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Reisenauer

Effektive Präzisions -Antriebe für den Elektroflug



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MICRO EDITION – Operating Instructions + Security

This gearbox has been developed by us for the special requirements of the electric flight.

The objective of minimum weight with maximum efficiency, very quiet running and optimum efficiency by computer-calculated tooth-geometry was clearly achieved! The use of different flanges allows compatibility with most electric motors making it suitable for use with small and large models.

Motors can even be swapped on the airfield, requiring only the removal of the gearbox and attaching another motor – with no tools.

To gain a better understanding of how the gear train works, it is possible to pull out the shaft with the planet carrier together with ball bearing completely after releasing from the external thread of the ring gear.

If you have received from us a complete drive, it will usually come in two parts, motor and gearbox separately. This is deliberate so that removing and installing will not be a secret, which will help when using and carrying out maintenance. The unit was previously installed and adjusted by us and had a test run on the test bench.

To assemble please follow the below:

- While assembling the gear keep the shaft pointing down.
- The thin steel thrust washer must be lying on the planet gears within the ring gear, otherwise it can be bent when screwing on the motor. During disassembly the thrust washer may have moved as it likes to stick on the flange – please locate centrally for assembling and insert into the middle of the gear. (The steel thrust washer protects the alu-flange of the plasma hardened planet gears!)
- Motor from the top, bring the gear box gently from the bottom and tighten clockwise (with whole unit upside down).

Caution: Too loosely tightened gear box can unfurl by fast acceleration!

Also if the unit is not attached to the front end gear tight enough, the torque from braking can release the motor from the gear box (not recommended!).

Now the unit is operational!

If you want to assemble the gear itself to one of your motors use the following pinions are matched to different gear ratios:

- Pinion-Control – don't mix up – check diameter!
3:1 = 8,55mm / 3,5:1 = 7,5mm / 4:1 = 6,7mm / 4,5:1 = 5,78mm / 5:1 = 5,36mm / 13:1 = 7,5mm
- Maximum length from the motor shaft end to motor face (not the bearing collar):
For motors up to 4mm shaft diameter: 17mm
For motors with thicker shafts must be shortened to 12mm or 15,7mm (Speed700).
A mini tool using a small blade works great for this but use a plastic bag to protect the motor from sanding dust. Then deburr!
- Degreasing: Degrease the motor shaft and pinion – e.g. with acetone
- Gluing: Put on some Loctite 648, 638 or 2701 (no superglue!) on pinion bore and shaft. Now turn up the pinion on the shaft, until it floats on an evenly film. The end of the pinion may be away **max. 12mm** (Speed700 15,7mm) from motor front face. After 15 minutes rev up the motor in idle for a short while, to throw off unnecessary Loctite, because cured residues between the teeth flanks can lead to gear rattle.
- Clean the flange of processing residues and then screw on the motor loosely. After approximately 30 minutes drying, the gear can be screwed on the motor as described in paragraph 2. The flange screws must be open a ¼ - ½ turn at this action.
Now hold the drive unit vertically (shaft up) and start the motor slowly.

The gear should now center itself and run quietly. If necessary the flange can be adjusted slightly with your fingers. A good idea is to use a multimeter and measure the current. The no-load current of the motor should increase by a maximum of 0,5 amps with gear. With a flange with internal fixing screws, it can be fixed with some superglue with the engine off. Then unscrew the gear and tighten the flange screws. With external fixing screws (all or 500, 600 Lehner and others of this size) of course the flange screws can be tightened smoothly from outside while motor is running. For quiet and low-loss run, a precise adjustment is absolutely necessary!

The relatively high rotation resistance by the cold and rigid high performance grease reduces considerably after a short run time.

With our in long trials selected MICRO GEAR HIGH PERFORMANCE GREASE, in normal operation almost no metal contact occurs in the gear. However, when starting or braking, the fat boundary can be broken. Therefore switch on slowly over a slow start over 2-3 seconds. When braking (use soft brake on controller) decelerate slowly.

MAINTENANCE - SERVICE

The gearbox runs practically loss-free when an effective lubricant film exists. After 50-60 battery charges the slide-mounted Edition gearbox with reduction 3-4,5 should be opened and cleaned. The gear wheels and particularly the 3 axes of the planet gears should be only lubricated with our high performance grease <http://www.reisenauer.de/artikeldetails.php5?aid=1135> or <http://www.reisenauer.de/artikeldetails.php5?aid=1448>.

Please use for the needle bearing Edition 5:1 gearbox the Peggy 9-Drops transmission fluid <http://www.reisenauer.de/artikeldetails.php5?aid=1798>. As this fluid cannot overboil, it can be filled up through one of the 3 threaded holes without removing the drive. Quantity approx. 0,4-0,5 ml.

At Inject version the shaft is hollow drilled. Thus, greasing is very easily possible without spinner removal after removing the Torx 8 plug screw with the 1,8mm cannula. When unused for longer periods please regrease before starting up, because drying could be occurred.

For replacement of course EVERY PART is available SEPARATELY.

MOTOR PINION REMOVAL: Bringing in temperatures of over 300° C (Caution stock) or by break apart with a gear/pinion remover.

SAFETY INSTRUCTIONS

For programming transmitter or controller necessarily remove the propeller!

Avoid rotational plane of the propeller – risk of injury!

Drive unit with assembled propeller ONLY slowly regulate high with speed controller (2-3 sec.) and decelerate slowly. - Don't use unbalanced or damaged propellers – Use the stop nuts of the propeller just once – make sure that there are no persons in front or beside the running propeller – Check the propeller after each landing for damage and tight fit! Too loosely screwed gears can loosen during operation! Use possibly releasable securing means, such as Loctite 222. Check more often the 3 frame fittings and the 5 outer screws of the ring gear are a tight fit, as well as the connection hub to gear shaft.

Attention: Maximum immersion depth of the 3 front fixing screws = 5mm!

Exceeding this length, the planet carrier can be blocked or destroyed!

CAUTION: On the gas a torque is generated. Thus, that the the gear will not be loosened, a solid screwing on the motor flange is necessary.
With two fork spanner keys
(<http://www.reisenauer.de/artikeldetails.php5?aid=1446>)
it is possible in an optimal way.
A light and a solid jolt secures the connection also for high performances.
The maximum force of a 5-year-old is enough.
A securing means is with a fixed screwing not necessary but can be used additionally – obviously solvable, only light middle strength.

