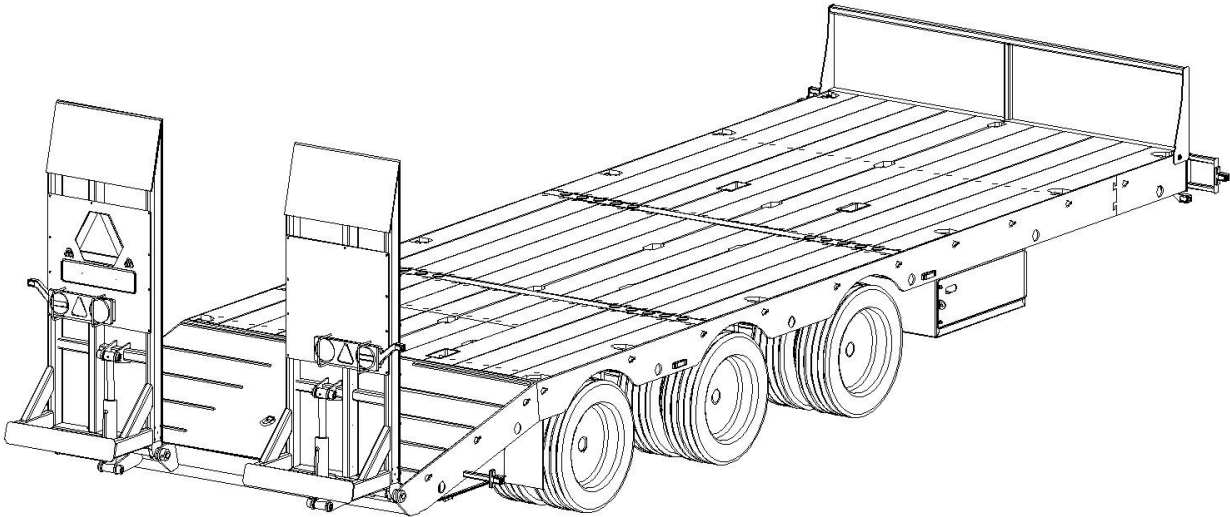


GLL Trailers Operator's Manual



Contents

1. Introduction	3
1.1. Basic introduction	3
2. Product description	3
2.1. General description	3
2.2. Technical specifications	4
2.3. Product identification	6
2.4. Hydraulic system	7
2.5. Electrical system	9
2.6. Air brake	10
3. Safety instructions	12
3.1. General safety instructions	12
3.2. Loading safety instructions	12
3.3. Hydraulic system	13
3.4. Tyres	13
3.5. Service and maintenance	13
3.6. Safety and information decals	14
4. Operating procedures	18
4.1. Connecting and disconnecting from the tractor	18
4.2. Loading and unloading the trailer	18
4.3. Trailer weight distribution	19
4.4. Load restrains	20
5. Periodic inspection and maintenance	20
5.1. Periodic inspection	20
5.2. Maintenance of axle bearings	20
5.3. Maintenance of tyres	21
5.4. Maintenance of hydraulic system	21
5.5. Lubrication	22
6. Warranty	25

1. Introduction

1.1 Basic Introduction

Before you begin to use the trailer, you should read and learn this Operator's manual. This manual describes basic rules of safe operation, use and maintenance of the trailer. Using trailer according to this manual ensures safe operation and long life, reliability of the equipment.

2. Product description

2.1. General description

GLL trailers have been designed for transporting excavators, tractors, forestry machinery and other heavy plant vehicles. Also it is suitable for transporting not bulk cargo. Every other use of trailer is forbidden.

2.2. Technical specifications

Table 1: GLL range technical specifications

	GLL4-18	GLL4-18L	GLL4-24	GLL4-27	GLL4-30
Gross weight	25 000 kg	25 000kg	35 500kg	35 500kg	35 500kg
Max. payload	18 000 kg	18 000kg	23 000kg	23 000kg	30 000kg
Max. load on drawbar	4 000 kg	4000kg	4000kg	4000kg	4000kg
Number of axles	2	2	3	3	3
Max. speed	40 km/h	40 km/h	40 km/h	40 km/h	40 km/h
Max. tipping angle					
Brakes	300x160	300x160	300x160	300x160	300x160
Electric system	12 V	12 V	12 V	12 V	12 V
working platform length	5550mm	7050mm	6550mm	8000mm	10010mm
Overall length	7729mm	9729mm	9229mm	10680mm	12680mm
Overall width with standard tyres	2550mm	2550mm	2550mm	2550mm	2550mm

Table 2: GLL range technical specifications

	GLL4-18 HS	GLL4-18L HS	GLL4-24 HS	GLL4-27 HS	GLL4-30 HS
Gross weight	24 000 kg	24 000kg	34 000kg	34 000kg	34 000kg
Max. payload	18 000 kg	18 000kg	23 000kg	23 000kg	30 000kg
Max. load on drawbar	4 000 kg	4000kg	4000kg	4000kg	4000kg
Number of axles	2	2	3	3	3
Max. speed	60 km/h	60 km/h	60 km/h	60 km/h	60 km/h
Max. tipping angle					
Brakes	300x160	300x160	300x160	300x160	300x160
Electric system	12 V	12 V	12 V	12 V	12 V
working platform length	5550mm	7050mm	6550mm	8000mm	10010mm
Overall length	7729mm	9729mm	9229mm	10680mm	12680mm
Overall width with standard tyres	2550mm	2550mm	2550mm	2550mm	2550mm

2.3. Product identification

The manufacturer's plate is located in the front of the trailer as it is shown in **FIGURE 1**. Welded on serial number is located on the side of drawbar tube.

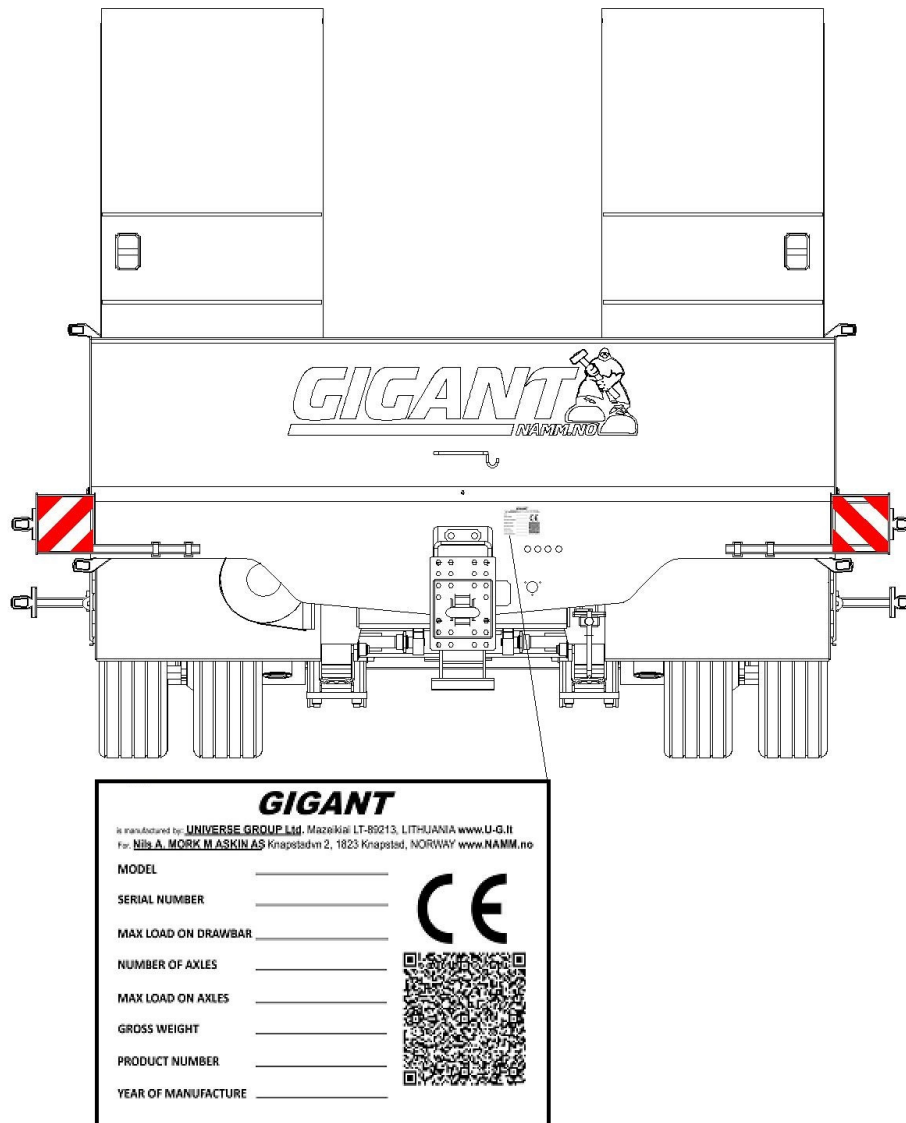


Figure 1: Technical Plate

2.4. Hydraulic system

Max. working pressure in hydraulic system **200 bar**.

Hydraulic brake system scheme is provided in **Figure 2**

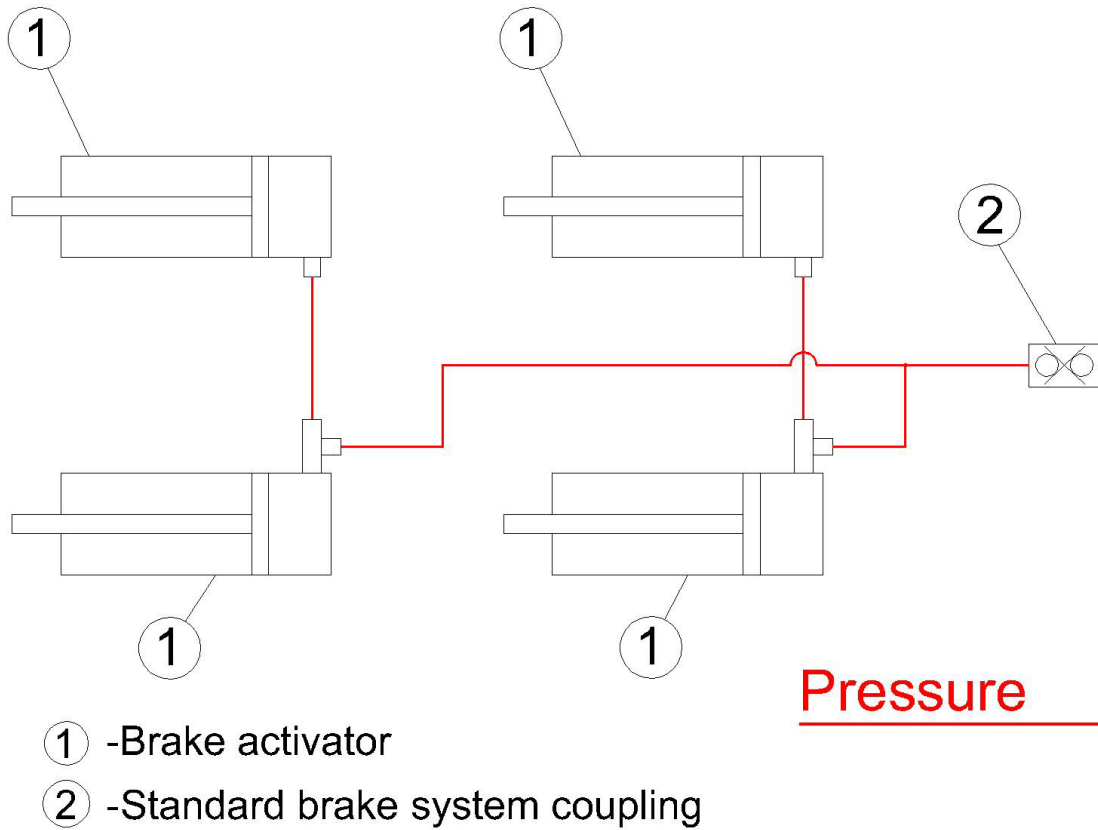


Figure 2: Brakes hydraulic scheme

Ramps Hydraulic system scheme is provided in **Figure3**

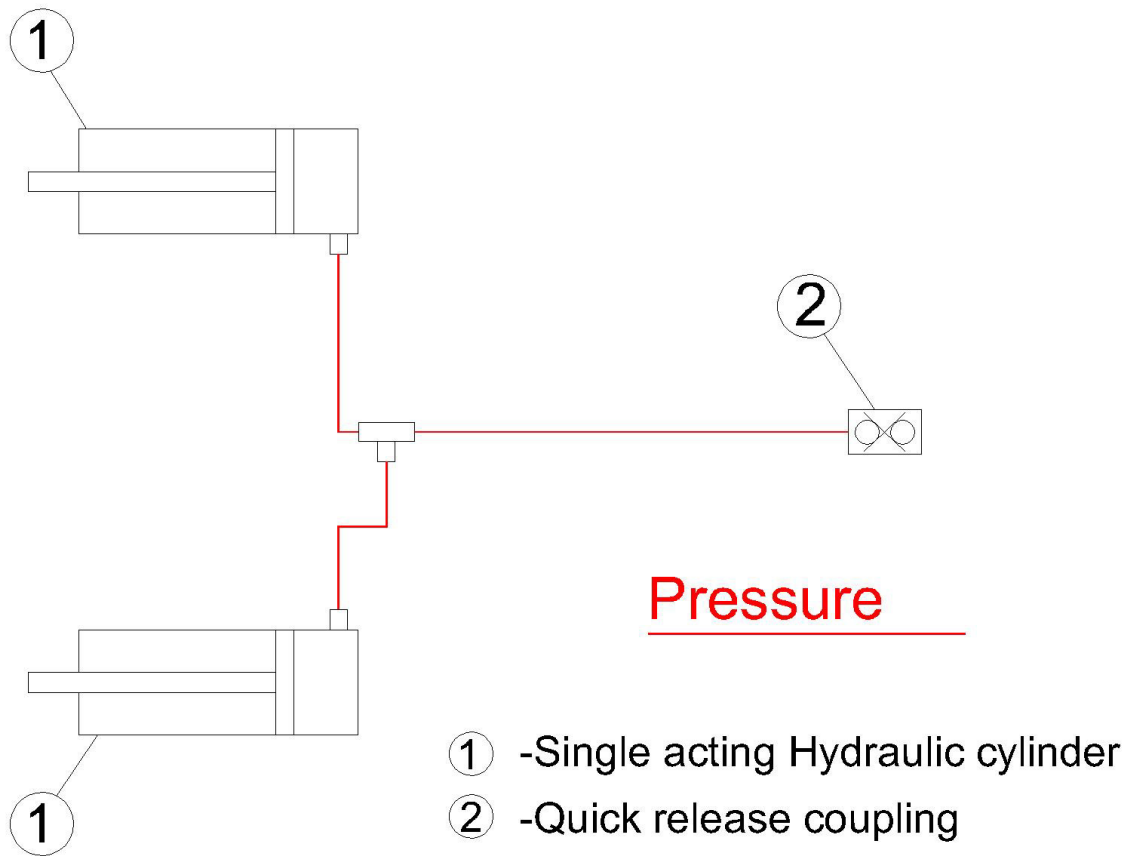


Figure 3: Ramp hydraulic scheme

2.5. Electrical system

The trailer electric system has been designed for feeding from tractor's 12V direct current source. Electric installation scheme is provided in Figure 4. System can be connected to the tractor with standard electric plug 7PIN 12V ISO 1724.

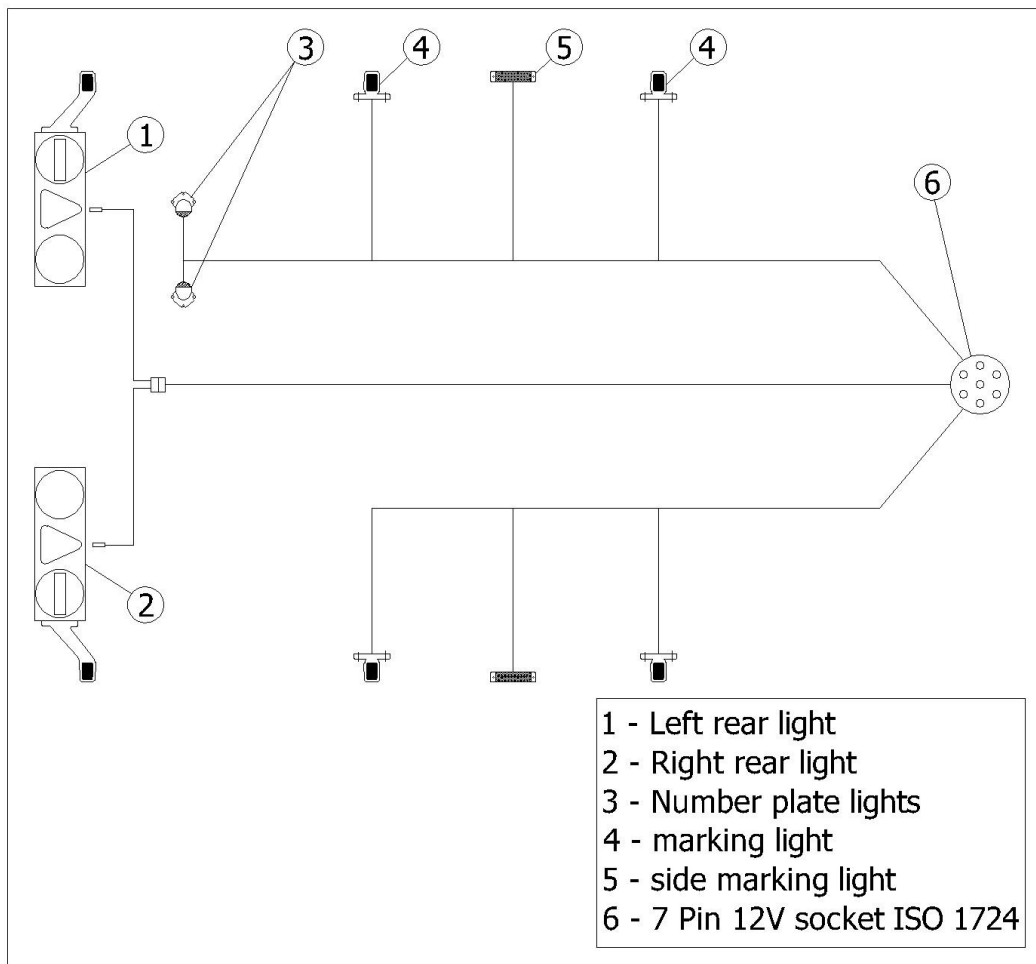


Figure 4: Electric scheme

2.6. Air brake system

Air brake system (without ABS) scheme is provided in **Figure 5**

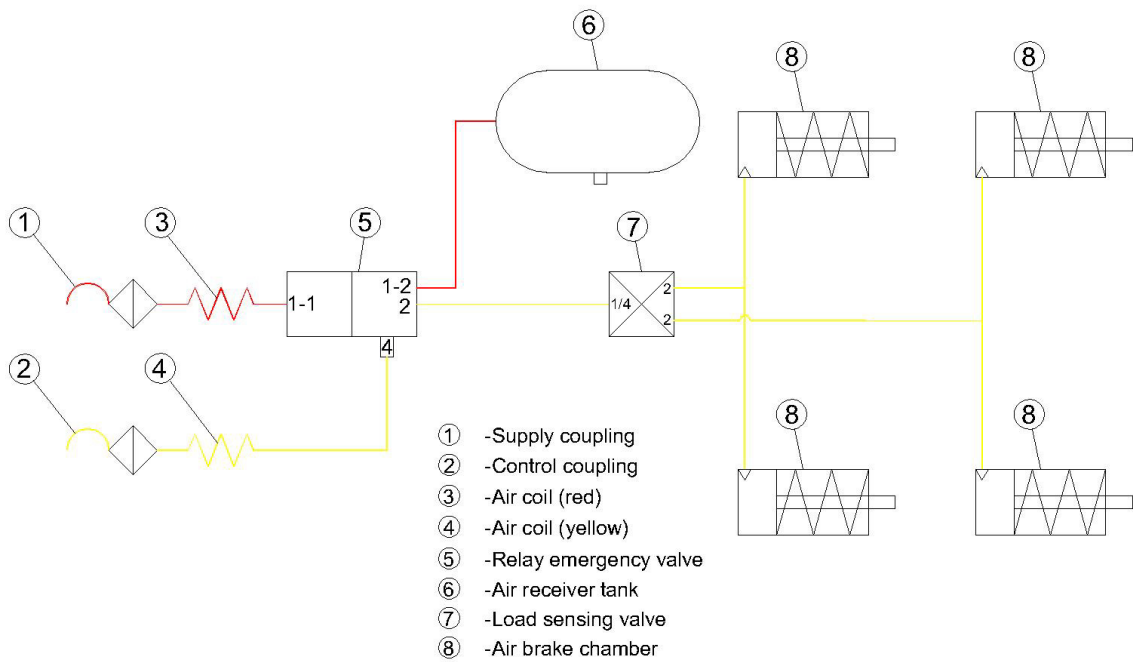


Figure 5: Air brake system (without ABS) scheme

Air brake system with ABS scheme is provided in **Figure 6**

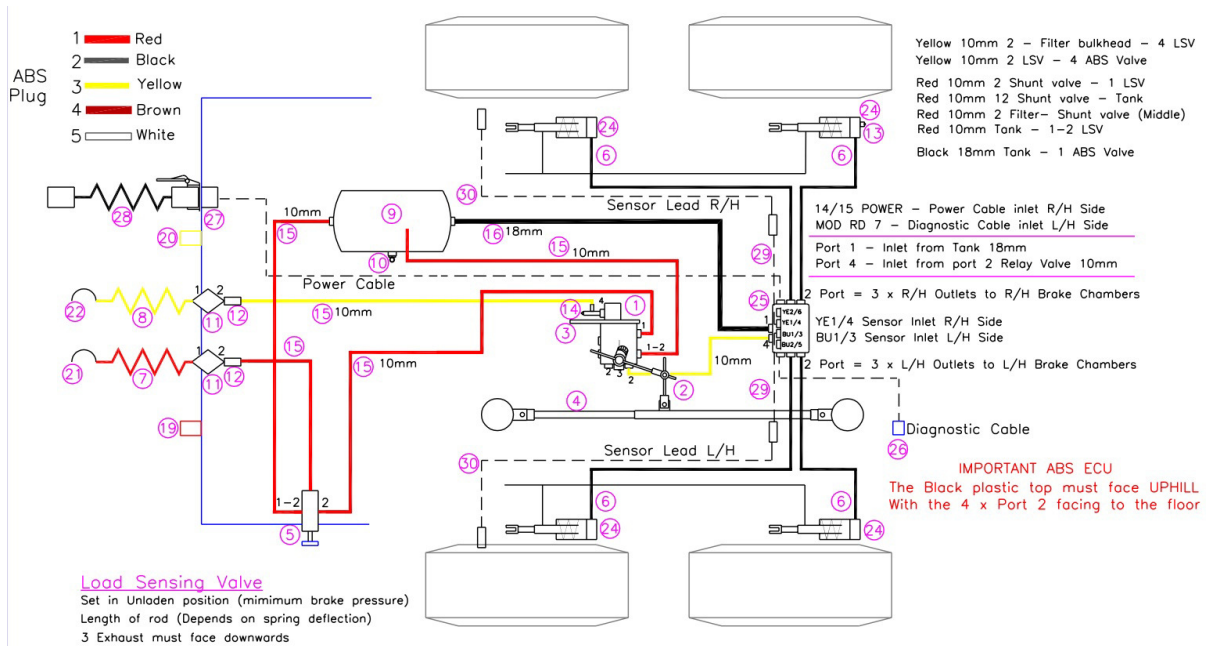


Figure 6: Air brake system with ABS scheme

3. Safety instructions

3.1. General safety instructions

- ◆ It is forbidden to operate the trailer by untrained operator. Before starting using the trailer operator must read and learn this manual.
- ◆ Before each use the operator must check trailer's technical condition. Always check braking system, ramp hoses, lightning system and hitch system.
- ◆ Do not operate the trailer under influence of drugs, medicine, alcohol or you are tired or sick.
- ◆ Use the trailer only for the purpose it was designed for.
- ◆ Do not allow riders on any part of the trailer during road travel.
- ◆ Keep hands, feet, clothing and hair away from all moving parts.
- ◆ Tie load before moving or transporting trailer.
- ◆ Check tie-downs frequently during transport to prevent shifting or movement of the cargo.
- ◆ Clear the area of all bystanders, especially children, before starting up and operating tractor, trailer or equipment.
- ◆ Make sure that all lights and reflectors are in place, clean and can be seen by all overtaking and oncoming traffic.
- ◆ Do not exceed stated loading limits.
- ◆ Do not exceed permissible speed limit.
- ◆ It is permitted to climb up the trailer only when it is stationary and engine of the tractor is stalled.
- ◆ Perform trailer maintenance regularly as it is stated in this manual.
- ◆ Use only genuine parts for service and repair to ensure reliable operation of the trailer.
- ◆ Follow the instructions and information provided on safety decals. Replace immediately any damaged decals on the trailer.
- ◆ Before disconnecting the trailer from the tractor make sure that the tractor and trailer are on level ground and that the trailer park brakes are applied.

3.2. Loading safety instructions

- ◆ Do not drop load on trailer in order to prevent damaging the cargo or the trailer.
- ◆ Place concentrated heavy loads over chassis main beams when loading.
- ◆ Tie load securely before moving or transporting.

- ◆ Check tie-downs frequently when transporting and keep them tight.
- ◆ Do not exceed load concentration and total load carrying specifications for trailer.
- ◆ Do not side load.

3.3. Hydraulic system

- ◆ During connection of hydraulic system to tractor, tractor couplings must not be under pressure.
- ◆ Check regularly condition of hydraulic system.
- ◆ In case of failure stop all operations and disconnect hydraulic system from the tractor until the problem is removed.

3.4. Tyres

- ◆ Retighten the wheel nuts after:
 - The first time of use.
 - The first laden journey.
 - The first 1000 km.
 - Monthly

Repeat every time the wheels are changed or removed.

- ◆ Check regularly tyre pressure.
- ◆ Replace tyre when protector depth is below 2 mm.

3.5. Service and maintenance

- ◆ Do not use the trailer with any defect.
- ◆ Servicing and maintenance works must be performed in accordance of general work health and safety instructions.
- ◆ Disconnect electric system from the tractor before repairs of electric installation or welding operations to be applied to the trailer.
- ◆ If during servicing and maintenance works trailer is connected to the tractor then the tractor engine must be stalled.
- ◆ During warranty period any service activity must be performed only by

manufacturer's authorized service team. Servicing by unauthorized personnel will decline any warranty claim.


- ◆ Use only original spare parts or parts indicated by the manufacturer. Use of not original parts will decline any warranty claim.





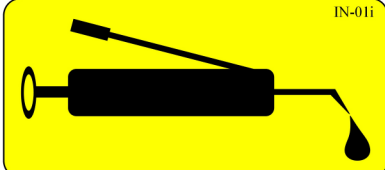
3.6. Safety and information decals

Decals presented in **Table 3**.

Decals location on the trailer shown in **Figure 7 and 8**.

Table 3: Safety and information decals

No.	Code	Decal	Meaning
1		<p>ADVARSEL FJERN ALLTID LASSET FØR AVSTØTTING TIPPSTØTTEN BEREGNET BARE FOR TOMT LASTEPLAN</p>	Information decal
2	IN-04i		Ensure wheel nuts are kept tight
3		<p>GLL4-18;GLL4-18E;GLL4-18L;GLL4-24;GLL4-27;GLL4-30</p>	Model name

4			
5	IN-02i		Safety decal
6	IN-03i		Keep off moving parts
7			
8			Grease nipple location

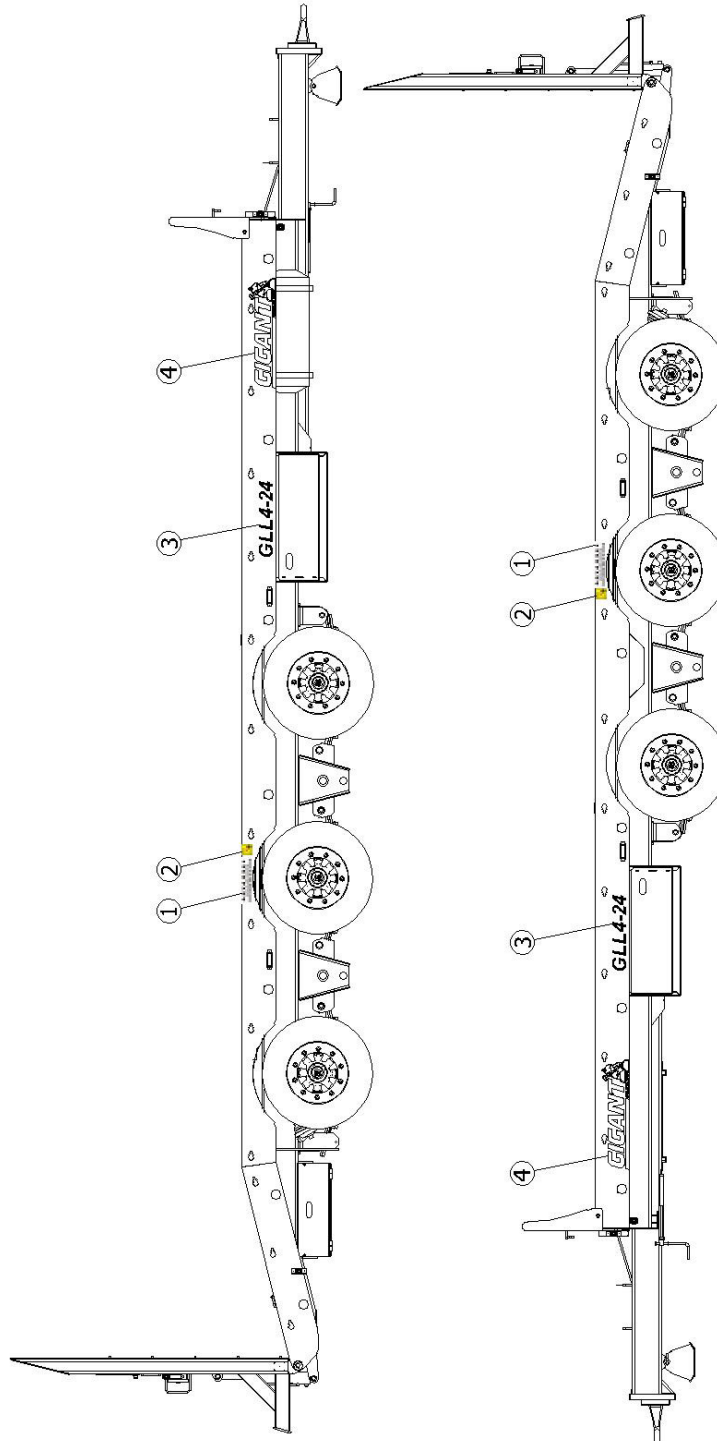


Figure 7: Decals location (side views)

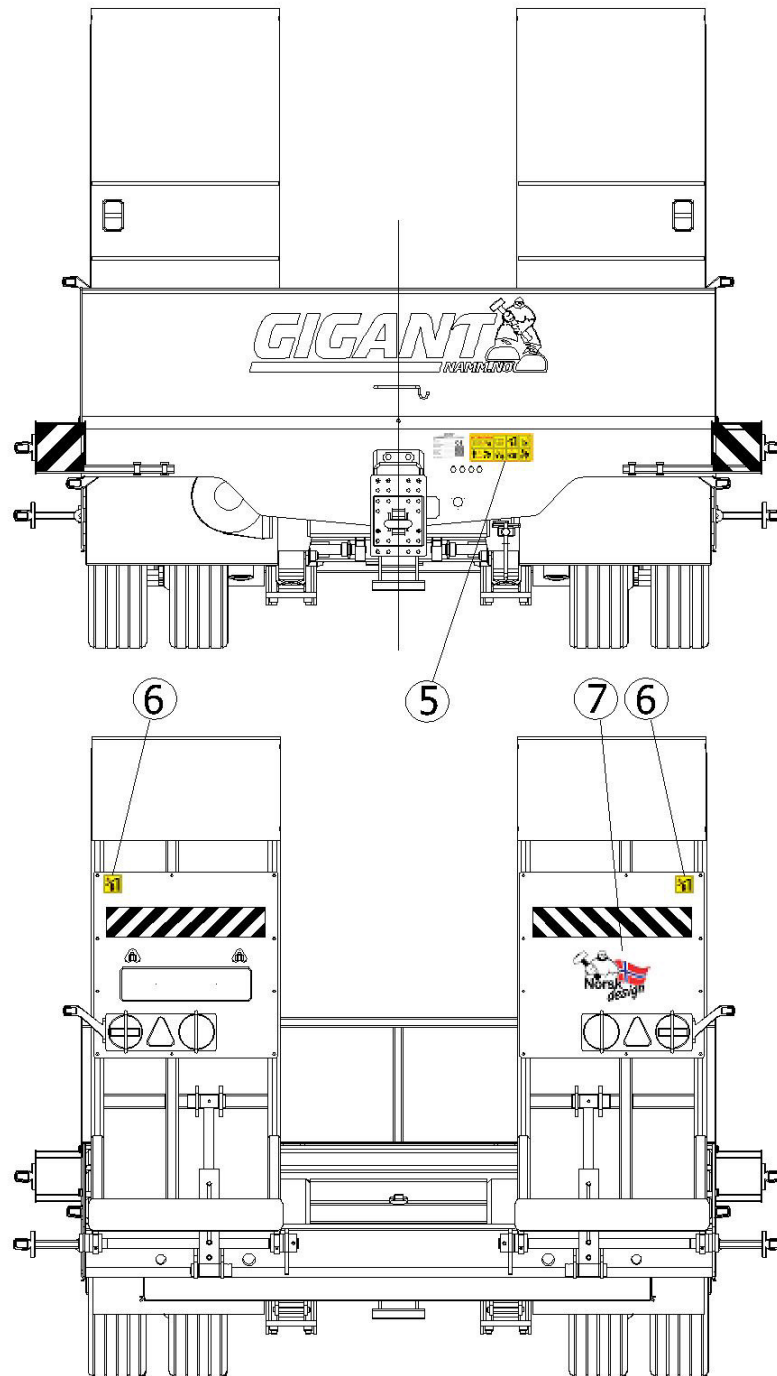


Figure 8: Decals Location (Front and rear views)

UAB „Universe Group“ accepts no liability for any loss or damage caused by failure to comply with safety instructions in this manual or by carelessness.

4. Operating procedures

4.1. Connecting and disconnecting from the tractor

- ◆ Check that the trailer hitch is compatible with the tractor.
- ◆ Always connect lightning system, hydraulic system and brake system when connecting trailer to tractor. When disconnecting trailer from tractor always disconnect lightning, brake and hydraulic systems also.
- ◆ Ensure that nobody is staying between the tractor and trailer when connecting or disconnecting trailer from tractor.
- ◆ Trailer must be secured from rolling before disconnecting from the tractor.
- ◆ It is forbidden to disconnect loaded trailer.

4.2. Loading and unloading the trailer

- ◆ It is forbidden to exceed the permissible loading limit.
- ◆ The load must be evenly divided over the trailer.
- ◆ Do not drop a load on the trailer. Place it on the floor in a position of equalize load distribution.
- ◆ Do not load uncoupled trailer.
- ◆ Determine the load carrying capacity of your trailer and the proper load position before you start loading.

4.3. Trailer weight distribution

- ◆ Trailers are designed for uniform load distribution. The load should be distributed equally between the front and rear of the trailer.
- ◆ Crosswise weights should be equally distributed (**FIGURE 9**). A heavy load should not be placed on one side. This will overload suspension and tyres on that side. Place load so that weight will be equal on rear tyres, eliminating possible twisting of the frame and overloading of axle housing and wheel bearings.
- ◆ When loading heavy concentrated loads not occupying full trailer floor area then:
 - a) Do not place heavy concentrated loads on trailer edges.
 - b) Heavy concentrated loads must be placed on chassis main beams.

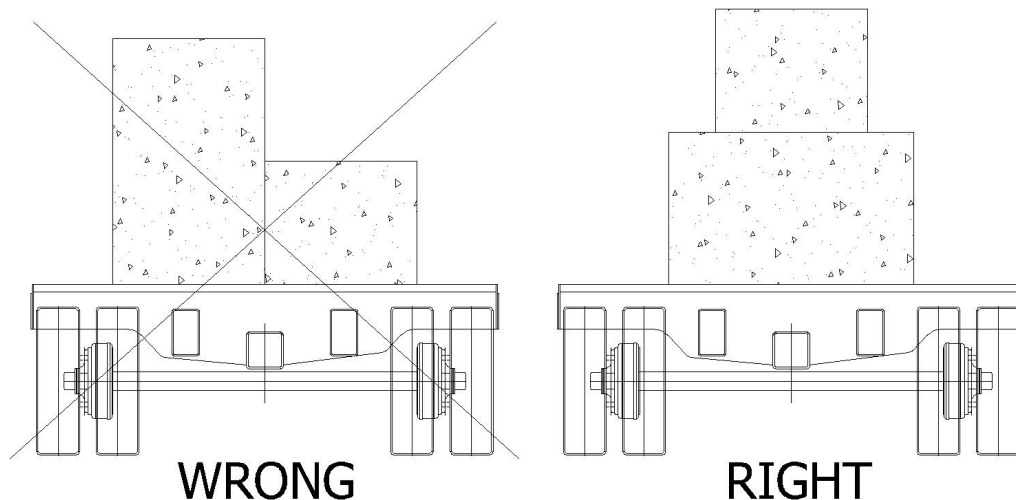


Figure 9

4.4. Load restrains

All loads must be properly secured before moving or transporting the trailer to prevent cargo movement. Attach the load restrains in a crossing pattern to prevent both lateral and longitudinal movement. Do not exceed the working strength of the restrains or the anchor. Check the restrains frequently during transport to ensure they stay tight. If they remain loose, the load can shift or move and lead to an unsafe condition.

5. Periodic inspection and maintenance

5.1. Periodic inspection

Weekly inspection

- ◆ Check all valves, hoses and pipes and report damage immediately to your service department.
- ◆ Grease all necessary points (see **Table 4**)
- ◆ Check brake operation.
- ◆ Check wheel nuts.
- ◆ Check functionality of lighting system of the trailer.

Monthly inspection

- ◆ Wash the trailer.
- ◆ Check all mechanical parts for damage and correct operation.
- ◆ Check that all fixing bolts are tight.
- ◆ Check the complete hydraulic installation, all valves, hoses and pipes for leaks and damages.
- ◆ Grease all necessary points (see **Table 4**)
- ◆ Check that all safety decals are mounted.

5.2. Maintenance of axle bearings

After first 50km and then after 500h or at least yearly check the play of axle hub

bearings. Position the vehicle on a level surface. Let the axle hub that you need to work on free to rotate. Make sure that the vehicle is kept absolutely immobile. Lift the axle you need to work on until the tyres are no longer touching the ground.

Make sure that the lifting equipment used is adequate for the weight of the vehicle is kept absolutely immobile, even after the axle is raised.

Place two levers between the tyre and the ground and, by raising and lowering the levers, verify that there is no clearance in the hub.

If there is clearance, adjust the bearings as described below.

- 1) Dismantle the hubcap and put it in a clean place to avoid dirt getting into it.
- 2) Remove the split pin from the castellated nut.
- 3) Tighten castellated nut until the bearings come into contact with the surface, i.e. until the key used for tightening requires considerably more force to turn the nut further.
- 4) After gently turning the hub once, slightly loosen the castellated nut and tighten it until once more in contact with the surface.
- 5) Check the position of the holes for the split pin and turn the castellated nut in order to align the slits with the nearest hole.
- 6) Verify that the hub is free to rotate and that it does not offer excessive resistance.
- 7) Insert a new split pin into the free hole and bend it back.
- 8) Reassemble the hubcap.

5.3. Maintenance of tyres

Tyres should be inspected regularly for cuts and damage. Always ensure that the tyres are inflated to the manufacturers recommended pressure. Never exceed the rated load and speed of the tyre.

5.4. Maintenance of hydraulic system

Hydraulic system must be totally tight. Check regularly for any leakages and if necessary tighten the couplings or replace them.

5.5. Lubrication

In order to ensure safe and reliable exploitation the trailer must be periodically lubricated. All greasing points on the trailer are marked with decal. Below you will find information regarding lubrication intervals (**Table 4**) and greasing points places (**Figure 10 and Figure 11**).

Lubrication **Table 4:**

No.	Lubrication place	Number of grease points	Frequency of lubrication
1.	Rocker	1pcs. per rocker	weekly
2.	Spring fixing pin	1pcs. per spring	weekly
3.	Ramps main pin	2pcs. per ramp	Daily
4.	Ramp hydraulic cylinder	2pcs. per cylinder	Daily
5.	Brake lever	2pcs.per axle	Daily
6.	Brake shaft	2pcs.per axle	Daily
7.	Steering axle main pivot pin	4pcs.per axle	Daily
8.	Steering axle rod	2pcs.per axle	Daily

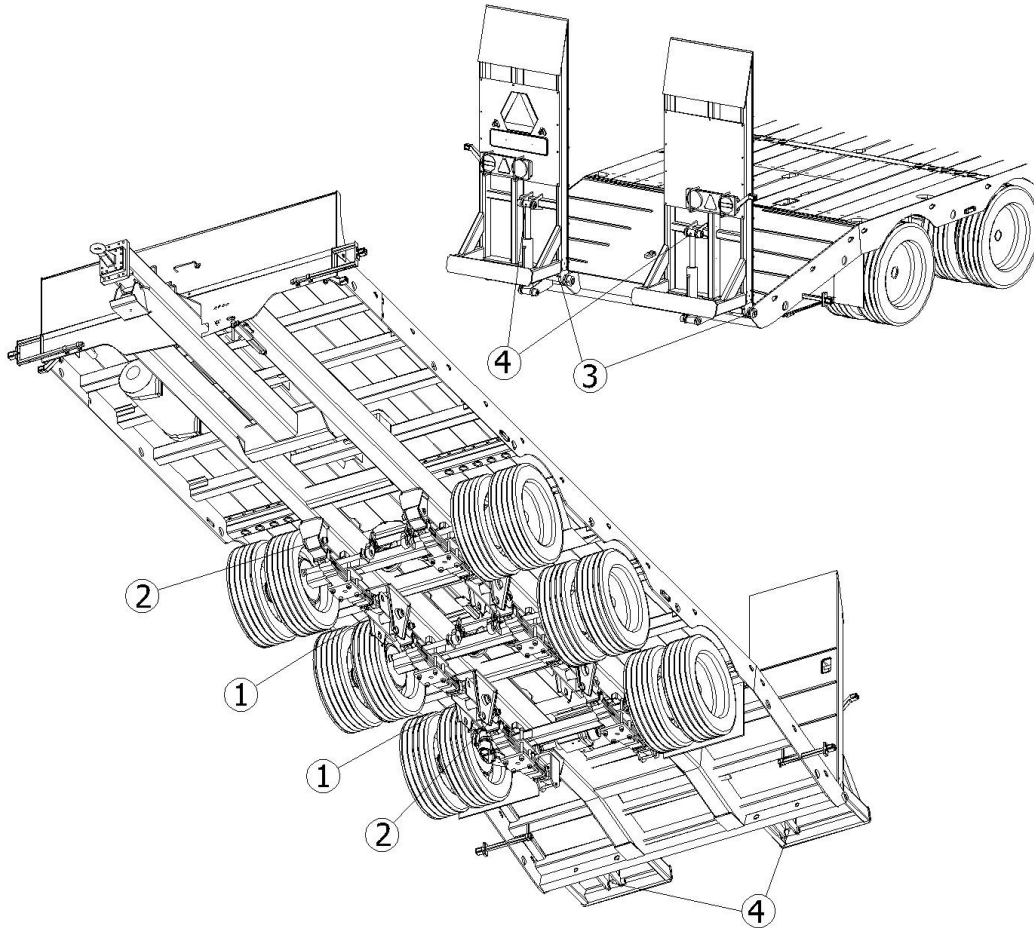


Figure 10: Greasing points

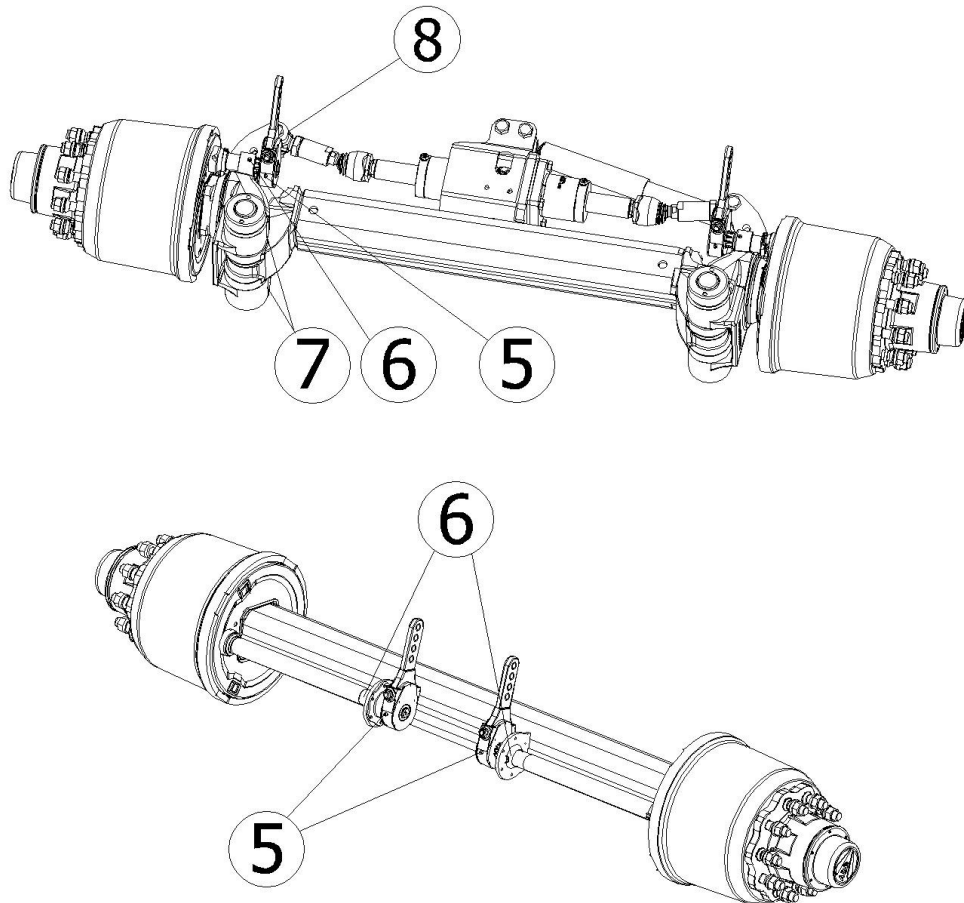


Figure 11: Greasing points

6. Warranty

UAB „Universe Group“ guarantees efficient operation of the trailer during its use according to technical and exploitation conditions described with this manual. The given warranty period for all new trailers is 12 month from date of purchase.

Circumstances which exempts the manufacturer from all liability:

- ◆ Non observance of the specification contained in this manual.
- ◆ Use of not original spare parts.
- ◆ Trailer servicing by unauthorized personnel during warranty period.
- ◆ Exceptional events (storms, earthquakes, floods etc.).
- ◆ Replacement of worn parts such as brake linings, tyres.
- ◆ Trailer use not for purpose it was built.
- ◆ Exceeded technical payload.
- ◆ Exceeded speed limit.
- ◆ Trailer physically damaged, not manufacturer's fault.