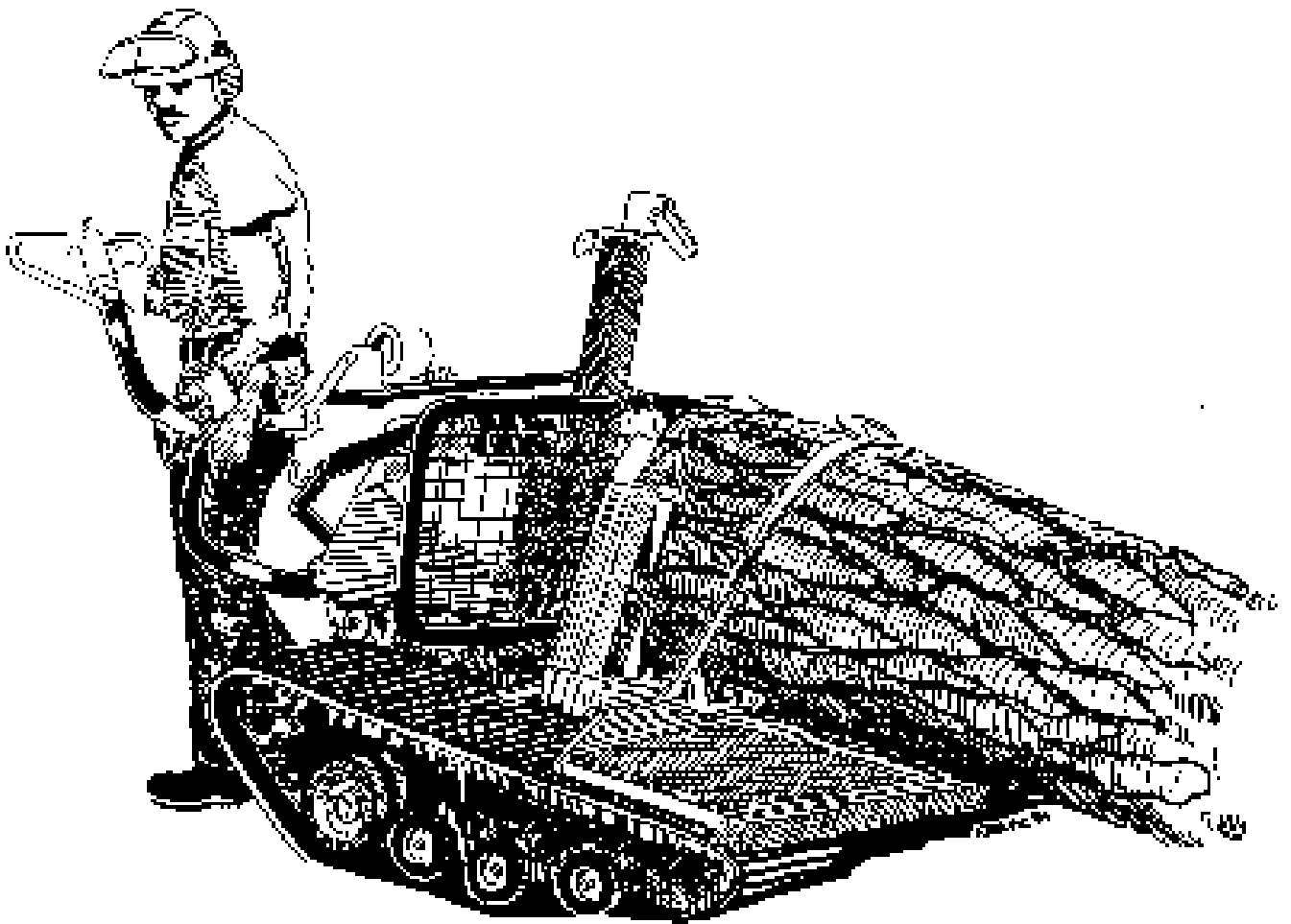


IRONHORSE



OWNERS MANUAL

JH-125,5 og 129

Standard, Proff and Proff V



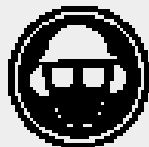
READ the manual and
UNDERSTAND the
contents before using
the machine.



SYMBOL EXPLANATION:

Symbols on the machine

Ironhorses can be dangerous!
Incorrect use can result in severe, even life threatening injuries.



Choke

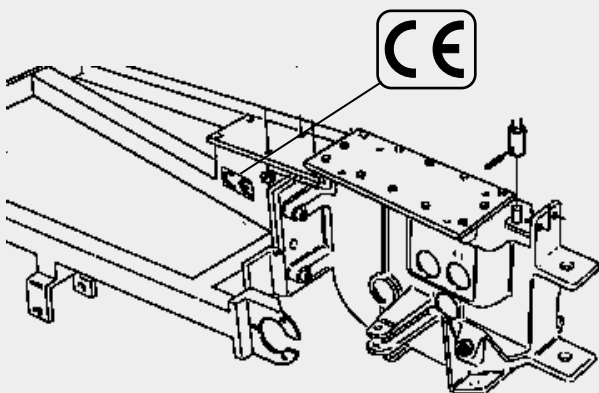
Fuel

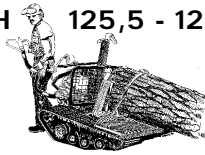
Read carefully through the owner manual and understand the contents before you use the Ironhorse.

Always use:
Hemet, ear muffs, gloves, safetyboots



CE- (Central European norm) is mounted to the right under the winch bracket


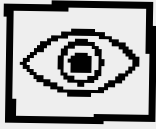


















SYMBOLS IN THE OWNERS MANUAL:

Contents:

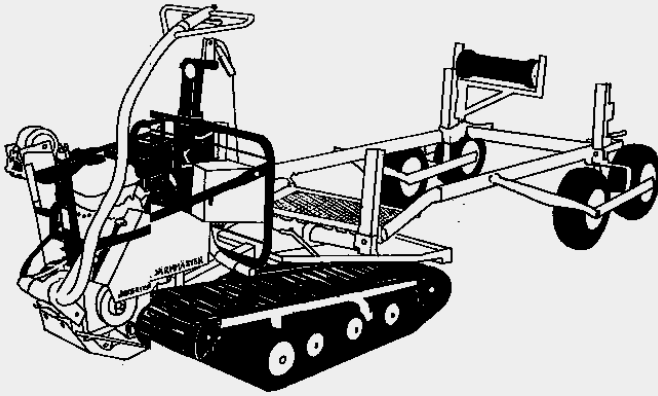
	Page
Symbols on the machine	2 and 3
Contents	3
Safety instructions	4
General, before use of the machine	5
Controls	6 and 7
Start of engine	8
Driving instructions	9 and 10
Uneven terrain	11
Use of powerwinch	12
Skidding of logs	13
Loading devices	14
Accessories	15
Technical data	16
Service schedule	17
First service	18
Service of engine	19
Changing oils	20
Greasing and adjustments	21
Adjusting the steering brakes	22
Adjusting the hydraulics/changing filter	23
Torque converter service	24
Heating of controlcables/changing brake pads	25
Troubleshooting	26 and 27
Registration card	28

Gloves 	Visual control 
 DANGER! WARNING! CAUTION!	Clutch 
Disengages 	Engages 
Free to steer 	Steering locked 
Reverse 	Forward 
Quick 	Slow 
Engine stop 	Parking brake 
Locked 	Unlocked 



DANGER

SAFETY INSTRUCTIONS



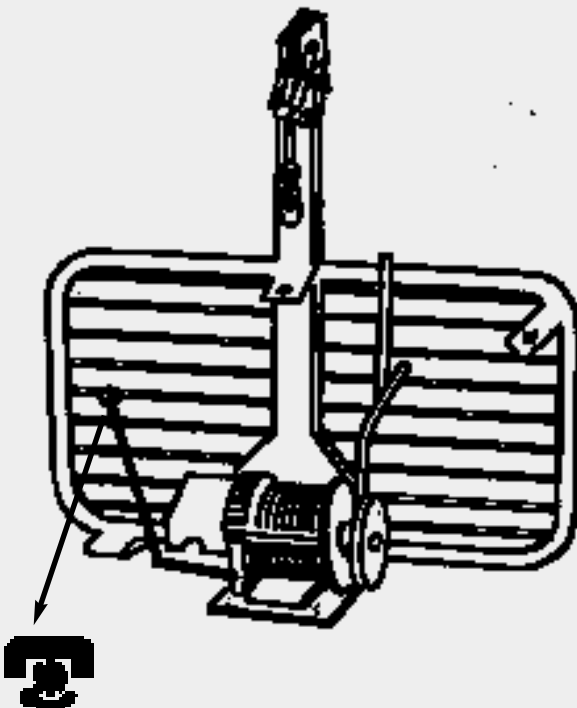
1. Read the owners manual before using the machine.
2. Exhaust fumes are dangerous. Do not use the machine indoor or in areas with poor ventilation.
3. Stop the engine and let it cool before refuelling.
4. Close the fuel valve when the machine is parked or transported.
5. Keep fingers and loose clothes away from rotating parts.
6. Always stop the engine before servicing it.
7. Keep children away from the machine.
8. Never try to stand on the machine, while in use.
9. Always use safetyboots with steel toe and good grip.
10. Do not attempt to start the machine in forward or reverse, always in neutral.
11. Check the function of controls before each start.
12. On steep downhill, back down, to prevent the machine from tipping forward. This is not necessary with the trailer or with logs.
13. The ironhorse is not made for transport of people.
14. Only one person should operate the machine. Keep all other people and animals well away from the work area, the machine, the controls, the winch cable and the objects being moved, transported or winched.

Powerwinch

1. Use only undamaged cable
2. Damaged cable must be replaced or shortened
3. Always use suitable gloves
4. Always be aware that the cable can break.
Do not stand in the hazard area.

WARNING/CAUTION

5. The machine can tip abruptly when winching. To avoid personal injury always winch from the rear and anchor the machine at the front by means of the manual winch or the anchoring band.
6. When using the winch to pull the machine forward, use the snatchblock so the pulling point is lower.
7. The winch must not be used for people transport.
8. Always keep fingers, hands, arms, legs, feet and loose clothing strictly away from the winch cable/wire at all times that the winch engagement lever is in the engaged position.





BEFORE USE OF MACHINE

Congratulations on your purchase of the Ironhorse. The machine is a superb machine for different transports. To adapt the machine to other different kinds of work, there are a lot of accessories for the machine. Ask your dealer for details.

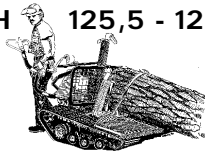
To be able to use all of the Ironhorse's advantages and possibilities, it is important to know how all the controls are working.

Be familiar to all the functions before you start using the machine.

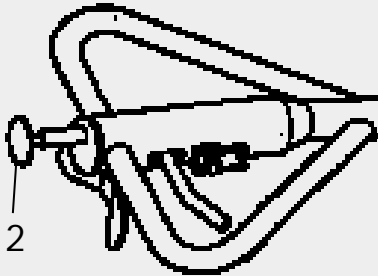
WARNING/CAUTION

Check this before start:

Oil level on the engine
Gearlever in neutral

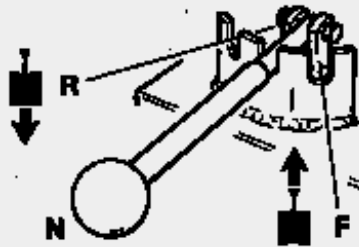


CONTROLS



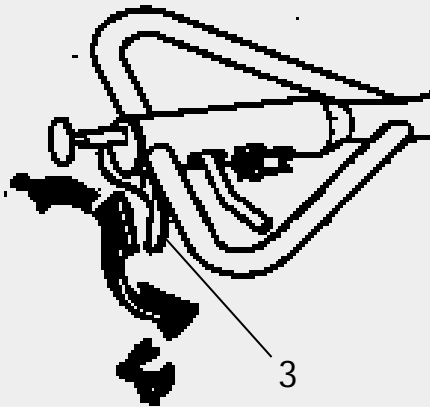
Emergency stop (2)

When pushed in, the engine stops. To start again, the handle has to be pulled out again.



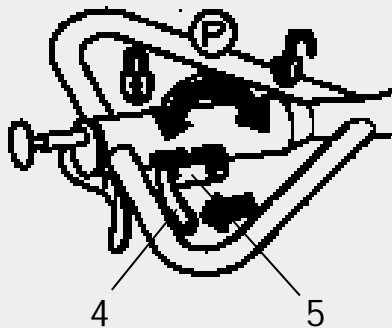
Gearlever

The gear lever has 3 positions. Forward, neutral and reverse. The machine is slower in reverse, but also stronger.



Throttle (3)

This lever regulates the speed of the machine. For maximum pulling strength use only half throttle.

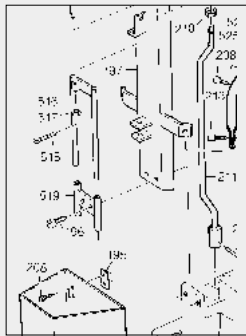
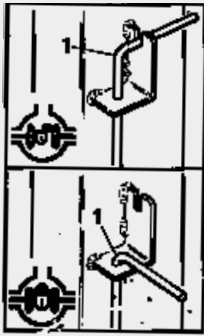


Brake (4)

The brake lever engages the disc brake on the gearbox. For parking, the lock (5) is used.

⚠ DANGER

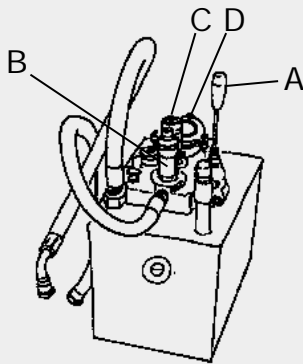
When braking down steep hills, it is an advantage to use the "steering lock" (see page 7). This ensures braking on both tracks. Beware of heat (on the disc) when going down long hills.



Steering lock

With this engaged, neither tracks can be released. You can push the handle sideways for better traction without releasing the tracks.

It is also useful when going backward downhill for control and ensuring braking on both tracks.



Hydraulic unit

This unit can be used for different hydraulic tools. Various sizes of pumps can be chosen for different flows and pressures (see page 23). The 48 ccm displacement pump delivers 3-Ω gallon/minute with a maximum of 220 bar psi.

Smaller and bigger pumps can be chosen for different flows and pressures.

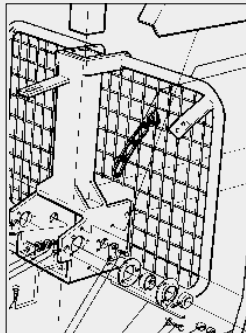
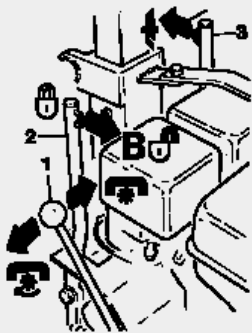
POWER WINCH

Tension lever (3)

The v-belt is tensioned with the lever and the winch starts to pull. (The rpm. has to be increased so the variator is engaged.)

The power comes from the secondary variator and the pulling speed depends on the force needed.

The winch can be used in all gear positions with the aid of the tension band (A).



Failure to disconnect the rubber tension band immediately after task is completed can result in undesired/accidental cable retraction causing damage to the machine and/or serious injury to the operator.

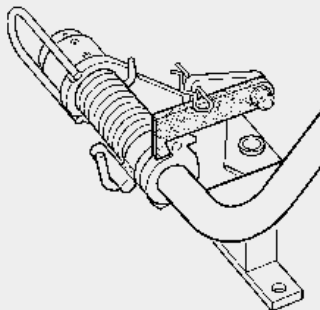
Engagement lever (1)

This lever engages the gears in the winch. Do not use force on the lever if the gears will not engage. Pull a little on the winch cables so the gears move into place, and try again.

Brake lever (2)

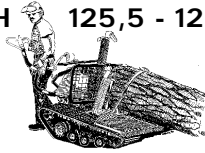
The winch has an automatic brake that holds 7-800 lbs, depending on the adjustment.

The lever is pulled forward to release the brake.



Steeringhandle lock

With this locking mechanism, the steering handle can be locked in the back position as well as the down position. It can also be used in other ways (see page 9).



STARTING ENGINE

Refueling

Use 90-93 octane fuel.

⚠ DANGER

Fuel is explosive. Avoid refuelling in poorly ventilated areas or close to open flame or other sources of ignition. Always stop the engine and let it cool before refueling.

Check oil level in engine

The oil level should be just below the oil filler cap. Refill oil if necessary. Use SAE 10w-30 (winter) or SAE 20w-50 (summer). For changing oil, see the service part in the book, page 21 or engine owners manual.

Check level of fluid in hydraulic reservoir

The oil level should be visible in the levelglass E. In warm weather and heavy work, it is important to maintain max oil level.

Fuel valve

Twist the fuel valve to the position "on". On longer stops, transport or shutdowns, the fuel valve should be positioned "off".

Choke lever

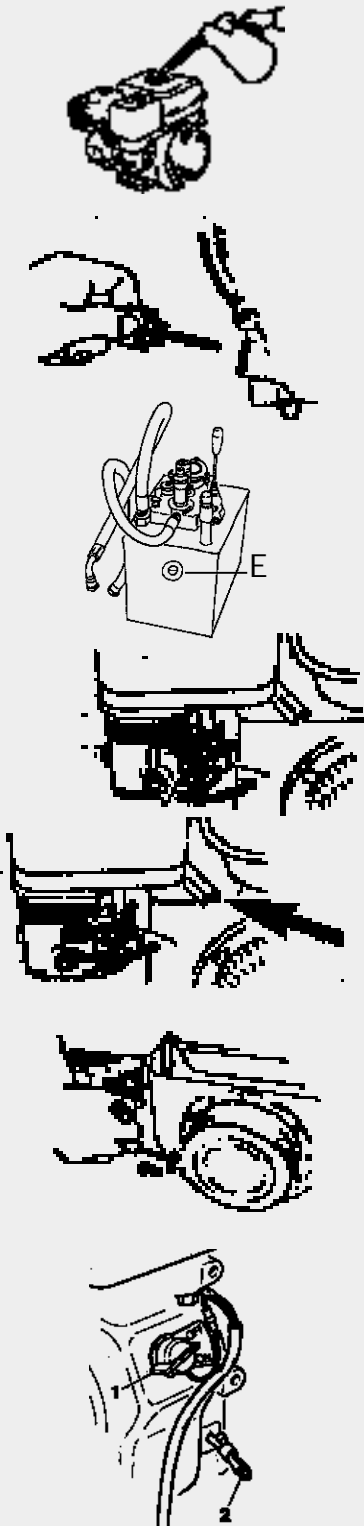
Close this lever when starting. Twist it gradually back as the engine gets warmer. Do not use the choke when the engine is warm.

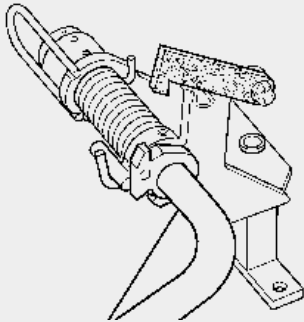
Recoil starter

Pulling the recoil starter starts the engine. Check that the emergency stop on the steering-handle is in the out position.

Stopping of engine

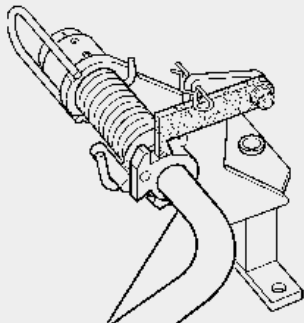
Let the rpm drop to idling, then twist the stop switch to off. On longer stops, turn off the fuel valve.





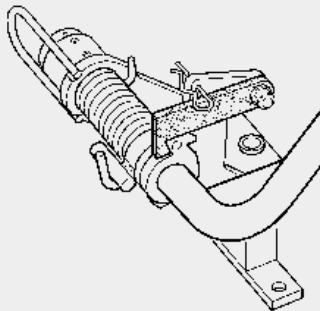
Steeringhandle lock: bypass

The picture shows the steering lock in bypass position. Using the machine in the bypass position can result in powerful shocks to the arms and hands of the operator.



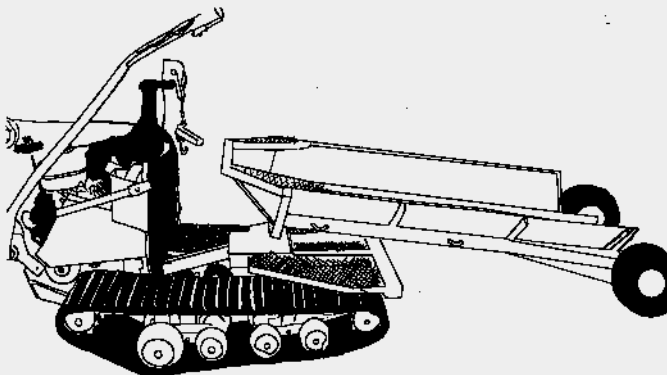
Steeringhandle lock: locked down position

The picture shows the steering lock in downward position with the steering handle forward. This is used when driving forward down steep terrain or when backing-up with no load on the machine.



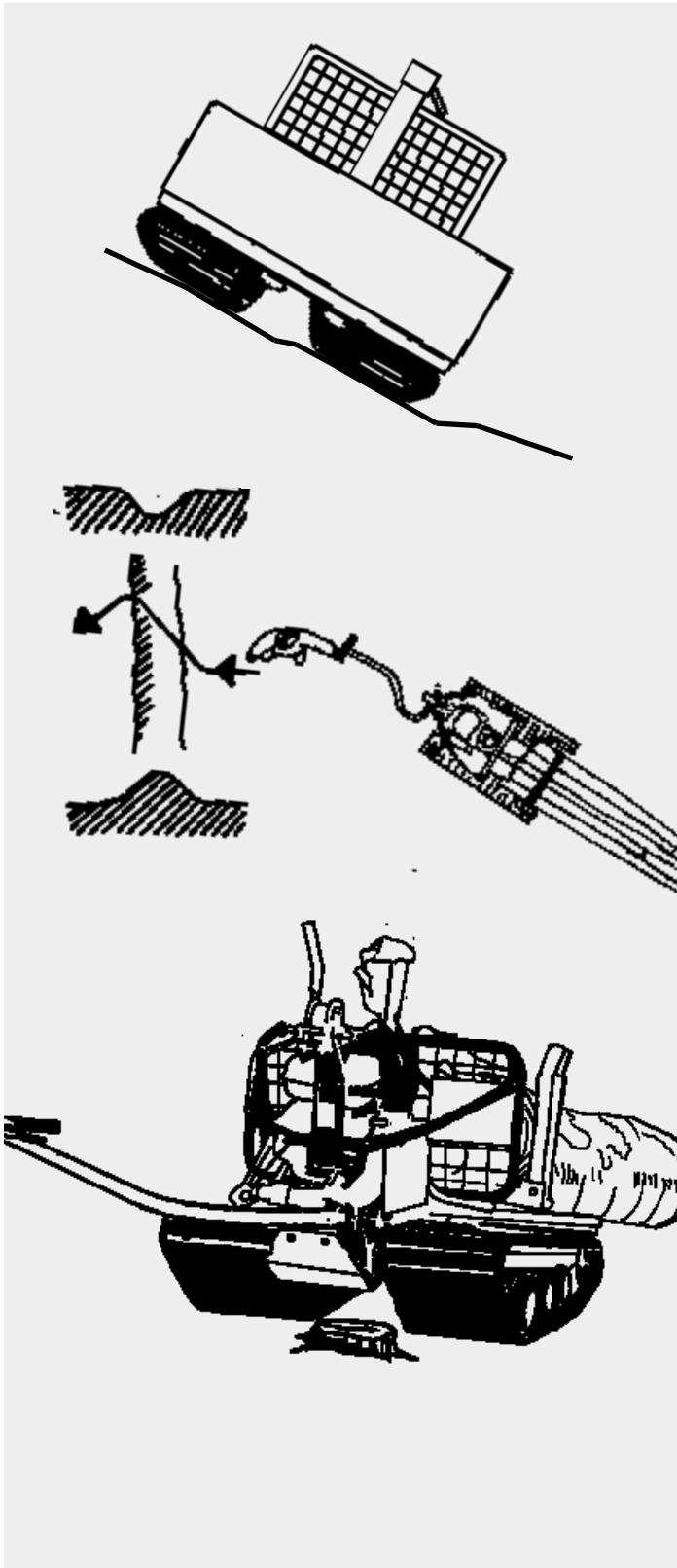
Steeringhandle lock: locked in fold-back position

The picture shows the steering-handle locked in the folded-back position.



Boggie/Cargo/Moose semi trailer

The trailer makes the machine longer and essentially more stabile. The machine can turn "under" the trailer, and is easy to turn even with heavy load. The trailer prevents the machine from tipping forward or backward. We recommend the trailer for driving with heavy cargo, especially in rough terrain.



⚠ CAUTION

Rotating track keepers

The track-keeper rollers ensure that the tracks are held in place when driving in sloped terrain. This kind of driving puts max pressure on the tracks, so try to avoid it when possible. Backing and turning in sloped terrain can cause the tracks to jump off.

⚠ WARNING

Driving across ditches

When crossing ditches it is best to approach at an angle. This prevents the skid pan from crashing into the other page of the ditch. Bumps in terrain should also be approached on an angle.

⚠ CAUTION

Passing stumps

Small stumps and rocks should be passed between the tracks. Larger ones should be passed on one of the tracks if you can't avoid them. This is to prevent damage to the tracks, especially on the sides of the tracks.

When driving over slippery rocks or stumps, the steering lock should be used for better control.

The life of the tracks is reduced if this is not followed.



DRIVING ON SLOPED/UNEVEN TERRAIN

DANGER

When driving on sloped terrain, many problems can be avoided by planning the route in advance.

This is important if the route is reused several times. When transporting in deep snow, it may be necessary to break the trail (road) with the machine empty, before using the road for transport. When it is below freezing point, this should be done the day before.

When driving on steep uphill with heavy cargo on the machine, it is important to place the cargo as far forward as possible, as the machine can tip backward.

Driving down steep slopes

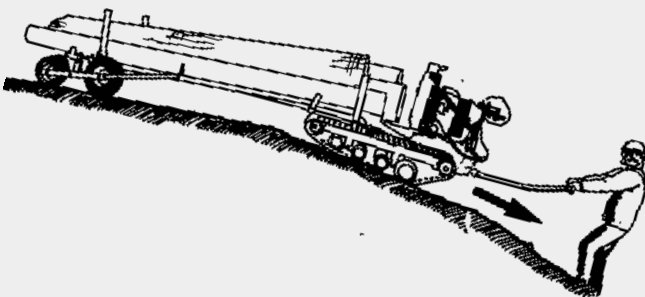
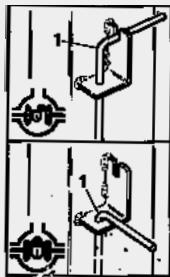
Without trailer

When driving down steep hills, the machine can tip forward. If the cargo is placed in front, it is better to back down the slope. The steering lock should be used on steep downhill (this ensures braking on both tracks). If it is too steep, use the winch to lower the machine down the slope by carefully and gradually releasing the winch brake lever. At times it can also be helpful to shift the gear lever into forward and use the throttle to provide additional resistance for braking.

With trailer

Always use the steering lock, as this ensures braking on both tracks and prevents the machine from twisting under the trailer. On steep downhill, it is best not to use a trailer. With the front-end of the log(s) secured to the log bunk and the rear-end dragging, it will be easier to maintain control because of the friction created against the ground. When driving up steep slopes with a load, try to use only half throttle. This provides the greatest amount of power. Using full throttle can cause the tracks to slip and spin.

The trailer makes the Ironhorse much more stable, it does not tip and is easier to turn.

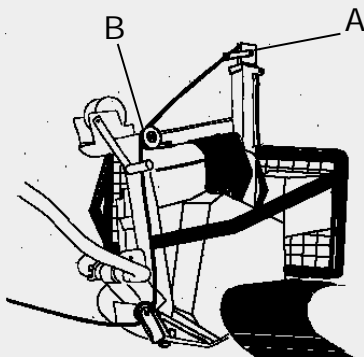
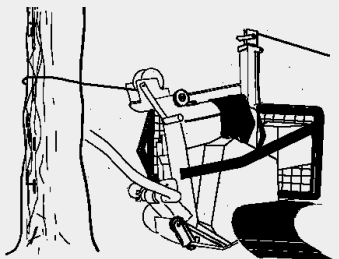
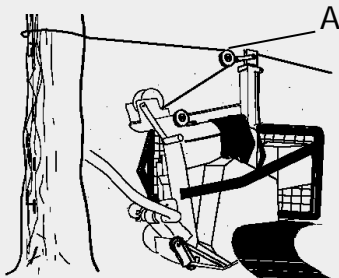
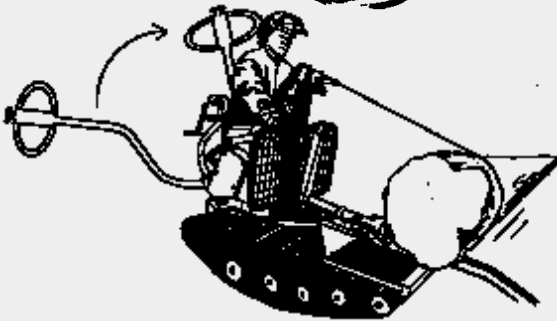
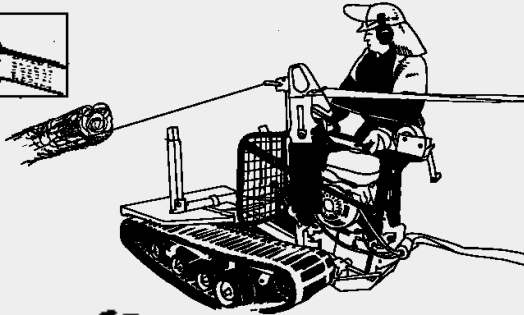
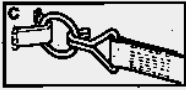




USE OF POWER WINCH

Winching in from the rear

During heavy winching it is important to anchor the machine. Use the anchor band by securing one end to a solid/stationary object and the other end to the ring on the winch mast (C). Remember that the pulling power on an empty cable/wire spool is 2400 lbs., while on a full spool it is approximately 1650 lbs.



⚠ DANGER

When the machine is operated with the steering handle lock in the "bypass" position the steering handle can swing/whip violently upward causing severe or even fatal injury to the operator.

⚠ DANGER

Anchoring with the hand winch (Light-Duty winching only!) For light-duty winching the machine can be anchored using the hand winch. Pass the (hand) winch cable through a snatch-block attached to the ring on the winch mast and attach the end of the cable to a solid/stationary object.

NOTE!

The snatch-block (A) is an optional item.

⚠ CAUTION

Do not attempt to anchor the machine directly from the hand winch spool to solid/stationary object. Doing so will likely damage the machine.

Winching the machine forward

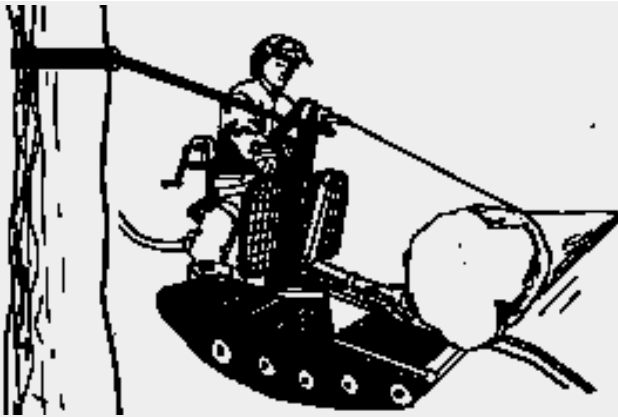
In some situations it can be helpful to utilize the motor winch to assist the machines forward movement. First, rotate the fair-lead (A) 180 degrees so the cableguide is pointed forward. Next, pass the wire through the castor (B) and insert the peg on the snatch-block through the hole in the skid pan. Extend the cable and anchor it to a solid/stationary object. It is possible to then drive both the tracks and the winch at the same time with the aid of the rubber tension band. (See page 7).



SKIDDING LOGS

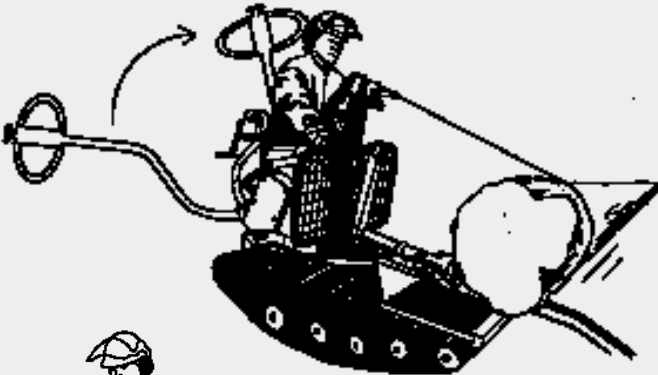
Loading of large logs

The winch is used to load large logs. The easiest way of doing this is to "roll" the log on. Put the wire over and around the log, and then back to the machine. When winching in the log it will roll within the cable onto the log bunk.



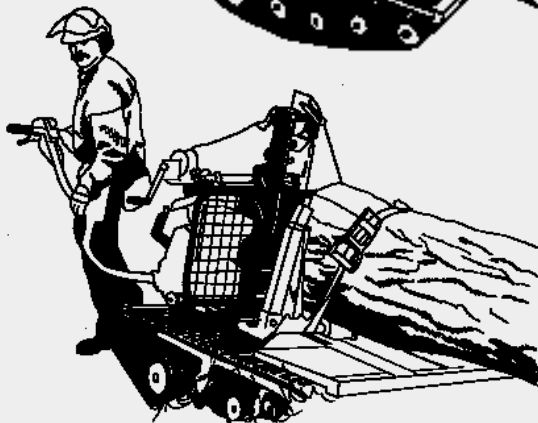
⚠ DANGER

When the machine is operated with the steering handle lock in the "bypass" position the steering handle can swing/whip violently upward causing severe or even fatal injury to the operator.



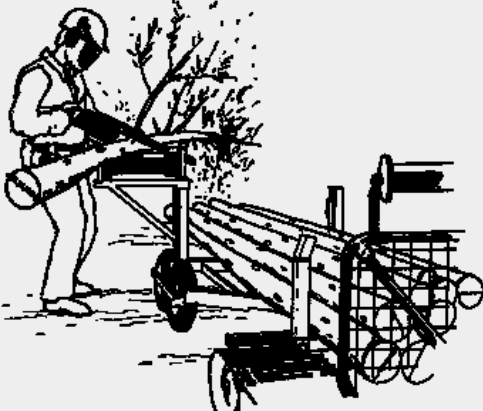
Securing the logs

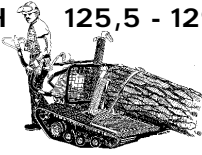
The log is secured to the bunk with the ratchet strap. Do not put the log too far up against the machine, this can limit the control of the machine when turning or in rough terrain. After transporting a short distance, recheck the tension of the ratchet strap.



Driving with logs on the trailer

The advantage of using a trailer when transporting logs is that you usually do not have to strap them to the machine. The load capacity of the machine is greater when using a trailer. When driving up hills, the length of the trailer should be increased to put more weight on the machine itself.

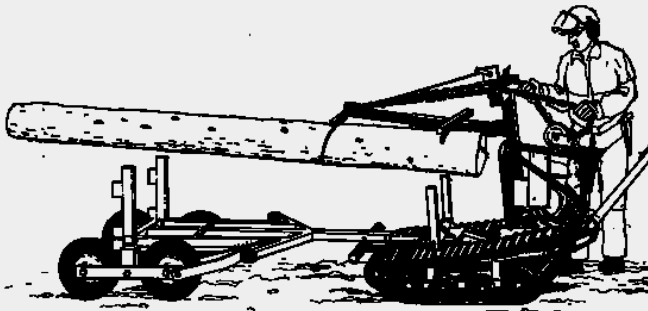




LOADING DEVICES

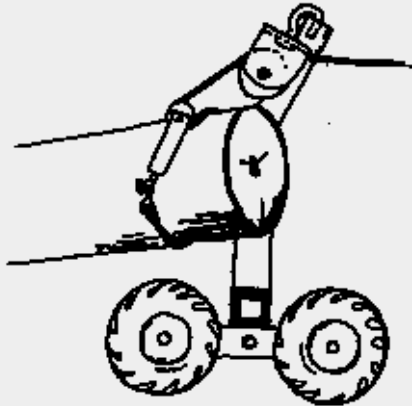
Loading crane

The loading crane makes it easier to load large logs. Winch the log in until it is along side of the loading crane. Release the winch cable and reset it approximately 3 feet back from the end of the log and continue to winch the log up and onto the trailer.



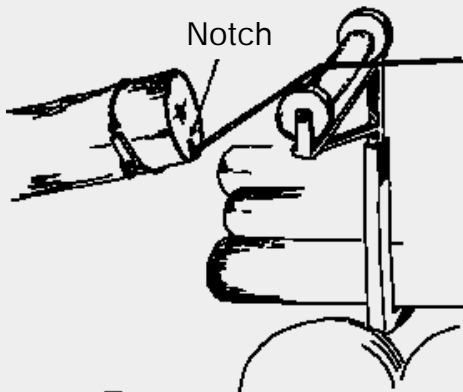
Snatch block device optional

With the help of this new device, the end of the log can be lifted up and on to the trailer.



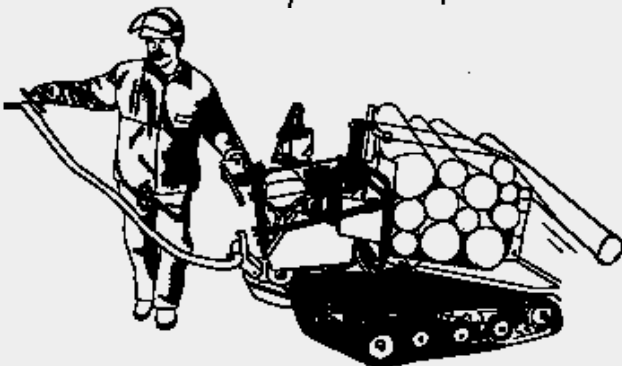
Workbench roller optional

Trees can be winched on to the trailer using the workbench roller if a notch is cut on the bottom of the log. Some of the limbs should be left on the tree, so that the tree doesn't roll before it makes it to the top of the roller.



Power winch

By positioning the Ironhorse 90 degrees to the log, logs can be "rolled" onto the trailer. Put the wire over and around the log and then back to the machine.

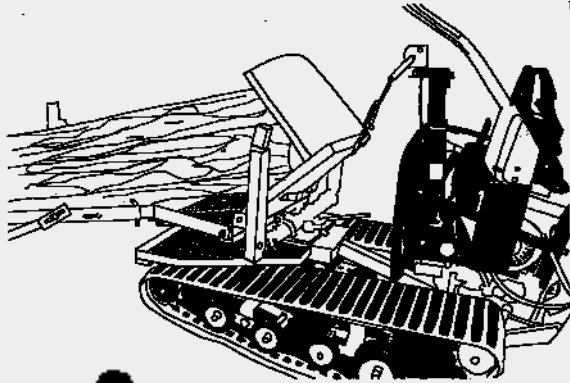




UNLOADING

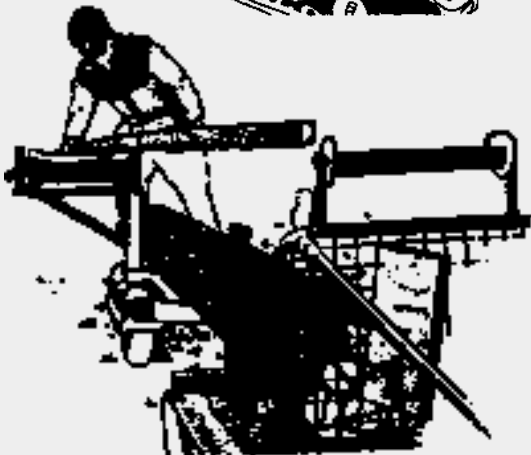
Box frame trailer optional

When the logs are ready to be unloaded, release the log-bunk at the rear of the trailer. Attach the winch cable to the front of the (optional) load-lifter and winch it up. As you drive forward the logs will slide off the trailer. When not using a trailer, release the log-bunk trip-lever and drive forward to off-load the logs.



Workbench roller optional

When loading and unloading smaller logs it is easier if you use the workbench roller as a pivot or fulcrum.



Mounting of skis on trailer

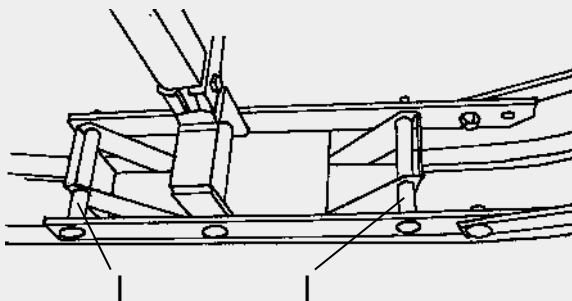
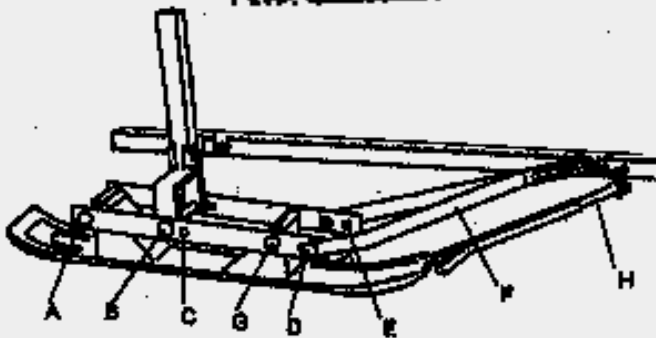
- A = Rear mounting for wheels and skis.
- B = Bogie bolt.
- C = Hole B, when using wheels.
- D = Hole to be used for mounting deflection arm when using skis.
- E = Mounting hole to rejection arm for use of wheels.
- F = Deflection arm.
- G = Front mounting for skis.
- H = Brach deflector.

1. Take off the wheels.
2. Move the deflection arm (F) back to the holes that the front wheel was mounted on to. (From hole E to hole D).
3. Move the bogie bolt from hole C to hole B.
4. Mount the skis in the holes A and G.
5. Mount H to the trailer. This makes the limbs and small trees to go under the skis.

Distance spacers. Boxframe trailer.

For trailers fitted with wide tires, distance spacers (I) must be installed outside of the mounting brackets.

4 spacers: 598 02 11-46



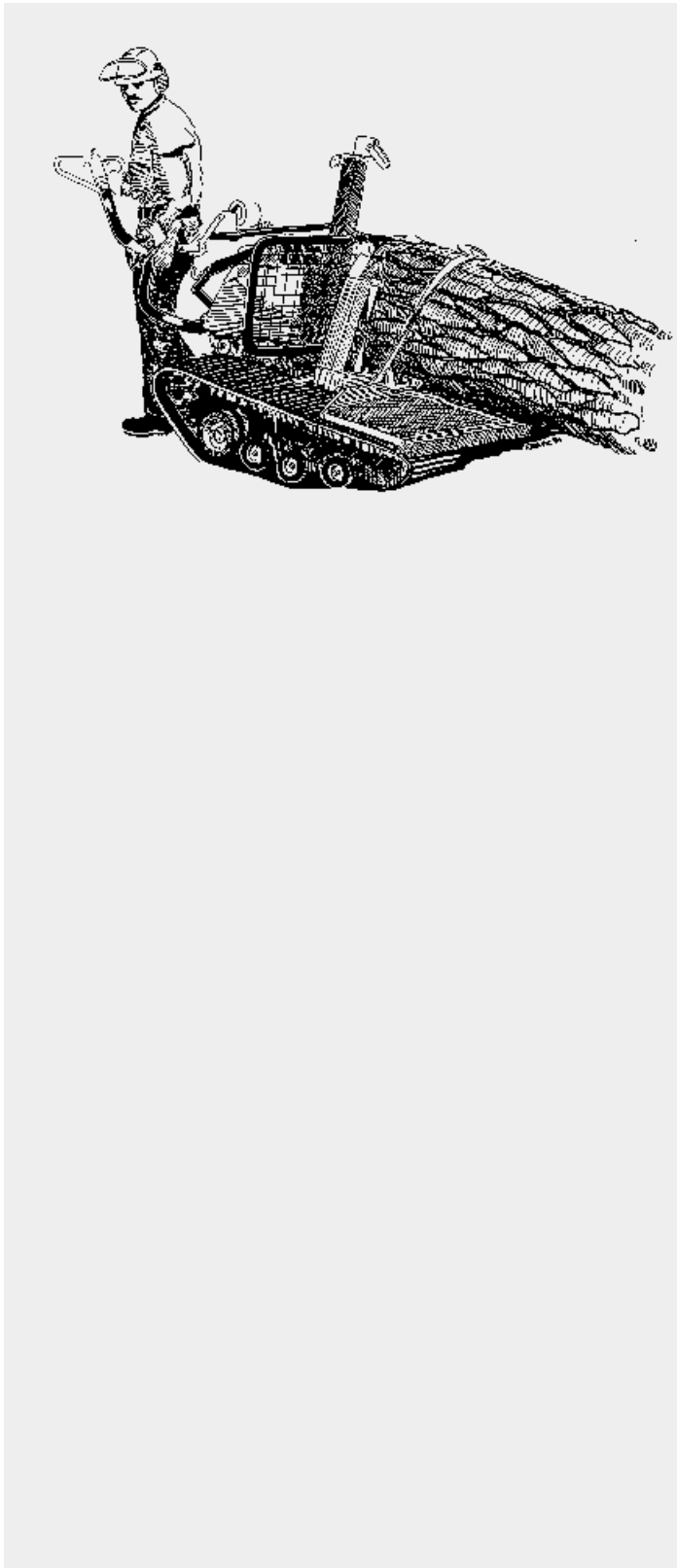


TECHNICAL DATA

Motor:	GX 140-140 ccm 5hp GX 160-160 ccm 5.5hp GX 200-200 ccm 6.5hp GX 270-270 ccm 9hp
Power winch:	(V-belt powered) from the secondary variator Pull capacity: 2400 lbs (empty spool) Pull capacity: 1650 lbs (full spool) Auto brake (holds 700–800 lbs)
Wire rope:	20 m 6 mm with steel core
Power transmission:	3/4" (19mm) belt drive torque converter (Ironhorses produced before jan. 92 use 5/8" belt)
Tracks:	Skega kevlar tracks 380 x 2900mm
Steering:	Dog clutches with steering brakes
Brakes:	Disc brake, with parking brake.
Turning-radius:	Turns within 1–2m depending on terrain and cargo
Starter:	Manual recoil starter
Power output:	55w, 12V (not standard on 9 hp)
Length:	165cm (steering handle turned backward). 65 inch
Width:	108cm, 42 1/2 inch
Height:	150cm, 59 inch
Hydraulic:	Up to 3,7 G.P.M., 3235 P.S.I.
Oil volume engine:	20 fl. oz. (5,5 HP) 37 fl. Oz. (9 HP)
Oil volume transmission:	19 fl. oz. SAE 10W - 30
Fuel tank:	1,3 GAL. (5,5 HP) 1,7 GAL. (9 HP)
Weight:	125.5 Standard: 594 lbs 125.5 Pro: 638 lbs 125.5 Pro V: 748 lbs 129 Pro: 682 lbs 129 Pro V: 770 lbs

Work environment

Noise:	(9 HP) ISO 7917, db (A) *82 (5,5 HP) ISO 9207, db (A) *96
Vibration:	M/S idle/full rpm 1,6/9;5



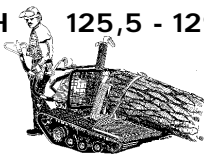
SERVICE SCHEDULE

	Every day	50 h	100 h	Every year
Check of engine oil level:	X			
Change engine oil (10 W - 30 or 10 W - 40):		X(B)		
Check of hydraulic oil:	X			
Change hydraulic oil (4 GAL. ATF oil) (20h first time):				X
Change hydraulic oil filter 508 02 10-55:			X	X(B)
Change air filter 17210 ZE 2-822 (9hp):		X		
Clean or replace air filter (5.5 & 9 HP):		X		
Empty fuel drain cup:	2-4 times every year			
Clean or replace spark plugs N9YC Champion/BP6ES NGK:		X		
Lubrication of dog clutches:		X(C)		
Tightening of bolts and screws:	Half-year (A)			
Adjusting steering brakes:	When necessary			
Change transmission oil (19 fl. oz.)				X
Check tension of track tightening:	X			
Check variator V-belt:	X(U)			
Check function of brakes:			X	

A=10h first time. B=20H first time. C= when required. U= weekly.
Lubricate internal variator parts.

Tools

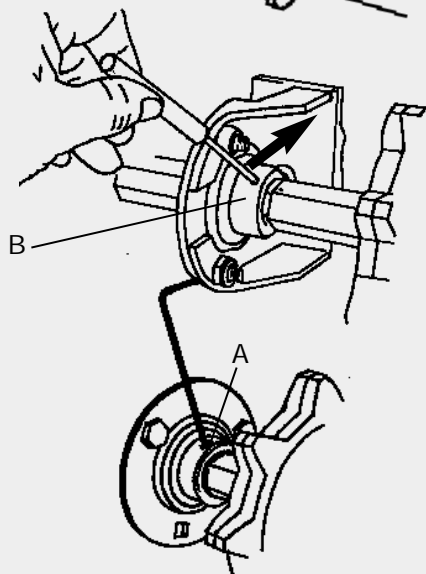
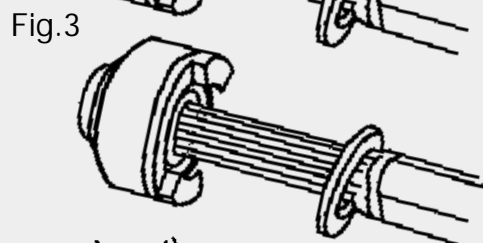
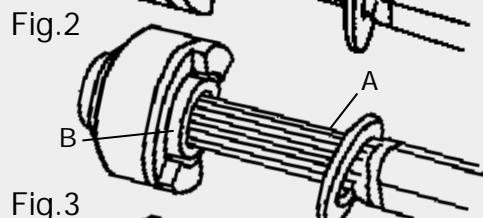
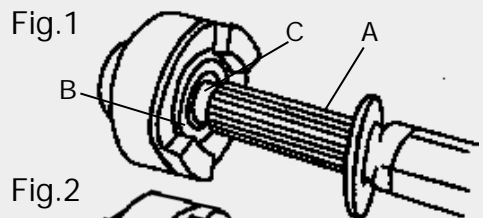
4 mm Allen wrench	Driveshaft bearing/ Safety valve
13 mm wrench	
19 mm wrench	Steering brakes
10 mm wrench	
16 mm wrench	Variator 9hp
Pressure guage fittings for manometer	508 02 10-27
Pressure guage	508 02 11-11
Oil sucker/transmission	508 02 08-29



FIRST TIME SERVICE



- 1.) Change motor oil. 1.1 liter 10W 30 oil..... page 21
- 2.) * Change hydraulic oil. About 4 GAL. ATF oil page 21
- 3.) * Change hydraulic oil filter page 24
- 5.) Check function of steering brakes page 23
- 6.) Lubricate torque converter page 25
- 7.) Tighten all bolts
- 8.) * Check max pressure on hydraulic (2250–3150 P.S.I.) page 24
- 9.) Control track tension page 22
- 10.) Check that the driveshaft has not slipped out.... Fig. 1 and 2



Bearing/shaft positioning

Fig.1 Shaft (A) has slipped out of bearing.
NEEDS ADJUSTMENTS.

Fig.2 Bearing & shaft slipped out of dog clutch.
NEEDS ADJUSTMENTS.

Fig.3 Proper positioning.

* Machines with hydraulics

Tightening of drivshaft

1. Loosen lock screw (A) 4 mm allen wrench.
2. Drivshaft forces in and holds there.
3. Bearing collar (B) is moved by tapping with a hammer and punch.
4. The lockscrew is tightened.
It is important that the screw lands on the flat spot of the drivshaft.



SERVICE OF ENGINE

Also see the owners manual for the engine

Air filter

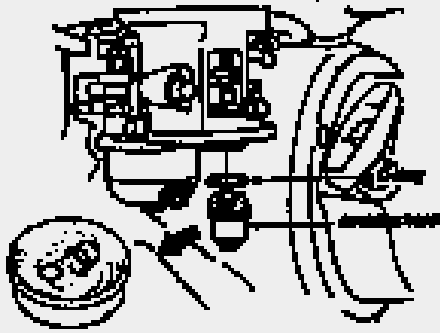
The paper element can not be cleaned so it must be replaced when necessary.

Honda part: 17210 ZE 2-822 (9hp)

The foam-rubber filter can be washed in warm soap water.

Never drive the machine without air filter.

5 and 5.5 hp has washable foam-rubber filter.



Carburetor

Shut off fuel valve and unscrew the draincup.

After emptying and cleaning, it is screwed back on and the fuel valve opened.



Sparkplug

The sparkplug gap should be 0.7-0.8 mm (0.028-0.031 in)

Recommended sparkplug:

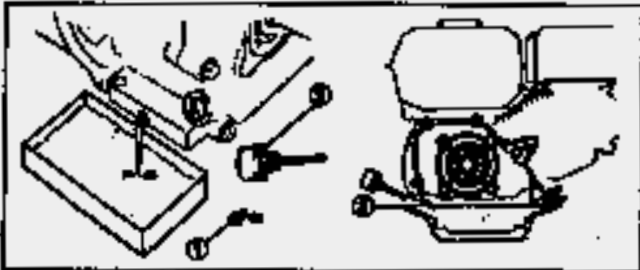
N9YC CHAMPION

BP6ES NGK

W8DC BOSCH

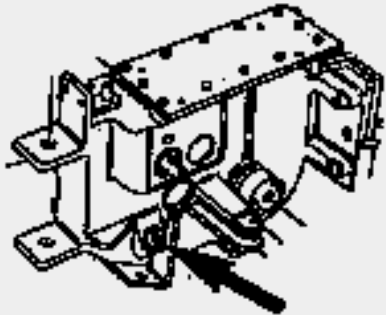


CHANGE OF OILS



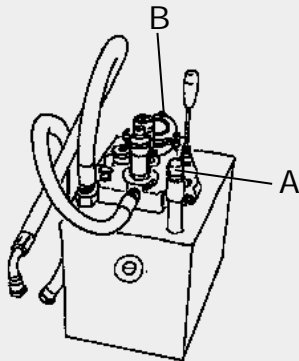
Engine

Changing of motor oil should be done when the engine is warm.
Remove the oil filler cap and drain bolt.
The engine takes 37 fl. oz. (9 HP), 20 fl. oz. (5 and 5.5 HP)
SAE 10 W - 30 (10 W - 40)



Transmission

The oil in the transmission should be changed once a year.
Use the dip-stick on the cap check the level.
Use motor oil SAE 10W - 30
Oil volume 0.55 l



Hydraulic oil tank

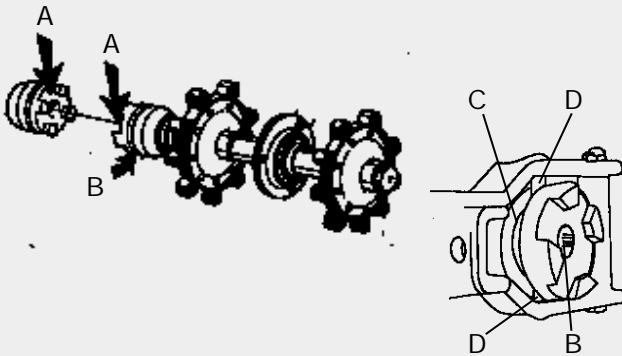
The hydraulic system capacity is 4 GAL. which is drained through the air valve (A) on top of the tank.
New oil is filled through the filter housing (B).
Change filter every time the oil is changed.
Filter: 508 02 10-14



LUBRICATING AND ADJUSTMENTS

Dog clutches

The dog clutches must be creased every 50 hours or more often if steering becomes difficult. Use waterproof grease at points (A), (C) & (D).

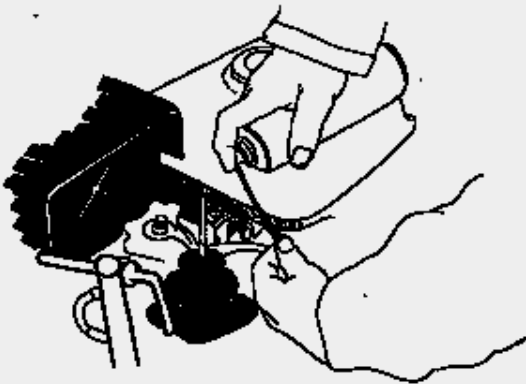


Braking and throttle cables

Both cables should be lubricated regularly to ensure smooth action. Use graphite lubricant or other light, moisture resistant lubricant.

Braking wire: 531 01 20-14

Throttle wire: 531 01 20-13



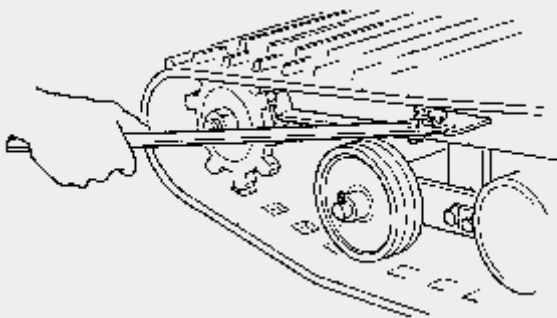
Tracks

Tightening

To ensure that the tracks stay on, they must be properly tensioned. When the tracks sags and touches the pipe underneath, it needs tightening. Tension is correct when the track can be pushed down to touch the pipe.

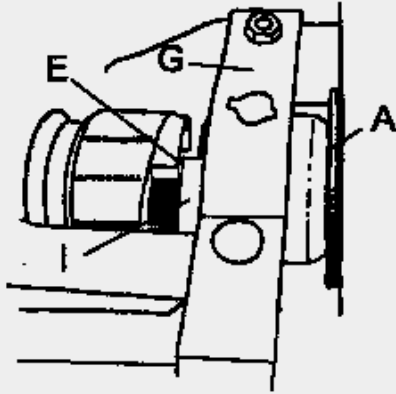
To tighten or remove tracks

Put the tensioning tool in position, with the yoke collar against the rear sprocket shaft. Use the tensioning tool to force the rear shaft back, releasing pressure on the clevis pin. Remove cotter pin and clevis pin. To tighten the track, force the rear shaft back. Insert the clevis pin into the next available hole and replace the cotter pin.



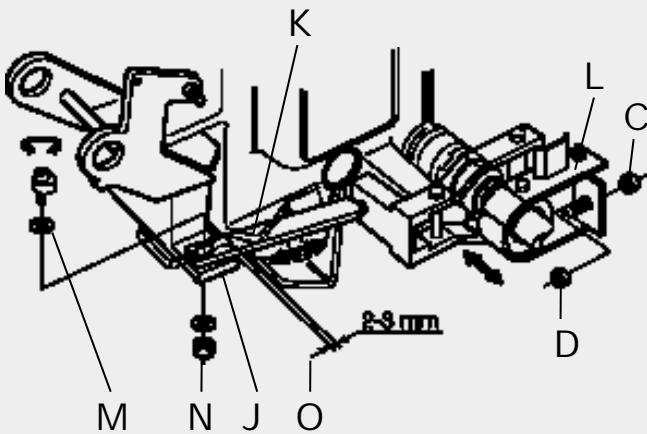


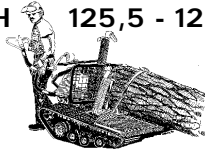
STEERING BRAKES



For optimum steering response, the steering brakes and linkage must be properly adjusted

- 1.) Push the steering handle fully to the side needing adjustment.
- 2.) Measure the gap between the legs of the dog clutches. The gap should be at least .040.
- 3.) With the steering handle pushed fully to the side, full pressure must be applied to the brake cone (A). If the steering arm (J) hits the gearbox at point (K), the linkage must be adjusted.
- 4.) To adjust the linkage, loosen locknut (D). Turn the adjustment nut (C) to move bracket (L) toward the gearbox slightly. Recheck clearance at point (K). Retighten locknut (D).
- 5.) Further adjustment can be accomplished by loosening locknut (N) and turning eccentric (M) to increase the travel of the pushrod.





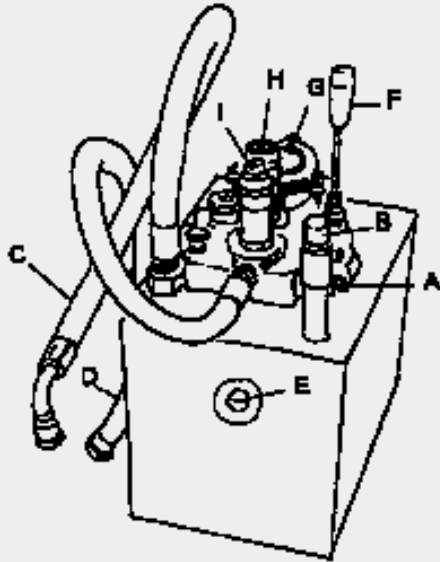
HYDRAULICS

Safety valve

The screw (A) adjusts max oil pressure (first loosen 13 mm locknut).

- B = Air valve/filling pipe
- C = Pumps sucking hose
- D = Pumps pressure hose
- E = Sight glass
- F = Control lever
- G = Return filter
- H = Return connection
- I = Pressure connection

The valve is a two-way valve, but is connected like a one-way valve to prevent the oil to go the wrong way.



Return filter

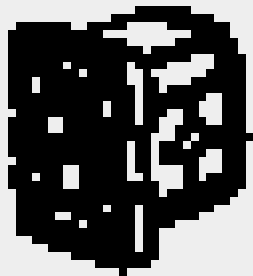
The filter (A) in the return filter is changed by screwing out the cap from the filter housing.

Return filter 508 02 10-14



Pump alternatives

.116 CU. IN.	1.59 G.P.M.	3530 P.S.I. (5,5 HP)
.146 CU. IN.	1.85 G.P.M.	3530 P.S.I. (5,5 HP)
.189 CU. IN.	2.38 G.P.M.	2940 P.S.I. (5,5 HP)
.219 CU. IN.	2.64 G.P.M.	2645 P.S.I. (5,5 HP)
.293 CU. IN.	3.44 G.P.M.	1980 P.S.I. (5,5 HP)
.372 CU. IN.	4.23 G.P.M.	2570 P.S.I. (9 HP)

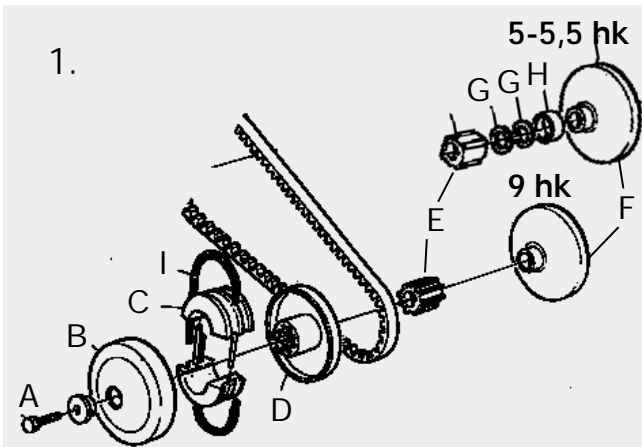




VARIATOR

Torque converter

The torque converter has to be lubricated frequently, every 20 hour. In severe use, it must be lubricated more often.



1.) Primary converter (driver)

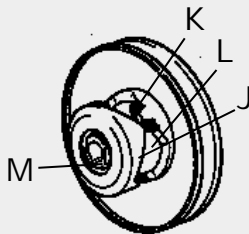
Take the drum (B) off after taking the bolt (A) out.

The crankshaft on the engine has to be hold still, so the easiest way is to knock on the wrench with a hammer. Clean the hub (E) and the moveable sheave (D) and put some graffiti grease an the parts. Add also a little amount of grease inside the drum where the weights (C) are running (Do not turn the hub the wrong way back)

To much grease will result in grease on the main disks and the belt will be slipping.

The 5,5 hp model has a bronze bushing that works as a bearing on idling.

2.



2.) Secondary converter (driven)

Add some grease on the cam (J) and the rubber knots (K) .

Spray some WD40 or similar on the spring (L) .

How the torque converter works.

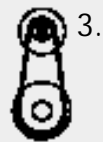
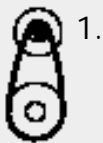
The engine is on idling. The springs in the primary holds the driver weights inn.

The rpm. Is increasing and the weights are forced out. That makes pressure on the moveable half and the machine starts to pull. (When the v-belt is worn it is narrower. That's makes that the machine starts to pull on a larger diameter, and that makes the machine lose power.)

The rpm. increases more and the moveable half goes further inn and the secondary discs are going apart. That results in higher speed on the machine.

The rpm. are on maximum and the machine has top speed. (If the v-belt is worn the machine is losing top speed also).

3.



Advices: The machine is strongest on half speed.

(Medium rpm holds the gear ratios low).

Change v-belt often. That makes the machine stronger and faster.

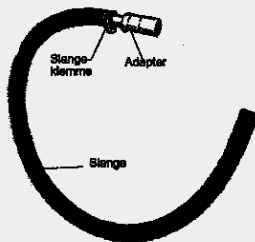
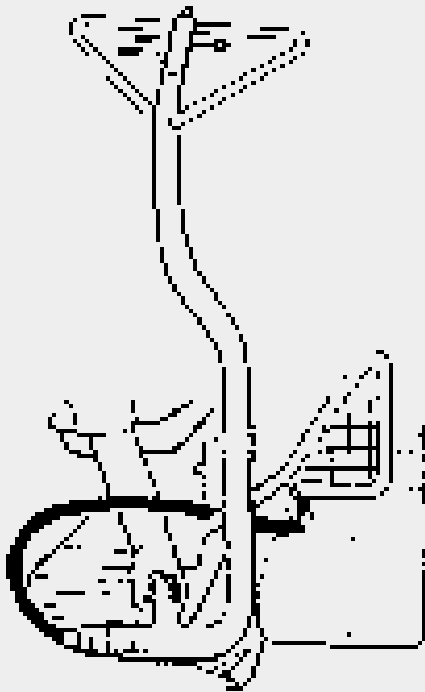


HEATING/THAWING OF THROTTLE- AND BRAKE CABLE

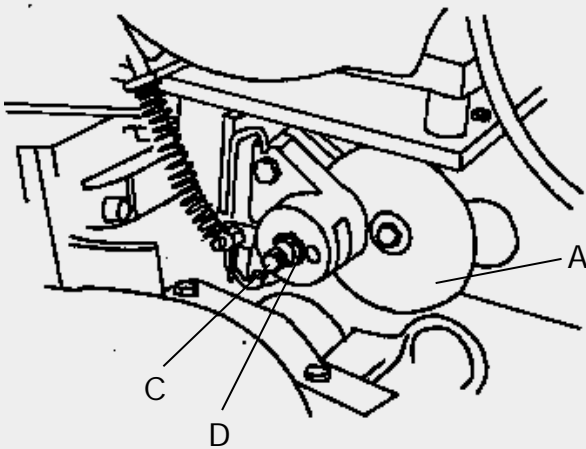
The throttle and brake cables are routed through the lowest point on the machine and therefore ice may form here. Ironhorse and it is easily created ice there. Letting warm exhaust enter through the steering handle can melt this. On the 9 hp model the exhaust goes through a flexible metal hose. An adapter takes the exhaust via the rubber hose and into the steering handle.

NOTE!

Fill the wire hoses with "antifreeze oil" to prevent the wires to freeze.



Adapter 508 02 10-35
Rubber hose 508 02 10-36



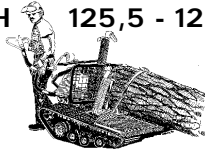
Adjusting/changing of brakes

The brakes are adjusted by loosening the (lock nut D) and screwing on the bolt (C).

The brake pad is changed by loosening (A). This makes it possible to take out the brake (calliper) so that the brakes can be changed. After the mounting it can be necessary to make a adjustment on the braking wire.

After a short drive, make sure the brakes are not heating up.

Brake pads: 531 01 93-48



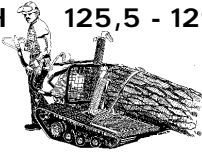
TROUBLE SHOOTING

PROBLEM	CAUSE	SOLUTION
The machine does not steer	The steering lock is engaged	Lift the brake and secure it
	The dog clutches do not disengage	A) Adjust eccentric (page 22) B) Change the bearings shifting fork
The machine turns bad	The steering brakes doesn't brake the tracks	A) Adjust the steering brakes (page 22) B) Take away oil or grease from the brakes
The machine has low pulling capacity	A) The V-belt is worn B) The variator is gearing up to high C) The secondary variator is giving after too easy D) The brakes is touching E) Air filter is too dirty	A) Change it B) 1. Change hub and moveable half 2. Give less throttle C) Check spring on secondary (driven) disc D) Adjust brakes E) Change filter (9 hp) clean filter (5,5 and 5 hp)
The variator is gearing down slowly	Hub and moveable (half) is dry	Lubricate with grease
The variator does not free out during idling	A) Spring around the weights in the primary variator has broken B) Bronze bushing broke (only 5 and 5,5 hp) C) Moveable half hangs up on the hub (9 hp)	A) Mount a new "spring" B) Mount new (bushing) C) Smothen the surface on the weights towards the drum
The tracks are forced off	A) Driveshaft has slipped out B) Sprocket wheel shaft or bearings is damaged C) The tracks are worn out	A) Push it in and lock it (page 18) B) Change bearings C) Change tracks



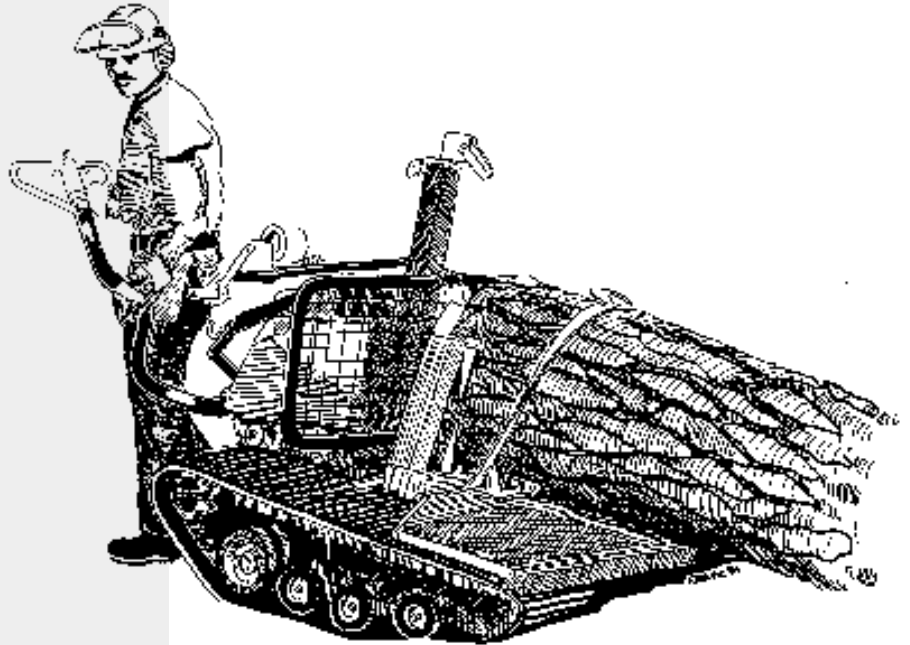
TROUBLE SHOOTING

PROBLEM	CAUSE	SOLUTION
The power winch has low pulling capacity	<p>A) V-belt is worn out</p> <p>B) The winch lever hits the cover</p> <p>C) The tension wheel bottoming on the driven wheel.</p>	<p>Change v-belt</p> <p>Shorter v-belt or bend lever.</p> <p>Change v-belt</p>
Makes a scraping sound when shifting gears	<p>A) Something wrong with the torque converter</p> <p>B) V-belt is so tight that the secondary variator is being pulled along</p>	<p>Look under variator page 26</p> <ol style="list-style-type: none"> Put the machine in gear If the machine moves, the engine has to be lowered 1/8"–3/16" Check that driver and driven disc is in line. Make sure the right v-belt is used.
The engine does not start	<p>A) The emergency stop has been pushed inn.</p> <p>B) Errors with the emergency stop.</p> <p>C) Need more choke</p> <p>D) Stop switch is in stop position</p> <p>E) No fuel</p> <p>F) Wrong spark plug</p>	<p>Pull the emergency stop all the way out</p> <p>Open the emergency stop and check what's wrong</p> <p>Give more choke</p> <p>Set the switch to ON</p> <p>Fill up with petrol</p> <p>Change the spark plug</p>



IRONHORSE INFORMATION

The Ironhorse came on the market in 1984 and a lot of developments are going on all the time. If you want to receive service bulletins and product update information, please fill out the coupon below and you will receive these items in the mail.



Owner

Contact person

Address

Zip code Country

Phone Fax

Use of machine: Forestry Agriculture Power company
 Hunting Arborculture Schools
 Municipal Other

Mail to: _____ **Faxes:** _____

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