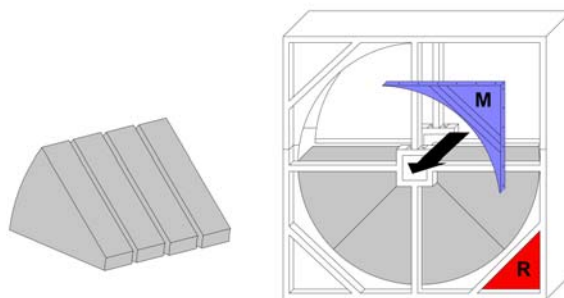


Assembly instructions / standing (vertical) installation MM3 for divided casing (B) with segmented rotors (S)

Size 3300 - 5000

with mounting corner and pre-mounted rotor half in casing
bottom part



Contents

A. Notes / List of required tools	Page 2
B. Delivery	Page 3
C. Inspecting the Installation situation.....	Page 4
D. Assembly.....	Page 5-13
1. Assembly casing	
2. Assembly rotor	
2.1 Blocking the rotor	
2.2 Assembly of the segments, circumferential panels and spacer discs	
2.3 Assembly of the last segment	
2.4 Spacer discs removal, rotor alignment	
2.5 Clamping of the circumferential panels	
3. Mounting of V-belt, mounting corner and seals	
3.1 V-belt mounting	
3.2 Rotation sensor mounting	
3.3 Mounting corners mounting	
3.4 Seals mounting	
4. Duct connections	

A. Notes / List of required tools

Important notes:

Rotors of this type are split up into various number of segments depending on application and site. The location of the mounting corner as well as the number and position of the inspection openings can deviate from these assembly examples.

These assembly instructions describe the procedure according to the example of a rotor that has been split up into eight segments. One half (four segments) has already been factory pre-assembled and thus serves as an assembly example.

The principle of the assembly remains the same for all segmentations.

The following segmentations are possible: 4, 6, 8, 10, 12 and 16 segments.

Please read these instruction through completely before beginning with the assembly. This is especially important in regards to the correct assembly of the rotor circumference panels (encasing panels), because two different versions are delivered here.

The assembly should be carried out only by experienced machine construction engineers.

We recommend a supervision by our specialists or having them carry out the assembly.

For the assembly of rotorsystems operating in the lying (horizontal) position, we strongly encourage the mounting instructions by our technicians.

Required tools and supplies:

Encasing / mounting corner / seals:

Impact screwdriver, SW 10 bit
Socket bit SW 10

Rotor:

2 ratchets with extensions
Socket bit SW 10 (for segment wall foot screws)
Socket bit SW 8 (for encasing panel screws)
Installation lever
Tongs
Tension belt (longer than rotor circumference)
Gloves
Timber beams for blocking the rotor

V-belt and rotation sensor:

Drill
Drill bit (2.5 mm)
Adhesive tape
Riveting tongs
Diagonal cutting nipper
Phillips screwdriver
Cable retainers

B. Delivery

Delivery of a rotorsystem comes in three parts per device (Figure 1):

1. Casing bottom part with pre-assembled rotor half, circumferential panels and the pivoting motor base with mounted on drive motor and screws for the casing mounting.
2. Casing top part
3. Box or boxes with segments still to be mounted, Casing sheets and small parts (V-belts, screws, etc.)

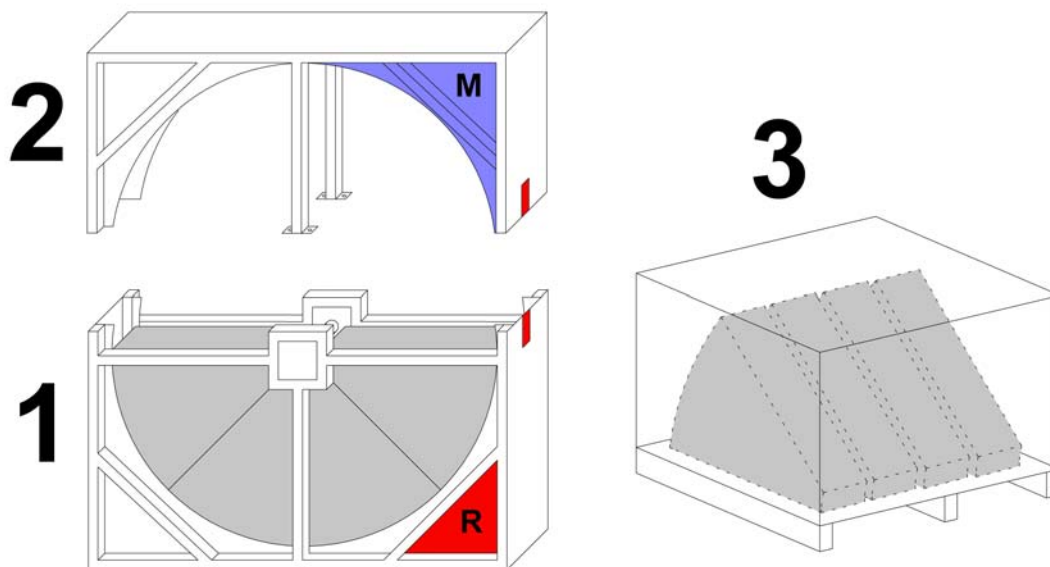


Figure 1

C. Inspecting the installation situation

In case the rotorsystem is equipped with a purge sector, the following needs to be observed:

- Always install the purge sector on the inner side of the building (the warm rotor side).
- To guarantee the function of the purge sector the later operational direction of rotation of the rotor needs to be taken into account.
- **The outgoing air always needs to turn into the purge sector.** (Figure 2)

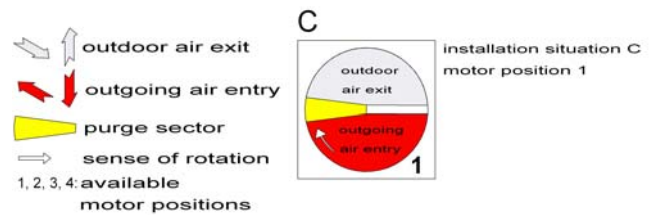
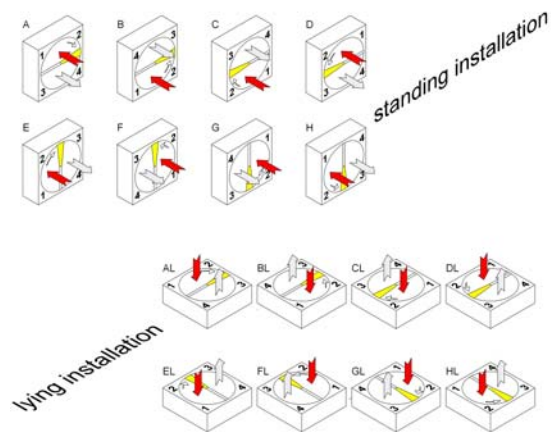


Figure 2

When building the support construction the following needs to be observed:

- The casing foundation has to be flat and level.
- Above all the weight support of the centre hub needs to be taken into account (Figure 3).
- The middle traverse of the encasing may not bend through.

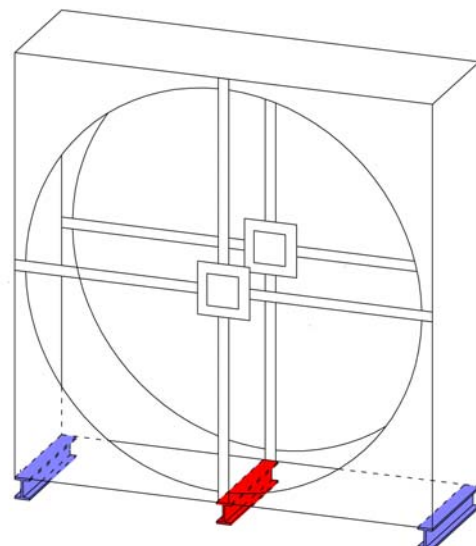


Figure 3

D. Assembly

1. Assembly casing

- Place casing top part onto casing bottom part.
- Observe markings.
- Screw casing top part to encasing bottom part.

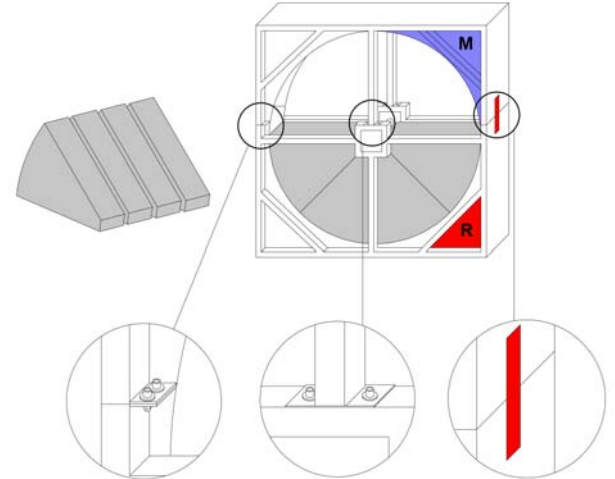


Figure 4

- **Unscrew mounting corner**
(Figure 5)

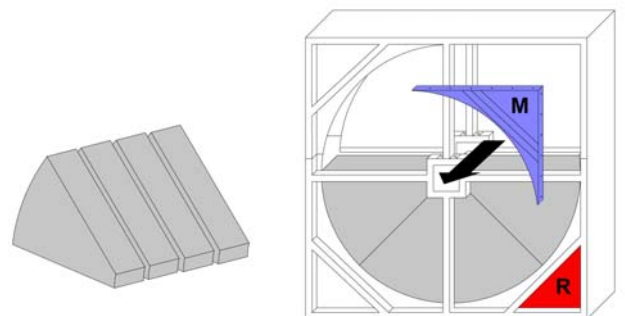


Figure 5

2. Assembly rotor

2.1 Blocking the rotor

- **The heat storing mass is very sensitive! Avoid high pressure, knocks, etc.**
- The already mounted rotor part needs to be blocked by a timber beam or by timber beams before installing the next segment. (Figure 6)

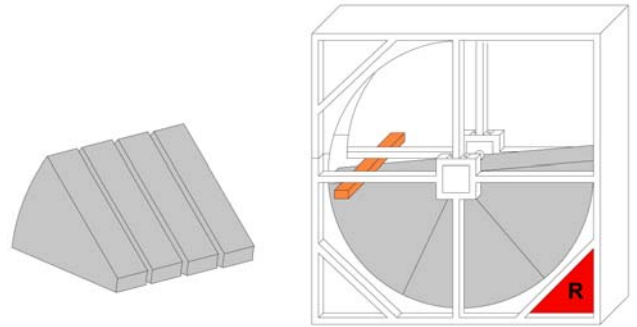


Figure 6

Attention Accident hazard!!!

2.2 Assembly of the segments, circumferential panels and spacer discs

- During the assembly of the segments be sure to keep track of the numbering (segments are numbered in order, see Figure 7).
- Do not remove the square profiles (transport protection) until the segment ahead of it has been mounted.
- The appropriate segment needs to be inserted through the mounting corner into the guide grooves of the preceding segment. Screw the segment foot to the rotor hub using the M12 x 40 socket screws. Do not forget the retainers.
- **The supplied spacer discs definitely have to be placed as assembly aids between the segment foot and the rotor hub (to install the last segment) (Figure 8).**
- **Insert socket screws, but do not tighten yet!**
- To each new inserted segment, also attach an **circumferential panel** with M10x30 socket screws. Do not forget washers! **Screw in the screws only about half way!** Refer to Figure 7, 8, 9 and 10.

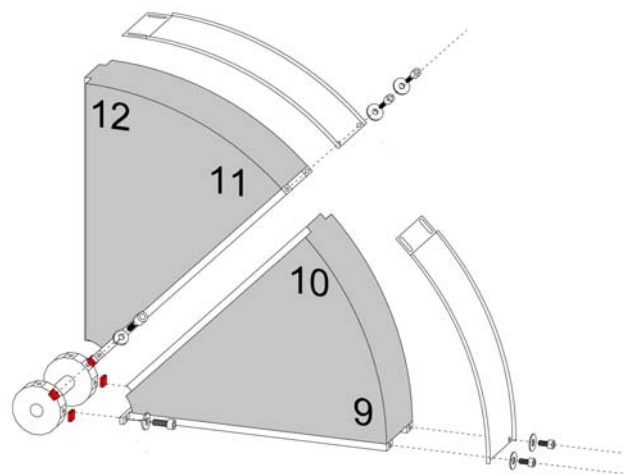


Figure 7

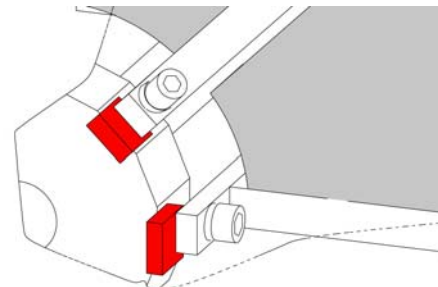


Figure 8

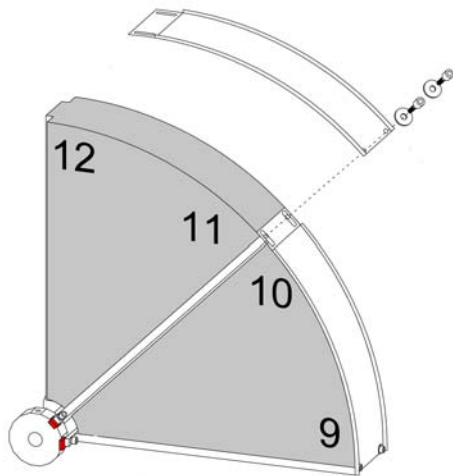


Figure 9

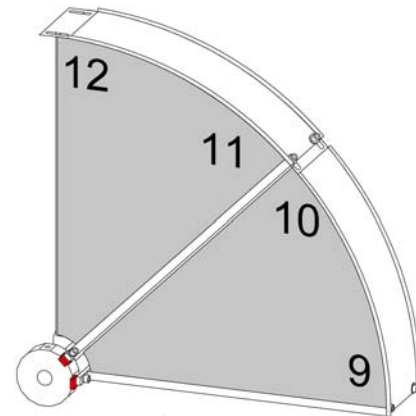


Figure 10

- ***In case the circumferential panels are made of steel and are equipped with an additional clamping device (Figure 11), then also loosely mount the M12x120 screws, plain washer and self-securing nuts intended for this loosely as well.***

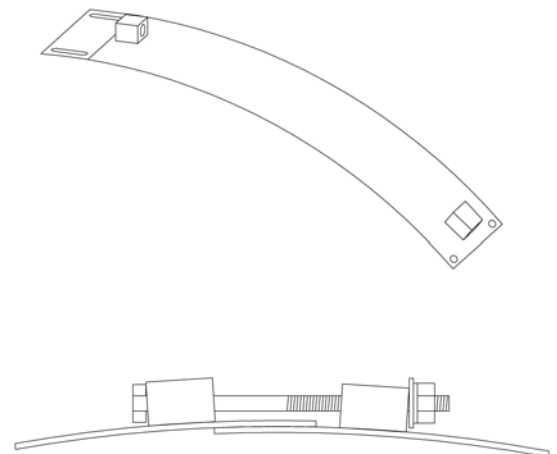


Figure 11

2.3 Assembly of the last segment

- When the last segment is mounted no spacer discs are needed any more. (Figure 12)
- Integrate the last rotor circumferential panel into the rotor circumferential panel ring (Figures 12 and 13). The last circumferential panel needs to be brought under the first circumferential panel. For this the screws of the first, already attached circumferential panel have to be screwed out again.

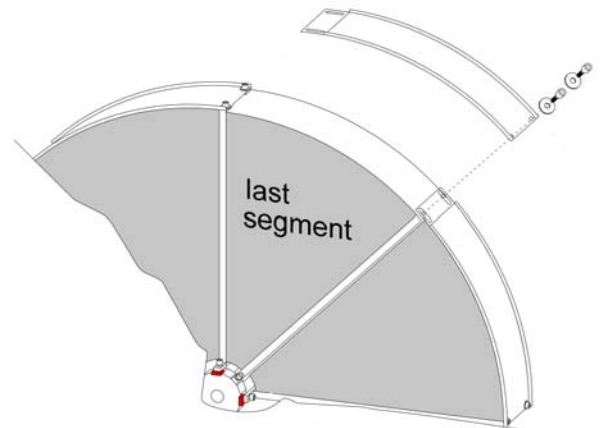


Figure 12

2.4 Spacer discs removal

- Remove the spacer discs; tighten opposite socket screws evenly segment by segment (Figures 13 and 14). Always make sure the rotor can turn freely!
- If the mounting has been done properly the play of the rotor should be less than 1 mm per meter rotor diameter. In rare cases it can be necessary to even out the play by inserting the supplied strips.

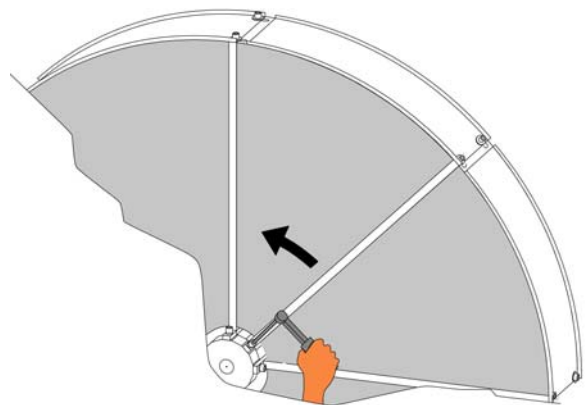


Figure 13

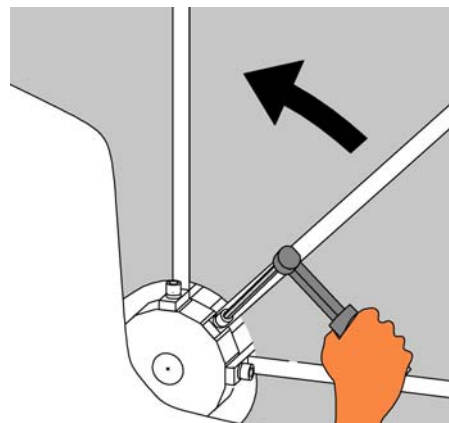


Figure 14

2.5 Clamping of the encasing panels

- **Attention! In case the circumferential panels feature an additional clamping device, then no tension belt is necessary. The rotor casing is clamped using the tensioning screws. The tensioning should be done as evenly as possible. It is recommendable to turn the rotor around several times.**
 - Tighten the rotor with the tension belt after screwing on the circumferential panels.
(The tension belt is laid around the rotor like the V-belt using adhesive tape, see Figure 16)
 - During the tightening make sure that the mounted circumferential panels can be pulled together without a problem, loosen the M10 screws again if necessary.
 - After the rotor has been firmly clamped, tighten the M10 socket screws firmly (Figure 15)
- If the rotor cannot be turned completely with the tension belt (tension belt lock), then this procedure needs to be repeated several times until all M10 socket screws have been firmly tightened.

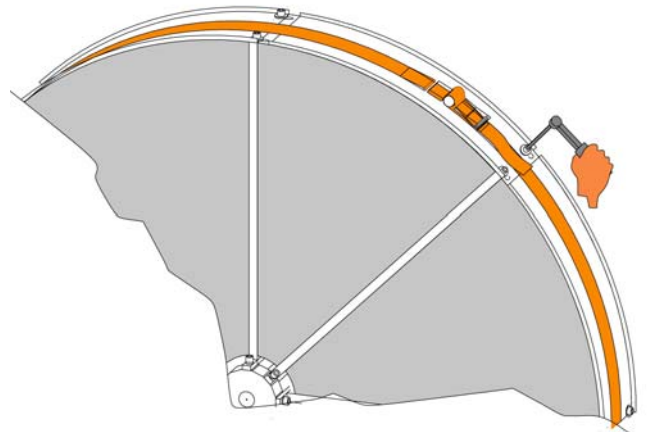


Figure 15

3. Mounting of V-belt, rotation sensor, mounting corner and seals

3.1 V-belt mounting

- Open inspection cover.
- Attach a belt end to the rotor with adhesive tape. (Figure 16)
- Make sure that the V-belt does not twist as the rotor turns.
- Turn rotor and place the drive belt over the V-belt pulley – shorten so that there is sufficient clamp travel at the pivoting motor base. (Figure 18)

Figure 18:

- 1 Drive motor
- 2 V-belt pulley
- 3 V-belt
- 4 V-belt lock
- 5 Pivoting motor base
- 6 Tension spring
- 7 Buffer element

- Shorten the belt according to Figure 17 and attach V-belt lock.
- **Attention! The drive belt may not be tensioned too much. Too much tension may damage the rotor casing and the variable speed drive unit. The drive motor may only be tensioned so that the drive belt does not slip.**

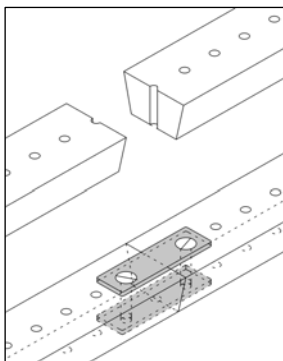


Figure 17

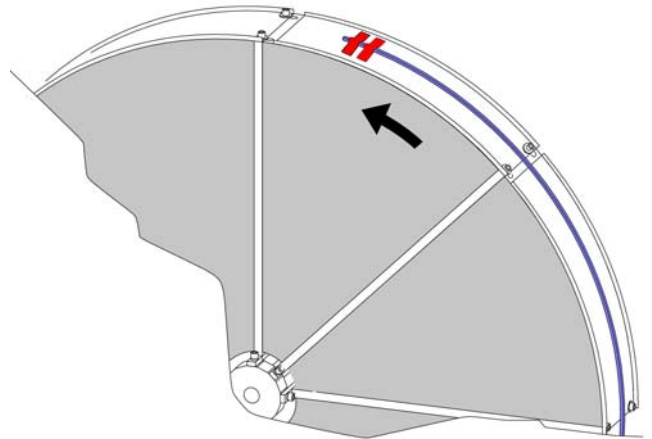


Figure 16

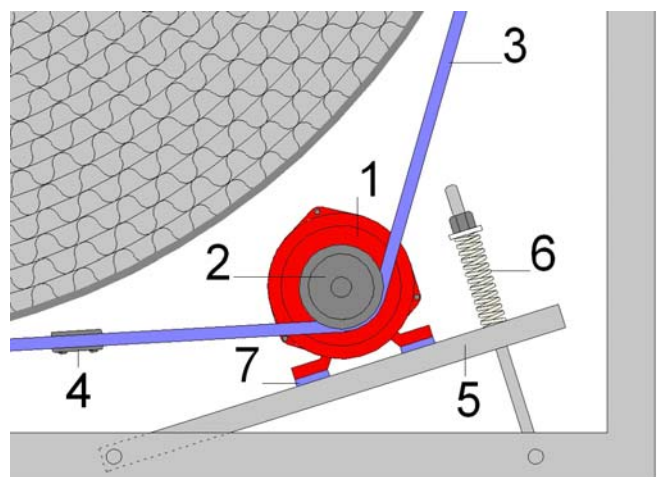


Figure 18

3.2 Rotation sensor mounting

- Attach the holder for the rotation sensor into the rotor system encasing so that after the mounting of the rotation sensor a gap of 5 – 8 mm can be made between magnet and rotations sensor.
- The magnet of the pulser i.e. the rotation sensor has to be screwed onto the circumference panel of the heat exchanger. Make sure that only the circumference panel of the rotor and not the accumulator is drilled into.
- In most cases the rotor's circumference panel is made of aluminium. The magnet can be screwed directly to the circumference panel.
- If the circumference panel is made of magnetic material, then an insulating buffer needs to be attached between the magnet and the circumference panel.
- The connection to the controller can be found in the corresponding operating instructions for rotortronic variable speed drive units.

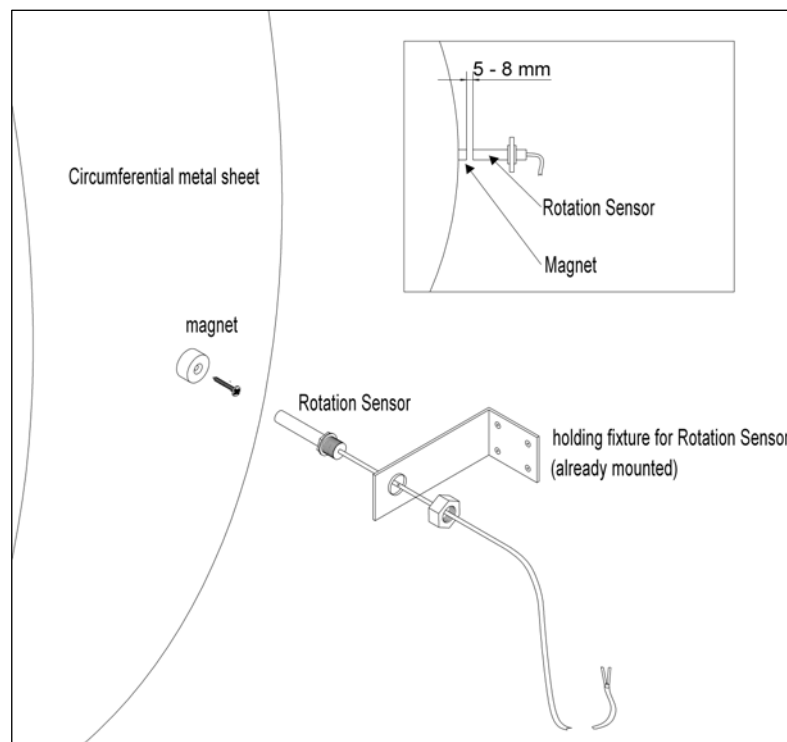


Figure 19

3.3 Mounting corners mounting

- Insert the mounting corner again and fasten to the casing frame with the appropriate screws.

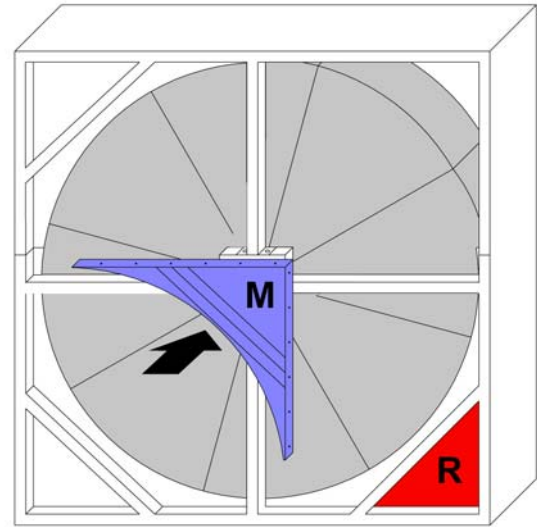


Figure 20

3.4 Seals mounting

- Middle seal Z-plates (Figure 21) depending on intended air flow distribution attach either to the horizontal or the vertical middle spar with the supplied cutting screws.
- **The middle seals should lie as close as possible, but not drag! To check the proper setting the rotor should be turned several times carefully by hand.**

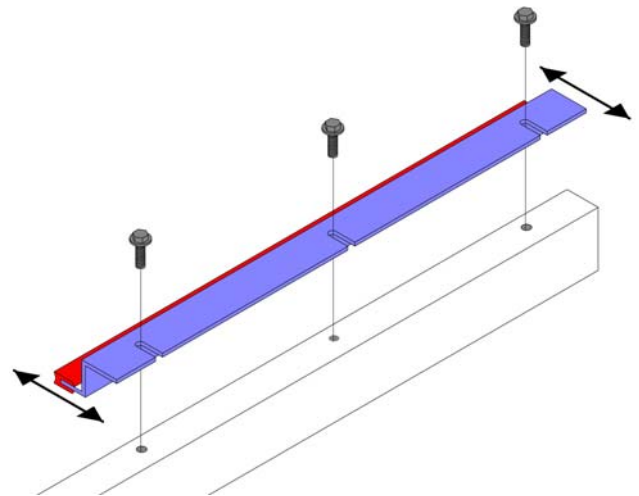


Figure 21

- Fasten bearing box seals (Figure 22) with cutting screws.

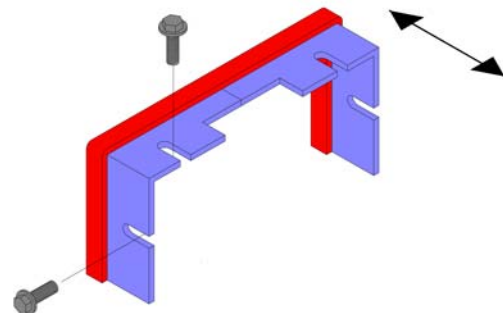


Figure 22

- The circumferential seals are held by spring clamps are further secured by an additional spring steel sheet. The rubber seal is pushed gently up against the rotor with a screwdriver (Figure 23). The circumferential seal is pushed back slightly by the rotating rotor, thereby bringing it into optimal operational position.

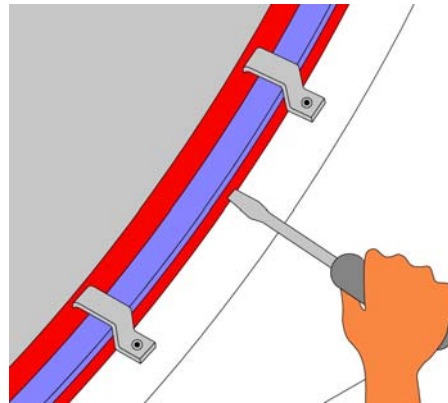


Figure 23

4. Duct connections

- When mounting the ducts to the rotor system casing, make sure that no forces act on the casing that could change the casing position. In critical situations we recommend installing elastic studs between rotor casing and air duct.

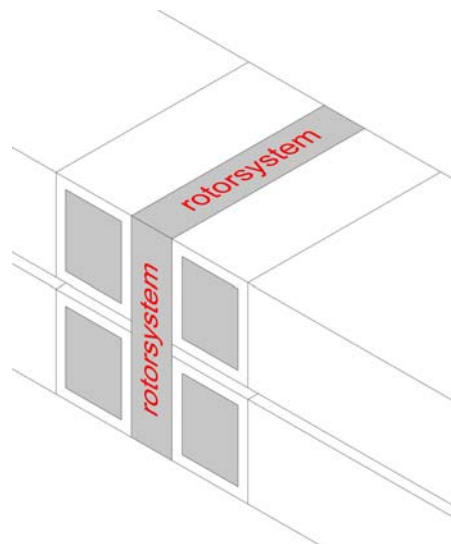


Figure 24

Note:

For installing and connecting the corresponding rotortronic speed regulation device, please refer to the supplied respective instructions.

In case these instructions are not available, please request them from us. The instructions can be found on our Internet site as a pdf file in the "download" area.

Technical specifications subject to change / Version 5.6