Reasons for excessive temperature of thrust bearing:

The forming principle of thrust tile oil film is the same as that between two plates.When the turbine is at rest, the thrust tile surface is parallel to the thrust disc surface.When steam turbine rotational, thrust dribble the oil into the gap, when the rotor axial force, gap medium oil film pressure, passed to the segment, initially hydraulic force no effect in tile supporting shoulder, but a slant on the inlet side. Together with the supporting a couple formed between shoulder, make tile deflection, forming oil film.With the deflection of the tile, the oil pressure force (Q) moves to the side of the oil outlet. When the force moves to the supporting shoulder, the tile keeps its balance. The oil pressure in the oil wedge and the axial thrust on the thrust plate keep the balance.

During operation, due to the vibration, uneven expansion and improper operation of the unit, the steam seal and resistance blade wear is caused, and the gap increases, resulting in increased inter-stage steam leakage. The axial thrust of the wheel disc and the convex shoulder of the steam seal increases.Therefore, operators should strictly operate according to the procedures to ensure that the cylinder flange heating up the temperature difference between the upper and lower cylinders, rotor and cylinder expansion difference, and vibration value within the standard range.During installation and maintenance, ensure that the clearance of seal, block vane and flow passage meet the quality standards.

During operation, due to the salt scale on the blade, the pressure drop of the steam flow through the separator and blade increases, and the reaction degree of the working blade increases accordingly. The axial thrust on the rotor disc and blade increases. The thrust bearing of the thrust tile is greater than the design value, and the temperature of the thrust tile increases.This situation can be determined by the pressure change in the monitoring section. At this time, the pressure in the monitoring section is high, and the pressure change in the monitoring section is generally no more than 15%. If it is greater than 15%, it should be stopped for processing.When blade scale is serious, it can be cleaned by reducing the load with warm water.Meanwhile, the quality management of chemical desalination should be strengthened.

The reduction of the vacuum of the unit and the wear on the inlet and outlet side of the rotor blade will increase the axial thrust of the rotor and raise the temperature of the thrust tile.When the vacuum decreases, the temperature of cylinder exhaust steam increases, and the reaction degree of rotor blade at the end stage increases, which increases the axial thrust.Therefore, increasing the vacuum of the unit can also reduce the temperature of the thrust tile.