



JÄRNHÄSTEN FLEX 2

ORIGINAL INSTRUCTION MANUAL



Read this manual carefully and make sure you have understood the contents before using Järnhästen.

Document history

The table below lists the different versions that have existed of this document.

Version	Date	Author	Description
1.0	2022-09-26	Örjan Gustavsson	Issue 1
2.0	2022-10-21	Örjan Gustavsson	Issue 2
3.0	2022-11.01	Örjan Gustavsson	Issue 3
4.0	2022-12-18	Örjan Gustavsson	Issue 4
5.0	2022-12-19	Mikael Swartz	Replaced images and new EC declaration (CE). Renumbering of sections, etc.
6.0	2022-12-20	Mikael Swartz	Moved and adjusted the section on connection hydraulics. Updated debugging instructions
7.0	2023-06-14	Peter R/Mikael S	Minor text updates

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1 Introduction

The chapter covers the following paragraphs:

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1.1 About this manual

The manual, purpose and target group

These instructions describe in detail how the machinery is to be installed, used, operated and inspected. It also describes the measures to be taken for maximum safety, how the safety features are designed and function, and their control and supervision with possible repairs as a result.

The target group is the user of the machine and the person or persons who perform standardized service and maintenance measures.

More thorough servicing or troubleshooting shall be carried out by the dealer's service personnel.

1.2 Important information for the user

Read this before using the product

All users must read the manual and it is especially important that all users read and understand the sections on security.

Intended use of the product

The Järnhästen Flex 2 is a track-driven, load carrier for transport and work primarily in outdoor terrain. Use in buildings requires good control of ventilation.

Prerequisites for use

In order to follow this manual and use the product, you must:

- Have basic knowledge and skills for work off-road.
- Received an introduction review from your dealer or directly from Lennartsfors AB's staff.

Safety instructions

This manual contains safety instructions (WARNING, CAUTION and ATTENTION) to enable you to use the product safely. See definitions below.



WARNING

WARNING recognizes a potentially dangerous situation that could result in serious injury or death. It is important that you do not proceed until you have met and understood all of the mentioned conditions.



CAREFUL

CAUTION draws attention to a dangerous situation that may lead to light or moderate personal injury. It is important that you do not proceed until you have met and understood all of the mentioned conditions.



OBSERVE

PLEASE NOTE means that you must follow the instructions to avoid damage to the product or to other equipment.

Symbol explanation

The following symbols are used on Järnhästen and in this manual.



Read this manual carefully and make sure you have understood the contents before using Järnhästen.



Hearing protectors must be worn.



Safety glasses must be worn.



Boots or work shoes with a steel toe cap and non-slip sole must be used.



Protective clothing must be worn.



Protective gloves must be worn.



Flammable substances.



Substances hazardous to health



Hazardous to the environment



No smoking



Warning hot surfaces

1.3 Related documentation

User documentation for Järnhästen Flex 2

The user documentation listed in the table below is supplied with Järnhästen

Part	Description
Manual	In this document
Spare parts list	Separate
Service book	In this document
Accessory books	Each accessory is accompanied by a separate instruction. These instructions contain important information regarding the safety, assembly, use and maintenance of the accessory.

2 Safety instructions

About this chapter

This chapter describes the safety precautions and emergency measures.

The chapter covers the following paragraphs:

2.1	Safety precautions	8
2.2	Emergency procedures	12

Important



WARNING

Before installing, operating, using and maintaining the product, you as a user must have read and understood this entire chapter so that you are aware of the risks involved.

The manufacturer takes no responsibility for use where the instructions for use are not followed. This applies during all phases of use and lifetime of the machine.

2.1 Safety precautions

General precautions

As a user of this vehicle, you are responsible for your safety and that of those around you and for protecting our environment. Read and understand the contents of this manual where you will find valuable information about your vehicle including procedures for safe driving.

Personal protective equipment



The user(s) of Järnhästen or persons staying in its immediate vicinity shall be equipped with personal equipment as follows:

1. Hearing protection
2. Gloves
3. Protective clothing
4. Boots or work shoes with steel toe and non-slip sole.
5. Safety glasses should be worn when handling fuel and oil.

Safety

Operator

For the personnel who use Järnhästen, the following applies:

- Must have read and understood the contents of this manual.
- Must not be under the influence of alcohol, medicine or fatigue.
- Adequate lighting is required when you do not drive during the day.
- Must not be a minor.

Safety Zones

Risk area for unauthorized person minimum 10 meters.

When winching, the danger zone is extended to 30 meters

Driving

- The maximum slope for driving on slopes is defined as 20° (36%) degrees.
- The maximum slope for lateral travel is defined as 20° (36%) degrees.
- The tool coupler (timber bunk bracket) is flexible and hydraulically movable, where the centre of gravity of the machine can also change.
- With a load on only Järnhästen or with a flatbed, with or without load, Järnhästen must always be backed down steep hills. Always use the diff lock, to secure the brake on both bands.

Transport, loading and salvage

- Preferably drive on and off the machine from the transport vehicle without lifting. Always secure Järnhästen during transport.
- Wear gloves when unpacking a new machine.
- See more information on transport, loading and loading in Chapter 9.

Maintenance

- During maintenance work, the machine should always be powerless to avoid risks of injury. See Chapter 7 for more information.
- For lifting during maintenance, always understand the risks and how a safe lift should be done. Read more about lifting and securing hoisted machines under chapter 9.
- When servicing, be aware that there may be hot surfaces such as the engine, muffler and hydraulic components if the machine has just been running. Always wear protective gloves.

Fuel



- Before use, always read chapter 7.2 "Fuel Management" and the engine's separate operating instructions for safe handling of fuel.
- Be careful when working near fuel, as it is highly flammable and explosive. Cigarettes, sparks and fire must be kept at a safe distance from all fuel-related parts.

- Gasoline can cause skin and eye irritation. Always wear protective gloves and goggles when handling. Avoid skin and eye contact. In case of skin contact, clean with soap and water.
In case of eye contact, rinse immediately with plenty of water.
- Avoid inhalation of steam/aerosol. Always handle gasoline in a well-ventilated area.
- Avoid emissions into nature.
- Dispose of waste and residues in accordance with the requirements of local authorities.



WARNING

Fuel used has the following hazardous properties:

1. The liquid, its vapors and exhaust gases are toxic.
2. May cause skin irritations.
3. Is highly flammable and explosive.

Hydraulic and engine oil



- Oils can cause skin and eye irritation. Always wear protective gloves and goggles when handling. In case of skin contact, clean with soap and water.
In case of eye contact, rinse immediately with plenty of water.
- Avoid inhalation of steam/aerosol. Always handle oil in a well-ventilated area.
- Avoid emissions into nature.
- Dispose of waste and residues (use oil) in accordance with the requirements of local authorities.



WARNING

Oils used have the following hazardous properties:

1. The liquid, its vapors and exhaust gases are toxic.
2. May cause skin irritations.
3. Is highly flammable.

Hot surfaces



- Pay attention to hot surfaces on Järnhästen. There is a risk of burning, especially from exhaust systems incl. silencers. But there is also a risk from hot surfaces on the engine and hydraulic components. Therefore, always wear protective gloves and protective clothing when working.

Winch

- Pay attention so that the machine does not tip over when using a winch or that the wire is damaged during work. See separate instructions in chapter 6.5 for safe handling.
- The winch is radio controlled, keep in mind the pinching risk when winching.
- Make sure Järnhästen is anchored.

Accessories in general

- Be careful when assembling and disassembling accessories to avoid crushing and crushing injuries. Make sure that the accessory has sufficient support during shutdown.
- Be careful when installing and uninstalling hydraulic couplings. Hydraulic oil spills may occur, see more info under the hydraulic oil section above.
- Be sure to follow the instruction and marking of hydraulic connections to avoid incorrect and dangerous movements of the accessories.

2.2 Emergency procedures

Introduction

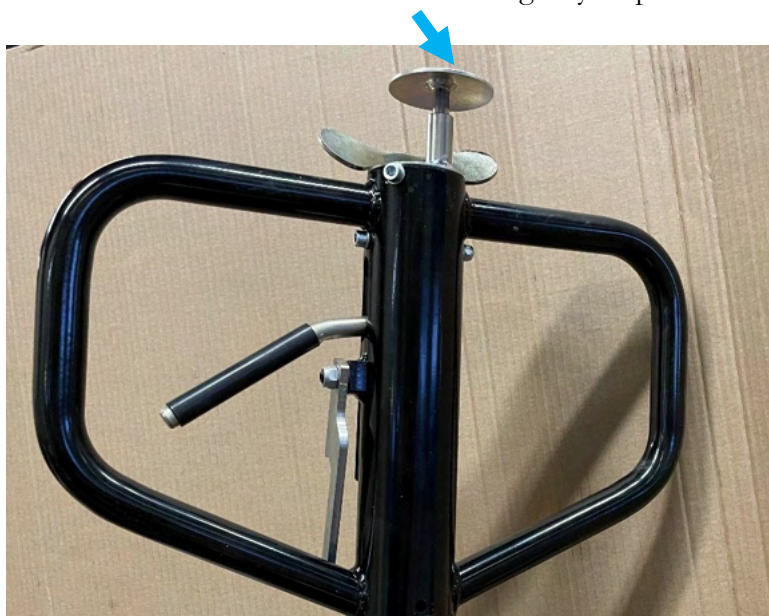
This section describes how you can turn off the machine in case of emergency.

It also describes what you should do if you suffer a breakdown or that the machine has stopped, jammed or overturned.

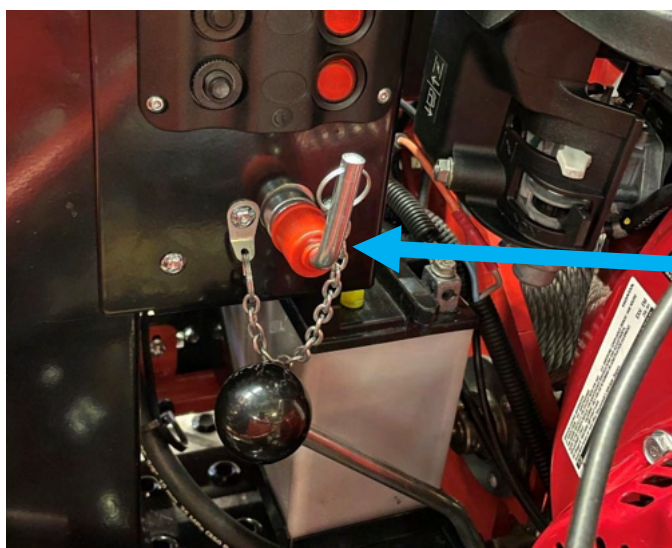
Emergency shutdown of the machine

On the handlebar there is an emergency stop control that can be activated if necessary, causing the machine to stop and the engine to stop.

Picture of the emergency stop on the handlebar.



Turn off the main power switch on the engine



Picture of main switch on the machine

The machine has overturned

If the machine rolls over, follow these instructions:

Step	Measure
1	If the engine is still running - press the emergency stop on the handlebar and turn off the switch on the engine and the main switch on Järnhästen
2	Try to roll the machine back as soon as possible to prevent fuel and oil leaks and oil from entering the air filter.
3	If necessary, use an external winch and preferably winch upwards to prevent the machine from continuing to "roll".
WARNING Never stand below the machine and secure the machine with ropes or wire ropes when winching	
4	Check the machine for damage. Wipe off any fuel and oil spills
5	Check if oil has escaped into the air filter
6	Restart the engine

3 Description of the Järnhästen Flex 2

About this chapter

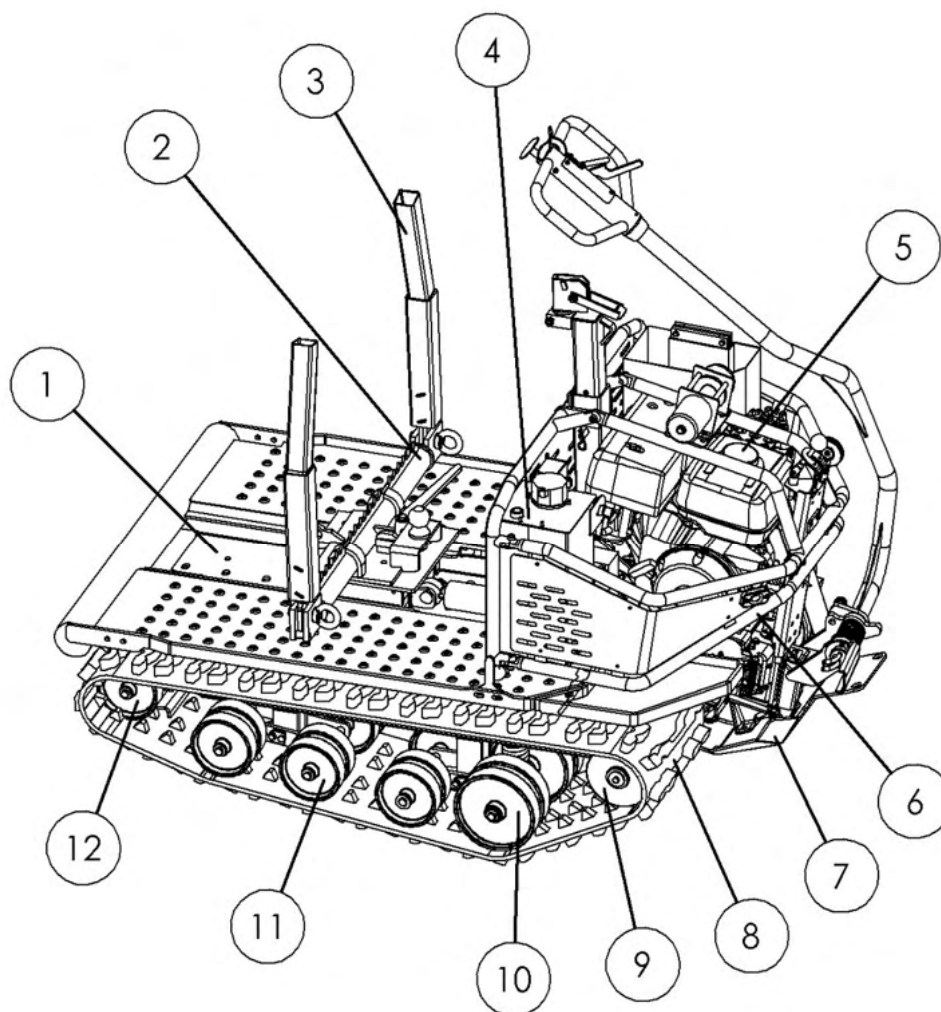
This chapter briefly describes the main parts, function and principles of navigation of the machine

The chapter covers the following paragraphs:

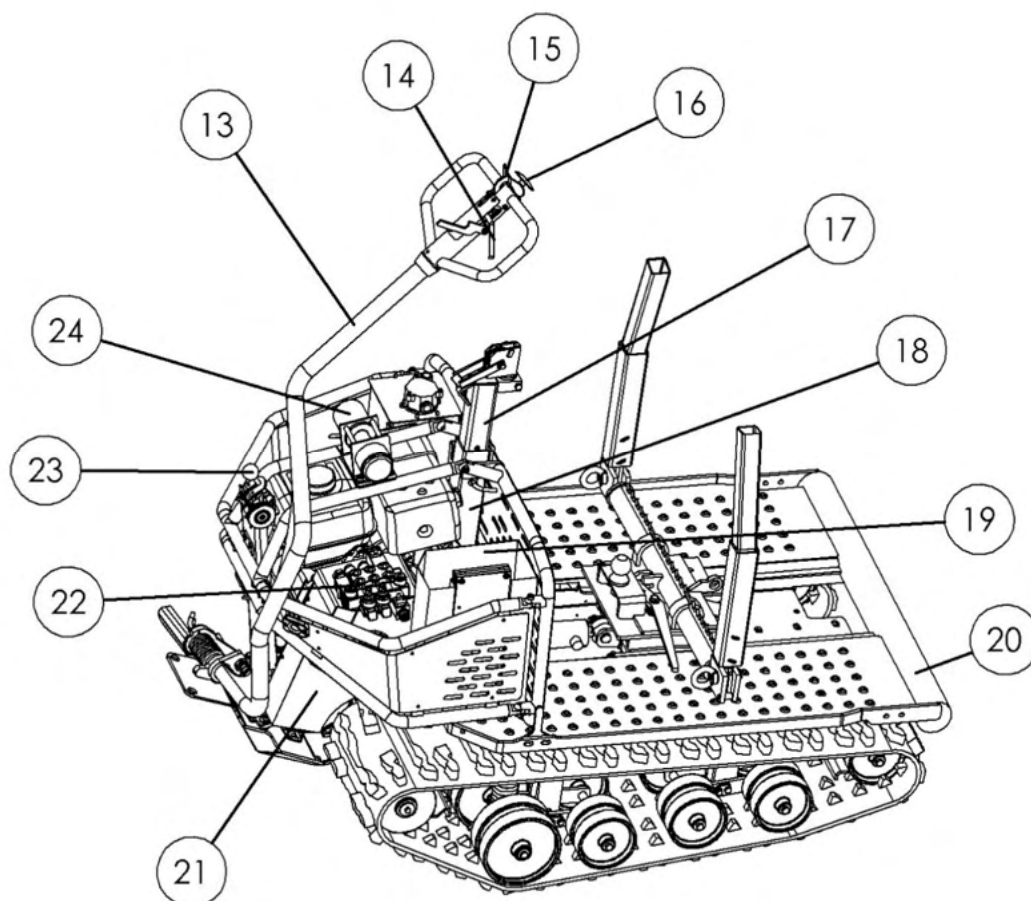
3.1	Main parts of the machine	15
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3.1 Main parts of the machine

1. Chassis	13. Handlebar
2. Timber bunk	14. Brake controls
3. Extension rods	15. Throttle
4. Hydraulic tank	16. Emergency stop
5. Gas tank	17. Winch tower
6. Protective arc	18. Hydraulic winch
7. Protective plate	19. Storage box
8. Drive belt	20. Integrated counterweight
9. Drive wheels	21. Strap protection
10. Front suspension bogie	22. Hydraulic package
11. Rear bogie with wheels	23. Shifters
12. Span wheel storage	24. Electric winch(option)



1. Chassis	13. Handlebar
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10. Front suspension bogie	22. Hydraulic package
11. Rear bogie with wheels	23. Shifters
12. Span wheel storage	24. Electric winch(option)



3.2 Functional principles

Generally

The Flex 2 Järnhästen is designed as a load and tool carrier for use primarily in terrain.

The machine is powered by a gasoline engine and is equipped with a variator between the engine and gearbox. On each side of the gearbox is a claw clutch which, through the movement of the handlebar, disengages the drive belts on each side. On the gearbox there is a control for forward, reverse and neutral positions.

The tool coupler (timber bunk bracket) is flexible and hydraulically movable, where the centre of gravity of the machine can also be changed, which provides extended application possibilities when driving in difficult terrain. Always start with the starting position, when the piston is unaffected, i.e. the piston rod in the run-in position.

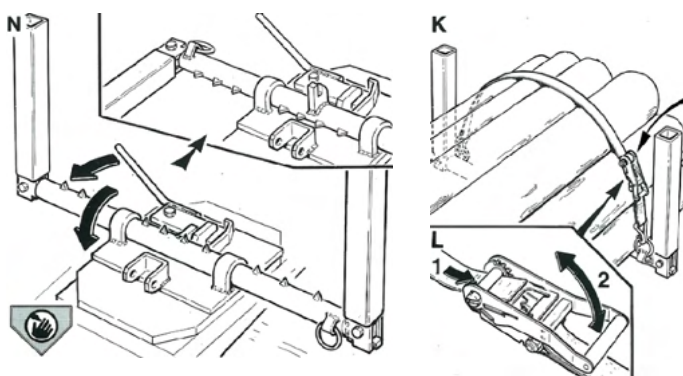


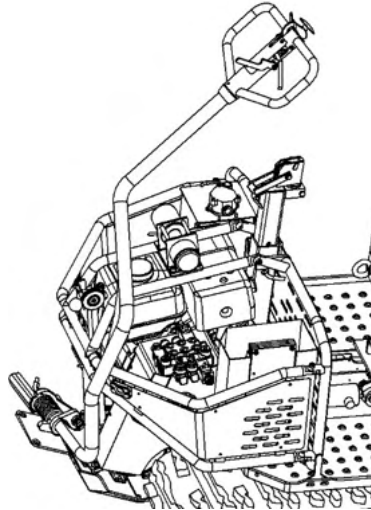
CAREFUL

NB! When the accessory mount is in its front position, the load can grab the load shift protection or engine when cornering heavily or on hilly terrain.

Timber bunk

The timber rear has folding bunks, as well as loops for lashing cargo. The bunk can also be locked with a pin attached to a chain. When unloading, there is a lever that releases the bunk that can be folded backwards for quick unloading of logs





Handlebar

The handlebar is attached to the gearbox through a steering yoke that is connected to clutches that disengage the tracks. By moving the handlebar to the right or left, the clutch on each side is disengaged. By further moving the handlebar to the right and left, the respective drive belt brakes and Järnhästen turns. If the handlebar is moved in neutral, the machine drives on both tracks and then goes straight ahead. The handle also includes throttle and brake controls as well as a stop control for the engine. The throttle is located in the center of the handlebar. The brake lever is located on one side of the handle. The stop slider is in the middle. The handlebar is folded through a spring that is adjustable. The handlebar caliper also has a diff latch with which you can lock and reduce the handlebar's movement and lock the steering for various purposes.

Wire rope guard

On the steering yoke is a jumper that prevents knots from coming into contact with the wire controls when attached to the handlebar. On the casing right next to the caliper are two nipples, where you can blow clean in the housing for gas and brake and then lubricate to prevent freezing.

Balance spring

Around the handlebar is a spring, which can be adjusted. The task of the spring is to balance the weight of the handlebar and make the handlebar weight neutral.

Latch handlebar

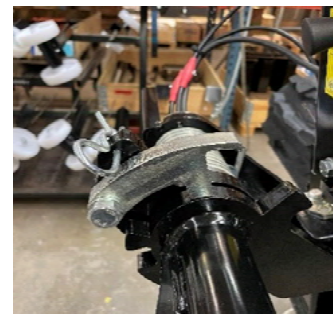
There is a latch at the base of the handlebar. The latch can be set in three positions. Mode (1) is the transport mode in which the handlebar folds backwards so that it reaches a minimum height. Location (2) locks the handlebar in the raised position. In position (3), the handlebar folds forward and this is the normal position when driving Järnhästen.



Mode 1



Mode 2



Mode 3



CAREFUL

Do not forget to secure the latch with the locking pin when the hook is in position 2 or 3.

Differential lock



The differential lock locks out the steering function, so whether the handlebar is moved to the right or left, the machine drives on both tracks. The switch is easily accessible on the gear console.

Shifter



The shifter has three positions. In position (F) Järnhästen goes forward, position (N) is neutral and in position (R) Järnhästen goes backwards.

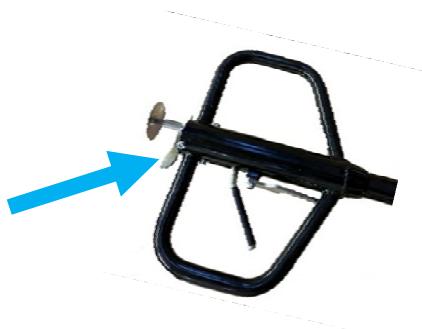
Stop control on the handlebar

Järnhästen is equipped with two stop controls. One of the controls, the emergency stop control, is easily accessible on the handlebar



Throttle control

The throttle to the engine is located on the handlebar. When the control is pressed, the speed of the engine increases. The slider is stepless. With the slider fully pressed, the engine runs at maximum rpm



Brake controls

The brake lever is located in the handle bracket and is easily accessible when operating the machine. By pulling the handle, the machine is braked, through the disc brake on the gearbox.

By locking the brake lever with a latch, the brake is locked, which then serves as a parking brake. The latch also locks the throttle control to prevent the use of the parking brake while driving.



Brake control Parking brake lockout

Auxiliary hydraulics

A pump for the hydraulics drives the hydraulic functions needed and via the hydraulic jacks various accessories can be connected.

See Chapter 6 for connection of accessories via the hydraulic jacks.

3.3 Approved accessories

A number of approved accessories have been developed for the Järnhästen Flex 2 and these are described in more detail in separate manuals, and which are part of the complete documentation for the machine.



Please read these manuals carefully as they contain important safety information.

Customers who want to develop their own or other, by Lennartsfors AB, not approved accessories, are encouraged to contact us for advice.



Please note that function and safety are not guaranteed by Lennartsfors AB and that CE approval only covers approved accessories

4 Technical data

Measure

Dimensions (l x w x h)	1,890 x 1,120 x 1,530
Cargo platform	1,026 x 1,065
Carrying capacity	1,100 kg
Traction	1,100 kg
Weight	534 kg without hydraulic fluid, oil and fuel
Ground clearance	200 mm
Bandwidth	380 mm

Engine/transmission

Make	Honda
Power Honda GX 270	6.3 kW (8.4 HP) / 3600 rpm. 270 cm ³
Power Honda GX 390	8.7 kW (11.7 HP) / 3600 rpm. 389 cm ³
Transmission	Torque convertor, mechanical gearbox (front/reverse/neutral), dog clutch

Hydraulic systems

Pump, auxiliary hydraulics	6.2cc gear pump
Flow	Max 22 l/min (3600 rpm)
Pressure	160 Bar
Valves	Directional control valve ORTA G3/8" 3-sect.

Electrical system

Tension	12V
Battery	20 Ah
Charging current	10 A

Radio controlled winch

Make/model	Akerström S800
Battery	3V (2xAA)
Frequency	869.7 – 870.0 MHz
Traction	900 kg

Volumes, types

Engine oil	GX 270/GX 390 1.1L 15W40
Hydraulic oil	9 liters RENOLIN ZAF 32 XHV
Fuel tank	GX 270/GX 390 5.3/6/3 litres
Gearbox	15W40, 0.5 litres

Noise emission

A-weighted emission sound pressure level (L _{pA})	85 dB(A)
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5 Installation and start-up

The chapter covers the following paragraphs:

5.1	Install the product.....	23
5.2	Installation of uninstalled parts included with the delivery	24
5.3	Starting the machine for the first time	24

5.1 Install the product

Delivery and unpacking

The machine is normally delivered unpacked from your dealer and no further installations need to be done.

However, on some occasions, unpacking and installation need to be carried out by the user:

Accessory box

Step	Measure
1	Remove wood and plastic packaging
2	Take out the box with tools and other documentation
3	Check for visible damage
4	Check the oil level in the engine as well as the hydraulic oil level
5	Check and, if necessary, charge the radio control battery

The machine comes with a box with various tools, manuals, etc. The content may vary with the type of machine, but mainly there are the following:

- Allen keys, 6+4mm
- Combination wrenches, 10-13 mm and 17-19 mm
- Spark plug wrench 21 mm
- Clamping tool 1/2" for tensioning handlebar spring.
- Tensioning tool for bearings, drive shaft
- Manuals, spare parts list and other documentation

5.2 Installation of uninstalled parts included with the delivery

The machine is delivered complete, but accessories can be supplied separately. It is important to carefully read the accompanying instructions for the accessory, which describes in detail how this is installed on the machine.

5.3 Starting the machine for the first time

Introduction

The machine is tested at the factory, but at the start for the first time it is recommended to do some extra checks

Starting the machine

Follow the instruction below:

Step	Measure
1	Make sure that the batteries in the remote control and the machine are fully charged.
2	Check the oil level in the engine and hydraulic fluid tank.
3	Check the fuel level and, if necessary, top up with fuel.
4	Check for any oil or hydraulic fluid leaks
5	Make sure that the machine is outdoors or in a well-ventilated room and that there are no obstacles to navigating the machine

6 Use of the machine

About this chapter

This chapter covers the basic steps fore, during and after driving.

The chapter covers the following paragraphs:

6.1	Pre-run check.....	25
6.2	Start and stop.....	26
6.3	Driving	29
6.4	After driving	32
6.5	Use of integrated winch.....	33

6.1 Pre-run check

Introduction

Before driving, the operator should always check to ensure safe handling

General review

Follow the instruction below:

Step	Measure
1	Check the throttle on the handlebar so it's easy to return
2	Check emergency stop on the handlebar
3	Check the fuel level and, if necessary, top up with fuel. See Chapter 8.3 "Fuel Management" for safe handling.
4	Check that the drive belts and bogie wheels are free of mud, branches, snow and ice, etc. In winter, it is checked that the drive belts are not frozen against the ground.
5	Make sure that the machine is outdoors or in a well-ventilated room and that there are no obstacles to navigating the machine

6.2 Start and stop

Introduction

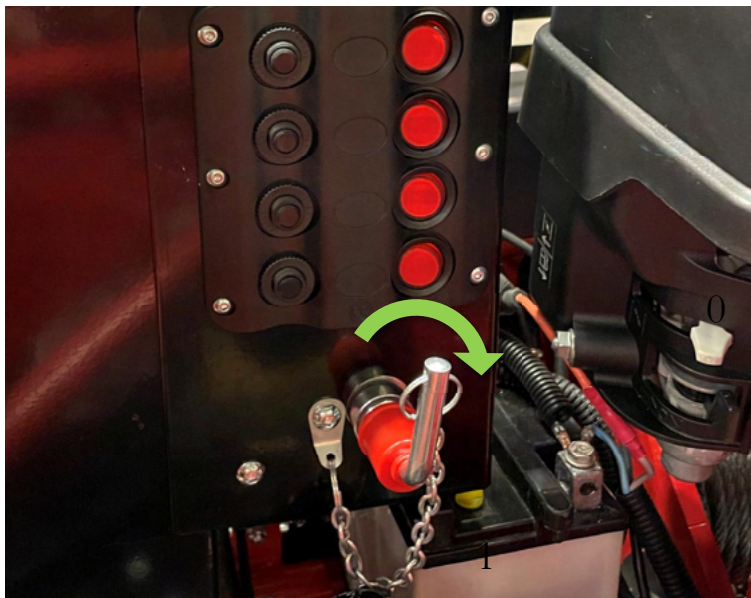
Description and instructions on how to start and stop the machine.

Start the machine

Follow the instruction below to start the machine:

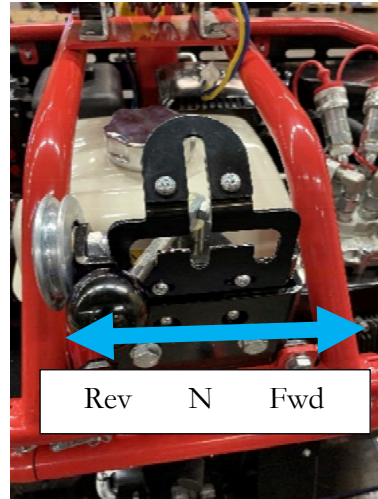
Step	Measure
------	---------

- | | |
|---|--|
| 1 | Turn the main power switch to position 1 |
|---|--|

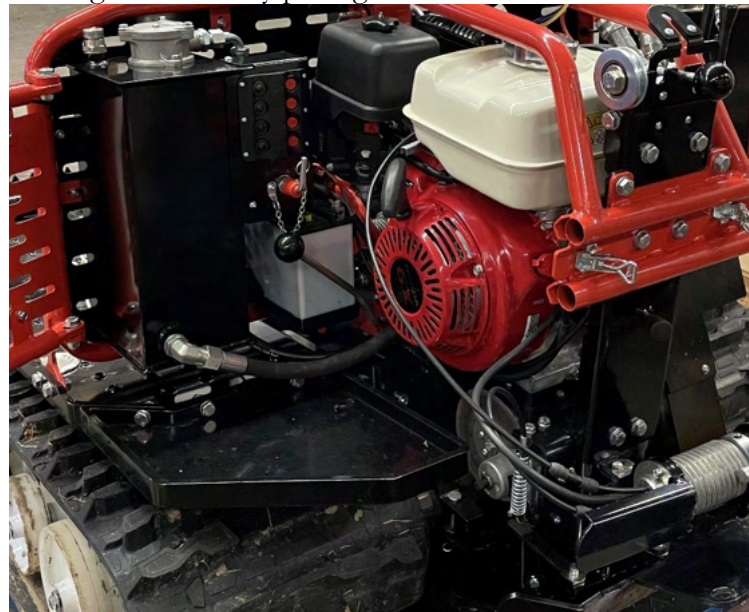


- | | |
|---|--|
| 2 | Check that the emergency stop function is disabled on the control handle and switch of the motor in position 1 |
| 3 | In cold weather, activate the choke control |

- 4 Check that the shifters are in neutral and thereby the hand throttle is not activated.



Starting the motor by pulling the start handle



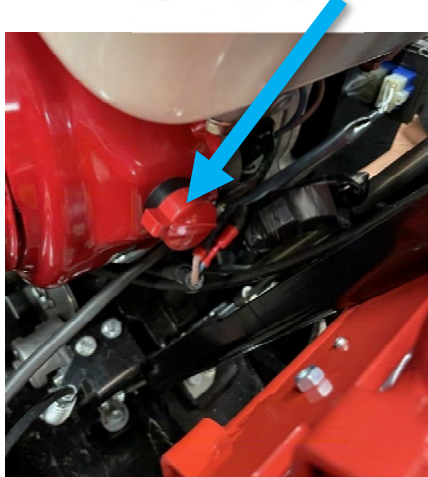
Let the engine run for 2-3 min, especially in all weather conditions before driving.

Stop the machine

Follow the instruction below to stop the machine

Step	Measure
------	---------

- | | |
|---|------------------------------------|
| 1 | Turn the stop slider to position 0 |
|---|------------------------------------|



- | | |
|---|---|
| 2 | Turn the main power switch to position 0. |
|---|---|



The emergency stop button on the handlebar should be used in case of danger or problems with the machine.



6.3 Driving

Introduction

The machine variator with built-in centrifugal clutch, automatically adjusts the gear ratio according to load and engine revolution.

As soon as you give the throttle with the throttle and the gear lever is in position, forward or backwards, the clutch engages and Järnhästen is set in motion.

By moving the handlebar in the direction you want the machine to move, the inner belt is disconnected and the traction force is transferred to the outer belt and Järnhästen changes direction. If the handlebar is moved further to the side, the inner band is additionally braked. This further improves swinging ability.



WARNING

When driving off-road, consider the following:

- Do not overload the machine.
- Plan your off-road drive
- Avoid stumps and rocks
- Do not use force against the machine

In heavily hilly terrain:

- Always reverse the unloaded Järnhästen without a cart down steep hills.
- Never stand on the Järnhästen when driving in difficult terrain.

Off-road

Driving Järnhästen in terrain is something that requires training and practice. Driving with a flatbed trailer or timber trailer, makes Järnhästen longer and more stable longitudinally.

The machine then swings under the load and prevents the machine from tipping forward or climbing steeply uphill.

Do not overestimate its possibility and load capacity.

Stumps and rocks often stop the progress, as the tracks are unable to climb over.

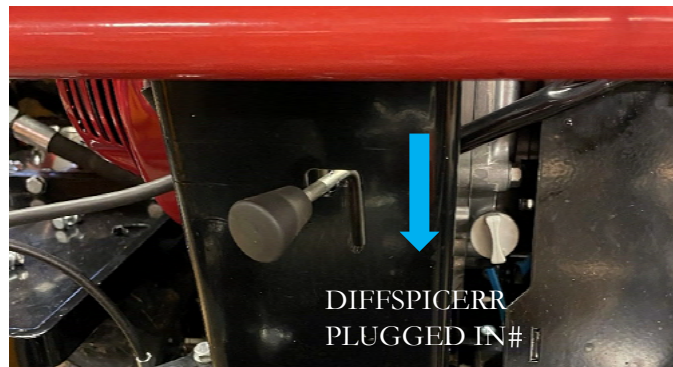
Plan your drive and cut high stumps, move rocks and fill ditches and pits with clearing timber.

If possible, straddle the stump between the bands.

When driving over ditches, pass the ditch diagonally, to avoid the protective plate getting stuck in the edge of the trench.

Järnhästen loses traction completely when one belt is disengaged and braked. Therefore, do not turn when there is a particularly great need for traction, for example on steep slopes or when crossing obstacles.

If you find yourself in situations where a turn is still unavoidable, use the diff barrier to block the disconnection of the tracks. Use the handlebar to break the correct machine. It can be very heavy to turn Järnhästen with the diff latch activated.



Järnhästen has limited accessibility in loose snow, if the machine is heavily loaded. Without cargo, however, it moves forward in difficult conditions. Therefore, pack the driving lane with an unladen machine the day before driving with a load is to take place.

When driving on slopes, there is a risk that the tracks will slide off the drive wheels.

Without cart

When driving on steep descents, the machine can tip ahead.

With a load on only Järnhästen or with a flatbed, with or without load, Järnhästen must always be backed down steep hills. Always use the diff lock, to secure the brake on both bands.

When reversing downhill and at the same time giving a little gas, so the clutch is engaged, you can also use the engine as an engine brake. The disc brake can be used as usual with the separate handle.

On very steep downhill, the engine winch can also be used.

With trolley

With a load on a trolley, on the other hand, you can drive downhill. Use the diff lock that ensures braking on both bands. Set the direction, as it is very heavy to turn with Järnhästen when the diff lock is activated.

On steep descents, the timber is dragged onto the machine's timber bunk. Trailing timber provides more friction.

Flexible accessory mount

The Flex model has a movable accessory bracket that provides extended application possibilities when driving in difficult terrain. The center of gravity can be shifted forward or backward as needed. Always start with the starting position, when the piston is unaffected, i.e. the piston rod in the run-in position

NB! When the accessory mount is in its front position, the load can grab the load shift protection or engine when cornering heavily or on hilly terrain.

The machine can be driven sideways, but then watch that the drive belts do not derail, especially under heavy loads and in combination with the machine turning.

The recommended maximum slope is 20° (36%).

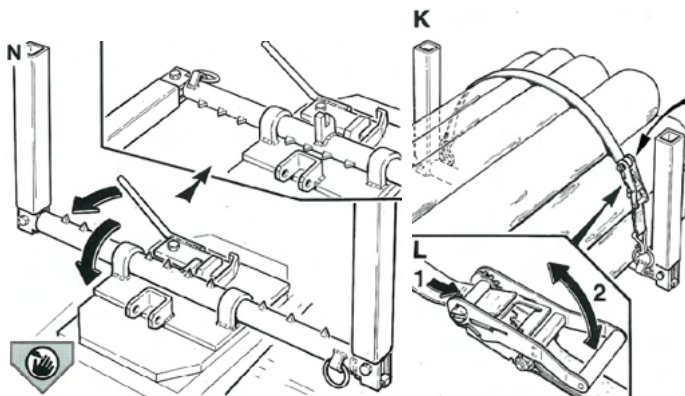


WARNING

Never stand below the machine when driving sideways!

Timber bunk

The timber bunk is foldable to easily unload dragging logs. If the latch (A) is released, the bunk is foldable backwards, when Järnhästen is then driven forward, the logs slide off.



Anchoring of logs

The logs are fastened to the bunk using the supplied strap between the loops on the timber bunk. The logs should not protrude more than 20 cm. in front of the bunk, otherwise the logs can be locked against the load guard when driving off-road. Tighten the logs after a few meters of driving

6.4 After driving

Introduction

Here is a description of the steps that should be performed after completion of the run.

Regular cleaning of the machine can extend the life of some components.

Perform the following steps

Follow the instruction below:

Step	Measure
1	Stop the machine.
2	Let the machine cool.
	WARNING Some surfaces of the machine may get hot – wear gloves.
3	Clean and clean the intake grille for the engine as well as soil and mud in the tracks. This is important to ensure that the machine runs as it should, but also to extend the life of it.
	OBSERVE Do not flush water directly against hot surfaces, electronics or cables, and motor. Too high a water pressure can damage components on the machine.



6.5 Use of integrated winch

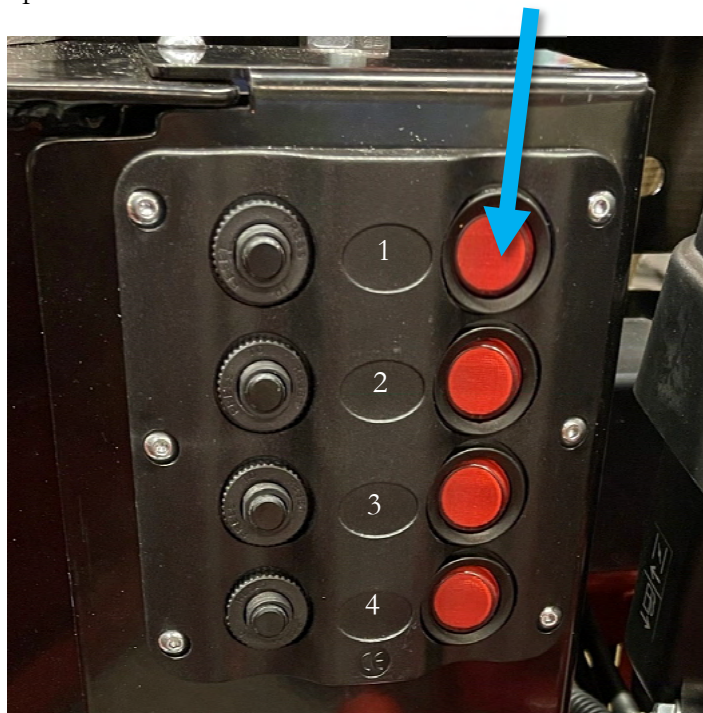
Introduction

The use of integrated radio-controlled winch is described here.

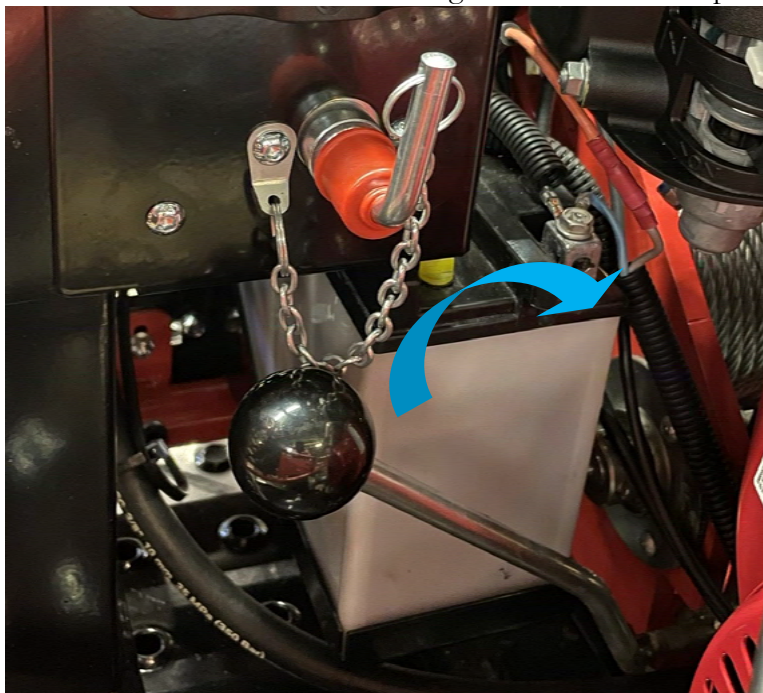
Winch objects for the machine

Follow the instruction below:

Step	Measure
1	Place the machinery in a place which allows the winch tower to be secured safely and the winch direction to be directed backwards.
2	Attach a secure line or the optional electrical winch, to a fixed point, such as a tree, or equivalent that can withstand at least 1,000 kilograms of force
3	Activate the control to the hydraulic winch with the switch Note "1"



- 4 Decouple the wire rope with the decoupling lever on the hydraulic winch. Pull the lever towards the engine so it is hooked up.



- 5 Pull out the wire by hand to the object to be winched.
- 6 Attach the wire hook firmly to the object to be winched. If a free straight direction towards the machine cannot be achieved, use the throwing block to "carry off" in another direction.
- 7 To winch the object, use the remote-control. Release the button immediately if getting stuck.



Stop the winch wire before it reaches the breaker block on the machine

**WARNING**

- The hydraulic winch has powerful traction. If Järnhästen is not anchored, it can tip over when winching!
- Lock the handlebar when winching so that the handlebar cannot move and cause personal injury!
- The winch thrust is greater than the weight of Järnhästen!
- Always lock the handlebar in the locked position to prevent the handlebar from opening during the use of the hydraulic winch.
- Never use a damaged winch cable.

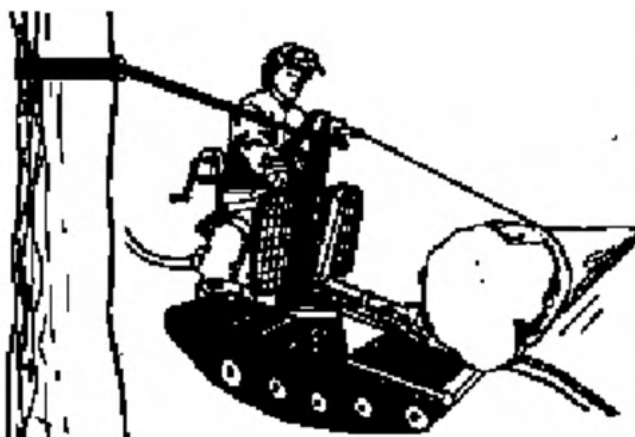
Winching from behind

In heavy winching, it is important that the machine is anchored in the winch direction. To anchor the machine with the anchor strap, or the electric winch (option)



Large log loading

The hydraulic winch can be used to load large logs. The easiest way is, to roll on the log with the help of the winch. The timber bunk is twisted and the pole is folded down and the extension rod is angled down towards the ground. The machine is placed in 90° against the log, the winch wire is transferred and then under the log and the winch hook is anchored to the ironhoist. After that, the hydraulic winch is started and the log rolls up on the bunk.



Winch the machine when stuck

Follow the instruction below:

Step	Measure
1	Pull out the cable out in the direction of travel of the machine.
2	Route the cable via the breaker wheel and attach the snatch block to the protection plate, to make the traction point as centered and low as possible



- 3 Attach the wire rope to a fixed point that can withstand at least 1,000 kg of stress.
The attachment point must be located higher than the breaker wheel of the machine to create a slight "lifting" motion
- 4 Start the winching while driving the machine forward if possible
- 5 Stop the winch as soon as the machine has come loose and can go on its own.

**WARNING**

Improper use of the winch may cause personal injury or machine damage. Always follow instructions and warnings.

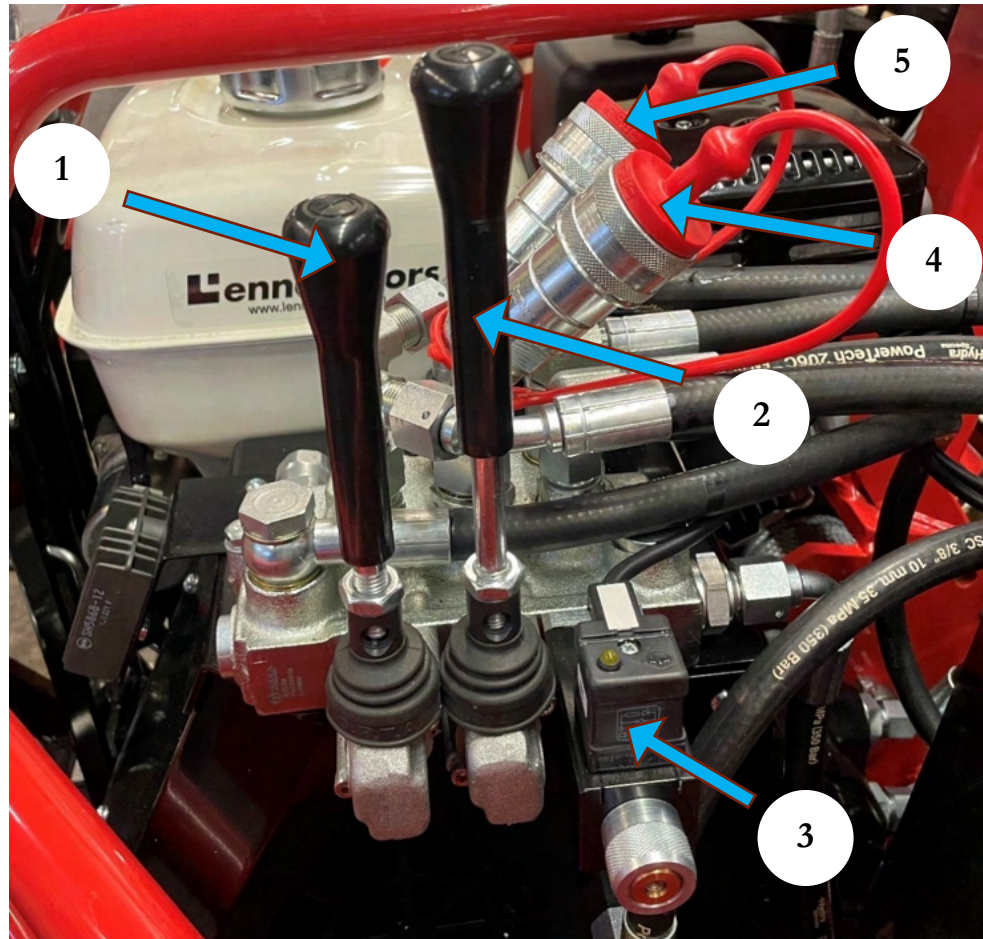
6.6 Connection of hydraulic jacks

Connection of hydraulic equipment to the hydraulic jacks is done as shown below.

On the hydraulic tank next to the valve package there is a label (see picture below) explaining hydraulic outlets 1-5 as shown on the next page.


WARNING

Please note that it is important that hydraulic equipment is connected correctly to ensure that the machine works as intended and to maintain safety.



1. Flexible accessory mount controls (front-rear)
2. Hydraulic jack controls for external equipment (on-off)
3. Electric valve for hydraulic winch
4. External outlet pressure
5. External withdrawals return

7 Maintenance of the product

About this chapter

This chapter describes the most common maintenance tasks and how to best store the machine in the long term.

The chapter covers the following paragraphs:

7.1	Maintenance of the different parts	39
7.2	Fuel Management	46
7.3	Service schedule	48
7.4	Long-term storage	49

7.1 Maintenance of the different parts

Introduction

Here are described the maintenance steps for the different parts of the machine that you can normally perform yourself. If necessary, contact your dealer or authorized service center.

Chapter 8.2 compiles the maintenance points into a service schedule (a table of recommended intervals).

Clean the machine generally before maintenance.

Maintenance often requires the machine to be lifted or hoisted up and placed on pallet jacks. See Chapter 10 section "Lifting the Machine" for instructions.

Engine

The engine is maintained according to separate operating instructions from the engine manufacturer.

Important to change the oil, cleaning filter and general cleaning, especially at the engine fan intake grille where light grass, and dirt can get trapped and prevent effective cooling of the engine

Chassis

The chassis is generally checked for damage and the function of moving with the flexible tool coupler is tested.

Control and Drive System

The brake cable should be oiled regularly, even if the return spring retracts the caliper. A sluggish retraction of the cable can cause the brake to be on against the brake disc and cause hot running.

The gas cable must be lubricated regularly. Loosen the wire at the carburetor and loosen the casing at the steering yoke.

Fill the casing with thin oil and reassemble the cable. Check the function. The greasing ports can also be used to oil the cables.

Variator

Primary variator of 9 and 13 horsepower is maintenance-free.

The secondary variator is greased into a thin layer of fat on the cam disc against which the plastic lugs slide. Check that the locking ring is not damaged.

Variator function

- 1) When the engine is idling, the springs in the primary variator hold the weights together, so that the moving disc disengages the belt.
- 2) The speed is increased and the moving disc is pressed against the belt and the machine starts pulling with a low gear ratio. When the belt wears, so it becomes narrower, the belt grips higher up on the pulley and the best torque has been lost and the iron hole becomes weaker.
- 3) As the revs increase further, the weights press the more moving disc against the belt, which then climbs the pulley and the gear ratio increases. NB! The machine is strongest if you start with less throttle.
If the resistance is small, the speed increases, the disc is further compressed and Järnhästen has its highest gear ratio. Increasing resistance, the movable disc slides on the cam disc of the secondary variator. The groove of the secondary variator pulley becomes wider, and the diameter of the belt decreases and shifts down, increasing torque and becoming stronger.

Claw clutch and steering brakes

The claw coupling should be lubricated with grease every 50 hours, or more often if it is difficult to pull the coupling out of the engagement under load.

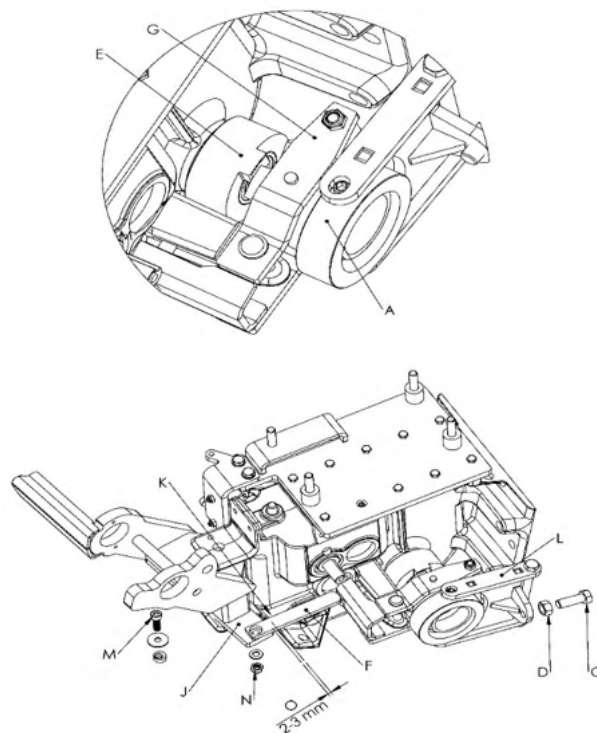
Grease the claws with grease on a brush as well as the splined shaft. Lubricate the groove of the claw coupling through the grease nipple on the steering yoke. NB! Too much grease in the groove can affect the properties of the steering brake.

Steering brakes

In order to take advantage of the steering properties with Järnhästen, it is important that the steering brakes are properly adjusted. With proper adjustment, maximum braking power is achieved, without overloading the mechanism.

The brakes are adjusted as follows:

1. Move the handlebar to the side to be adjusted
2. Turn the machine with the handlebar, so the movable claw clutch hangs on the clutch mounted on the gearbox (E)
3. The handlebar is pressed completely to the side, until it bottoms out in the fixed brake cone (A).
4. If movement is stopped by the steering yoke (J) bottoming out against the stop lug (K) of the gearbox, the steering brake bracket (L) must be adjusted by means of the just nut (C). The lock nut (D) must first be loosened.
5. When the handlebar is pressed slightly to the side, so that the movable claw clutch has bottomed out in the brake cone (A), the brake bracket is adjusted with a nut (C), the gap between the caliper (J) and the stop lug (K) of the gearbox shall be 2 to 3 mm (O). Should this adjustment not be enough, you can adjust the shock rod (F) with the exenter screw (M).
6. The distance (E) between the claw couplings must not be less than 1 mm to secure neutrality. If this distance is not reached, you can mount a washer on the shock rod, or adjust the exenter screw (M).



Brakes

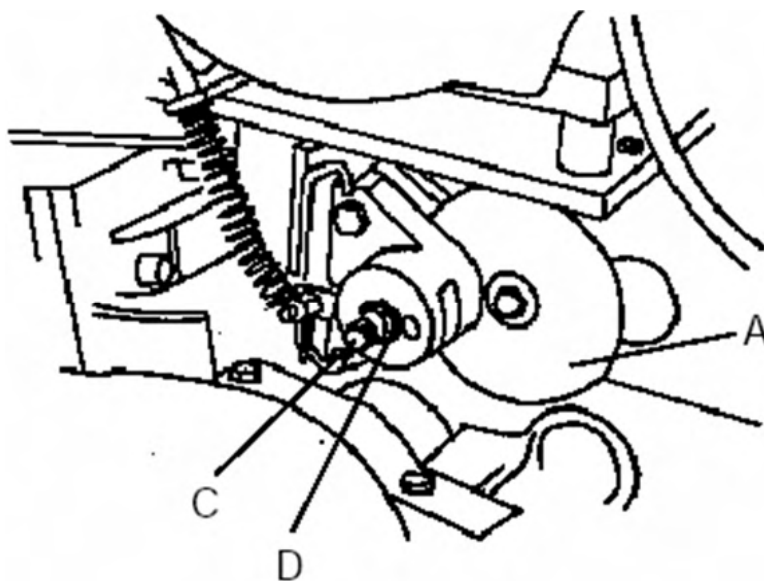
Adjustment / replacement of brake pads.

The brake pads are adjusted, by loosening the conternut (D) and adjusting with bolt (C).

The brake pads are replaced by loosening the cable and brake disc (A). When you pull off the disc, the entire caliper follows out and the brake pads can be changed.

After assembly, it may be necessary to re-adjust. The brake pads should be adjusted, so the brake disc runs freely. If you adjust too hard, it can heat up and the pads and brake disc will be damaged.

If you have changed the brake pads, it may be necessary to readjust after a short period of use.



Gearbox

Oil change gearbox. The oil in the gearbox should be changed once a year. The level is checked using the dipstick in the filler hole.

Recommended oil: SAE 10W 30 Oil volume: 0.55 l.

Winches

To reduce wear on winch cables, they should be regularly oiled. Soak a sponge in lubricating oil and oil the cable. IMPORTANT! Wear gloves, as the wires of the wire may be damaged.

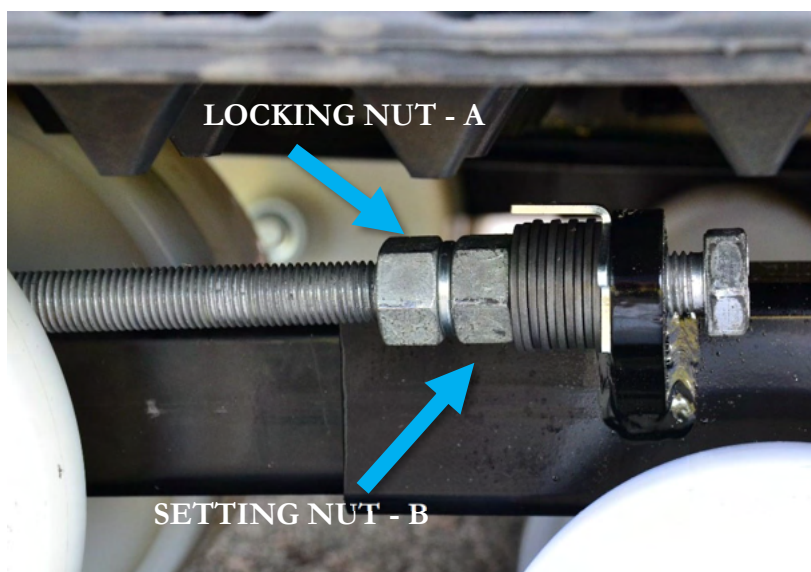
Drive system

The drive system, which consists of wear parts such as drive wheels, bogie wheels and drive belts, is checked for visible damage and wear.

The tension of the drive belts is checked and adjusted as described below:

Step	Measure
1	Hoist the entire machine or one side so that the drive belts run freely.

2 Loosen nut A

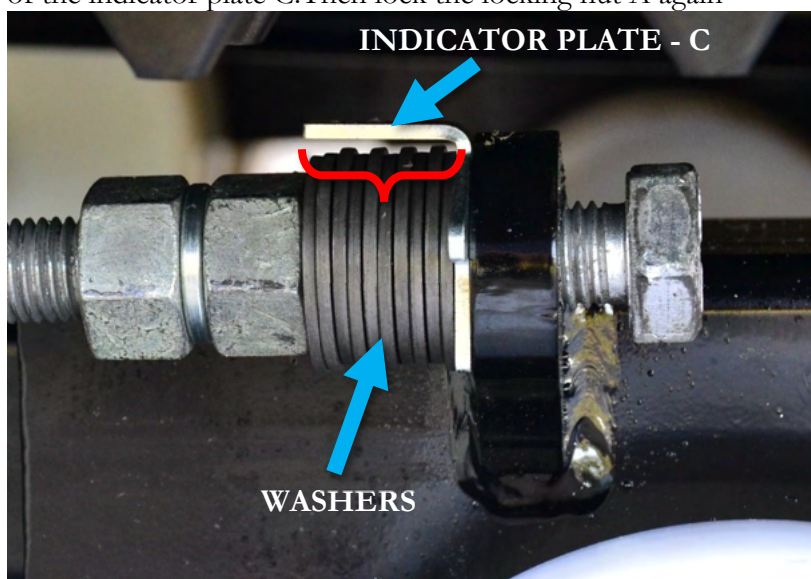


OBSERVE

Correct belt tension is very important to avoid unnecessary wear on the drive system and reduce the risk of track tracking and breakdown in the field

3

Tension the belt by adjusting nut B so that the washers on the threaded rod are pressed together enough to "fit" within the length of the indicator plate C. Then lock the locking nut A again



Hydraucorpse

The skin is generally checked for visible hydraulic oil leaks. In the event of a leak, contact your dealer for advice.

Return filters must be changed according to intervals in the service schedule, see chap. 8.3. See Chapter 4.1. "Main parts of the machine" for placement of return filters.

Electrical system and control

Electrical systems are generally checked for damage to cables and connections. Lamps are checked and replaced if necessary.

Battery for Järnhästen does not normally need to be charged if the machine is running regularly. In the event of prolonged stops or storage, it needs to be maintenance charged at regular intervals for best durability. See more under chapter on "Long-term storage".

Winch

Check for damage to the wire to the winch periodically. Change the wire if necessary so as not to risk creating dangerous situations when winching.

Important to oil or grease the free-spool mechanism.

Gas and brake cables

To prevent jamming or frozen wires, it is important that these are lubricated regularly. At the entrance to the handlebar entrance, the casings of both the gas and brake cable have been fitted with so-called lubrication ports or nipples. These should be opened and lubricated with liquid oil. Do not forget to screw back the protective screws.

Hint! – Blow clean compressed air into the nipples before lubrication to get out any moisture or water.

Also lubricate the wire at the throttle in the handlebar and at the engine.

Hint! – Use protective covers throughout the machine or thread a plastic bag or similar over the handlebar if you leave the machine without a roof in rain and snow.

7.2 Fuel Management

Fuel safety

Before use, always read and follow the engine's separate operating instructions with safety precautions for handling fuel.

The following is forbidden to do in the vicinity of fuel:

- To smoke.
- Having open flame or hot objects nearby.
- Having the engine running.



WARNING

Fuel used has the following hazardous properties:

1. The liquid, its vapors and exhaust gases are toxic.
2. May cause skin irritations.
3. Is highly flammable and explosive.

Recommended fuel

Always use unleaded gasoline according to the table below.
(taken from the engine's separate operating instructions).

Unleaded petrol	
United States	Pumped gasoline, octane rating of 86 or higher
Outside the U.S.	Petrol with an octane rating of 91 or higher
	Pumped gasoline, octane rating of 86 or higher

Unleaded 98, 95, 95 E5 or E10 can be used in Honda products (E5 or E10 contains 5% or 10% ethanol).

Do not use gasoline containing more than 10% ethanol. This will cause corrosion damage to components of the fuel system and damage rubber and plastic parts.

When using alkylate gasoline, use the instructions and data sheets provided by the alkylate manufacturer for more information.

If the engine is not used regularly (e.g. more than 4 weeks between each use), fuel stabiliser should be used.

Fuel stabilizer has a limited shelf life, and its performance will deteriorate over time.

- Once opened, the bottle has a maximum lifespan of 2 years.
- Fuel stabilizer will not recreate or revive old gasoline. It must be added when the gasoline is fresh.

Fueling

Refuelling should take place in a well-ventilated area with the engine turned off and with the machine on an even surface. Allow the engine to cool down first if it has been running. Never fill up with fuel indoors where the gasoline vapors may come into contact with flames or sparks.

Never use gasoline that is old, contaminated, or mixed with oil. Make sure that dirt and water cannot get into the fuel tank. Clean the tank regularly and clean the fuel filter according to the service schedule to avoid operational breakdowns.

Check and top up the petrol in the tank according to the points below.

Step	Measure
1	Wipe clean around the tank lid to avoid dirt in the tank and open the lid slowly to remove any excess pressure.
2	Check fuel level and refill the tank when the level is low. Where Care not to spill fuel.
3	Be sure to close the tank cap after filling to avoid leakage.

7.3 Service schedule

Introduction

The table below summarises the maintenance points at intervals and measures.

Maintenance schedule

Torque/subsystem	First 20h	Every 40h	Every 150h	Annually
<u>Engine and fuel system</u>				
Oil level	Check	Control		
Oil change				Replace
Air filter			Replacement in dusty conditions	Replace
Spark plug			Control	Replace
Fuel tank and hoses	Leak check	Control		Replace hoses/4yrs
Fuel filter				Clean/6 month
<u>Chassis</u>				
General inspection/injuries		Control		
Center of gravity movement tool attachment			Control	
<u>Drive system</u>				
Drive belt	Control and training	Control and stretching	Internal wear control	External wear control
Variator			Control wear of strap	
Drive wheels and axles			Control	
Claw coupling		Lubrication		Control
Steering brakes				Control
Disc brake				Control
Bogie and bogie wheels			Control	
<u>Transmission and hydraulics</u>				
Gear oil	Level control		Level control	Replace
Valves, valve blocks	Leak check	Leak check		
Piston for flexible tool attachment	Leak check	Leak check		
Hoses, connections	Leak check	Leak check		
Hydraulic tank	Leak check	Leak check	Replacement filter	
Return filter	The filter is changed for the first time after 50 hours, then every 500 hours			
Hydraulic oil level	Control	Control		
Hydraulic oil	Changed for the first time after 500 hours, then every 2,000 hours			
<u>Electrical system and control</u>				
Battery		Control (Charge battery)		
Cables, connections	Control		Control	
Lamps & lighting		Control		
Wire to Winch (control/damage)			Control	
<u>Other</u>				
Gas and brake cables	Lubrication	Lubrication		

7.4 Long-term storage

Introduction

If the machine is not to be used for 6 months or more, here are instructions on how best to carry out long-term storage.

Generally

The machine should be stored under cover with a temperature between +0°C to +30°C and with a relative humidity not exceeding 65% for best durability and to avoid surface rust.

Engine and fuel

Follow the engine supplier's instructions for storing the engine and fuel in separate operating instructions.

Battery

The battery should be stored in a cool dry place (plus degrees). Disconnect the battery from the machine if it is not in plus degrees and maintenance charge it once a month to extend the battery life.

Use a charger designed for lead-acid battery (12V), with a charging current of 4A.

8 Debugging

About this chapter

Troubleshooting that can take place both in the field and in the workshop.
Below are explanations of the most common faults for each subsystem.

The chapter covers the following paragraphs:

8.1	Engine	50
8.2	Hydraulic systems.....	50
8.3	Drive system.....	51
8.4	Steering, handlebar.....	51
8.5	Electrical system.....	52

8.1 Engine

Introduction

For troubleshooting of engine-related problems, refer to the engine supplier's owner's manual.

8.2 Hydraulic systems

Frequently asked questions

The table shows troubleshooting for the hydraulic system.

Problem	Cause	Solution
Working hydraulics for weak/longm	Incorrectly connected accessory.	Check the flow and pressure of the socket.
	Faulty hydraulic oil	Only use prescribed hydraulic oil with the correct viscosity.

8.3 Drive system

Frequently asked questions

The table shows troubleshooting for the drive system.

Problem	Cause	Solution
Variator function	The machine loses traction	Check the drive belt. Worn drive belt affects traction ability
Drive belts slide off sideways	Too large side slope in combination with load	Do not attempt to drive on a constant side slope
	Incorrect band tension	Tighten the straps

8.4 Steering, handlebar

Frequently asked questions

Table shows steering and handlebar troubleshooting

Problem	Cause	Solution
The handlebar falls to the ground in the forward position	Styrlever spring not tight enough	Tighten the spring with the included tools
Difficulty turning with and without load	Misaligned steering brakes	Adjusting steering brakes according to instruction 8.2.6
Requires a lot of power to disconnect the claw couplings	Poorly lubricated splines and claw clutches	Lubricate claw couplings and adjust according to instruction 8.4.1, claw coupling and steering brake
The machine does not swing	Diff barrier enabled	Unload diff barrier
Too much slack in the handlebar	Worn inner rings in clutch fork	Change inner rings
Handlebar loosens	Worn bushings in steering yokes	Change bushings

8.5 Electrical system

Frequently asked questions

The table shows troubleshooting for electrical systems and control.

Problem	Cause	Solution
(Option) Starter Don't go around	Too little power in battery	Charge the battery or replace if necessary.
The hydraulic winch does not start	Too little power in the battery or remote control or blown fuse	Change the battery in the remote control to the winch.
Some electrical functions do not work	Fuse	Check the cause and, if necessary, replace the fuse

9 Transport, towing and lifting

About this chapter

For all transport and movement of the machine that does not take place via your own engine, it is important that the following instructions are followed.

Transport

When transporting (without packaging) it is recommended to drive Järnhästen on and off the transport vehicle. Make sure that the below points are followed.

1. Stop the engine
2. Make sure that the fuel filler cap and oil filler cap are securely in place.
3. Always load secure the Järnhästen's frame securely with straps to the transport vehicle so it does not shift or tip over during transport.
4. Remove the ignition key to prevent it from getting lost during transport.

Transport new machine

When transporting an Järnhästen on a pallet with packaging, it is easiest to lift it by forklift. Always secure Järnhästen securely with straps to the transport vehicle so that it does not shift or tip over during transport.

Always wear gloves when unpacking a new machine.

**WARNING**

Make sure that the truck can lift at least 550 kg (Järnhästen's approximate weight without accessories).

Salvage

When salvaging ensure compliance with these points:

1. Stop the engine
2. If the machinery has overturned, follow the instructions in Chapter 3.2.
3. Attach the tow line as a starting point to the mounting loop at the front of the chassis. Alternatively, when salvaging backwards, the tow line can be routed around the pole and through the plate at the rear of the chassis. The machine should not be towed more than short distances.
4. Pull carefully and pay attention so the machine does not tip over, especially on inclines.

Lifting of the machine

Lifting of the machine is preferably done with a circular loop around the winch tower.

Lifting the machine in the winch tower must not be done with accessories mounted on the machine.

**WARNING**

Always ensure that lifting takes place safely and always check that the lifting equipment (round sling) used can lift the machine (machine incl. winch weighs about 550 kg). Secure the machine with pallet jacks or equivalent for work under the machine.

10 Recycling and scrapping

About this chapter

This chapter deals with the recycling and destruction of the machine.

Recycling and scrapping

When the machinery is used up, it must be recycled in accordance with the regulations in force. Contact staff specialized in recycling.

The machine is emptied of oil from the engine and gearbox as well as any gasoline

Essentially, the machine should then be disassembled into the following fractions for recycling:

- Rubber band, variator strap
- Plastic wheels.
- Chassis, handlebar
- Battery
- Wiring and electrical components (except battery)

11 EC declaration of conformity

Lennartsfors**EC DECLARATION OF CONFORMITY OF MACHINERY**

Original

Directive 2006/42/EC, Annex II, 1A

Manufacturer (and, where applicable, his authorised representative):

Company: Lennartsfors AB

Address: Lennartsfors 1, 672 92 Årjäng, Sweden

Ensures that:

Machine type: Järnhästen Flex 2

Machine No.: IH FLEX 2

Complies with the Machinery Directive 2006/42/EC.**Also complies with the following Directives:**

2015/30/EU, EMC

The following harmonized standards have been applied:

EN ISO 12100:2010 Safety of machinery — General principles for design — Risk assessment and reduction

The following other standards and specifications have been applied:**Competent to compile technical documentation:**

Name: Mikael Swartz

Address: Lennartsfors 1, 672 92 Årjäng, Sweden

Signature

Place/Date: Lennartsfors, 19 December 2022

Name: 

Name clarification: Mikael Swartz

Position: CEO

12 Contact

Contact our support

Mail: support@lennartsfors.com

Phone: 0573-39200, select "Spare parts"

Visit us

Lennartsfors AB

Lennartsfors 1

SE-672 92 ÅRJÄNG

When contacting about support and spare parts sales, it is important to provide the following information. Note these details in this manual for future reference.

Machine model:

Serial number:

Dealer:

13 Guarantees

LENNARTSFORS AB'S LIMITED GUARANTEE FOR THE EUROPEAN ECONOMIC AREA (EEA) AND THE COMMONWEALTH OF INDEPENDENT STATES (CIS) AND TURKEY FOR: JÄRANHÄSTEN

SCOPE OF WARRANTY

Lennartsfors AB ("LENNARTSFORS") guarantees Järnhästens sold directly by LENNARTSFORS or by distributors or dealers authorized by LENNARTSFORS to distribute Järnhästen ("Järnhästen Distributor/Dealer") in the member states of the European Economic Area (consisting of the Member States of the European Union and the United Kingdom, Norway, Iceland and Liechtenstein) ("EEA"), in member states of the Commonwealth of Independent States (including Ukraine and Turkmenistan) ("CIS") and Turkey, in respect of defects in materials or workmanship during the period and under the conditions set out below.

LCKE factory-installed parts and accessories are not covered by the warranty. Please refer to the applicable parts and accessories warranty conditions.

The warranty will be void if Järnhästen has been altered or modified in a way that strongly affects its function and performance or if changes have been made to change its intended use.

LIMITATION OF LIABILITY

TO THE FULLEST EXTENT PERMITTED BY LAW, THIS EXPRESS WARRANTY SHALL BE MADE AND SUPERSEDES ALL OTHER EXPRESS OR IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. TO THE EXTENT IMPLIED WARRANTIES CANNOT BE WAIVED, THEY ARE LIMITED TO THE DURATION OF THE EXPRESS WARRANTIES. INCIDENTAL AND CONSEQUENTIAL DAMAGES OF ANY KIND ARE EXCLUDED FROM COMPENSATION UNDER THIS WARRANTY. SOME JURISDICTIONS DO NOT ALLOW LIMITATIONS OF LIABILITY, LIMITATIONS, OR EXCLUSIONS AS DESCRIBED ABOVE. THESE MAY THEREFORE NOT BE APPLICABLE IN YOUR CASE. THIS WARRANTY GIVES YOU SPECIFIC RIGHTS, AND YOU MAY ALSO ENJOY OTHER LEGAL RIGHTS THAT MAY VARY FROM COUNTRY TO COUNTRY.

No Järnhästen distributor/dealer or any other person is authorized to make any representation, representation or warranty regarding the product beyond what is included in this limited warranty and such cannot, if provided, be asserted against LENNARTSFORS.

LENNARTSFORS reserves the right to change this warranty at any time, understanding that such a change does not affect the warranty terms that apply to products sold during the validity of this warranty.

EXCLUSIONS – WHAT IS NOT COVERED BY THE WARRANTY

Under no circumstances is the following covered by this limited warranty:

- Normal wear and tear;
- Normal maintenance, trimming, adjustments;
- Damage caused by negligence or failure to provide proper maintenance and/or storage, as described in the owner's manual,
- Damage caused by dismantling of parts, improper repair, servicing, maintenance, modification or use of parts or accessories that are not manufactured or approved by LENNARTSFORS and which, in LENNARTSFORS's opinion, are either incompatible with the product or adversely affect its function, performance and durability, or damage caused by repairs carried out by a person who is not an authorized Järnhästen distributor/dealer by LENNARTSFORS with service function;
- Damage caused by neglect, abnormal use, negligence or use of the product in a manner inconsistent with what is described and recommended in the Owner's Manual;
- Damage caused by accident, submersion, flooding of water or snow, fire, theft, vandalism or force majeure;
- Use of fuels, oils, or lubricants that are not suitable for use with the product (see owner's manual);
- Damage caused by rust, corrosion or exposure to the elements;
- Minor or consequential damages or damages of any kind including, but not limited to, costs of towing, storage, transportation, telephone, rent or taxi, inconvenience, insurance costs, loan payments, loss of time, loss of income or lost usage time due to service work.

WARRANTY PERIOD

This warranty is effective from the date (1) of the first shipment of the product at retail or the date (2) on which the product is first put into service, whichever occurs first, for a period of:

TWENTY-FOUR (24) CONSECUTIVE MONTHS for private use and twelve (12) consecutive months for commercial use.

An Järnhästen is used for commercial purposes when the use is in connection with professional use or any work or employment during any period of the warranty period. An Järnhästen is also used commercially if, at any point during the warranty period, it is provided with commercial decals or licensed for commercial use.

The repair or replacement of parts or the performance of service under this warranty does not extend the life of this warranty beyond its original expiration date.

Please note that the time limit for notification of product defects applies provided that it complies with the applicable national or local legislation of the country where the customer resides.

WARRANTY TERMS

The warranty applies only if each of the following conditions is met:

- Järnhästen must have been purchased as new and unused by the first owner from a Lennartsfors distributor/dealer authorized to distribute Järnhästen products in the country where the sale has taken place.
- The delivery inspection specified by LENNARTSFORS must have been carried out and documented;
- The product must have been registered under warranty by an authorized Järnhästen distributor/dealer.

- Järnhästen must be purchased in the EEA by an EEA resident, within the CIS by an inhabitant of that area and within Turkey by a resident of Turkey, and
- The validity of the warranty requires that regular maintenance, as instructed in this owner's manual, is carried out at specified time intervals. LENNARTSFORS reserves the right to require proof of proper maintenance before warranty compensation is granted.

If any of the above conditions have not been met, LENNARTSFORS will not grant any guarantee compensation to any owner, either in the case of private leisure ownership or commercial ownership. These restrictions are necessary to enable LENNARTSFORS to protect the safety of its products, its consumers and the general public.

CUSTOMER'S RIGHTS AND OBLIGATIONS

The customer must stop using Järnhästen when a fault is discovered. The customer must inform the authorized Järnhästen distributor/dealer within two (2) months from the discovery of the defect and give him reasonable access to the product and reasonable time to repair the product. The customer must also present to the authorized Järnhästen distributor/dealer proof of purchase of the product and is obliged to sign a repair/work order at the start of the warranty repair to make it valid. All parts replaced under this warranty are transferred to LENNARTSFORS.

Please note that the time limit for notification of product defects applies provided that it complies with the applicable national or local legislation of the country where the customer resides.

LENNARTSFORS'S RIGHTS AND OBLIGATIONS

To the extent permitted by law, LENNARTSFORS's liability in this warranty is limited to, at its sole discretion, repairing parts that are considered defective in normal use, maintenance and service, or replacing such parts with new original parts free of charge for parts and working time, at all authorized Järnhäst distributors/dealers during the warranty period, in the circumstances described herein.

LENNARTSFORS's liability is limited to carrying out the necessary repairs and replacement of spare parts. In no case shall a complaint regarding breach of warranty be a reason for cancellation of the purchase or that Järnhästen returns to the owner. You may also have other legal rights, which may vary from country to country.

In the event that service is necessary outside the EEA, CIS or Turkey, the Owner shall be responsible for any additional costs caused by local practices and conditions such as, but not limited to, freight, insurance, taxes, license fees, import duties and any financial charges, including those levied by governments, states, territories and their respective authorities.

LENNARTSFORS reserves the right to improve, modify or change products from time to time, without obligation to change previously manufactured products.

ASSIGNMENT OF WARRANTY

If ownership of a product is transferred during the warranty period, this limited warranty shall also be transferred and apply for the remaining warranty period, provided that LENNARTSFORS or an authorized Järnhäst distributor/dealer receives proof that the previous owner has approved the transfer as well as the required information about the new owner.

Lennartsfors, December 21, 2022