EDT Part Numbering System

Revised 11/14

PLANE BEARINGS

NA 1 G E 7 - 20-LK

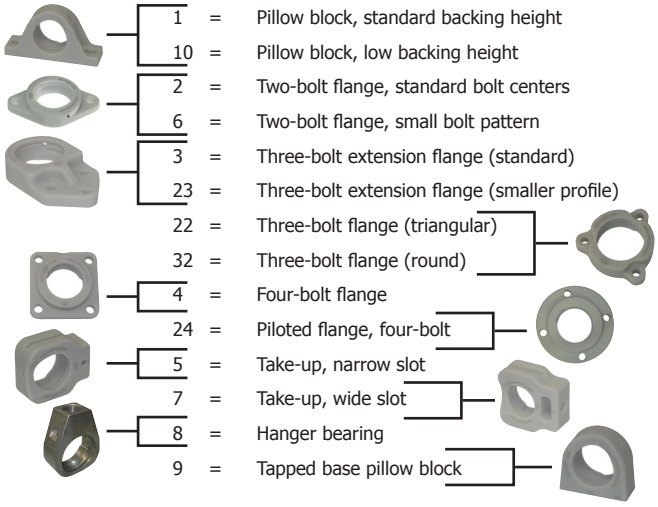
Material Indicator

Polymer: PA, AA, NA, OE, QF, QB, FA, MA, MY, MZ
Metals / metal treatments: ZA, ZF, ZN, ZQ, ZZ, Z4

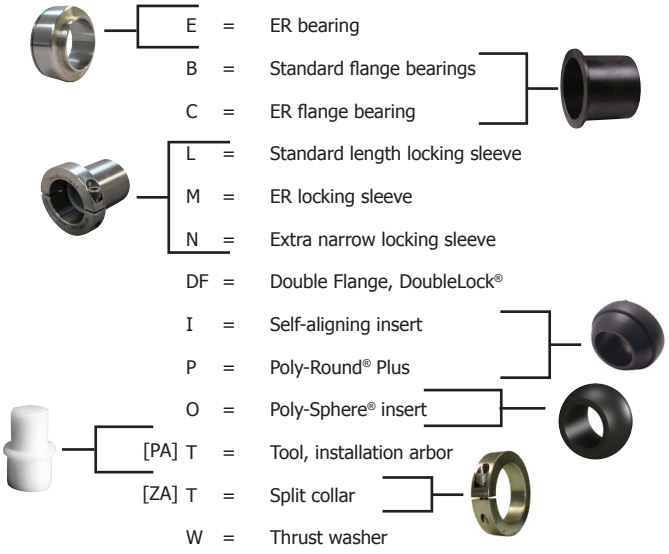
∗ Housing only indicated as '1GE' or '1GE-QK'. Prefix and suffix indentifies details of assembly or plane bearing components.

NA **1** G E 7 - 20-LK

Shape or Series



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 (triangular)
32	=	Three-bolt flange (round)
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	=	Standard flange bearings
C	=	ER flange bearing
L	=	Standard length locking sleeve
M	=	ER locking sleeve
N	=	Extra narrow locking sleeve
DF	=	Double Flange, DoubleLock®
I	=	Self-aligning insert
P	=	Poly-Round® Plus
O	=	Poly-Sphere® insert
[PA] T	=	Tool, installation arbor
[ZA] T	=	Split collar
W	=	Thrust washer

NA 1 **G** E 7 - 20-LK

Housing or Non-Housing Style

∗Full housing P/N - 3 digits (Ex: 1GE)

NON-HOUSING

U	=	Non-housing product
V	=	Single split collar
W	=	Double split collar
B	=	Polymer block bearing (straight bore)
L	=	Stainless steel split flangette housing
O	=	Poly-Sphere® bearing

HOUSING

G	=	EDT "KG" cast polymer housing (spherical ID)
A	=	Stainless housing (spherical ID)
E	=	Type E housing
F	=	Mild steel housing (spherical ID)
P	=	Stainless steel cast housing

OPTIONAL HOUSING MODIFIER

-CB	=	Cap, blind
-CT	=	Cap, thru
-0_	=	Housing modification
-QK	=	QuiKlean®
-Q	=	Square bolt holes
-SM	=	Wider spherical radius

EX: QF 1 A E - **QK** 7 - 20 - LK

NA 1 G **E** 7 - 20-LK

Group Size

Dimensional interchange

RING SIZE	EDT GROUP	SPHERICAL OD		
203	A	= 1.575″	/	40 mm
204	B	= 1.850″	/	47 mm
205	C	= 2.047″	/	52 mm
206	D	= 2.441″	/	62 mm
207	E	= 2.835″	/	72 mm
208	F	= 3.150″	/	80 mm
209	G	= 3.346″	/	85 mm
210	H	= 3.543″	/	90 mm
211	I	= 3.937″	/	100 mm
212	J	= 4.331″	/	110 mm

RING SIZE	EDT GROUP	SPHERICAL OD		
213	Z	= 4.724″	/	120 mm
214	K	= 4.921″	/	125 mm
215	L	= 5.128″	/	130 mm
216	M	= 5.511″	/	140 mm
217	N	= 5.905″	/	150 mm
218	O	= 6.299″	/	160 mm
219	P	= 6.693″	/	170 mm
220	Q	= 7.480″	/	190 mm
221	R	= 7.874″	/	200 mm

EDT GROUP	TYPE E OD's		ID
01	65mm OD	x	1.35 ID
02	72mm OD	x	1.54 ID
03	85mm OD	x	1.87 ID
04	90mm OD	x	2.10 ID
05	100mm OD	x	2.35 ID
06	120mm OD	x	2.65 ID
07	125mm OD	x	3.14 ID
08	145mm OD	x	3.70 ID
09	175mm OD	x	4.20 ID
10	195mm OD	x	4.70 ID
11	212mm OD	x	5.20 ID

NA 1 G E **7** - 20-LK

Modifier

O	=	Standard part
C	=	Custom part
H	=	Hardened steel
M	=	Mild steel
Q	=	Square bolt hole
T	=	Split
6	=	316 Stainless steel components
2	=	Poly-Round® Plus with Double Flange DoubleLock® sleeve
3	=	Poly-Round® narrow, no locking sleeve (with or without housing)
4	=	Poly-Round® narrow and locking sleeve (with or without housing)
5	=	Poly-Round® in housing (no locking sleeve)
7	=	Poly-Round® with locking sleeve (with or without housing)
8	=	Ball bearing in housing
9	=	ALL-ROUND® Supreme bearing (with or without housing)
P	=	Poly-Round® Plus assembly

NA 1 G E 7 - **20-LK**

Shaft/ID Size

(indicated as "x" in the catalog)

Inches in 16th's (Ex: 1-1/4" = 20/16 → 20)
OR
Fractions (Ex: 1-1/4")

Metric with "M" or "mm" suffix
(Ex: 20M **OR** 20mm)

OPTIONAL MODIFIER (EX: QF 1 A E - QK 7 - 20 - **LK**)

-04	=	0.6 Longer locking sleeve
-04-LK	=	0.6 Longer sleeve, DoubleLock®
-LK	=	KleenCap® DoubleLock®
-LC	=	DoubleLock® (Obsolete, now LK or MC)
-MC	=	DoubleLock®
-HT	=	High temperature
-HTV	=	High temp, fixed end
-HTE	=	High temp, expansion end
-OS	=	Oven series

EX: 4Y1GE8-20GX
4Y205-16GX

BALL BEARINGS

Ball Bearing Material		Ball Bearing Style		BB Ring Size OR Housing		Modifier		-	Shaft	Lubricant		Modifier	
4	400 stainless	Y	set-screw (also B)	For inserts - refer to **Group Size** section above		Blank if bearing only Not an assembly			size in 16ths	Grease	G - Food grade Y - High temp food grade	X	Standard
3	300 stainless	U	wide eccentric (also A)	*For assemblies - use 3-digit Housing part number		8	mounted; ball bearing in housing			Solid lube - polymer	F - Food grade (-55° to 200°) J, B, P - Miscellaneous food grades C - Food grade non-corrosive K, R - High temperature E, D - Industrial grades	Z	Shield
5	NC steel	E	narrow eccentric	Example:								O	Open
6	52100 steel	0	unmounted	205	group / ring size							B	Bare
7	alloy	F	flanged unmounted	1GE	housing style					Solid lube - graphite	W, M, T, V - Various temperature ranges	V	Vacuum grade
												SM	Wider unit

SELECT THE BEST EDT INSERT FOR THE ENVIRONMENT

Class III Plane Bearings



Poly-Round® 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 interchanges with all industry standard spherical bearings
- Available in all inch and metric sizes

Materials for Poly-Round® bearing

NA: (gray)
- Moderate speed and load
- Good for impact and washdown environments
- 6,000 PV rating
- -40°F to 220°F
- Incidental food contact

QF: (black)
- 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

FA: (white)
- 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

PA: (white)
- Low speed and load
- Excellent for submerged or chemical
- 1,000 PV rating
- Cryogenic to 150°F
- Direct food contact approved



All-Round® Supreme Bearings

Stainless steel inserts with replaceable flange 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® flange bearing

QB:
- Excellent price-to-performance
- Not recommended in submerged, 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

Ball Bearings



Stainless Steel Ball Bearings

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)



- Stainless available in inch & metric sizes to 2-7/16"
- Non-corrosive treated available to 90 mm
- 400-Series ss for maximum strength
- 300-Series ss for maximum corrosion resistance

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

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 x 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 x D x RPM
where D = shaft diameter (in)
RPM = shaft revolutions/min

See PV Calculation Worksheet on page N-4

EDT Materials Selection Chart

	POLY-ROUND® & ALL-ROUND® Bearing Materials	PV Limit	Max Speed V (SFM)	Max Loading P (PSI)	Cont.Operating Temp.	Performance in Moisture Wash Down	Performance in Moisture Submerged	ΔT Dimensional Stability with Temp Change	Chemical Resistance	Abrasion Resistance	Impact Resistance	USDA/FDA Contact Accept.
BEARINGS	PA UHMW white	1,000	50	800	150°F/65°C	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
	OE brown	5,000	350	1,000	160°F/72°C	Excellent	Good	Fair	Good		Excellent	Incidental
	NA grey	6,000	350	2,000	200°F/93°C	Excellent	Good	Fair	Good		Excellent	Incidental
	FA white	6,000	350	1,000	500°F/260°C	Excellent	Excellent	Poor	Excellent		Excellent	Direct
	QB black-green	50,000	400	3,000	500°F/260°C	Excellent	Poor	Excellent	Fair		Good	Incidental
	QF black	60,000	400	6,000	450°F/232°C	Excellent	Excellent	Excellent	Excellent		Fair	Incidental
	MZ Black	6,000	300	4,000	650°F/343°C	Excellent	Excellent	Excellent	Excellent		Fair	Incidental
	MY Black	5,000	250	3,000	800°F/425°C	Excellent	Excellent	Excellent	Excellent		Fair	Incidental
HOUSINGS	KG polymer housing	Not a bearing material			150°F/65°C	Excellent	Excellent	Good	Excellent	N/A	Good	Incidental
	ZA stainless housing	Not a bearing material			1000°F/540°C	Excellent	Excellent	Excellent	Excellent	N/A	Excellent	Direct

Ratings are excellent, good, fair, poor

* PV limits are shown for unlubricated radial bearing applications.
Low temperature / submerged installation may permit PV limits up to 2x higher.

(Scale: Poor-Fair-Good-Excellent revised 12/06)

Data Sheet for Polymer Bearing Materials

Property	ASTM Test	Units	**PA UHMW** (white)	**AA** (white)	**OE** (brown)	**NA** (gray)	**FA** (white)	**QB** (black-green)	**QF** (black)	**MA** (black-brown)
USDA/FDA Approval			**Direct**	Direct	Incidental	Incidental	Direct	Incidental	Incidental	Incidental
Specific Gravity	D-792	g/cm	0.94	1.42	Incidental	1.14	2.3	1.4	1.6	1.43
Impact Strength (notch izod)	D-256	ft-lb/in	>25	1.4	1.1	0.9	2.5	1.1	0.8	0.8
Tensile Strength (Yeild)	D-638	psi	3,100	10,000	8,000	9,300	1,300	8,400	10,000	8,000
Elongation	D-638	%	350	30	11	50	15	6	3	6
Shear Strength	D-732	psi	3,500	9,500	7,500	10,000	1,700	2,727	--	11,200
Compression Strength	D-695	psi	2,400 10% deflection	5,200 1% deflection	15,000 10% deflection	10,000 1% deflection	2,000 2.5% deflection	5,900	22,000	15,200
Hardness	D-785	Rockwell	R64 D67	R120 M94	R115 --	R109 M57	R50 68A	R128 M105	-- D84	-- M85
Coeffcient of Liner Thermal Expansion	D-695	in/in/F	7.20 x 10^{-5}	5.0 x 10^{-5}	5.6 x 10^{-5}	5.5 x 10^{-5}	3.3 x 10^{-5}	3.4 x 10^{-5}	2.0 x 10^{-5}	2.7 x 10^{-5}
Thermal Conductivity	C-177	BTU/hr sq ft/F/in	29	1.6	--	--	--	1.5	3	3
Coeffcient of Friction (against steel)		Static dynamic	.25 .14	.15 .20	.14 .20	.12 - .21 .13 - .16	-- 0.04 - 0.2	-- .15	.17 .08	-- .12
Moisture Absorption 24 hours Saturation	D-570	%	<.01 <.01	.25 .90	.13 --	1.2 5.3	<.35 <1.0	<0.1 .23	.05 .01	.19 1.0
Max. Continuous Use Temperature		F°	150° / 65°C	160° / 72°C	160° / 72°C	200° / 93°C	500° / 260°C	500° / 260°C	450° / 232°C	650° / 343°C
Max. Intermittent Use Temp.		F°	220°	220°	300°	300°	550°	650°	550°	850°
Minimum Use Temperature		F°	Cryogenic	-40	-40	-40	-40	Cryogenic	Cryogenic	Cryogenic
Maximum Recommended PV		(lb) (ft) (in) (min)	<1,000	<2,000	10,000	6,000	6,000	50,000	60,000	100,000
Outgassing TML (Total Mass Loss)		E-595	--	--	--	--	0	--	0	--

BEARING DESIGN CHECKLIST (BDC)

Reference Project: _____ **Date:** _____

Distributor / Branch | Contact

Customer | Contact

City | State

Phone | Fax

Email

Application Data

Do any of these conditions exist?

- ❍ Modular Belt
- ❍ Tensioned Flat Belt
- ❍ Screw Auger
- ❍ Overhung Load
- ❍ Trunnion
- ❍ USDA/FDA Inspection
- ❍ Indirect Food Contact
- ❍ Direct Food Contact
- ❍ Wash Down
- ❍ Submersion
- ❍ Chemical
- ❍ Abrasive Material
- ❍ Vibration/Impact

What type of drive is being used?

- ❍ Roller Chain
- ❍ Direct Couple
- ❍ Timing Belt/HTD Belt
- ❍ V-Belt
- ❍ Line Shaft
- ❍ Hydraulic Motor
- ❍ Slave Drive
- ❍ Variable Frequency Drive
- ❍ Supported Shaft Mount Reducer
- ❍ Unsupported Shaft Mount Reducer
- ❍ Idler

Bearing for: ❍ New machine ❍ Retrofit

How long is current bearing lasting? (Estimated life)

Weeks: _____ Months: _____ Years: _____

Is a drawing of current system available? ❍ Yes ❍ No

Existing problem is with: ❍ Bearing ❍ Housing ❍ Both

Suspected cause of failure: _____

_____

Will existing housing be re-used? ❍ Yes ❍ No

Has a plane bearing been tried previously? ❍ Yes ❍ No

Material or brand: _____

Describe the application:

_____

_____

_____

Bearing Data

❍ Mounted ❍ Type “E”/Roller ❍ Thrust
❍ ER ❍ Unmounted/Radial ❍ Roll End

Shaft Diameter: _____

Shaft RPM: _____

Estimated Load per Bearing: _____

Temp. Around Bearing: _____

Shaft direction: ❍ Horizontal ❍ Vertical ❍ Inclined

Type of motion: ❍ Radial motion ❍ Linear motion
❍ Expansion ❍ Intermittent ❍ Reversing ❍ Frequent stop/start

Self-alignment required? ❍ Yes ❍ No

Split housing required? ❍ Yes ❍ No

Part # of existing bearing: _____

Style of housing: _____

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.

(**F** _____ ÷ **A** _____) = **P** _____ x **V** _____ = **PV** _____

- F: Load on bearing
- A: Journal diameter x bearing LTB
- P: Pressure
- V: From chart below
- PV: Operational PV of bearing* (NTE PV limit of material from box below)

Calculate **P** (**P**ressure) 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)	1/2	3/4	1	1-1/4	1-1/2	2	2-1/2	3	3-1/2	4
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

Journal Size (diameter in inches)

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

Not recommended to use plane bearings

These EDT products have USDA Acceptance

USDA/NSF Equipment Acceptance List

April 2011

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


UNITED STATES DEPARTMENT OF AGRICULTURE
MARKETING AND REGULATORY PROGRAMS
AGRICULTURAL MARKETING SERVICE

EQUIPMENT ACCEPTANCE CERTIFICATE

Firm:
EDT Corporation
Vancouver, Washington

Model Designation:
Poly-Round® Spherical Bearings

April 6, 2011
Date of Issuance

April 5, 2015
Date of Expiration

U.S. Department of Agriculture
Marketing and Regulatory Programs
Agricultural Marketing Service
Dairy Grading Branch
1400 Independence Ave., SW
Washington, DC 20250-0230

The issuance of this form is based on U.S. Department of Agriculture, Dairy Grading Branch, Equipment Design Review Section, evaluation of the equipment listed above for compliance with:

NSF/ANSI/3-A 14159-1 - 2010 Hygiene requirements for the design of meat and poultry processing equipment

This form does not limit USDA's responsibility to take appropriate action in cases in which evidence of non-compliance, improper maintenance, or non-sanitary conditions have been observed.

USDA

United States Department of Agriculture

Polymer Housings	**Series #**
Tapped base pillow block housing	9G_
Pillow block housing – standard backing height	1G_
Pillow block housing – low backing height	10G_
2-Bolt flange housing	2G_
2-Bolt flange housing – small bolt pattern	6G_
3-Bolt extension flange housing	3G_
4-Bolt flange housing	4G_
Narrow slot take-up housing	5G_
Wide slot take-up housing	7G_
Piloted flange housing	24G_
4-Bolt housing – small bolt pattern	4G_-01
3-Bolt flange housing – triangular	22G_

Stainless Steel Housings	**Series #**
Tapped base pillow block housing	9A_
Pillow block housing – standard backing height	1A_
Pillow block housing – low backing height	10A_
2-Bolt flange housing	2A_
2-Bolt flange housing – small bolt pattern	6A_
Piloted 2-bolt flange housing	6A_-SP
3-Bolt extension flange housing	3A_
4-Bolt flange housing	4A_
Narrow slot take-up housing	5A_
Wide slot take-up housing	7A_
Hanger housing	8A_
Piloted flange housing	24A_
4-Bolt housing – small bolt pattern	4A_-01
3-Bolt flange housing – triangular	22A_

USDA/NSF EQUIPMENT ACCEPTANCE LIST (continued)

QuiKlean® Housings	**Series #**
Tapped base pillow block housing (polymer)	9G_-QK
Pillow block housing – standard backing height (polymer)	1G_-QK
2-Bolt flange housing (polymer)	2G_-QK
4-Bolt flange housing (polymer)	4G_-QK

Block Bearings	**Series #**
Tapped base pillow block	9B_O
Pillow block – standard backing height	1B_O
Pillow block – low backing height	10B_O
2-Bolt flange	2B_O
2-Bolt flange – small bolt pattern	6B _O
3-Bolt extension flange	3B_O
4-Bolt flange	4B_O
Narrow slot take-up	5B_O
Wide slot take-up	7B_O
Mini 2-bolt	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	ZAIU_ _
All-Round® stainless ER cylindrical inserts	ZAE_ _ _
All-Round® flange polymer bearings	_ _BU_ _-_
Installation arbor	PATU_O
Poly-Round® spherical bearings	_ _IU_O
Poly-Sphere® bearing	_ _OU_O
Radial Poly-Round® bearings	*All sizes to scale*

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

KOSHER CERTIFICATE

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 to 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 above 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-(½-3)
  QFIU(A-M)9-(½-3)
- QB or QF ALL-ROUND® ER bearings ..... QBEU(A-M)9-(½-7.4)
  QFEU(A-M)9-(½-7.4)
- ALL-ROUND® Solution® mounted bearings ..... QB(1-19)G(A-M)9-(½-3)
  QF(1-19)G (A-M)9-(½-3)
- Ultimate Solution® mounted bearings ..... QB(1-19)G (A-M)9-(½-3)
  QF(1-19)G (A-M)9-(½-3)
- Trolley wheel bearings EDTWB1
- Solid polymer spherical insert ..... QFIU(A-M)O-(½ -3)
- ALL-ROUND® flange bearings ..... With or without locking sleeves (check availability)
- Custom bearings: QF with 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

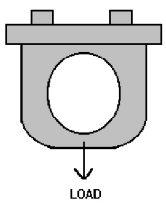
General chemical analysis is rated on the following:
A Acceptable
L Limited
U Unacceptable

Group	Chemical Tested	Temp	Rating
Acids, strong	Concentrated hydrochloric or sulfuric acid	73º F	L
Acids, weak	Acetic acid, hydrochloric (dilute), sulfuric acid (dilute)	73º F	A
Alcohols	Methanol, ethanol, anti-freeze	73º F	A
Alkalies, strong	Strong ammonia or sodium hydroxide	73º F	L
Alkalies, weak	Dilute ammonia or sodium hydroxide	73º F	A
Chlorinated solvents	Methylene chloride, chloroform (111 trichloroethane)	73º F	U
Ethers	Diethyl ether, tetrahydrofuran	73º F	L
Hydrocarbons - Aliphatic	Gasoline, hexane, grease	73º F	A
Hydrocarbons - Aromatic	Benzene, toluene	73º F	A
Inorganic salt solutions	Sodium chloride, potassium cyanate	73º F	A
Ketone, esters	Acetone, methyl ethyl ketone	73º F	U

Tapped Base Pillow Block Thread Integrity Test

Test was conducted using EDT part number 9GC.
Housing was mounted upside down, with bearing loaded opposite the base.

Bolt is 3/4 of threaded hole depth



Test Made	Housing Reaction
Test #1 4,000 # Max. test load	No noticeable distortion. Threads are still intact.
Test #2 766 # Continuous hanging weight test, 11 Days	Housing initially moved .001" then remained there the balance of the test. Threads are still intact.
Test #3 250 # Load dropped vertically 6–10"	Housing took 6 repeated drops before breaking. Note: Threads are still intact.

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 stregth	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	D785	M scale	92
THERMAL			
D TUL at 264 psi (1.8 MPa)	D 648	°F (°C)	221 (105)
Coefficient of thermal expansion	--	in/in/°F	5.14×10^{-5}
Maximum continuous working temperature	--	°F	150
Maximum intermittent temperature	--	°F	250
ELECTRICAL			
Volume resistivity, 73°F (23°C)	D 257	ohm-cm	4.6×10^{14}

EDT Corp ■ 360-574-7294 ■ FAX 360-574-3834
edtcorp.com ■ edtsales@edtcorp.com

Hardware Information

Hardware used by EDT is usually 18-8 or 300-series stainless

Typical hardware sizes on EDT products														
Bearing Ring Size	201-202-203	204	205	206	207	208	209	210	211	212	214	215	216	217-221
EDT Group Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N - R
EDT Type E Group size				1	2	3		4	5		6	7	8	9, 10, 11
BB set-screw	10-32 UNF	1/4-28 UNF	1/4-28 UNF	1/4-28 UNF	1/4-28 UNF	5/16-24 UNF	5/16-24 UNF	3/8-24 UNF	3/8-24 UNF	3/8-24 UNF	3/8-24 UNF	1/2-20 UNF	1/2-20 UNF	1/2-20 UNF
Locking sleeve set-screw	1/4-28 UNF	1/4-28 UNF	1/4-28 UNF	1/4-28 UNF	1/4-28 UNF	1/4-28 UNF	5/16-24 UNF	5/16-24 UNF	5/16-24 UNF	5/16-24 UNF	3/8-24 UNF	3/8-24 UNF	3/8-24 UNF	1/2-20 UNF
Locking sleeve (metric)		M6x1	M6x1	M6x1	M6x1	M6x1								
KleanCap® screw (metric)		KCS06M-01	KCS06M-01	KCS06M-01	KCS06M-01	KCS06M-01								
KleanCap® screw P/N	KCS010-32	KCS1/4-28	KCS1/4-28	KCS1/4-28	KCS1/4-28	KCS1/4-28	KCS516-24	KCS516-24	KCS516-24	KCS516-24	KCS3/8-24	KCS3/8-24	KCS3/8-24	KCS1/2-20
KleanCap® screw	10-32 UNF X 1/2	1/4-28 UNF	1/4-28 UNF	1/4-28 UNF	1/4-28 UNF	1/4-28 UNF	5/16-24 UNF	5/16-24 UNF	5/16-24 UNF	5/16-24 UNF	3/8-24 UNF	3/8-24 UNF	3/8-24 UNF	1/2-20 UNF
KleanCap® hex size	3/16”	1/4” / 6MM for metric	1/4” / 6MM for metric	1/4” / 6MM for metric	1/4” / 6MM for metric	1/4” / 6MM for metric	5/16”	5/16”	5/16”	5/16”	3/8”	3/8”	3/8”	1/2”

Recommended tightening torque limit of stainless set-screws:

In set-screw ball bearings	
10-32 UNF	20 inch-pounds
1/4-28 UNF / M6x1	29 inch-pounds
5/16-24 UNF	60 inch-pounds
3/8-24 UNF	110 inch-pounds
1/2-20 UNF	170 inch-pounds

Use of threadlocker will assure screw stays in place, less affected by vibration

In eccentric ball bearings and locking sleeves	
10-32 UNF	28 inch-pounds
1/4-28 UNF / M6x1	35 inch-pounds
5/16-24 UNF	74 inch-pounds
3/8-24 UNF	155 inch-pounds
1/2-20 UNF	245 inch-pounds

Use of threadlocker will assure screw stays in place, less affected by vibration

When installing housings onto equipment:

All housings should be installed with a flat washer under the head of the bolt.

Use of a lockwasher is at the discretion of the installer. If a lockwasher is used, it should be installed above the flat washer.

On polymer housings, bolt pressure should not exceed 25-30 foot-pounds of torque.

KleanCap® is a registered trademark of EDT

ENGINEERING NOTES

Shaft size tolerances required for insert bearings

Shaft size	Ball bearing insert* (UC or SA) 	Ball bearing insert* (HC or HU) 	DoubleLock® on EDT plane bearing 	Setscrew locking sleeve on EDT plane bearing 
1/2” to 1-1/8”	nominal to -.0006” no plus	nominal to -.0006” no plus	nominal to +.0005 and -.002	nominal to +.001 and -.002
1-3/16” to 1-15/16”	nominal to -.0006” no plus	nominal to -.0006” no plus	nominal to +.001 and -.002	nominal to +.002 and -.002
2” to 3-1/8”	nominal to -.0007 no plus	nominal to -.0007 no plus	nominal to +.001 and -.002	nominal to +.003 and -.003
3-1/4” to 4-1/2”	nominal to -.0009” no plus	nominal to -.0009” no plus	nominal to +.001 and -.002	nominal to +.003 and -.003

***** The higher the shaft speed, the closer the shaft must fit within the ball bearing to maximize the speed capability of the bearing. Shafts sized closest s You - rely on tighter tolerances; TGP (turned, ground and polished) shafting is recommended for higher operating speeds.

For heavy loads, there should also be a close fit (small difference) between ball bearing and the shaft. In heavy loads where there is NOT high speed, consider plane bearings, like EDT Poly-Round®s (shown above).

9/19/2014

ENGINEERING NOTES

Solid Polymer Lubricant

Solid polymer lubricant is grease-free for life

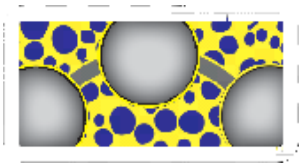
Ball and roller bearings are traditionally lubricated with grease and oils. These lubricants often purge and contaminate the surrounding area and require periodic maintenance through manual or automatic re-lubrication. EDT's solid polymer lubricant (EPL) drastically reduces or eliminates the problems associated with traditional lubrication.

EPL solid polymer lubricants never require re-lubrication, consistently deliver the right amount of lubrication, resist contamination, stand up to harsh applications and wash downs, and dramatically improve cleanliness. EPL can also dramatically improve bearing life by blocking out contaminates and resist chemicals that can cause early bearing failure.

Physical characteristics of EDT's solid Polymer Lubricant

EPL is a superior solid lubricant that combines a micro-porous polymer with high quality, high performance synthetic lubricant, and other additives. The chemical composition of the polymer, additives and synthetic lubricant vary depending on the application. For example, food grade USDAH1 approved oils are used in food processing formulas. Additional additives modify performance characteristics, such as:

- low operating temperature
- reduced friction
- increased load and extreme pressure



EPL's micro-porous structure is comprised of millions of microscopic pores that hold and release lubricating oil. As the bearing rotates and the rolling element track warms, oil is released from the interconnected micro-pores of the solid polymer to lubricate the bearing. Oil is retained in the matrix through surface tension.

The polymer's micro-porous structure traps oil throughout its entire mass and slowly delivers lubrication to the bearing as needed. EPL formulas contain 50% to 80% oil by weight, which is 2 to 5 times more oil than standard grease. The oil-permeated solid polymer also fills and seals the open space of the bearing to block out contaminates that lead to early bearing failure.

Benefits of EPL

Benefit	EPL	Manual greasing	Auto grease	Auto oil
High cleanliness	Yes	No	No	No
Protection from contaminates	Yes	No	No	No
Low preventive maintenance	Yes	No	*high cost	*high cost
Chemical resistant	Yes	No	No	No
Lubricates as needed	Yes	No	Yes	Yes
No need to re-lubricate	Yes	No	No	No
Low operating cost	Yes	No	No	No

*Automated lubrication systems have high initial cost, require ongoing maintenance, and continue to use grease or oil.

Solid Polymer Lubricant

Solid polymer limitations

The use of solid polymer lubricant limits operating speeds of all bearings. Additionally, solid polymer lubrication formulas have maximum recommended operating temperatures. These can be found in the chart below. To calculate speed limitation **at ambient temperatures**, use the following formula:

$$\textit{Maximum rpm} = \frac{\textit{Ndm value}}{\textit{(O.D. + Bore)(.5)}}$$

[All dimensions in mm]

Ndm values	
Bearing Type	Ndm value
Single row deep grove ball bearings with steel cage, including ceramic hybrid	300,000
Ball and Y-bearings with plastic cage	40,000
Double row deep groove and angular con- tact ball bearings	150,000
Cylindrical roller and self aligning ball bearings	150,000
Spherical roller bearings	84,000
Tapered roller bearings	44,000

Proven applications

- **Food processing**; clean operating environments
- **Contaminated environments** (dirt, sand, flour, etc.)
- **Low operating temperatures**
- **Difficult to reach** or maintain bearings
- **Horizontal** bearing operation
- **Wash down**; chemical cleaning
- **Oscillating rotation**
- **Harsh** environments
- **Material handling**
- **Wet** environments
- **Waste treatment**



Solid Polymer Lubricant	Description	Food Safe	Operating Temp	EDT Lube P/N
EPL 4000F	High performance oil-permeated solid lubricant	YES	-55°F to 215°F	F
EPL 5500F	High performance **high temperature** oil-permeated solid lubricant	YES	-25°F to 350°F	K
EPL 6500F	**Extreme low temperature,** high performance, oil-permeated solid lubricant	YES	-65°F to 200°F	B
EPL 3500F	High performance oil-permeated solid lubricant	NO	-55°F to 215°F	H
Other EPL products	More formulations at **www.edtcorp.com**			

Bearings For Severe Service Environments

TECHNICAL UPDATE February 28, 2002

EDT Bearing Selection Guidelines

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 40ºF (4ºC).
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 150ºF. 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-Round® bearings 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 90º bend in the conveyor as 3 times the length, and each 180º curve as 6 times the length. Example: a 10-foot conveyor with one 90º bend has an equivalent length of 30 feet. With two 90º bends, the bearings on the 10-foot conveyor are handling the equivalent of 60 feet on a straight conveyor. Ten feet with one 90º and one 180º 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, which are best left to ball bearings.

(Continues on next page)

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 holds 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. (See pages G-3 & G-4 in the PINK section).

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, will speed the corrosion process.

OPTION: Check with EDT for assistance to see if a plane bearing (fully non-corrosive) might be an option for your application.

TECHNICAL UPDATE 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 retail or industrial customer is then forced to make a purchasing decision based on incomplete information that is based more on “marketing” than on the complete facts of the science.

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.

TECHNICAL UPDATE July 25, 2014

Summary analysis of failed solid-lubricated ball bearings and 'red water'

In response to reports of premature ball bearing failure of EDT solid-lubricated stainless ball bearings, whether 440C or 300-series, EDT conducted research into the source of the problem towards finding a solution. The premature ball bearing failures manifest as bearings showing a 'red water' stain at the 6 o'clock position (gravity induced), and ball bearings failing more rapidly than historical life in the same location. Interestingly, these two events do not always occur together.

Our research began by interviewing plant personnel and also making numerous trips to processing facilities. It was challenging to discern a pattern of failure and to get comparisons with like installations that had not failed in other plants, as well as seeing varying results with alternative products. Consideration was given to equipment, lubricants, seals, bearing brands, types of metals in races, shields, cages, and the wash down chemicals used in the plants. Multiple failed bearings were submitted to an independent testing lab for evaluation, as was MSDS information of cleaning chemicals that came in contact with the bearings.

Laboratory Testing

EDT supplied failed bearings and photos of additional bearing failures and of 'red water' marking to an independent testing laboratory located in the Portland, Oregon area. The lab was asked to evaluate the nature of the current condition of all components of the bearings. They were also asked to assess the expected interaction of the component materials with cleaning chemicals (alkaline and chlorine) used in the field.

The following items were evaluated by the lab and/or by EDT:

1. 440 stainless bearings with solid lubricant
2. 440 stainless bearings with conventional food grade grease
3. 300-series stainless and solid lubrciated bearings returned from field use
4. Alternative coated 52100 bearings with conventional food grade grease
5. Seal combinations
6. Shield combinations
7. Shaft size variations
8. Consideration of application
9. Consideration of plant geography
10. Consideration of dwell time exposure to the cleaning chemicals and sanitizers
11. Considerations of other EDT customer experiences over years of exposure

Here are facts and discoveries relevant to the occurrences of 'red water' and premature ball bearing failures:

1. The 440C stainless and the 300-series stainless used in EDT bearings is metallurgically the same as that used in other brands of stainless insert ball bearings.
2. A check of all vendor sources related to failed EDT bearings could detect no changes in processes and procedures, materials, or lubrication.
3. While there have been isolated incidences of corrosion of EDT bearings in various plants, the rash of corrosion and premature failures became more evident in the fall of 2013. This timing correlates with a move to more aggressive cleaning chemicals, particularly in facilities processing protein-rich food products.
4. There was no appreciable difference in corrosion pattern based on bearing location (application), plant location, or shaft size.
5. In areas where bearings are not subjected to significant wash down (box conveyors that get shorter chemical dwell time or areas inaccessible to heavy CIP), solid-lubricated, stainless ball bearings show very little sign of corrosion.
6. There appears to be no interaction of cleaning chemicals with the bearing components of seal, non-stainless cages, shield, solid lubricant, or grease.
7. In the presence of other liquids, some dilution of any lubricant can be expected.
8. There was degradation on all stainless bearings (440C and 300-series) of inner- and outer-races and balls from alkaline cleaners and chlorine sanitizers when used independently. There was also a third degrading action of the metal when these chemicals

(Continues on next page)

Solid-lubricated ball bearings and 'red water' (continued)

1. were used together or when a second chemical was used while there was residual of the first.

   While 300 SS is generally more corrosion resistant than 400 SS, per the laboratory, the 300-series stainless is also subject to corrosion in the presence of these new, more aggressive cleaning chemicals. The two primary components of the 'red water' were analyzed to be iron and chromium, both of which are dark in color and exist in both SS metal families.

   Grease protected the metal races better than the oil that is in solid lubricants. Because of this difference in protection, the races are more exposed to the chemicals with solid lubricants than with grease, which makes the chemicals more damaging.
2. Solid lubricated bearings on newly installed equipment, subjected to the full range of chemicals but not yet put into service, showed very little signs of corrosion.
3. Whether bearings were originally purchased with food grade grease or solid lubricated, in facilities where grease has been consistently [re]supplied, there are few-to-no incidences of bearing corrosion or 'red water.'

   At plants that initiated a routine maintenance program of weekly re-greasing ALL ball bearings, regardless of whether originally purchased greased or solid lubricated, in order to "top off" the lube-fill, even 440 stainless insert ball bearings show little evidence of corrosion. Notably, with this practice, some stainless bearings have run reliably for as much as 2-1/2 years.
4. EDT Poly-Round® plane bearings (insert bearings that are made of solid polymer and mated with 316 stainless locking sleeves) consistently have exhibited no corrosion regardless of the composition of the cleaning chemical.

Conclusion

While generally 300-series stainless is more corrosion resistant than 400-series stainless, the 300-series, in the presence of these more aggressive cleaners, WILL show signs of corrosion.

It has been determined by the lab and validated in the field that, regardless of seal type, there is sufficient dilution of the solid lubricant to expose the bearing races to the caustic effects of the cleaning chemicals. Standard lubrication (grease) seems to offer better protection of the races from the chemicals; with grease, corrosion can better be prevented.

Prior to the use of such aggressive cleaning chemicals, EDT solid lubricated bearing products have provided significant cost savings for users. There is not a problem with the solid lubricants or solid lubricated bearings; the issue is the aggressive chemical solutions diluting the oil more readily than grease, after which the metal is not as well protected and is more prone to corrosion. Until a better class of solid lubricants is developed to address these advances in cleaning and sanitizing chemicals, in applications where high levels of aggressive chemical solutions are used, greased bearings are better performers than solid lubricated bearings

EDT's Poly-Round® plane bearings with 316 stainless components in 300-series stainless, or our KG polymer material housings continue to be up to the challenges of this increasingly severe environment. There are many applications where ball bearings are currently used that would benefit from converting to plane bearings, and EDT will continue to work to expand the use of Poly-Round® bearings where feasible.

In the short term, for plants where solid lubricated bearings are prematurely failing and where increasingly aggressive cleaning chemicals are utilized, greased bearings with the ability to re grease to refresh the protective effect of grease on the stainless races appears to significantly extend bearing life, albeit without reducing labor. To avoid over-greasing and exacerbate product contamination from excess grease, careful attention should be paid to the amount of additional grease routinely added – some facilities processing protein have found that re-greasing one squirt one time per week sufficiently refreshes the grease to maximize stainless ball bearing life despite ongoing exposure to these increasingly aggressive wash down chemicals and sanitizers.

For the long term, EDT is exploring several options for new bearing lubricants and for bearing materials that can withstand the changing environment in food processing facilities. Tests of some options are in progress, and new products will be introduced when tests are completed and inventory is in place.

EDT strives to provide bearing products that address sanitation and productivity with low cost of ownership. We sincerely appreciate the opportunity to work with our customers, and look forward to continuing to partner with you with the goal of developing bearings that accommodate the needs at your facilities for:

- highest levels of sanitation
- lowest maintenance costs to maintain operations
- increasingly aggressive wash down products and processes
- different personnel and practices at each facility

With questions or concerns about EDT products, please contact us directly:

360-574-7294 or 800-810-7100