FORS MW
We make it easy

FARMA®

Grapple Skidder

1000 F

1000 TM

1000 TMT

1000 THT

EN_V1.0-2018W02

Original instruction

INSTRUCTION BOOK

CONTENTS

INTRODUCTION

This instruction manual is intended for FARMA skidders, and contains information for safe use. FARMA skidders are intended for self-employed work in the fields of agriculture and forestry.

Even if you have experience of this type of product, we recommend that you read our instructions carefully in order to familiarise yourself with the product. The instructions contain information that is vital for safety and efficiency, as well as to ensure the validity of the factory guarantee. When the product you have purchased is delivered, check that is has not sustained any delivery or transport damage. If there should be any such damage, or if any parts are missing, contact your dealer immediately.

It is the responsibility of the user to inform himself regarding the use of the product and to follow the instructions carefully.

Manufacturer:
AS FORS MW
TULE 30
765 05 SAUE
Tel: + 372 679 0000□□ □□
www.forsmw.com

Dealer:

1. SAFETY REGULATIONS

1.1 GENERAL SAFETY REGULATIONS

Carefully read through the instruction manual before using the skidder. Important data relating to your particular skidder can be found in the skidder's technical data. Incorrect usage can result in injuries to you and damage to the skidder.

Operating a skidder requires a high level of expertise, as well as knowledge about the machine you are using. It is important for you to acquire knowledge and to train with regard to the skidder's behaviour. Practice the movement pattern and always work with smaller loads until you are completely familiar with the skidder. Take care to ensure that nobody is within the safety zone (20 m).

FARMA skidder is intended for normal use within agriculture and forestry, and may only be used by individuals who possess knowledge about the handling of agricultural machinery.

1.2 DESCRIPTION OF THE USE OF WARNING SYMBOLS

In the user manual we distinguish between the terms **"DANGER!",** "**WARNING!",** "**NOTE!"** and **"INFORMATION!"**. These markings are used to draw the attention of readers to the fact that this is an area that is of particular importance.

DANGER! - a description of an imminent hazard that will result in severe injury or death if not avoided and should be limited to the most extreme situations.

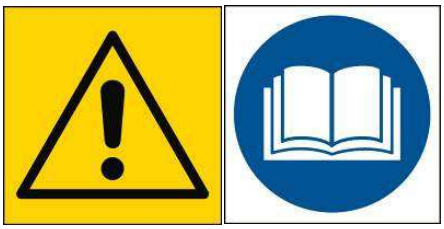
WARNING! - a very important item of safety information is supplied with this warning symbol.
A description of a potentially hazardous situation which if not avoided could result in injury or serious injury or death.

NOTE! - the note symbol indicates that the product, process or enviroment may sustain damage, as well as indicating the risk of minor injuries.

INFORMATION! - Important information for use of the product.

1.3 PRESENTATION OF LABELS

WARNING!



Warning triangle and instruction manual label

The skidder is supplied with a warning triangle alongside the instruction manual decal in order to reinforce the requirement for the user to read the entire instruction manual carefully before starting to use the skidder.

WARNING!

Safety distance 20 metres

This decal shows the importance of taking great care when working within the skidder's safety zone. Always keep a close eye on and monitor the skidder's safety zone. Carelessness can result in direct danger to life.

INFORMATION!

Label for the use of safety equipment

These decals challenge the user to employ appropriate safety equipment in order to avoid injury when using the skidder.

WARNING!

Hydraulic fluid under pressure

Hot hydraulic fluid at high pressure levels can occur in the hydraulic system. Take care when connecting, and replace poor quality hoses.

WARNING!

Risk of clamping injuries

There is a risk of clamping or crushing injuries during work and maintenance.

INFORMATION!

Lubrication label

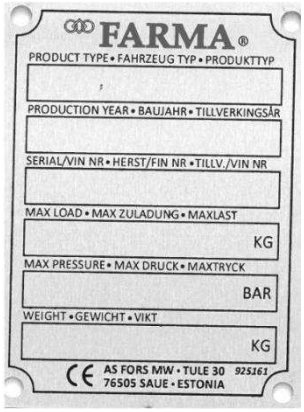
This label used to show the importance of regular lubrication of the trailer. Please also check lubrication intervals from chapter 6. Maintenance.

WARNING!

Warning regarding remotely started machine components

If the skidder is equipped with a winch and/or radio control of skidder functions, these can be started without anybody being in contact with the crane. Ensure that the area around the crane and the winch is free before starting this function, and that nobody is within the risk zone.

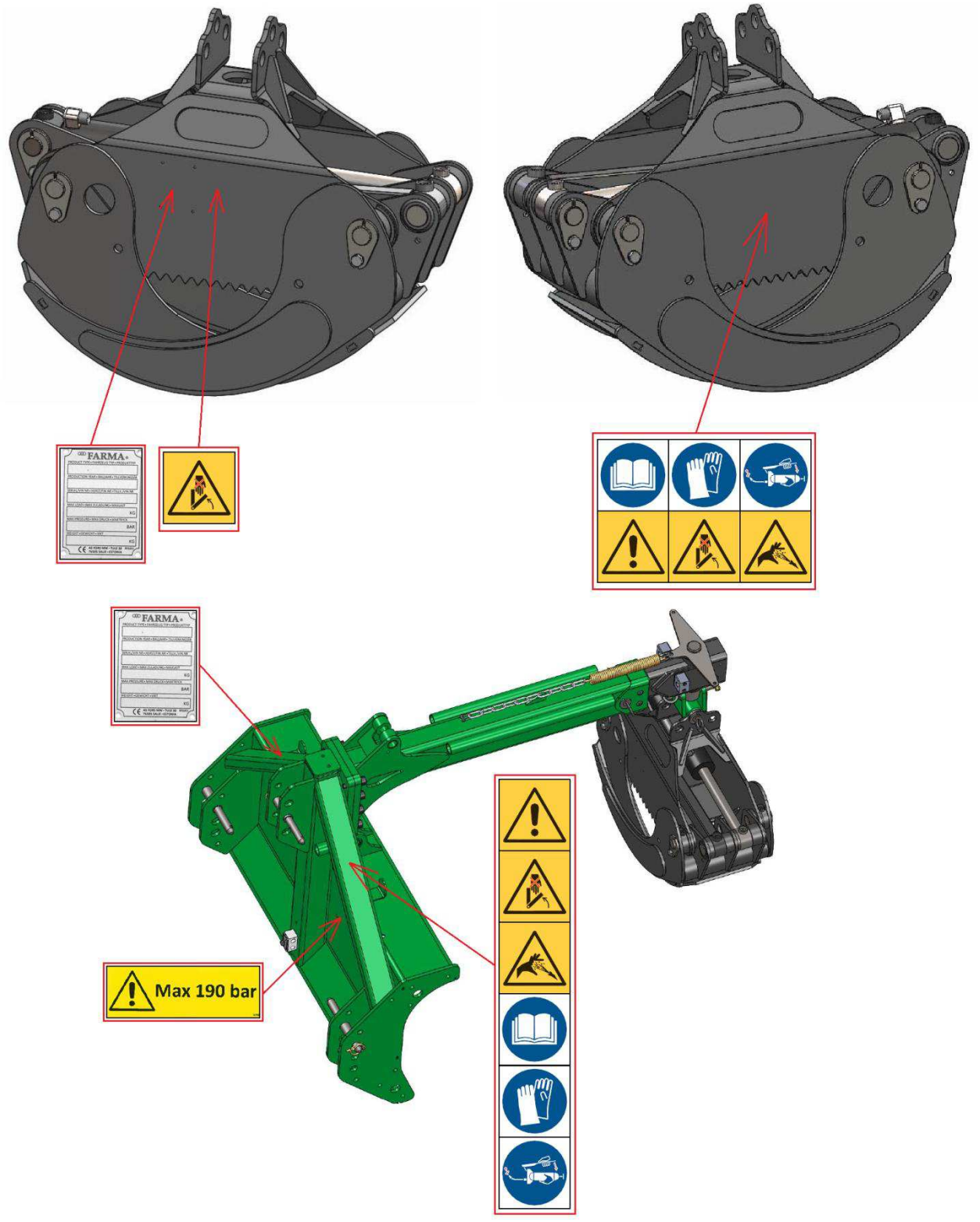
INFORMATION!



FARMA ID-plate

Each skidder that is delivered is supplied with a designation plate. Ensure that the skidder has this plate and check the data contained on the plate.

1.4 LOCATION OF THE LABELS ON THE PRODUCT



2. SAFETY INSTRUCTIONS

2.1 UNLOADING PRODUCT

Before unloading the product, check visually that the product is not damaged during transportation. If the product is damaged, inform the company that transported the product and the dealer or manufacturer of the product immediately.

- Ensure that you have enough space for unloading the product;
- Wear personal protective equipment such as helmet and footwear.

2.2 BEFORE YOU START TO WORK

- Study safety instruction;
- Before you connect the skidder to the tractor's hydraulic system, you must have read through the tractor's instruction manual so that you know how the skidder is to be connected to the tractor;
- Take extreme care when connecting the skidder to and disconnecting it from the tractor or trailer;
- This skidder is only intended to be used and operated from the tractor's driver's seat;
- Familiarise yourself with the skidder and its functions;
- The skidder is not intended for lifting people;
- You must not hand the skidder over to an outside individual without first having ensured that this person is familiar with the operating and safety regulations.

2.3 IN OPERATION

It is prohibited for unauthorised parties to be within the skidder's risk zone, which is 20 m!

If the hydraulic system's overload protection is incorrectly affected or the system's functions are otherwise altered, safety cannot be guaranteed under any circumstances!

Always pay attention when working close to electrical cables. Maintain a safe distance. Bear in mind the risk of unforeseen movements. If the skidder should come into contact with a power line for any reason:

- **Warn people in the vicinity of the crane not to touch the machine;**
- **Do not touch any metal parts;**
- **Remove the arm system from live cables**

When there is a risk of overturning, immediately lower the skidder by moving the control lever to the lowering position.

- Ensure that nobody is within the skidder/crane´s risk zone while working;
- Always maintain a visual check on the work area;
- Never overload the skidder;
- Never stand or walk under suspended loads;
- Ensure that the tractor is always standing on firm ground so that there is no risk of overturning;
- Only use grapples that are correctly dimensioned for the work task;
- Do not work under conditions where there could be a risk of clamping injuries or some other injury.
- Take great care when loading and unloading in the vicinity of power lines. Maintain the safety distance to live cables;
- Do not insert your hand or any other part of your body into the machine, the wiring system or under the load while work is in progress. Do not risk becoming trapped between the skidder's parts or between the tractor and the skidder;
- Stop working by lowering the skidder and the grapple onto a firm surface, switch off the engine, engage the parking brake and remove the ignition key to prevent unauthorised usage;

2.4 CLEARING BLOCKAGES AND CLEANING

- When cleaning, first perform a rough clean using just water, although avoid using high-pressure sprays on electrical components;
- Use an environmentally friendly detergent. Allow it to work for the specified time. Rinse off with hot water;
- Always lubricate the skidder after cleaning.

2.5 INSTRUCTIONS IN THE EVENT OF EMERGENCY STOP

Risk of overturning

When there is a risk of overturning, immediately lower the skidder by moving the control lever to the lowering position.

- Keep hold of the lever until the load is on the ground. Do not interrupt the lowering movement, as the risk of overturning will increase if the load should suddenly stop;
- Never use the outer boom for lowering the load when there is a risk of overturning, as this could result in the load ending up in the cab;
- If the tractor overturns, follow the instructions found in the tractor's cab. Do not jump out of the cab. There is a risk that you might end up under the falling load or under the overturning tractor.

Hose ruptures

- In the event of a loss of pressure in the hydraulic fluid or in the event of a rupture in the hydraulic hoses or pipes running between the controls and the skidder, you must switch off the tractor's engine and lower the load to the ground immediately. Disconnect the hydraulic flow. Repair the rupture. Take care to clean up any oil that has run down to the ground. Hand in waste to an appropriate waste management facility;
- If the rupture is in the main pressure hose from the tractor to the controls, you must stop the oil flow by disconnecting the lever control for the tractor's hydraulic outlet or by switching off the tractor's engine with the stop button. Also take care to clean up any oil that has run down to the ground.

2.6 TRANSPORT

Follow these instructions to avoid the risk of accidents. The manufacturer and dealer are not responsible for any damage in the event of failure to comply with these instructions.

It is important for you to adapt your speed to the driving situation. Drive carefully on sideways inclines. The same applies on slopes.

Risk of overturning.

- Ensure that none of the additional equipment connected to the skidder can´t cause accidents during transport;
- It is forbidden to drive on public roads with loaded skidder;
- You must always maintain control of the unit in all situations;
- Always check that the LGV sign and reflective signs are in the correct locations;
- The permitted transport dimensions, must never be exceeded;
- Before driving, check that nobody is in the vicinity of the machine and that your visibility is unrestricted;
- Bear in mind the height of the machine when driving under flyovers;
- Traffic rules are there to be followed Comply with the applicable legislation.

NOTE! Observe the specified safety distance to electrical cables when you are in the vicinity of such cables.

2.7 MAINTENANCE

Hydraulic system

The skidder hydraulic valves are supplied with both main pressure limiters and choke valves to prevent the skidder from being overloaded. No modifications of any type may be carried out!

Note: Always read through the relevant safety instructions when connecting and using the skidder's hydraulics. All hydraulic hoses should be considered to be pressurised.

For disruption free operation, oil must be changed and filters replaced at the specified intervals. When replacing hydraulic components, this should be carried out in such a way that no dirt enters the system. Use a lint-free cloth or rag when cleaning.

Note: It is prohibited to release oil onto the ground or into watercourses. Never mix oils of different types or makes in the system.

- Do not start the tractor without having disconnected the hydraulic pressure to the skidder;
- Support the skidder during maintenance work to ensure that no parts are dependent on the hydraulic cylinder;
- Pinpoint the fault before carrying out repair work, so that you do not open the hydraulic system unnecessarily;
- If possible, engage trained service personnel for any work on the machine's hydraulic functions;
- The skidder's hydraulic valves are supplied with both main pressure limiters and choke valves to prevent the crane from being overloaded. Modifications may not be carried out under any circumstances;
- The skidder's hydraulic hoses and pipes must always be kept in good condition. Replace the relevant components in the event of any defects. Defects in hoses, for example, can result in a high-pressure jet of oil that can penetrate skin on contact and cause a serious infection. If this occurs, consult a doctor immediately.

Note: When the hydraulic system is brought back into use following repair work, be extremely carefully. Air in the system can result in unforeseen skidder movements. You should therefore bleed the system by operating all the cylinders to their limit positions a few times.

Note: When using the hydraulic functions, you should use them gently. Do not operate them at full speed from one position to the next. This can cause damage to hydraulic seals and other parts.

Handling oil/grease

Carefully read through the warning information on the oil and grease products you are using, and follow their instructions accurately!

- Avoid skin contact with oil and grease during service work;
- Wear the correct protective clothing;
- Never clean your hands with lubricating oil or grease. This can damage your skin;
- If oil or grease causes changes to your skin, seek medical attention immediately;
- The law demands that all waste oil be dealt with and disposed of at the correct place during service and maintenance.

Repair welding

If repairs or modifications require welding work, you must first contact your dealer, who will provide you with the necessary welding instructions. Incorrect welding or ignorance during welding can result in sudden breaks in the structure!

3. TECHNICAL INFORMATION

3.1 DESIGN OF THE PRODUCT

The Farma 1000 Series Grapple Skidders are available in 4 configurations and all consist of a grapple on the end of a frame that mounts to the cat 1 and cat 2 3-point hitch on a tractor or using the adapter plate to the front loader for grasping and picking up wood or logs. Hydraulic power provided by the tractor is used to control the hydraulics. The grapple is designed to pivot and swivel to align the log as required.

The Farma 1000 Series Grapple Skidder has modular design. You can mount different options on one base.

Specific model features Farma 1000 series grapples:
1000 THT: 0,16 m3 grapple, hyrdraulically etendabe telescopic boom and 360° hydraulic rotator.

1000 TM: 0,16 m3 grapple, manually etenable telescopic boom and manually rotatable grapple with spring return pivot.

1000 TMT: 0,16 m3 grapple, manually extenable telescopic boom and 360° hydraulic rotator.

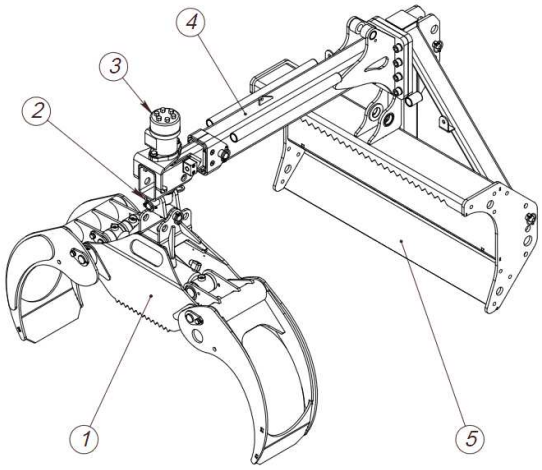
1000 F: 0,16 m3 grapple that is fixed with shaft to the telescopic boom. Telescopic boom can be extended hydraulically or manually.

By changing the telescopic boom and shaft unit you can easylly change these configurations.

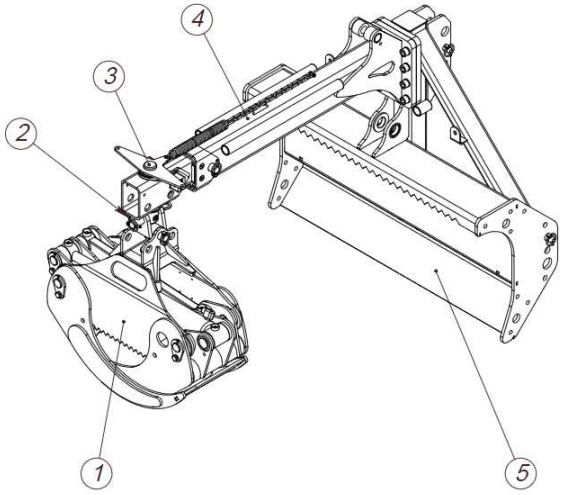
The Farma 1000 Series Grapple Skidder has some optional equipment that fits to all configurations.

3.1 MAIN COMPONENTS OF THE SKIDDER

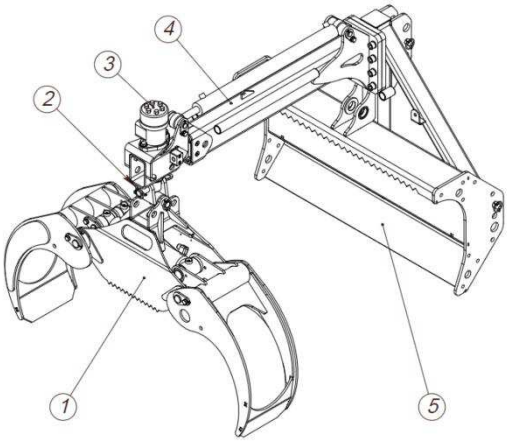
FARMA Grapple Skidder 1000 TMT



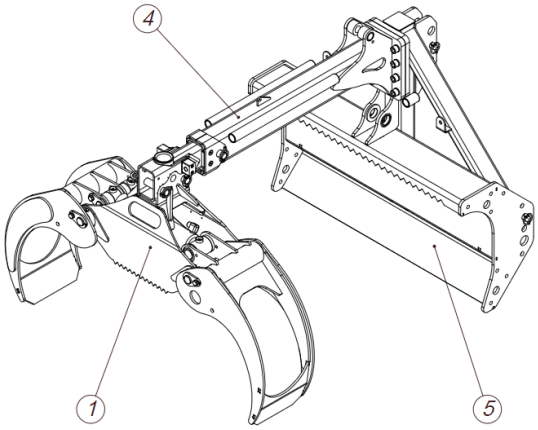
FARMA Grapple Skidder 1000 TM



FARMA Grapple Skidder 1000 THT



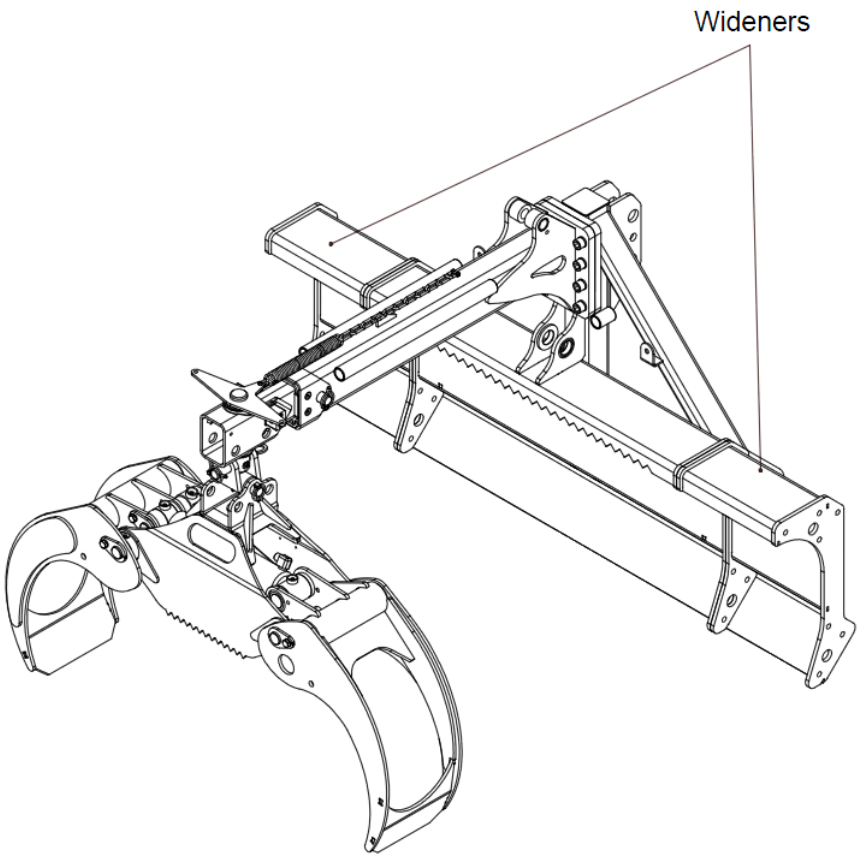
FARMA Grapple Skidder 1000 F



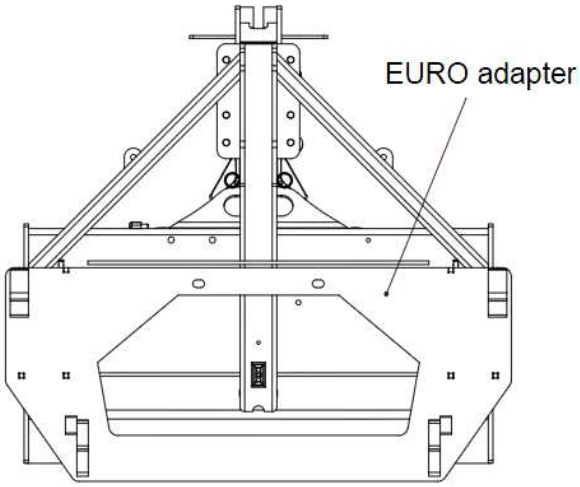
No.	Main components
1	Grapple
2	Link system
3	Shaft unit
4	Boom system
5	Base

3.2 GRAPPLE SKIDDER ACCESSORIES

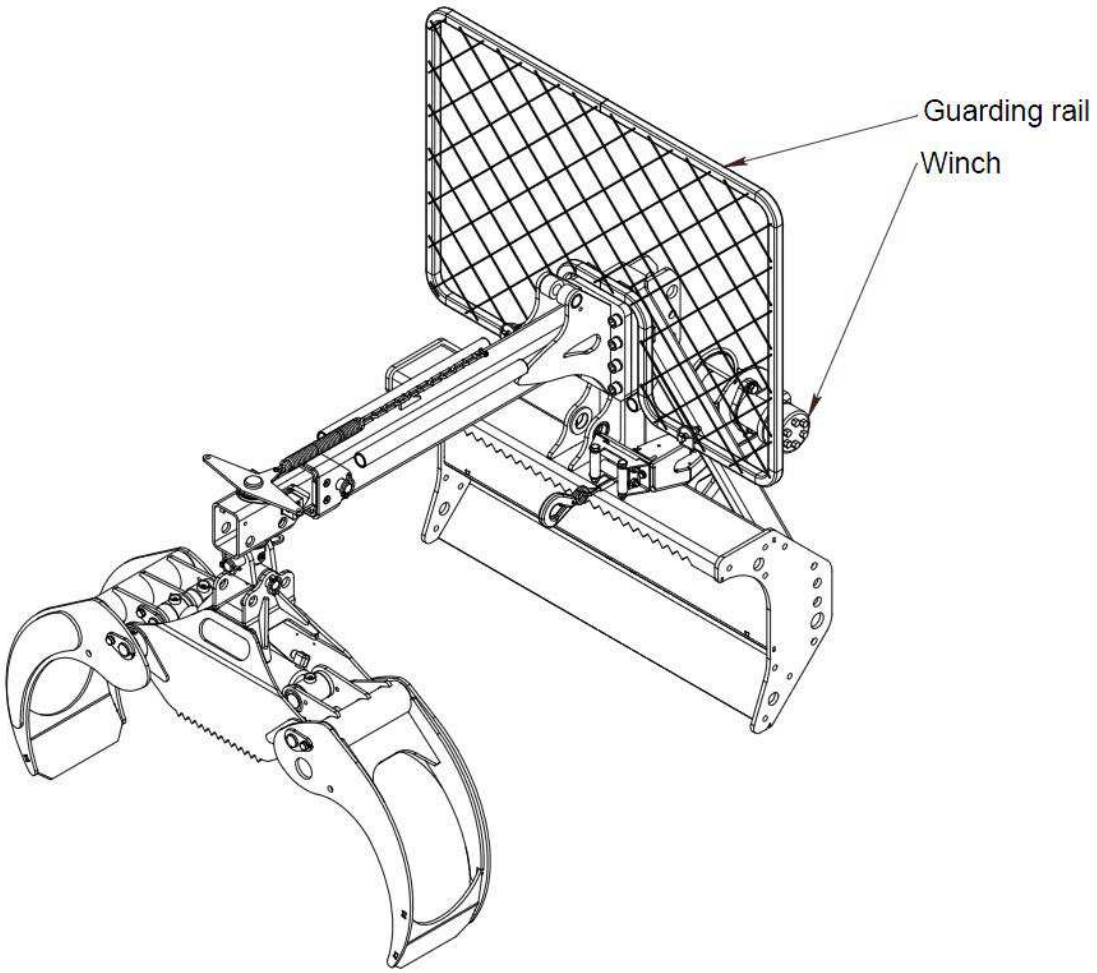
Wideners



Adaptor plate for front loader



Winch

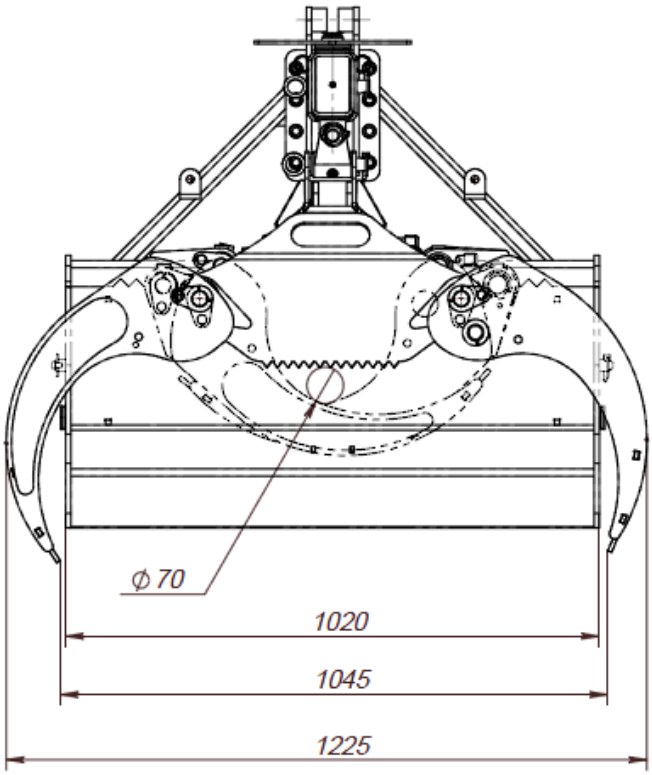


3.3 TECHNICAL DATA

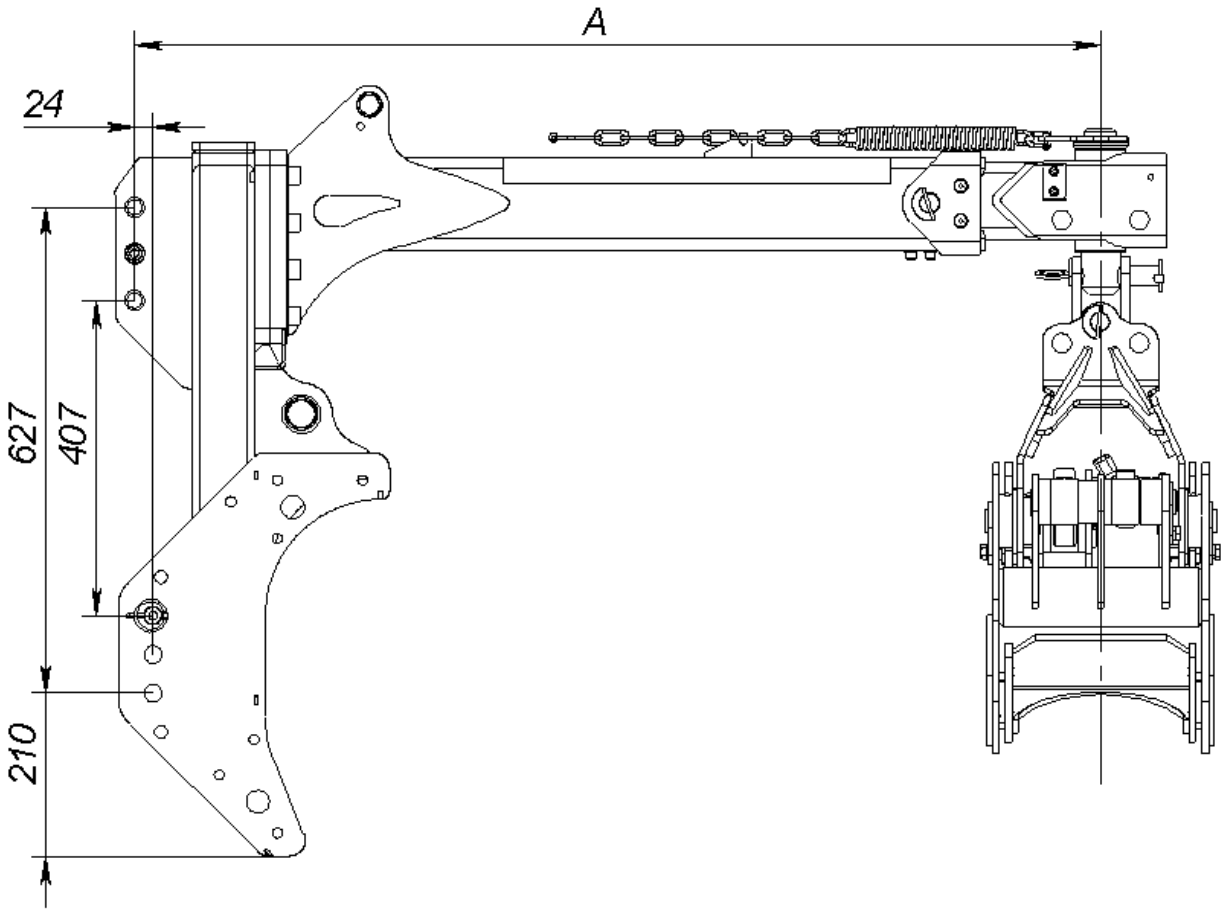
Grapple Skidder 1000	
Gripping force arms tip-tip (kN)	7,0
Max working pressure (MPa)	17,5
Weight (Kg)	224
Turning angle (°)	90
Telescopic extension (mm)	500
Plate width (mm)	1020
Linkage category (Hp)	<60

3.4 DIMENSIONAL DRAWING

Skidder Grapple 0,16 dimensions:



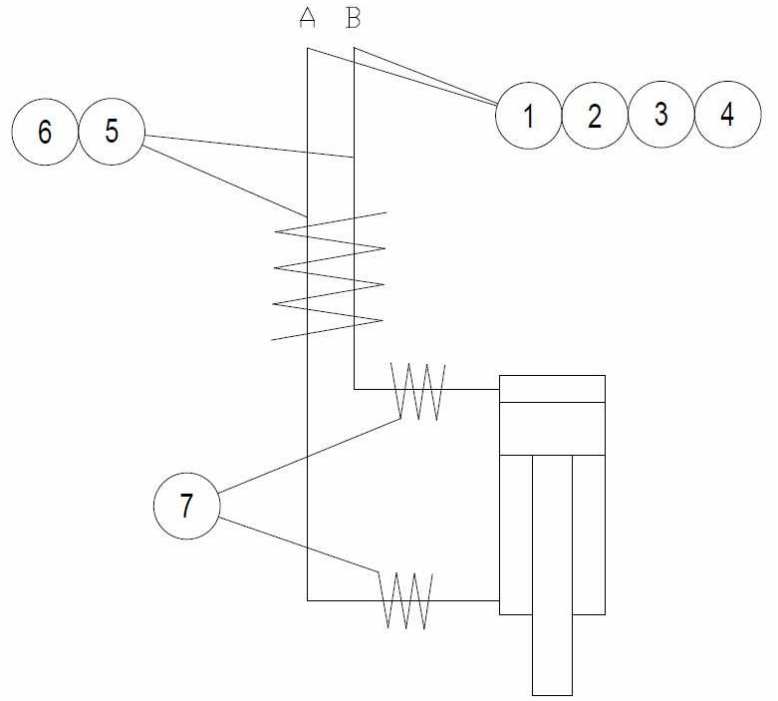
Skidders dimensions (TM, THT, TMT & F):



MODELS	Lenght A, min - max
Grapple Skidder 1000 TM	1245 - 1745 mm
Grapple Skidder 1000 TMT	1235 mm
Grapple Skidder 1000 THT	1235 - 1835 mm
Grapple Skidder 1000 F	1235 mm

3.5 HYDRAULIC SCHEMES

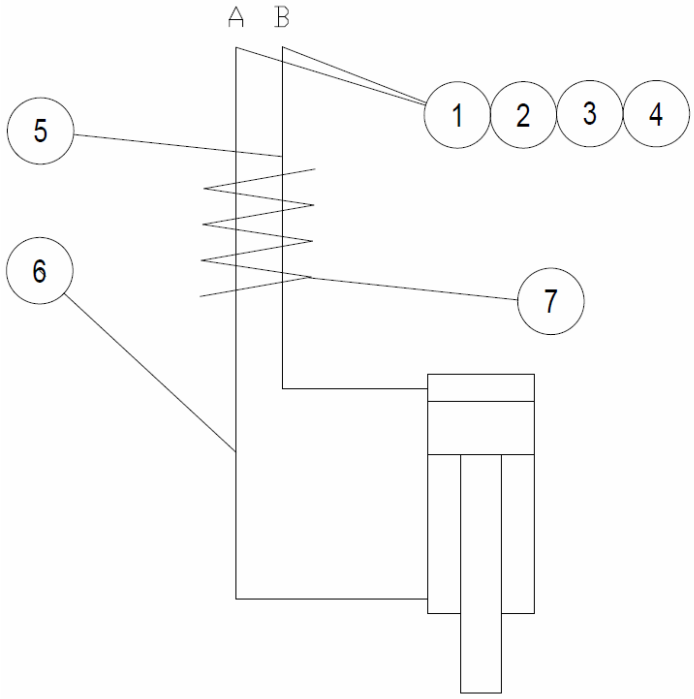
Hydraulic scheme of Grapple hoses (FMWH00040) - standard



Components of grapple hoses hydraulic scheme (FMWH00040):

ITEM NO.	DESCRIPTION	QTY.
1	Straight nipple	2
2	Rubber bonded seal	2
3	Bayonet coupling	2
4	Dust cover	2
5	H-hose	2
6	SPIRO PIPE	8,1m
7	SPIRO PIPE	0,4m

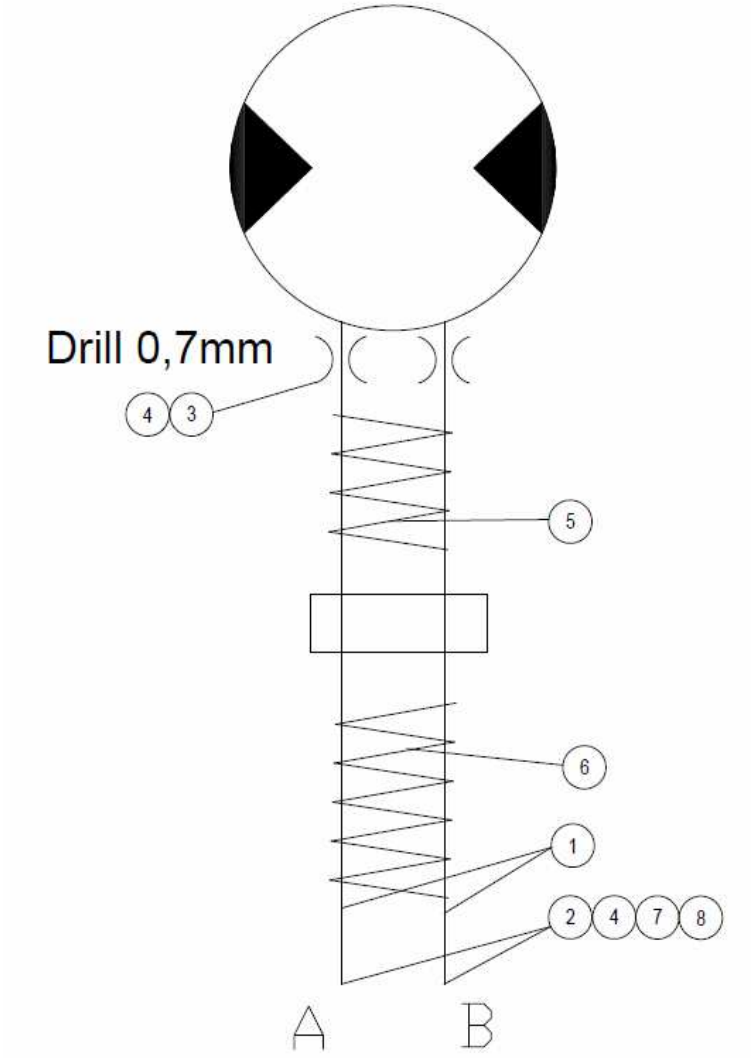
Hydraulic scheme of hydraulic telescope (FMWH00040-01) - optional



Components of hydraulic telescope hydraulic scheme (FMWH00040-01)

ITEM NO.	DESCRIPTION	QTY.
1	Straight nipple	2
2	Rubber bonded seal	2
3	Bayonet coupling	2
4	Dust cover	2
5	H-hose	1
6	H-hose	1
7	SPIRO PIPE	0,5m
-	Cable Tie Plastic	3

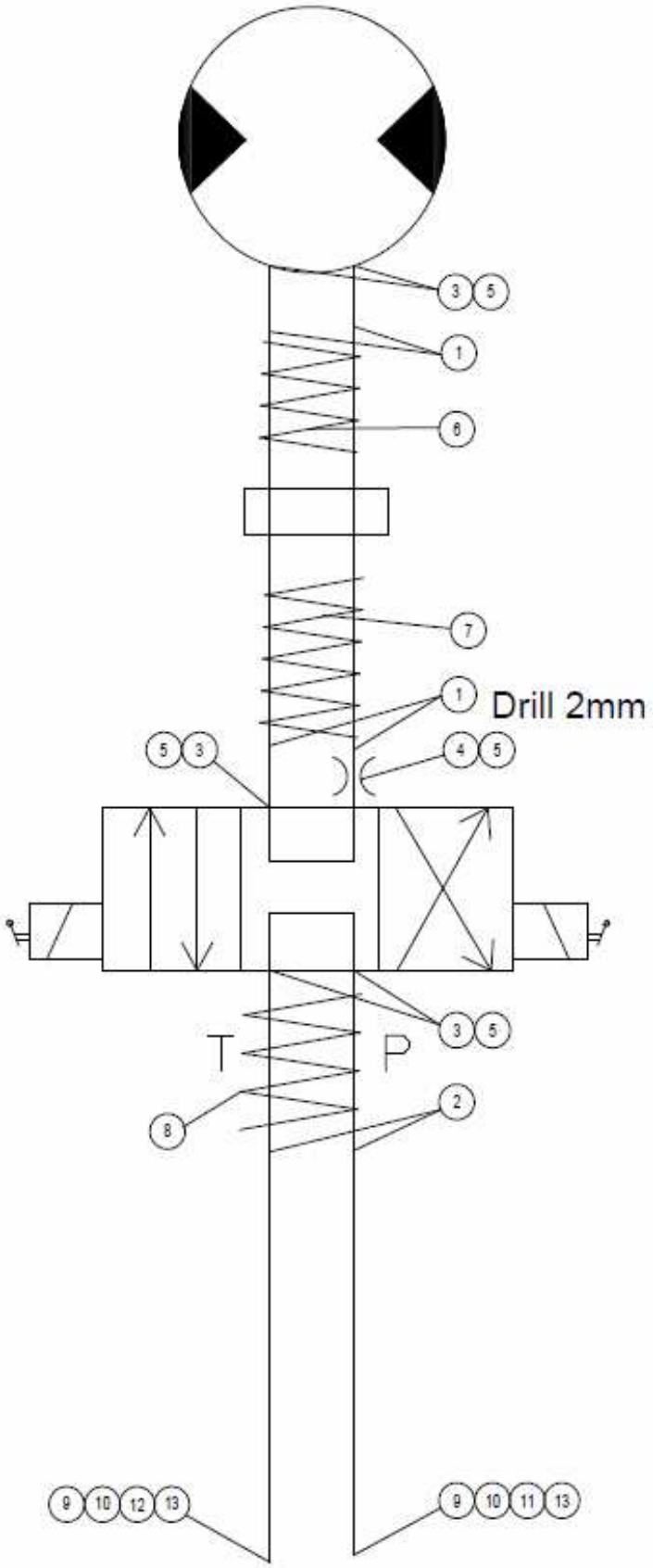
Hydraulic scheme of hydraulic rotation (FMWH00040-02) - optional



Components of hydraulic rotation hydraulic scheme (FMWH00040-02):

ITEM NO.	DESCRIPTION	QTY.
1	Hose	2
2	Straight nipple	2
3	Straight nipple (choke)	2
4	Rubber seal	4
5	Spiro pipe	0,5m
6	Spiro pipe	0,4m
7	Bayonett male	2
8	Dust cover	2

Hydraulic scheme of winch (FMWH00040-03) - optional



Components of hydraulic rotation hydraulic scheme (FMWH00040-03):

ITEM NO.	DESCRIPTION	QTY.
1	Hose	2
2	Hose	2
3	Straight nipple	5
4	Straight nipple (choke)	1
5	Rubber seal	8
6	Spiro pipe	0,5m
7	Spiro pipe	0,4m
8	Spiro pipe	0,8m
9	Bayonett male	2
10	Dust cover	2
11	Label No2 Pump Red	1
12	Label No3 Tank Blue	1
13	Heat-shrink tubing	0,18m

3.6 CONFORMITY OF STANDARDS

Grapple Skidder is manufactured accordingly to demands in **directive 2006/42/EC** and therefore can be used mounted together with other equipment to provide a complete machine.

4. INSTALLATION

4.1 NEED FOR TRAININGS

Although there are no operational restrictions on the Grapple Skidder when used for the first time, it is recommended that the following mechanical items be checked:

After operating for 1 hour:

1. Ensure the machine is in safe condition before checking any components;
2. Check that all grapple pivot pins are secure and in place;
3. Check that all grapple pivot points move freely;
4. Check for leaks in the hydraulic system;
   - Inspect connectors and fittings for leaks;
   - Inspect hoses for damage. Reroute hoses if rubbing;
5. Check all hydraulic cylinders for smooth operation;
6. Check that all nuts, bolts and other fastenersare tight. Retighten to their specified torque.

After operating for 10 hours:

1. Repeat steps 1 through 6 listed above (After operating for 1 hour);
2. Go to the normal servicing and maintenance schedule as defined in the Maintenance Section.

4.2 CONNECTING MACHINE

During loading and transport on public roads, adhere to the applicable traffic legislation!

Note: When connecting and disconnecting the skidder, bear in mind the risk of clamping injuries, the risk of slipping, the tipping risk and the risk of hydraulic high-pressure jets and hot oil. Ensure that neither the hydraulic pump nor the power take-off is connected.

- Connect the skidder to the 3-point hitch to the tractor. Ensure that the pins are properly locked;
- Check the condition of the skidder;
- Connect both the hydraulic hoses for the grapple cylinders to the tractor's doubleaction hydraulic outlet. Ensure that the quick couplings are clean and that they lock properly;
- Connect both the hydraulic hoses for the telescopic boom to the tractor's doubleaction hydraulic outlet. Ensure that the quick couplings are clean and that they lock properly;
- If equiped with winch then connect the hydraulic hose marked "PUMP" to the tractor's pump outlet and hose marked "TANK" to the tractor's tank inlet. At first connect "TANK" hose then "PUMP" hose.

4.3 DISCONNECTING MACHINE

The oil can be very hot! Do not allow the hydraulic hoses to hang down to the ground!

- Park the skidder on a flat, stable surface;
- Switch off the tractor's hydraulic pump and power take-off. Release the remaining hydraulic pressure;
- If equipped with winch then disconnect "PUMP" hose first then "TANK" hose.

4.4 PERMISSIBLE ENVIRONMENTAL CONDITIONS

The recommended ambient working temperature for this machine is -30°C to +40°C.

4.5 PROTECTIVE MEASURES RECOMMENTATIONS

Use Your Personal Protection Equipment during installation works

5. OPERATION

5.1 CONTROLS AND DISPLAYS

The Farma 1000 Series Grapple Skidders are intended to controlled trough tractor hydraulic levers.

- Connect both the hydraulic hoses for the grapple cylinders to the tractor's doubleaction hydraulic outlet. Ensure that the quick couplings are clean and that they lock properly;
- Connect both the hydraulic hoses for the telescopic boom to the tractor's double-action hydraulic outlet. Ensure that the quick couplings are clean and that they lock properly;
- If equiped with winch then connect the hydraulic hose marked "PUMP" to the tractor's pump outlet and hose marked "TANK" to the tractor's tank inlet. At first connect "TANK" hose then "PUMP" hose.

5.2 PRE-OPERATION CHECK

Efficient and safe operation of the Farma Grapple skidder requires that each operator reads and understands the operating procedures and all related safety precautions outlined in this section. A pre-operation checklist is provided for the operator.
It is important that this checklist is followed, for personal safety and ensuring the grapple is in good mechanical condition.

Before operating the machine and each time thereafter, the following areas should be checked off:

Pre-Operation Checklist	✓
Check that grapple pivot rotates freely 180°and lock functions properly.	
Check that hydrualic rotator has no leaks and rotates freely 360°.	
Check the condition of the hydraulic winch, and fairlead components, winch system must move freely to operate properly.	
Check the condition of the hydraulic extendable boom and components, boom system must move freely to operate properly.	
Check the condition of wiring harness from control to the grapple	
Check that the machine is properly attached to the Tractor or front loader. Be sure locking levers are engaged mounting pins are extended into the attachment	
Check and lubricate the machine per the schedule outline in the Maintenance Section.	
Check condition of all hydraulic components. Keep all components in good condition.	
Check that all bushings move freely. Replace any that are rough or seized.	
Check and ensure that all covers, guards and shields are in place, secured and functioning as designed.	
Check all fasteners and tighten as required (see "Bolt Torque" specification chart).	
Check that personal protection equipment is used and in good repair.	

5.3 OPERATING INSTRUCTIONS

NOTE: If damage should occur during use, the work must be halted immediately and the fault pinpointed and rectified before starting to use the skidder again.

Sideways inclines
There is always a danger when operating on sloping terrain. When driving on a sideways incline, the risk of overturning can be reduced by lowering the skidder as low as possible.

Driving off-road

- On steep terrain, drive straight up or down slopes in order to reduce the risk of tipping. Never drive across slopes that are so steep that you cannot drive up them;
- When driving up a slope, the risk of the towing vehicle fronting up increases when the machinery's centre of gravity has been moved backwards. In such situations, it is important to consider to use extra weights in front if necessary;
- You must be particularly careful when leaning to the side. It only needs a small change for the towing vehicle to overturn;
- The skidder's centre of gravity is higher than the towing vehicle when you are driving with a load. This means that the towing vehicle cannot be able to pass through a critical passage with load that towing vechile managed with no load;
- Bear in mind that it is more difficult to control a large, heavy load than a smaller, lighter one. You should therefore adapt the load to the size of the towing vehicle and the terrain conditions. Always adapt your driving to your level of experience;

NOTE: If the tractor tips over, hold onto the steering wheel firmly and do not jump out! The cab is your best protection!

5.4 WORKING IN EXTREME CONDITIONS

The recommended ambient working temperature for this machine is -3o°C to +4o°C. Note that when working in low or high temperatures, the level of wear and stress on seals and hoses increases. The durability of the steel is also impaired, and cracks can occur.

When working under extreme conditions, work with smaller loads than normal in order to prevent damage. When working in cold conditions, always allow the hydraulic fluid to circulate freely for a number of minutes. Then operate each function a number of times to allow seals and hoses to soften up before applying full pressure. During extremely warm periods, take care with the temperature of the oil. Temperatures of above 8o°C destroy the oil's properties and damage seals and hoses.

- Do not exceed winching angle of more than + 25°, and operate only on level ground with the base lowered to the ground for stability;
- Do not winch down a slope, always winch up a slope, winching down a slope could result in crushing injuries resulting from a log rolling down hill;
- When using snatch blocks to winch at difficult angles, be aware of danger zone created between the snatch block, log and skid steer;

- Do not allow anyone within 6 m (20 ft) of machine or logs during operation. Keep children away. Logs could roll in unpredictable ways;
- Always lower base to the ground when operating the winch to provide stability;
- Always wind the wire under load, wire will not wind properly if not under load;
- Check wire condition before using winch. Wire may break during operation if it is corroded, knotted, has broken strands or sharp kinks. Replace wire if damaged;
- Do not winch across a slope and do not operate on hillsides or when working area is cluttered, wet, muddy or icy to prevent slipping and tripping. Winching across a slope could cause your tractor to roll over;
- Do not touch wire during operation.

6. SERVICE/MAINTENANCE

Service and maintenance must be carried out regularly in order to guarantee problem-free, economical use.

NOTE: Failure to comply with the Fors WM instruction manual invalidates all the machine's guarantees. Regular, correct maintenance is a precondition for the guarantees applying.

NOTE: Only genuine spare parts may be used during repair and maintenance work.

6.1 SAFETY INFORMATION

Read the instructions before starting to service the machine. Do not attempt to carry out work on or to service the machine until you are completely familiar with and understand the instructions. Read and following the instructions before each service. Adhere to the recommended service and lubrication intervals.

- Only genuine spare parts may be used during repair and maintenance work;
- Always use tools adapted to the purpose;
- Always wear protective clothing and protective goggles;
- Always switch off the tractor's engine. Switch off the tractor's engine and remove the key from the ignition;
- If it is necessary for the tractor's engine to be running during certain elements of the service, take care to keep parts of your body away from moving machine parts;
- During service work, the skidder should be lowered to the ground so that no parts are dependent on the hydraulic cylinder;
- Take great care with oil that is under pressure. Oil under high pressure can easily penetrate the skin. Consult a doctor immediately in the event of an accident;
- Hot oil can cause burn injuries. Inhalation of hot oil mist can cause breath difficulties;
- Getting oil on your skin in the event of a hose explosion is not dangerous, although you should avoid contact with your eyes and nose. In the event of exposure to oil in your respiratory tract or your eyes, contact a doctor immediately;
- Store explosive and flammable liquids at a safe distance from sparks or open flames.

NOTE: When changing oil, collect the oil in a safe manner. Never release oil onto the ground. This is prohibited by law. Oil and grease must by law also be disposed of at an authorised location.

6.2 DAILY/MONTHLY MAINTENANCE PROCEDURES AND INSPECTION

Daily inspections

Remember that:

- It is important to inspect the equipment daily;
- If you see any defects, you must rectify them immediately;
- Worn bolts and screws can entail a risk of breakages when under load;
- If cracks are discovered in the skidder, operations must be halted immediately;
- Damaged hoses must be replaced immediately;
- Check for leaks. Leaking hydraulic fluid entails a risk of accidents and can result in serious environ- mental damage.

Daily inspection procedure:

- Check all bolted joints and tighten all loose bolts;
- Operate the skidder's complete movement pattern to ensure that all functions are intact;
- If necessary, lubricate;
- Avoid high-pressure washing when cleaning. First clean simply with warm water. If necessary, use an environmentally friendly detergent. Lubricate the skidder after cleaning.

Monthly maintenance

- Check to make sure there is sufficient lubricationon sliding surfaces;
- Clean the hydraulic cylinders and lubricate their bearings;
- Check the hydraulichoses for any damage.

Replacing hydraulic components

Always use genuine parts when it comes to hoses, seals, bolts, etc. Using genuine parts guarantees faults free usage.

Replacing seals

If a cylinder seal is damaged, replace all the seals in the cylinder.
Take care when replacing seals to ensure you do not damage them during installation.

1. Once the old seals have been removed, carefully clean the cylinder and piston rod before installing the new seals;
2. Lubricate the new seals with hydraulic fluid;
3. If possible, engage the specified service personnel for any work on hydraulic functions.

6.3 MAINTENANCE MATERIALS

NOTE: When changing oil, collect the oil in a safe manner. Never release oil onto the ground. This is prohibited by law. Oil and grease must by law also be disposed of at an authorised location.

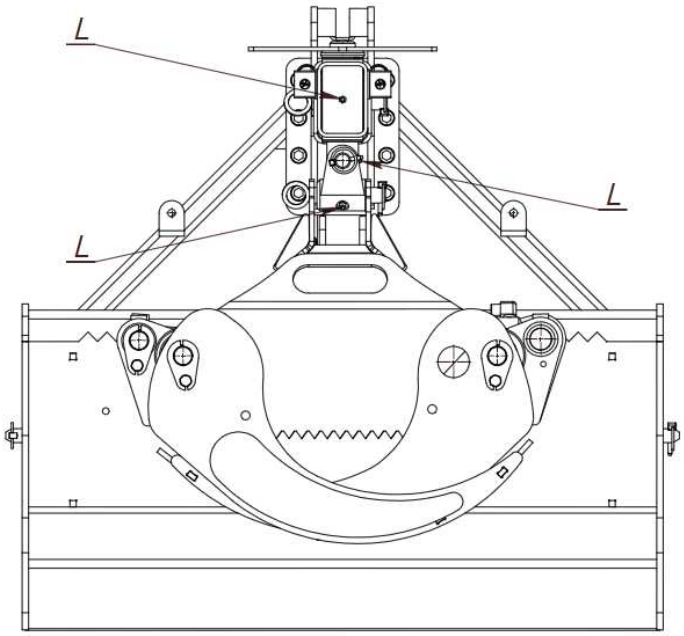
Lubricating grease:

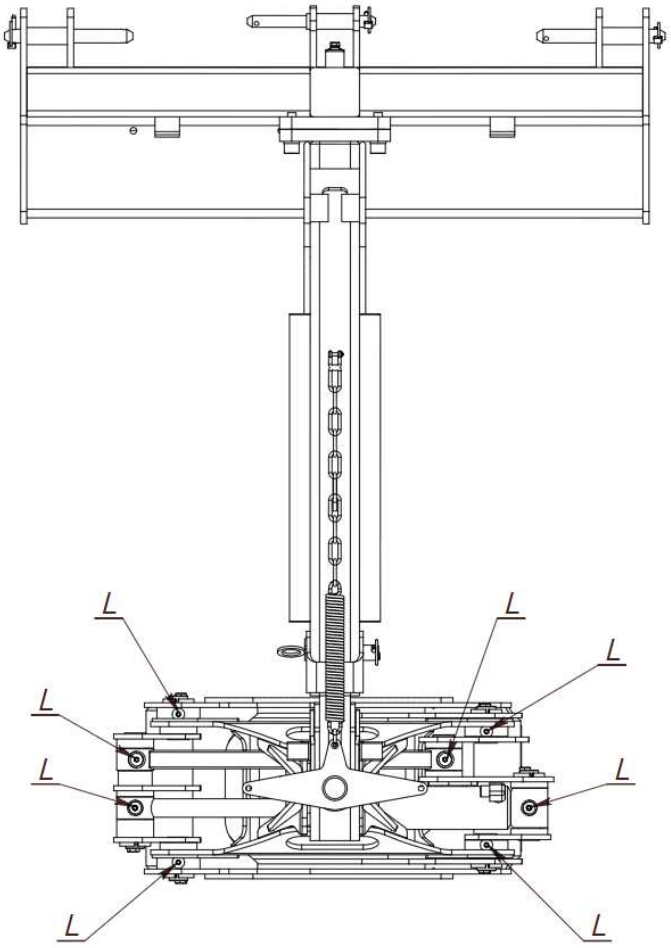
Brand	Type
BP	Energrease LS-EP 2, L2M
ESSO	Beacon EP2, Multipurpose GR Moly
MOBIL	Mobilux EP2, Mobil Grease MP Special
SHELL	Alvania EP Grease 2
UNION/TEXACO	Marfak Multi-Purpose 2, Molytex Grease 2

Recommended hydraulic oils: UTTO or STOU SAE1oW/3o, SAE 32, SAE 46.

NOTE: Use only hydraulic fluids recommended for your tractor hydraulic system by the manufacturer.

6.4 LUBRICATION SCHEDULE





Lubricating interval (work hours) - 20h.

6.5 TIGHTENING TORQUES

The tightening torque (Mv) in Nm for untreated, oiled steel screw joints when using a torque wrench or screwdriver/wrench with torque control. Torque range max. ± 5%. Metric coarse threads. All bolts must be tightened after 10 hours of operation.

Thread M	Property class according to SS-ISO 898/1		
	8.8	10.9	12.9
5	5.7	8.1	9.7
6	9.8	14	17
8	24	33	40
10	47	65	79
12	81	114	136
14	128	181	217
16	197	277	333
18	275	386	463
20	385	541	649
22	518	728	874
24	665	935	1120

6.6 CLEANING

Remove accumulated dirt and dust. Painted external surfaces should be cleaned regularly with a sponge or soft brush and soap. When cleaning, never use warm water in a high-pressure washer. This dissolves the grease.

NOTE: Avoid high-pressure washing when cleaning. First clean simply with warm water. If necessary, use an environmentally friendly detergent. Lubricate the skidder after cleaning.

6.7 SCRAPPING

- It is not allowed to store the skidder in a cold and/or damp environment for a long period;
- All metal parts are recyclable and should when time comes be handed over to a recycler.

6.8 STORAGE

If the skidder is not going to used for an extended period (longer than 2 months) of time, it is important to clean it carefully. Note that high-pressure washing is not recommended. After washing, all the lubricating points must immediately be lubricated. When lubricating with new grease, it forces the water away from the surfaces and thereby counteracts corrosion and wear.

- Store the skidder under a roof. If this is not possible, the skidder must be covered with a tarpaulin;
- Before lowering the skidder onto its storage surface, ensure that the surface will not give way during the storage period, for example due to rain or the thawing of frozen soil;
- Place the boom and the grapple in the transport position;
- Support the skidder to ensure it will not overturn during storage.

NOTE: A skidder in storage is not a play area for children.

6.9 TROUBLESHOOTING

Fault symptom	Possible reason and action
Air in the hydraulic system	• Locate the leak and eliminate the defect. • Check the oil level. • Check the quick release couplings between the towing vehicle and grapple skidder.
Excessive oil leakage from the pump.	• Replacement of pump.
Low oil pressure.	• Adjust the oil level.
The hydraulic cylinder's piston seal leaks.	• Replace the gasket.
Noise from the hydraulic system.	• Air has entered the system. Locate where the air is entering and eliminate the defect.
Oil leak	• Replace faulty hose. • Adjust the hose connections

7. EC DECLARATION OF CONFORMITY (EXAMPLE)

EC Declaration of Conformity of the Machinery

Manufacturer:
Fors MW AS
Tule 30
76505 Saue
Estonia

The technical file is compiled by **Priit Raud**;
I hereby confirm that this equipment, **FARMA Grapple Skidder 1000 TM (TMT, THT or F)**

Trade mark: **FARMA**
Function: **interchangeable equipment**
Model: **1000 F (1000 TM/ 1000 TMT/ 1000 THT)**
Type: **FS** variant: **1000 F (1000 TM/ 1000 TMT/ 1000 THT)**
Serial no.: **FSF001x01xxxxx (FSTM01x01xxxxx/ FSTMT1x01xxxxx/ FSTHT1x01xxxxx)**

Trade name: **FARMA Skidder Grapple 010**
Type: **FGS** **V**ariant: **010**
Serial no.: **FGS010x01xxxxx**

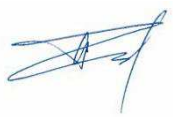
Trade name: **FARMA Winch for Skidder**
Type: **FW** Variant: **RW600S**
- Serial no.: **FW060Sx01xxxxx**

Manufacture year: **xxxx**

is manufactured accordingly to demands in **directive 2006/42/EC** and therefore can be used mounted together with other equipment to provide a complete machine.

The equipment can't be used before the machine or the formation that it will take place in, is accordingly to the demands of the EC Machinery directive.

For the guarantee and safety, it is of uttermost significance that the instruction book is read before the machine is put into service.



Saue, Estonia 2018-01-25

Priit Raud
CEO