Instructions for use

FORESTRY WINCHES
45H/45Hpro/55H/55Hpro

Instructions for safe work

Spare parts list

CE

THE MANUFACTURER:

Uniforest d.o.o.
Latkova vas 81d
3312 Prebold
www.uniforest.si

Valid from serial number:

45H	12108000444
45Hpro	12208000437
55H	12314001080
55Hpro	12410003927

GENERAL

Dear customer!

We are pleased that you decided to purchase our machine. Forestry winch is a forestry machine of modern design, whose construction enables effective and safe work in the forest. Work in the forest can only be safe if you follow the instructions for safe work and use. Upon following all instructions, the machine will operate flawlessly, and you will avoid unnecessary costs.

We recommend reading the instructions carefully. If you are not sure about something, you can also contact us.

We wish you safe work.

Index:

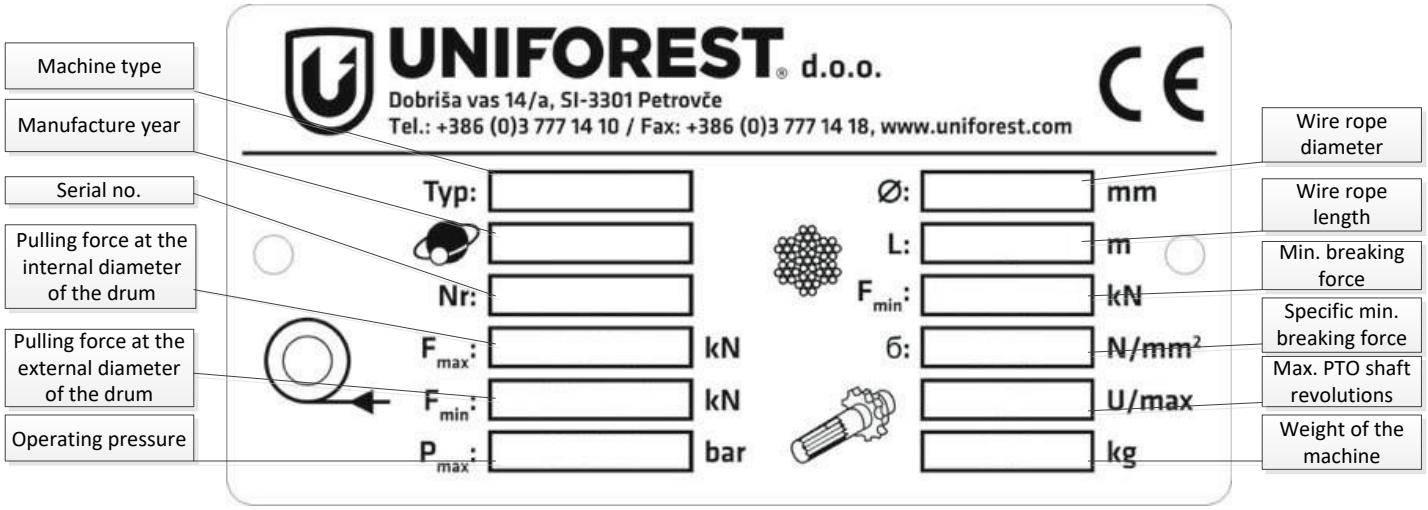
1. Intended purpose

The machine is intended exclusively for normal work in the forest. Any other use outside of this framework holds as unintended. This winch can only be used for pulling loads on the ground. The manufacturer is not liable for damages, resulting from unintended use. In this case, the user is the sole bearer of risk. Intended use also includes regarding operational, service and maintenance conditions, which are prescribed by the manufacturer. Only persons, who are trained and acquainted about the dangers and consequences, which can result from improper use, can operate the machine. Relevant safety regulations must also be followed, including generally valid safety-technical, occupational medicine and road traffic regulations. Own interference and modifications of the machine exclude the manufacturer's liability for damages resulting from this.

2. Technical data:

	Unit	45H	45Hpro	55H	55Hpro
Connection	category	1,2	1,2	1,2	1,2
Pulling force	kN	45	45	55	55
Brake force	kN	56,25	56,25	68,75	68,75
Wire rope medium speed	m/s	0,60	0,60	0,60	0,60
Wire rope maximum	mm/m	9/150	9/150	10/120	10/120
		10/120	10/120	11/105	11/105
	mm/m	11/105	11/105	12/90	12/90
Wire rope length (serial)	mm/m	10/70	10/70	11/70	11/70
Tractor required power	kW	37-50	37-50	40-55	40-55
	PS	50-68	50-68	54-75	54-75
	kN	104,40	104,40	123,40	123,40
Rated strength	N/mm2	2160	2160	2160	2160
Width	mm	1400	1400	1590 □ 1800	1590 □ 1800
Depth	mm	490	490	490	490
Height without protective net	mm	1335	1335	1450	1450
Height with protective net	mm	2300	2300	2300	2300
Weight (without wire rope)	kg	395	421	409	435
Power take-off RPM	min-1	max. 540	max. 540	max. 540	max. 540
Unwinding device		□	■	□	■

□ Optional ■ Serial x Not possible

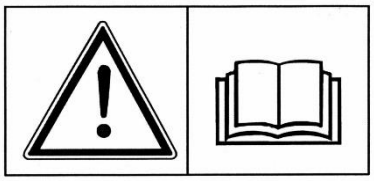


INSTRUCTIONS FOR SAFE WORK

When operating the winch, you must devote maximum attention to safety! To prevent accidents, carefully read and follow the instructions below.

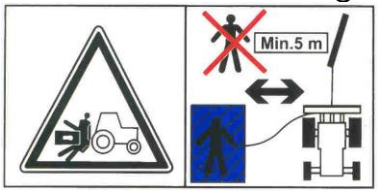
1. General:

1. Apart from the instructions in this user manual you should also observe all general safety and accident preventing regulations.

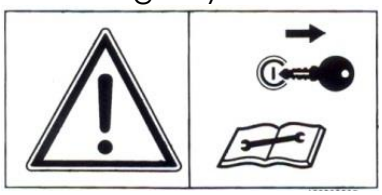


2. When working with the winch, it is necessary to comply with the rules of safety at work.
3. Only persons, who are older than 18, are allowed to work with the winch.
4. Safety and warning plates on the machine provide important instructions for safe use. Observe them for your safety.
5. The winch or its flawless operation should be checked before every use or at least once every working day. Defects should be removed by an expert. Before first use or after significant alterations and at least once a year the winch must be examined by an expert.
6. When using public transport routes observe traffic signs and regulations.
7. When using the winch wear personal protective equipment(helmet, gloves, appropriate footwear,...).
8. Before starting and driving check the surrounding area (children). Maintain adequate visibility.
9. Riding on the winch during transport is not allowed.
10. Connect the winch according to the instructions.
11. For on road travel the machine must be in the following condition. If the winch covers the rear lights of the tractor and they are not visible during transport on public roads, install additional lights on the winch.
12. Adjust the driving speed to the environmental conditions. When driving up or down or across a slope avoid sudden turning of the steering wheel.
13. Do not stand in the danger area.

14. If the tractor is not blocked against moving with a brake or wheel blocks, no person should be standing between the tractor and the winch.



15. Do not touch the winch until every part of the winch has stopped.
16. Check mounting bolts regularly.
17. Before use the winch must be visually inspected. At least once a year, the winch must be inspected by a professionally qualified person.
18. During any work on the winch you must turn the tractor off.



19. It is forbidden to remove the safety devices from the winch.
20. Use a tow rope of adequate strength and quality (see the factory plate).
21. A damaged wire rope must be replaced immediately.
22. It necessary to use a wire rope of an appropriate lenght. When you wind the rope up, a distance of 1,5 of rope diameter to outer diameter of the drum should stay on the drum. When you unreel the rope, a minimum of 3 rope wraps should stay on the drum.
23. The assistant is not allowed to connect load on the winch until he has informed the tractor driver about it.
24. It is especially dangerous to stand next to the tree that you are about to pull (Figure 1).
25. When using a relay pulley there is a triangular danger area, where you are not allowed to stay during the tow (Figure 2).

Figure 1

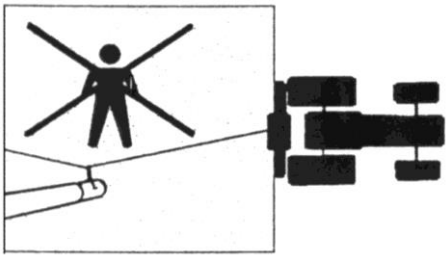


Figure 2

26. When towing observe the maximum allowed angle of 30° (Figure 3).
27. On uneven terrain or when not observing the maximum allowed towing angle there is a danger of the winch rolling over (Figure 4).

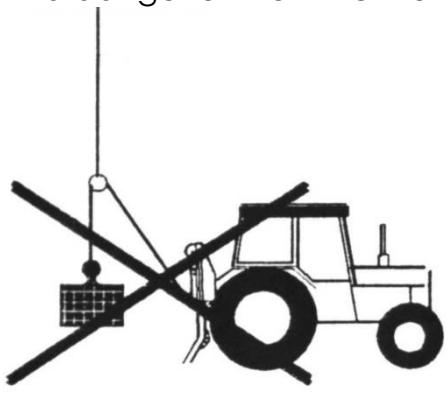


Figure 3

Figure 4

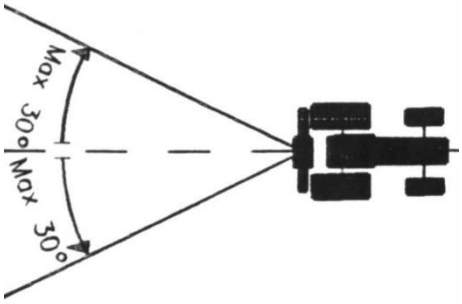


Figure 5

28. Do not use the winch for unintended purposes (lifting loads, etc.).(Figure 5)
29. Tractor driver and assistant must continuously communicate during their work.
30. The winch operator must continuously observe the load during the tow. If this is not possible due to the configuration of the terrain, the assistant should help.
31. The tractor to which the winch is connected to must have a minimum tyre profile which still meets the traffic regulations. Otherwise the wheels must be fitted with snow chains. Chains are also obligatory when working in snow and ice.
32. When disconnecting the winch, you first need to choose an appropriate hard and flat surface. Fix the winch by means of support legs. Lean the drive shaft on the prepared holder.
33. In the area of the three point linkage there is a danger of injuries due to compression or crushing.

34. The winch can be operated only from a safe place from which the load, wire rope, rope hook or the winch itself do not pose a threat to the operator. A safe place can also be the tractor seat if the winch has a safety net of sufficient size. When operating the winch outside the tractor seat the operator must be provided with an appropriate protection, e.g. the tractor itself, secure location at a sufficient distance from the vehicle, e.g. behind a tree. Logs can be monitored from the side next to the connection and shorter timber can be monitored diagonally behind the load. (See Figure 6).

35. During the tow, it is forbidden to stand between the load and the winch as well as in the danger area between the winch, relay pulley and load. (See picture 7).
36. Before operating the winch, make sure that the winch butt plate is securely anchored to the ground. In the event of soft ground, steep slopes or when pulling heavy loads, the tractor must be fastened with an additional rope or chain. This will prevent the risk of slipping or even overturning of the tractor.
36. Adjust the speed of load pulling and the size of the load to the tractor's power capacity. You should also pay attention to the inclination of the slope and the terrain to avoid a rollover and to maintain a safe steering and braking performance.
37. The hitch on the winch is designed as a work tool and should not be used on public roads

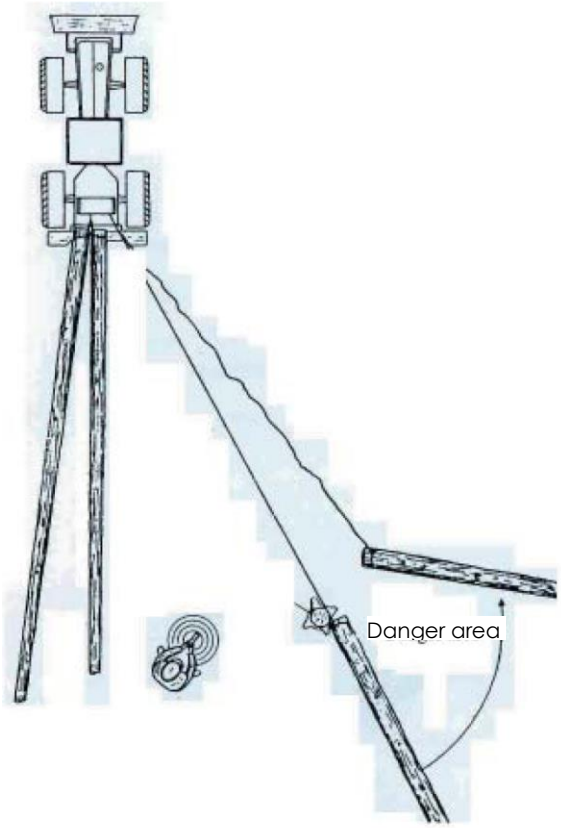


Figure 6

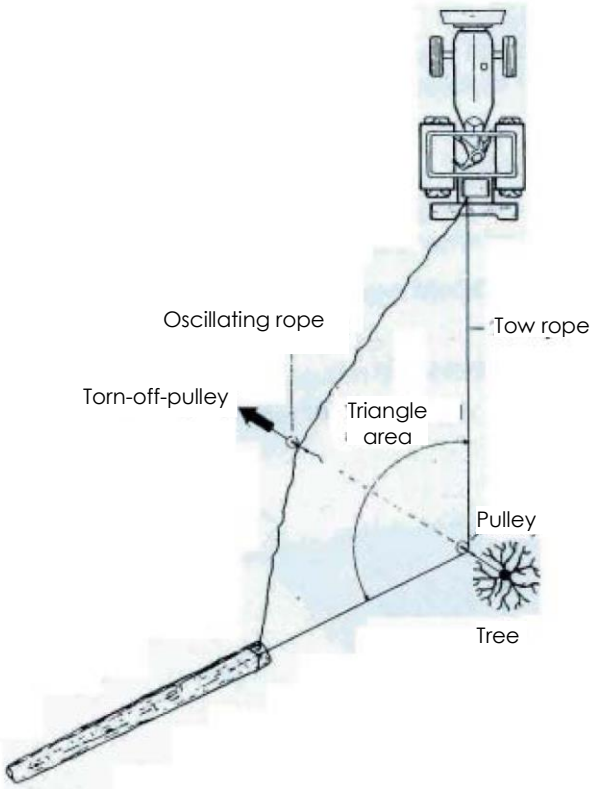


Figure 7

2. Pto shaft

1. Only PTO shafts, which are prescribed by the manufacturer, can be used.
2. Cardan protection pipes and protection funnels and connection protection must be installed, which must be in perfect condition.
3. With PTO shafts, be careful with prescribed pipe protection in transport and working position.
4. Connect and disconnect the cardan only when the cardan power take off is disengaged, the engine is stopped and the ignition key is removed.
5. Always be careful to install and secure the cardan correctly.
6. Protect the cardan protection from rotation with hang chain.
7. Before engaging the PTO shaft on the tractor, make sure that the chosen number of revolutions and rotation direction comply with the requirements, given in the technical data chapter.
8. Before engaging the PTO shaft, be careful that nobody is standing in the machine's danger zone, which applies also to operation.
9. PTO shaft must never be engaged, when the engine is stopped.
10. Put the disconnected PTO shaft on the foreseen holder.

INSTRUCTIONS FOR USE

1. Description

The winch is a machine intended for storing chopped logs from the forest. Basic parts of the winch are: welded housing, drive part, drum with shaft, clutch, brake, upper and lower pulley and other smaller elements. Control is done by electro hydraulic system. Clutch and brake are engaged by hydraulic cylinders. Pressure in the hydraulic part is created by the hydraulic pump, which is driven by the PTO shaft. Hydraulic battery maintains required pressure in the system even after the pump becomes still or the tractor is shut down, which still enables to unwind the wire rope. Steering elements are powered by electricity from the electrical socket at the rear of the tractor. The winch operates with hydraulic pressure to maximum 160 bar.

Safety valve is factory set and the pressure is not allowed to be increased!

2. Required equipment of the tractor

- PTO shaft with chosen gear ratio, max. 540 RPM.
- Three-point hitch of I and II category.
- Electrical installation 12 V with socket on the rear of tractor.

the

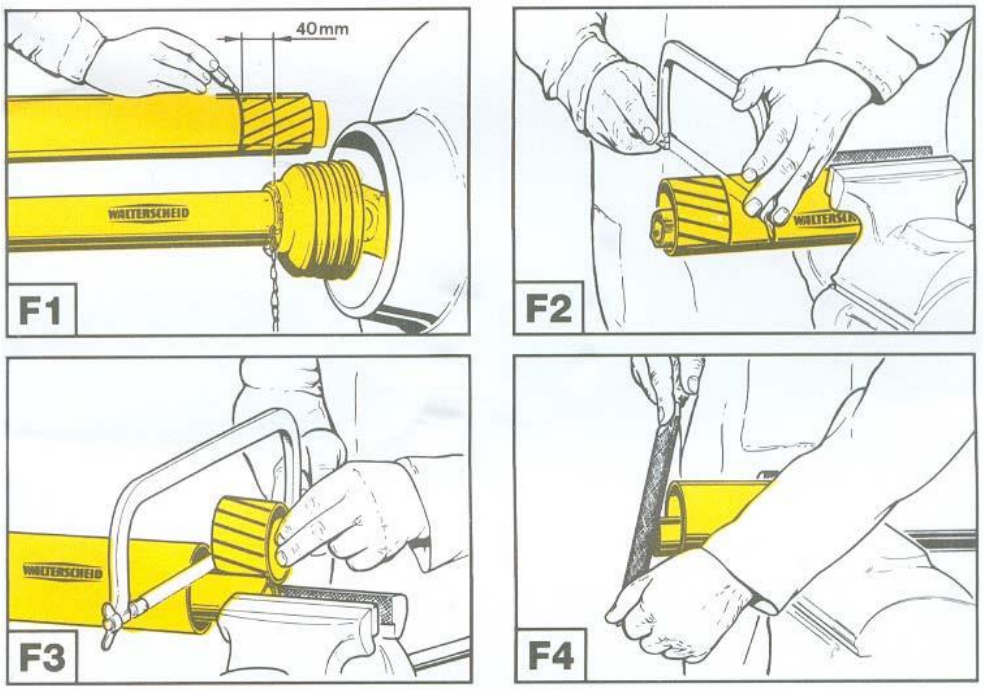
Maximum number of revolutions and direction of tractor PTO shaft rotation is 540 min^{-1}.

3. Pto shaft adjustment

Length of PTO shaft needs to be adjusted for different tractors (figure F1-F4). For winch 45H/55H/55Hpro, the use of PTO shaft with torque 695 Nm (type W 400E Walterscheid) is appropriate.

Ascertain the accurate length in the following manner:

1. Shut down the tractor.
2. Connect the machine to the tractor.
3. Extract the PTO shaft apart and connect the individual shaft halves to the tractor and machine and compare them crosswise and mark them (figure F1).
4. Shorten external and internal plastic protection pipes (figure F2).
5. Shorten external and internal slide profiles with the same distance as plastic protection pipes (figure F3).
6. Crop the pipe end, remove fillings and grease the slide positions well (figure F4).



4. Tractor mounting

When connecting the winch, do not stand in the danger zone!

Forestry winch can be connected to any tractor, which has a three-point hitch, with connection frame of category I or II. Appropriate construction also enables easy connection to the tractor with automatic connection rods. Connect the prescribed PTO shaft and secure cardan protection with a hang chain. Be careful that the cardan clicks into place on both connection points! For transfer of torque from the tractor to the winch, it is advisable to use a PTO shaft with a clutch. Once the winch is attached to the tractor, strengthen the stabilizers on the lower connection rods and level the winch with a hitch nut into position, so that the winch is tilted backwards for approximately 20 degrees. Electrical cable plug on the winch is connected to the socket on the tractor. Steering console is connected to the socket on the winch housing. When using remote control, receiver cable is connected to the socket, where the steering console used to be.

5. Wire rope unwinding

When the winch is properly connected, we can begin with unwinding of the wire rope. On tractors without a socket with constant current of 12 V, we can connect a supply cable in the socket, which is usually made for connection of light equipment on the trailer. Because of this, we have to turn on the position lights.

On the steering console (figure 8), press the left button to release the brake. Hydraulic cylinder shifts to position 1.
If we disengage pressure on the button in less than 3 seconds, the brake cylinder shuts and the winch is again open and unwinding is not possible. If this button is pressed for more than 3 seconds, the function shifts from "impulse" to "constant release" and despite not holding the button, the cylinder stays in the open position and the winch in unwinding function.

When unwinding, we have to be careful not to unwind the wire rope completely or leave at least three winds on the drum. This distance is marked on the wire rope. Due to safety reasons, the wire rope is installed on the drum so that if the logs start to slide without control, the rope must "pull" itself off the drum. If the rope was pulled out with excessive force, we can pull out the entire wire rope during pulling. In this case, replace it according to the procedure, foreseen for wire rope installation. If the wire rope is very tight and we wish to release it, we have to do it impulsively with quick presses 2-3 times on the left button. This prevents the wire rope to unwind too quickly from the drum and that the wire rope is not too loose. It also prevents the logs to slide downhill.

Warning
Steel rope must be completely unwound before first use and wind it back on the generator drum under load.
For instance, we can do this so that we attach the rope to a standing tree and pull the tractor with slight braking to the tree. This procedure must be done also before trying to tow, if we towed downhill beforehand or if the rope was wound loosely during towing.

ATTENTION!
Loosely wound steel rope can be damaged (stuck, bent) at greater load, so that it is prohibited to use it again.
Warranty does not apply for a steel rope, which is damaged in such manner.

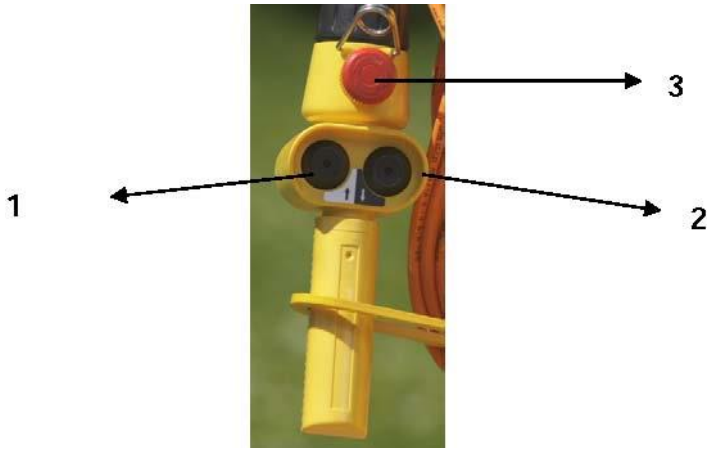


Figure 8

6. Winch controler

We can start pulling, when the winch is on the ground and properly strengthened. Apply the hand brake on the tractor. If the PTO shaft is engaged and the hydraulic system requires pressure, we can start pulling. Press the right button on the steering console (pos. 2, figure 8). The wire rope starts winding on the drum. When we release the button, the winding stops.
If the unwinding of the wire rope does not stop immediately after releasing the button, the winch is malfunctioning. Immediately stop work and contact service company, because operating the winch in this case is deadly!

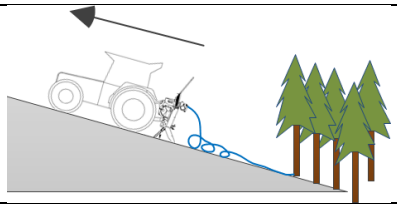
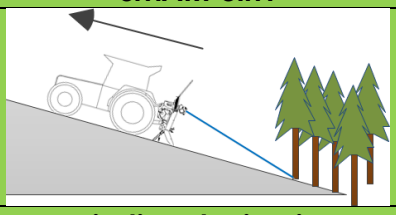
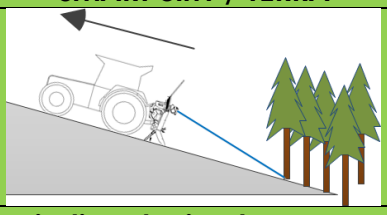
During pulling it is forbidden to lift the winch, because this can damage the connection PTO shaft on the winch.

In case of ultra vires or danger of accident, immediately press the red button (pos. 3,) to put the winch in a standstill.

7. The SMART 3in1 / TERRA function

If your winch is equipped with an unwinding device (Hpro version), it icludes the SMART 3in1/ TERRA function.
It can only be operated using a corresponding remote controller.
When the winch is started for the first time, use the manual console and test its operation.

Operation mode

Classic mode	SMART 3in1	SMART 3in1 / TERRA
		
The unwinding device activates after 1.5 seconds.	**The unwinding device is activated with an impulse – no delay**	**Unwinding device turns on with a pulse – without delay** ***We can see on the transmitter whether the unwinding device is active***
To start unwinding the pulling rope with the unwinding device: Hold the unwinding button for at least 1.5 seconds. **To switch off the unwinding device:** Release the unwinding button. **To switch the unwinding device back on:** Hold the unwinding button for at least 1.5 seconds.	**To switch on the unwinding of the pulling rope:** Hold the unwinding button for at least 1 second: This activates the unwinding process **without** the unwinding device. **To switch on the unwinding device:** Press the unwinding button. **To switch off the unwinding device:** Press the unwinding button. **To switch off the unwinding of the pulling rope:** Press the pulling button.	**Switching on unwinding of wire rope:** Hold the unwinding switch for at least 1 second. Unwinding function turns on **without** unwinding device. **Switching on the unwinding device**: Push the unwinding switch to direction of unwinding – permanently. **Switching off the unwinding device**: Turn off the unwinding switch - permanently **Switching off unwinding of wire rope:** Press the pulling function button.
med dvema intervaloma vklopa in izklopa odvijalne naprave vedno držite gumb vsaj 1,5 sekunde.	odvijalna naprava se vključi v trenutku ko pritisnete gumb za odvijanje.	The unwinding device is activated the moment you press the unwinding function button.

After making sure that the winch operates properly by using the manual console, you can test the winch with a remote control.
If the winch is not responding, your remote control is not suitable. In this case, replace the remote control or put the winch into the classic mode. To do this, follow the procedure below.

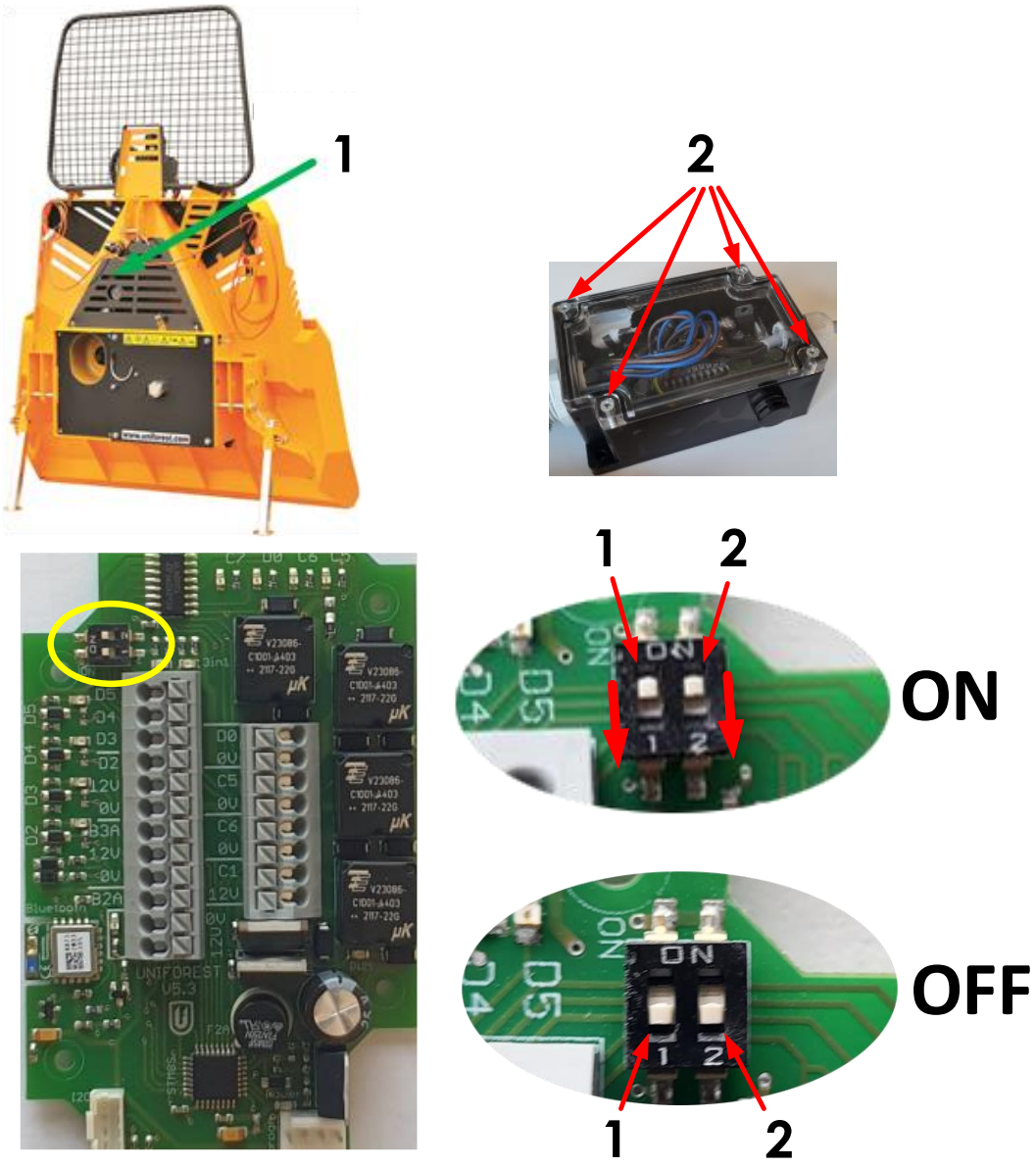


Figure 8a

Before switching off the SMART 3in1 function, turn of the tractor's engine and disconnect the power supply to the winch.
Remove the protection on the winch (1, Figure 8a). Loosen the screws on the electric box (2). Move the switch 1(TERRA), 2(SMART 3in1) on the switch panel to position OFF. Close the box and tighten the screws (2). Install the protection (1) back onto the winch.

8. Limit switch

Your winch can also be equipped with a limit switch (optional equipment). It was designed to automatically stop the pulling of the wire rope when the end of the rope reaches its final position. The limit switch prevents damage to the wire rope and its guide on the upper pulley.

SETTINGS

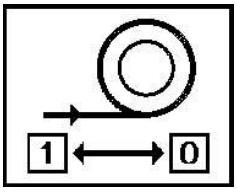


Figure 9

1. Clutch

Before any modification on the winch, shut off the tractor engine!
Pulling force on the clutch is factory set and does not require to be changed. Due to wear of friction surfaces, distance between clutches needs to be set after a certain period. This is done once a year at usual work in the forest or after every 1000 m^3 of pulled out logs, but not before end of warranty period. Perform the setting by unscrewing the nut (pos. 9, figure 11), which is the safety nut, to the left. Then, tighten the high nut (pos. 15, figure 11) to the right. In this position, there is no distance between the clutches. Then, unwind the nut for one turn to the left – this creates a gap between the lamellas of approximately 4-5 mm. Retighten the safety nut (pos. 9, figure 11) to the right. This protects the high nut from unwinding. Engage the motor and PTO shaft, pull out the rope and begin controlling the adjustment. If, despite not engaging the right button for pulling, the rope starts to move, then the distance between the clutches is too small. Increase it for approximately 1 millimeter or repeat the setting procedure by unwinding the high nut for ¼ of a turn to the left. Engaging pulling is not allowed, if the nuts (pos. 9 and 15, figure 11) are not installed on the shaft, because the hydraulic cylinder of the clutch gets damages, because the maximum permitted travel is only 8 mm!

WARNING
For cylinder travel greater than 8 mm, oil can leak down the clutches.

2. Preliminary brake

With bolt (pos. 4, figure 11) and wing nut (pos. 5, figure 11) set the preliminary brake. By rotating the bolt to the right, the brake force is increased, with rotating to the left, the brake force is decreased. Then tighten the wing nut, which prevents the bolt to loosen automatically. Proper setting ensures that the wire rope does not roll off the drum automatically or excessively. This would cause loose winding and damage to the wire rope at fast disburdening of the brake and unwinding. Preliminary brake is properly set when unwinding of the rope is still possible without excessive effort. If you pull the rope uphill, it is possible to additionally disburden the brake, so that rope towing is easier, the bolt (pos. 4, figure 11) must be returned to its original position immediately after.

3. Break

At the end of pulling, the differential brake automatically engages. **The brake is factory set to the braking force, which is 25% higher than the rated pulling force of the winch. As the braking padding is wearing down, the braking force is changing and you have to reset it periodically. This is required when the brake does not hold the burden as described in the beginning of this paragraph. The braking force is adjusted by loosening or tightening the screw (pos. 2, figure 11) after you have loosened the locking nut (pos. 3, figure 11). Tightening the screw (pos 2, figure 11 decreases the braking force, while loosening increases it. After the adjustment is completed, tighten the locking nut (pos. 3, figure 11). Correctly adjusted frictional brake in the engaged position prevents the burden from sliding backwards, while in the disengaged position it allows for an uninterrupted drawing of the rope from the winch.**

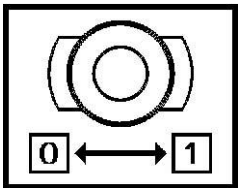


Figure 10

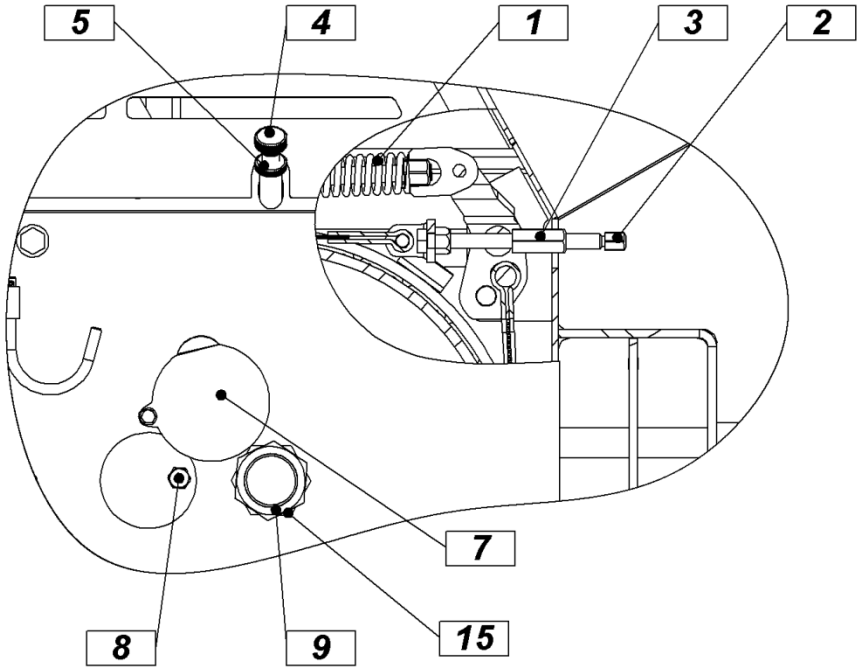


Figure 11

4. Drive chain tensioning

After a certain period of operation (10 hours), the drive chain stretches; therefore it must be checked frequently and tensioned, if required. It must be checked every 500 hours of operation or once every year. Tensioning is done according to the following procedure (figure 12)! First, disengage the PTO shaft and turn off the engine. Remove the protective sheet of the PTO shaft (pos 1, figure 12). Loosen the nuts (pos 2 and pos 8, figure 12) which fix the lower and upper drive (pos 3 and pos 9 figure 12). Then, unwind the safety nut (pos 12, figure 12) and using the screw (pos 13, figure 12) begin tensioning the longer chain (pos 6). Turn this screw to the right until the chain is properly tensioned. The chain is properly tensioned, when there is a swing of the chain for approximately 3-4 mm in transversal direction. Then tighten the screw with the counter-nut (pos 12, figure 12) to prevent the tensioner to get loosened. Now, securely tighten all four nuts on the lower drive (pos 2, figure 12). Then begin tensioning the shorter chain (pos 7, figure 12). If the four nuts (pos 8, figure 12) have been loosened beforehand, loosen the nut (pos 11, figure 12) and begin turning the tensioning screw (pos 10, figure 12) in left direction. This increases the distance between both housings. When the chain (pos 7, figure 12) is correctly tensioned, retighten the nut (pos 11, figure 12). At the end, similarly retighten nuts (pos 8).

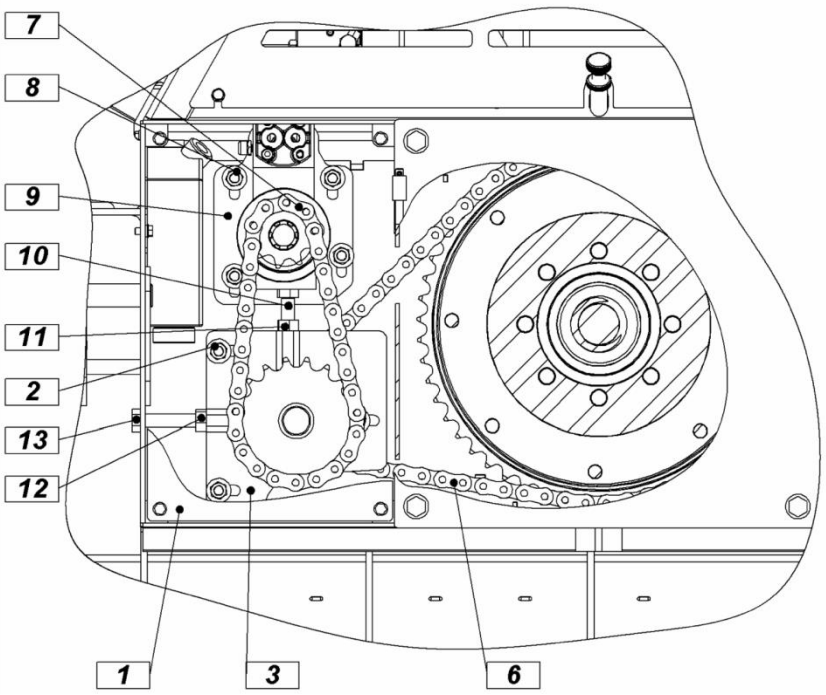


Figure 12

5. Wire rope assembly

First, remove the triangular protective net on the winch column. Then rotate the cover (pos. 7, figure 11) and rotate the drum in a position, which enables unscrewing of the bolt (pos. 8, figure 11)on the drum. Insert the wire rope in the guide of the upper pulley and direct it through the upper pulley to the rope drum. Insert the rope in the groove and tighten the bolt (pos. 8). Then start to wind according to the procedure, which applies to towing. Once the entire length of the wire rope is wound, unwind it again and wind it again strongly according to the procedure, which is described in the chapter "Wire rope unwinding" to prevent damage to the rope.

6. Operation

The device begins unwinding the wire rope automatically, when you release the wire rope or when the function for wire rope unwinding is set on the brake. The wire rope is unreeling until you stop the unreeling function on the winch. After the machine is turned on, the steering system ensures the engagement of the hydraulic cylinder in the unwinding position. After three seconds, the oil flow is redirected to the hydraulic motor of the upper pulley. The non-return valve, which is connected to the brake cylinder, enables a stable position of this cylinder. When in use, all regulations for safe use of the winch must be observed. Unwinding speed depends on the oil flow or the PTO shaft speed, which must not exceed 540 revolutions per minute.

When the wire rope unreeling function is turned on, the speed of the wire rope is a bit higher at the beginning. After a few meters, the speed decreases. This is completely normal considering the system of operation.

Only the speed is decreased and not the force, which the wire rope is being unreeled with from the drum.

Settings

After the assembly and testing, the machine is set. If the machine does not start unwinding the rope, when you turn it on, you must adjust the settings.

Observe the following procedure to adjust the settings.

If the wire rope is not mounted on the drum tight enough, unreel it and reel it again properly (use a load). To ensure a flawless operation of the reeling machine, the wire rope must not be damaged (bent or torn).

When you start unwinding the wire rope, adjust the force of the safety brake on the drum, so that the wire rope does not unwind on the drum (See instructions for using the winch, Safety brake settings). Next you must set the pulling force of the small sheave (pos. 3, figure 12a) on the larger sheave. If the rope is slipping on the larger sheave (2), increase the force of the small sheave using the adjustment screws (4). In case the larger sheave (2) is not spinning, decrease the pulling force of the small sheave (3) using the adjustment screws (4).

If the reeling machine functions properly, you can increase the force of the safety brake on the drum to ensure an even winding of the wire rope onto the drum. If you are using an additional brake, it is important that during the reeling of wire rope on the drum (unloaded rope – there is no load on the rope), the bigger sheave (2) is spinning together with the wire rope (it should not be sliding). The settings are made according to the above procedure.

Diameter of the wire rope

During the construction of the wire rope, certain parameters were considered which should be taken into account while using it to assure a quality lifetime of the machine.

The radius of the wheel edge must be identical to the diameter of the wire rope. For winches with different traction forces use the following wire ropes:

	MODEL
	45H
	45Hpro
	55H
	55Hpro
WIRE ROPE	**ø 10, ø 11**

The use of a wire rope with an improper diameter can seriously impair the functionality of the machine.

If the wire rope is damaged (torn, crumpled), it is practically impossible to unreel that part of the wire rope. In such cases complaints do not comply.

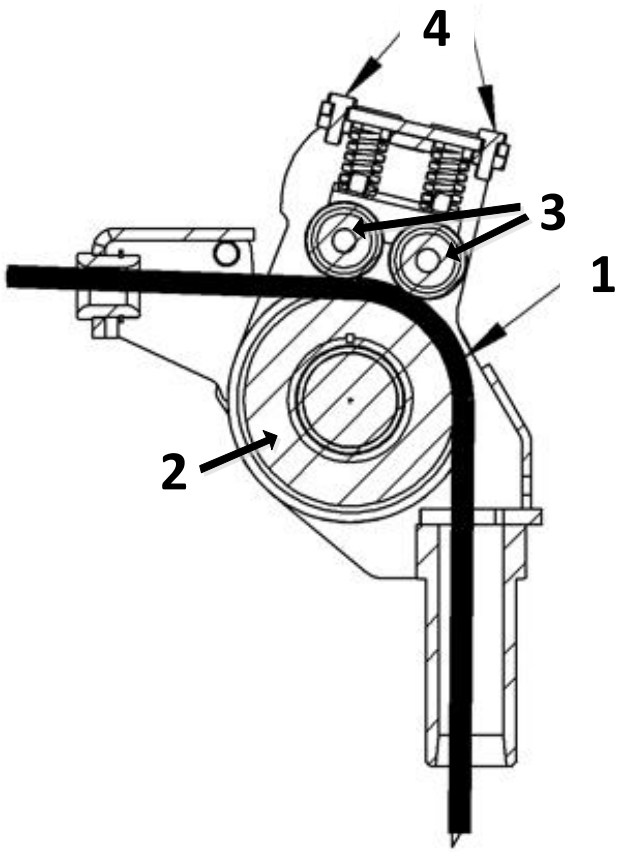


Figure 12a

7. Adjusting the unwinding speed

The 55Hpro winch is equipped with a valve for adjusting the unwinding speed. With the 45Hpro winch, this is available as optional equipment.
The unwinding speed of the wire rope is adjusted according to the following procedure:

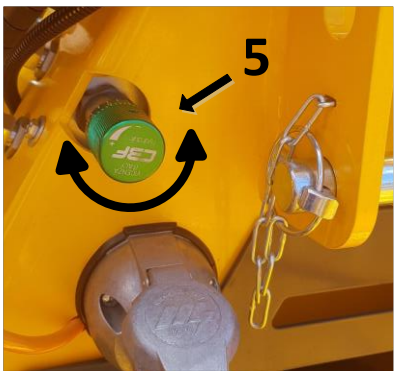


Figure 12b

- To increase the unwinding speed, rotate the valve (5, Figure 12b) in the counter-clockwise direction.
- To decrease the unwinding speed, rotate the valve (5) in the clockwise direction.
- If the valve (5) is turned all the way, the wire rope stops unwinding.

8. Adjusting the limit switch

The limit switch is adjusted for operation after the assembly and test. In the event of incorrect operation, a subsequent adjustment may be required.

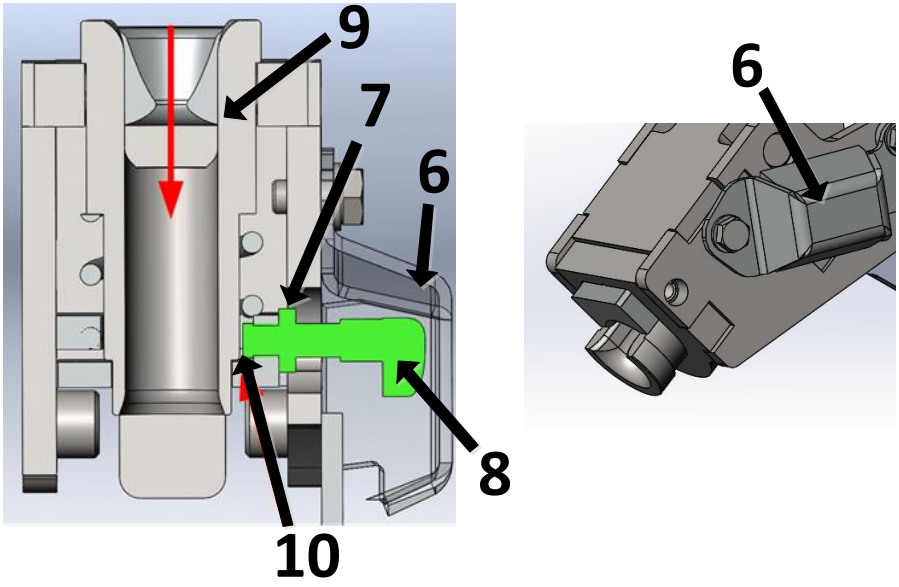


Figure 12c

Before adjusting the limit switch, turn of the tractor's engine and disconnect the power supply to the winch.
Remove the protection of the switch (6, Figure 12c). Unscrew the safety nut (7) on the limit switch (8). Press on the sleeve (9) until it rests in its final position. Screw on the sensor (8) until it reaches the surface of the sleeve (9). Unscrew the sensor (8) by one turn, so that the distance between the sensor and the sleeve (9) is 1 mm.

Check the operation of the limit switch:
When the sleeve (9) is released, the sensor (8) is not active (the sensor lamp is off). Move the sleeve (9) by 5 mm (the sensor lamp flashes). Press on the sleeve (9) until it reaches its final position (the lamp is on).
If the sensor operates properly, fasten the cover of the sensor (6) back onto the rope guide.

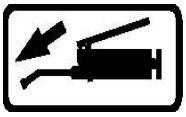
MAINTENANCE

Before proceeding with maintenance work, shut down the engine, remove the key and wait for all moving parts to stop.

There is a grease fitting on the winch, which enables greasing of the upper pulley and guide. The second grease fitting is on the housing of the lower pulley. Greasing is required every 60 hours of operation. The PTO shaft needs to be lubricated according to instructions of the manufacturer.

Non-frequent greasing can cause wear of slide elements and consequentially a defect, which is not subject to warranty terms!

Drive chain must be lubricated every 200 hours of operation. Lubricate it with spray for lubrication of chains or special grease, which does not melt at high temperatures, because the grease can come into contact with friction coating of the clutch.



First, remove the PTO shaft protection. Clean the chain before lubrication. Do not lubricate the part, where the grease can reach clutch with application.

If grease comes into contact with friction coating of the clutch due do improper and excessive lubrication, this would mean a drastic reduction in pulling force and consequentially it would be required to replace the blades of the clutch, which cannot be a subject of this warranty!

All other bearings on the winch are of closed type, therefore greasing is not necessary.

1. Control of hydraulic oil
Oil level in the tank needs to be controlled occasionally.
Oil level in the tank is 1,9 liters.

For hydraulic system, oil for hydraulic systems ISO 32 is used. In summer months, when the ambient temperature surpasses 25 °C, oil ISO 46 needs to be used. First oil change needs to be done after 1000 hours of operation. Each next oil change must occur after 1000 hours of operation or at least once a year. During operation, oil temperature needs to be controlled. It this surpasses 70 °C, the cardan must be stopped and the reason of overheating must be determined. If you do not have a thermometer present, you can check the oil temperature by touching the hydraulic line. This can be done only with the engine stopped. Otherwise, the hydraulic system can malfunction.
Oil level is controlled with a gauge on the tank cover (figure 13, pos. 3). This is the place, where oil is filled.
For any kind of intervention in the hydraulic system, you must release pressure in the system. This is achieved by pressing the left button on the control console (pos 1, figure 8), until the pressure drops to 0 bar (pos 1, figure 14).
Before starting, you must first remove both the triangular protection from the winch column and the PTO protection. Drain the oil from the reservoir (figure 13) at the pipe which is installed between the pump and tank. At the bottom of the reservoir you can find a filter that needs to be replaced every time you change the oil. It is also necessary to clean the high pressure filter (pos 2, figure 14).

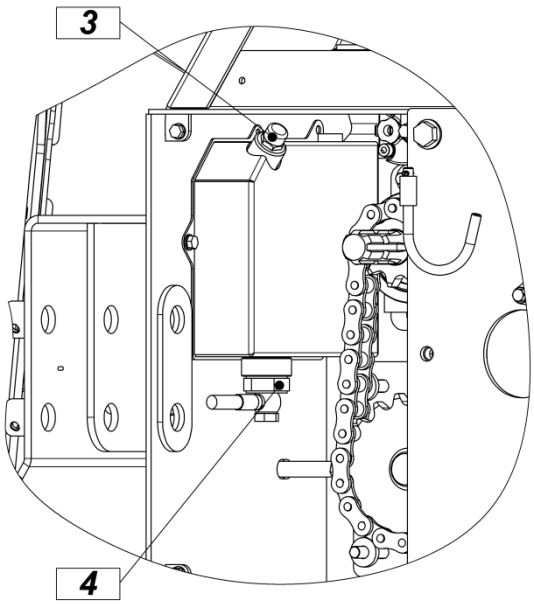


Figure 13

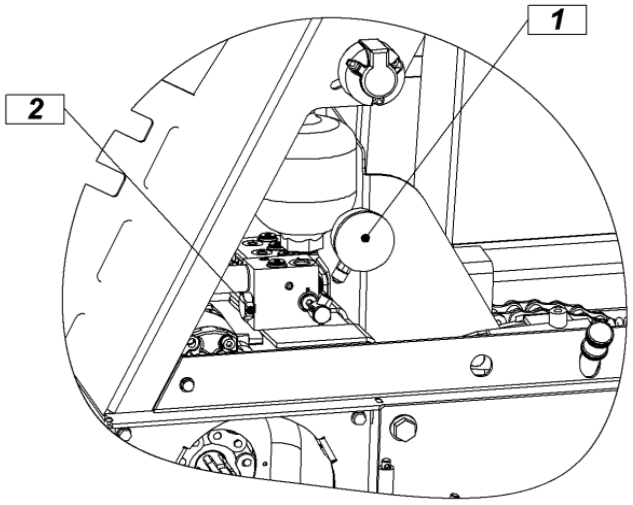


Figure 14

REMOVAL OF FAULTS

1. Winch

Determined fault (malfunctions)	Cause	Procedure for removal of faults (malfunctions)
Manometer does not show pressure.	Manometer does not work.	Replace the manometer.
	Sprocket does not drive the pump (broken axle, broken chains, spring pin on the sprocket).	Replace the damaged part.
	Impurities in pressure valve.	Unscrew the valve, clean it and replace it.
	Folded tube.	Replace the tube.
	Not enough oil in the tank.	Fill up oil in the tank.
	Pump malfunction.	Replace the pump.
Pressure drops too quickly.	The battery's membrane is damaged or nitrogen level in the battery is incorrect.	Fill up nitrogen or replace the battery.
	Impurities in steering valve.	Unscrew the valve, clean it and replace it.
	Non-return valve does not seal (impurities or malfunction).	Unscrew the valve, clean it and replace it.
	Pressure valve does not seal (impurities or malfunction).	Unscrew the valve, clean it and replace it or change it.
Clutch cannot be engaged.	Impurities in steering valve.	Unscrew the valve, clean it and replace it.
	No voltage / electrical current on the electro-magnetic coil.	Check the electrical wiring and contacts.
	Insufficient voltage on the electro-magnetic valve (min 11.6 V).	Check the electrical installation on the tractor.
	Electro-magnetic coil does not work.	Change the electromagnetic coil.
Brake cannot be engaged.	Impurities in steering valve.	Unscrew the valve, clean it and replace it.
	No voltage / electrical current on the electro-magnetic coil.	Check the electrical wiring and contacts.
	Insufficient voltage on the electro-magnetic valve (min 11.6 V).	Check the electrical installation on the tractor.
	Electro-magnetic coil does not work.	Change the electromagnetic coil.

Determined fault (malfunctions)	Cause	Procedure for removal of faults (malfunctions)
Pressure oscillates.	With each engagement of electro-magnetic valve it is normal for the pressure to oscillate. If the pressure oscillates, when the valves are not engaging, this means that the pressure valve is damaged or there are impurities in the valve.	Change or clean the pressure valve.
Insufficient pulling force.	Grease on frictional padding of the clutch.	Replace clutches.
	Burnt frictional padding of the clutch.	Clean padding with sandpaper or grind (thickness approximately 0.5 mm).
	Insufficient pressure in hydraulic system (required pressure at least 140 bar).	Determine the reason for pressure drop.
	Worn frictional padding of the clutch.	Replace clutches.
	Incorrectly installed clutch.	Install according to technical documentation.
Insufficient brake force.	Improper setting.	Setting according to instructions for use.
	Grease on the padding of the brake belt.	Replace the brake belt.
	Damaged brake belt.	Replace the brake belt.
	Damaged brake mechanism.	Replace damaged parts.
Wire rope cannot be pulled out or the pulling is difficult.	Improper setting of pre-brake.	Setting according to instructions.
	Improper setting of brake.	Setting according to instructions.
	Damaged or stuck wire rope.	Pull out the rope with a tractor and, if required, install a new wire rope.
	Damaged brake belt.	Replace the brake belt.

The winch pulls, despite the clutch being disengaged.	Error on electro-magnetic valve.	Cease work immediately and consult a service company.
	Not enough clutch distance.	Setting according to instructions.
	Broken part of frictional padding on the clutch.	Replace clutches.
	Excessively tensioned drive chain.	Chain setting according to instructions
	Damaged winch drum.	Replacement or repair of the drum.
Pulling is not interrupted by the limit switch	Incorrect adjustment of the limit switch	Adjust according to instructions

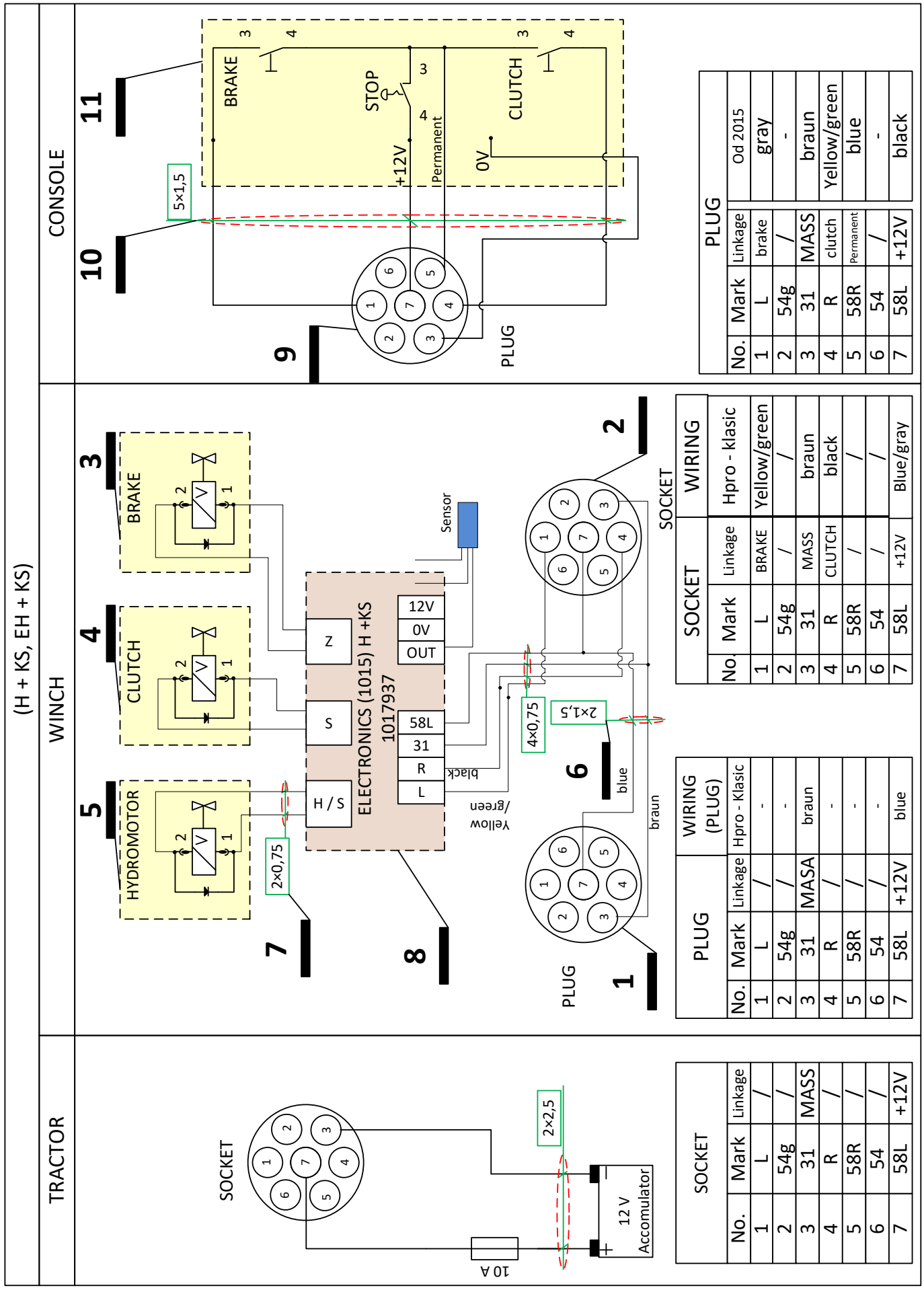
2. Reeling machine

Identified of malfunctions (errors)	Cause	Elimination of malfunctions
1. After it is turned on, the reeling machine does not start working, system pressure is 80 bar or more.	a) No electricity.	Put the plug in the socket.
	b) Damaged or improperly installed wire rope	Properly install the wire rope on the drum and the reeling machine. If the wire rope is damaged, replace or remove the damaged part. If the wire rope is installed properly, it is possible to uncoil it by hand when the thrust rollers are completely loosened and the reeling function is activated.
	c) Thrust rollers are too tight	Loosen the thrust rollers. After the reeling machine is turned on, it should unreel the wire rope and the pulley wheel should not slide on the wire rope.
	d) Safety brake is too tight.	Completely loosen the thrust rollers on the reeling machine. When the reeling function is activated, the wire rope can be uncoiled by hand. If the drum is resisting too much, loosen the safety brake.
	e) Damaged or blocked hydraulic engine	Completely loosen the thrust rollers on the reeling machine. The wire rope can be unreeled by hand, the pulley wheel is not spinning. Check for mechanical damage of the reeling machine – blocked engine, otherwise replace the hydraulic engine.
	f) Failure of the electrohydraulic valve coil or valve	When the reeling machine is turned on, there is no pressure in the hydraulic supply pipe of the reeling machine's hydraulic motor. Check the electrical connections on the reeling machine's valve, coil and valve.
	g) The speed control valve is fully tightened	Adjust the unwinding speed according to instructions
2. After it is turned on, the reeling machine does not start working, the system pressure is less than 80 bar	a) Winch drive is not activated	Turn on the winch drive.
	b) Damaged or worn hydraulic engine	The hydraulic engine is too heavy so it does not generate enough torque to unreel the wire rope. Replace the hydraulic engine.
	c) An insufficient quantity of oil – loud pump	Add oil, check the filter in the tank.
3. After it is turned on, the reeling machine unreels only ~ 5 m of the wire rope and then it stops working.	When the unreeling stops, check the pressure in the system. Then follow the instruction under point 1 or 2.	

4. After it is turned on, the reeling machine unreels only ~ 5 m of the wire rope and then it stops working. After some time it starts working again, then stops again and so on.	a) The number of revolutions per minute on the cardan shaft is too low	Increase the rpm of the cardan shaft.
	b) Incorrect setting of the safety valve or thrust rollers	See point 1.
	c) Damaged or improperly installed wire rope.	Properly install the wire rope on the drum and reeling machine – it should be possible to uncoil the rope without turning the machine on. If the wire rope is damaged, replace or remove the damaged part.
5. After it is turned on, the reeling machine is working, but it does not unreel the wire rope and the pulley is spinning freely.	a) The thrust rollers do not execute enough pressure on the wire rope.	Tighten the thrust rollers, until the pulley starts unreeling the rope.
	b) Improper diameter of the wire rope	Replace the wire rope.
6. After some time (until the oil heats up) the reeling machine stops working.	– The electrohydraulic valve jams at a certain temperature.	Replace the valve.
	– Worn hydraulic engine – too much leakage	Replace the hydraulic engine.
7. The reeling machine randomly works or does not work.	Loosened electrical connections	Check the electrical connections and tighten them accordingly.

ELECTRICAL EQUIPMENT

Version H+KS



SOCKET		
No.	Mark	Linkage
1	L	/
2	54g	/
3	31	MASS
4	R	/
5	58R	/
6	54	/
7	58L	+12V

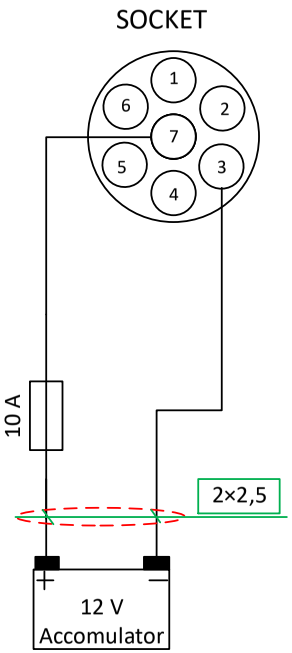
PLUG			
No.	Mark	Linkage	WIRING (PLUG) Hpro - Klasic
1	L	/	-
2	54g	/	-
3	31	MASA	braun
4	R	/	-
5	58R	/	-
6	54	/	-
7	58L	+12V	blue

SOCKET			WIRING
No.	Mark	Linkage	Hpro - klasic
1	L	BRAKE	Yellow/green
2	54g	/	/
3	31	MASS	braun
4	R	CLUTCH	black
5	58R	/	/
6	54	/	/
7	58L	+12V	Blue/gray

PLUG			
No.	Mark	Linkage	Od 2015
1	L	brake	gray
2	54g	/	-
3	31	MASS	braun
4	R	clutch	Yellow/green
5	58R	Permanent	blue
6	54	/	-
7	58L	+12V	black

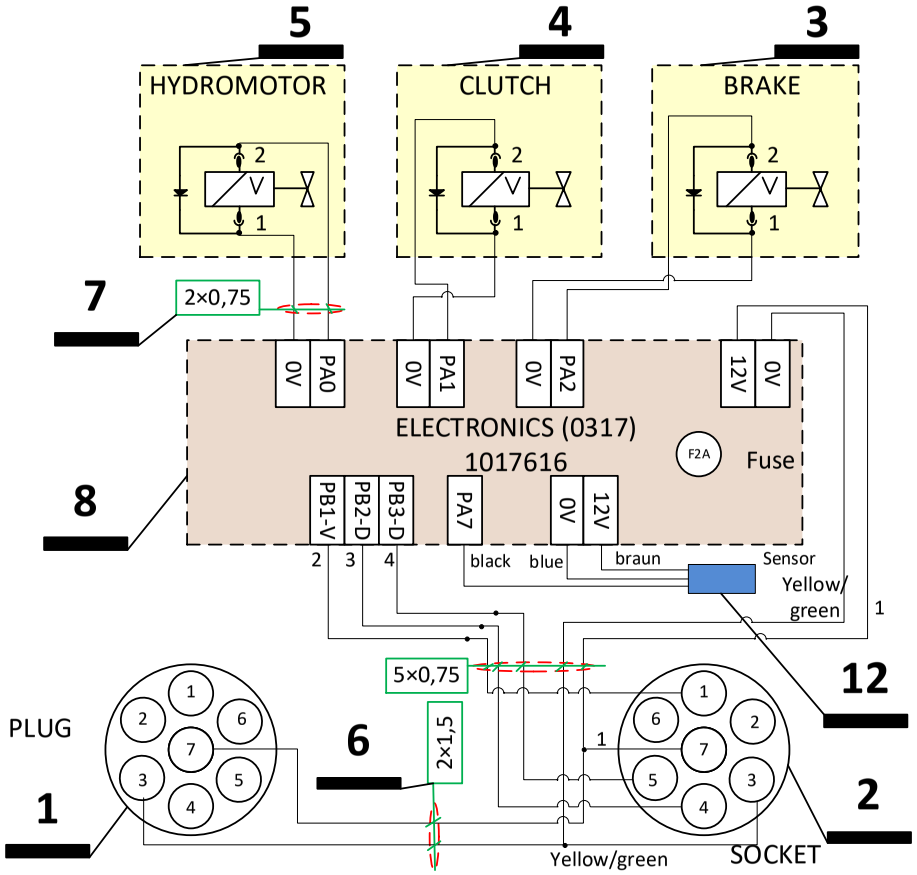
(Hpro, Hpro+KS, Ehpro+KS)

TRACTOR



SOCKET		
No.	Mark	Linkage
1	L	/
2	54g	/
3	31	MASS
4	R	/
5	58R	/
6	54	/
7	58L	+12V

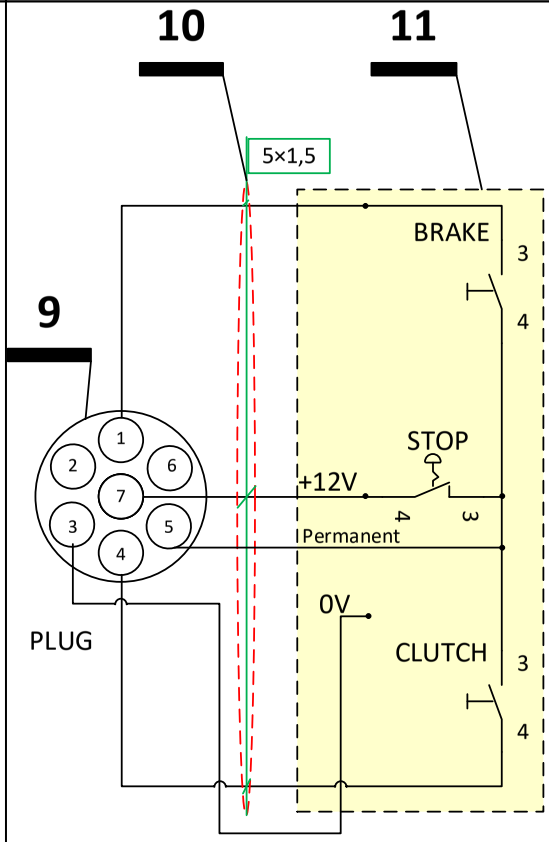
WINCH



PLUG			OŽIČENJE (VTIKAČ)
No.	Mark	Linkage	Hpro - SMART
1	L	/	-
2	54g	/	-
3	31	MASS	Yellow/green
4	R	/	-
5	58R	/	-
6	54	/	-
7	58L	+12V	1

SOCKET			OŽIČENJE
No.	Mark	Linkage	Hpro – SMART
1	L	BRAKE	2
2	54g	/	/
3	31	MASS	Yellow/green
4	R	CLUTCH	3
5	58R	Permanent	4
6	54	/	/
7	58L	+12V	1

CONSOLE



PLUG			
No.	Mark	Linkage	Od 2015
1	L	Brake	gray
2	54g	/	-
3	31	MASS	braun
4	R	clutch	Yelloow/green
5	58R	Permanent	blue
6	54	/	-
7	58L	+12V	black

EC DECLARATION OF CONFORMITY

IN COMPLIANCE WITH:

DIRECTIVE 2006/42/ES AND THE MACHINERY SAFETY RULES
(OFFICIAL GAZETTE OF RS, NR. 75/08, 66/10 and 74/11)

MANUFACTURER:

UNIFOREST D.O.O.
Latkova vas 81d, 3312 PREBOLD, SLOVENIJA

PERSON RESPONSIBLE FOR TECHNICAL DOCUMENTATION:

MARKO POLAK, UNIV.DIPL.INŽ., UNIFOREST,
Latkova vas 81d, 3312 PREBOLD

DESCRIPTION OF DEVICE - MACHINE:

WINCH:
UNIFOREST 45H, 45Hpro, 55H, 55Hpro, 65H, 65Hpro, 85H, 85Hpro

WE DECLARE UNDER OUR SOLE RESPONSIBILITY THAT THE ABOVE MENTIONED MACHINE

WINCH:
UNIFOREST 45H, 45Hpro, 55H, 55Hpro, 65H, 65Hpro, 85H, 85Hpro

IS COMPLIANT WITH THE FOLLOWING REGULATIONS AND STANDARDS:

DIRECTIVE 2006/42/EC AND THE MACHINERY SAFETY RULES
(OFFICIAL GAZETTE OF RS, NR. 75/08, 66/10 and 74/11)

HARMONISED AND OTHER STANDARDS:

SIST EN ISO 12100:2011 SIST EN ISO 4254-1:2010/ AC:2013
SIST EN ISO13857:2008 SIST EN ISO 4413:2011 ÖNORM L5276:2008

DATE:
PREBOLD, 12. 04. 2019

SIGNATURE OF RESPONSIBLE PERSON:
MARKO POLAK, UNIV.DIPL.INŽ.

UNIFOREST d.o.o.
Dobriša vas 14a, SI-3301 Petrovče / 2

Spare parts list

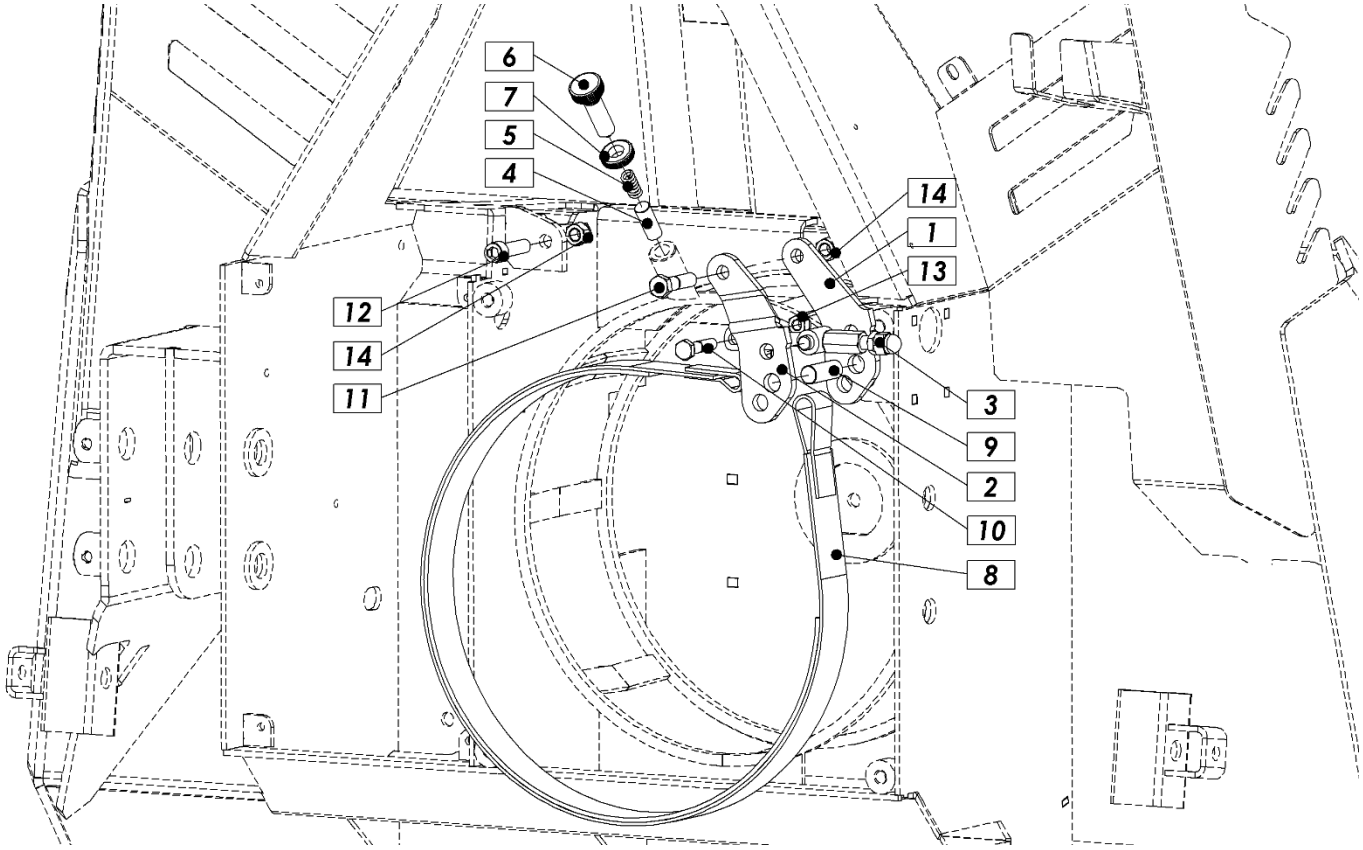


Figure 1: 4006.05.30.0 / 5006.05.30.0 – Brake mechanism.

Pos.	Name	No. of pieces	Number	
			45H 4006.05.30.0	55H 5006.05.30.0
1	Clutch plate	1	5006.05.11.0	5006.05.11.0
2	Clutch plate	1	5006.05.12.0	5006.05.12.0
3	Brake fork	1	5006.05.15.0	5006.05.15.0
4	Pre-brake bolt	1	5006.05.34.0	5006.05.34.0
5	Compression spring	1	5006.05.36.0	5006.05.36.0
6	Band brake screw Zn	1	5006.05.37.0	5006.05.37.0
7	Pre-brake nut	1	5006.05.38.0	5006.05.38.0
8	Brake belt var.	1	502.06.00.0	502.06.00.0
9	Brake bolt	1	502.06.12.0	502.06.12.0
10	Screw M10x45 Zn	1	1000075	1000075
11	Screw M12x50 Zn	1	1000072	1000072
12	Hexagon socket screw M12x45	1	1000099	1000099
13	Nut M10 Zn	1	1003461	1003461
14	Nut M12 Zn	2	1000142	1000142

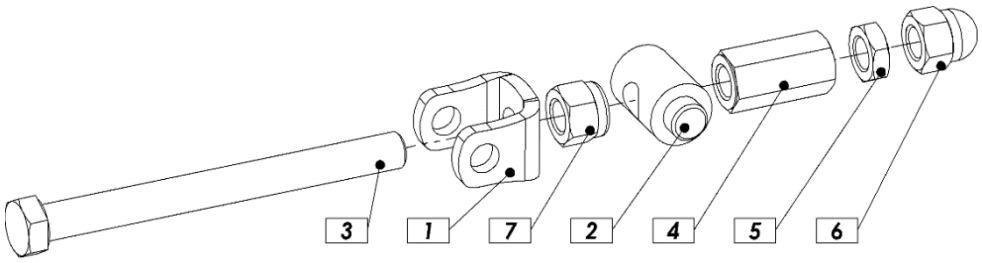


Figure 2: 5006.05.15.0 – Brake fork.

Pos.	Name	No. of pieces	Number
1	Fork eye	1	5006.05.16.0
2	Bolt	1	5006.05.14.0
3	Screw M12x130 Zn	1	1000119
4	Nut M12 black	1	1000148
5	Nut M12x1,5 Zn	1	1000150
6	Nut M12 Zn	1	1000149
7	Nut M12 Zn	1	1000142

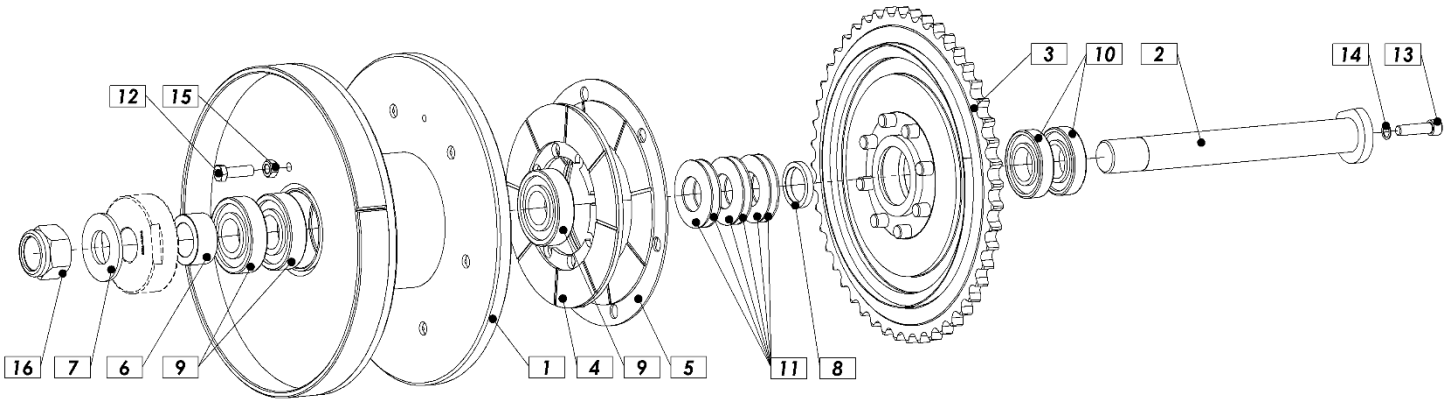


Figure 3: 5006.06.00.0 - Rope drum with a chain wheel.

Pos.	Name	No. of pieces	Number
1	Rope drum var.	1	5006.05.00.0
2	Drum shaft var.	1	5006.06.06.0
3	Chain wheel Z48 var.	1	5006.06.01.0
4	Clutch plate 240	1	5006.06.09.0
5	Clutch plate 274	1	5006.06.10.0
6	Bush	1	5006.06.12.0
7	Washer	1	5006.06.13.0
8	Distance bush	1	5006.06.14.0
9	Bearing 6308 ZZ	3	1000303
10	Bearing 6208 2Z	2	1000301
11	DISC SPRING 80x41x2,25	6	1000290
12	Screw M12x40 Zn	1	1000059
13	Hexagon socket screw M12x45	1	1000099
14	Washer M12 SKZ	1	1000287
15	Nut M12 Zn	1	1000139
16	Nut M39	1	1000147

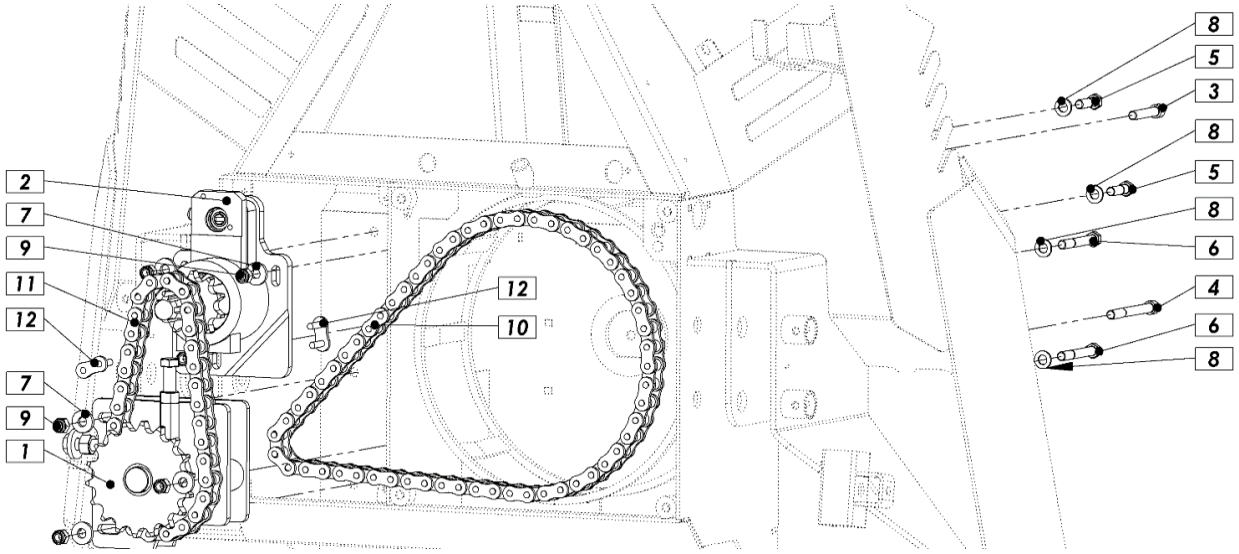


Figure 4: 5006.08.00.0 – Drive.

Pos.	Name	No. of pieces	Number
1	Drive kpl.	1	5006.08.10.0
2	Reduction gear kpl.	1	5006.08.40.0
3	Hexagon socket screw M12x70	1	1000131
4	Hexagon socket screw M12x120	1	1001095
5	Screw M12x45 Zn	2	1000083
6	Screw M12x95 Zn	2	1000047
7	Washer M12 Zn	6	1003632
8	Washer M12 Zn	4	1000161
9	Nut M12 Zn	6	1000142
10	Chain RK 16 B-1 (Lange 59x25,4=1498,6)	1	1000281
11	Chain RK 16 B-1 (Lange 31x25,4=787,4)	1	1003549
12	Joint link SG 16 B1	2	1003488

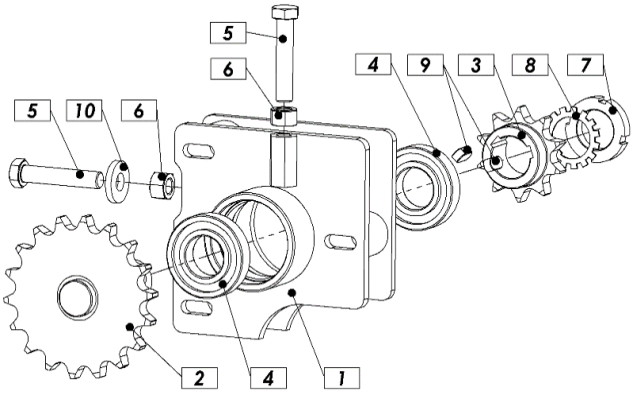


Figure 5: 5006.08.10.0 – Lower drive.

Pos.	Name	No. of pieces	Number
1	Drive housing	1	5006.08.15.0
2	Chain wheel with shaft	1	5006.08.20.0
3	Chain wheel z=10	1	702.28.03.0
4	Bearing 6208 2RS	2	1000313
5	Screw M16x80 Zn	2	1000137
6	Nut M16 Zn	2	1000140
7	Nut KM8 (M40x1,5)	1	1000145
8	Washer MB8 small	1	5006.08.24.0
9	Dowel 12x8x25-A	2	1000417
10	Washer M16 Zn	1	1000183

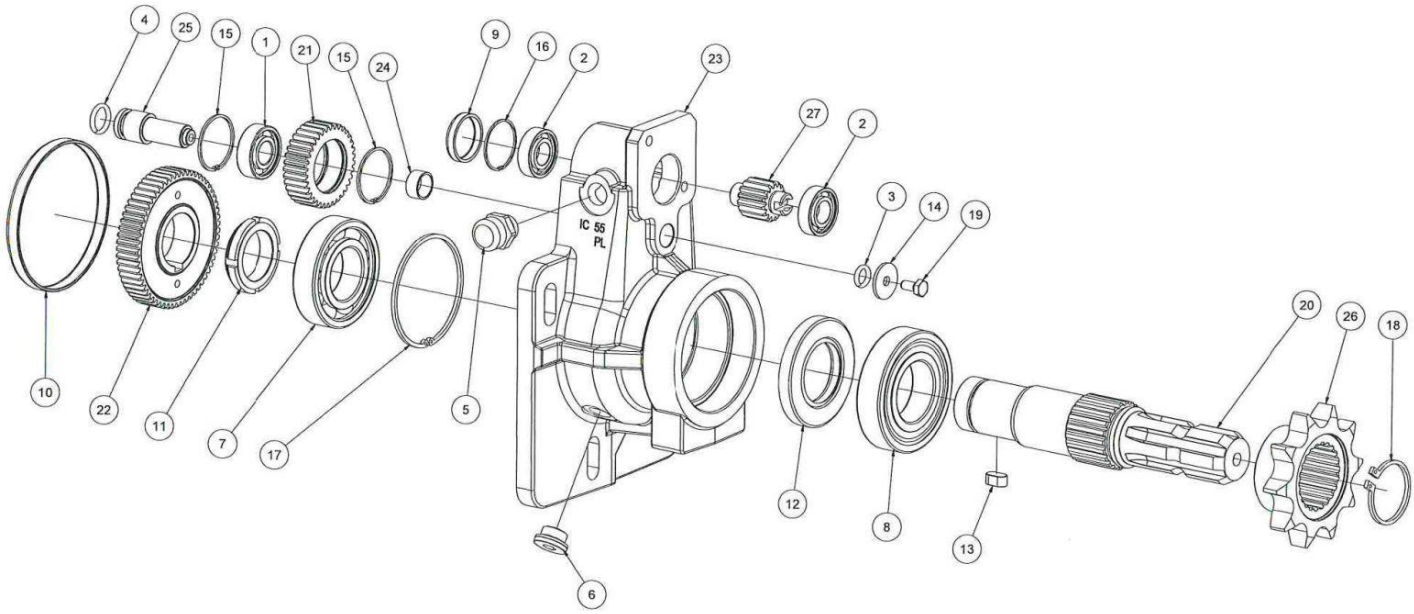


Figure 6: 5006.08.40.0 – Reduction gear GR55.

Pos.	Name	No. of pieces	Number
1	Bearing 6202	1	1000305
2	Bearing 6002	2	1000324
3	O-ring 112-9.92x2.62 NBR	1	0CUS104
4	O-ring 119-15.08x2.62 NBR	1	0CUS105
5	AIR VENT VALVE 3/8"	1	1011294
6	PLUG HYD. VSTI3/8ED	1	1000778
7	BEARING 6207	1	1000300
8	BEARING 6208 2RS	1	1000313
9	INNER OIL SEAL 32X7	1	1000773
10	INNER OIL SEAL 100X10	1	1000774
11	Nut GUK M35x1,5	1	0CUS529
12	Sealing ring TC 40x72x10	1	0CUS531
13	Dowel UNI 6604 Tipo A-8x7x15	1	0LIN049
14	Washer UNI 6593 -6.4x24x2	1	0RON023
15	RETAINING RING N 35X1,5	2	1000138
16	RETAINING RING N 32X1,2	1	1000264
17	RETAINING RING N 72X2,5	1	1000236
18	RETAINING RING Z 40x1,75	1	1000238
19	SCREW M6 x 12 ZN	1	1000074
20	Drive shaft (GR55)	1	7ALB003
21	Gear wheel B 35x1,5	1	7COR035
22	Gear wheel Z59	1	7COR059
23	Drive housing – casting	1	7CORP005
24	Distance bush 18x9	1	7DIST1890
25	Axis 20x55	1	7PERN2055
26	Chain wheel Z10	1	7PIGN010
27	Gear wheel B 18x1,5	1	7PIGN015

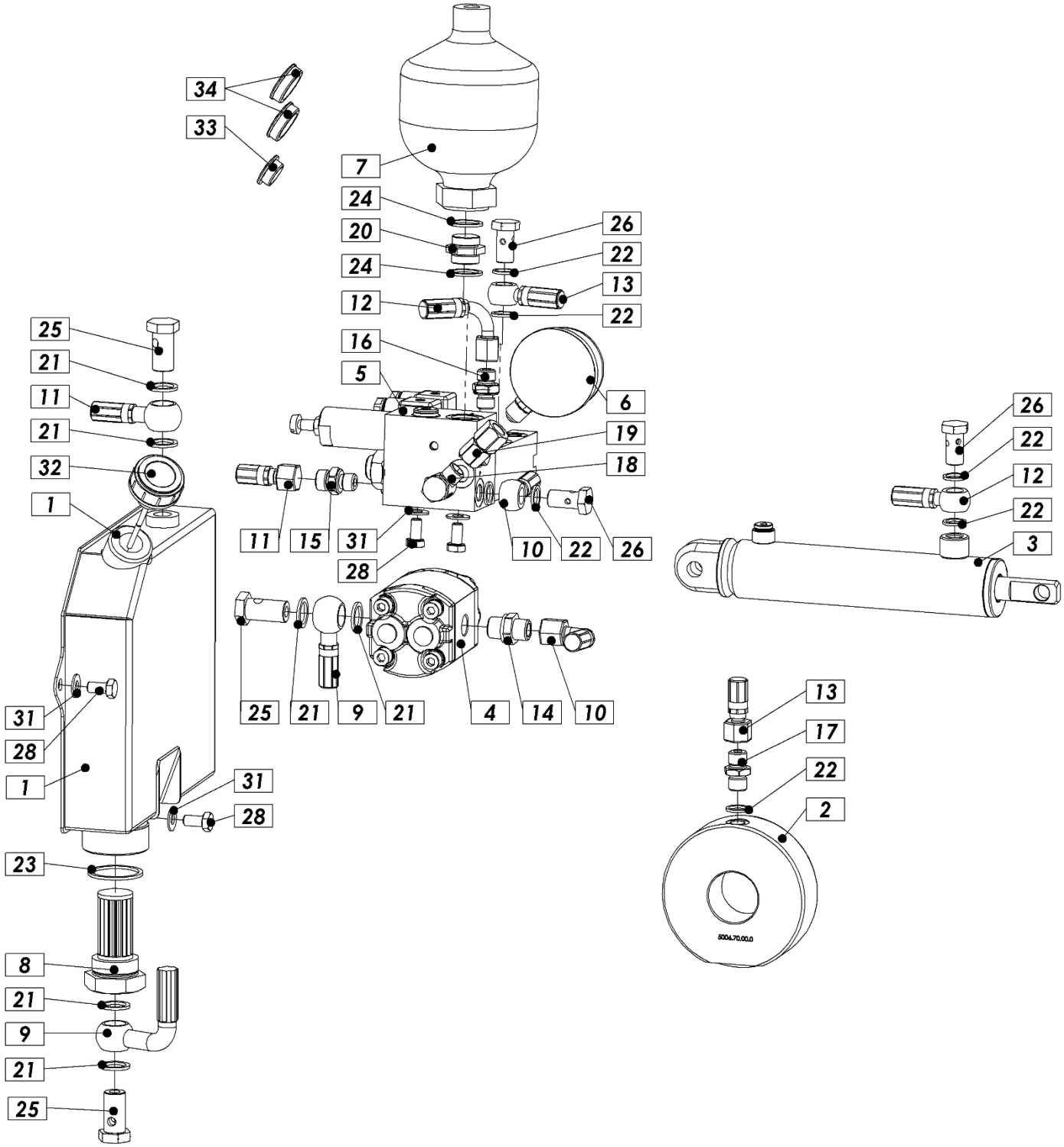


Figure 7: 4006.32.00.0 – Hydraulic assembly 45H/55H.

Pos.	Name	No. of pieces	Number
1	Tank var.	1	5006.32.10.B
2	Hydraulic cylinder 55H	1	5006.70.00.0
3	Brake cylinder	1	7002.80.10.0
4	Gear pump, right IN-lateral_OUT-lateral 3/8"	1	1007019
5	Hawe SK 7470 650 II (55)	1	1000692
6	Pressure gauge	1	1000678
7	ACCUMULATOR HYD. ADE050 (80bar)	1	1003821
8	SUCTION FILTER WITH A NUT M36x1,5	1	1007714
9	HYD. HOSE 1SN DN08 360B3/8 / B-90-3/8"	1	1000797
10	HYD. HOSE 1SN DN08 160M-90-16/B-1/4"	1	1000760
11	HYD. HOSE 1SN DN08 300 M-16/B-3/8"	1	1000798
12	HYD. HOSE 2SN DN06 570 B-1/4"/M-90-14	1	1000820
13	HYD. HOSE 1SN DN06 500A-1/4 / B-1/4"	1	1000800
14	HYD. ATTACHMENT GE10LR3/8EDOMD	1	1000639
15	HYD. ATTACHMENT GE10LREDOMD	1	1000643
16	HYD. ATTACHMENT GE08LREDOMD	1	1000594
17	HYD. ATTACHMENT 4HMK4	1	1000642
18	HYD. ATTACHMENT SWVE08LROMD	1	1000590
19	HYD. ATTACHMENT MAVE08LR	1	1000596
20	HYD. ATTACHMENT 8HMK4	1	1000726
21	Washer Cu 3/8	6	1000617
22	HYD. WASHER HID CU 1/4"	7	1000599
23	HYD. WASHER CU 36x42X2	1	1000602
24	HYD. WASHER HID CU 1/2"	2	1000724
25	HOLLOW SCREW HYD. 3/ 8"	3	1000633
26	HOLLOW SCREW HYD. 1/ 4"	3	1003765
27	Hexagon socket screw M8x90	2	1004767
28	Screw M8x16 Zn	4	1000050
29	Washer M8 Zn	2	1003465
30	Washer M8 Zn	2	1003473
31	Washer M8 SKM	4	1009844
32	PLUG WITH PRESSURE VALVE PVC SRL 1/2" 75(45)	1	1017359
33	TECHNOLOGICAL HOLE PLUG 20x7	1	1001047
34	Technological hole plug 30x7	2	1020573

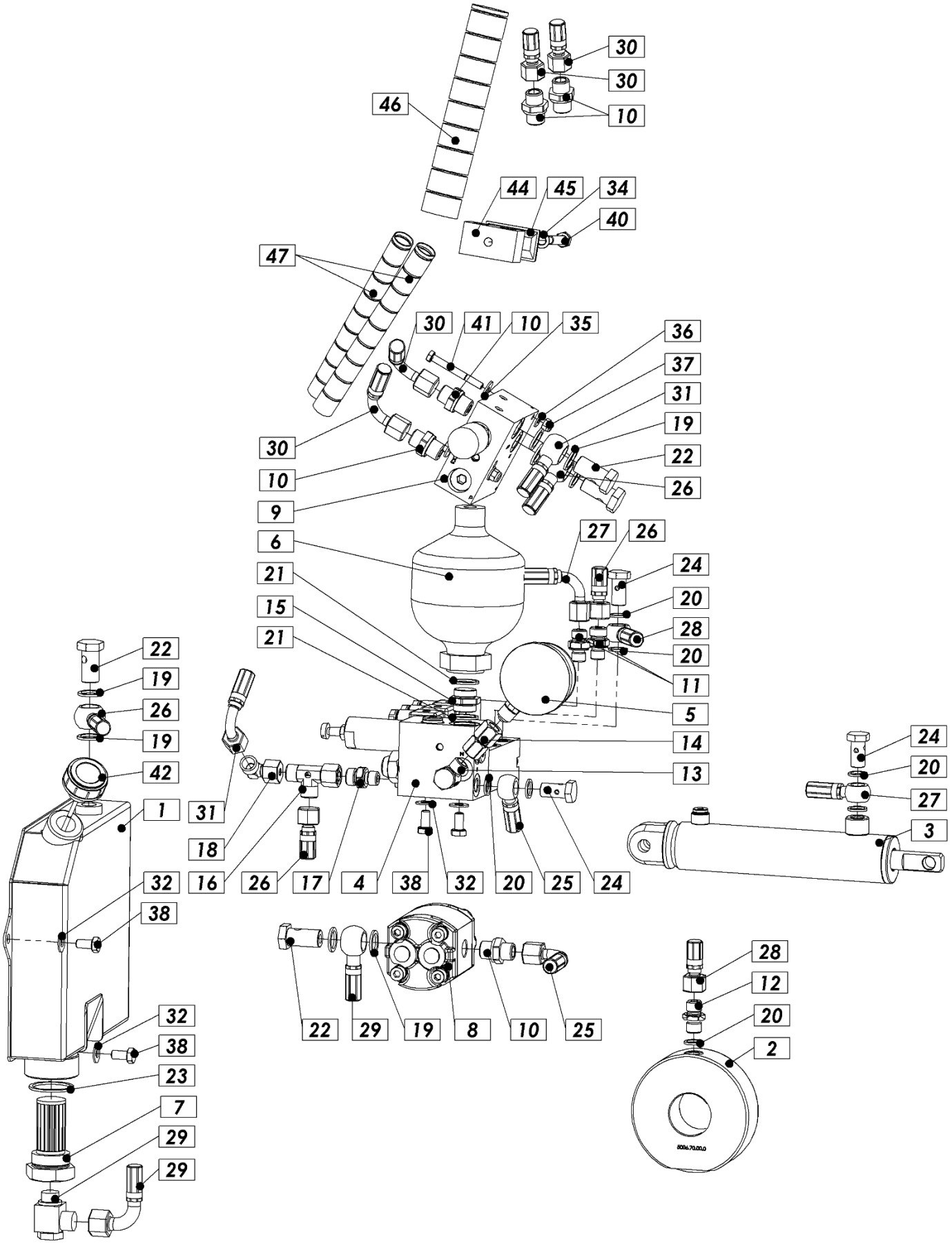


Figure 8: 5006.32.15.0 – Hydraulic assembly 55Hpro.

Pos.	Name	No. of pieces	Number
1	Tank	1	5006.32.10.B
2	Hydraulic cylinder	1	5006.70.00.0
3	Hid cil	1	7002.80.10.0
4	Hawe SK 7470 650 III	1	1000689
5	Pressure gauge	1	1000678
6	Accumulator hyd.	1	1003821
7	Suction filter with a nut	1	1007714
8	Gear pump, right	1	1007019
9	Control valve	1	806.06.60.0
10	Hyd. Attachment GE10LR3/8EDOMD	5	1000639
11	Hyd. Attachment GE08LREDOMD	1	1000594
12	Hyd. Attachment 4HMK4	1	1000642
13	Hyd. Attachment SWVE08LROMD	1	1000590
14	Hyd. Attachment MAVE08LR	1	1000596
15	Hyd. Attachment 8HMK4	1	1000726
16	Hyd. attachment EL10LOMD	1	1000743
17	Hyd. Attachment GE10LREDOMD	2	1000643
18	Hyd. attachment EVW10LOMD	1	1000805
19	Washer Cu 3/8	8	1000617
20	Hyd. washer CU 1/4"	7	1000599
21	Hyd. washer CU 1/2"	2	1000724
22	Hollow screw HYD. 3/ 8"	4	1000633
23	Hyd. washer CU 36x42X2	1	1000602
24	Hollow screw HYD. 1/ 4"	3	1003765
25	Hyd. hose 1SN DN08 160M-90-16/B-1/4"	1	1000760
26	Hyd. hose 1SN DN08 300 M-16/B-3/8"	2	1000798
27	Hyd. hose 2SN DN06 570 B-1/4"/M-90-14	1	1000820
28	Hyd. hose 1SN DN06 500A-1/4 / B-1/4"	1	1000800
29	Hyd. hose 1SN DN10 360B3/8 / B-90-3/8"	1	1011301
30	Hyd. hose 1SN DN08 710 M-16L_M-90-16L	2	1021988
31	Hyd. hose 1SN DN08 420 M-90-16L B-3_8 90°	1	1021989
32	Washer M8 SKM	4	1009844
33	Washer M8 Zn	2	1003465
34	Washer M8 Zn	3	1003473
35	Washer M6 Zn	2	1000173
36	Washer M6 SKM	2	1000175
37	Nut M6 Zn	2	1003712
38	Screw M8x16 Zn	4	1000050
39	Hexagon socket screw M8x90	2	1004767
40	Screw M8x45 Zn	1	1012046
41	Screw M6x55 Zn	2	1001077
42	Plug with pressure valve	1	1017359
43	Technological hole plug 20x7	1	1001047
44	Attachment tube	1	1000667
45	Upper plate	1	1009620
46	Hose protection - Spiral 35 mm	1	1014104
47	Hose protection - Spiral 20 mm	2	1000693

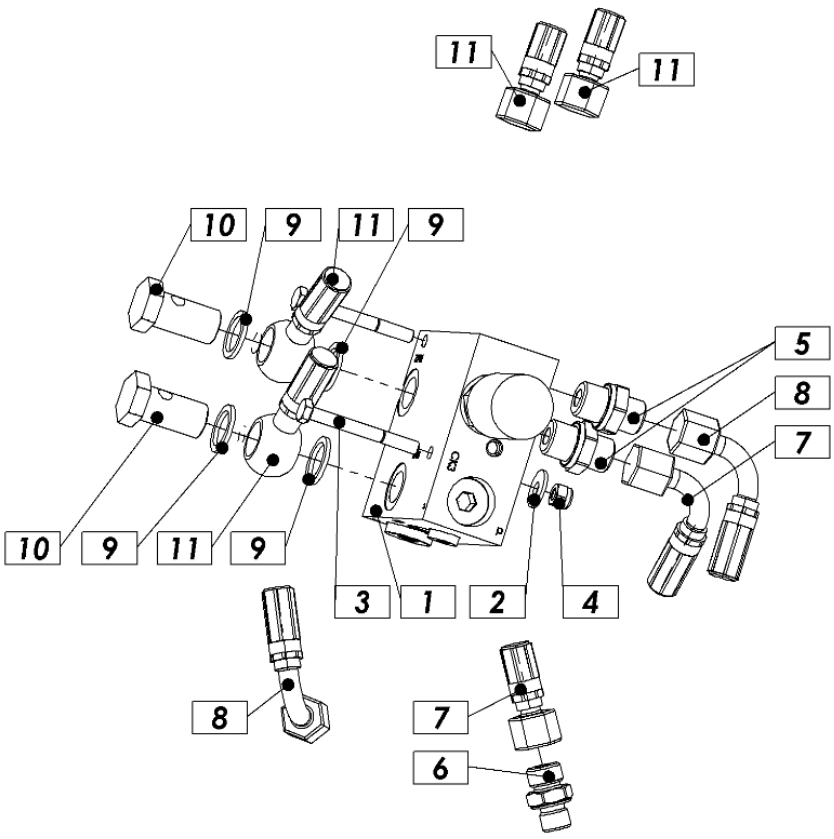


Figure 9: 4006.32.20.0 – Unwinding speed adjustment valve 45Hpro.

Pos.	Name	No. of pieces	Number
1	CONTROL VALVE	1	1019384
2	Washer M6 Zn	2	1000173
3	Screw M6x55 Zn	2	1001077
4	Nut M6 Zn	2	1003712
5	HYD. ATTACHMENT GE10LR3/8EDOMD	2	1000639
6	HYD. ATTACHMENT GE10LREDOMD	1	1000643
7	Hyd. hose 1SN DN08 710 M-16L_M-90-16L	1	1021988
8	Hyd. hose 1SN DN08 450 M-90-16_M-90-16 110°	1	1022441
9	Washer Cu 3/8	4	1000617
10	HOLLOW SCREW HYD. 3/ 8"	2	1000633
11	Hyd. hose 1Sn DN08 700 M-16L_B-3_8	2	1022448

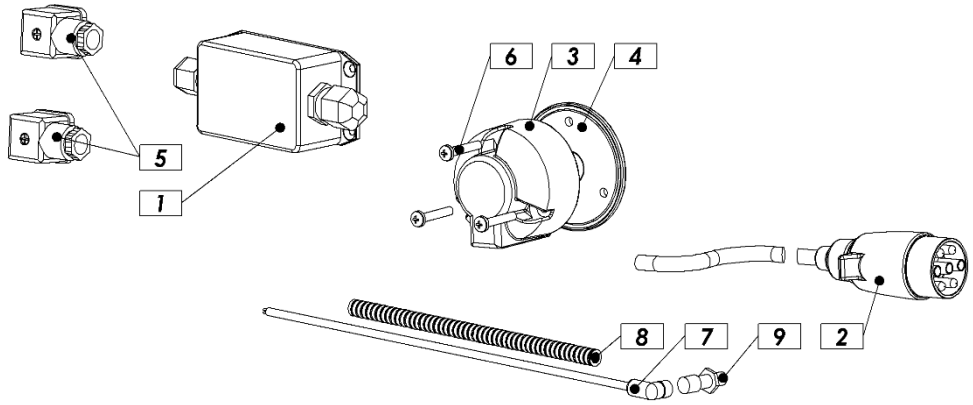


Figure 10: 7002.12.10.0 / 7002.12.30.0 – Cables H/H+KS.

Pos.	Name	No. of pieces	Number	
			45/55H 7002.12.10.0	45/55H+KS 7002.12.30.0
1	Electronics (H + KS)	1	/	1017937
2	7-pin plug	1	1000988	1000988
3	7-pin socket	1	1000987	1000987
4	RUBBER WASHER FOR SOCKET	1	1000991	1000991
5	HYD. valve connector	2	1000934	1000934
6	SCREW M5 x 30 ZN	3	1000082	1000082
7	Sensor cable	1	/	1011893
8	SENSOR PROTECTION TUBE	1	/	1015391
9	Sensor	1	/	1010814

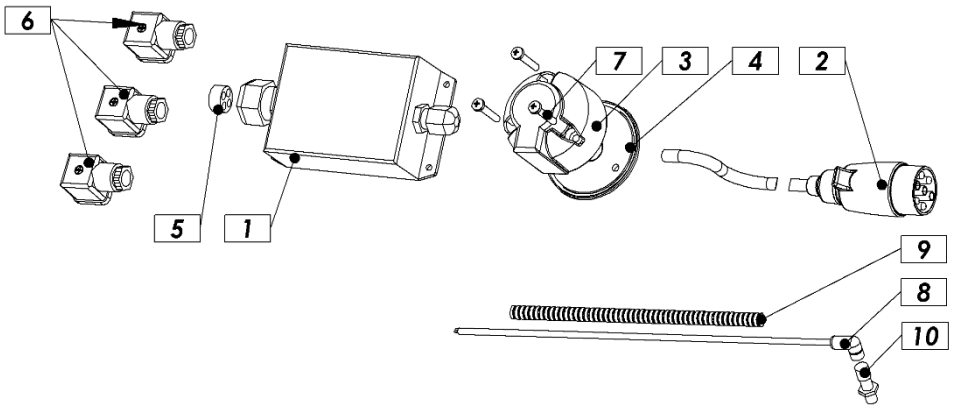


Figure 11: 7002.12.50.0 / 7002.12.00.0 – Cables Hpro/Hpro+KS

Pos.	Name	No. of pieces	Number	
			45/55Hpro 7002.12.50.0	45/55Hpro+KS 7002.12.00.0
1	El. box - central (PG9, M25)	1	1017616	1017616
2	7-pin plug	1	1000988	1000988
3	7-pin socket	1	1000987	1000987
4	RUBBER WASHER FOR SOCKET	1	1000991	1000991
5	GLAND RUBBER M25 4x6mm holes	1	1017389	1017389
6	HYD. valve connector	3	1000934	1000934
7	SCREW M5 x 30 ZN	3	1000082	1000082
8	Sensor cable	1	/	1011893
9	SENSOR PROTECTION TUBE	1	/	1015391
10	Sensor	1	/	1010814

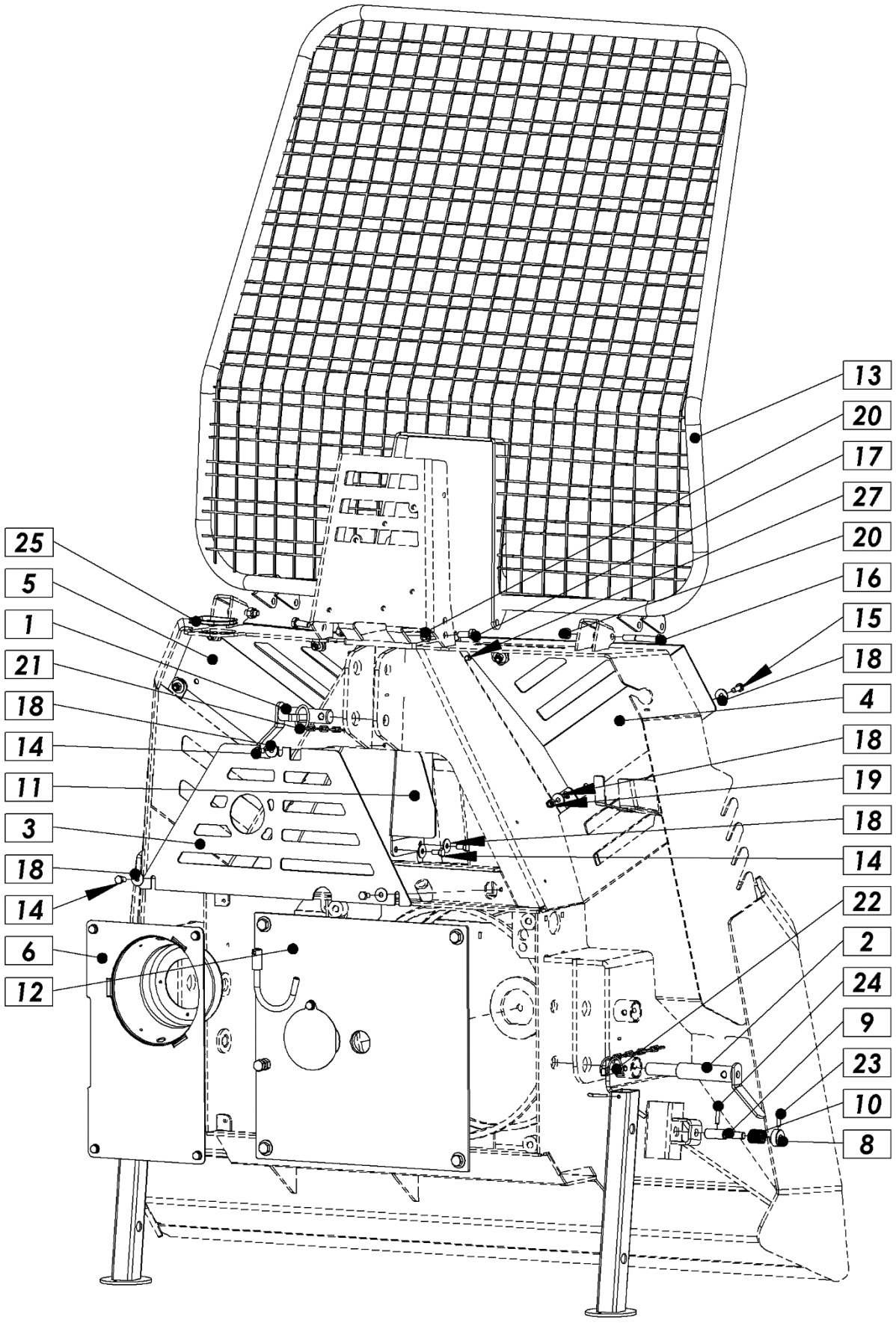


Figure 12: 4006.13.00.0 / 5006.13.00.0 – Protections and mechanisms.

Pos.	Name	No. of pieces	Number	
			45H 4006.13.00.0	55H 5006.13.00.0
1	Up. attachment pin	1	702.56.03.0	702.56.03.0
2	Lower attachment bolt	2	502.00.20.0	502.00.20.0
3	Protective sheet metal	1	4006.00.50.0	5006.00.50.D
4	Upper protection	1	4006.01.45.0	5006.01.45.0
5	Upper protection	1	4006.01.46.0	5006.01.46.0
6	PTO protection kpl.	1	5002.00.60.0	5002.00.60.0
7	Support foot	2	5006.00.10.0	5006.00.10.0
8	Hub	2	5006.00.15.0	5006.00.15.0
9	Bolt	2	5006.00.16.0	5006.00.16.0
10	Foot spring	2	5006.00.18.0	5006.00.18.0
11	Protective sheet metal	1	5006.00.65.0	5006.00.65.0
12	Drum cover kpl.	1	5006.11.00.0	5006.11.00.0
13	Screen var.	1	5008.88.00.0	5008.88.00.0
14	Screw M8x16 Zn	5	1000050	1000050
15	Screw M8x20 Zn	8	1000051	1000051
16	Screw M10x70 Zn	2	1010831	1010831
17	Screw M10x25 Zn	2	1000061	1000061
18	Washer M8 Zn	21	1003471	1003471
19	Nut M8 Zn	8	1003460	1003460
20	Nut M10 Zn	4	1003461	1003461
21	Spring latch 10mm + chain 2.2 mm	1	1004565	1004565
22	Tube fuse 8x42 mm + chain	2	1004566	1004566
23	Spring latch 6x30	2	1000214	1000214
24	Spring latch 6x40	2	1000208	1000208
25	Grommet, large Ø 70	1	1000736	1000736
26	Cotter pin 5x50	2	1003497	1003497
27	Grease fitting M8x1	1	1000234	1000234

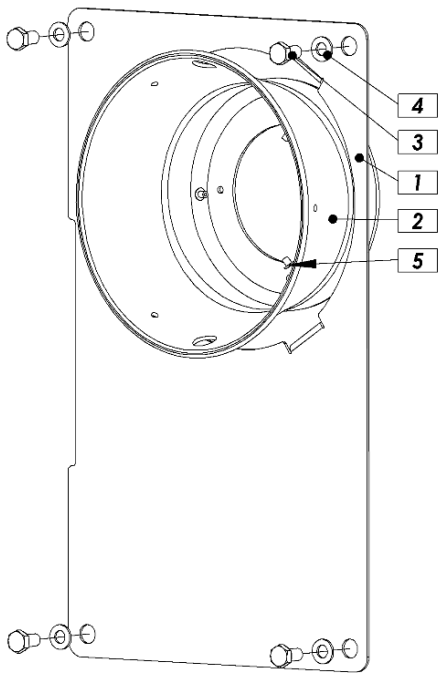


Figure 13: 5002.00.60.0 – PTO protection.

Pos.	Name	No. of pieces	Number
1	PTO protection	1	5002.00.61.0
2	PTO protection	1	305.35.02.0
3	Screw M8x16 Zn	4	1000050
4	Washer M8 Zn	4	1003465
5	Rivet	3	1003685

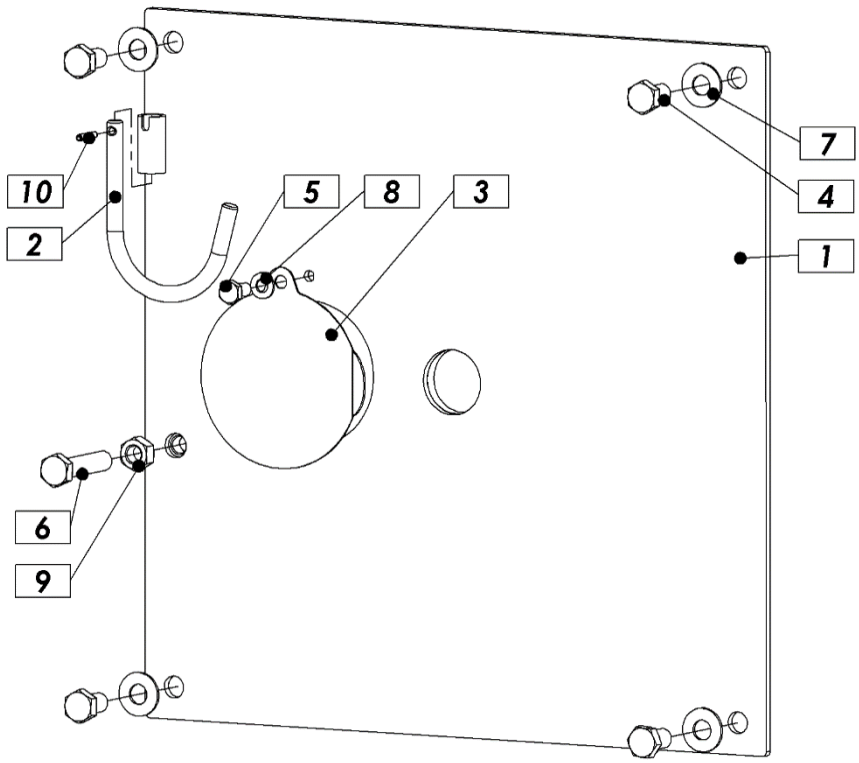


Figure 14: 5006.11.00.0 – Drum cover.

Pos.	Name	No. of pieces	Number
1	Cover var.	1	5006.11.05.0
2	PTO bracket Zn	1	502.11.08.0
3	Small cover	1	502.11.09.0
4	Screw M12x20 Zn	4	1000055
5	Screw M8x16 Zn	1	1000050
6	Screw M12x55 Zn	1	1000084
7	Washer M12 SKM	4	1000176
8	Washer M8 Zn	1	1003465
9	Nut M12 Zn	1	1000139
10	Spring latch 4x20	1	1000207

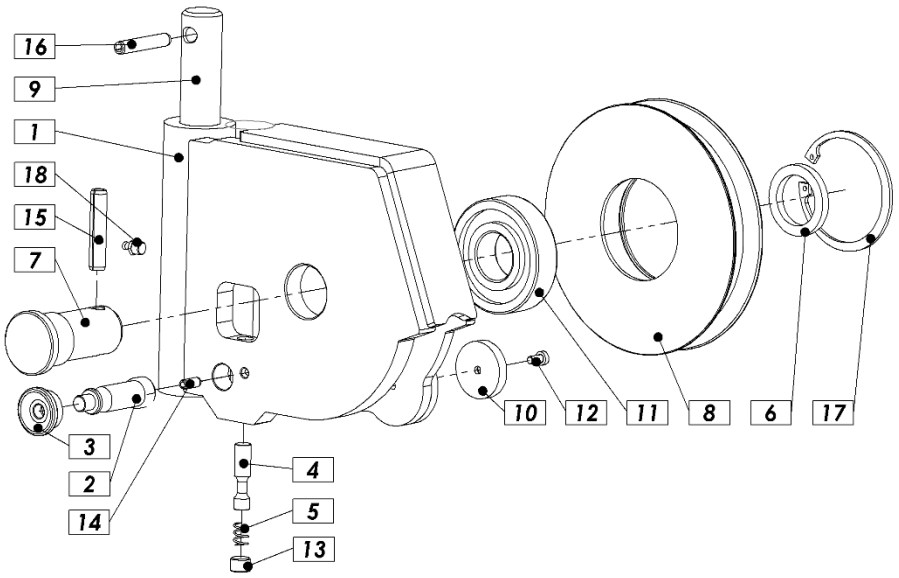


Figure 15: 5006.10.00.A – Lower pulley.

Pos.	Name	No. of pieces	Number
1	Lower pulley housing var.	1	5006.10.01.A
2	Bolt Zn	1	5006.10.09.0
3	Holder Zn	1	5006.10.10.0
4	Safety latch Zn	1	5006.10.11.0
5	Brake compression spring	1	5006.10.12.0
6	Washer 31.9/ 44.5 - 5.8	1	502.09.18.0
7	Pulley bolt	1	5006.10.18.A
8	Pulley wheel	1	502.09.08.0
9	Low. pulley bolt	1	502.10.10.0
10	Magnet 36x7	1	1000507
11	Bearing 6306 2RS	1	1000308
12	Hex socket screw M5x10 Zn	1	1000117
13	Locking screw M12	1	1000118
14	Spring latch 6x14	1	1003971
15	Spring latch 10x50	1	1001116
16	Spring latch 8x45	1	1000230
17	Retaining ring N72x2,5	1	1000236
18	Grease fitting M8x1	1	1000234

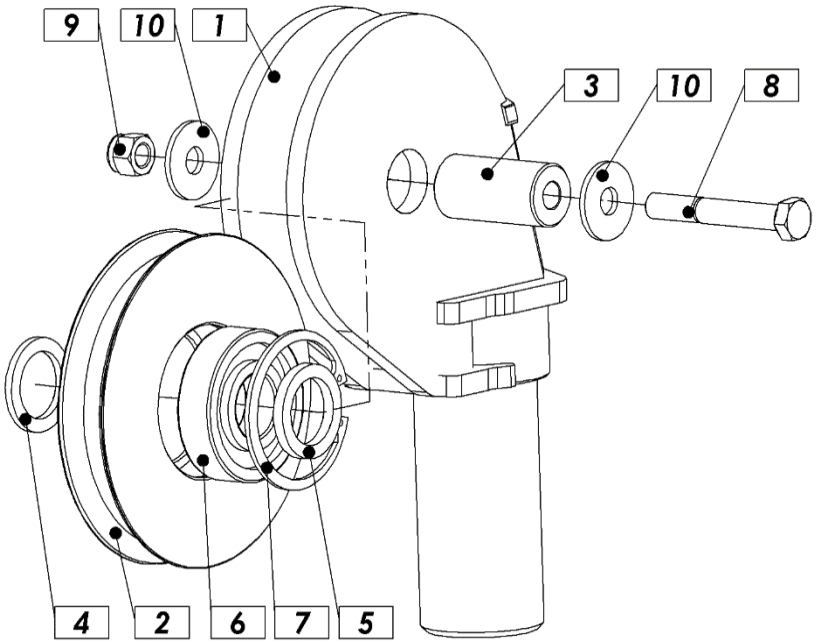


Figure 16: 5006.09.35.0 – Upper pulley 45H/55H.

Pos.	Name	No. of pieces	Number
1	Upper pulley var.	1	5006.09.01.0
2	Pulley wheel	1	502.09.08.0
3	Pulley bush	1	502.09.09.0
4	Spacer 1	1	502.09.17.0
5	Washer 31.9/ 44.5 - 5.8	1	502.09.18.0
6	Bearing 6306 2RS	1	1000308
7	Retaining ring N72x2,5	1	1000236
8	Screw M12x80 Zn	1	1000046
9	Nut M12 Zn	1	1000142
10	Washer M12 Zn	2	1000166

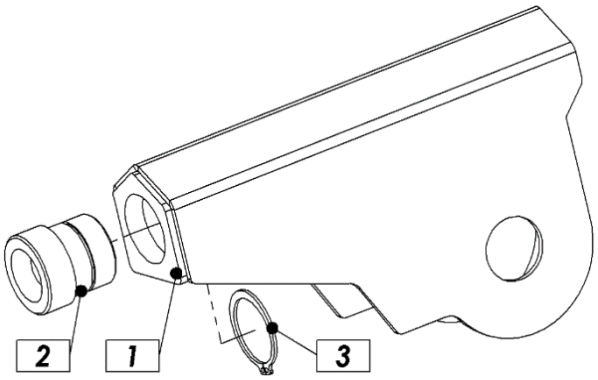


Figure 17: 5006.09.09.0 – Rope guide 45H/55H.

Pos.	Name	No. of pieces	Number
1	Guide var.	1	5006.09.10.0
2	Bush, hardened	1	5006.09.12.0
3	Retaining ring Z35x1,5	1	1000261

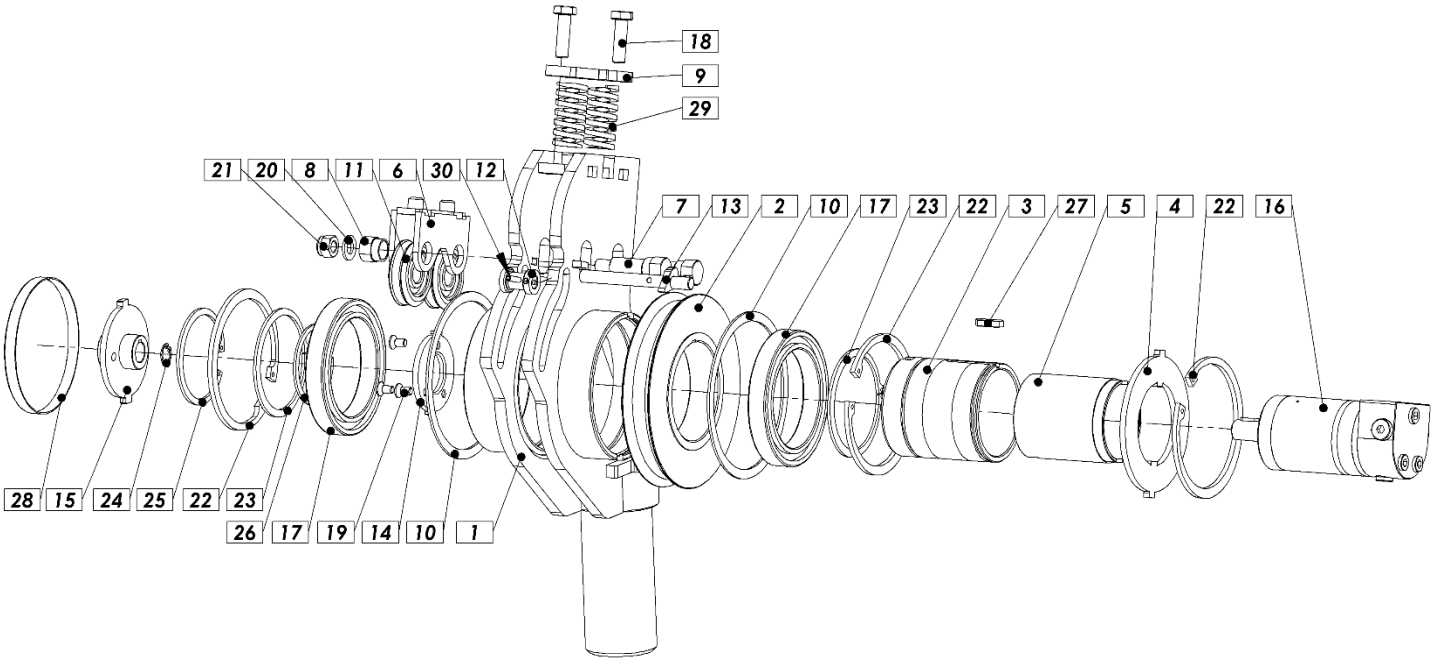


Figure 18: 504.09.15.0 – Pulley with hydraulic drive.

Pos.	Name	No. of pieces	Number
1	Upper pulley var.	1	504.09.11.C
2	Pulley wheel	1	504.09.16.1
3	Hollow drive shaft	1	504.09.17.1
4	PLATE 2 ZN	1	504.09.18.1
5	Hydraulic motor tube 1 Zn	1	504.09.19.0
6	Roller holders var.	1	504.09.23.A
7	Bolt	2	504.09.24.A
8	BUSH ZN	2	504.09.28.A
9	Push plate	1	504.09.30.A
10	Washer 120X135X2 ZN	2	504.09.31.0
11	Roller with bearing	2	504.09.55.0
12	Bush	1	504.09.211.0
13	Rope limiter	1	504.09.220.0
14	Hydraulic motor flange	1	704.25.78.0
15	Flange var.	1	704.25.131.0
16	HYDRAULIC MOTOR OMM 32C RLL	1	1009296
17	BEARING 61916 2RS	2	1000318
18	Screw M10x35 Zn	2	1000112
19	Screw M6X12 Zn	3	1000063
20	Washer M10 Zn	2	1003731
21	Nut M10 Zn	2	1003461
22	Retaining ring N110x4	3	1000256
23	Retaining ring Z80x2.5	2	1000257
24	Retaining ring N16x1	1	1000255
25	Retaining ring N75x2,5	1	1000252
26	Retaining ring N62x2	1	1000237
27	Dowel 5x5x25	1	1001035
28	Cover 110 x 10	1	1000731
29	TOOL SPRING 25X51	2	1000037
30	Spring latch 4x20	1	1000207

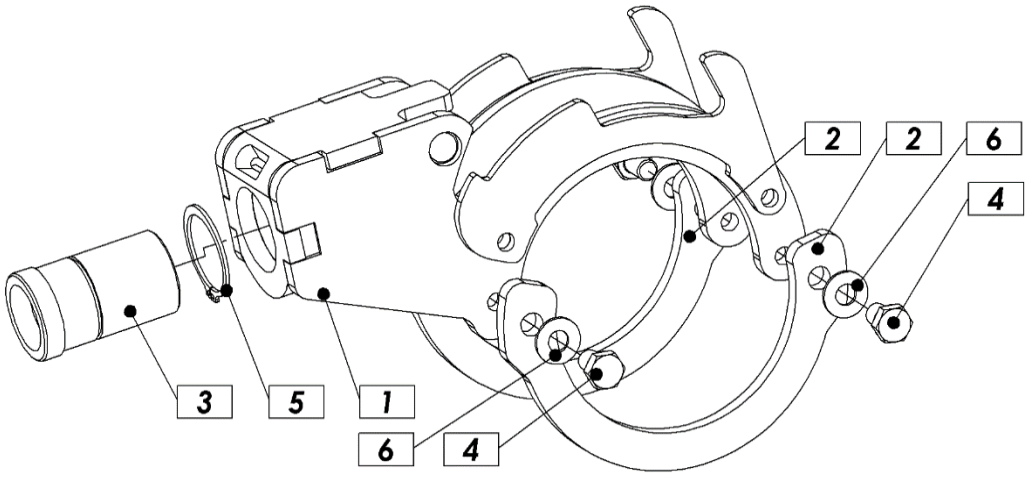


Figure 19: 504.09.60.0 – Rope guide 45Hpro/55Hpro.

Pos.	Name	No. of pieces	Number
1	Roller var.	1	504.09.34.2
2	CLAMP	2	504.09.40.1
3	Guide sleeve	1	704.25.168.A
4	Screw M10x16 Zn	4	1000094
5	Retaining ring Z40x1.75	1	1000238
6	Washer M10 SKM	4	1000169

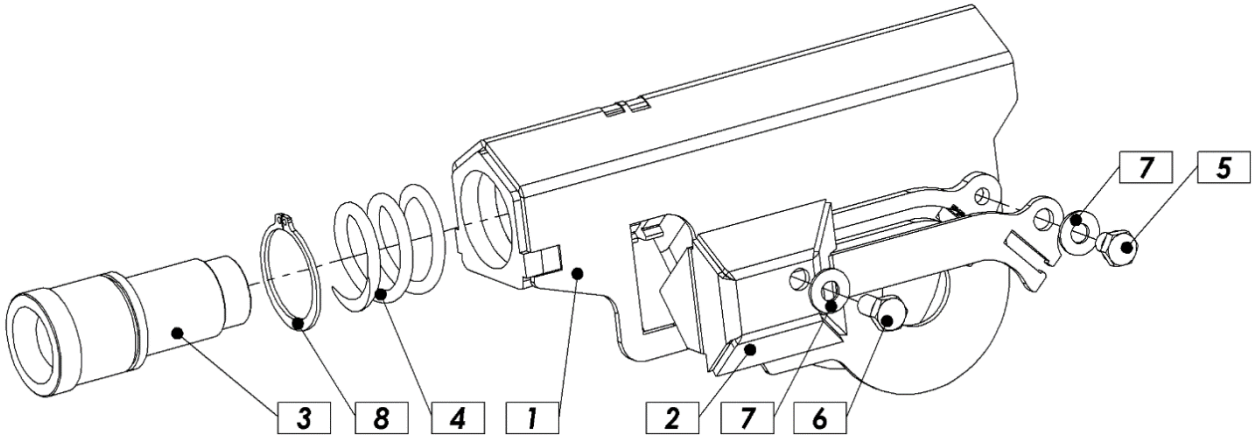


Figure 20: 5006.09.30.0 – Rope guide 45/55H+KS

Pos.	Name	No. of pieces	Number
1	Guide var.	1	5006.09.20.0
2	Sensor cover	1	5006.09.16.0
3	Guide sleeve	1	704.25.168.B
4	Spring 5×43×38	1	704.25.221.0
5	Screw M8x10 Zn	1	1000134
6	Screw M8x16 Zn	1	1000050
7	Washer M8 SKM	2	1009844
8	Retaining ring Z40x1.75	1	1000238

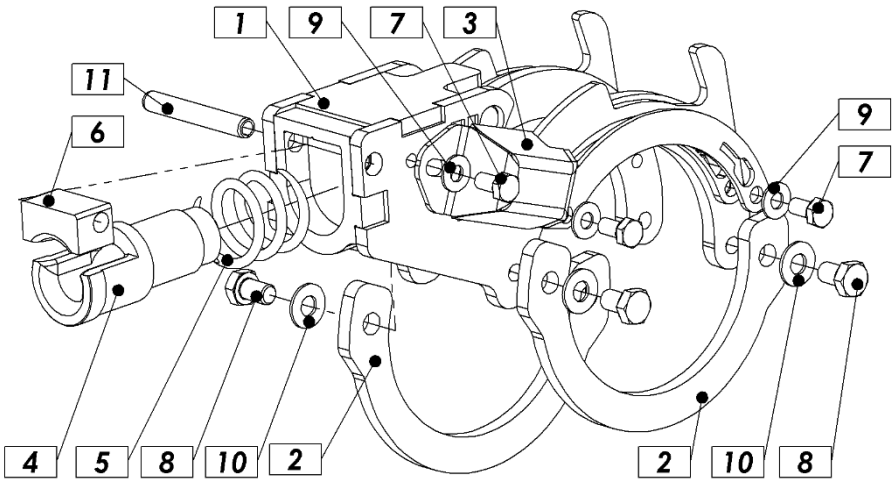


Figure 21: 504.09.200.0 – Rope guide 45/55Hpro+KS

Pos.	Name	No. of pieces	Number
1	Wire rope guide var.	1	504.09.230.A
2	CLAMP	2	504.09.40.1
3	Sensor_cover	1	504.09.208.0
4	Guide sleeve	1	704.25.168.C
5	Spring 5×43×38	1	704.25.221.0
6	Sliding plate	1	704.25.222.0
7	Screw M8x16 Zn	3	1000050
8	Screw M10x16 Zn	4	1000094
9	Washer M8 SKM	3	1009844
10	Washer M10 SKM	4	1000169
11	Flexible pin 10×70	1	1011291

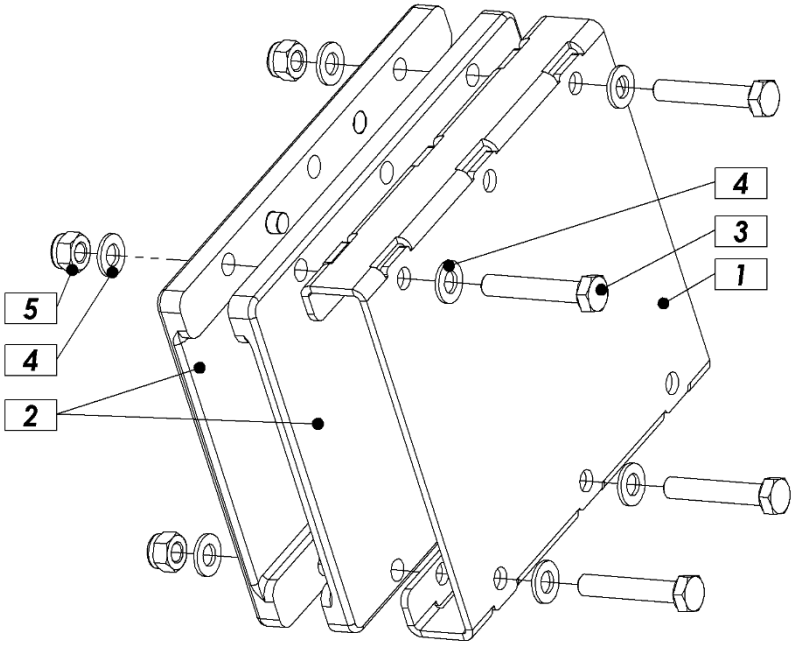


Figure 22: 5006.13.20.0 – Chainsaw bracket.

Pos.	Name	No. of pieces	Number
1	Chainsaw bracket plate	1	1020.07.47.0
2	Bracket plastic, injection-moulded	2	1020.07.49.0
3	Screw M8x45 Zn	4	1012046
4	Washer M8 Zn	8	1003465
5	Nut M8 Zn	4	1003460

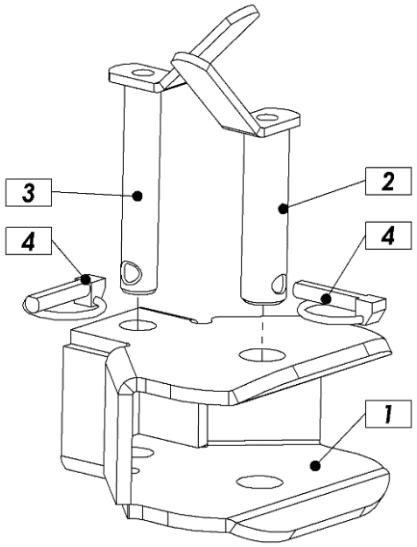


Figure 23: 5006.12.10.0 – Attachment.

Pos.	Name	No. of pieces	Number
1	Attachment var.	1	5006.12.00.0
2	Upper attachment bolt	1	702.56.03.0
3	Attachment bolt var.	1	7002.00.20.0
4	Tractor pin 10	2	1000211