

Index

- abnormal misalignment, 9, 23
- acoustic noise, 2, 88, 112, 135, 137, 140, 144, 252–4, 256, 259, 266
- alignment, 9, 19, 25, 36, 126, 182
- aluminium die cast, 31, 222, 226–7
- American Petroleum Institute, 189, 210, 212
- angular contact bearing, 55, 57, 76, 90, 95, 103
- angular misalignment, 8
- API, 189, 210, 212, 214, 219
- attenuation, 116, 171, 173, 213
- auxiliary sea water lift pump, 120
- axial clearance, 49, 182
- axial load, 52, 54, 58, 90, 103, 179, 182
- axial misalignment, 8

- Babbitt, 175, 179–80, 182–3, 187, 198–9
- ball diameter, 81
- ball pass frequency inner race, 115
- ball pass frequency outer race, 115
- ball spin frequency, 79, 115
- Bearing Analysis Handbook*, 6
- bearing clearances, 4, 49, 176
- bearing defect frequency, 83, 116, 271
- bearing degradation, 75, 78, 161
- bearing dynamic capacity, 65
- bearing housing vibration, 185, 191, 214, 216
- bearing insulation, 162
- bearing life, 63–5
- bearing load zone, 49
- bearing shells, 175, 182
- boiler forced draft fan, 115
- Bow Thruster, 109–10, 114
- brass cage, 12, 49, 54, 57, 83, 90, 95, 103, 138, 158–9, 262, 278
- British Standard, 15, 156, 186
- broken rotor bars, 2, 202, 206, 221–2, 226–7, 231
- broken shaft, 75, 159, 161, 166

- cement factory, 260, 263, 265–6
- centrifugal force, 10, 35, 133, 136, 146, 164, 192, 245, 250
- coil span factor, 235

- condition monitoring, 1, 6–7, 11, 27, 31–2, 76, 79, 92, 160–1, 221, 226, 231
- contact angle, 55, 58, 110
- corrosion, 9, 36, 68, 152, 167
- coupling guard, 20, 79, 81, 115, 153, 274
- cylindrical roller element bearing, 47, 53, 55, 78, 90, 103, 127, 152, 158, 278

- damaged ball, 115
- decibel, 86
- deep groove ball bearing, 52

- eddy current displacement probe, 183
- electromagnetic force, 2, 6, 17, 19, 208, 210–11, 216, 221, 225, 233, 235–7, 258, 271
- electrostatic discharge, 71–2
- envelope analysis, 76, 78–9, 152, 154, 159, 274
- equivalent bearing load, 65
- excessive load, 66, 182
- extra capacity bearing, 54, 82, 133, 136, 138, 154, 159

- Factory Acceptance Test, 28, 68, 90, 163, 183, 185, 202, 209, 211–12, 262
- false brinelling, 66, 120, 127, 132, 140, 163, 166–7
- Fast Fourier Transform, 15
- fatigue failure, 65, 67, 79, 133
- fluid film bearing, 175
- flux density, 208, 233, 235, 237, 263
- 4-point contact ball bearing, 55
- FPSO, 109
- frequency conversion, 193
- frequency spectra, 11, 84, 86, 107
- frequency spectrum, 87, 103, 107
- fretting, 68, 167
- fundamental train frequency, 81

- gas recirculating fan, 19
- grease lubrication, 50, 95
- grease management, 270, 277

- ingress protection, 198
- inner race, 80

- inner race defects, 119
- inverter, 72, 193, 253–4, 256, 258–9
- journal bearing, 4, 175–6, 192, 211
- Kramer, 193
- magnetic force, 208, 211, 233
- MCSA, 222, 226–7, 231
- mechanical imbalance, 10, 15, 25, 31, 106, 192, 206, 245, 247
- mechanical impedance, 6, 225
- mechanical stiffness, 90, 103, 116, 171, 173, 274
- mechanical unbalance, 118, 146, 151, 164
- misalignment, 7–8, 10, 25, 31, 53, 59, 72, 124, 182
- Motor Current Signature Analysis, 202, 221, 226–7, 231
- NEMA, 16, 28, 172, 185, 210, 213
- offshore installation manager, 27
- oil drainage, 179
- oil-fed pressure bearing, 177
- oil feed, 179–80
- oil film wedge, 176
- oil scoop ring, 181
- oil viscosity, 180
- OIM, 27, 31
- parallel misalignment, 7
- pitch diameter, 81
- pitting, 65, 72, 163
- QJ, 57–8
- radial clearance, 12, 49
- RCFA, 141, 160
- resonance, 12, 83, 192, 197, 250
- ring lubricated bearing, 181
- roller bearing, 37, 82, 117, 133
- rolling element bearing, 3–4, 6–7, 47, 49–50, 52, 61, 63, 75, 78, 122, 154, 174, 270–2, 277
- rotational speed frequency, 11, 13, 29, 81, 83, 92, 110, 113, 124, 163, 197, 214, 245, 247, 249, 251
- rotor slot vibration, 211, 215, 222, 225, 227, 231
- rotor slotting, 210, 221, 231
- RTD, 204
- shaft alignment, 7
- shaft currents, 68
- shaft displacement, 4, 75, 185–6, 189, 192, 197–8, 200–2, 204
- shaft displacement probe, 189
- shaft misalignment, 7–8, 10–11, 17, 19, 32, 35–6, 39, 41, 106, 271
- shielded ball bearing, 141
- skidding, 68, 80, 108, 133, 135–7, 158, 278
- sleeve bearing, 3, 20, 27, 75, 161, 174, 177–8, 180, 182–3, 185–6, 190, 271
- slip energy recovery, 193
- slip frequency, 193, 227, 231
- Slip Ring Induction Motor, 192–3
- slipping, 67
- soap, 52, 95
- soft foot, 9, 11, 19, 32, 36–7, 39–42, 208
- spalling, 65, 163
- spherical roller bearing, 59
- spike energy, 79
- SRIM, 195, 198, 201, 260, 262
- SRP, 165, 167
- stator core, 2, 114, 142, 208, 210
- stator core back, 208, 210–14, 216, 219–20, 222, 227, 262, 265
- stator frame vibration, 230, 232
- stator winding temperature, 204
- structural resonance, 241, 247
- sulphate removal pump, 160, 166
- supply voltage unbalance, 208, 236
- SWIP, 192
- tapered roller bearing, 58
- TEFC, 78
- Tesla, Nikola, 1
- thickener, 52
- time domain, 13, 213, 216, 237
- true brinelling, 67
- twice supply frequency, 17, 210, 218, 232, 237
- vibration spectrum analysis, 1, 7, 10, 15, 37, 105, 129, 232, 258, 271
- white metal, 175, 179–80, 182–3, 187, 199
- zoom spectrum, 131, 136–7, 157