

User's manual

Heavy-duty PTO Shaft

61982–61985

64481–64522

wiltec



Illustration similar, may vary depending on model

Please read and follow the operating instructions and safety information prior to initial operation.

Technical changes reserved!

Illustrations, functional steps, and technical data may deviate insignificantly due to continuous further developments.



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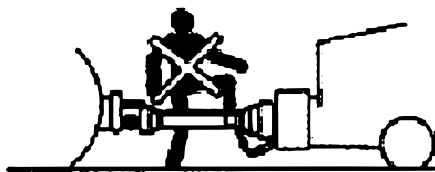
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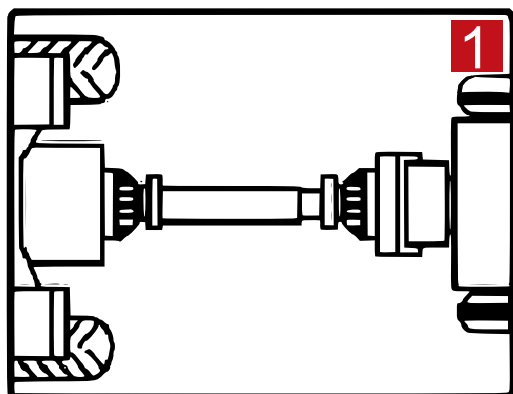
Introduction

Thank you for choosing to purchase this quality product. To minimise the risk of injury, we ask you to always take some basic safety precautions when using this product. Please read this operating manual carefully and make sure that you understand it. Keep these operation instructions in a safe place.

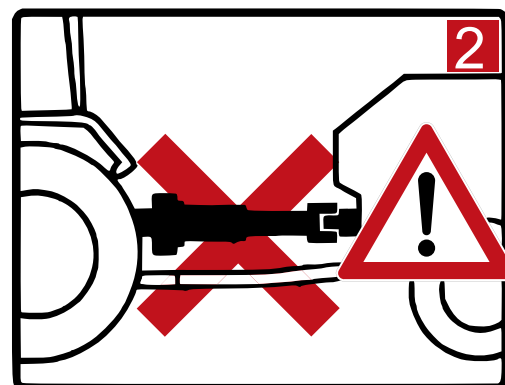


Important!

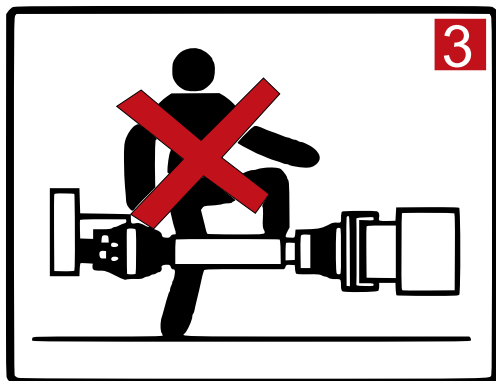
- Do not operate the machine connected without protective equipment for the PTO shaft, tractor, and machine. The shields of the PTO shaft must be able to turn freely on the PTO shaft.
- Always keep the user and other persons away from rotating parts at any time!
- Getting in contact with a turning PTO shaft can provoke serious injuries and even death!



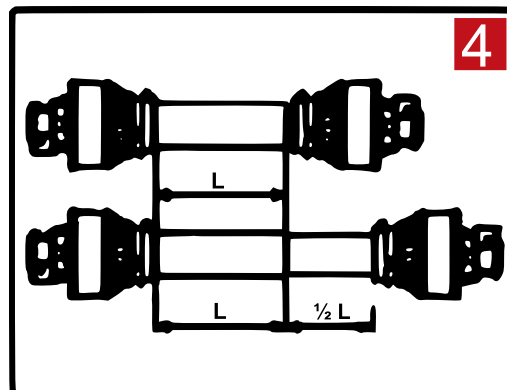
All rotating parts must be shielded.



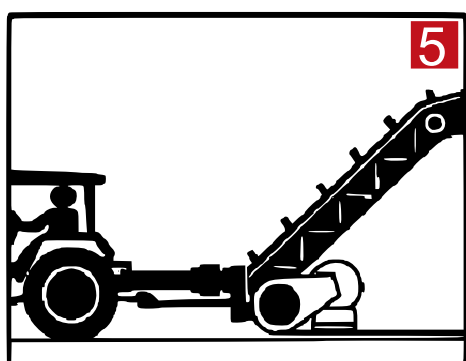
The driveline must be securely attached to both ends. Guards must turn freely on the driveline.



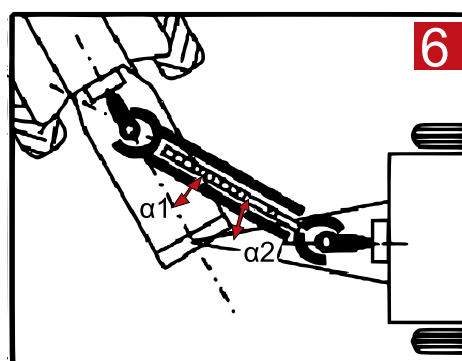
3 Shut the tractor engine off and remove the key before approaching the implement or carrying any maintenance work out.



4 Confirm the minimum and maximum working lengths of the driveshaft. The telescoping pipes must overlap by at least $\frac{1}{3}$ of their length while in use.



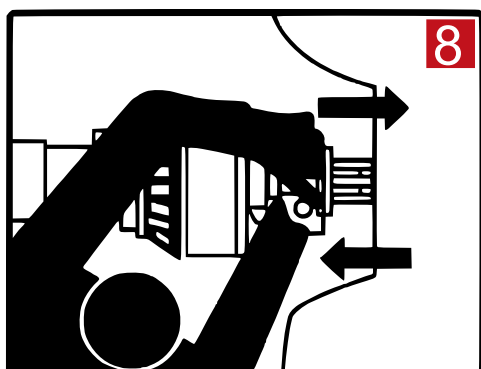
5 The tractor must be hitched to the implement and positioned so that the angles of the joints are minimal and equal.



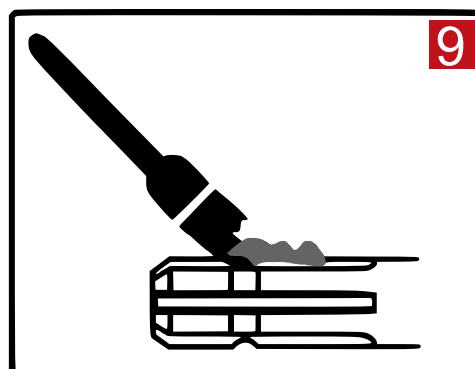
6 Disengage the PTO if the angles are too large or not identical.



Important! Before attempting any repair procedures, always wear appropriate protective clothing such as safety glasses, safety shoes, and gloves. Do not wear loose or baggy clothing around the PTO shaft.



8 Ensure that the driveline is securely attached to the tractor and the implement before operating it.



9 Clean and grease the tractor PTO and implement the shaft before installing the driveline.

SAFETY INSTRUCTIONS

- Read the operational instructions before using the device.
- Only perform repairs with original spare parts.
- Only use the device obeying to the specified normal operation for power transmission between tractor and device.
- The Cardan shaft may only be used in accordance with the instructions that refer to the device and performance.
- Do not exceed the maximum admissible operational speed.
- Only operate the Cardan shaft with the guards and retaining chains being intact.
- Parts of the Cardan shaft can become very warm during operation.
- It is forbidden to stay near the rotating drive shaft during operation.
- Only transport the drive shaft in a horizontal position.
- When handling the device, only wear tight-fitting clothes, protective work shoes, and gloves.
- Before working and coupling, switch off the motor and ensure that it cannot be switched on accidentally.
- The profiles must not be extended, their cross section must not be modified.
- Before connecting or disconnecting the Cardan shaft, always switch off the drive of the tractor/drive shaft power and ensure that it cannot be switched on accidentally!
- Always install the overload clutch or freewheel clutch on the side of the device.
- Before beginning to work, check the length of the drive shaft in all working positions. The drive shaft must not buckle or be operated with too low a profile overlap. Hinge the retaining chains, but respect the free movability of the pivoting range.
- Never use the rotation protection chains to transport the drive shaft. Only use a suitable support to transport the device.

Protective equipment on the device

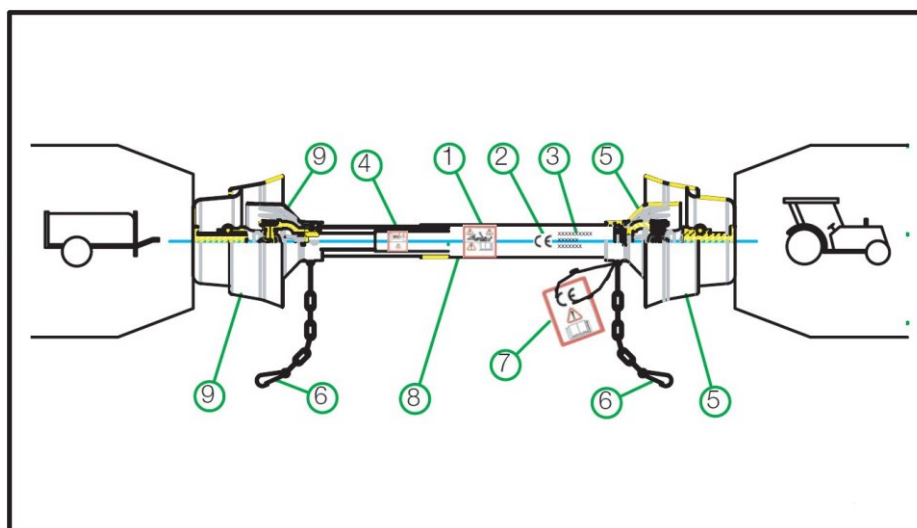
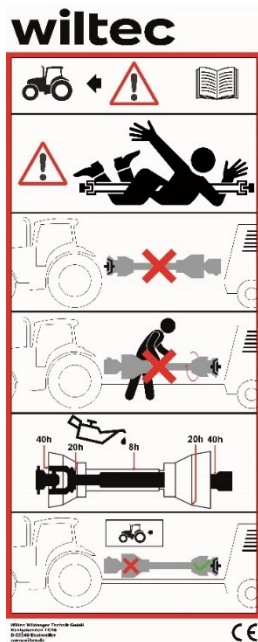


Figure 1

Nº	Name	Nº	Name
1	Safety label on outer pipe	6	Safety anti-rotation chains
2	CE mark	7	Instruction manual containing the Declaration of Conformity
3	Identification of the guard and of the maker	8	Guard
4	Label with safety information on the inner pipe	9	Power take-off guards on machine side
5	Power take-off guards on tractor side		

Safety label on outer pipe



No	Explanation
1	Read instruction manual before operating the device.
2	Rotating drive shaft! Danger of death!
3	Before beginning work, make sure guards are present and in good working order. Replace parts that are damaged.
4	Never approach the cardan shaft while it is running.
5	Clean and lubricate drive shaft on a regular basis.
6	All rotating parts must be shielded.

Commissioning

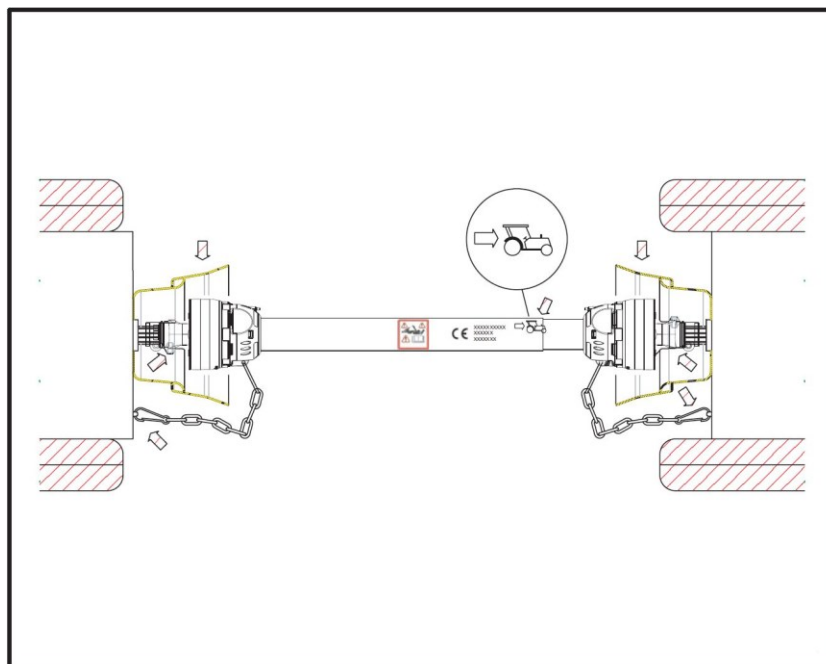


Figure 2

- Make sure that the power take-off guards on tractor side and machine side are fitted and capable of offering sufficient protection at the maximum working angles of the cardan-shaft transmission.
- The arrow next to the tractor icon indicates tractor side for installation of the cardan-shaft transmission. Make sure that the fixing systems of the outer jaws are correctly clamped onto the power take-off of the tractor and machine.
- Fix the guards to the tractor and to the machine using the chains. Never, under any circumstance, use the shaft without its protective elements and without fixing it with the chains.

Adjusting the length

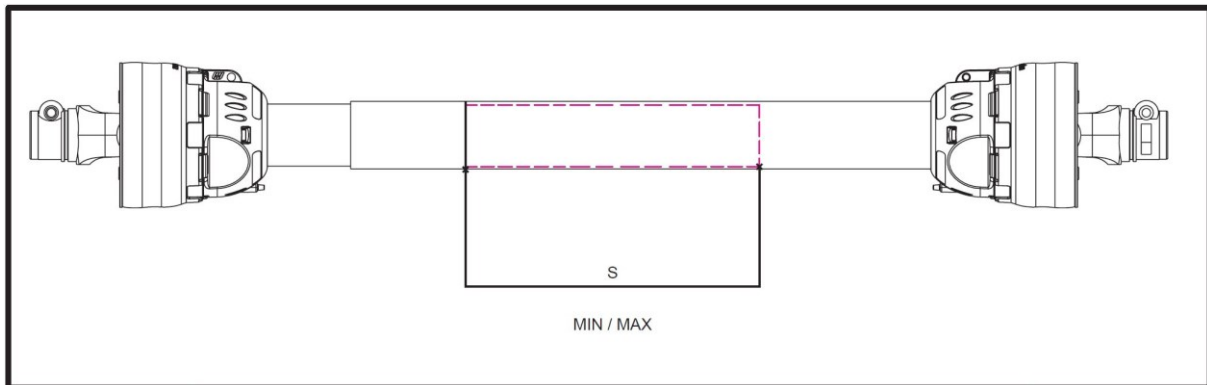


Figure 3

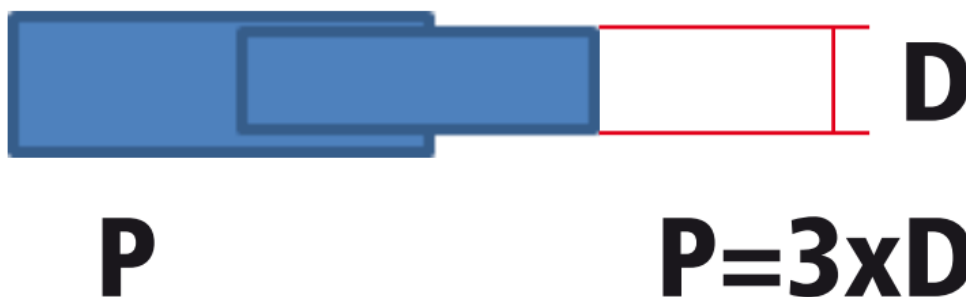
Make sure that the maximum and minimum (MAX/MIN) lengths of the shaft are compatible with the working lengths required, bearing in mind that the S pipes should overlap by at least $\frac{1}{3}$ of the length of the individual pipes. If you need to shorten the shaft, proceed as follows:

1. Remove guards as shown on p. 10 of this instruction manual (Fig. 9, 10, 11, 12, 12a).
2. Shorten both triangular pipes to the same length.
3. Shorten both plastic protection pipes to the same length, namely that of the triangular pipes.
4. Remove any burrs from the ends of the pipes by means of a file and clear away any metal shavings.
5. Refit guards as shown on p. 10 of this instruction manual (fig. 13, 14, 14a, 15, 16).

⚠ ATTENTION: After installation, make sure that pipes and protection are overlapping by one third of the maximum length (see measurement “S” of fig. 3).

Insufficient overlapping can cause serious accidents and damages.

Please check after adjusting the shaft if the overlapping is at least $\frac{1}{3}$ of the length of the individual pipes.



- The shaft may only be extended by the half of the profile overlap P existing when pushed one in another. The minimum overlap length must not fall below the 3-fold diameter of the inner profile pipe.
- Shortening of the drive should be avoided. The device is used best with its original length.

Maximum working angles

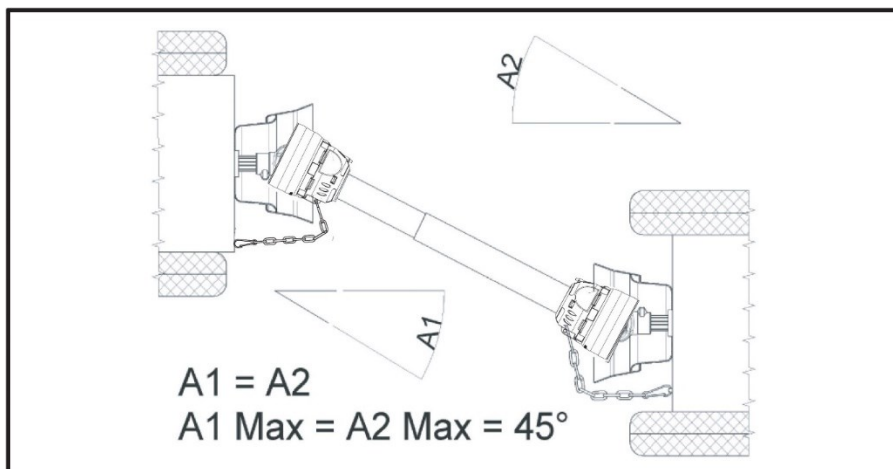


Figure 4

Check that cardan-shaft transmission and relative guard have sufficient space for their movements. Make sure that the chains are long enough to allow for conditions of extreme working angles. Work in the “A1” and “A2” articulation angles within the following values:

- max. 25° for continuous work
- max. 45° for intermittent work (max. 5 min).

Before starting work, make sure that, with the maximum working angle chosen, the guards on the power take-offs on tractor side and machine side cover the entire length of the transmission.

Disconnect the power take-off when carrying out manoeuvres which involve larger angulations than those prescribed. Not observing the above regulations is strictly prohibited, as it can lead to breakage of the cardan shaft and is extremely hazardous for the safety and health of operators.

Lubrication

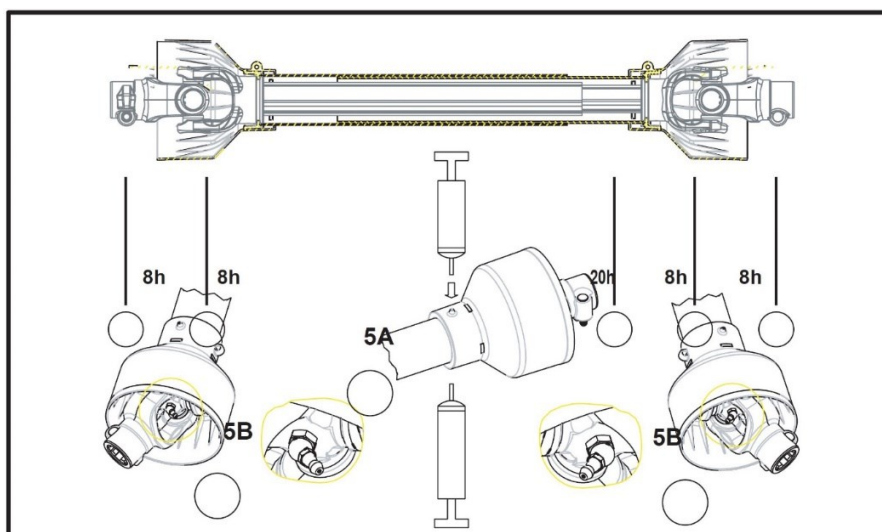


Figure 5

- To ensure the efficiency of the cardan joint, the shaft should be greased in the positions shown in Fig. 5 following the prescribed and highlighted hour frequency.
- Use lithium grease of the L EP1 or L EP2 type. Use the hole in the cowling to grease the ring nuts of the guard (Fig. 5, pos. A) and the special greasers to grease the crosses (Fig. 5, pos. B).

Long-term storage

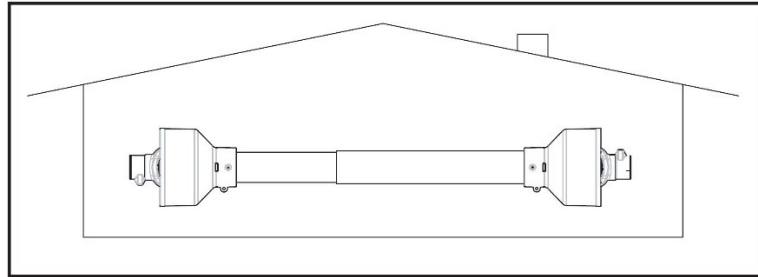


Figure 7

In the event of long-term storage, the shaft should be cleaned, greased, and stored away from atmospheric agents. On resuming work, lubricate and check the efficiency of all parts. In the event of short-term storage, put away the shaft in such a manner as to prevent the plastic guards getting deformed, damaged, or crushed.

Features of the guard

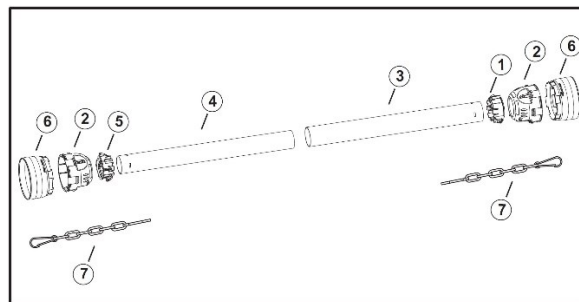
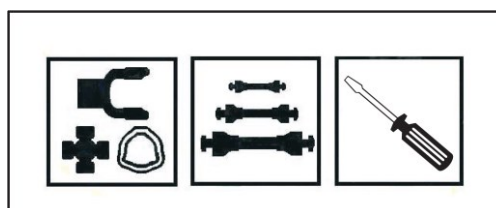


Figure 8

Nº	Name	Nº	Name
1	Ring nut for the outer pipe	5	Ring nut for inner pipe
2	Housing	6	Soft extension
3	Outer pipe	7	Safety anti-rotation chains
4	Inner pipe		

- The guard is made of several parts, which are to be assembled in one unit on the cardan shaft. It is divided into two halves. These engage on the corresponding two parts of the shaft, each of which slides on the other.
- Fig. 8 illustrates the parts making up the protective device.

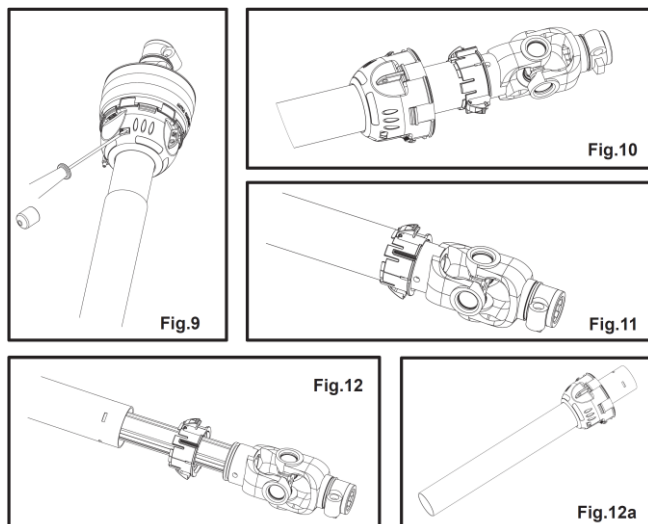
Replacing parts of the guard



Replace damaged or worn components using only original spare parts. Never modify nor tamper with the components of the guard. To replace damaged components, proceed as follows:

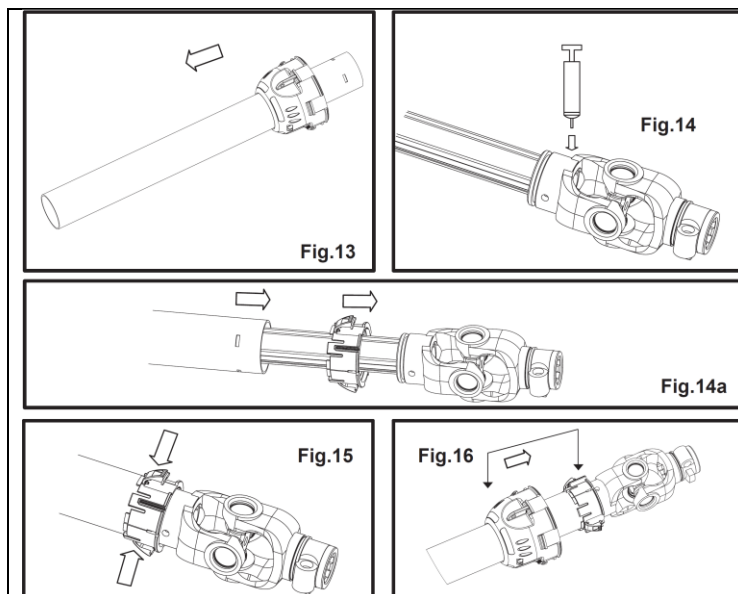
1. Remove damaged components following the instructions provided on p 10, Fig. 9, 10, 11, 12, 12a.
2. Replace damaged parts using only original spare parts.
3. Refit the complete guard, following the instructions on page 10, Fig. 13, 14, 14a, 15, 16.

Removing the guard



1. Using the special wrench, press down simultaneously on the 4 fixing tongues of the ring nut (Fig. 9).
2. Slide the cowling a few centimetres in the direction shown, taking care not to damage the adhesive label containing safety information (Fig. 10).
3. Open the ring nut and detach it simultaneously from both the pipe and inner jaw, as shown in Fig. 11 and Fig. 12.
4. Take off the cowling as shown in Fig. 12a.
5. Repeat the same operations for the other half of the guard.

Installing the guard



1. Put the protection cowling around the pipe of the guard, as shown in Fig. 13.
2. Grease the seat of the ring nut on the inner jaw of the cardan shaft (Fig. 14).
3. Insert the ring nut in its seat on the inner jaw of the shaft and simultaneously align the four teeth of the ring nut with the four holes in the plastic pipe (Fig. 14a and Fig. 15).
4. Slide the cowling and make sure the greasing hole and the hole in the plastic pipe are aligned. Pressing gently, make the two tongues of the hering nut "click" into the corresponding holes in the cowling.
5. Make sure that the assembly is correctly locked in place.
6. Repeat the same operations for the other half of the guard.

Assembling and dismantling the homokinetic joint protection

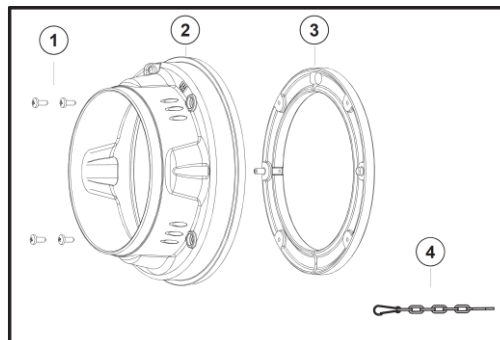
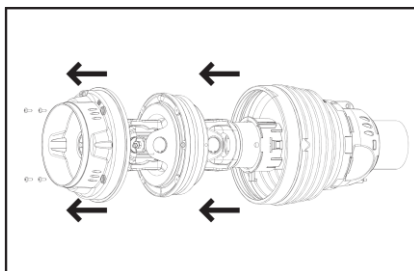


Figure 8

Components of the homokinetic joint protection

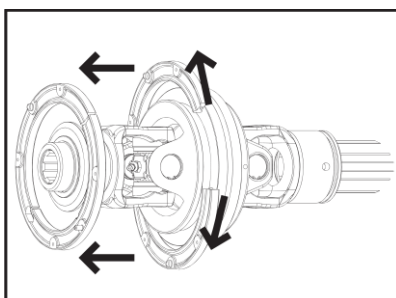
Nº	Name	Nº	Name
1	Fixing screw	3	Connection nut
2	Housing	4	Anti-rotation chain

Dismantling of homokinetic joint protection – 1



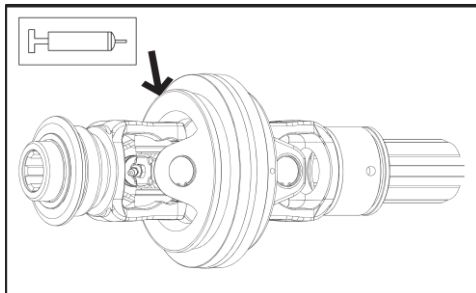
Unscrew the fixing screws and remove the hood from the joint.

Dismantling of homokinetic joint protection – 2



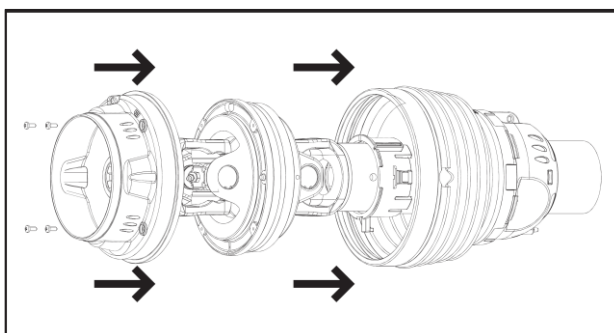
Prise the collar to free it from its housing and slip it off the joint.

Assembling of homokinetic joint protection – 1



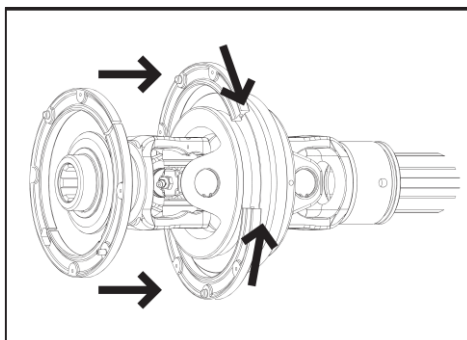
Grease the collar housing.

Assembling of homokinetic joint protection – 2



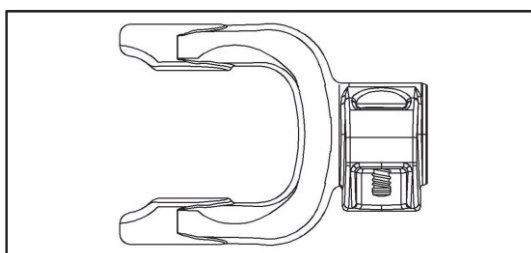
Insert the connection collar into its housing.

Assembling of homokinetic joint protection – 3



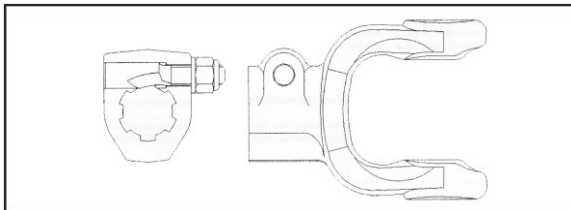
Insert the hood, matching the holes with the lugs of the collar and fix it with the screws.

Push-button coupling



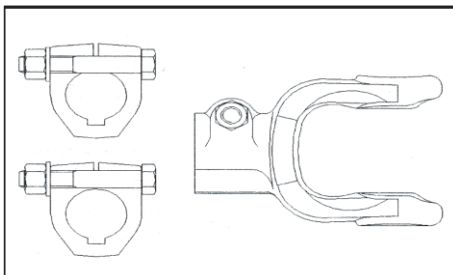
Press the push button and push the shaft on the power take-off until it clicks into position and locks. Make sure that the coupling devices have clicked perfectly into place before starting up the shaft.

Yoke with conical clamp



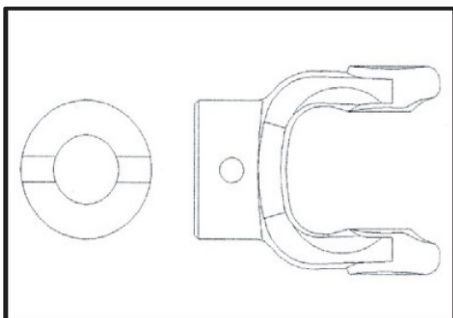
Slip the yoke onto the coupling and then insert the conical clamp so that the conical profile locks on the rim of the shaft, and tighten the nut. Only and exclusively use the conical clamp.

Yoke with interfering and non-interfering bolt



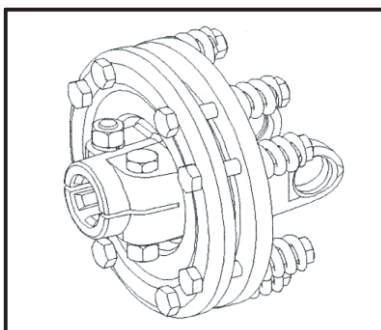
Slip the yoke onto the coupling, insert the bolt, and tighten the nut.

Plain yoke with bolt hole



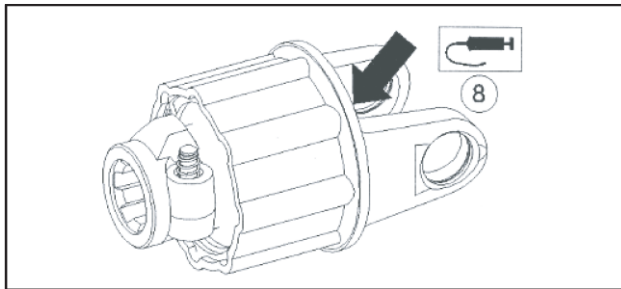
Slip the yoke onto the coupling, insert the bolt, and tighten the nut. Only use bolts of minimum length and of the class specified by the machine manufacturer.

Friction disc torque limiter



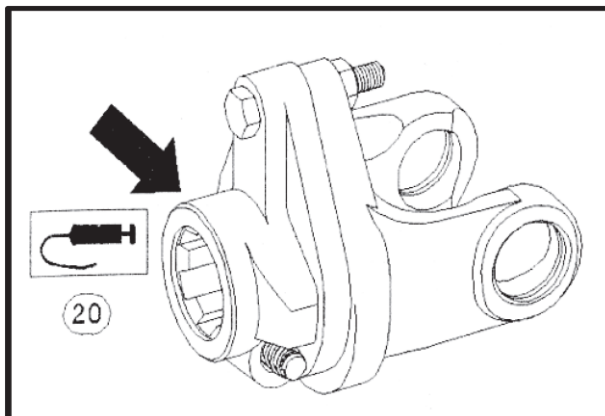
Limits torque to the taring value which is transmitted continuously. Keep in a sheltered place when not in use. Taring may be varied by adjusting the springs.

Pawl torque limiter



Limits torque to the nominal value transmitted in a pulsating manner. During intervention, if the noise of the pawls tripping is audible, stop the machine. Grease after every 8 working hours and every period of non-use.

Freewheel



Protects the transmission from power returns due to rotating masses with high inertia in the stop and deceleration phase. Grease after every 8 working hours and every period of non-use.

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