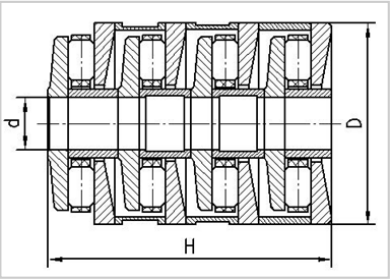
Customized Bearing

Tandem Bearing-F-53041.T3AR

Bearings	**F-53041.T3AR**
Dimensions(mm)	
Height	
Inner	Welocme
Outer	your
Rows	Inquiry
Load Rating (KN)	
C	
Co	
Weight	



Tandem bearings in large gearboxes

Tandem bearings are primarily used when reliable support must be provided for high axial forces in a limited radial

design envelope. A typical application for tandem bearings is the distribution gear in twin screw extruders.

The power range found in twin screw extruders ranges from approx 2 kW and

16 MW. The back pressure forces are also quite high: they range from 2.5 to3,400 kN.

Due to the small center distance between the heavily loaded extruder shafts, a tandem bearing is often used in combination

with a thrust cylindrical roller bearing (series 894...) having the corresponding load carrying capacity.

The combination of two identical tandem bearings or two differing tandem bearings is also possible

depending on the design envelope and gear application.

Tandem bearings offer an optimum solution wherever the following requirements apply:

- small radial design envelope
- high axial forces
- long operating life
- low frictional energy.

Other possible applications include:

- deep hole drilling equipment
- friction welding machines.

Tandem bearings have proven effective principally in gearboxes for single and twin screw extruders in the rubber and plastics industry.

Tandem bearings consist of several axial cylindrical roller bearings arranged in line. A system of rings and washers

matched to each other ensures that all stages of the tandem bearing are subjected to uniform load at all times irrespective ofthe ratio C/F. The rings and washers are made from hardened steel. Tandem bearings are predominantly fitted with standardaxial cylindrical roller and bearing assemblies.

Extruder gearboxes with their requirements for high axial load capabilities in a narrow envelope, paired with the expectation of high reliability and long servicelife, are an ideal application for products and solutions.

To bear extreme thrust loads in a narrow envelope, multilayer thrust cylindrical roller bearings are used. Several, stacked, thrust cylindrical roller bearings arecalled tandem bearings. Mostly tandem bearings are used in gearboxes for double screw extruders. Depending on the design concept two tandem bearings or one tandem bearing paired with a standard thrust cylindrical roller bearing are being used.

To distribute the loads and to avoid only one or two bearings having to carry the full thrust, the stages/levels are separated by elastic sleeves. Elastic sleeves

and washers have to be perfectly matched to achieve an even distribution over every stage.

Shaft washers and housing washers are designed to suffer an almost identical elastic deformation under load, to keep the roller raceways parallel.

Designing and calculating the sleeves for bore and housing is critical for an optimum function of the bearing. Shape and dimensions influence their spring

characteristics. Spring characteristics of the rings should be even over the full

stretch of permissible axial loads and not only for the working point.

Most tandem bearings have three, four, six or eight stages. On request we will design your specific configuration for your specific needs.