caused by the use of non-original spare parts or accessories.

The warranty does not apply to arbitrary modifications that have been made to the machine.

Get in touch with the dealership where you bought your machine when ordering spares or other service. When ordering spares, always specify the correct model, type and serial number found on the name plate on the chassis.

Notes

EC certificate of conformity

according to EC standard 2006/42/EC

We TREJON FÖRSÄLJNINGS AB
(tenderer's name).....

SE – 911 35 Vännäsby, Företagsvägen 9
.....
(Full Company Address - In case of affiliated partners with registered office within the EC, the manufacturer's company name and address are also stated)

declare with sole responsibility that the following product,

Forestry trailer

MF650, MF850, MF950, MF1050, MF1050BS MF1202
.....
(make, type)

for which this certificate applies, complies with the current basic safety and health protection regulations in accordance with EC Standard 2006/42 / EC,
(if applicable)
and also meets the requirements of other applicable EC standards.

— — —

.....
(title and / or number and publication date of other EC standards)

(if applicable)

The following standard(s) and/or technical specification(s) have provided the basis for the professional introduction of the safety and health regulations set out in the EC standards:

EN ISO 12100-1 : 2010 EN ISO 12100-2 : 2010
.....
(title and/or number as well as publication date of standard(s) and/or technical specification(s))

Henrik Johansson
CEO

Vännäsby, 01.05.2021
.....
Issued (place/date)

.....
(Name, position and signature of authorised employee)

8 Warranty certificate / Proof of transfer

Guarantee- /assignment certificate

Guarantee terms	-	Valid between retailer (Trejon AB dealer) and machine purchaser.
General about guarantee	-	In order to obtain valid guarantee terms set forth below, and the specific guarantee terms set by each provider. These are attached to the user manual for each machine, as appropriate.
Validity of guarantee	-	The guarantee is 12 months from date of purchase. In some cases, the guarantee can be limited by running time.
The guarantee covers	-	Damaged parts, which have broken down because of defective production operations of materials in course of normal use of the machine.
	-	Only the labor cost for replacement of defective warranted part.
The guarantee does not cover	-	Transport costs applicable to the machine or the parts.
	-	Travel costs.
	-	Any resulting costs incurred as a result of damage to the machine.
	-	If the machine has been modified by the owner.
	-	Damage due to normal wear and tear of the machine – Not related to manufacturing defects, poor service, user inexperience or use of spare parts that are not original.
	-	Excessive or inappropriate use of the machine.
	-	The guarantee is not applicable to parts which are subject to wear, for example hoses, sealing, oil, belts, batteries, chains, knifes etc.
	-	The guarantee period for replaced parts during the guarantee period expires with the machine's guarantee.
	-	Normal adjustments, maintenance or supervision
Guarantee procedures	-	Contact place of purchase as soon as any damage or malfunction is detected. Do not use the machine if the damage can be worse.
	-	Guarantee repairs must be performed by Trejon AB approved workshop.
ATTENTION!		**The guarantee shall enter into force provided that the machine GUARANTEE/ ASSIGNMENT CERTIFICATE has been fully completed and signed by both parties (archived by the seller), and recorded on the Trejon web portal no later than 14 days from date of sale (the seller is responsible for this happening).**

Assignment certificate:

Machine Buyer shall confirm with his signature that he had received manual containing operating instructions, and received information about the operating, security and maintenance requirements described in this and made the final inspection of the machine.

PLEASE FILL IN!

Product: _____ Serialno. _____

Salesman: _____ Company: _____

Signature of salesman: _____ Date of purchase: _____

Name of buyer: _____ Telephone: _____

E-mail: _____

Address: _____ Zipcode: _____

City: _____ Country: _____

Date: _____ Signature of buyer: _____

We store personal data, see our privacy policy: https://www.trejon.se/enu/Dataskyddspolicy/

TREJON AB reserves the right to modify or improve shown models with technical or commercial motivations without the requirement to carry out the same modifications on machines already delivered. Illustrations in this Instruction Manual do not necessarily show the machine that has been delivered.

Technical information, dimensions and weights are not binding. All misprints reserved.

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