RACS (Rotating Animal Cage System)

Installation and Operation manual

Thank you for purchasing our system for monitoring different events in awake animals.

On the following pages you will find information which is necessary for safe operation. Please review the following instructions, including warnings and safety instructions, for your personal safety.

Please provide this manual to all personnel who will be operating the RACS.

If you need help in installing or operating this equipment, please contact your dealer or **Microbiotech/se AB** directly.

Microbiotech/se AB
Box 47172
100 74 Stockholm
Sweden

Phone: +46-8-726 96 06
Fax: +46-8-726 83 10
E-mail: mab@microbiotech.se

Table of contents

A. General warnings

Caution: Keep all objects away from the rotating parts of the RACS. Also watch loose parts, like long hair, clothes, jewlery etc.

The RACS is designed to be used within the following environmental conditions:
- Indoor use
- Temperatures 10 to 35 degrees Celsius
- Humidity within normal indoor conditions does not effect the individual components of the system.

B. Safety instruction for RACS

Always make sure that the connections to and from the animal are properly secured in each ends. Place instrumentation such as pumps/fraction collector/sensor electronics etc. as close to the end of the balance arm as possible but without risking the arm to entangle in any of the equipment when moving up/down and sideways.

C. Installation

Before installation read all safety instructions and warnings.

Unpack the box containing the parts for the RACS. Check that it correlates to the following check list.

1. Balancing arm	1 pc
2. Balancing weight	1 pc
3. Rotating plate with drive unit	1 pc
4. Wire with tether long/short	2 pcs
5. Animal collar	25 pcs
6. Rod and round plate for holding balancing arm	1 pc
7. Side arm for holding Rod	1 pc
8. Power supply with cable	1 pc
9. User’s manual	1 pc

A: Attach the Side arm to the back side of the Rotating plate drive unit by sliding it into the holes and securing it at desired length using fingers.
B: Slide the round plate with Rod onto the side arm and secure it at desired length using fingers.
C: Slide the Balancing arm onto the Rod fixed to the round plate and secure it at desired height. Alternatively you may fix the stopper to the rod at a desired height and have the Balancing arm rest on the top of the stopper enabling the arm to rotate freely with the animal.
D: Adjust the Balancing arm so the swivel is centred in the cage and adjust the Balancing weight accordingly.
E: Connect the cable from the Balancing arm to the drive unit and connect the power supply cable to the drive The power supply itself is plugged into the mains socket.
F: Make sure the power light next to the power supply cable inlet is lit and then press the start button on the front of the drive unit.
G: The rotation speed is adjusted by using the knob wheel on the drive unit front panel.

D. Features of the RACS

The RACS is designed to be used in applications involving awake smaller rodents where it is desired to connect different tubes/lines/wires etc. to the animal. RACS will allow for the animal to move around without entangling the different connections during movement. Sensors detect when the animal turns and send signals to rotate the plate in the different direction at a user defined speed depending on animal activity level.
A distinctive feature of the RACS is the flexible design of the balancing arm and the cage adapter. It is possible to adjust the height of the balancing arm, to a certain degree, as well as the length of the balancing arm and also to have the balancing arm rotate with the animal. This way the system easily fits with many of the different cages and containers used. Rectangular cage in sizes up to 47 x 27 cm or round bowls 27 x 27 cm may be used.

E. Functions

The RACS is intended for use in different monitoring applications in laboratory research conditions. Since the applications include handling of live subjects it is the responsibility of the individual users to ensure safety and good ethics.

F. Maintenance

The RACS itself does not need any regular service or lubrication while the different monitoring techniques used may need attention paid to tubing carrying liquid, electrical wires, optical fibres etc. When not in use turn the system off.

G. Warranty

The RACS is warranted to be free from manufacturing defects. In case of warranty claims please note that we accept claims on manufacturing defects up until three months after date of delivery. It is the customer responsibility to pay for the transportation back to the factory.

The warranty is only valid for production errors, and does not cover faults caused by misuse or failure to follow the manual. Unauthorised repair also makes the warranty invalid. Secondary failures cannot be considered as basis for a claim in any case. There is no warranty other parts not included with the system, which are consumed on a regular basis.

H. Helpful hints

Checklist when encountering unknown events.

Steel wire connection to plastic collar and rotating arm:

In order to achieve the most secure connection to the plastic collar we recommend that the connector at the end of the steel wire is fixed so it goes through one of the ladder holes in the collar. This way it cannot move sideways during the experiment. Please ensure that the connector is properly locked after fixed in position. The upper part of the steel wire is fixed in position through two holes in the rotating lower part fixed to the balancing arm. Using the MAB Steel wire is a suggestion and it may be replaced by any other tethering device of choice which may be fitted in the two holes.

The plate does not move:

Make sure the power adapter cord is plugged in properly in both ends, that the power indicator light is on and when pressed that the system start button on the drive unit front panel light up. Set the plate speed in the middle of its span. When these are checked turn the black lower part holding the steel wire gently using fingers to one of its end positions. The plate should now move, if it does not move the black lower part to other end position to check if there is movement.

If all things are checked, indicators light up but still no movement the sensors in the balance arm may be defect and contacting Microbiotech or your local representative is recommended.

Stockholm, 2024

<u>User’s Manual</u>

RACS
Rotating Animal Cage System