Selection of thrust bearings

Guide to thrust bearing load-carrying capability

Rubbing*‡ (generally intended to operate dry – life limited by allowable wear).

Oil impregnated porous metal*‡ (life limited by lubricant degradation or dryout).

Hydrodynamic oil film† (film pressure generated by rotation – inoperative during starting and stopping).

Rolling‡ (life limited by fatigue).

Hydrostatic applicable over whole range of load and speed-necessary supply pressure 3-5 times mean bearing pressure).

* Performance relates to thrust face diameter ratio of 2.
† Performance relates to mineral oil having viscosity grade in range 32-100 ISO 3448
‡ Performance relates to nominal life of 10 000 h.

This figure gives guidance on the maximum load capacity for different types of bearing for given speed and shaft size.
In many cases the operating environment or various special performance requirements, other than load capacity, may be of overriding importance in the selection of an appropriate type of bearing. The tables give guidance for these cases.