

EDT PART NUMBERING SYSTEM

Revised 12/06

QB 1 G C 9 - 1

SHAFT / ID SIZE (indicated as 'x' in the Price Guide) [-0x suffix indicates modification]

MODIFIER

- O = standard part
- C = custom part
- H = hardened
- M = mild steel
- Q = square bolt hole
- T = split
- 6 = 316 stainless steel

Assemblies:

- 3 = Poly-Round® with short LTB, no sleeve, (w/ or w/o hsg)
- 4 = Poly-Round® with short LTB and locking sleeve (w/ or w/o hsg)
- 5 = Poly-Round® in housing (no sleeve)
- 7 = Poly-Round® w/ locking sleeve (with or without housing)
- 8 = ball bearing in housing
- 9 = ALL-ROUND® Supreme bearing (with or without housing)

GROUP SIZE : dimensional interchange














	spherical size	ring size		spherical size	ring size
A	= 1.575" / 40mm	203	M	= 5.511" / 140mm	216
B	= 1.850" / 47mm	204	N	= 5.905" / 150 mm	217
C	= 2.047" / 52mm	205	O	= 6.299" / 160 mm	218
D	= 2.441" / 62mm	206	P	= 6.693" / 170 mm	219
E	= 2.835" / 72mm	207	Q	= 7.480" / 190 mm	220
F	= 3.150" / 80mm	208	R	= 7.874" / 200 mm	221
G	= 3.346" / 85mm	209			
H	= 3.543" / 90mm	210			
I	= 3.937" / 100mm	211			
J	= 4.331" / 110mm	212			
Z	= 4.724" / 120mm	213			
K	= 4.921" / 125mm	214			
L	= 5.128" / 130mm	215			


HOUSING or NON-HOUSING STYLE


- A = stainless housing (spherical ID)
- B = polymer block bearing (straight bore)
- F = mild steel housing (spherical ID)
- G = EDT "KG" cast polymer housing (spherical ID)
- U = non-housing product
- TU = take-up frame, ss bolt-on
- TD = take-up frame, ss weld-on


SHAPE or SERIES

-QK indicates QuiKleen®
-0_ indicates a modification


-  1 = pillow block, standard backing height
-  10 = pillow block, low backing height
-  2 = two-bolt flange, standard bolt centers
-  6 = two-bolt flange, small bolt pattern
-  3 = three-bolt extension flange (standard)
-  23 = three-bolt extension flange (smaller profile)
-  22 = three-bolt flange (triangle)
-  4 = four-bolt flange
-  24 = piloted flange, four-bolt
-  5 = take-up, narrow slot
-  7 = take-up, wide slot
-  8 = hanger bearing
-  9 = tapped base pillow block

 E = ER bearing

 B = std. flanged bearing
C = ER flanged bearing

 L = std. locking sleeve
M = ER locking sleeve

 I = self-aligning insert

 T = tool, self-aligning install
TV = single split collar
TW = double split collar
W = thrust washer

MATERIAL (not applicable to EDT housings)

various including: ZA ZY PA AA NA OA OE QF QB FA MA MY MZ

stainless steel
stainless ball bearing
various polymers

GA = The Glove® 

ZB, ZJ, ZM, ZT, ZW stainless ball various solid lubricants
ZC, ZD, ZF, ZN, ZQ, ZZ, Z4 metals or metal treatments



SELECT THE BEST EDT INSERT FOR THE ENVIRONMENT

Class III Plane Bearings

Ball Bearings



Poly-Round® Bearings

All-Round® Supreme Bearings

Stainless Steel Ball Bearings

Solid polymer bearing insert with locking sleeve:

- cost effective and convenient
- thick bearing wall offers long life
- sanitary and cleanable
- predictable operation and wear
- non-corrosive
- non-conductive
- requires no grease after installation
- dimensionally interchange with all industry standard spherical bearings
- available in all inch and metric sizes

Materials for Poly-Round® bearing

- NA:** moderate speed and load
good for impact and washdown environments
6,000 pv rating
-40°F to 220°F
incidental food contact
color - gray
- QF:** speed to 400 sfm; high load (call for details)
good for submerged or chemical location
good for high or low temperatures (with special bore)
60,000 pv rating
cryogenic to 500°F
incidental food contact
color - black
- FA:** not affected by chemical, moisture, or impact
good for submerged oil or chemical locations involving edible products
6,000 pv rating
cryogenic to 500°F
direct and continuous food contact approved
color - white
- PA:** low speed and load
excellent for submerged or chemical
1,000 pv rating
cryogenic to 150°F
direct food contact approved
color - white

Stainless steel inserts with replaceable flanged polymer bearing:

- dimensionally interchange with all industry standard spherical bearings
- non-conductive
- require no grease after initial installation
- sanitary and cleanable
- corrosion resistant
- predictable operation and wear
- cost-effective and convenient
- reusable components
- spherical or ER-style
- outer race available in 304 or 316 ss
- available in all inch and metric sizes

Materials for All-Round® flanged bearing

- QB:** excellent price-to-performance
not recommended in submerged or high-salt or extreme pH locations
50,000 pv rating
cryogenic to 550°F
- QF:** speed to 400 sfm, high load (call for details)
unaffected by any chemicals at temperatures below 400°F
60,000 pv rating
cryogenic to 500°F
incidental food contact

Choose ball bearings instead of PLANE BEARINGS in these applications

- high tension (flat belt conveyors, urethane belts, V-belt drives)
- high speed devices (fans, pumps, table top conveyors)
- overhung loads (shaft mounted gear reducers)
- trunnions

- choose ball bearings for applications where plane bearings are not recommended:
 - high speed locations
fans, pumps, saws/knives
 - overhung loads
 - tension locations
flat belts, Eagle belting, V-belt drives
 - trunnion devices

Choices of:

- **re-greasable** lubricated with food grade grease
 - operating range -40°F to 300°F
 - high temp grease to 400°F
- **solid-lubricated** (grease-less) with either of two kinds of lubrication:
 - for chemical resistance, very low friction, temperature extremes (specify -250°F to 650°F), vacuum locations
 - oil-filled polymer to block contaminants into bearing at ambient temperatures (food-grade; wet or dry)



PV Calculation Worksheet

PV (Pressure x Velocity) is a method of calculating bearing capacity by determining the amount of heat generated in a plane bearing. PV is the relationship of the load to the shaft speed.

$$\left(\frac{F}{\text{load on bearing}} \div \frac{A}{\text{Journal diameter} \times \text{bearing LTB}} \right) = P \times V = PV$$

from chart
operational PV of bearing
below NTE PV limit of material from box below

Calculate **P (Pressure)** by figuring F/A (force divided by area)

F = load on the bearing
 A = journal size x length thru bore (LTB)

Use this chart to determine **V (Velocity)**:

- 1) Find row that reflects speed
- 2) Find column that reflects journal size
- 3) The point where these two meet is **V** for this application

Material Operating Limits			
	Limiting P	V	PV
PA	800	50	1,000
AA	2,000	200	2,000
NA	2,000	350	6,000
QB	3,000	400	50,000
QF	6,000	400	60,000
MA	6,000	400	110,000

Bearing / Journal Surface Speed Calculations (V = Surface Feet per Minute)

Journal Speed (in RPM)	1500	197	294	393	492	590	786	983	1179	1376	1572
	1000	131	197	262	328	393	524	655	786	917	1048
	900	118	177	236	295	354	472	590	708	826	944
	800	105	157	210	262	315	420	524	628	734	838
	700	92	138	184	230	276	368	459	551	642	734
	600	79	118	158	197	236	316	393	472	551	629
	550	73	108	145	180	217	288	361	432	505	577
	500	66	98	131	164	197	262	328	393	459	524
	450	59	88	118	148	177	236	295	354	413	468
	400	53	79	105	131	158	210	262	315	367	420
	350	46	69	92	115	138	184	230	276	321	369
	300	40	59	79	98	118	158	197	236	276	315
	250	33	49	66	82	99	132	164	197	230	262
	200	27	39	53	66	79	106	131	158	184	210
	175	23	35	46	58	69	92	115	138	161	184
	150	20	30	40	49	59	80	99	118	138	158
100	14	20	27	33	40	53	66	80	92	105	
75	10	15	20	25	30	40	50	60	69	79	
50	7	10	14	16	20	26	33	40	46	53	
25	4	5	7	8	10	13	17	20	23	26	
		½	¾	1	1¼	1½	2	2½	3	3	4
		Journal Size (diameter in inches)									

Marginal - double check load (P) before selecting a plane bearing

Not recommended to use plane bearings

Data Sheet for Polymer Bearing Materials

Property	ASTM Test	Units	PA	AA	NA	FA	QB	QF	MA
USDA/FDA Acceptance	--	--	Direct	Direct	Incidental	Direct	Incidental	Incidental	Incidental
Specific Gravity	D-792	g/cm	0.94	1.42	1.14	2.3	1.4	1.6	1.43
Impact Strength (notched izod)	D-256	ft-lb/in	>25	1.4	0.9	2.5	1.1	0.8	0.8
Tensile Strength (yield)	D-638	psi	3,100	10,000	9,300	1,300	8,400	10,000	8,000
Elongation	D-638	%	350	30	50	15	6	3	6
Shear Strength	D-732	psi	3,500	9,500	10,000	--	2,727	--	11,200
Compressive Strength	D-695	psi	2,400 (10% deflection)	5,200 (1% deflection)	10,000 (1% deflection)	2,000 (2.5% deflection)	5,900	22,000	15,200
Hardness	D-785	Rockwell	R64 D67	R120 M94	R109 M57	R50 68A	R128 M105	-- D84	-- M85
Coefficient of Linear Thermal Expansion	D-695	in/in/F	7.2×10^{-5}	5×10^{-5}	5.5×10^{-5}	3.3×10^{-5}	3.4×10^{-5}	2×10^{-5}	2.7×10^{-5}
Thermal Conductivity	C-177	BTU/Hr sq ft/F/in	29	1.6	--	2.5	--	2.5	3.2
Coefficient of Friction (against steel)	--	Static dynamic	0.25 0.14	0.15 0.20	0.12–0.21 0.13–0.16	-- 0.04–0.20	-- 0.15	0.17 0.08	-- 0.12
Moisture Absorption 24 Hours Saturation	D-570	%	<0.01 <0.01	0.25 0.90	1.2 5.3	<0.35 <1.0	<1.0 0.23	0.05 0.10	0.19 1.0
Max Continuous Use Temperature	--	F°	170°	180°	200°	500°	550°	500°	650°
Max Intermittent Temperature	--	F°	220°	220°	300°	550°	650°	550°	850°
Maximum Use Temperature	--	F°	Cryogenic Poly-Round®	-40°	-40°	-40°	-40° Poly-Round®	Cryogenic	-40°
Max Recommended PV	--	(lb) (ft) (in) (min)	<1,000	<2,000	6,000	6,000	50,000	60,000	110,000

Where to use EDT plane bearings

Tough applications where ball bearings don't perform as reliably as desired, such as:

- Sanitary – HACCP
- High or low temperature
- Wash-down or steam
- Exposure to processing liquids, chemicals
- Incomplete rotation or oscillating motion
- Submerged in liquids
- Locations difficult to regularly maintain
- Exposed to bulk solid contaminants

Where to use EDT ball bearings

- High tension applications (V-belt drives, flat belt conveyors, urethane belts)
- High speed devices (fans, pumps, table top conveyors)
- Overhung loads (shaft mounted gear reducers)
- Trunnion applications

Bearing capacity is measured by PV and will determine the amount of heat generated in a plane bearing. PV is the relationship of the load to the shaft speed in a bearing.

HOW TO CALCULATE PV

PV - $P \times V$

P - pressure in PSI (lbs./sq. in.)

V - velocity in SFM (surface ft./min.)

P - F/A

where **F** = force (load) on bearing

A = shaft dia (in.) x LTB

(LTB = bearing length through the bore)

V - $.262 \times D \times \text{RPM}$

where **D** = shaft diameter (in.)

RPM = shaft revolutions/min.

See PV Calculation Worksheet on page T4

MATERIAL SELECTION CHART

	ALL-ROUND® Bearing Materials	PV Limit	Max Speed V (SFM)	Max Loading P (PSI)	Continuous Operating Temp.	Performance in Moisture		Δ T Dimensional Stability with Temp Change	Chemical Resistance	Abrasion Resistance	Impact Resistance	USDA/FDA Contact Acceptance
						Wash-down	Submerged					
Bearings	PA UHMW white	1,000	50	800	150°F	Excellent	Excellent	Poor	Excellent	Abrasion applications are very unpredictable. Each application must be tested for abrasion resistance.	Excellent	Direct
	AA white	2,000	200	1,000	160°F	Excellent	Good	Fair	Fair		Fair	Direct
	OA black OE brown	5,000	350	1,000	160°F	Excellent	Good	Fair	Fair		Fair	Incidental
	NA grey	6,000	350	2,000	220°F	Excellent	Good	Fair	Fair		Excellent	Incidental
	FA white	6,000	350	1,000	500°F	Excellent	Excellent	Poor	Excellent		Excellent	Direct
	QB black-green	50,000	400	3,000	550°F	Excellent	Poor	Excellent	Fair		Fair	Incidental
	QF black	60,000	400	6,000	500°F	Excellent	Excellent	Excellent	Excellent		Fair	Incidental
	MA black-brown	110,000	400	6,000	600°F	Excellent	Poor	Excellent	Fair		Fair	Incidental
Housings	KG polymer housing	Not a bearing material			160°F	Excellent	Excellent	Good	Excellent	N/A	Good	Incidental
	ZA stainless housing	Not a bearing material			1000°F	Excellent	Excellent	Excellent	Excellent	N/A	Excellent	Direct

Scale: Poor-Fair-Good-Excellent

Revised 12/06



These EDT products have USDA Acceptance

USDA/NSF EQUIPMENT ACCEPTANCE LIST

August, 2007



Note that all sizes in each family are accepted under this listing.

Polymer Housings	Series #
Tapped Base housing	9G_
Standard backing height pillow block	1G_
Low backing height pillow block	10G_
Two bolt flanged housing	2G_
Two bolt flanged housing	6G_
Three Bolt Extension flanged housing	3G_
Four Bolt housing	4G_
Narrow Slot Take-Up housing	5G_
Wide Slot Take-Up housing	7G_
Piloted Flange housing	24G_
Four Bolt housing (mini)	4G_-01

Stainless Steel Housings	Series #
Tapped Base housing	9A_
Standard backing height pillow block	1A_
Low backing height pillow block	10A_
Two bolt flanged housing	2A_
Two bolt flanged housing	6A_
Three bolt Extension flanged housing	3A_
Four Bolt housing	4A_
Narrow Slot Take-Up housing	5A_
Wide Slot Take-Up housing	7A_
Piloted Four Bolt flange housing	24A_
Four Bolt housing (mini)	4A_-01
Three bolt flange housing	22A_

USDA/NSF EQUIPMENT ACCEPTANCE LIST (continued)

QuiKlean® Housings

Series

Tapped Base housing – polymer	9G_-QK
Pillow block housing – polymer	1G_-QK
Two Bolt Flanged housing – polymer	2G_-QK
Four Bolt Flanged housing – polymer	4G_-QK

Block Bearings

Series

Tapped Base	9B_O
Standard backing height	1B_O
Low backing height	10B_O
Two bolt flange	2B_O
Two bolt flange	6B_O
Three bolt extension flange	3B_O
Four bolt flange	4B_O
Narrow Slot Take-Up	5B_O
Wide Slot Take-Up	7B_O
Mini Two Bolt Block	NA2ZX-
Special Narrow Slot Take-Up	NATUN-X

Stainless Steel Take-Up Frames

Series

Narrow Slot - bolt on style	TU5_ _
Wide Slot - bolt on style	TU7_ _
Narrow Slot – weld on style	TD5_ _

Bearings

Series

All-Round Stainless Spherical inserts	ZAI U_ _
All-Round Stainless ER Cylindrical inserts	ZAE_ _ _
All-Round Flanged Polymer bearings	_ _BU
Installation Arbor	PATU_O
Poly-Round Spherical Bearings	_ _IU_O
Radial Poly-Rounds	<i>All sizes to scale</i>

WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE
AND CONSUMER PROTECTION

EQUIPMENT COMPLIANCE

EDT Corporation

1006 J NE 146th St., Vancouver, WA 98685

The following equipment complies with the sanitary construction requirements in Wisconsin dairy and food regulations for non-product contact areas.

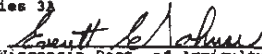
Stainless Steel Bearing Housings

Model Designations:

Pillow Blocks Solid Type 304 Series 1A
Two-Bolt Flange Solid Type 304 Series 2A
Four-Bolt Flange Solid Type 304 Series 4A
Narrow Slot Take-Up Solid Type 304 Series 5A
Wide Slot Take-Up Solid Type 304 Series 5B
Three-Bolt Extension Flange Solid Type 304 Series 3A

Date of Issuance: March 15, 1994

Number: 94-8


Wisconsin Dept. of Agriculture,
Trade and Consumer Protection
801 W Badger Rd.
Madison, Wisconsin 53713

The issuance of this form is based on the Wisconsin Department of Agriculture, Trade and Consumer Protection review of the equipment listed above complies with the Wisconsin dairy and food regulations and applicable 2A Sanitary Standards for non-product contact areas. This in no way affects the responsibility of the Wisconsin Department of Agriculture, Trade and Consumer Protection to take appropriate action in cases in which evidence of non-compliance has been established.

WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE
AND CONSUMER PROTECTION

EQUIPMENT COMPLIANCE

EDT Corporation

1006 J NE 146th St., Vancouver, WA 98685

The following equipment complies with the sanitary construction requirements in Wisconsin dairy and food regulations for non-product contact areas.

Polymer Block Bearings


All-Round Supreme - Self-Aligning Bearing Inserts

Model Designations:

NA

Date of Issuance: March 15, 1994

Number: 94-6


Wisconsin Dept. of Agriculture,
Trade and Consumer Protection
801 W Badger Rd.
Madison, Wisconsin 53713

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WISCONSIN DEPARTMENT OF AGRICULTURE, TRADE
AND CONSUMER PROTECTION

EQUIPMENT COMPLIANCE

EDT Corporation

1006 J NE 146th St., Vancouver, WA 98685

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Plane Bearings

Model Designations:

Spherical Housings, Polymer Block Bearings, Solid Spherical Polymer Bearings, All-Round Supreme Self-Aligning Bearings, Solid Cylindrical Polymer Bearings, Cylindrical Mounted Replacement Bearings, All-Round Polymer Bearings, Locking Sleeves, Linear Bearing, Hanger Bearings

Date of Issuance: March 15, 1994

Number: 94-7


Wisconsin Dept. of Agriculture,
Trade and Consumer Protection
801 W Badger Rd.
Madison, Wisconsin 53713

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KOSHER CERTIFICATE

To: EDT Corp customers
 From: Carl Klinge
 Subject: Animal fat use in EDT products
 Date: December 4, 1996

EDT Corp makes bearings to operate in severe maintenance environments from a variety of polymer and metal materials. In some installations such as those operating according kosher dietary laws, it is imperative to identify products that contain any animal fat or animal by-products.

EDT has conducted an investigation of our manufacturing processes and those of our vendor and resin suppliers to determine the extent of use of animal fats and animal by-products.

The following EDT materials include no animal fats or by-products in the base materials. In addition, no animal fats or animal by-products have been used during the manufacture of these materials.

- * QB polymer (bearing material)
- * QF polymer (bearing material)
- * KG polymer (housing material)
- * 304 stainless steel
- * 316 stainless steel
- * 17-4 PH stainless steel

EDT bearing products that are made solely of the materials and therefore contain no animal fat or animal by-products include:

- Stainless bearing housings (1-19)A(A-M)
- Cast polymer bearing housings (1-19)A(A-M)
- QB or QF ALL-ROUND® SUPREME bearings QBIU(A-M)9-(1/2-3)
 QFIU(A-M)9-(1/2-3)
- QB or QF ALL-ROUND® ER bearings QBEU(A-M)9-(1/2-7.4)
 QFEU(A-M)9-(1/2-7.4)
- ALL-ROUND® Solution® mounted bearings QB(1-19)G(A-M)9-(1/2-3)
 QF(1-19)G (A-M)9-(1/2-3)
- Ultimate Solution® mounted bearings QB(1-19)G (A-M)9-(1/2-3)
 QF(1-19)G (A-M)9-(1/2-3)
- Trolley wheel bearings EDTWB1
- Solid polymer spherical insert QFIU(A-M)O-(1/2 -3)
- ALL-ROUND® flanged bearings w/ or without locking
 sleeves (Check availability)
- Custom bearings: QF w/ or without 304, 316 or hardened stainless components

ENGINEERING NOTES



EDT 'KG' Technical Data Sheet

Chemical Acceptability for 'KG' Material used for EDT polymer mounted bearing housings

General chemical analysis is rated on the following shown:

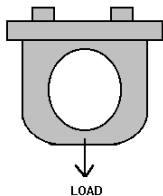
A- (Acceptable) L- (Limited) U- (Unacceptable)

GROUP	CHEMICAL TESTED	TEMP	RATING
Acids, Strong	concentrated hydrochloric or sulfuric acid	73°F.	L
Acids, Weak	acetic acid, hydrochloric (dilute), sulfuric acid (dilute)	73°F.	A
Alcohols	methanol, ethanol, anti-freeze	73°F.	A
Alkalies, Strong	strong ammonia or sodium hydroxide	73°F.	L
Alkalies, Weak	dilute ammonia or sodium hydroxide	73°F.	A
Chlorinated Solvents	methylene chloride, chloroform (111trichloroethane)	73°F.	U
Ethers	diethyl ether, tetrahydrofuran	73°F.	L
Hydrocarbons-Aliphatic	gasoline, hexane, grease	73°F.	A
Hydrocarbons-Aromatic	benzene, toluene	73°F.	A
Inorganic Salt Solutions	sodium chloride, potassium cyanate	73°F.	A
Ketone, Esters	acetone, methyl ethyl ketone	73°F.	U

TAPPED BASE PILLOW BLOCK THREAD INTEGRITY TEST test was conducted using EDT part number 9GC

Housings mounted upside down, with bearing loaded opposite the base.

BOLT IS 3/4 OF
THREADED HOLE DEPTH



TEST MADE

HOUSING REACTION

Test #1

No noticeable distortion. Threads are still intact.

4,000 # Max. Test Load

Test #2

Housing initially moved .001" then remained there the balance of the test. Threads are still intact.

766 # Continuous Hanging
Weight Test 11 Days

Test #3

Housing took 6 repeated drops before breaking.
Note: Threads are still intact.

250 # Load Dropped
Vertically 6-10"

Mechanical Properties of 'KG' Material
used for EDT Polymer mounted bearing housings

PROPERTIES	ASTM Test Method	Units English (SI)	Results
PHYSICAL			
Specific gravity, 73°F (23°C)	D 792	--	1.229
Water absorption at 73°F (23°C), 24 hours	D 570	%	0.22
UV Exposure	---	--	Acceptable
MECHANICAL			
Modulus of elasticity	D 638	psi (MPa)	190,000(1310)
Ultimate tensile strength	D 638	psi (MPa)	12,000(83)
Elongation at yield	D 638	%	8
Flexural modulus	D 790	psi (MPa)	455,000(3100)
Flexural strength	D 790	psi (MPa)	13,500(93)
Notched Izod impact strength at 73°F (23°C)	D 256	ft-lb/in(J/m)	1.6(86)
Unnotched Izod impact strength at 73°F (23°C)	D 256	ft-lb/in(J/m)	12.4(663)
Barcol hardness	D 2583	M-943 scale	30
Rockwell Hardness	D 785	M scale	92
THERMAL			
DTUL at 264 psi (1.8 MPa)	D 648	°F (°C)	221(105)
Coefficient of Thermal Expansion	---	in/in/F°	5.14X10 ⁻⁵
Maximum continuous working temperature	---	°F	150
Maximum intermittent temperature	---	°F	250
ELECTRICAL			
Volume resistivity, 73°F (23°C)	D 257	ohm-cm	4.6x10 ¹⁴



TECHNICAL UPDATE

Date: February 28, 2002

EDT Bearing Selection Guidelines

Revised 02/02

These guidelines and generalizations are intended to assist in initially selecting the optimum EDT product to try in any specific application. Accurate applications information, collected on an EDT Bearing Design Checklist (BDC) completed either by someone familiar with the application or direct site information, is vital to choosing the most appropriate bearing. Bearing selection for any application is only as accurate as the information provided to select it.

- 1) Always specify self aligning bearings unless there is a specific reason to recommend a block bearing. Price alone is not a good reason.) Machine frames are fabrications and by that definition are never square; therefore bearings mounted on fabricated frames must have self aligning capability.
- 2) Always recommend a locking sleeve with a bearing. Half of a bearing's performance is based on the bearing material and design; the other half is based on the condition of the journal. This includes both the nature of the material and its' surface finish over the expected life of the bearing. The primary reason not to spec a locking sleeve is that the journal operation is very slow and does not make a full rotation.
- 3) Never spec a plane bearing in a friction drive application. Examples of this would be "V" belt motor drives, flat belt conveyors, and urethane belt conveyors.
- 4) Never spec a plane bearing in a high speed application. Examples of this would be fans and pumps.
- 5) Never spec a plane bearing in an overhung load. Example would be a shaft mounted gear reducer. If the reducer is supported by a separate frame or by a torque arm, call the factory for a review.
- 6) Never spec a plane bearing in a trunnion application.
- 7) Always spec a Poly Round in applications below 40°F (C).
- 8) Never spec FA in an ALL ROUND® bearing.
- 9) Never spec QB for continuous submerged operations or environments where the pH is more than 3 points off of neutral. Neutral pH is 7, QB should not be used lower than 4 nor higher than 10 pH.
- 10) KG housings should not be spec'd in applications that have ambient temperatures above 150°F. However, high temperature wash down and steam cleaning are acceptable (since the higher temperatures are not being sustained during operation, only in cleaning).

- 11) Machine specific (customized) bearings must be spec'd from a BDC or with participation of someone intimately familiar with the machine. Customized bearings often have less room for error.
- 12) Modular plastic belt conveyors will always use NA Poly Rounds with a locking sleeve.
These are covered by the EDT Guaranteed Solutions program to last for a minimum of one year.
- 13) When estimating the length of a conveyor for an application: figure each 90 degree bend in the conveyor as 3 times the length and each 180 degree curve as 6 times the length. Example a ten foot conveyor with one 90 degree bend has an equivalent length of 30 feet. With two 90 degree bends, the bearings on the 10' conveyor are handling the equivalent of 60 feet on a straight conveyor. 10' with one 90 degree and one 180 degree bend is equivalent to a 90 foot straight conveyor when calculating bearing load. Normally you would see these kinds of designs on tabletop chain conveyors and are best left to ball bearings.
- 14) Abrasive contaminants (dust, flour, grains, sand and other solids) must be kept out of the working surface of the bearing. Grease is not recommended in dusty environments as it attracts and hold the contaminants in the bearing. Seals like Forsheda v rings are recommended to reduce solid contamination of the journal. If there is sufficient room, the EDT Glove® should be used. (The Glove® is available blind bored or thru bored.)
- 15) In high solid abrasive contaminated applications it is best to completely isolate and cover the bearing with the EDT Glove® . Since any covering that restricts airflow around a bearing will raise temperature, it is normally recommended to use a ball bearing inside of the EDT Glove®.
- 16) If there is not enough flushing liquid present in an application, a black residue may build up around the ID of a QB or QF bearing. This is normal, but may be unacceptable in a sanitary environment. The only remedy for this is to use an alternative material; call the factory for recommendations.

RED FLAG ALERT!

Stainless ball bearings can rust since the balls and races are made of 400-series (hardenable) stainless steel. High concentrations of cleaning solutions as well as other strong chemicals may speed up the corrosion process.

EDT plane bearings are fully non-corrosive alternatives to ball bearings, for most locations
EXCEPT:

- high tension: flat belts, urethane belts, tabletop chain
- overhung loads
- high speed devices: fans, pumps
- trunnions





TECHNICAL UPDATE

Date: October 1, 2002

EDT Corp response regarding Anti-Microbial Agents

Anti-microbial agents in bearings, bearing housings, belting, cutting boards, knife handles and other food processing accessories are being increasingly promoted in industry. They began to appear several years ago in the U.S. with a variety of consumer and industrial products. In the European Union, Microban® has been approved as a food contact additive in plastics. In the USA, it is registered for use in food contact surfaces, except in food packaging.

EDT Corp is keeping watch on the regulations by government agencies as well as the scientific debate about this kind of product. There is not full agreement about the benefit or harm that these anti-microbial agents can have either short- or long-term.

Regardless of how they are promoted, anti-microbial agents are **not designed to kill** and **do not kill** the harmful bacteria. While certainly some bacteria are killed in the process, the purpose of these agents is to **RETARD THE GROWTH** of the bacteria. While this certainly would seem to be a desirable feature, there is considerable evidence in the testing that has been done to date that the bacteria that are not killed are, in fact, more resistant to these agents and develop increased resistance. This creates a bigger problem than was had before the introduction of these agents. This is true of Microban® and all other antimicrobial agents on the market.

If 98% of bacteria coming in contact with any product were killed because of an anti-microbial additive, that would leave 2% that would quickly multiply and, in the subsequent generations, would not be affected by the agent at all. In these kinds of bacteria, the second generation could be generated quickly and food processing plants would be continually forced into new and advanced chemicals to keep up acceptable sanitation levels.

Surveys that have been conducted in both the consumer and industrial markets clearly indicate that people believe that these agents kill the bacteria, and people have developed a false sense of security when using products advertised with this anti-microbial feature. It is unwise to operate under the assumption that anti-microbials prevent bacteria from occurring.

Anti-microbial agents are not expensive and do not change the price of the products in any meaningful way, but they make for great advertising until the buyer fully understands the limitations of the products. Many companies have added these agents to their products with good intentions but have done so without a full understanding of the long term implications of these actions. Products are too often advertised for their features, and the limitations are not explained. The customer must make a purchasing decision without complete information.

In the future, EDT expects that there will be killing agents that can be added to products but, at this time, we are not aware of any. To date, we have seen no documentation that will show anything but a small “kill” percentage and a large “growth retardant” percentage.

EDT maintains a file of anti-microbial agents that are on the market but, because of the uncertainty of the final testing results and with a high probability of long term problems, we have decided to wait until more testing has been done before we take steps to add these agents to our products. If positive new information comes available on this subject and long term testing shows that chemical additives are beneficial in the fight against detrimental bacteria, you can be assured that EDT Corp will upgrade our products to include these agents. For now, we believe that to include these agents in our products would be a disservice to our customers.

Additional questions on this topic should be addressed to: Carl Klinge, EDT Engineering Manager.