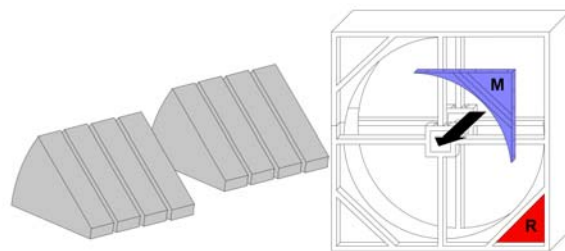


Assembly instructions / standing (vertical) installation MO3 for divided casing (B) with segmented rotors (S)

Size 3300 - 5000

**with mounting corner and without 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, circumference panels and spacer discs	
2.3 Assembly of the last segment	
2.4 Spacer discs removal, rotor alignment	
2.5 Clamping of the circumference 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 the pivoting motor base with mounted on drive motor
2. Casing top part
3. Box or boxes with segments still to be mounted, Casing sheets, circumferential panels and small parts (V-belts, screws, etc.)

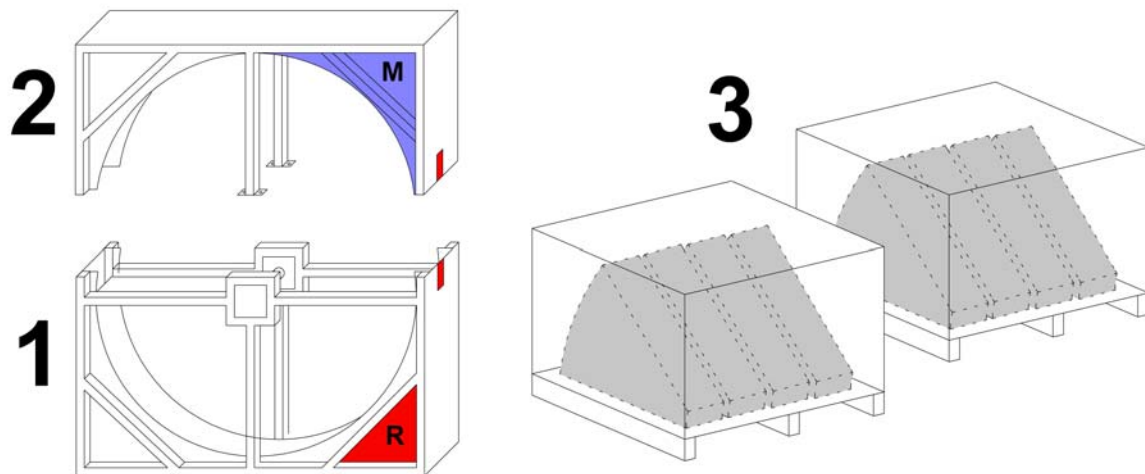


Figure 1

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)**

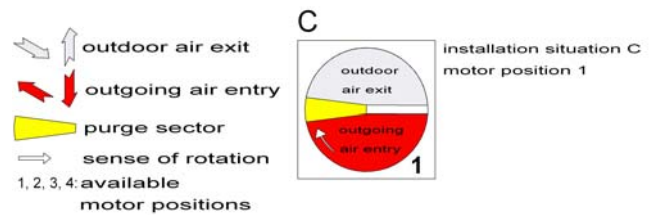
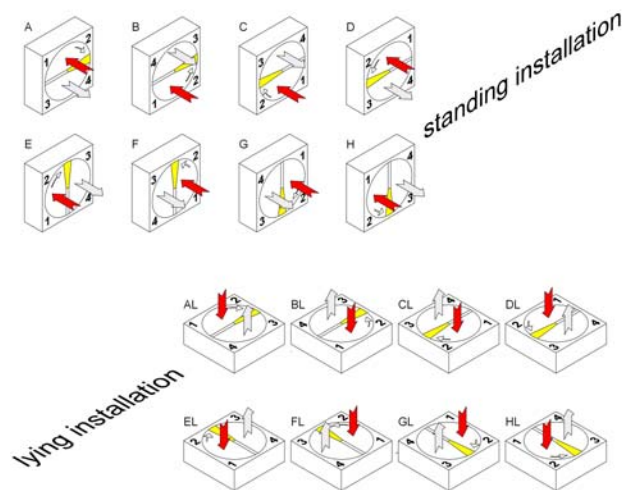


Figure 2

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 casing may not bend through.

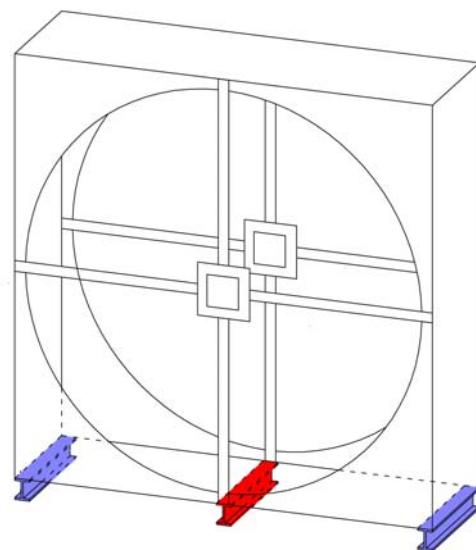


Figure 3

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)

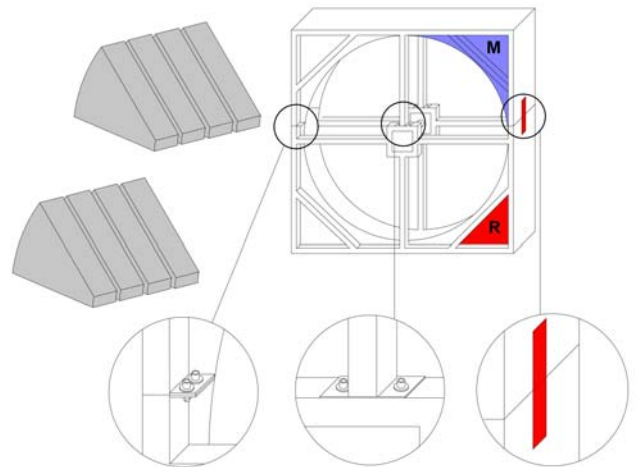


Figure 4

- Screw the “segment wall for checking the correct installation situation” of Rotor hub and casing tightly on the rotor hub. Remove possible pollutions between rotor hub and segment wall foot before.
- When controlling the correct installation of the rotor hub also check that the distances between the segment wall for aligning and the 8 metal beams are nearly the same (figure 5 und 6).
- Usually it is not necessary to re align the rotor hub, because it was carefully preassembled in the work. When controlling the 8 distances to the beams, small deviations should be neglected.
- Remove the “segment wall for checking the correct installation situation”.

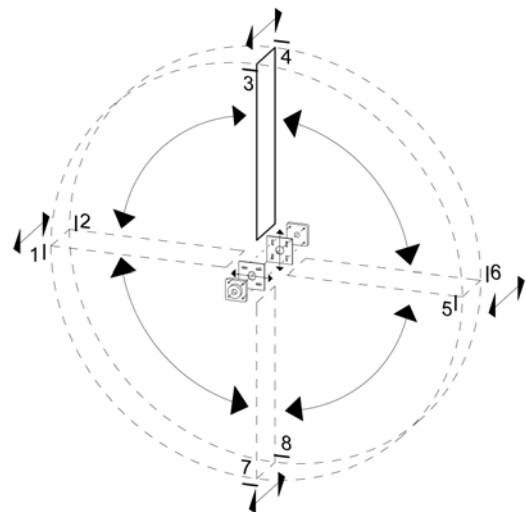


figure 5

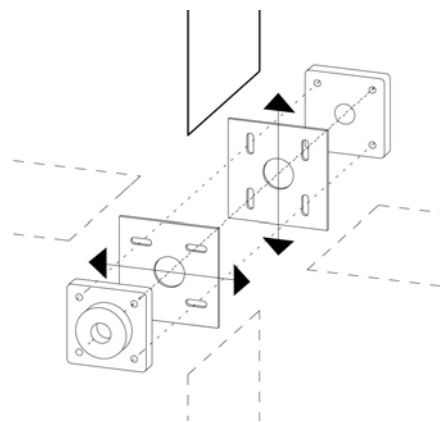


figure 6

- **Unscrew mounting corner**
(Figure 7)

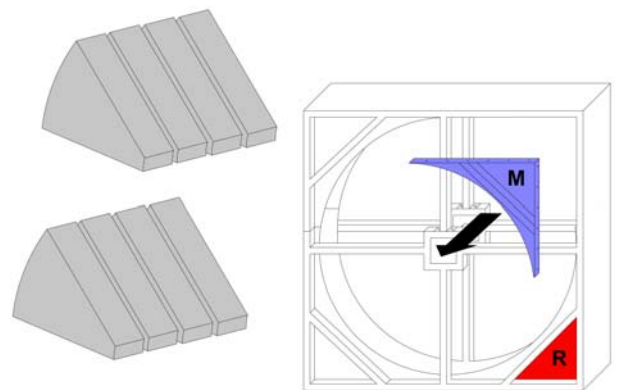


Figure 7

2. Assembly rotor

2.1 Blocking the rotor

- **The heat storing mass is very sensitive! Avoid high pressure, knocks, etc.**
- It is expedient to use a timber beam to mount the segments (Figure 8)

- The segments are numbered in order. Start rotor mounting with segment 1-2. Next segment 3-4 etc.

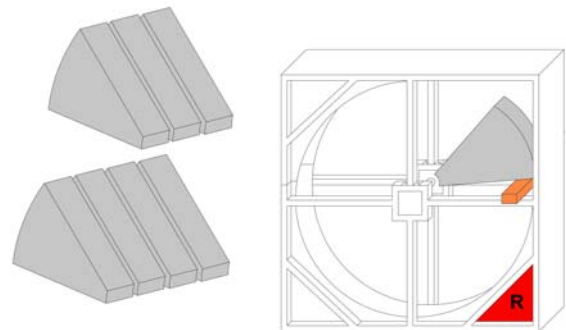


Figure 8

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 9).
- 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 10).**
- **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 9, 10, 11 and 12.

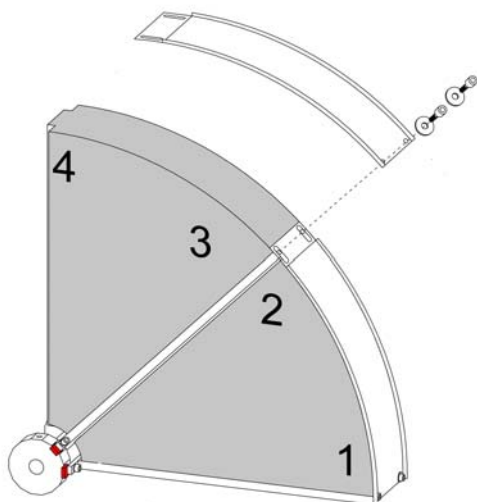


Figure 9

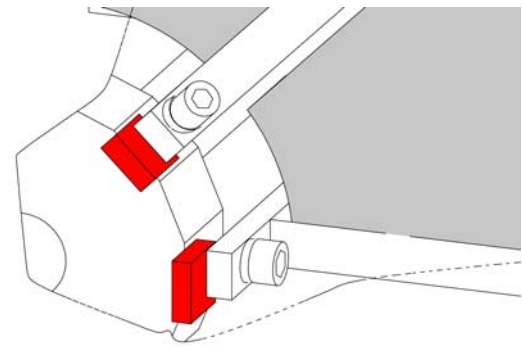


Figure 10

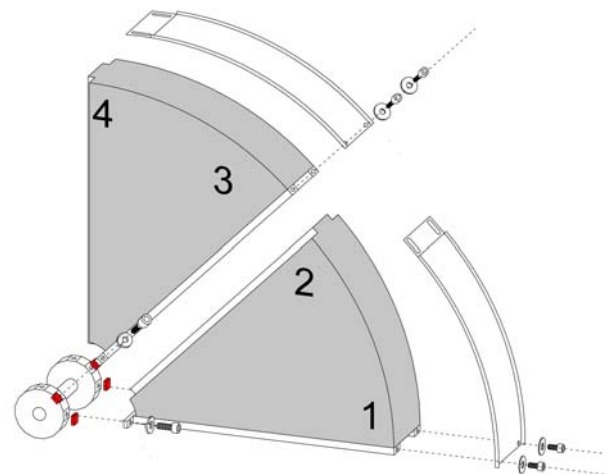


Figure 11

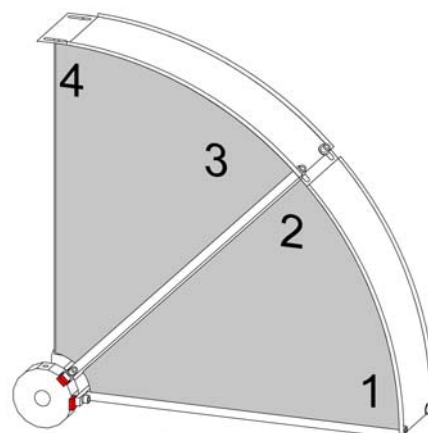


Figure 12

- ***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.***

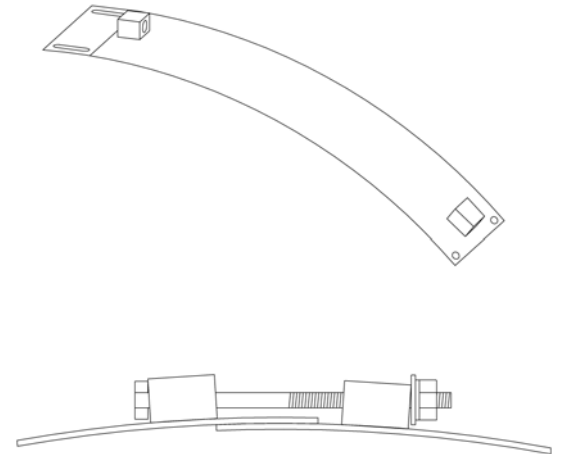


Figure 13

2.3 Assembly of the last segment

- When the last segment is mounted no spacer discs are needed any more. (Figure 14)
- Integrate the last rotor circumferential panel into the rotor circumferential panel ring (Figures 14 and 15). 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.

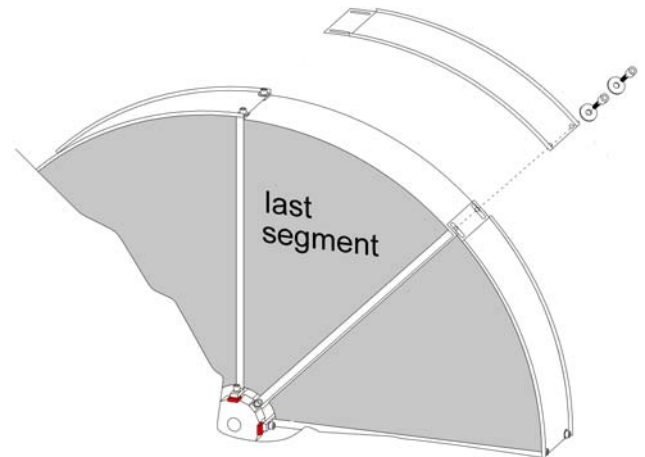


Figure 14

2.4 Spacer discs removal

- Remove the spacer discs; tighten opposite socket screws evenly segment by segment (Figures 15 and 16). 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.

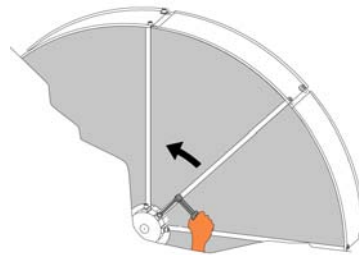


Figure 15

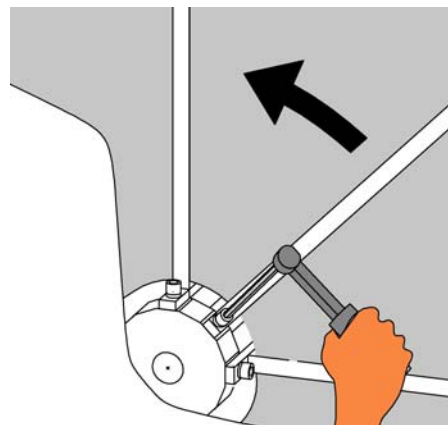


Figure 16

2.5 Clamping of the circumferential 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 18)

- 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 17)

- 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.

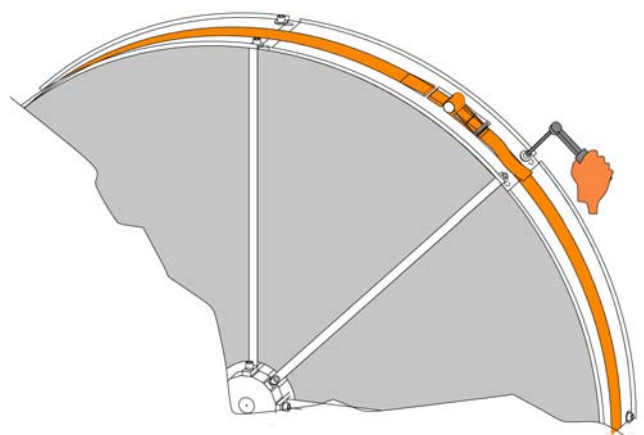


Figure 17

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 18)
- 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 20)

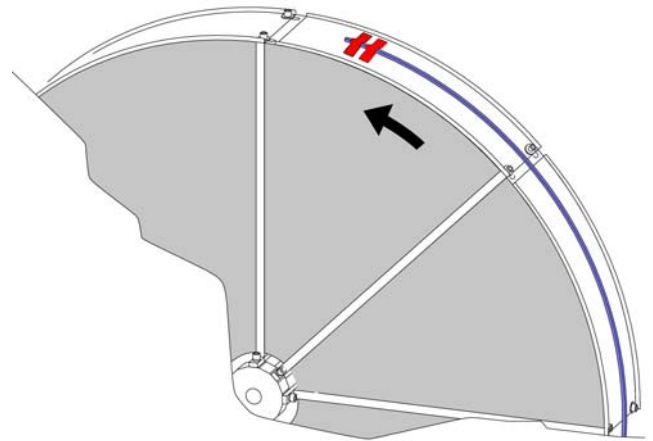


Figure 18

Figure 20:

- 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. File down or cut off protruding screw thread.
- **Attention! The drive belt may not be tensioned too much. Too much tension may damage the rotor circumferential panels and the variable speed drive unit. The drive motor may only be tensioned so that the drive belt does not slip.**

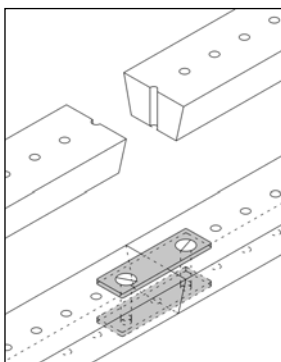


Figure 19

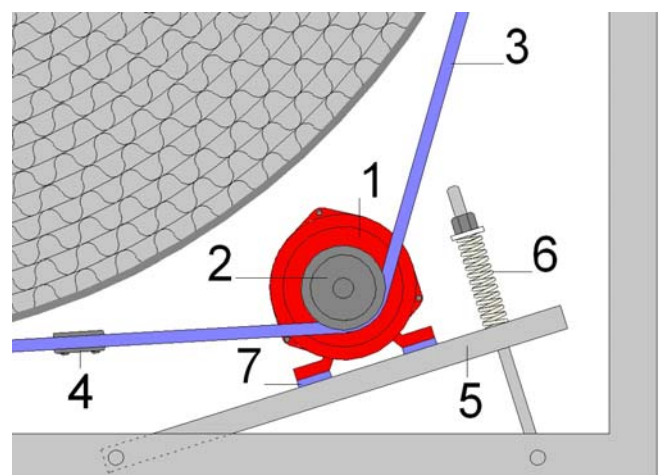


Figure 20

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 circumferential panel of the heat exchanger. Make sure that only the circumferential panel of the rotor and not the heat storing mass is drilled into.
- In most cases the rotor's circumferential panel is made of aluminium. The magnet can be screwed directly to the circumferential panel.
- If the circumferential panel is made of magnetic material, then an insulating buffer needs to be attached between the magnet and the circumferential panel.
- The connection to the controller can be found in the corresponding operating instructions for rotortronic variable speed drive units.

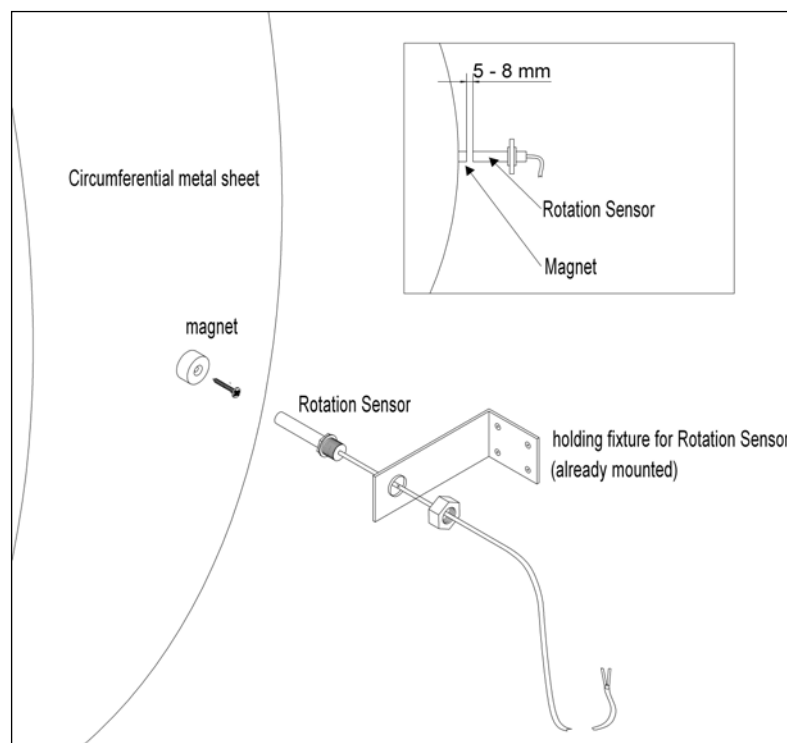


Figure 21

3.3 Insert of Mounting corner

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

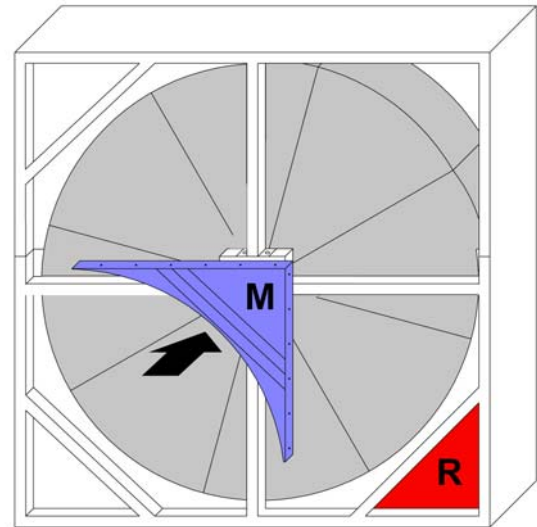


Figure 22

3.4 Seals mounting

- Middle seal Z-plates (Figure 23) 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.**

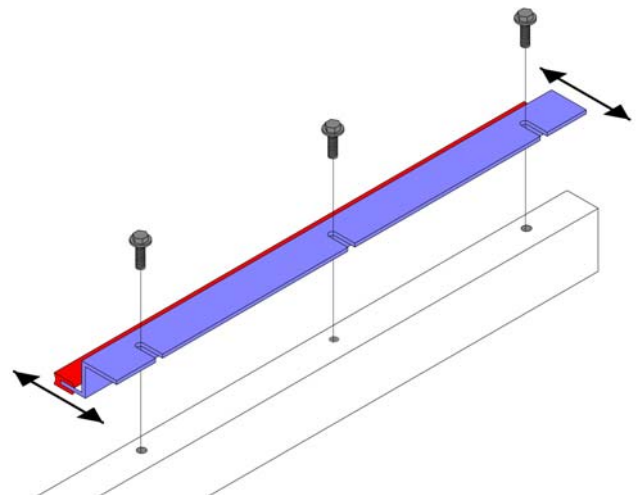


Figure 23

- Fasten bearing box seals (Figure 24) with cutting screws.

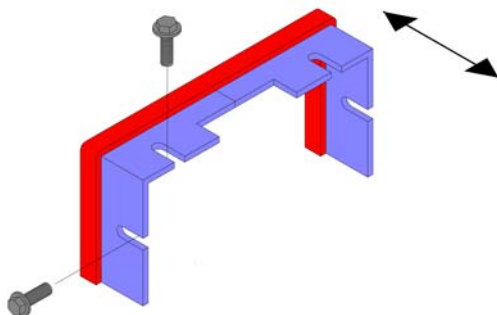


Figure 24

- The circumferential seals are held by spring clamps. The 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 25). The circumferential seal is pushed back slightly by the rotating rotor, thereby bringing it into optimal operational position.

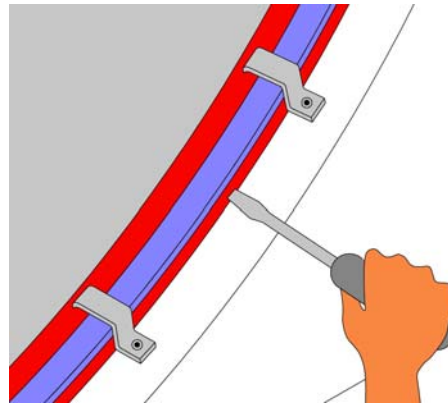


Figure 25

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.

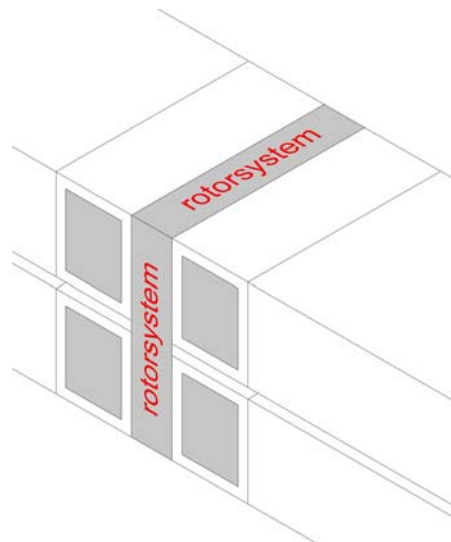


Figure 26

Note:

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

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