

EDT Bearing Selection Guide

A quick application reference for EDT products

This is a general reference. For specific recommendations concerning your applications, contact EDT Corp or your local distributor account manager. You will be asked to complete a Bearing Design Checklist (BDC) to assist in this process. A blank Bearing Design Checklist can be found on page U-5.

Bearing application	Type of bearing to use	Refer to this catalog or website section
Modular plastic belt conveyor	NA Poly-Round® bearing	J Poly-Round® Solution®
Wire belt conveyor (flat- or round-wire)	NA Poly-Round® bearing	J Poly-Round® Solution®
Wire belt conveyor in oven, idler rollers	QF Poly-Round® bearing in metal housing (Note: in most cases cast iron housings are used inside ovens)	E Stainless Spherical Solution® Housings <i>and</i> H Poly-Round® Bearings
Wire belt conveyor in ovens, head and tail puleys	Ball or other rolling element; standard or solid-lubricated	K Stainless Ball Solution®
Submerged fryer	FA Poly-Round® bearing in stainless housing for direct food contact QF Poly-Round® bearing in stainless housing for incidental food contact	H Poly-Round® Bearings <i>and</i> E Stainless Spherical Solution® Housings
Flat-belt and urethane belt conveyor	Ball or other rolling element; standard or solid-lubricated	K Stainless Ball Solution®
Table-top conveyor (usually high speed and multi-curved)	Ball or other rolling element; standard or solid-lubricated	K Stainless Ball Solution®
V-belt drive or unsupported overhung load	Ball or other rolling element; standard or solid-lubricated	K Stainless Ball Solution®
Fans, some pumps	Ball or other rolling element; standard or solid-lubricated (For plane bearings: contact Graphalloy at 914-968-8400 or sales@graphalloy.com)	K Stainless Ball Solution®
Trunnion	Ball or other rolling element; standard or solid-lubricated	K Stainless Ball Solution®
Reversing motion or frequent start/stop motion	Poly-Round® or Cylindrical Poly-Round® or Radial Poly-Round®	J Poly-Round® Solution® <i>or</i> H Poly-Round® Bearings <i>or</i> Q Unmounted Radial Bearings
High load + low speed combination	All-Round® or Poly-Round® or Cylindrical Poly-Round® (may require metal housing)	C All-Round® Solution® <i>or</i> J Poly-Round Solution®
Low load + high speed combination	Ball or other rolling element; standard or solid-lubricated	K Stainless Ball Solution®

What are Plane Bearings?

All **Bearings** provide a sacrificial and disposable product between moving parts that are easier and less expensive to replace than more costly and less disposable components. (This is different than a **bushing** which is a device designed to fill an empty space and has no other particular function.)

Plane bearings are devices that have no “rolling” components. They are designed to maintain the centerline position of a shaft or establish a precise location of a structure. The name comes from the geometry “plane” that establishes the point of operation.

Plane bearings are divided into four classes based on the way each type works.

Class I

A lubricated bearing whose source of lubricant must come from the outside. In order to be effective the lubricant must always be present; an absence of the lubricant will result in the journal contacting the bearing wall, and failure of the application.

Primary materials Brass, bronze, iron, babbitt, steel, polymer, wood, phenolic (micarta), elastomer, ceramic.

Principle of operation In a perfect design, the fluid film (lubricant) separates the journal from the bearing wall during normal operation, and eliminates wear.

Class II

A lubricated bearing whose source of lubricant comes from within the bearing wall. In some cases the lubricant is added after the bearing is in its final physical form, and in others the lubricant is built into the matrix of the material during the manufacturing process. In either case, when the lubricant contained within the bearing wall has been exhausted, the journal will contact the bearing wall and will fail in the application.

Primary materials Sintered metals (primarily bronze), polymers (oil filled), ceramic, wood.

Principle of operation In a perfect design, the fluid film (lubricant) separates the journal from the bearing wall during normal operation, and eliminates wear.

Class III

A bearing that requires no separate lubrication, and fails when the bearing wall has been exhausted or when the bearing material has broken down. Failure occurs when the journal centerline can no longer be sufficiently maintained for the application, or the load can no longer be sustained. The bearing must give up of itself in order to perform. (See chart below for list of primary materials.)

Principle of operation – A very thin film of material on the journal that is scraped from the inside of the bearing by the journal provides a suitable working interface between the journal and bearing wall.

Class IV

Any other product that qualifies as a plane bearing by virtue of meeting all of the requirements of the plane bearing definition, but that do not fall into any of the first three classes by its operation.

Class III Bearing Materials

Base Materials		Additives
<ul style="list-style-type: none"> ▪ Steel ▪ Resin (solid) ▪ Polyethylene (low molecular weight) ▪ Filament wound resins ▪ UHMW (polyethylene, ultra-high molecular weight) ▪ Composition resins (wood, paper, cotton, canvas) ▪ Ceramic 	<ul style="list-style-type: none"> ▪ Polyimide ▪ Urethane ▪ PPS ▪ Wood ▪ Peek ▪ PEI ▪ Polyamide-imide ▪ PES ▪ PBI 	<ul style="list-style-type: none"> ▪ PTFE ▪ Graphite ▪ Carbon ▪ Molybdenum ▪ Silicone