Maintenance – and repair manual for RollcarTV-3

ZW99547

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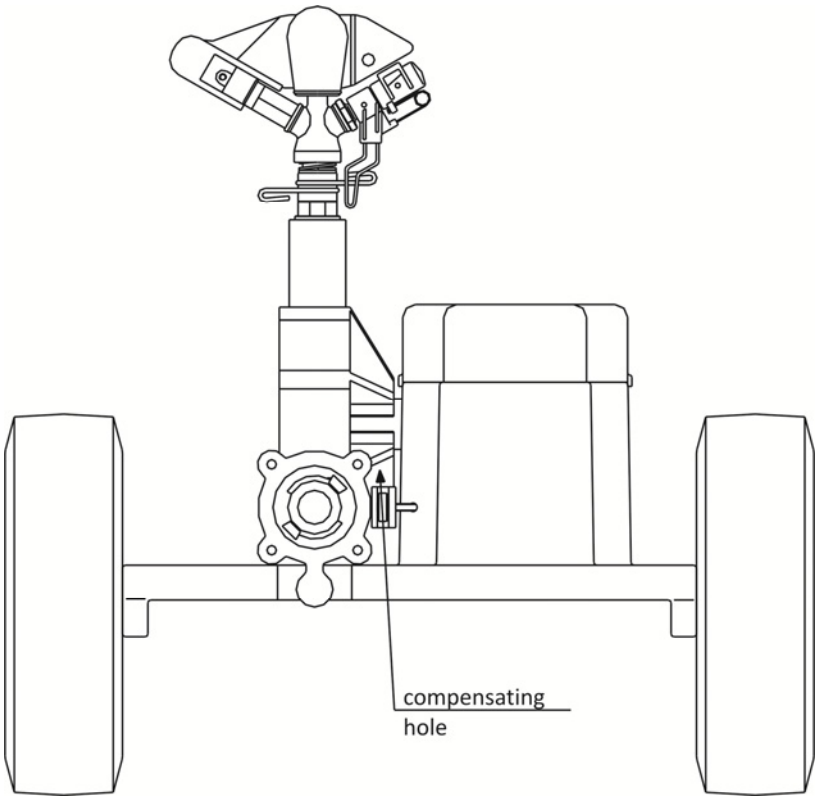
A. Inspection of external leakage

1. Deep - groove ball bearing and rotary shaft seal on turbine shaft

1.1 Leakage on compensating hole

In case there is a recognisable leakage on the compensating hole or in the turbine housing, it must be looked for the reason of the malfunction in the rotary shaft lip seal. In the majority of cases as consequence of the leakage, the deep-groove ball bearing in the turbine housing and partial the deep-groove ball bearing in the gear wheel is damaged (please check leakage monthly).



1.2 Radial tolerance on turbine shaft

In case it appears a radial clearance on the turbine shaft (that can be determined on the turbine wheel if the turbine cover is screwed off) the cause is always a defect deep-groove ball bearing in the turbine housing (Examination twice a year).

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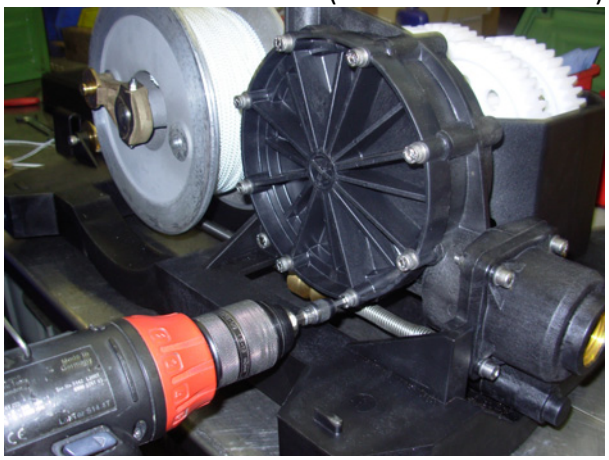
2. Repair of turbine bearing and rotary shaft lip seal

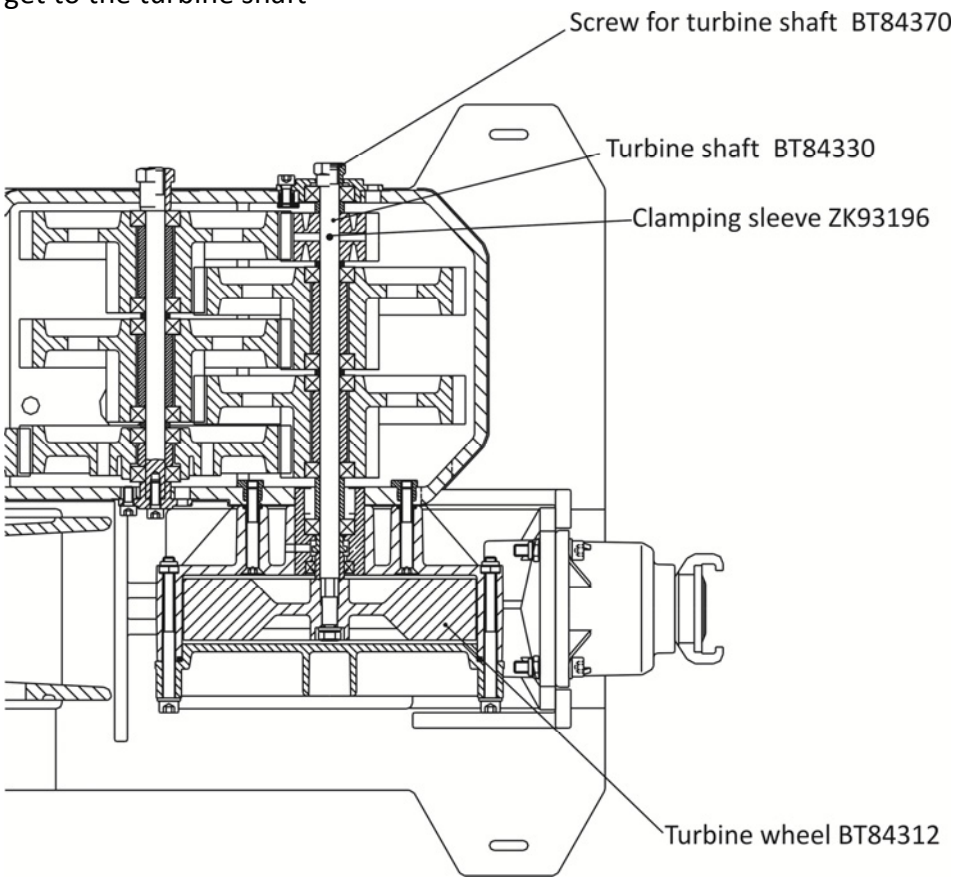
In case such a problem appears on your RollcarT, the repair has do be done as stated below.

⇨ Dismantle bonnet (BT84337), gear box cover (BT84342) and plastic wheel (ZK94434, BT84442, BT84443 and ZK94435) completely.

⇨ Screw off turbine covers (BT84419 + ZK94376)



⇨ Adhere turbine wheel (BT84312) with the left hand and remove screw (BT84330) M10 to get to the turbine shaft



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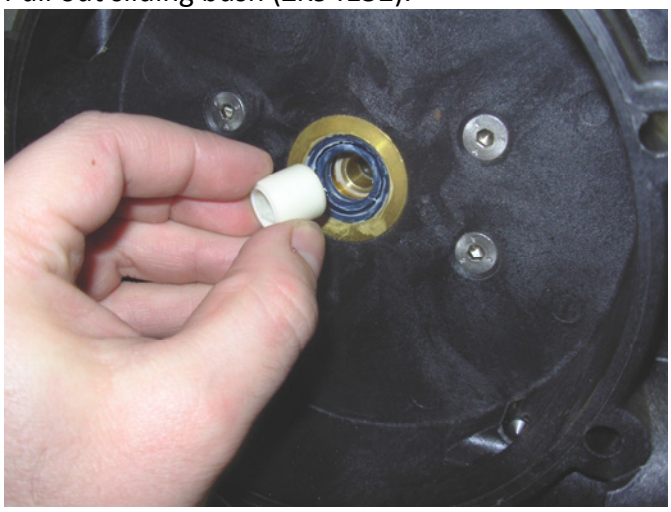
⇨ Beat back clamping sleeve (ZK93196) with punch drift 4mm (standard tool).

⇨ Pull out turbine wheel (BT84312) with turbine shaft (BT84330).

⇨ Pull out sliding bush (ZK94152).



⇨ Take out gear and spacer ring off gear case.

⇨ Beat out shaft seal packing (ZK94377) together with guide bush for turbine shaft (BT84388).

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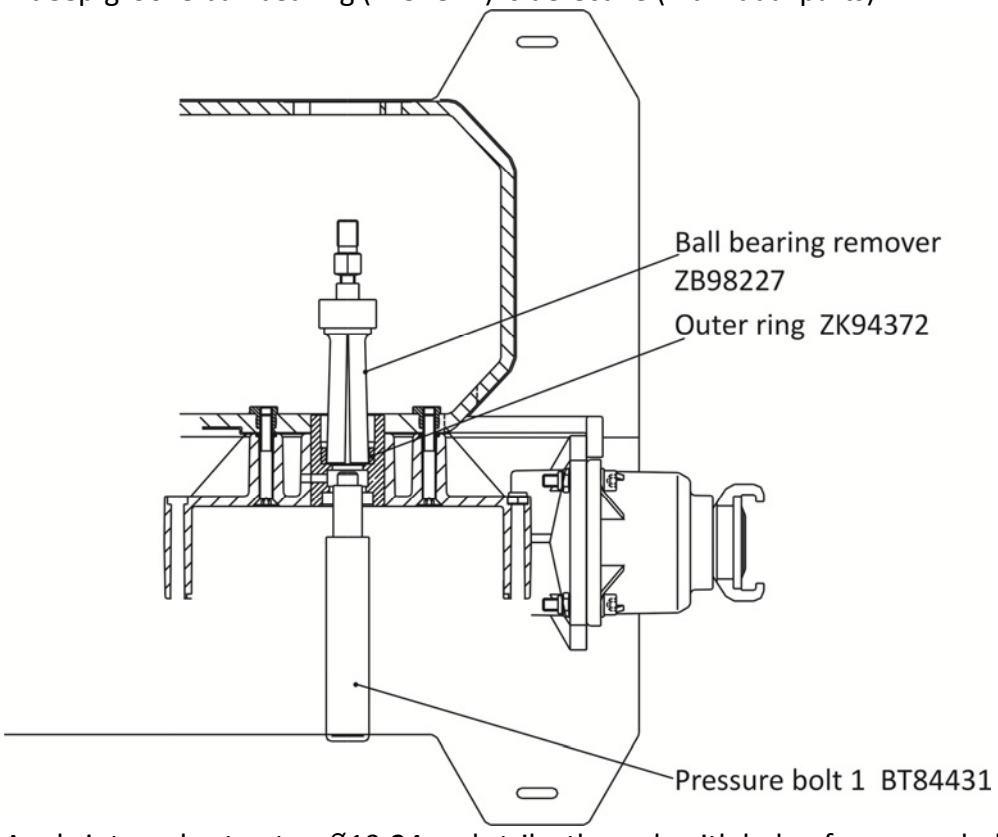
⇨ In case deep-groove ball bearing (ZK94372) is still complete:

drive out with help of pressure bolt No.1 (BT84431) to gear case.

⇨ If deep-groove ball bearing (ZK94372) is defective (individual parts):



Apply internal extractor Ø19-24 and strike through with help of pressure bolt No.1 (BT84431) towards gear case.

⇨ Check whether turbine housing is okay, otherwise it should be replaced by:

1 piece	turbine housing	BB84418
4 pieces	O-ring	ZK16551
4 pieces	countersunk screw	ZK93195

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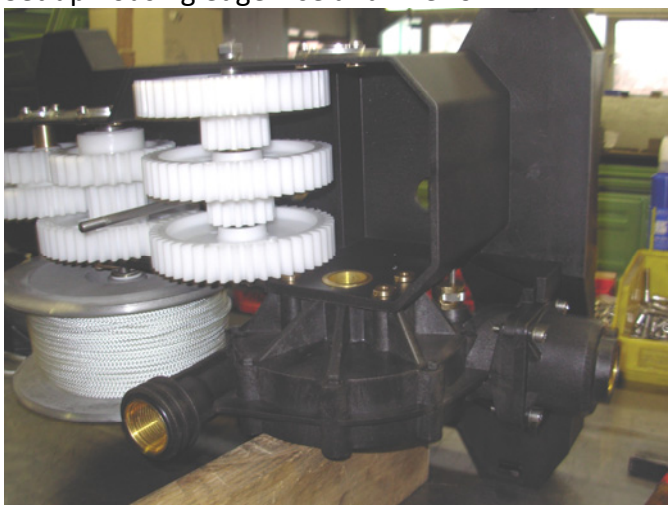
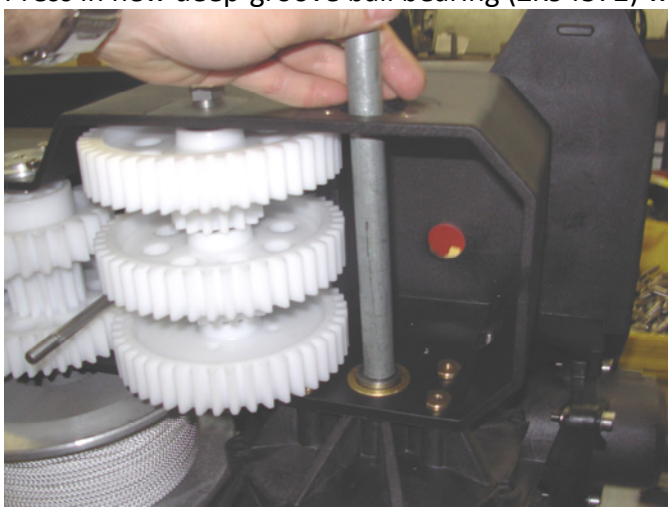
⇨ Set up housing edgewise and inferior

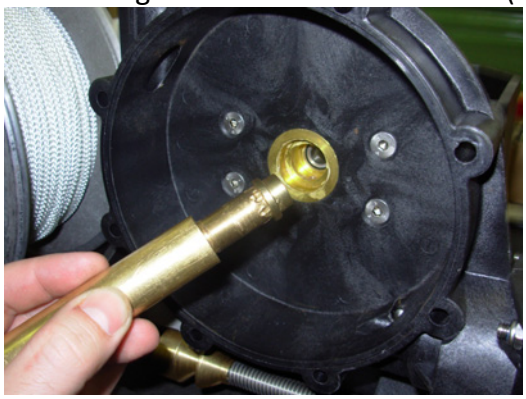


⇨ Press in new deep-groove ball bearing (ZK94372) with pressure bolt no. 2 (BT84432)



Press on deep-groove ball bearing only over outer ring!

⇨ Insert new guide bush for turbine shaft (BT84388) with pressure bolt no. 1 (BT84431)



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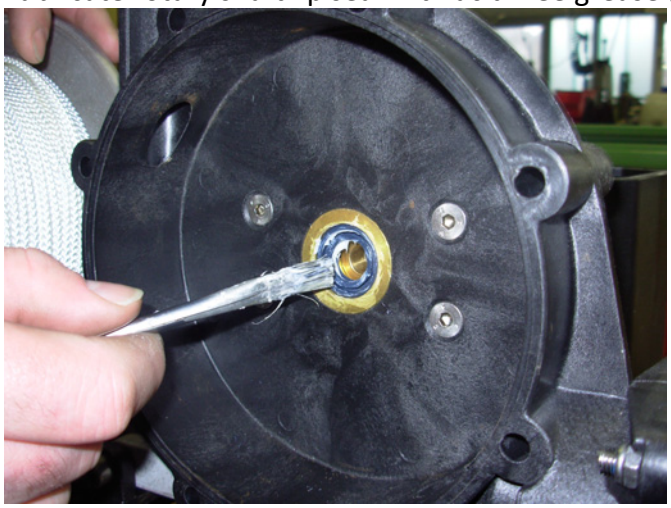
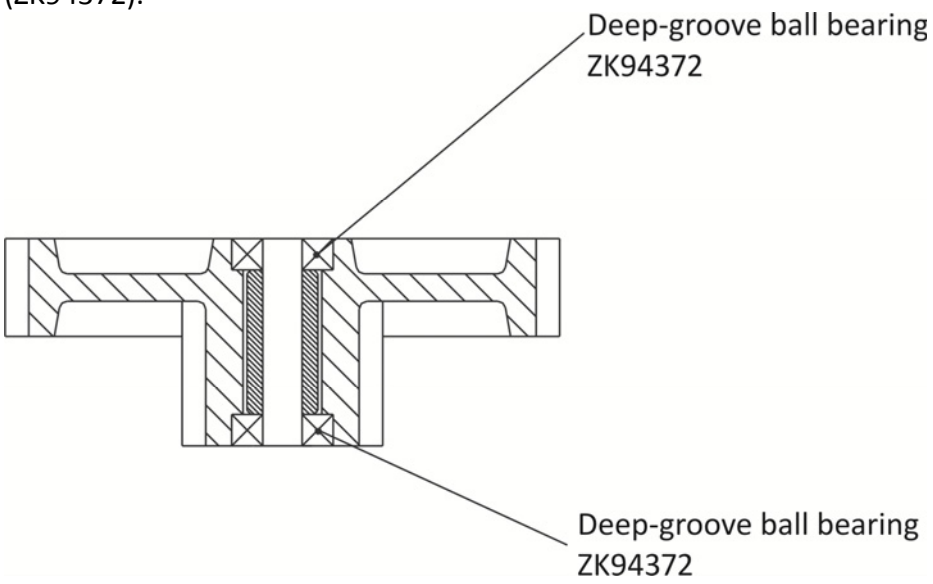
⇨ Insert new shaft seal (ZK94377) with pressure bolt no. 3 (BT84433) – opening has to be visual outside

⇨ Lubricate rotary shaft lip seal with acid free grease (Molikode)



⇨ Check the assembled ball bearings on zero clearance and ease of movement in the gears and the cover turbine shaft, if necessary replace it by a new deep-groove ball bearing (ZK94372).



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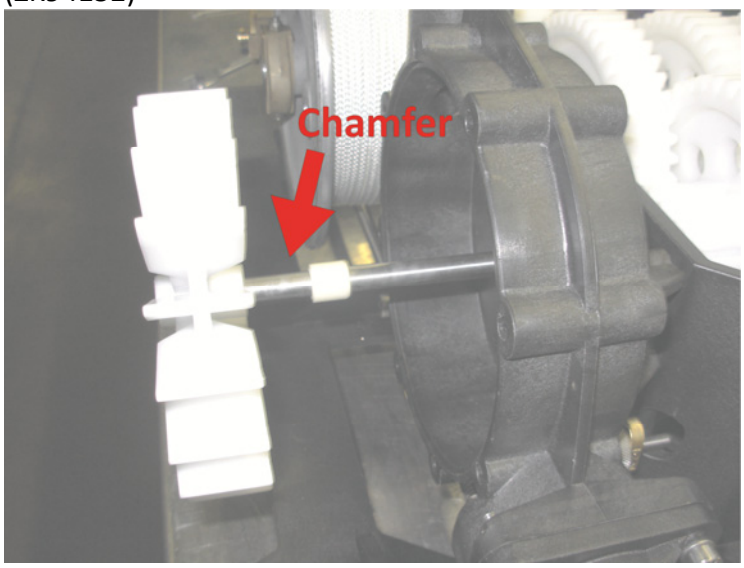
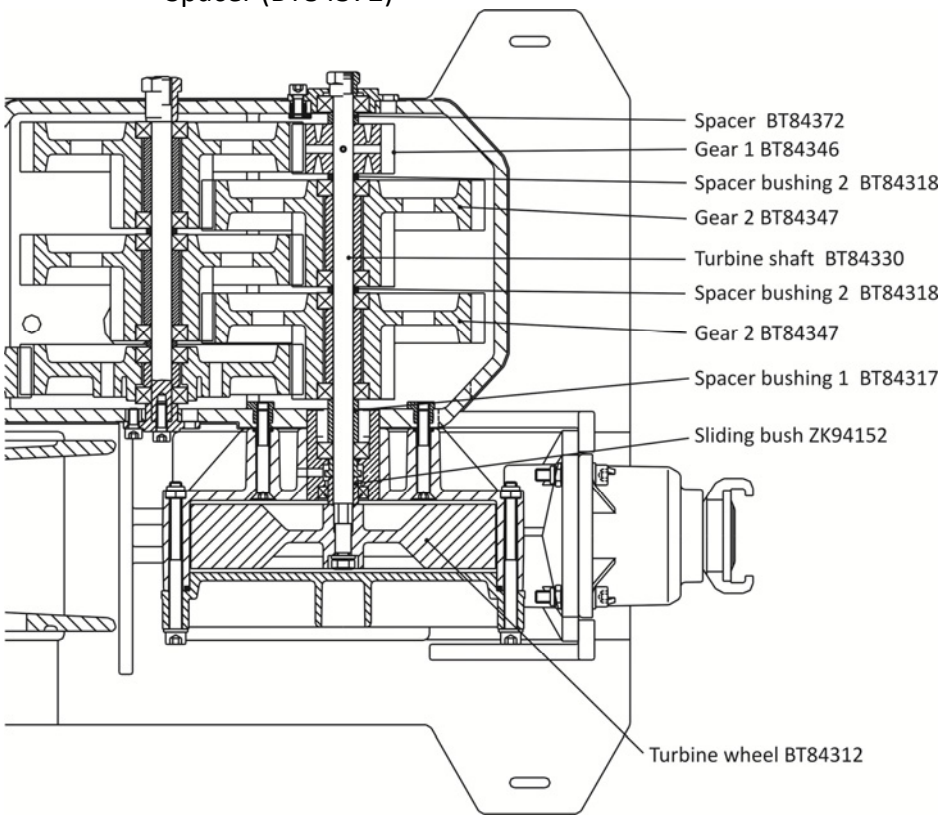
⇨ Insert and ensure correct position of turbine shaft and turbine wheel with sliding bush (ZK94152)



bead than following pieces on turbine shaft:

- ☆ Spacer bushing 1 (BT84317)
- ☆ Gear 2 (BT84347)
- ☆ Spacer bushing 2 (BT84318)
- ☆ Gear 2 (BT84347)
- ☆ Spacer bushing 2 (BT84318)
- ☆ Gear 1 (BT84346)
- ☆ Spacer (BT84372)



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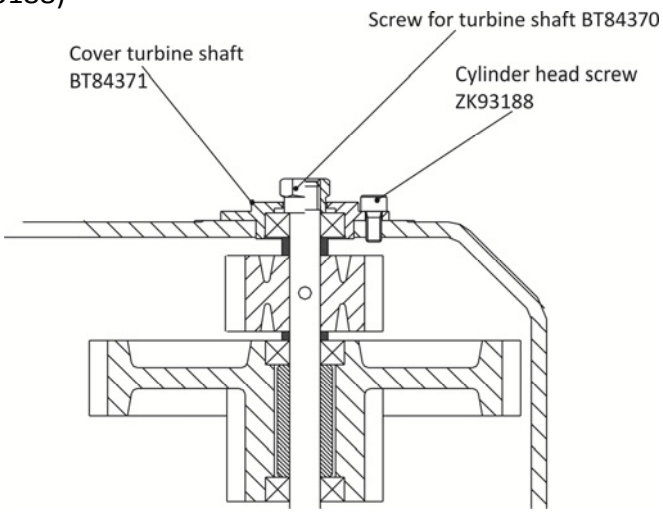
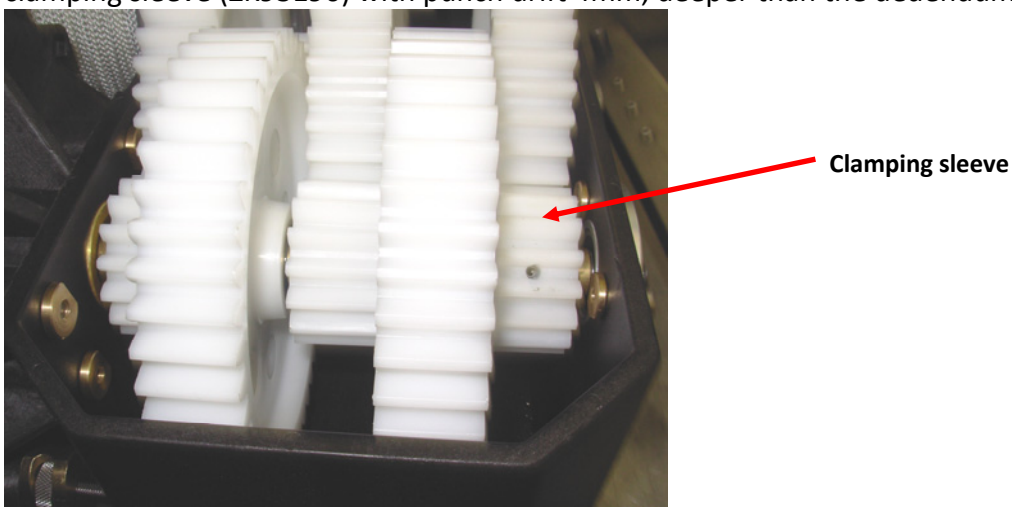
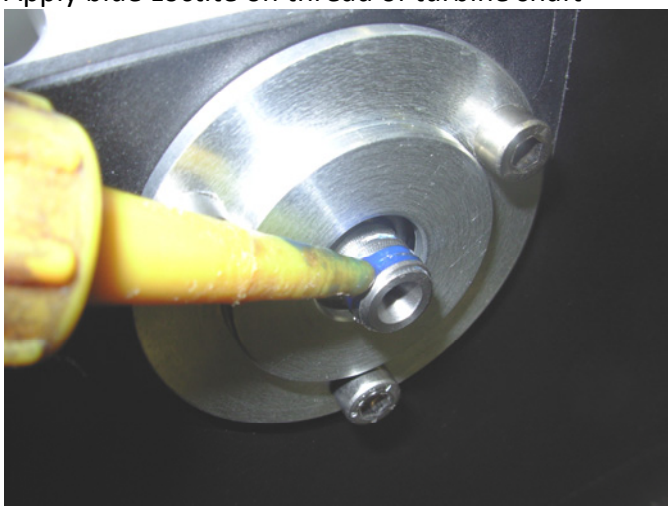
⇨ Screw tightly cover for turbine shaft (BT84371) with deep-groove ball bearing (ZK94372) (3x ZK93188)



⇨ Turn turbine shaft and gear 1 in that way that the bore holes are congruent. Drive into clamping sleeve (ZK93196) with punch drift 4mm, deeper than the dedendum.



⇨ Apply blue Loctite on thread of turbine shaft



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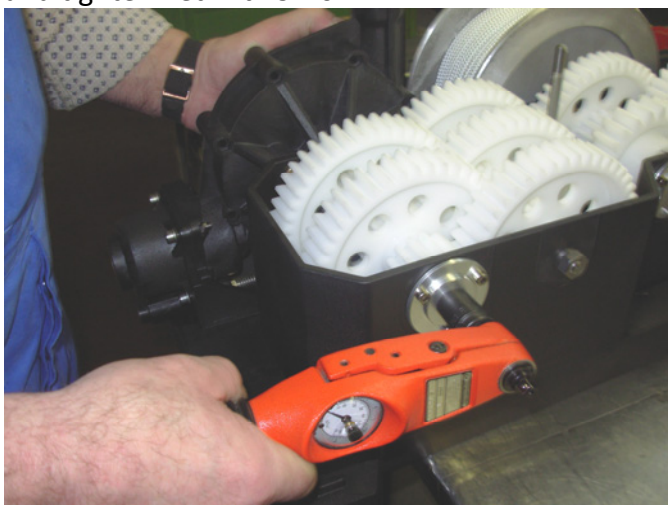
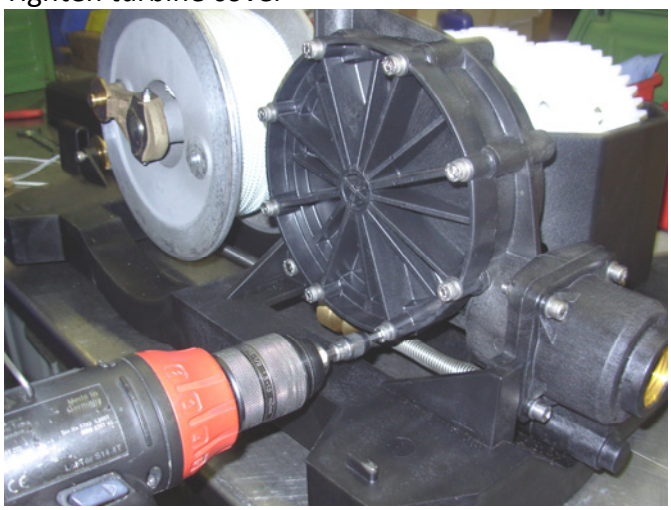
⇨ Unscrew clamping nut for turbine shaft (BT84370), adhere turbine wheel with the left hand and tighten net with 9-10Nm.



If the clamping torque is to small a leakage on the turbine shaft arise; thereby the deep-groove ball bearing is destroyed.

⇨ Tighten turbine cover



⇨ Assemble wheels, gear cover and cover to the unit.

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Annotation

☆ For this repair following pieces are to be ordered:

- 6 pieces deep-groove ball bearing ZK94372
- 1 piece shaft seal ZK94377
- 1 piece guide bush for turbine shaft BT84388
- 1 piece clamping sleeve spare part ZK93196
- 1 piece clamping nut for turbine shaft BT84370

☆ Following special tools are needed:

- Pressure bolt 1 BT84431
- Pressure bolt 2 BT84432
- Pressure bolt 3 BT84433
- Bull bearing remover ZB98227

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B. Examination of cable and cable drum

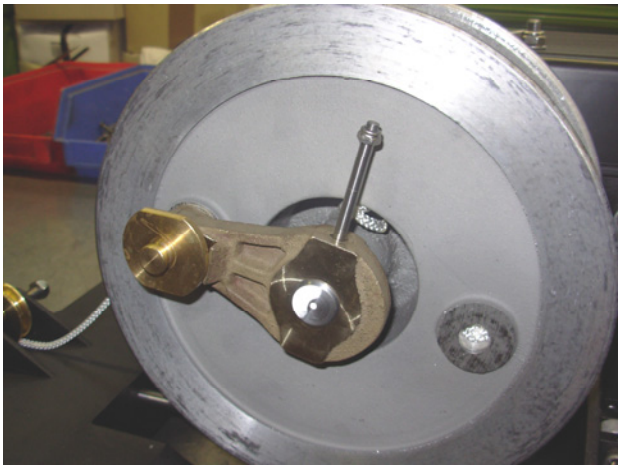
1. Examination of cable

The cable should be inspected once a month for any visible damage.
If the cable is frayed, the cable drum should be replaced.
Damages of the cables can occur when the cable is coiled beside the drum. Frequent causes here for are an insufficient tensioning of the cable before putting into operation.

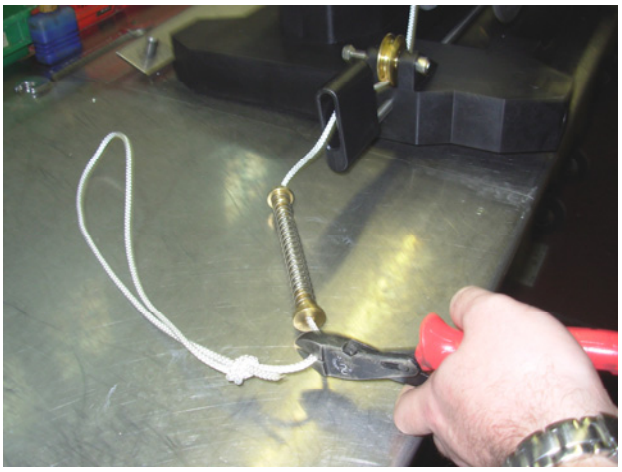
2. Replacement of cable drum

Remove nuts from shearing screw BT84336 and beat through shearing screw through the shaft.

- Pull down driver BB84341 from the shaft.



- Cut cable so that the limit stop for RollcarT (BT84416 and ZK84424) can be deducted from the cable.



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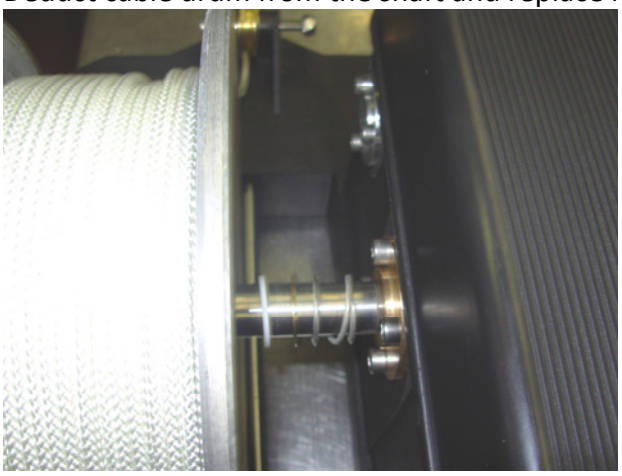
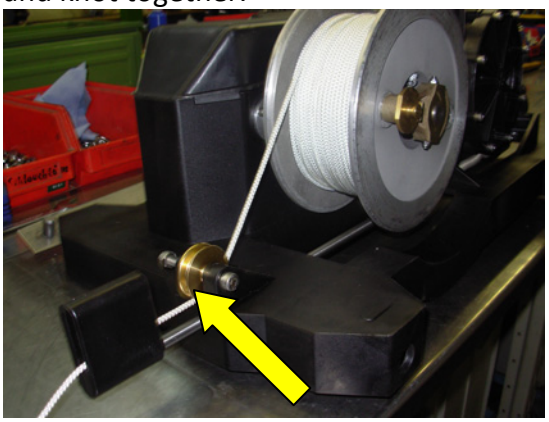
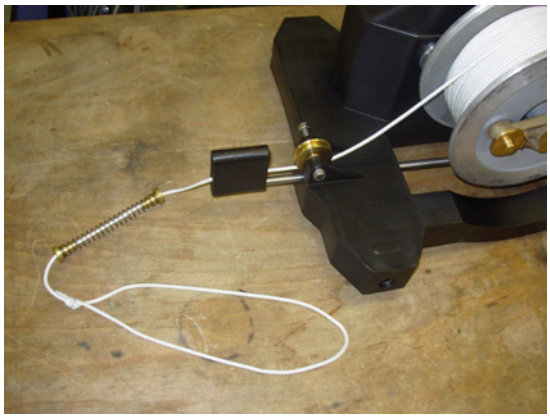
- Deduct cable drum from the shaft and replace it by a new cable drum BB84429.



Ensure that spring, brass washer and Teflon washer (drum brake) are fitted before putting on the cable drum!

- Feed hauling cable into cable guide, shut-off rod and limit stop. Form a loop at the end and knot together.





cable guide

Make sure that the loop goes over the spur!

- Fit driving arm. A new shearing screw BT84336 should be used.
- Adjust limit stop and put device again into operation.

Necessary spare parts:

1 piece	cable drum with cable	BB84429
1 piece	shearing screw	BT84336
1 piece	110m of cable	ZK94226

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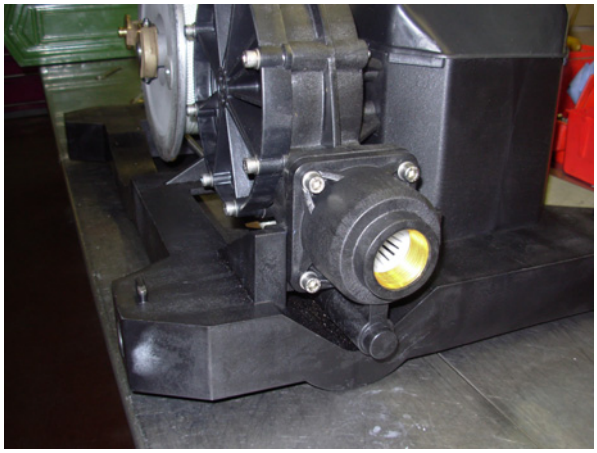
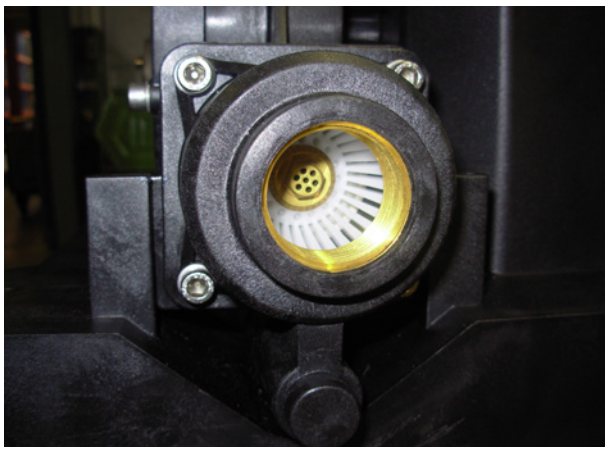
C. Checking the valve

1. Check shut-off valve for leaks and dirt

After every watering job, an easy check can be made to see if the valve is watertight. Especially when using uncleaned water, it can happen that the valve may fail to close or open completely. Small stones, for example, or grass may also have become stuck in the valve, which would result in the sprinkler losing pressure.





2. Cleaning and replacing the valve

- Remove valve casing using Allen key SW5

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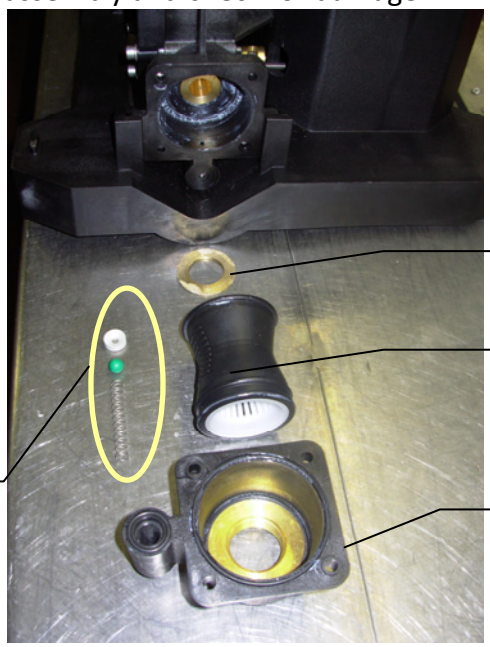
- Clean valve assembly and check for damage



- When putting the valve back together, ensure that the valve insert is fitted with the studs facing down

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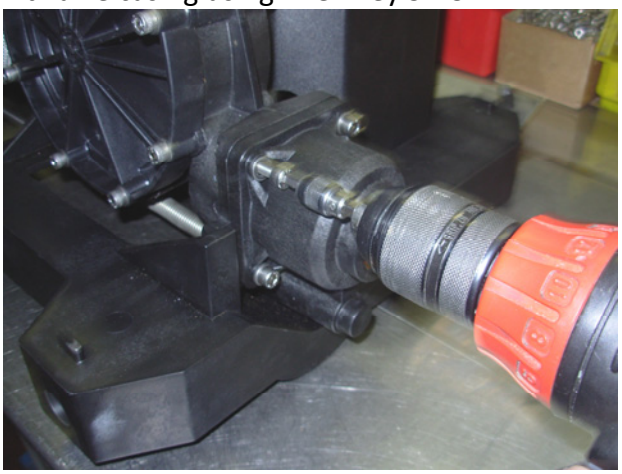
- Assemble control module (1st spring, 2nd ball bearing, 3rd seal), as per detail X on the individual parts list
- Insert brass washer with chamfer facing the valve insert
- Smear valve insert with non-acidic grease (Molykote) and put back together

- Fit valve casing using Allen key SW5



- Check that it works

Spare parts:

1 x	O-ring, diameter 67x2.5	BB84429
1 x	O-ring, diameter 18x2.5	BT84336
1 x	Valve casing	BB84420
1 x	Valve insert	BB84410
1 x	Valve pressure spring	ZK91560
1 x	Ball bearing	ZK94281
1 x	Sealant ring	ZK94487

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Subject to change without prior notice.

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