

Mar. 7, 2012  
CT-S-023 / 796-94435

## Replacement of thrust bearing with improved type

### REASON FOR SUGGESTION:

Recently the output demand of the turbine and compressor is increasing. So, we have developed thrust bearing for higher load.

The improvement is as follows.

- 1) Direct lubrication nozzle is applied to supply necessary oil, and used oil in the bearing housing is quickly drained.
- 2) Copper alloy is applied as back metal of bearing pad to improve cooling capability.
- 3) Off set of the bearing pad pivot is applied to increase oil film thickness, and has improved the load ability.
- 4) The shape of leveling plate was improved to reduce friction.

A sufficient improvement of the bearing metal temperature can be achieved by these modifications.

### DETAILS OF SUGGESTION:

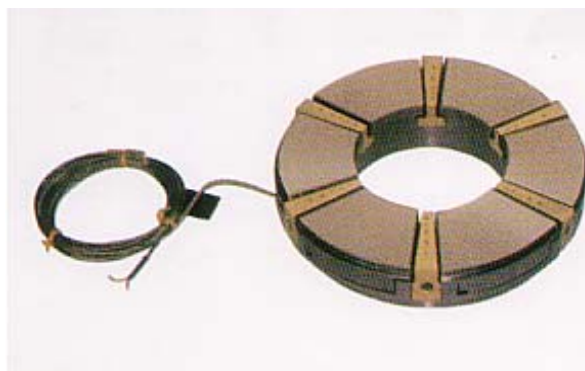
The outline of modification is as follows.

- 1) When J type thrust bearing is installed, new K type bearing can be fit in the existing space because axial size is smaller than J type thrust bearing. Bearing housing is needed to be replaced.
- 2) When K type thrust bearing is already used for existing, there is no need for replacing bearing housing. Modification of drain hole and replacement of bearing are required.

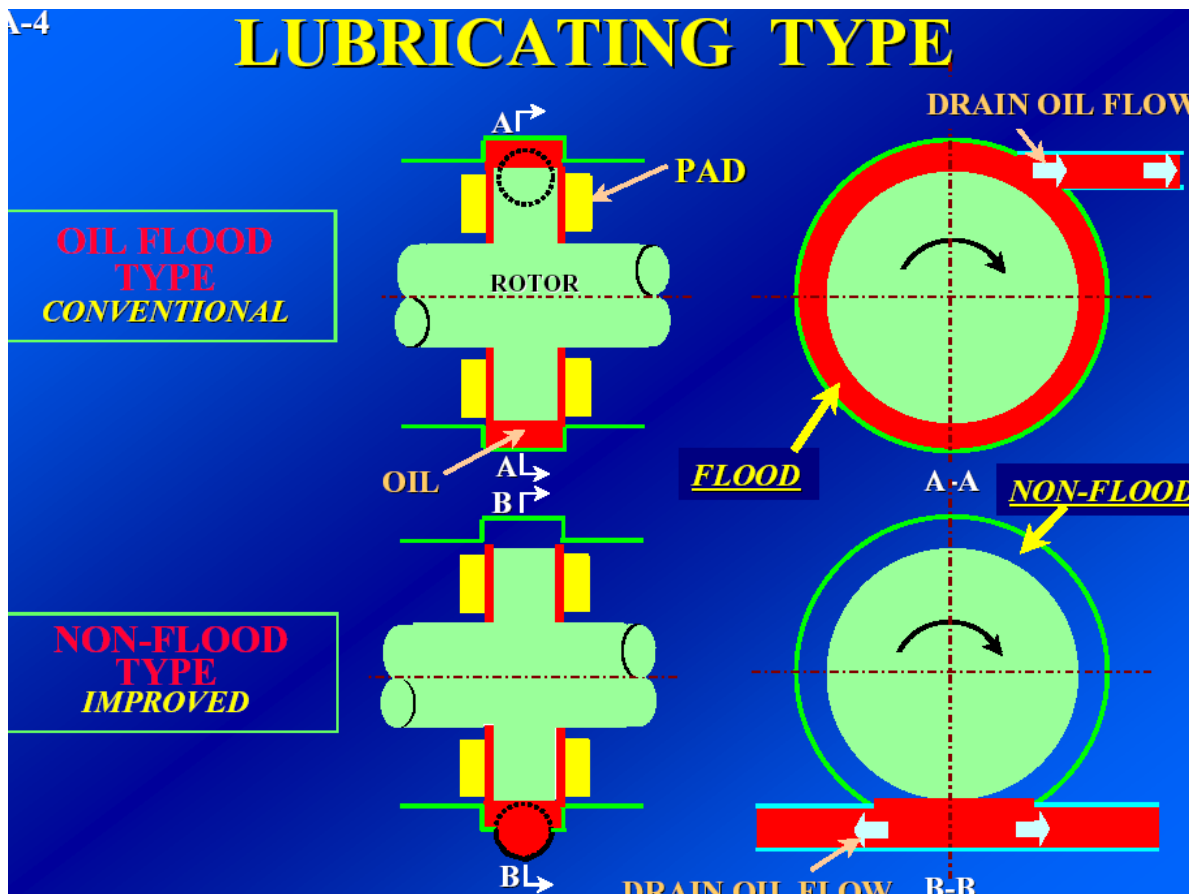
## Improved Thrust Bearing



12 Pads  
(For High Speed Turbine)

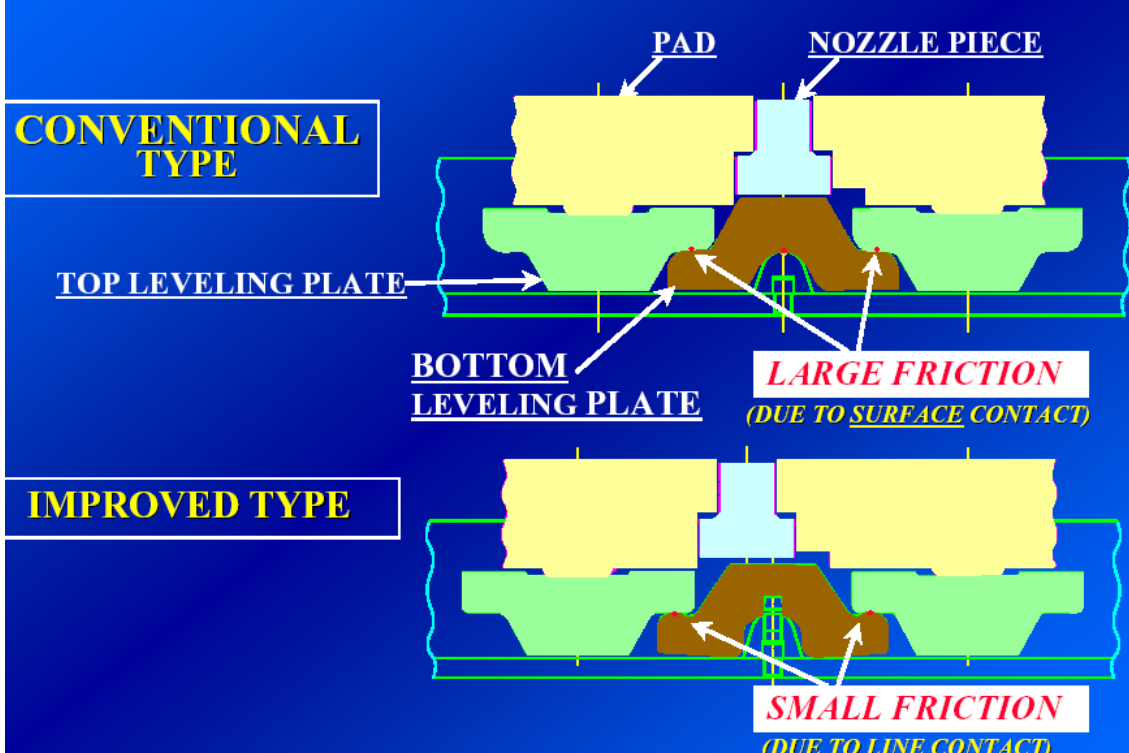


6 Pads



A-6

# IMPROVED LEVELER (REDUCED FRICTION TYPE)



A-8

## SUMMARY

### HIGH RELIABILITY OF THRUST BEARING

- ★ **NON-FLOOD TYPE**
- ★ **IMPROVED LEVELER**
- ★ **COPPER ALLOY BACK METAL**
- ★ **OFF-SET PIVOT**

### EFFECT OF APPLICATION in Ethylene Plant

