



**Kellfri®**

# **21-SV27 FORESTRY TRAILER**



**CAREFULLY READ THE OPERATING INSTRUCTIONS BEFORE USING THE PRODUCT!**

**OPERATING INSTRUCTIONS TRANSLATED FROM THE ORIGINAL**

## TABLE OF CONTENT

	Sidan
1. Introduction .....	3
2. Product information .....	3
3. For your safety .....	4
4. Product safety information .....	4
5. Incase of emergencies .....	5
6. Personal protection .....	5
7. Warning signs and labels.....	5-6
8. Surroundings .....	7
9. Safety measures before use.....	7
10. Connecting the trailer .....	7
11. Operating the machine and connecting equipment.....	8
12. Use and care .....	8
13. After use .....	8
14. Transporting and storing .....	8
15. Maintenance and service - trailer.....	9
16. Assembly guide 21- SV27 .....	12-13
17. Rotator .....	14
18. Rotator implement .....	14
19. Instructions - Rotator .....	15
20. Service and maintenance - Rotator .....	15
21. Spare parts - Rotator .....	15
22. Spare parts SV27 .....	16-17
23. Technical data Crane.....	18
24. Lift diagram .....	19
23. Operating .....	20
24. Loading work .....	21
25. Warranty terms and conditions.....	24

Some information is taken from the book "Run to the forest proper and safe" from  
the Swedish Agricultural University

## **1. INTRODUCTION**

Thank you for choosing a product from Kellfri AB. By following the general safety information and the instruction manual and by using common sense, you will have a great and safety use of your Kellfri product for many years.

Kellfri designs and delivers effective, affordable machinery and components for forest, agriculture, construction and gardening in Sweden, other Nordic countries and Europe.

## **2. PRODUCT INFORMATION**

Kellfri forestry trailer allows loading and unloading of timber. The forestry trailer is designed to be connected to the tractor's towing device and towed by a farming tractor. Kellfri does not provide any customizations between towing vehicle and the forestry trailer.

Kellfri forestry trailer SV27 that has a total width of 133 cm is extremely flexible with great maneuverability in forest terrain. It is easy to get in among the trees and past wind traps. Hydraulic support legs, double frame and low placed turn housings make the cart becomes very stable both when loading and driving in the woods. A separate unit powers the crane with levers. The crane lifts 200 kg at 2.7 m. Kellfri forest trailer SV27 is perfect on land with low bearing capacity and sensitive cultural environment sites. You minimize soil damage and can use the rig year round regardless of weather. You get increased access to the forest with a Kellfri SV27. Equipped with hydraulic support legs and 50 mm rotatable ball coupling.

### **TECHNICAL DATA**

### **21-SV27**

Max load	2,7 tons
Crane reach	2,7 m
Wheels	205/65 R15
Support foot	Standard
Coupling	50 mm ball
Bolsters	8
Hydraulic support legs	Standard
Lifting capacity 2,7m	200 kg
Grip area	0,08. m <sup>2</sup>
Rotator	Yes, rotating
System pressure	16 Mpa
Valve	multi-lever 7 st
Brakes	No
Motor	6,5 hk
Load width bottom of trailer	630 mm
Load width top of trailer	1000 mm
Ground clearance	300 mm
Operating weight	640 kg
Ball coupling pressure	180 kg

### **3. FOR YOUR SAFETY**

Before using the product, please read the safety information and instruction manual and understand its contents for your own and others' safety. Always keep the safety information and instruction manual easily accessible to the user of the product. Remember that it may be good for your own and others' safety to read the safety information every now and then. If the instructions manual is damaged or otherwise unusable, please contact and order a new one from:

Kellfri AB, Munkatorpsgatan 6, 532 37 SKARA. Tel: 0511-242 50

The general safety instruction is also available from Kellfri's website: [www.kellfri.co.uk](http://www.kellfri.co.uk)

Do not use this equipment if you are feeling sick, tired or in influence of alcohol. Nor if you are under the influence of strong medications or drugs, suffering from strong depression or severe mental illness. Always follow the general traffic rules and regulations and the rules of the Animal Welfare Act. Persons under 15 years old and people with mental illness may not use these products.



The product must not in any circumstances be modified without permission from the manufacturer. Unauthorized modification of the machine and/or accessories can cause fatal injuries or death to operator or others.

### **4. PRODUCT SAFETY INFORMATION**

- Read the instructions carefully before using this product.
- For safety reasons the forestry trailer can only be used in the manner prescribed in this instruction. The user is responsible for the instructions are read through and followed. Implements connected to the tractor – read the manual of the tractor.
- Always check the performance of the machine combination that will be used with the forestry trailer to ensure safety and performance.
- Never overload the trailer!
- Never leave the driver's seat until the towing vehicle is braked.
- Danger zone 15 meters. No one other than the operator may be present within the danger zone during operation with the forestry trailer.
- The trailer may not be parked with the load unattended!
- When the forestry trailer shall be disconnected, it must be done with unloaded carriage on flat ground and the trailer wheels must be secured with appropriate brake pads.
- To stop the movement of the trailer in case of emergency, use the unit's stop device.
- At interruption of oil supply to the crane, there is a risk of losing suspended load. First lower the lifting arm then the folding arm and unload the grapple claw.
- The tractor should be equipped with fire extinguishers of type ABE2 or 3. Contact your insurance company.
- Forestry trailer is equipped with a 50mm ball coupling. Check the condition of the coupling regularly. Maximum tensile loading on the ball coupling is 9 tons and maximum pressure 3 tons.
- The noise level of the trailer does not exceed 70 dB (A)
- Be careful when working with equipment that has hydraulic hoses because the oil under pressure can penetrate the skin. Seek medical attention immediately if this occurs.
- The trailer is not equipped with a lighting device and it is intended for use only in daylight. Otherwise equip the forestry trailer with magnetic taillight.



Never use faulty safety equipments!

**Kelfri disclaim any responsibility for self-made modifications, changes or alterations!**

## **5. INCASE OF EMERGENCIES**

In case of an emergency please dial 112.

Keep cell phone or emergency phone available specially when working alone. First aid kit and fire extinguishers must be kept easily accesable during all work, maintenance and service.

## **6. PERSONAL PROTECTION**

Always wear suitable clothing and footwear. Do not wear loose clothing or jewelry when using the machine. Remember to put up long hair when operating rotating machines. Wear protective gloves, to prevent risking burns on contact with hot surfaces such as exhaust system, and to avoid oil and gasoline on the skin. Hearing protection should be used when the engine is running.



## **7. WARNING SIGNS AND LABELS**

Ensure that warning labels are always visible and clean. Clean the warning labels as required. Do not rinse using pressure washer directly on the warning labels. Any damage/ broken stickers should be replace. Order new stickers from your supplier. When traveling on public roads, the LSV sign has to be visible and stay in place. The forestry trailer is equipped with the following decals: (see next page)

- When traveling on public roads, the SMV sign must be attached.
- EU rules decide the speed of which the trailer without brakes must follow. Follow these rules.

Symbol	Explanation
  	<p>Read the instruction manual! Before work begins. Caution Before maintenance, service, connection and disconnection of the machine, the tractor's engine must be switched off and the ignition key removed.</p>
  	<p>Danger zone 15 m Respect the equipment danger zone! Warning! Risk of crushing! No one is allowed to stand underneath suspended load.</p>
	<p>Lever function</p>
	<p>Max pressure towing eye 3 tons / 1.5 tons</p>
  	<p>Lubrication after 10h of operation Always use the support legs when loading / unloading Tighten all screws and connections</p>
	<p>Warning! Electrical lines.</p>
  	<p>Max 200kg grip Warning- oil jet from hydraulic hose Warning- moving parts.</p>
 	<p>Warning! Forbidden to stay on the machine! Warning! Risk for child accident! Children are not allowed to be near the machine</p>
	<p>The product is CE marked</p>

## **8. SURROUNDINGS**

Make sure your working area is clear from people, children and objects before installing and using the machine. Risk of serious injuries can occur during operation. Take an extra caution when children are in the area where the equipment/ product is being used or stored. Check the area for low hanging electrical wires. Be careful when working on slopes and near ditches. Always work alone with single - purpose tools/products. Never have junk lying in your area. Keep working areas clean. Always respect the risk zone.



Children in the area should be supervised.

## **9. SAFETY MEASURES BEFORE USE**

Read the safety information and instruction manual carefully. Be sure you understand the safety measures, instruction manual and warning labels. Use common sense when operating the machine and use appropriate personal protective equipment. Always check the performance and the machine combination that are used. It's highly important these matches in a satisfactory manner. This is to ensure the product or the function and most important yours and others safety.

Do visual inspection of equipment or product before use. Fix or replace damaged or worn parts immediately to reduce the risk of injury. Lubricate moving parts and check that all screw-nuts and bolts are tightened. Learn and remember the correct working methods. Beginners should always keep a low speed, use extreme caution before routine and product knowledge is achieved. The user/customer is responsible to handle the situation correctly. The product should not be taken into use unless it can be done in a safe way for the user.

## **10. CONNECTING THE TRAILER**

- Read the instructions in full.
- Check ball hitch on the trailer. Then hook the forestry trailer on the tractor.
- Drive and check the equipment movements carefully. No hoses must be stretched too tight or rub against sharp edges, etc. If they do, fix. At any leaks retighten leaking couplings. Do not tighten the couplings more than needed. At overload, they can break.
- Check the tire air pressures. Maximum pressure is 2.5 bar.



For safety, this product should only be used in the manner described in this manual. The user is responsible for the instruction to be read through and followed.

## 11. OPERATING THE MACHINE

Only people who understand the safety information and instructions in this manual may operate the equipment. Be alert and careful when working with the machine and only use the tool or product in the manner described in this manual. When working with equipment that has moving parts, there is always the risk of injury. Be careful when working with equipment equipped with hydraulic hoses ,oil under pressure can penetrate the skin. Seek medical attention immediately if this occurs. Always work alone with the tools that are defined as single purpose tools. Respect the equipment's danger zone.

### Connecting equipment.

- The hydraulic valve is best placed on the tractor. Hydraulic pressure hoses must not be brought inside the cab.
- Connect the crane valve pressure and return hose. Make sure that pressure and return hose are not connected incorrectly. The valve can be destroyed if the hoses are connected incorrectly.

## 12. USE AND CARE

- Check that the equipment is not damaged before connecting it to the vehicle.
- Connect the equipment and lock it in place.
- Air frequently occurs in the system in the beginning, carefully drive all cylinders in their end positions several times to remove air in the system.
- Practice the movement pattern calmly and methodically for loading and unloading timber in the trailer.
- Hold the crane low during all transportation.
- The stability is worse in the beginning when loading, be careful!
- Both support legs must be lowered when loading on and off the timber. It is prohibited to drag timber with the crane when the tractor is running. The tractor must be stationary during use of the crane.
- It is forbidden to fold the folding arm to maximum and then press down the lift arm. The crane is designed to lift the timber, not pressing timber. Maximum speed when driving is 30km / h.
- The load should be distributed evenly over the cart.
- All cargo that sticks out should be anchored well.

### 12.1 STARTING THE ENGINE

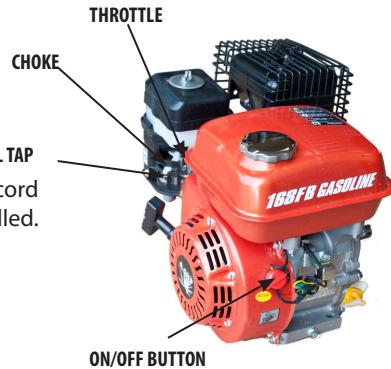
1. Fill the tank with fuel and engine oil.

2. Turn the button to "ON".

3. Open the choke and fuel tap.

When the machine is cold, the choke may need to be used.

4. Pull the starter handle slowly until switch goes in and then **FUEL TAP** make a hastily pull with the handle. Do not pull out the starter cord completely and do not let go of the handle when the rope is pulled. Repeat this step until the engine starts.



### 12.2 TURNING OFF THE MACHINE PROPERLY:

- Set the throttle on the lowest speed.
- Turn the ignition switch to the OFF position.
- Turn off the fuel tap.

## **13. AFTER USE**

RInse the trailer when needed.

## **14. TRANSPORT AND STORING**

Make sure there are no people, children and foreign objects around the area before transporting the machine. Always take an extra caution during the transport. Ensure that the product is well secured and that transport brackets are mounted. Always place the load as low as possible. Respect the danger zone even during transport. When lifting the equipment, never go underneath suspended loads. Trailer used for transport should have working brakes. Always store the machine in a dry place preferably underneath a cover when not in use. Ensure that the product is stable and not likely to tip over. Never let children play where the machine is being stored. Always keep in mind the risk of tipping!

## **15. MAINTENANCE AND SERVICE**

Ensure that the unit is stable and cannot tip over during maintenance and service. Replace damaged or worn parts immediately to reduce the risk of abrasion. Always perform maintenance, service and inspection, as recommended. Use only original replacement parts or spare parts with equivalent performance to reduce the risk of damage. All repairs and connections with electricity must be performed by a qualified person.

Check all nuts and bolts are tightened after performing maintenance and service. Contact your retailer for spare parts. Always test the machine before using it.

*Kellfri AB is constantly working on further developing their products and therefore reserves the right to modify, among other things the design and appearance without notice.* Regularly check the condition of the equipment. If crack, twisting, bending, gaps or fatigue is discovered then stop using the machine. Never weld in the towing eye as it changes the strength.

The hydraulic system should only be operated with hydraulic oil designed for the purpose. All lubrication points are to be lubricated every 25 hours. Tighten all screws and nuts after a few hours of operating, and after that every day when operating.

Service	Interval	Measure
Tires	Before every use	Check the air pressure in the tires. There should always be at least the recommended pressure. (see tire)
Cables and hoses	Before every use	Make sure all cables and hoses are complete.
Wheel nuts	First check after 2-3 hours operating. Then 2-3 times / year.	Tighten all the wheel nuts 90Nm.
Trailer parts	Regularly at least 3 times per year.	Check, Visually inspect the brakes if there are any, the light, SMV sign, towing eye, shafts, hinges, turning rims if there are any. Replace worn or damaged parts.
Trailer	After every use	Rinse with water when needed.
Hydraul oil 32 or 46	Regularly	Always check the oil level and oil quality, dirty oil must not be used! Fill up hydraulic oil if needed.

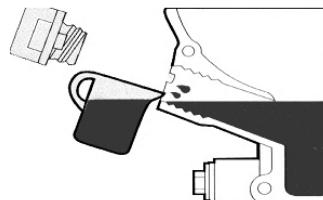
Tighten all bolts, nuts and couplings after 10h of operating! If any leaks appear, retighten leaking Couplings. Do not tighten the couplings more than needed. At overload, they can break.

## 15.1 CHANGING OIL

When changing oil, be sure to use approved containers for oil. Old oil must be disposed to proper recycling station. Contact your municipality for more information.

- Ensure that the machine cannot tip over.
- Pull out the dipstick.
- Place a jar underneath the engine and remove the oil plug.
- Drain the oil pan, put back the oil plug and tighten.
- Fill with fresh oil and check the level. Use engine oil SAE 10W-30

IMPORTANT: Do not overfill the engine with oil.

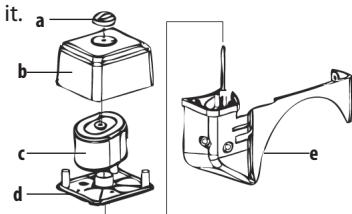


## 15.2 CLEANING AIR FILTER

It is important to always check and clean the air filter to prevent damage to the engine. A clean air filter extends the life of the engine.

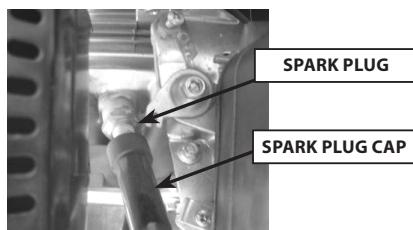
1. Loosen wing nut and remove the filter cover.
2. Clean the filter, use ojelösande chemicals with high flash point such as methylated spirits.
3. Clean all parts and let them dry.
4. Dip the filter into engine oil and then squeeze out the oil in it.
5. Refit all parts.

- a. Wing nut
- b. Filter cover
- c. Filter
- d. Filter bracket
- e. Filter housing



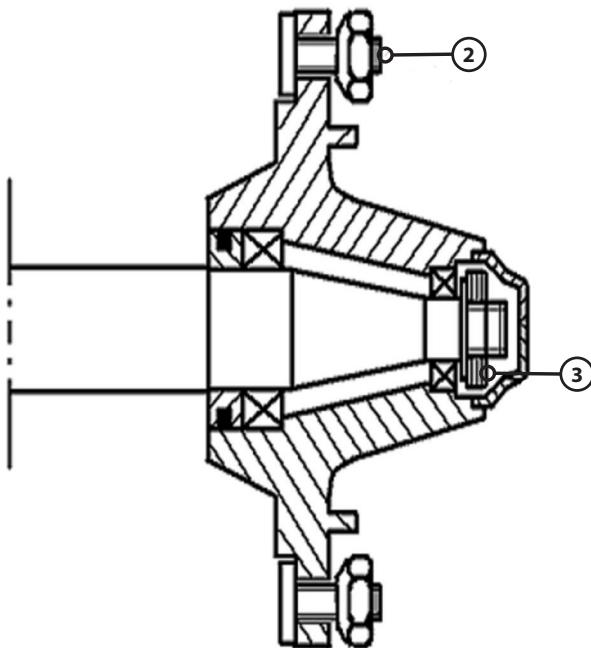
## 15.3 KONTROLL, RENGÖRING OCH BYTE AV TÄNDSTIFT

1. Disconnect the spark plug cap and remove the spark plug, use a spark plug wrench.
2. Clean the spark plug and measure the distance between the spark gap (distance between electrodes). The correct distance is between 0.7mm-0.8mm



3. Mount back the spark plug.

When changing to a new plug tighten additional 1/2 turn after tightening, tighten by hand. When mounting the old spark plug, tighten 1/8 - 1/4 extra.



#### 15.4 CARE INSTRUCTIONS

1. Do not overload the trailer.
2. After changing wheels, check that the wheel nuts are tightened and after a few kilometres of driving, check again. The tightening torque must not exceed 45 kgm. If possible, use a torque wrench.
3. Ensure that the storage position is correct to avoid housing glitches and abnormal wear of bearings. Housing settings should rather be too loose than too tight.

## 16. ASSEMBLY GUIDE 21-SV27

To consider when mounting the trailer:

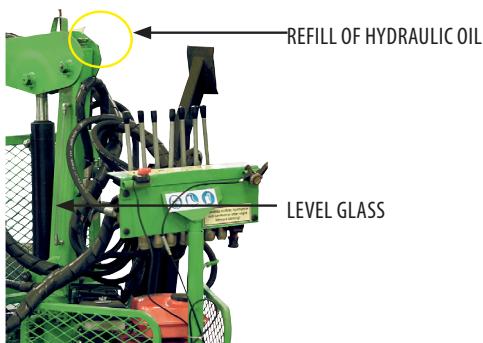
It is recommended that installation is carried out by two people because of the weight of the trailer. - Tools required for assembly of the trailer: wrench (large), spanners 13 and 32, nippers



1. Prepared all parts for assembly, remove all packaging materials such as plastic, steel, etc.  
Set the wheels to the side.



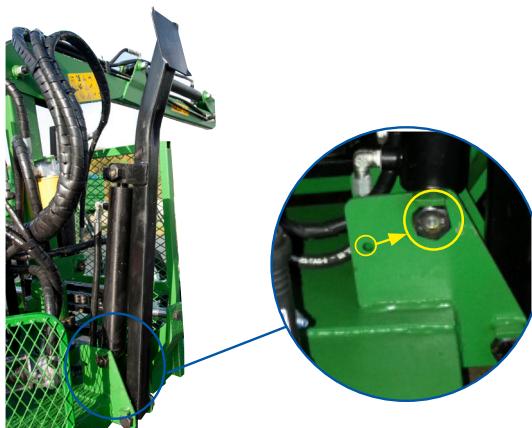
2. Fill the engine with engine oil SAE 10W-30 (check oil level with the dipstick, it should be between the max and min) and petrol (not oil mixed).



3. Check the hydraulic oil level on the tower, see the level glass, fill up if necessary. The oil level should be half of the level glass.

Filling the tower.

- When the level is at half, run all features to fill the hoses and cylinders with oil.
- Check oil level and then fill again with hydraulic oil.
- Run all features again, and then check the oil level. Fill if needed.



4. Move the support leg cylinders

- Remove the bolt that secures the cylinder to the frame.
- Loosen the great bolt, and then move the cylinder into the outermost hole and tighten. (See picture)
- Do the same procedure on the other side.

## 5. Installation of the frame and Boogie

- Start the hydraulic unit.
- Then fold out the support legs on both sides so that the front of the trailer is lifted from the ground.
- Move the crane to the side and set it so that grapple claw rests on the ground.
- Remove the remaining parts located on the frame.
- Remove pins and the shaft that is mounted on the front of the trailer, mount the rear part of the frame and secure with pins.
- Mount bracket for Boogie, secure with the shaft and tighten.
- Mount Boogie, make sure all bolts are put into the track on the boogie shaft, tighten.



- Release center cap and bolts located on the wheel hub. Mount the rear wheels first and then raise the support legs to make it easier to mount the front wheels.
- When all wheels are mounted, tighten wheel housings and mount center caps. (See section 15.4 CARE)

6. Check and tighten all bolts, nuts and fittings.
7. Lubricate all the joints, wheel bearings and tower.
8. Assemble all the support legs.



## **17. ROTATOR**

USE RESTRICTIONS (Instructions for safety when operating)

- Check the rotator maximum load weight.
- Do not overload the rotator!!!
- Make sure that the hydraulic system has reached operating temperature.
- Check operating speeds and directions as well as the control levers function.
- Lift up the load before it is moved and turned over.
- During lifting, the load may not be left unattended.
- When the rotator is without pressure, it has no brake torque and the load can be reversed, for example by the wind or due to imbalance. To stop the turnaround, use a counter movement when necessary.
- Check that the hydraulic hoses do not touch any obstacles. A broken hose or nipple may cause the load to fall or the load to continue turn.
- Set the crane in such a transport or storage position that it does not collide with the rotator. It is, for example forbidden to use the rotator as a support for the crane boom.

## **WORKING CONDITIONS**

This hydraulic turning device or rotator is intended to be used on a hydraulically powered crane. Eg. cranes that handle timber or cargo. Rotator shaft is attached to the lifting equipment, for example. a grapple claw, which handles the cargo.

With help of the rotator, the load can be rotated horizontally. The rotator shaft leads the hydraulics into the lifting equipment. The maximum load of the lifting equipment must not exceed the corresponding value of the rotator. When the rotator is in use, the hydraulic oil must have reached the right working temperature and meet the standard viscosity values.

## **ASSEMBLY INSTRUCTIONS**

Rotator connection to the crane

- The rotator should be connected with a link to the end of the crane boom.
- The rotator shall always hang freely and vertically in the shaft direction. Link pins must be locked in place by cotter pins.
- The rotator is connected to a bushing on the lifting equipment with a pin that locks in place with cotter pins.

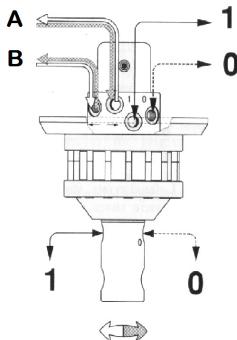
## **THE ROTATOR'S CONNECTION TO THE HYDRAULIC SYSTEM OF THE CRANE.**

Rotation turner: The system should be thoroughly cleaned. When the hydraulic system has come up in working-temperature, the oil should be circulated in the system so that any pollution is headed to the filter. Hoses to the rotation turner are connected by middle nipples, where the oil, also here can be circulated preferably about 5 minutes. The rotator is connected to a crane control valve with suitable hoses and pipes. The crane shall have pressure-relief valves that limit the pressure on the rotator to maximum 200 bar. If higher pressures are possible, one should install pressure relief valves to the rotator's hydraulic line. The oil flow to the rotation turner is supplied by restriction nipples. The direction of the rotation turner and the grapple claw movement must match the markings on the control levers. The operating speed of the rotation turner must be checked if the turning is too slow. The openings of the restriction nipples are factory set to a diameter of 1.5 mm, they can be enlarged by 0.1 mm steps.

## **18. ROTATOR IMPLEMENT**

When connecting the hydraulics, it should be noted that the maximum pressure in the pressure channel is 200 bar and that the marked channel in the rotator upper lid (upper channel) and the shaft must be connected to the opening side of the cylinder on the lifting equipment. Eg. a grapple claw. When the grapple claw is opened it should be noted that the cylinder movement is not driven to the outer position so that the channel will remain under pressure, as this pressure is an unnecessary burden on the rotator. The crane and equipment must be in accordance with the machine directives.

A,B=Turning  
1=Grapple claw closed  
0= Grapple claw open



Technical data	FR7
Turning angle	Unlimited
Max work pressure	200 bar
Recommended. L/min.	10
Torque (200 bar)	350 Nm
Max shaft power	20 kN
maximum permissible load.	1000 kg
Vikt	10 kg

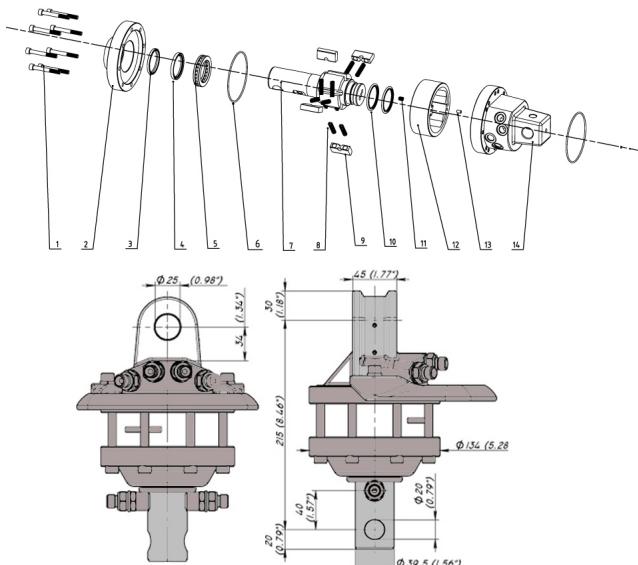
## 19. OPERATING INSTRUCTIONS

When using a crane and a rotator one must exercise caution and act according to the crane's safety instructions. Pressure on the rotation shaft from the side should be avoided. It is prohibited to pull the load with the crane or the vehicle before lifting. Rupture of the hydraulic hose or nipple can cause the load to fall or the turning movement to continue. Damage to the hose or device can cause a jet of liquid at high pressure.

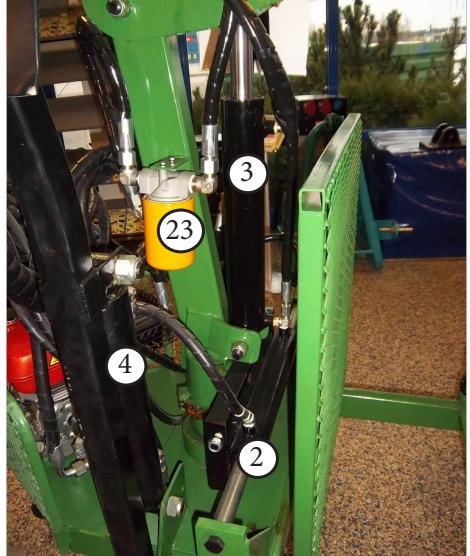
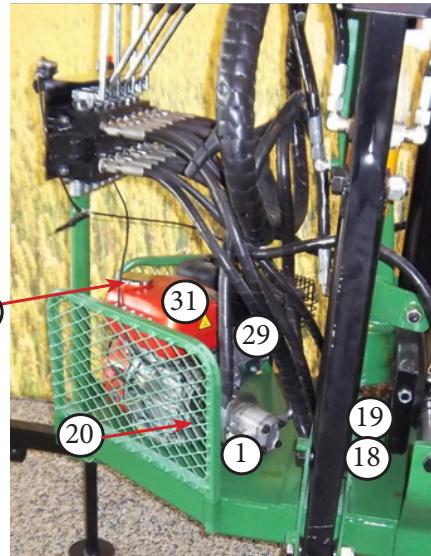
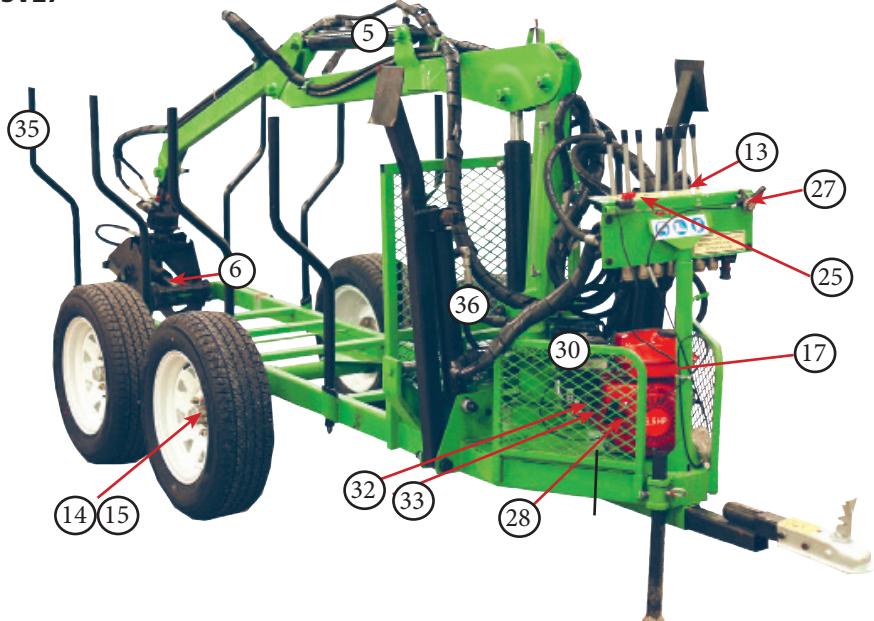
## 20. SERVICE AND MAINTENANCE INSTRUCTIONS

If the rotator's rotation becomes uneven and occasionally interrupted, the device should be checked. Lubrication of the pin on the rotator upper ear should be performed regularly. Rotator upper ear, shaft, hoses and nipples should be checked weekly due to the risk of cracking. Any damage or oil leaks must be corrected immediately. Leakage of bushing seals is seen in for example grapple claw pressure force is weakened and that the grapple claw is opened. In connection with the annual crane control, one should check that the binder bolts are tightened. The rotator may under no circumstances be repaired by welding. Replacing the rotator seals and other components must be performed in good conditions, for details contact the seller.

## 21. ROTATOR EXPLODED VIEW

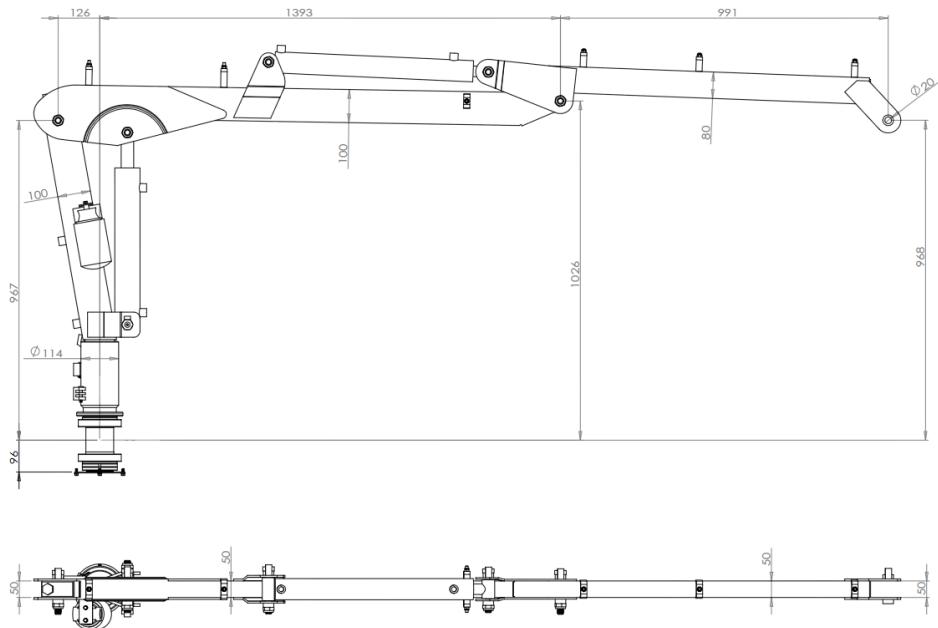


NO	Name	Amount
1	Bolt	8
2	Lower housings	1
3	Shaft seals	1
4	Seal	1
5	Bearing	1
6	O-ring	2
7	Shaft Ø 40	1
8	Spring	10
9	Wing	5
10	Seal	2
11	Plug	1
12	Spacer	1
13	Plug	1
14	Upper housings	1



## 22. SPARE PARTS

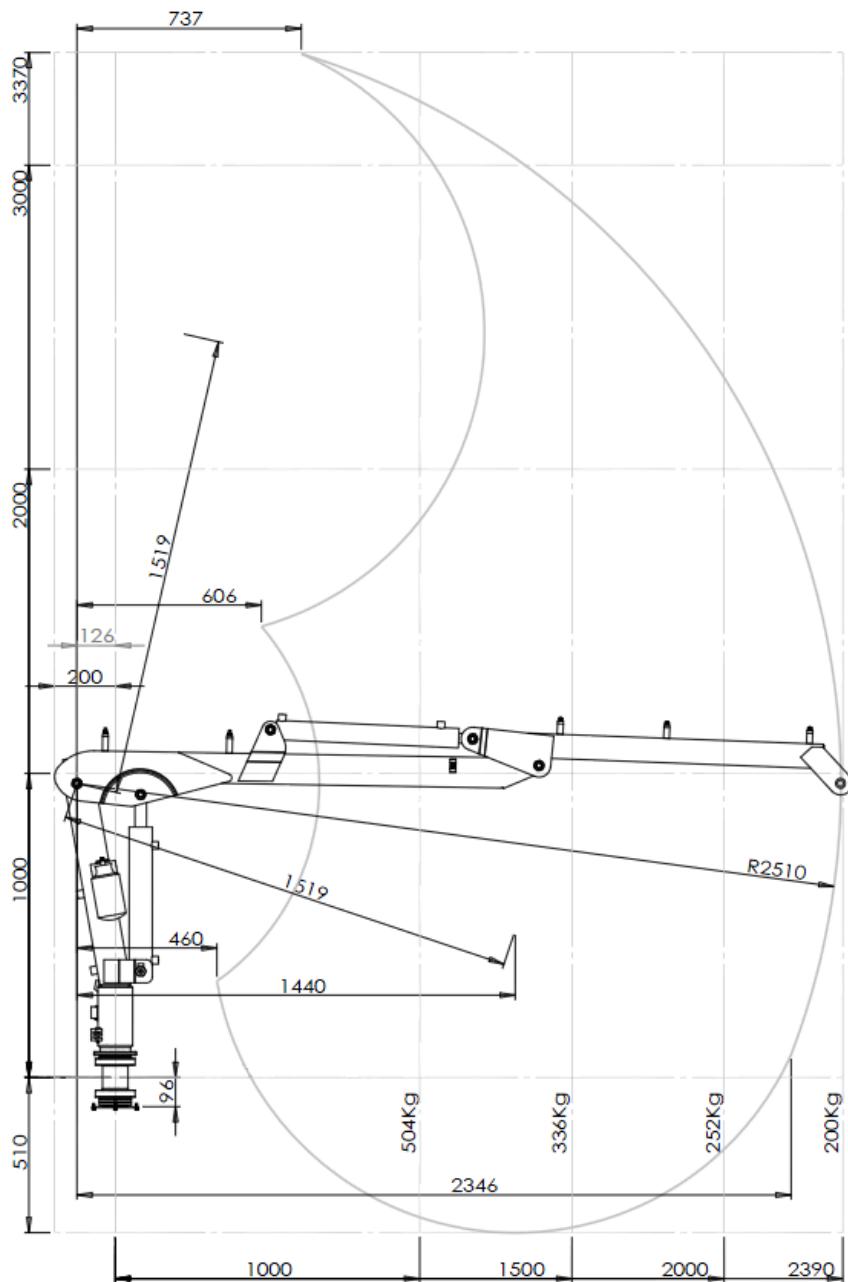
NO.	Designation	ITEM NO.
1	Hydraulic pump	R21-SV27.001
2	Cylinder - Turn	R21-SV27.002
3	Cylinder - Boom	R21-SV27.003
4	Cylinder - Support legs	R21-SV27.004
5	Cylinder - Stick	R21-SV27.005
6	Cylinder - Grapple claw	R21-SV27.006
7	Seal set - turn cylinder	R21-SV27.007
8	Seal set - Stick cylinder 55/32	R21-SV27.008
9	Seal set - Boom cylinder	R21-SV27.009
10	Seal set - Support legs	R21-SV27.010
11	Seal set - Grapple claw	R21-SV27.011
12	Air filter holder	R21-SV27.012
13	Valve packet	R21-SV27.013
14	Wheel bearing Inner LM67010	R21-SV27.014
15	Wheel bearing outer R10-4T-LM11949/LM11910	R21-SV27.015
16	Seal valve cover	R21-SV27.016
17	Motor - Petrol	R21-SV27.017
18	Chain tensioner for turn housing	R21-SV27.018
19	Chain	R21-SV27.019
20	Claw coupling - complete	R21-SV27.020
23	Oil filter including holder	R21-SV27.023
25	Switch ON/ OFF	R21-SV27.025
27	Throttle complete with wire	R21-SV27.027
28	Pull start	R21-SV27.028
29	Muffler	R21-SV27.029
30	Air filter	R21-SV27.030
31	Tank	R21-SV27.031
32	Carburetor	R21-SV27.032
33	Relay for oil level sensor	R21-SV27.033
34	Tank cap	R21-SV27.034
35	Side prop	R21-SV27.035
36	Hydraulic hose - Support leg	R21-SV27.036



### TECHNICAL DATA

**21-SV27**

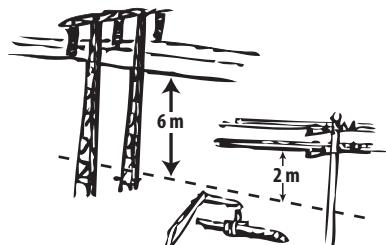
Crane reach [mm]	2700
Grapple claw (width) [mm]	700
Grapple area [ $m^2$ ]	0,08
Rotator weight between the crane arm and rotator [kg]	13
Torque [kNm]	7
System pressure [Mpa]	16
Oil volume- turn housing [L]	1



## 23. OPERATION

Most accidents occur due to toppling over or if the tractor turns over. The worse the terrain is or the greater the load, the greater the risk of an accident.

- Important advice to reduce the risk of accidents:  
Keep a safe distance when driving under power lines.  
No part of the crane may be closer than: In the case of high-voltage power lines 6 metres, and in the case of low-voltage power lines 2 metres



- Drive straight up or down hilly terrain. Do not drive up slopes that are too steep to drive up. As the tractor and trailer's centre of gravity is displaced backwards on a slope, there is a risk that the tractor may tip up. Use additional load weights if necessary. The same gear must be used driving down a slope as used when driving up it. Do not put the tractor into neutral when driving down a slope.



- Minimise the weight of the load. The more the weight is displaced to the point where they can turn over.



**REMEMBER! It is harder to control a large load than a smaller one!**

## 24. LOADING WORK

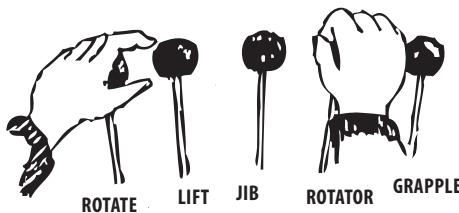
### Basic movements

If you are not accustomed to using a grapple, you should first practice basic crane movements. Exercises that shorten the learning time are set out below. The timber trailer's stabilisers must be used during all loading and unloading work. The ground under the stabilisers must be level and stable as there is a risk of overturning when working on slopes. Therefore, it is very important that the trailer is loaded and unloaded on a level surface.

### PRACTISE STEPS

#### 1. One lever at a time

Begin with one function at a time. Operate the crane using a low and even engine speed. Check which crane movements are suitable for the tractor. The operator must feel completely comfortable with the grapple's movement pattern. Practice starting and stopping each movement smoothly to ensure the grapple does not sway when in operation. Do not run grapple loader functions to their end positions at full speed.



#### 2. PARALLEL DISPLACEMENT

Once you have mastered the first exercise, the next one is to place the grapple about 0.5 metres above the ground as far from the trailer as possible with the grapple loader turned 90 degrees to the trailer. Move the grapple back and forth toward the trailer parallel to the ground. The stop and start movements should also be smooth.

#### 3. LOADING AND UNLOADING

Set up a reasonably high pile of logs. Grip the pile and place the gripping point so that the lowest point of the timber tilts toward the headboard. Lift the timber in towards the trailer before using any rotating or lifting movements. You are in full control once grapple movements are smooth and there is no swaying. Complying with these instructions means you will not have to retighten the hose connections in the rotator that often. By working calmly and methodically, you learn a movement pattern, which is good in terms of safety. The crane operating techniques take a few weeks/months to learn before you can work at full capacity.

The risk of accidents is greater than normal during the learning phase. Pulling the wrong lever to let the timber slide off the grapple when you least expect it can be happen easily during this process. Therefore, you should leave a good amount of space around you when practicing.

### NOTE!!!

Do not leave the cabin until:

- The grapple loader is attached and unloaded and the tractor brakes are engaged.

NOTE: There is less stability when starting to load.



### **SCANDINAVIAN DESIGN**

Our products are designed and developed by skilled and experienced designers and engineers in Scandinavia, which provides security for customers. The products are CE marked and produced by selected manufacturers according to the requirements we have in the market, with no middlemen. Design for value – neither more nor less – means that we can offer you efficient and established quality products at very affordable prices!

# SKOGSVAGNAR



Kellfri's timber trailers and cranes are heavily dimensioned rigs with the best driving characteristic and maximum mobility. Developed by our engineers to be effective in the forest without sacrificing safety. The safety gate is well dimensioned to protect the driver. All hydraulics and hoses are built or placed in a sheltered position to minimize the risk of external damage. There is much free space under the carriage for easy passing over obstacles and a climbing friendly bogie. The trailer has a low center of gravity and hydraulic support legs that allow the trailer to be stable for loading and unloading. All cranes have a bent lift arm which provides a maximum lift capacity in a flat land position. Overhead lifting cylinders in protected location. When you buy a KELLFRI forestry trailer it is delivered with oil in the system, assembled, tested and ready.

## **WARRANTY TERMS AND CONDITIONS**

Validity of the warranty	- Kelifri's Warranty is valid 12 months from the date of purchase.
This warranty replaces	- Compensation for spare parts after acknowledgment that the fault lies on the material or manufacturing defects.
This guarantee do not cover	<ul style="list-style-type: none"><li>• Labour costs</li><li>• Travel expenses</li><li>• Any modification that the buyer himself has/had made.</li><li>• Any consequential damages that occurred out of damage to the machine.</li><li>• Damage due to normal deterioration of the machine, inadequate: service, user inexperience or use of spare parts which are not original.</li><li>• Wear parts such as hoses, seals, oils, and mechanical belts</li></ul>

## **EG-FÖRSÄKRAN OM MASKINENS ÖVERENSTÄMMELSE, ORIGINAL**

### **EC-DECLARATION OF CONFORMITY**

According to 2006/42/EC, Annex 2A

Kellfri AB

Munkatorpsgatan 6  
532 37 Skara, Sweden

Declares that the machine

Name: 21-SV80, 21-Sv90, 21-GI53/GL63/GLP57

Type: Timber trailer with crane

Complies with all applicable provisions of the Machinery Directive 2006/42/EC.

Other equipment must meet the hardware requirements of the Directive.



Tina Baudtler, VD

*Kellfri AB is constantly working on further developing their products and therefore reserves the right to modify, among other things the design and appearance without notice.*

---

### **CUSTOMER SERVICE**

You are always welcome to give your feedbacks, reviews or ask us about our tools and products.

**Kellfri AB**

**Phone: +46 (0)511 242 50**

**Fax: +46 (0)511 168 33**

**E-mail: info@kellfri.se**

The logo consists of the word "Kellfri" in a bold, blue, sans-serif font. A registered trademark symbol (®) is located at the top right corner of the letter "i". Below the main text, there is a horizontal line consisting of three short vertical bars of decreasing height from left to right.