User manual

FORESTRY WINCH
45M, MR
55M, MR

Spare parts list

CE

THE MANUFACTURER:

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

Valid from serial number:

45M	11108000514
45MR	11208000360
55M	11310000669
55MR	11410000928

GENERAL

Dear customer!

We would like to congratulate you for the purchase of our machine. The mechanical f forestry winch is a forestry machine with a modern design and a construction which enables efficient and safe work in the woods. Work in the woods can only be safe if you observe the instruction for safe use. If you follow the instructions the machine will work perfectly and there will be no unnecessary expenses. We recommend you to carefully read the user manual. In case of doubt do not hesitate to contact us. We wish you safe work with the machine.

1. Index

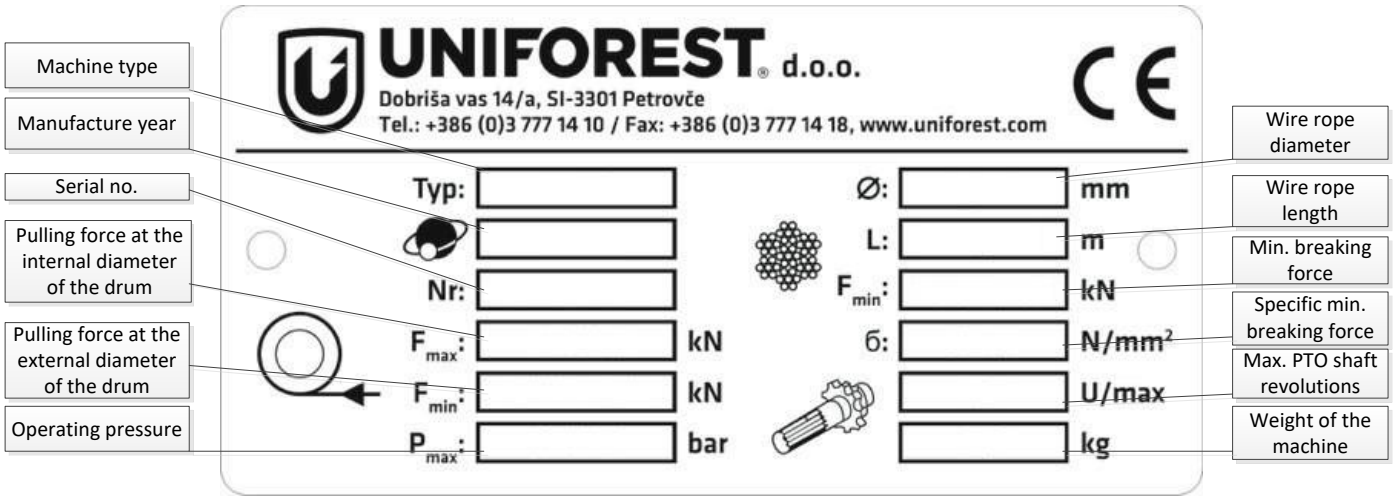
2. Intended use

The machine is designed exclusively for normal work in the woods. Any other use is considered as unintended. This winch can only be used for pulling loads on the ground. The manufacturer is not liable for any damage resulting from inappropriate use. In this case, the user takes all responsibility. Intended use also includes observing operational, handling and maintenance conditions specified by the manufacturer. The machine can be operated only by a person who is qualified and informed about the dangers and consequences of inappropriate use. Relevant safety regulations as well as general regulations on technical safety of devices, health regulations and road rules must be observed. The manufacturer is not liable for any damages that may arise from users making unauthorized changes on the machine.

3. Technical data:

	Unit	**45M**	**45MR**	**55M**	**55MR**
Working group	EM	1		1	
Pulling force	kN	45		55	
Brake force	kN	56,25		68,75	
Wire rope medium speed	m/s	0,9	0,6	0,9	0,6
Wire rope maximum length	mm/m	Ø 9/135		Ø 10/110	
	mm/m	Ø 10/110		Ø 11/90	
	mm/m	Ø 11/90		Ø 12/75	
Wire rope length (serial)	mm/m	Ø 10/70		Ø 11/70	
Tractor	kW	37-50		40-55	
required power	kM	50-68		54-75	
Calculated tear force	kN	104,4		100	
Rated strength	N/mm2	2160		2160	
Width	mm	1400		1590	
Length	mm	490		490	
Height without protective net	mm	1335		1450	
Height with protective net	mm	2300		2300	
Weight (without wire rope)	kg	361	371	375	385
Revolutions on cardan	min-1	max.540		max. 540	

□ **Option** ■ **Serial**


Machine type
Manufacture year
Serial no.
Pulling force at the internal diameter of the drum
Pulling force at the external diameter of the drum
Operating pressure
UNIFOREST d.o.o.
Dobriša vas 14/a, SI-3301 Petrovče
Tel.: +386 (0)3 777 14 10 / Fax: +386 (0)3 777 14 18, www.uniforest.com
CE
Typ:
Nr:
Fmax:
kN
Fmin:
kN
Pmax:
bar
Ø:
mm
L:
m
Fmin:
kN
б:
N/mm²
U/max
kg
Wire rope diameter
Wire rope length
Min. breaking force
Specific min. breaking force
Max. PTO shaft revolutions
Weight of the machine

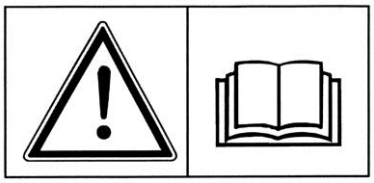
SAFETY INSTRUCTIONS

When working with the winch you need to observe the safety instructions!

In order to prevent accidents carefully read and observe the following instructions:

1. General:

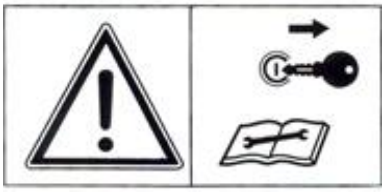
1. Apart from the instructions in this user manual you should also observe all general safety and accident preventing regulations.



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 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

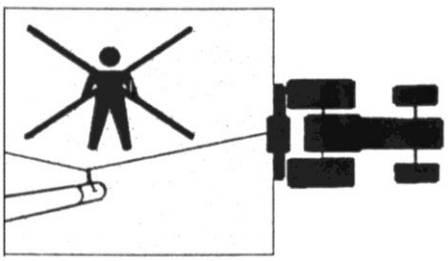
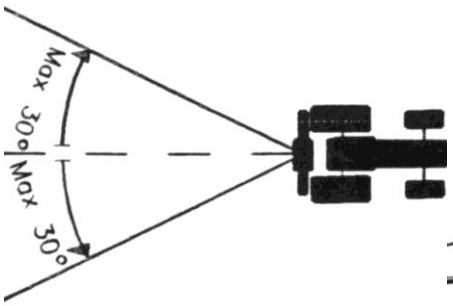


Figure 2

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 6).



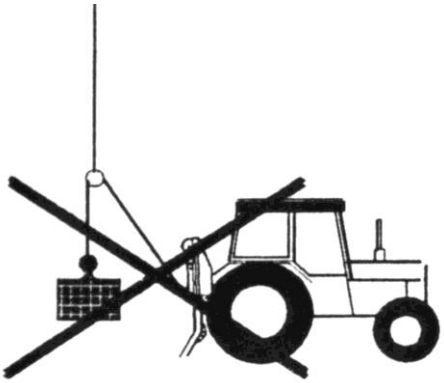
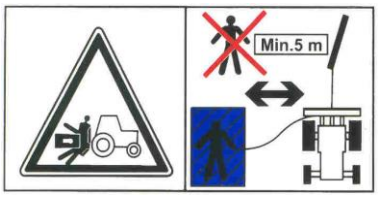


Figure 3 Figure 4 Figure 5

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 continuosly 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. 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
38. 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).

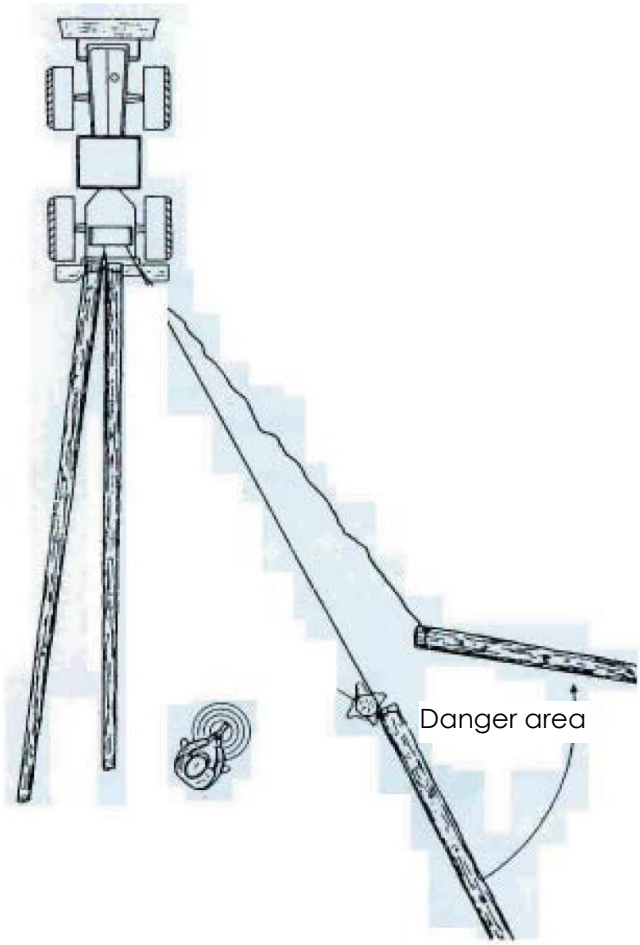


Figure 6

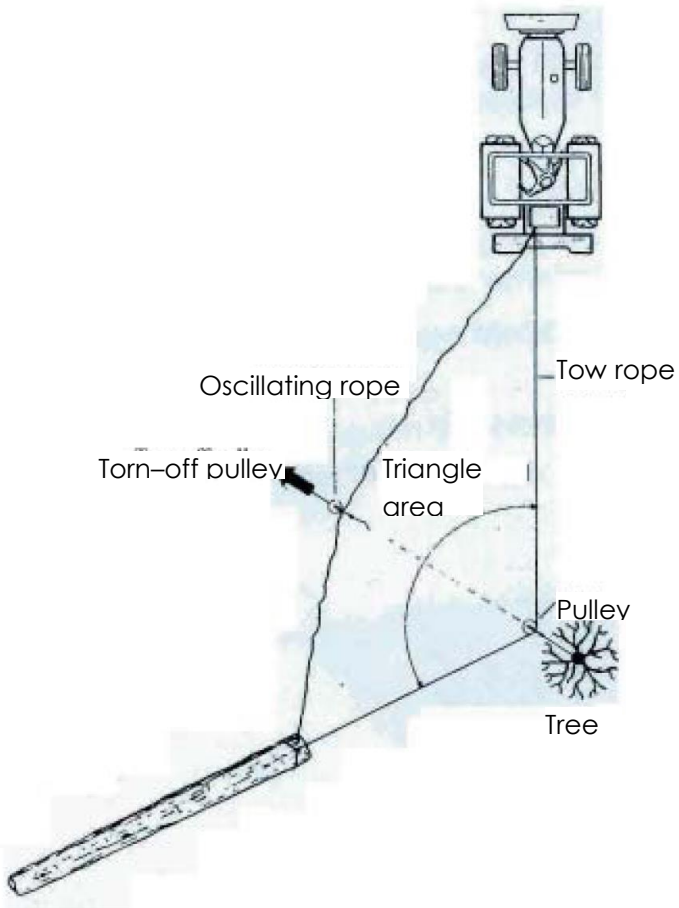


Figure 7

2. Cardan shaft

1. Only use such cardan shafts which are recommended by the manufacturer.
2. The cardan shaft protection pipes, protective funnels and attachment protection must be mounted on the machine and be in perferct condition.
3. Observe the recommended pipe protection in transport and working position.
4. The cardan shaft can only be connected or disconnected, when the cardan attachment is turned off, the engine has stopped and the ignition key has been removed.
5. The cardan shaft must always be properly mounted and protected.
6. Secure the cardan shaft agains rotating with a chain.
7. Before switching on the cardan shaft on the tractor make sure that the chosen speed and direction of rotation match the requirements from the chapter Technical data.
8. Before switching on the cardan shaft make sure no person is standing in the danger area of the machine. This rule must also be observed during machine operation.
9. Never switch on the cardan shaft when the engine is turned off.
10. Put the disconnected cardan shaft on the intended holder.

INSTRUCTIONS FOR USE

1. Description

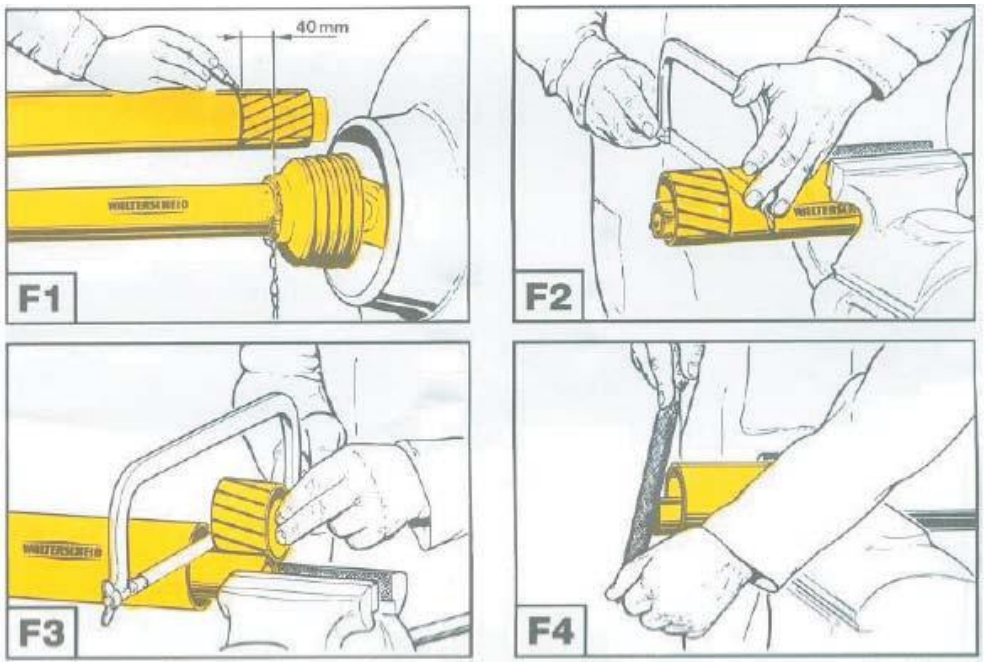
A winch is a machine intented for harvesting felled timber from the forest. The basic components are: welded frame, drive part, drum with wire rope, clutch, brake and directional pulley. Using the wire rope, the logs can be towed to the moldboard and attached with forestry chains to the grooves on the winch frame. Then the logs can be transported to a place which is accessible by other means of transport.

2. Required equipment of the tractor

-PTO shaft with chosen gear ratio, max. 540 RPM. -Three-point hitch of I and II category.
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 45M/MR, 55M/MR the use of PTO shaft with torque 500 Nm (type W 300E 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!

The forestry winch can be attached to every tractor with a three-point hitch with a category I or II coupling. 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!
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.

5. Wire rope unwinding

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.
Once the winch is properly connected to the tractor, you can start unreeling the wire rope. Pull the wooden lever on a red string (pos. 3, figure 11) and thus move lever 2 to the OFF position (figure 11). The brake is released and the wire rope can be unreeled. In case you have just installed the wire rope on the drum or you have noticed that the wire rope is not installed properly, you should unreel the entire wire rope and then reel it back tightly, as described in the beginning of this chapter.

6. *Towing*

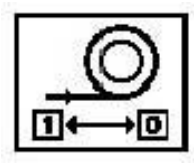


Figure 9

Lower the winch on the ground so that the winch is supported by a hard surface. Engage the hand brake. Never start towing if a winch is not in a stable position on the ground. Before you pull the black string (pos. 10, figure 11), check that the string is installed properly between the small pulleys (pos. 9, figure 11). The lever (pos. 1, figure 11) should return to its original OFF position as soon as you stop pulling the string (pos. 10, figure 11).

If this string is not wound properly, it may happen that you will not be able to stop the towing, which can lead to an accident.

Any interference with the activation mechanism which would prevent synchronous operation of clutch and brake is prohibited. It is also forbidden to pull the red brake string (pos. 3, figure 11) during the towing.

It is forbidden to lift the hydraulic linkage during the towing (it can lead to a malfunction of the PTO shaft).

SETTINGS

1. Clutch

A properly set clutch enables optimal traction force. The clutch was factory set during the testing of the winch, but due to friction surface wore, it eventually must be set anew.
The re-setting is not permitted within the warranty period!
Install a dynamometer on the black string. In case you do not own a dynamometer, you can also use a spring balance with an appropriate weighing range. Once you have installed the dynamometer (spring balance), pull the string with a force of 350 N (35 kg) and check the position of the lever (pos. 1, figure 11). This lever can be seen in figure 11a. Use the nut on the main shaft (pos. 8, figure 11) to regulate the position of the lever (pos. 1), until the lever is not touching the backrest. In case you tightened the nut too hard (pos. 8, figure 11) and the lever moved away from the backrest, the necessary axial force on the friction surface of the clutch has been reduced too much. The winch will not be able to reach to necessary traction force and the friction surface of the clutch will be damaged due to sliding.

2. Safety brake

Use a screw (pos. 6) and a lock nut (pos. 7, figure 11) to set the safety brake. First loosen the lock nut and regulate the screw (pos. 6). By turning the screw clockwise, you increase the brake force and by turning the screw anti-clockwise, you decrease the brake force. Then tighten the lock nut which prevents the screw from becoming loose. A proper setting means that the wire rope will not unreel from the drum automatically or too easily. This can lead to wire rope damage when you release the brake and start unreeling the wire rope. The safety brake is set properly when the wire rope can be unreeld without too much effort. In case you are pulling the rope up a slope, it is possible to additionally relieve the brake so that the pulling of the rope is easier. But after you finish the work, the safety brake must be returned to its original position (as describe above).

3. Brake

The brake is set via a nut (pos. 5, figure 11). The brake lever (pos. 2) must be in the ON position (figure 10). First use a wrench key to loosen the nut (pos. 4), then to turn the nut with the screw (pos. 5) to the left in order to tighten the brake belt and vice versa. For optimal operation the gap between the nuts must be 11 mm. If the brake force is not sufficient, repeat the procedure and tighten the nut (pos. 5) to the left. If brake force is set too high, the unreeling of the rope is more difficult. In such cases, turn the nut to the right. At the end, tighten the nut (pos. 4).

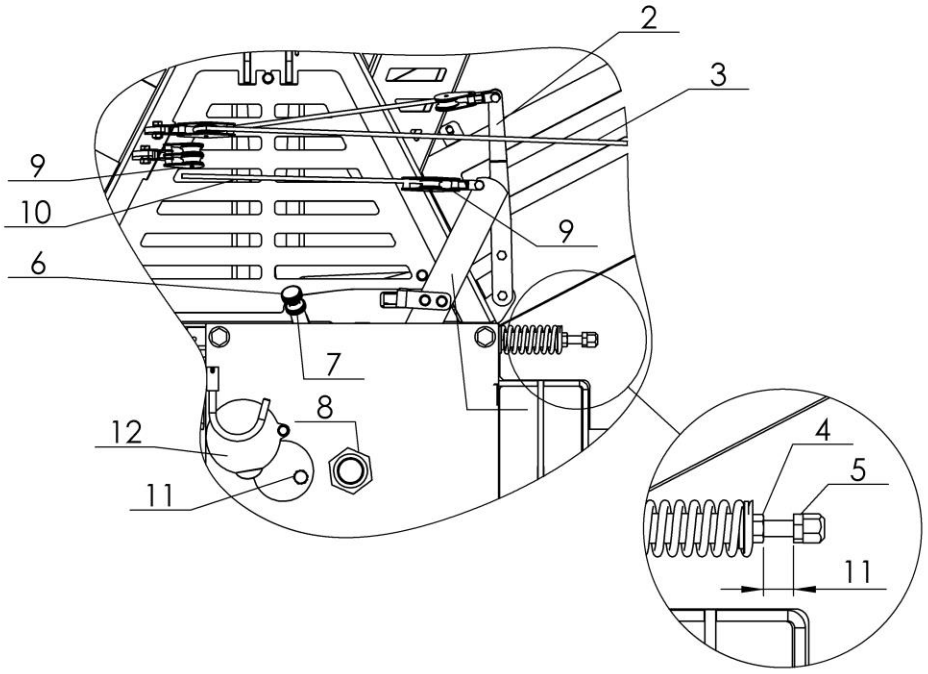


Figure 11

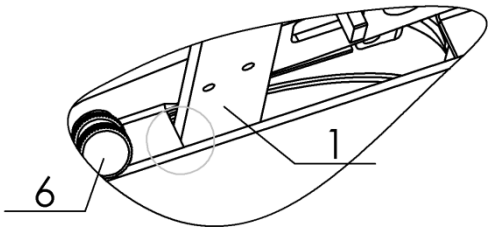


Figure 11a (lever rest)

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 100 hours of operation. 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).

Series M winches

First loosen the nut and the screw (pos. 2, figure 13), which are used to fix the housing. Then start tensioning the chain (pos. 3) with the screw (pos. 4). Turn the screw to the right, until you reach an appropriate tension of the chain. At the same time, you must still hold the tightening nut (pos. 5). The chain is correctly tensioned when it can still oscillate for approx. 3 to 4 mm in the transverse direction. Tighten the retaining screws (pos. 2) which you have loosened before.

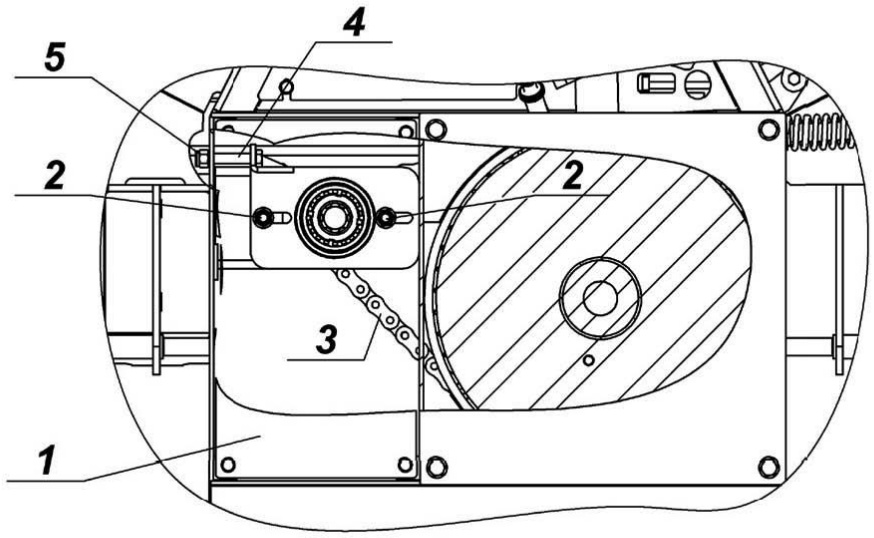


Figure 12

Series MR winches

First loosen the nut and screw (pos. 2 and pos. 3, figure 12), which are used to tension the shorter chain. Then use the screw (pos. 5) to start tensioning the longer chain (pos. 6). Turn the screw to the right, until you reach an appropriate tension of the chain. At the same time, you must still hold the tightening nut. The chain is correctly tensioned when it can still oscillate for approx. 3 to 4 mm in the transverse direction. Tighten the retaining screws (pos. 4) which you have loosened before.
Then you can start tensioning the shorter chain (pos. 8, figure 12). if you have loosened the two nuts (pos. 7) beforehand, you can start turning the tensioning screw (pos. 3) to the left. This prevents the gap between both housings. Finally, tighten the lock nut (pos. 2) and the retaining screws of the upper housing (pos. 7).

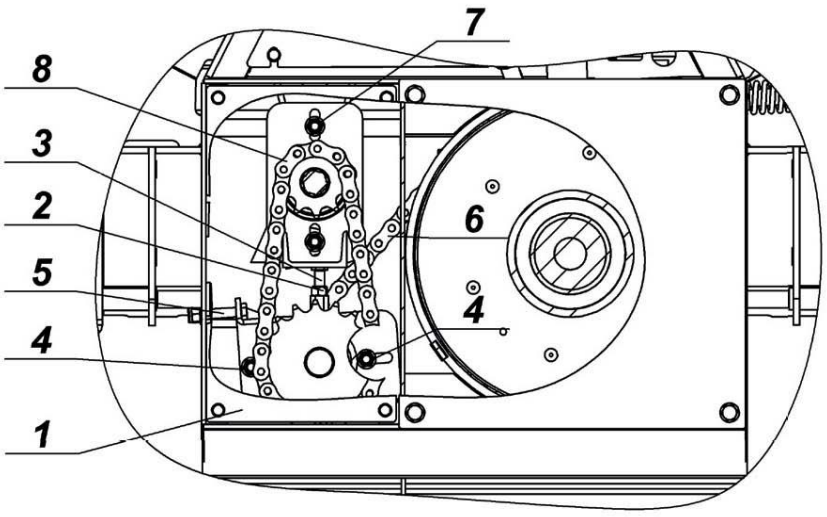


Figure 13

5. Wire rope assembly

First, remove the triangular protective net on the winch column. Then rotate the cover (pos. 12, figure 11) and rotate the drum in a position, which enables unscrewing of the bolt (pos. 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. 11, figure 11). 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.

MAINTENANCE LUBRICATION

 **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 100 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 cardan shaft protection, which must be fitted back after finishing lubrication. 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. Grease the PTO shaft according to the instructions of the manufacturer.

TROUBLESHOOTING

Identified malfunctions (errors)	Cause	Elimination of malfunctions (errors)
Lack of traction force	Grease on the friction surfaces of the clutch	Replace the clutch
	Burned friction surfaces of the clutch	Clean or polish the coating with sandpaper (to a thickness of 0,5 mm)
	Incorrectly installed	Install according to technical documentation
	Worn friction surfaces of the clutch	Replace the clutch
	Incorrectly installed clutch	Install according to technical documentation
Insufficient braking force	Incorrect settings	Set according to instructions for use
	Grease on the brake belt coating	Replace brake belt
	Damaged brake belt	Replace brake belt
	Damaged braking mechanism	Replace damaged parts
	Other	Contact customer service
The wire rope cannot be unreeled or the unreeling is difficult	Incorrect safety brake setting	Set according to instructions for use
	Incorrect brake settings	Set according to instructions for use
	Damaged or stuck wire rope	Unreel the rope with a tractor and if necessary, install new wire rope
	Damaged brake belt	Replace brake belt
	Improper position of the brake lever	Set according to instructions for use
	Damaged or corroded activation mechanism	Apply WD spray to the activation mechanism or replace the activation mechanism if necessary
	Other	Contact customer service
The winch is pulling although the clutch is turned of	Incorrect settings	Install according to technical documentation
	Crossed or twisted rope for controlling the brake lever	Set the mentioned string in a parallel position
	The lever that connects the clutch handle does not allow it to return to the OFF position	Check the lever
	Damaged activation mechanism	Repair or replace the activation mechanism
	Damaged winch drum	Replace or repair the drum

	Too small clutch clearance	Set according to instructions for use
	Broken part of clutch friction coating	Replace the clutch
	The drive chain is too tense	Set drive chain according to instructions for use
Winch is very loud during operation	The drive chain is not tense enough	Set drive chain according to instructions for use
	Damaged or worn bearings	Replace bearings

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.
DOBRIŠA VAS 14, 3301 PETROVČE, SLOVENIA

PERSON RESPONSIBLE FOR TECHNICAL DOCUMENTATION:

MARKO POLAK, UNIV.DIPL.INŽ., UNIFOREST,
DOBRIŠA VAS 14, 3301 PETROVČE

DESCRIPTION OF DEVICE - MACHINE:

WINCH:
UNIFOREST 45M, 45MR, 55M, 55MR

WE DECLARE UNDER OUR SOLE RESPONSIBILITY THAT THE ABOVE MENTIONED MACHINE

WINCH:
UNIFOREST 45M, 45MR, 55M, 55MR

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

DATE:
PETROVČE, 23. 8. 2018

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

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

SPARE PARTS LIST

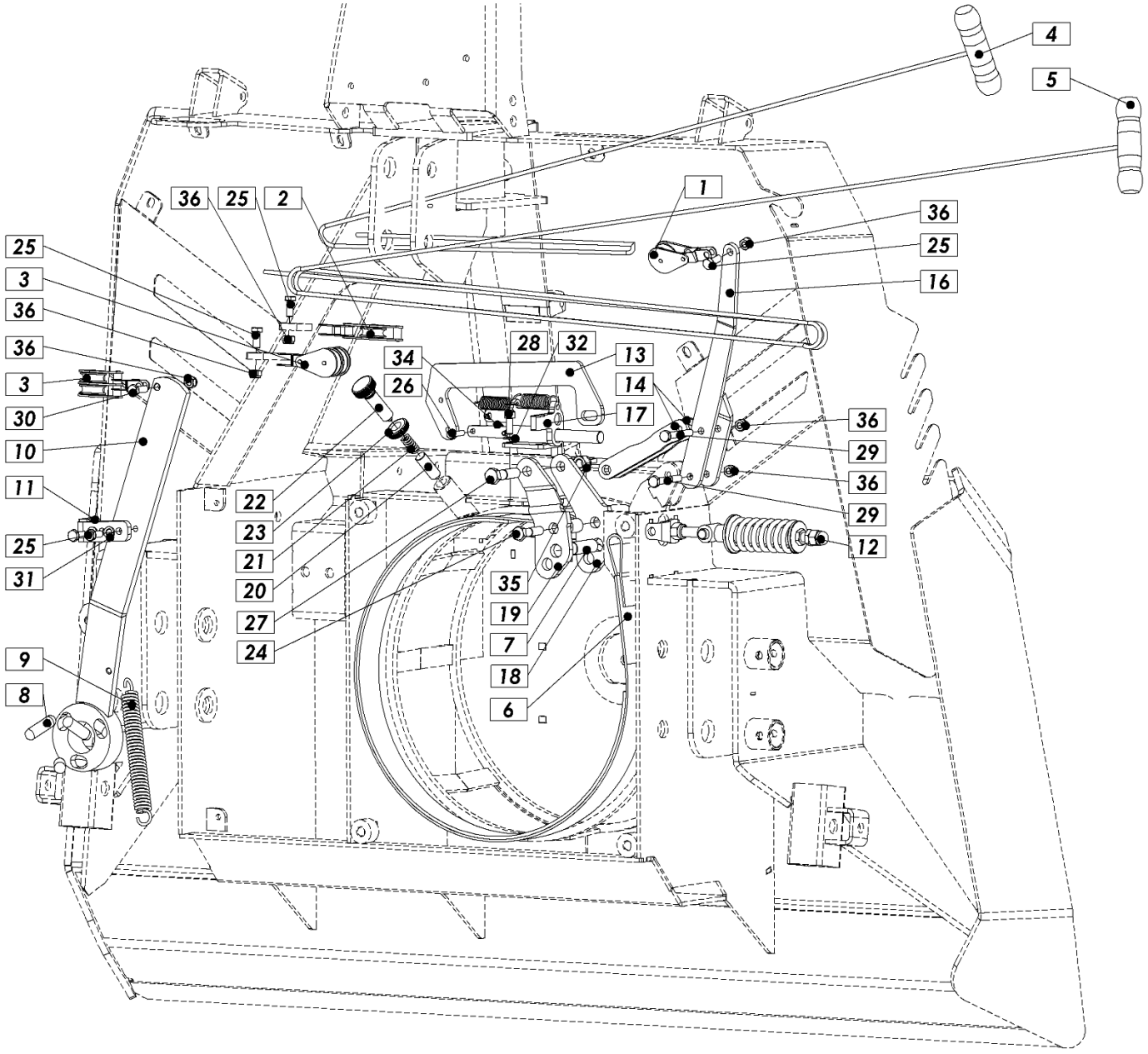


Figure 1: 4002.05.30.0 – Brake and clutch mechanism.

Pos.	Name	No. of pieces	Number
1	Pulley, small, single	1	502.00.40.0
2	Pulley, small, single 2	1	502.00.42.0
3	Pulley, small, double, wide	2	502.00.43.0
4	BRAKE CABLE KPL	1	502.00.50.0
5	Clutch cable kpl.	1	502.00.55.0
6	Brake belt var.	1	502.06.00.0
7	Brake bolt	1	502.06.12.0
8	Clutch roller	3	502.11.15.0
9	Clutch lever spring	1	502.11.25.0
10	Clutch lever var.	1	5002.05.05.0
11	Activation mechanism	1	5002.05.08.0
12	Brake fork	1	5002.05.15.0
13	Automation system coupler	1	5002.05.41.C
14	Lever link	2	5002.05.43.0
15	Compression spring	1	5002.05.63.0
16	Brake lever var.	1	5002.05.45.0
17	Automation system kpl.	1	5002.05.50.c
18	Clutch plate	1	5006.05.11.0
19	Clutch plate	1	5006.05.12.0
20	Pre-brake bolt	1	5006.05.34.0
21	Compression spring	1	5006.05.36.0
22	Band brake screw Zn	1	5006.05.37.0
23	Pre-brake nut	1	5006.05.38.0
24	Screw M10x45 Zn	1	1000075
25	Screw M8x20 Zn	5	1000051
26	Screw M6x25 Zn	1	1000155
27	Screw M12x50 Zn	1	1000072
28	Hexagon socket screw M8x20	2	1000107
29	Screw M8x55 Zn	2	1000041
30	Screw M8x25 Zn	1	1000052
31	Washer M8 Zn	2	1003473
32	Washer M8 Zn	2	1003465
33	Nut M10 Zn	1	1003461
34	Nut M6 Zn	1	1003712
35	Nut M12 Zn	1	1000142
36	Nut M8 Zn	6	1003460

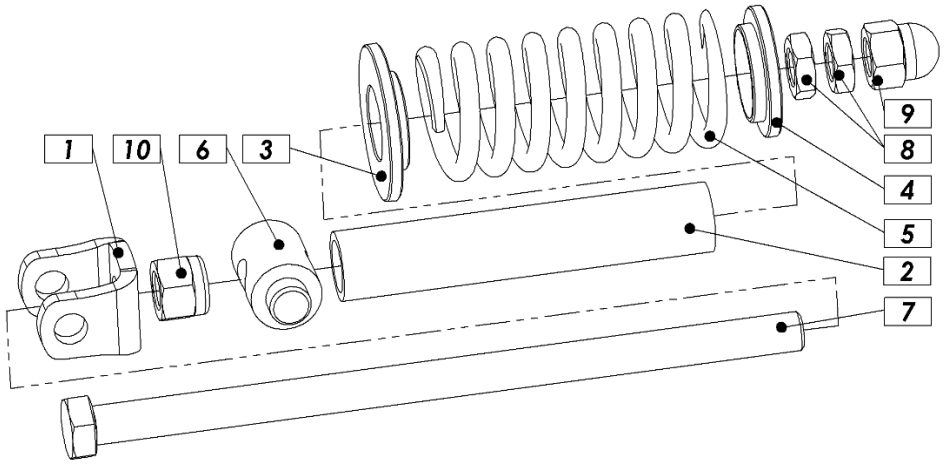


Figure 2: 5002.05.15.0 – Brake fork.

Pos.	Name	No. of pieces	Number
1	Fork eye	1	5006.05.16.0
2	Brake tube	1	5002.05.22.0
3	Spring washer	1	5002.05.23.0
4	Brake bush	1	5002.05.24.0
5	Brake spring	1	5002.05.40.0
6	Bolt	1	5006.05.14.0
7	Screw M12x220 Zn	1	1000122
8	Nut M12x1,5 Zn	2	1000150
9	Nut M12 Zn	1	1000149
10	Nut M12 Zn	1	1000142

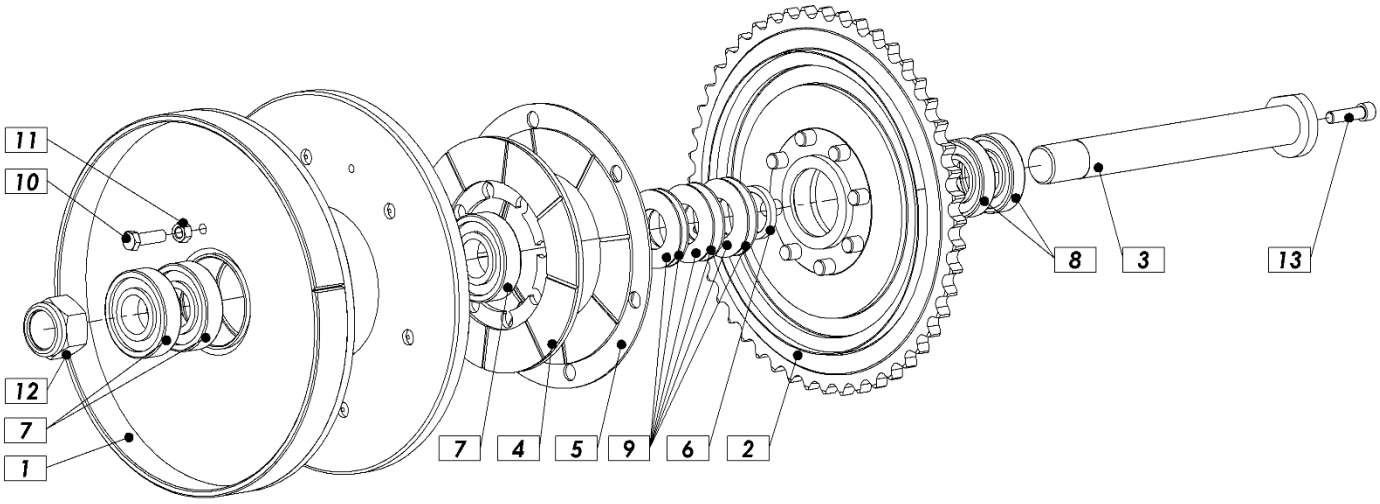


Figure 3: 5002.06.00.0 - Rope drum with a chain wheel.

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

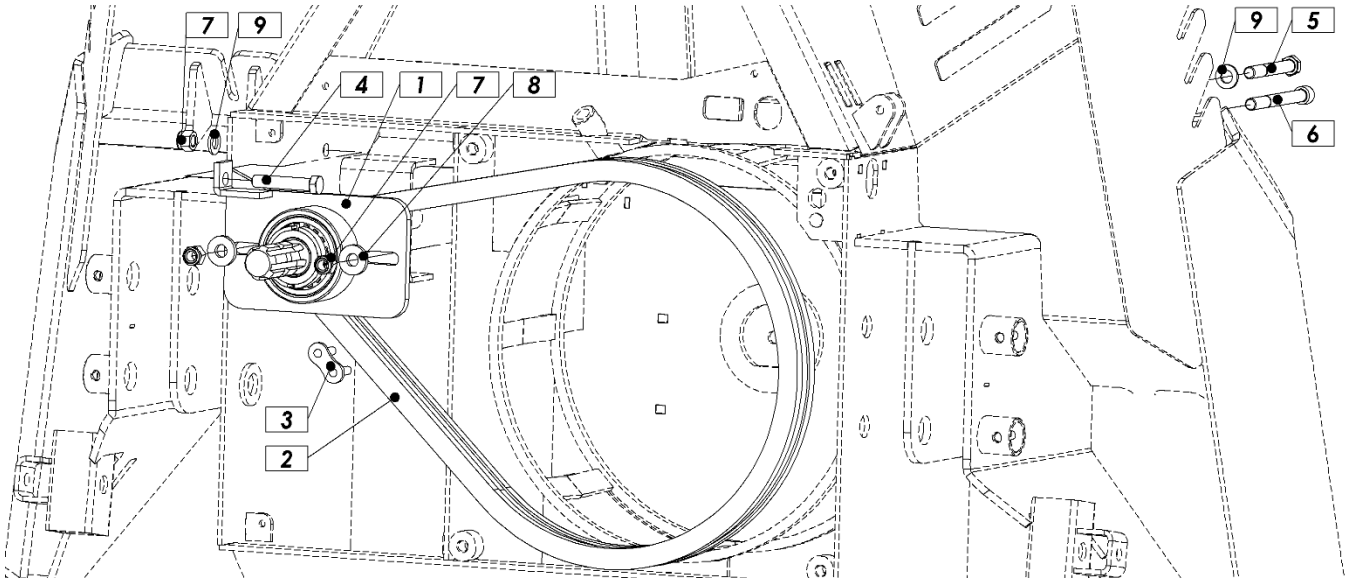


Figure 4: 5002.08.00.0 – Drive 45M/55M kpl.

Pos.	Name	No. of pieces	Number
1	Drive kpl.	1	502.08.00.0
2	CHAIN RK 16 B-1 (Lange 57x25,4=1447,8)	1	1000292
3	Joint link SG 16 B1	1	1003488
4	Screw M12x65 Zn	1	1000045
5	Screw M12x95 Zn	1	1000047
6	Hexagon socket screw M12x120	1	1001095
7	Nut M12 Zn	3	1000142
8	Washer M12 Zn	2	1003632
9	Washer M12 Zn	2	1000161

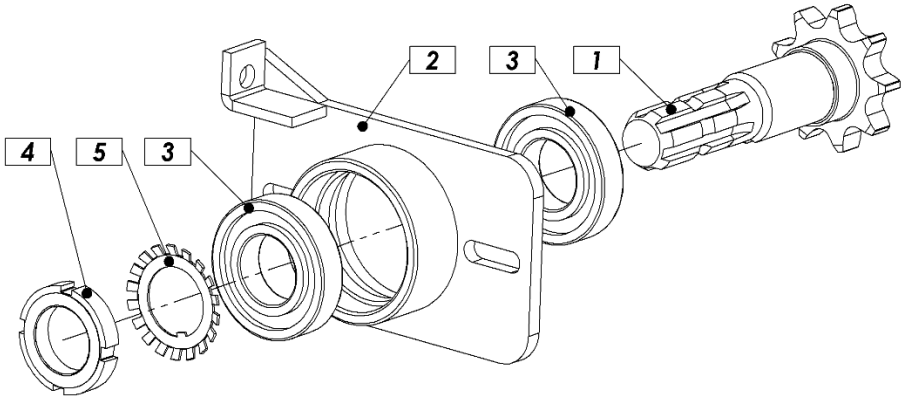


Figure 5: 502.08.00.0 – Drive.

Pos.	Name	No. of pieces	Number
1	Drive shaft	1	502.08.02.A
2	Drive housing var.	1	502.08.10.0
3	Bearing 6208 2RS	2	1000313
4	Nut KM8 (M40x1,5)	1	1000145
5	Washer mb-8	1	1003510

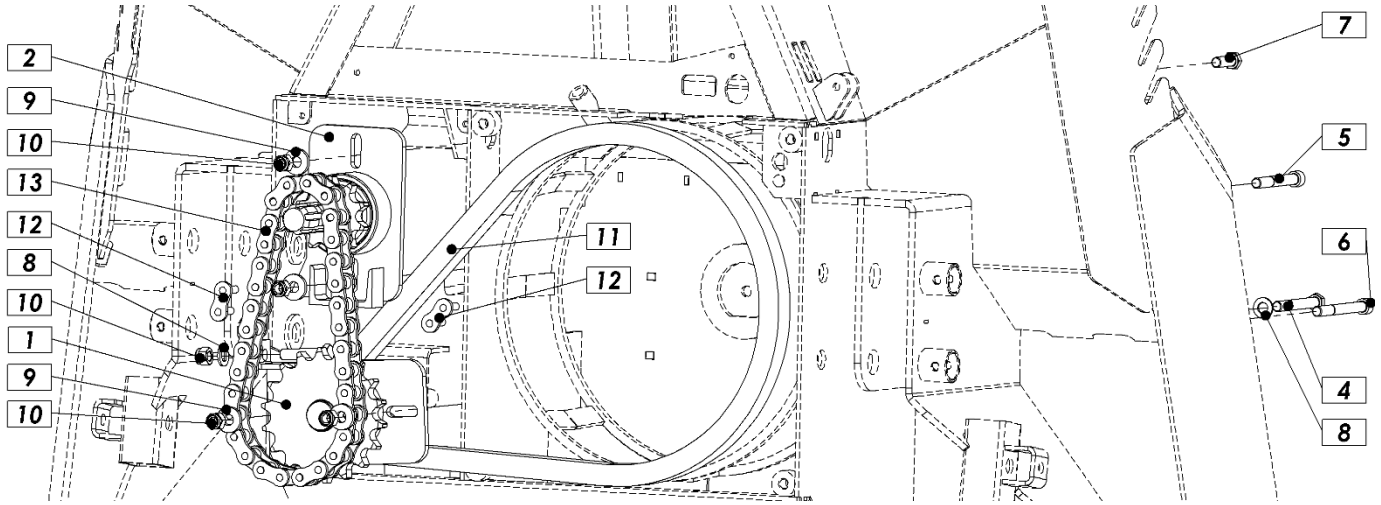


Figure 6: 5003.08.00.0 - Drive 45MR/55MR kpl.

Pos.	Name	No. of pieces	Number
1	Drive kpl.	1	503.07.00.0
2	Drive kpl.	1	503.08.00.0
3	Screw M12x55 Zn	1	1000084
4	Screw M12x100 Zn	1	1000120
5	Hexagon socket screw M12x100	1	1000098
6	Hexagon socket screw M12x120	1	1001095
7	Screw M12x40 Zn	1	1000059
8	Washer M12 Zn	2	1000161
9	Washer M12 Zn	4	1003632
10	Nut M12 Zn	5	1000142
11	CHAIN RK 16 B-1 (Lange 59x25,4=1498,6)	1	1000281
12	Joint link SG 16 B1	2	1003488
13	CHAIN RK 16 B-1 (Lange 33x25,4=838,2)	1	1000286

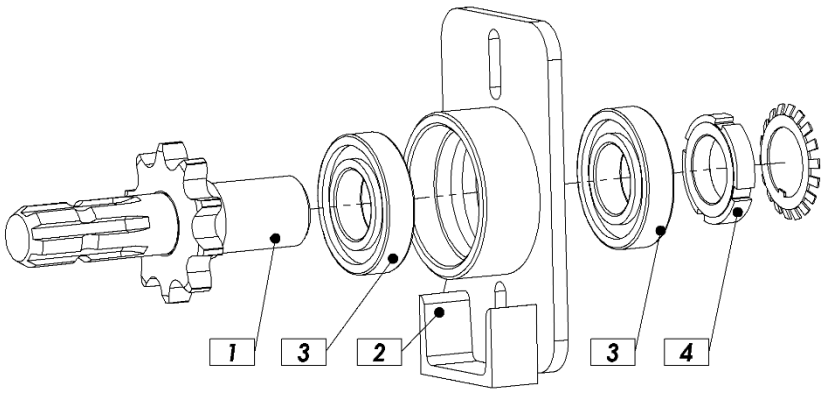


Figure 7: 503.08.00.0 – Drive.

Pos.	Name	No. of pieces	Number
1	Drive shaft var.	1	503.08.01.0
2	Drive housing var.	1	506.08.10.0
3	Bearing 6208 2RS	2	1000313
4	Nut KM8 (M40x1,5)	1	1000145
5	Washer mb-8	1	1003510

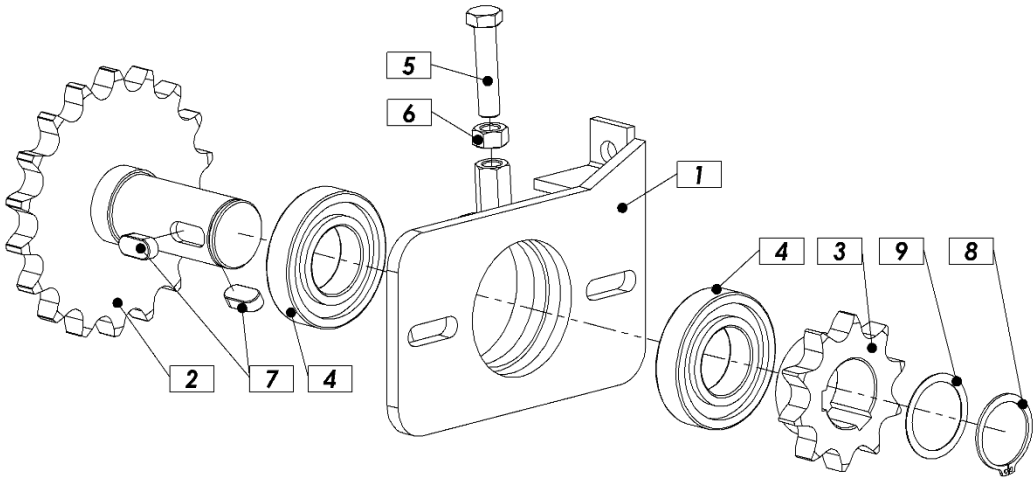


Figure 8: 503.07.00.0 – Drive.

Pos.	Name	No. of pieces	Number
1	Drive housing var.	1	506.08.20.0
2	Drive shaft. lower var.	1	503.07.01.0
3	Chain wheel z=10	1	702.28.03.0
4	Bearing 6208 2RS	2	1000313
5	Screw M12x55 Zn	1	1000084
6	Nut M12 Zn	1	1000139
7	Dowel 12x8x25-A	2	1000417
8	Retaining ring Z40x1.75	1	1000238
9	Washer 40x50x0,5 Zn	1	1000189

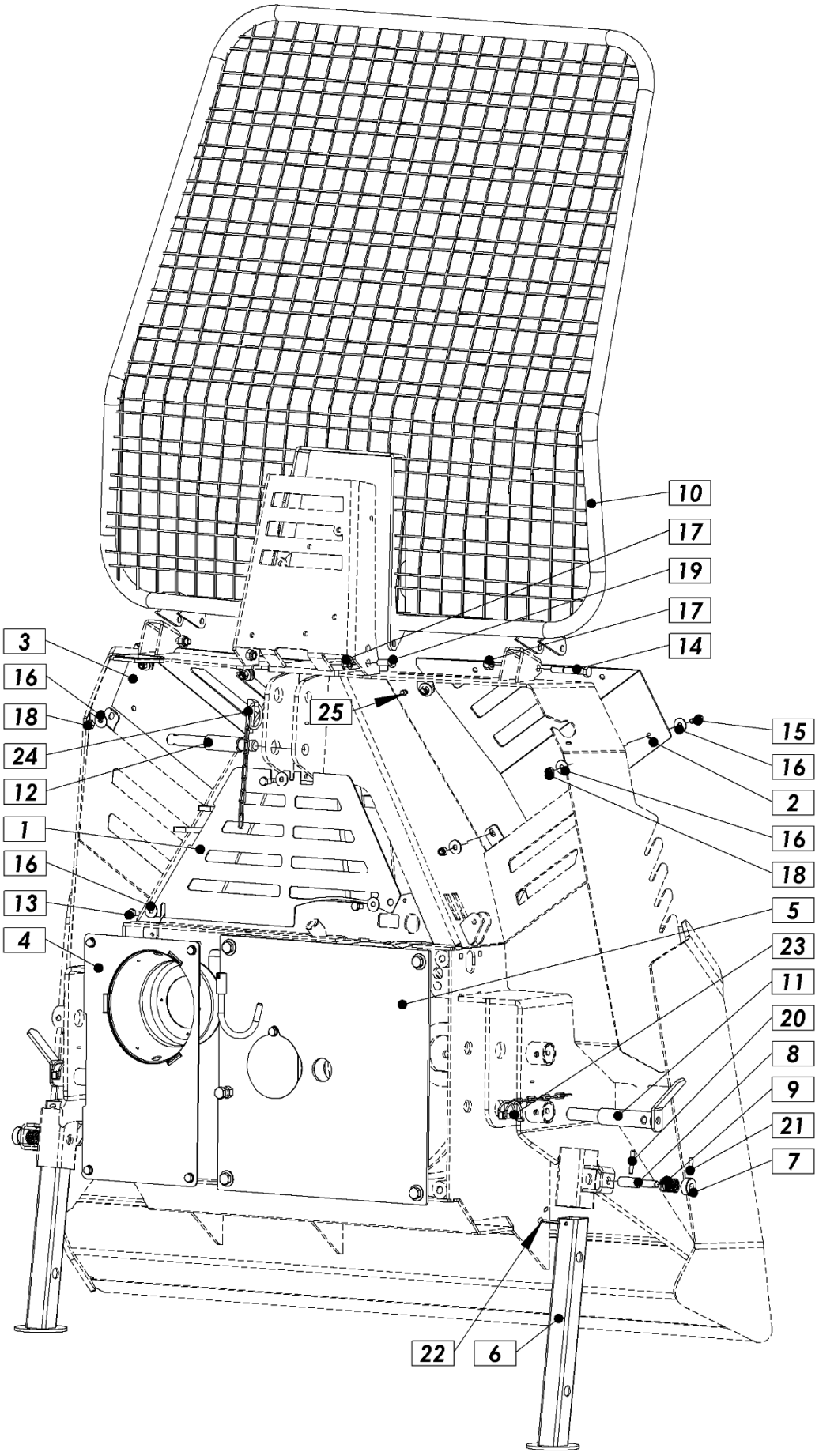


Figure 9: 4002.13.00.0 / 5002.13.00.0 – Protections and mechanisms kpl.

Pos.	Name	No. of pieces	Number	
			45M/45MR 4002.13.00.0	**55M/55MR 5002.13.00.0**
1	Protective sheet metal	1	4002.00.50.0	5002.00.50.0
2	Upper protection	1	4006.01.45.0	5006.01.45.0
3	Upper protection	1	4006.01.46.0	5006.01.46.0
4	PTO protection kpl.	1	5002.00.60.0	5002.00.60.0
5	Drum cover kpl.	1	5002.11.00.0	5002.11.00.0
6	Support foot	2	5006.00.10.0	5006.00.10.0
7	Hub	2	5006.00.15.0	5006.00.15.0
8	Bolt	2	5006.00.16.0	5006.00.16.0
9	Foot spring	2	5006.00.18.0	5006.00.18.0
10	Screen var.	1	5008.88.00.0	5008.88.00.0
11	Bolt, lower var.	2	502.00.20.0	502.00.20.0
12	Upper tractor bolt Zn	1	502.00.15.0	502.00.15.0
13	Screw M8x16 Zn	3	1000050	1000050
14	Screw M10x70 Zn	2	1010831	1010831
15	Screw M8x20 Zn	8	1000051	1000051
16	Washer M8 Zn	19	1003471	1003471
17	Nut M10 Zn	4	1003461	1003461
18	Nut M8 Zn	8	1003460	1003460
19	Screw M10x25 Zn	2	1000061	1000061
20	Spring latch 6x40	2	1000208	1000208
21	Spring latch 6x30	2	1000214	1000214
22	Cotter pin 5x50	2	1003497	1003497
23	Tube fuse 8x42 mm + chain	2	1004566	1004566
24	Spring latch 10mm + chain 2.2 mm	1	1004565	1004565
25	Grease fitting M8x1	1	1000234	1000234
26	Grommet, large Ø 70	1	1000736	1000736

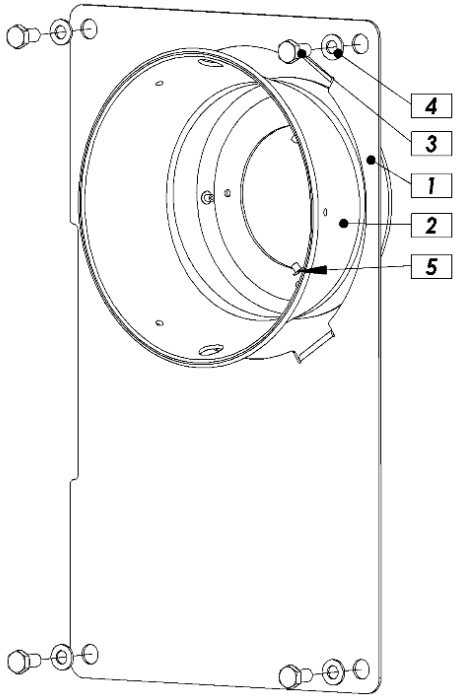


Figure 10: 5002.00.60.0 – PTO protection.

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

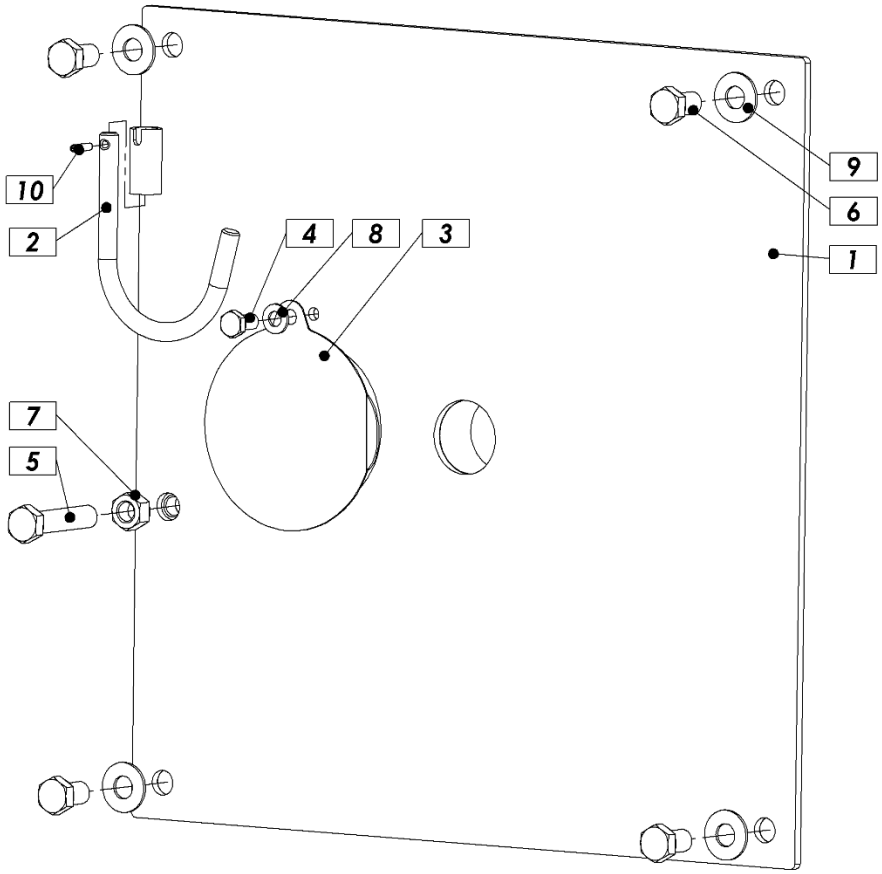


Figure 11: 5002.11.00.0 – Drum cover.

Pos.	Name	No. of pieces	Number
1	Cover plate var.	1	5002.11.05.0
2	PTO bracket Zn	1	502.11.08.0
3	Small cover	1	502.11.09.0
4	Screw M8x16 Zn	1	1000050
5	Screw M12x55 Zn	1	1000084
6	Screw M12x20 Zn	4	1000055
7	Nut M12 Zn	1	1000139
8	Washer M8 Zn	1	1003465
9	Washer M12 SKM	4	1000176
10	Spring latch 4x16	1	1012275

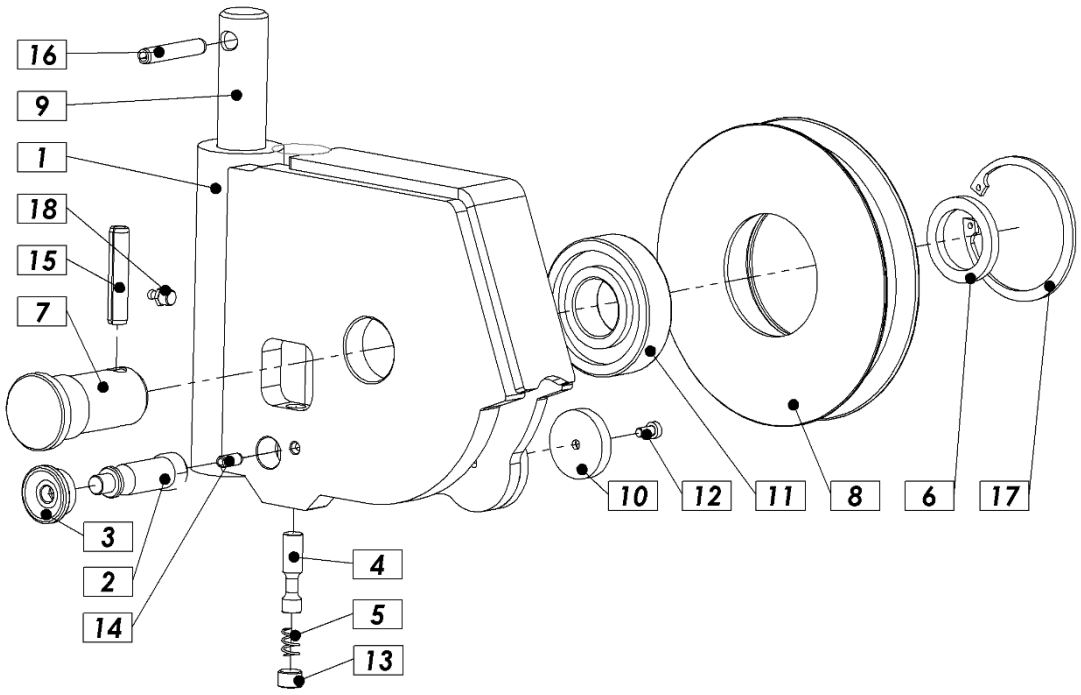


Figure 12: 5006.10.00.A – Lower pulley.

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	Lower 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

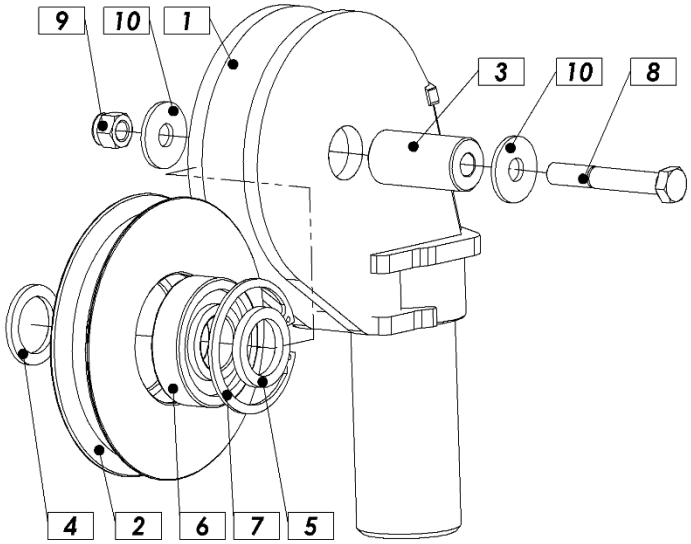


Figure 13: 5006.09.35.0 – Upper pulley.

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

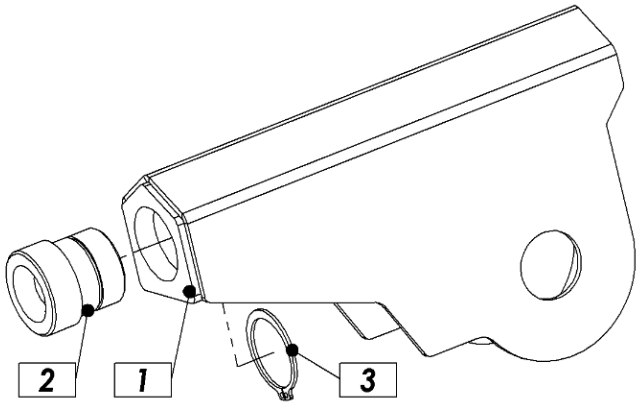


Figure 14: 5006.09.09.0 – Rope guide.

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

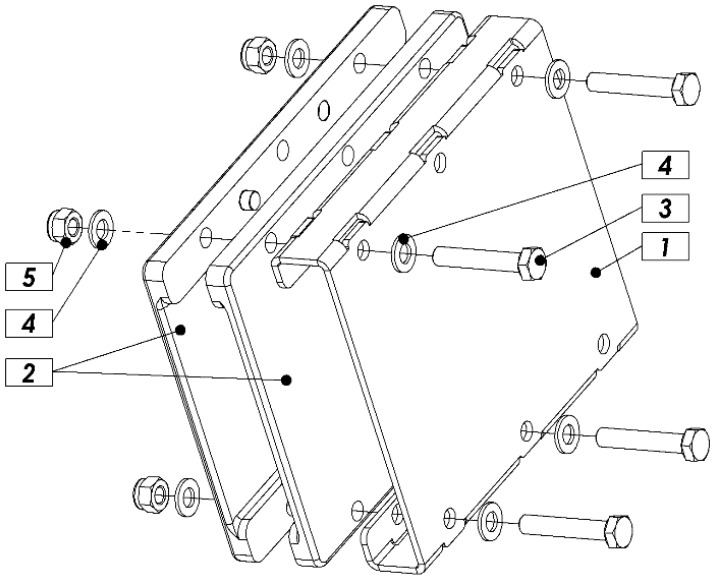


Figure 15: 5006.13.20.0 – Chainsaw bracket.

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

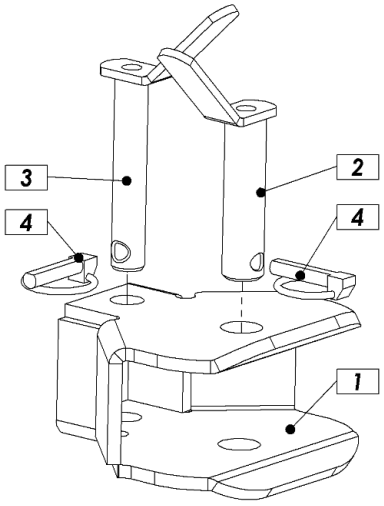


Figure 16: 5006.12.10.0 – Attachment.

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