

*Royal Exclusiv pumps & skimmers*

Klaus Jansen // Richard-Byrd-Str. 7 // 50829 Cologne // Germany

Fon +49(0)221/222886 0 // Fax +49(0)221/22288622

info@royal-exclusiv.de // www.royal-exclusiv.de



*Since 1986*



## Operating and maintenance manual for Mini Red Dragon pumps

For all Bubble King® Double Cone protein skimmer with MRD pump 700, 1200, 1600

v1.0

**ENG**





## **Operating and maintenance manual for Mini Red Dragon pumps**

**For all Bubble King® Double Cone protein skimmer with MRD pump 700, 1200, 1600**

1. Maintenance	2
1.1. Maintenance of the pump	2
1.2. Deliming and cleaning the impeller	3
1.3. Assembly of the rear bearing	3
2. Setup instructions, adjustable nozzle	4
3. Cleaning the nozzle and suction pipes	4
4. Defects and claims for compensation, disclaimer	5
5. Manufacturer's declaration	6
5.1. Manufacturer	6
5.2. Informations and support	6

### **Important Notice**

Please read this manual carefully before you install the device. We recommend not to proceed the installation of the device until you read the manual. This prevents any questions and problems that might occur in installation process. As soon as you power-on the skimmer pump for the first time, you agree that you read and understood this manual. In doubt or if anything is unclear please contact your supplier/vendor or dealer before you start-up the skimmer pump.

## 1. Maintenance

We recommend the cleaning of the Mini Red Dragon skimmer pump at frequent intervals respectively to check the needle wheel for foreign objects. To check the needle wheel it is not necessary to remove the skimmer from the filter tank.

Unplug the skimmer from the mains. Remove the nozzle from its seating. Turn the pump into your direction and optically check the first row of needles for foreign objects like snails, mussels, activated carbon pellets, filter cotton or food debris. In case of an accumulation of debris in the pump, the pump must be disassembled.

### 1.1. Maintenance of the pump

We recommend cleaning the Mini Red Dragon pump at regular intervals and checking the pin wheel for possible foreign matters. For the entire maintenance of the skimmer only a slotted screwdriver is necessary.

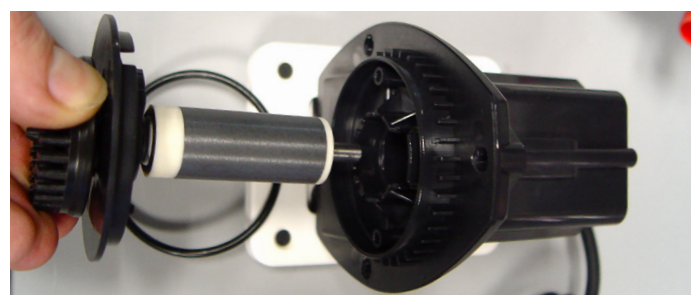
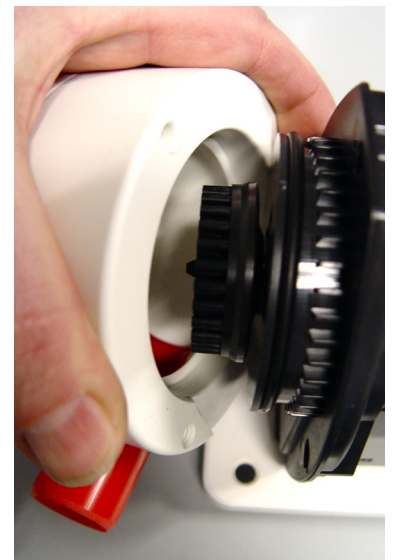
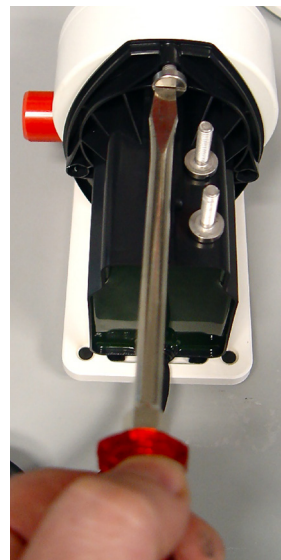
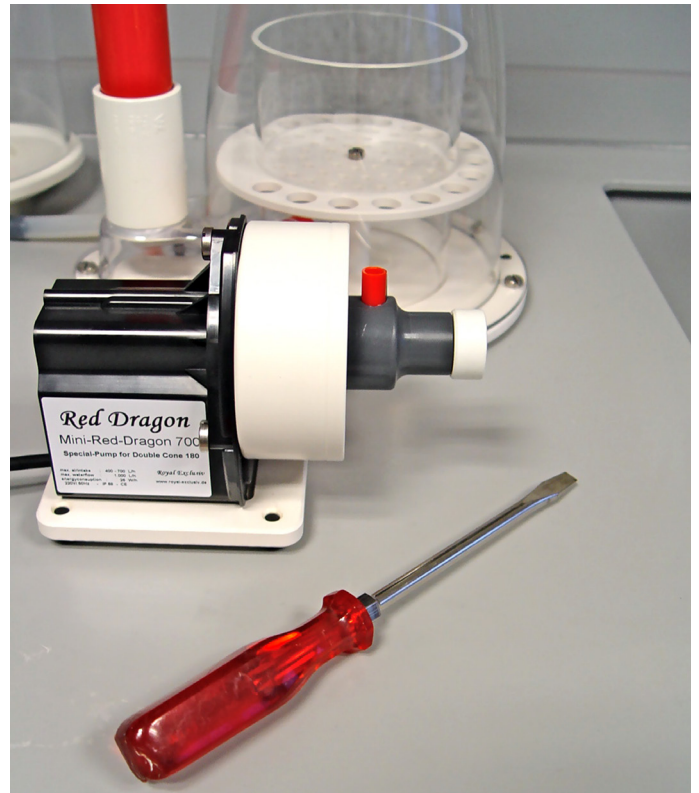
Unplug the skimmer from the mains or disconnect the power plug and remove the pump from the silicone hose by gently rotating it. Remove the three titanium pump head screws and check the pin wheel for snail shells, mussels, active carbon pellets, filter cotton or residual food. In case of larger accumulations, please clean the pin wheel. Pull out the impeller and clean and delime the entire pump.

Red Dragon® Bubble King® pumps feature an integrated automatic switch-off function. The energy input is continuously measured electronically. If power consumption increases for whatever reasons, e.g. in case of calcification resulting in sluggish bearings – the electronic system of the pump recognizes this as a failure and the pump is switched off automatically.

By plugging/unplugging the power plug the pump can be made ready for operation again. Please note that it is prohibited to circumvent the electronics to make the pump run again by constantly plugging/unplugging the power. If the Red Dragon® pump switches off, there is always a problem which must be remedied. This is usually a cleaning interval that is to be implemented. Continuous circumventing of the pump electronics may result in motor damage which is not covered by guarantee or goodwill. Furthermore, major impurities may generate vibrations.

*We recommend to check the Mini Red Dragon pump already after three months, to determine the possible maintenance intervals that, can be depending on precipitation between 2-12 months.*

If the impeller group extremely calcified, solve the plate between engine and rotor. Cover enter with a small slot screwdriver, **!carefully!**



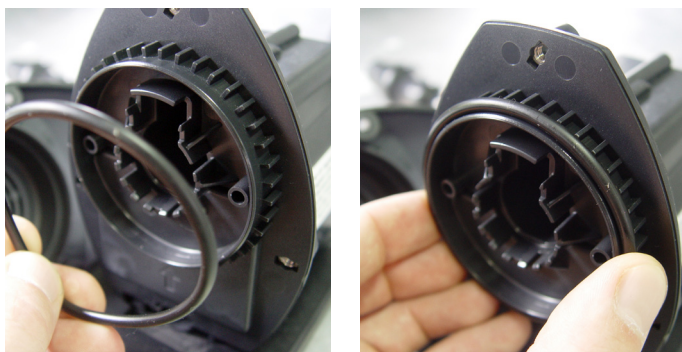




Since 1986



For assembly: fix the O-ring in position, then carefully let the magnetic impeller with the lip on top click into place. Caution ! Strong magnetic forces !!



## 1.2. Deliming and cleaning the impeller

**Caution:** Never apply force to the wheel unit. The ceramic shaft is very sensitive and may break immediately if bent. Replacement shafts are available.

Now delime the impeller unit using a suitable deliming bath.

**Never use hydrochloric acid - not even diluted!**

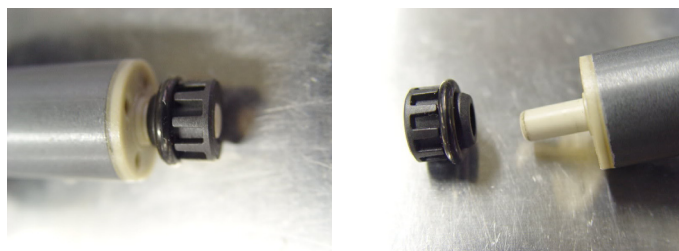
This may damage the pump. Suitable substances are: formic acetic phosphoric acid or common deliming agents for water purification appliances like coffee makers. The containment shell of the motor must also be delimed.

Coarse, greasy plaques must be removed under ordinary tap water prior to deliming using a mediumcoarse brush.

Please observe the relevant safety regulation attached to every sales package prior to using deliming acids. Wear protective clothing and goggles.

### Important notice:

The rear bearing bush requires spezial attention as most errors are made here.



If the rear bearing brush – as seen on the photo – sits on the shaft when removing the impeller unit, it is vital to carefully remove the bearing from the shaft photo

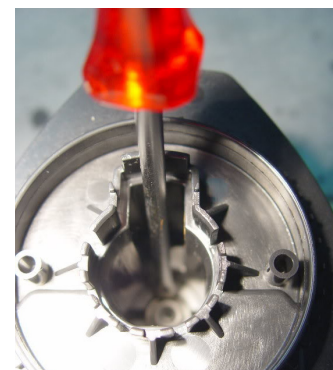
**Under no circumstances** put the bearing loosely onto the shaft and then insert the wheel unit into the motor block.

The bearing wont fit in its slide, and thus, the pump will hum extremely after putting into operation. The bearing must securely installed into its slide before assembling the wheel unit. Blocked bearings may cause damage to the pump or prevent it starting up, due to the O-ring grinding against the bearing seat.

## 1.3. Assembly of the rear bearing

If the bearing is mounted into the appropriate notch, the O-ring must be firmly pressed into the notch using a medium-size slotted screwdriver.

It is important that the bearing, properly in its Groove, is positioned. The O-ring must be above such as in figure. O-rings points down, the runner in this State may not engage and the whole wheel unit is pressed to approx. 2 mm to the front. This touches the fan on the front of the cover, causing an extreme noise. The bearings must not be mounted in this position.



For more information, please visit [www.royal-exclusiv.de](http://www.royal-exclusiv.de). Simply enter the part number or name into the search box or email: [info@royal-exclusiv.de](mailto:info@royal-exclusiv.de).

All information subject to change. We try our best, but printing errors reserved.

## 2. Setup instructions, adjustable nozzle

The water intake screw-on nozzle is designed to control the amount of water pumped into the mixing chamber. Turning the nozzle **counter-clockwise** will increase the water pumping capacity and **screwing it clockwise** will reduce the throughput (about 500 litres per turn).



Nozzle screwed off completely

Nozzle closed

Ideal condition 1 x turn counter-clockwise

For **ideal** results follow these steps: screw on the nozzle fully, make a complete turn counter-clockwise. If air bubbles rapidly leave the output tube, the pumping power is too high. Please screw on the nozzle until no air bubbles exit the T-piece. If the skimmer is new, screw on the nozzle almost completely and run it in for 1-2 days. Brand-new skimmers may produce bubbles, cause overflow and be subject to extreme fluctuations. The bearings of the pump also need approximately one week to grind in. Before first use, open the wedge-shaped tube fully.

## 3. Cleaning the nozzle and suction pipes

The suction pipe with 10 mm for air induction (red) and 6 mm for ozone (grey) needs regular decalcification and cleaning as, depending on the degree of lime content in the water, a plug may form, which can impair the overall the performance of the pump and deteriorate skimming drastically.

Please inspect and decalcify the nozzle regularly !! Remove major clogging using a pointed tool before decalcification.



Nozzle with air- and ozon- plug

## 4. Defects and claims for compensation, disclaimer

### 4. Defects and claims for compensation

**4.1.** Barring any further claims we are only liable that the supplied goods are free of defects until the initial transfer of perils. Insignificant variations of the contracted appearance and workmanship or marginal limitation of the usability or suitability of the product are unremarkable.

The warranted condition, endurance and usability the product is solely subject to the specification agreed in writing, in the product specification and / or in this manual. Further oral agreements, especially from preliminary talks, advertising and / or in related industrial standards will be only valid as integral part of a written contract. Only conditions and specifications assured specifically by us are valid. We do not accept conditions or specifications made by third parties. Specifically the specification assured in this manual are valid. If the customer wants to use the product for other than the intended purpose, he is obliged to thoroughly check the suitability of the product for the other purposes. We give no warranty and no liability accrues for any applications that are not agreed on by us explicitly and in written form.

Any manipulation of the pump, the (needle wheel) impeller or the electronic as well as any attempt to modify the software, to influence the software or to read out or re-engineer the software of the driver unit immediately causes a loss of warranty and all claims and rights expire.

Every user is held responsible for the appropriate usage of his **Mini Red Dragon** skimmer pump. The user manual does not discharge you from your liability for a safe, appropriate and secure application, installation, operation and maintenance.

By using this manual you agree that in no circumstances the manufacturer can or will be held liable for any personal injuries or property damages which possibly occur due to the usage of the device. This applies specifically for any damages that are due to inappropriate piping or plumbing. Insufficient or missing cleaning- or maintenance intervals and damages that might result due to these are not covered by warranty. This applies especially for calcinations (salt water usage) and accumulated foreign particles (pond usage) such as sand or gravel, which lead to damages on rotors, bearings, rotor housing or motor housing, that are not covered by warranty.

**4.2.** Our warranty for defects is strictly limited to supplementary performance. This is upon our choice either removal of defects or replacement delivery free from defects. In the case of challenge, impossibility or failure of the supplementary performance the customer has the right for impairment or the right to withdraw from the contract.

Additional expenses which arise because the customer has brought the sales item to another place than his subsidiary. The manufacturer explicitly limits the warranty to the pump itself. We are not reliable for consequential damages, or damages that are caused by a malfunction or failure of the skimmer, such as a loss of animals. It is in the responsibility of the customer to provide back-up devices for the case of a potential malfunction or failure of the pump.

**4.3.** The customer has to check the goods immediately thoroughly, also for product safety. Apparent damages have to be reported in written form immediately. Hidden damages have to be reported immediately after their discovery. The customer is liable to report transport damages within 24 hours to the carrier and/or the delivery service. Disregarding the rules for checking and reporting results in a loss of warranty.

**4.4.** Furthermore we are not liable for the consequences of inappropriate application, usage, maintenance and handling of the product by the customer or his subsidiaries, neither for normal abrasion. This applies specifically to the consequences of thermal, chemical, electrochemical or electrical influences as well as for infringements against our uses- and maintenance manuals. The same applies to damages which are the result of changes or adjustments by the customer which have not been approved by us in beforehand.

**4.5.** Our liability for wanton negligence is limited to claims of injury of life, body and health, to claims based upon the law on product liability and to claims from culpable fundamental breach of the contract which entail contractual obligations. For the rest our liabilities for wantonly negligent breach of contractual obligations, which are foreseeable at the time of the conclusion of the contract, are barred.

Damages, which are unambiguously attributed to inappropriate usage of the product, are in general to be accounted for by the customer. In the case of returns of the product the customer has to use break-proof packaging for the product. The customer is liable for any damages that can be accounted to an inappropriate packaging.





**4.6.** Claims against us become time-barred within a year after the initial delivery of the goods to the customer. The same applies to claims for damages regardless of their juridical cause. The limitation period does not apply to claims based upon the malicious concealment of damages from the injury of life, health or body and for other damages that result out of intention or wanton negligence.

**4.7.** If it becomes apparent during our examination of damages reported by the customer or in the course of our removal of defects, that the reported damages or claims were made wantonly negligent or unwarranted, we may charge an adequate consideration for our examination and for the removal of defects. The customer has the right to neglect a necessary repairing and to demand the return of the skimmer. In general every examination of damages is bound to lump-sum compensation if it occurs that the customer has to be accounted for the damages.

#### **4.8. Spare parts**

Our liability to deliver and hold spare parts available is limited to the period of 5 years after initial shipment of the product. Our respective list prices apply for spare parts.

#### **4.9. Disposal**

We offer our customers to take back products that fall under the restriction of hazardous substances directive (ElektroG) within Germany free of charge, for products, which were brought into circulation after the 13th of August 2005. We will take care for the disposal. If a customer chooses not to let us take care for the disposal, he takes the responsibility of a disposal according to legal regulations and discharges us from our liabilities according to §10 sect. 2 ElektroG and any associated liabilities of others.

#### **4.10. Subject to alterations**

The manufacture has the right for changes in hardware and software of the product at any time without preliminary notice, as long as these changes advance reliability or quality of the skimmer. No claims can be made if for instance design, functionality or performance of the skimmer changes elementary. The assured specification of the skimmer is always guaranteed.

## **5. Manufacturer's declaration**

Titles against **Royal Exclusiv®** concerning the products described in this manual address on the **Royal Exclusiv®** guarantee clauses. Specification may vary due technical improvements.

### **5.1. Manufacturer**

#### **Royal Exclusiv® pumps and skimmers**

Richard-Byrd-Str. 7 // 50829 Cologne // Germany

Fon +49(0)221/222886 0 // Fax +49(0)221/22288622

info@royal-exclusiv.de // www.royal-exclusiv.de

#### **Made in Germany**

Royal-Exclusiv® EAR-number: WEE.Reg.No. 83082352

### **5.2. Informations and support**

Thank your for purchasing a **Royal Exclusiv®** Mini Red Dragon protein skimmer pump. This protein skimmer is a high quality product made in Germany with the highest manufacturing demands on modern CNC machines. This manual is supposed to help you to setup the protein skimmer for use and to advice you with the necessarily maintenance procedures.

To ensure longlasting satisfaction with this product we please you to read this manual carefully and follow our guidelines.

**Royal Exclusiv®** guarantees 5 years of spare part availability for the Mini Red Dragon protein skimmer pump.

Should the device in some way not meet the high demands you expect from **Royal Exclusiv®** please contact the dealer where you purchases your Mini Red Dragon protein skimmer pump. This is usually the best way for product support. However you may feel free to contact our support on our website: <http://www.royal-exclusiv.de>