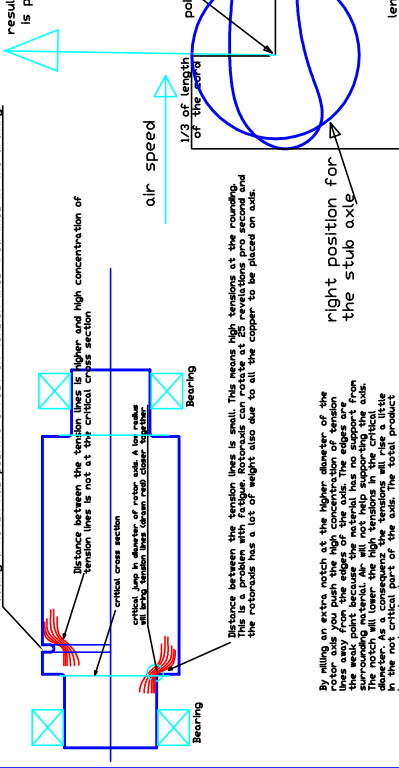


Simplified image of a rotor axis

Heavy rotor axles feel high bending moment. Due to its rotational speed fatigue is a problem. A good design is very important. By making a notch in the axle with higher diameter a better tension situation will occur at the transition from higher to lower diameter of the rotor axis. Due to the notch the higher tensions will be transferred more towards the middle of the axle. The stress concentration will be less because the material is stronger and cheaper. Because there is no material. Due to this redesign the rotor axis is stronger and cheaper. The material from which the axle is made is very expensive. Due to the notch more material can be recycled.

adding a notch has positive effect on tension lines (red lines in the drawing)



By filling an extra notch at the higher diameter of the rotor axle you push the high concentration of tension lines away from the edges of the axle. The edges are the weak point because the material has no support from surrounding material. Air will not help supporting the axle. The material will be stronger and cheaper. As a consequence the tensions will rise a little in the not critical part of the axle. The total product is now made much stronger.

DESIGNED BY A SENIOR ENGINEER AND NOT A JUNIOR ENGINEER. THE SENIOR ENGINEER SHOULD BE RESPONSIBLE FOR THE DESIGN. THE JUNIOR ENGINEER SHOULD BE RESPONSIBLE FOR THE MANUFACTURE. THE SENIOR ENGINEER SHOULD BE RESPONSIBLE FOR THE DESIGN AND MANUFACTURE. THE JUNIOR ENGINEER SHOULD BE RESPONSIBLE FOR THE MANUFACTURE. THE SENIOR ENGINEER SHOULD BE RESPONSIBLE FOR THE DESIGN AND MANUFACTURE. THE JUNIOR ENGINEER SHOULD BE RESPONSIBLE FOR THE MANUFACTURE.

Holding the wing shaped vane at point A gives a better tension situation. When stub axle is placed at point B (1/3 of core length) will occur in the transition from vane to stub shaft in point B will lower the tensions in the