

# Application Triage

<b>Level 1: Core</b>	<ul style="list-style-type: none"> <li>Baggers <ul style="list-style-type: none"> <li>- Triangle</li> <li>- Rotary</li> </ul> </li> <li>Blanchers (in-line)</li> <li>Bottle/can washers</li> <li>Breaders</li> <li>Cryovac shrink wraps</li> <li>Debone carts </li> </ul>	<ul style="list-style-type: none"> <li>Debone conveyors </li> <li>Dryers</li> <li>Dumpers: single pivot</li> <li>Flat belts </li> <li>Freezers, tunnel</li> <li>Fryers, paddle</li> <li>Idler bearings</li> </ul>	<ul style="list-style-type: none"> <li>Microwave ovens (in-line)</li> <li>Modular plastic belt conveyors (Intralox, Habisit, Rex, etc)</li> <li>Modular wire belt conveyors</li> <li>Ossid hot water tunnels</li> </ul>	<ul style="list-style-type: none"> <li>Pasteurizers (in-line conveyors)</li> <li>Peelers/scrubbers</li> <li>Screw conveyors/ augers (bottom bearing on non-drive end)</li> <li>Sprocket bushings</li> </ul>	<ul style="list-style-type: none"> <li>Steamers (in-line)</li> <li>Stork rehangers </li> <li>Tabletop chains (in-line)</li> <li>Type E/RPB (review with EDT/SW)</li> <li>Yamato scales</li> </ul>	<b>Red flag</b> <ul style="list-style-type: none"> <li>If you are not familiar with the application, and/or which bearing to use</li> </ul> <ul style="list-style-type: none"> <li>1–2 day response</li> </ul>
<b>Level 2: Intermediate</b>	<ul style="list-style-type: none"> <li>Blenders</li> <li>Brine tanks </li> <li>Chillers </li> <li>Cookers  </li> <li>Conveyors, curved </li> <li>Feather presses </li> </ul>	<ul style="list-style-type: none"> <li>Fillers</li> <li>Flocculators</li> <li>Fryers, batch</li> <li>Fryer, opposing belt </li> <li>Hide pullers </li> <li>Hock cutters </li> </ul>	<ul style="list-style-type: none"> <li>Ice rakes</li> <li>Malt house</li> <li>Marinators</li> <li>Meat presses  </li> <li>Mixers</li> </ul>	<ul style="list-style-type: none"> <li>Oven, idler rollers (in-line)</li> <li>Parts washers</li> <li>Paw scalders/pickers </li> <li>Proofers</li> <li>Retorts (high temp)</li> </ul>	<ul style="list-style-type: none"> <li>Screens, waste water</li> <li>Slicers, Cashin </li> <li>Snout pullers </li> <li>Sorters</li> <li>Tank pasteurizers</li> </ul>	<b>Red flag</b> <ul style="list-style-type: none"> <li>If bearing speed (V) is in <b>yellow</b> or <b>red</b> area of chart 1</li> </ul> <ul style="list-style-type: none"> <li>1–3 day response</li> </ul>
<b>Level 3: Complex</b>	<ul style="list-style-type: none"> <li>Can closers</li> <li>Carcass washers </li> <li>Casting belts </li> <li>Cubers  </li> <li>Dicers </li> <li>Fans</li> <li>Freezers, spiral</li> <li>Meyn rehangers </li> </ul>	<ul style="list-style-type: none"> <li>Ovens, spiral</li> <li>Rotating drums </li> <li>Rotating screen </li> <li>RPR as rollers in new application</li> <li>Slicers </li> <li>Trunnions </li> <li>Type E/RPB over 3"</li> </ul>	<p>These applications</p> <ul style="list-style-type: none"> <li>Abrasives</li> <li>Chemical</li> <li>Thrust load</li> </ul>	<b>Red flags</b> <ul style="list-style-type: none"> <li>If within 25% of material max limit on chart 2 <ul style="list-style-type: none"> <li>- Hot or cold</li> <li>- Speed (V)</li> <li>- Load (P)</li> </ul> </li> <li>If bearing speed (V) is in <b>yellow</b> or <b>red</b> area of chart 1</li> </ul> <ul style="list-style-type: none"> <li>Engineering must review</li> <li>3–5 day response</li> </ul>	<b>PV Calculation Template</b> $F \frac{\text{Load on bearing}}{\text{Journal diameter x bearing LTB}} \div A \frac{\text{Journal diameter x bearing LTB}}{\text{From chart 1}} = P$ $P \times V = PV$ <p>PV Operational PV of bearing* (NTE PV limit of material from chart 2)</p>	
<b>Level 4: Special</b>	<ul style="list-style-type: none"> <li>Cam followers</li> <li>RPR – not as a roller</li> <li>Shakers</li> <li>Skatewheels</li> <li>Customs</li> <li>R&amp;D projects</li> </ul>	<b>Red flags</b> <ul style="list-style-type: none"> <li>Proceed only if: <ul style="list-style-type: none"> <li>- Customer has high pain point</li> <li>- Customer willing to trial at own expense</li> <li>- Customer willing to trial with risk of failure</li> </ul> </li> </ul> <ul style="list-style-type: none"> <li>Engineering must review, and should only do so if customer agrees to level of participation</li> <li>3–10 day response</li> </ul>				
<b>Level 5: Decline</b>	<ul style="list-style-type: none"> <li>Pumps (refer customer to Graphalloy 914-968-8400)</li> <li>High volume molded parts</li> <li>Gears or sprockets (except bushings)</li> <li><b>NOT EDT'S BUSINESS</b></li> </ul>					

Poultry Dairy Pork Ball bearing

**2 Material Operating Limits**

Limiting	P	V	PV	Temp
PA	800	50	1,000	150°F
OE	1,000	350	5,000	160°F
AA/ME	1,000	200	2,000	180/160°F
FA	1,000	350	6,000	500°F
NA	2,000	350	6,000	200°F
QB	3,000	400	50,000	500°F
QF	6,000	400	60,000	450°F
MZ	3,000	300	6,000	650°F
MY	5,000	250	5,000	800°F

**1 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