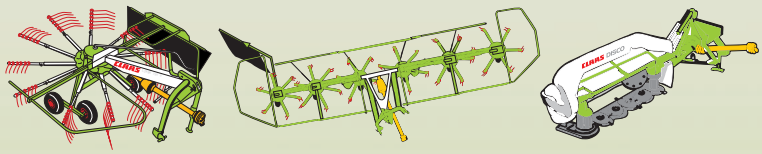
CLAAS



SWATHERS
TEDDERS
MOWER UNITS

Repair and Adjustment Instructions

SERVICE & PARTS

GENERAL REPAIR INSTRUCTIONS

General

1. Find cause of damage, limit damage and secure machine.
2. Use original CLAAS parts and appropriate CLAAS special tools.
3. Repairs can be carried out quickly and correctly when the following are observed:
   - Mark machine parts before removing them to ensure that they are correctly re-installed and correctly balanced after replacement.
   - Expansion pins must always be positioned with the slot to the loaded side. If they are displaced by 90°, they will loosen, fall out or shear.
   - Replace split pins, wire locks, metal-plate locks, lock washers and spring washers during repairs.
   - Grease lubricated ball bearings and roller bearings with good-quality grease.
   - Align sprockets and v-belt pulleys with each other.
   - Observe cleanliness when working on hydraulic systems.
   - Do not mix different oil types.
   - Rotate or operate machine or machine assemblies slowly after repair.
4. Inform the machine owner of the cause, type and scope of repairs!

Test run

5. Always prepare and conduct a test run after repairs.
   - Correctly screw in and tighten all screws!
   - Clear up all tools used!
   - Touch up paint at points where welding, drilling and grinding work was carried out.
   - Replace all safety features so they operate correctly!
   - Check electrical connections!
   - Check settings on the machine!
   - Lubricate all required grease points!
   - Check all oil levels!
   - Conduct test run!

SCREW CONNECTIONS

General

All nuts and bolts must be checked against the parts list for strength class, length and correct standard before assembly.

When tightening the screws and bolts ensure that they are tightened crosswise starting in the centre, unless otherwise specified. Then all threaded connections must be tightened again.

The threaded connections are tightened and retightened with a torque spanner.

Nuts must be no more than one strength class below the bolts used.

All screws and bolts must be tightened as specified in the *Tightening torques* on page 3.4 table, unless otherwise specified.

Special shaft nuts

Special shaft nuts are generally specially manufactured and have a turned collar. Unlike the standardised shaft nuts tab washers are not required. They are locked by the turned collar being locked or tapped into a groove or a profile gap, unless otherwise specified. The turned collar must not be deformed by locking or tapping to the extent that they are cracked through.

If the external diameter of the shaft nut is used as a seal, the thread of the shaft nut and the shaft is locked with locking fluid, unless otherwise specified
– see *Liquid screw lock*, page 3.7.

Self-locking screws (with micro-encapsulated glue)

Replace self-locking screws, e.g. Verbus Plus / Imbus–Plus etc., at every assembly. They can be re-used up to three times in exceptional cases. Always tighten at the specified torque.

Always tighten self-locking screws with micro-encapsulated glue quickly to the specified torque. Unscrew these screws quickly to remove them completely. The self-locking screws must **not** come into contact with sealing compound (e.g. “Epple 33” etc.).

Instead of self-locking screws, screws locked with liquid locking material must only be used where the screw connections can be heated up to about 200°C to loosen them. Note also the specified quality class of the screws (8.8/10.9 etc.).

Self-locking screws with micro-encapsulated glue can only be used where the operating temperature does not exceed max. +90 °C.

4 Drive systems

LINER REDUCTION GEAR

General assembly and maintenance instructions

Bearings

Never press on the rollers, balls or cages during assembly.

Screw connections

Screw connections must be tightened with torque wrenches.

Tighten screws and bolts with tightening torques,
– see *Tightening torques*, page 3.4.

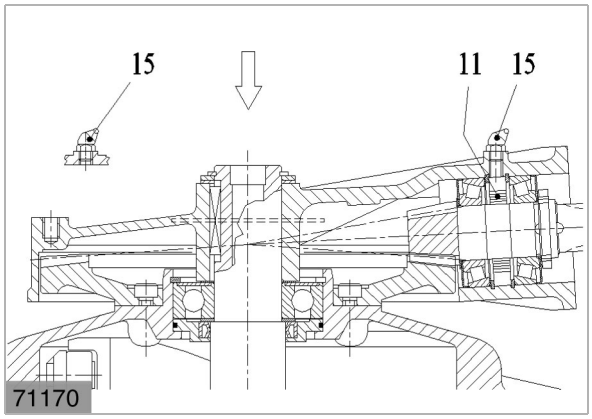
Radial shaft seals

When installing radial shaft seals the contact surfaces between the seal and shaft must be lubricated beforehand.

Do not allow the seals of radial shaft seals to contact sharp objects (edges, etc.) during assembly, otherwise they may be damaged.

Gearbox in oil bath

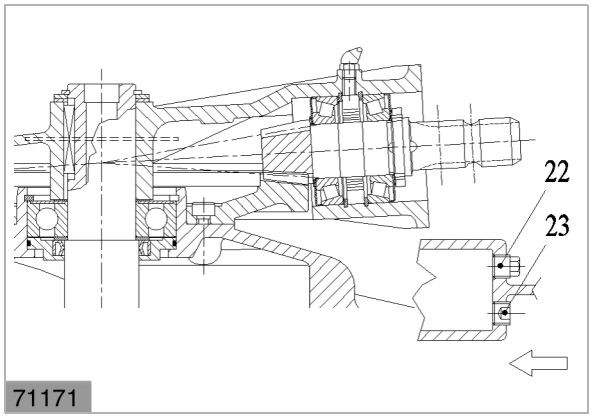
First oil change after the first 50 hours of operation and/or at least once a year.



27

Install grease nipple (15) and fill gearbox with grease (11).

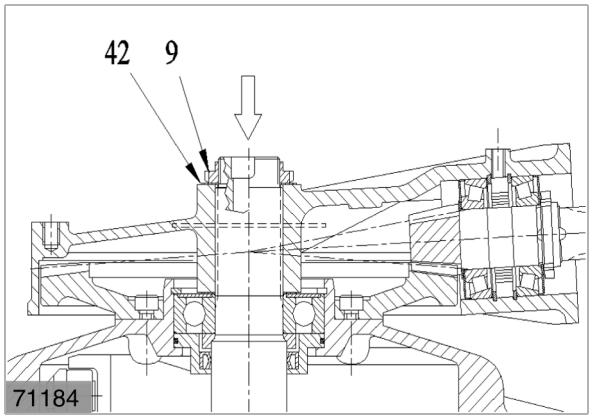
(Fig. 27)



28

Fill gearbox with oil and install plug (22) and (23) with Loctite 243.

(Fig. 28)



54

Install shim (42) and flange nut (9). Tighten flange nut with a torque of 196 ÷ 245 Nm.

Check contact pattern and backlash, adjust if required with shim (8) (Fig. 46) and (19) (Fig. 51) – see *Reduction gear "LINER 680 / 680 L / 680 Profil / 650 Twin / 350 S / 350 T" – general assembly instructions*, page 4.22 and *Adjustment of spur gears*, page 3.10.

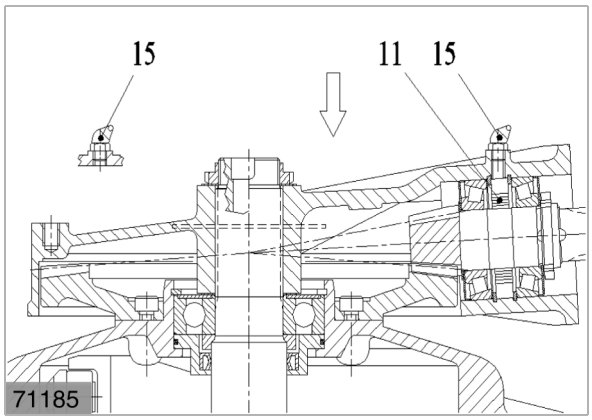
Caulk flange nut (9) with shaft.

(Fig. 54)

Remove flange nut (17) and reinstall with Loctite 270. Tighten flange nut (17) with a torque of 79 ÷ 108 Nm.

Caulk flange nut (17) with pinion.

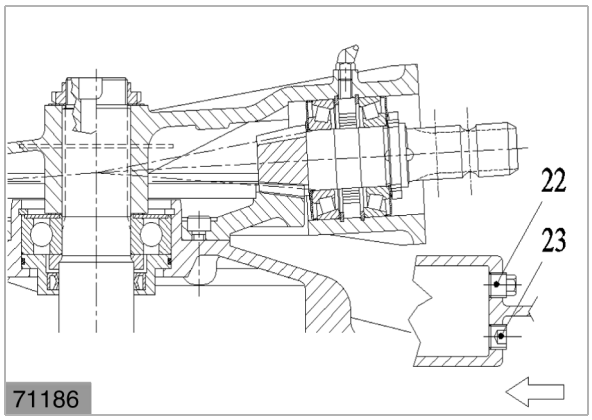
(Fig. 52)



55

Install grease nipple (15) and fill gearbox with grease (11).

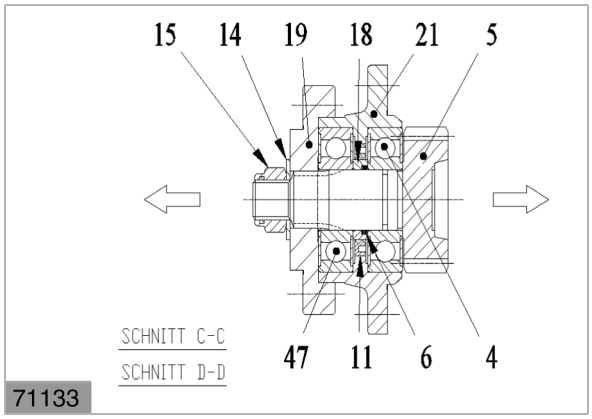
(Fig. 55)



56

Fill gearbox with oil and install plug (22) and (23) with Loctite 243.

(Fig. 56)



12

Unscrew nut (15) from the mowing disc flange (19).

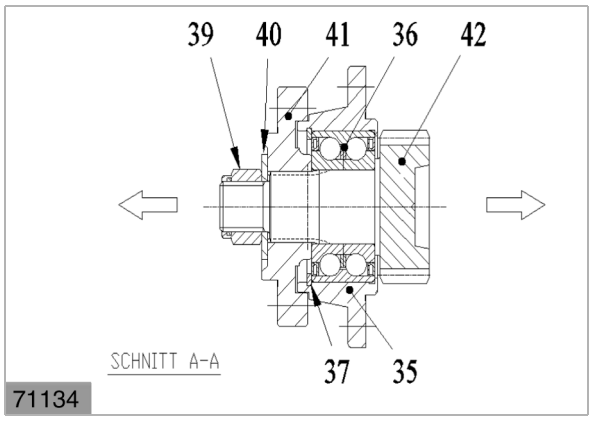
Remove washer (14).

Use a pull tool:

– Remove mowing disc flange from the pinion (5),
– pinion (5) from the bearing flange (21),
– roller bearing (47) and (4) from the bearing flange.

Remove o-ring (6), bush (18) and radial shaft seal (11).

(Fig. 12)



13

Unscrew nut (39) from the mowing disc flange/input rotor (41).

Remove washer (40).

Remove pinion (42) from mowing disc flange (41) with a pull tool.

Remove circlip (37).

Use a pull tool:

– Remove pinion (42) from the bearing flange (35),
– roller bearing (36) from pinion (42).

(Fig. 13)

Assembly

Caution!

Do not damage radial shaft seal and o-rings during assembly!

– Follow general assembly instructions from page 3.6.

Note!

Always use new o-rings and radial shaft seals!