



**MRC**

# MRC hybrid ceramic ball bearings





# Hybrid ceramic ball bearings . . .

virtually eliminate the risk of electrical erosion

Electricity and bearings don't always go well together, especially in electric motors and generators. Even the smallest stray electrical currents can bring your bearings, and your business, to a standstill.

Rarely is a threat so clear—and so easily eliminated. The majority of bearing failures in variable frequency drive electric motors and large wind turbine generators are linked to the passage of damaging electrical currents through the bearings. This so-called electric erosion not only affects the bearing raceways but also the lubricant, and thus the performance of the bearing. Over time, electric

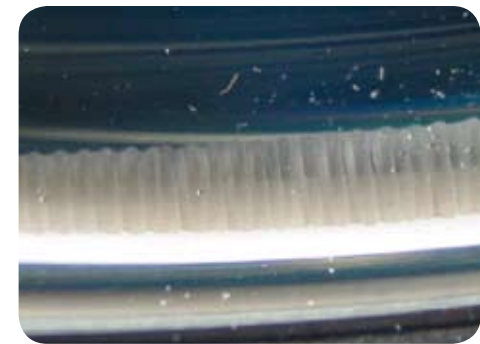
erosion can result in premature bearing failure and generator or electric motor breakdown and extended downtime. Can you afford an unnecessary production loss?

Fortunately, there is a reliable, cost-effective solution that eliminates the risk of electrical erosion—and the huge cost of repairs and lost energy production associated with it.

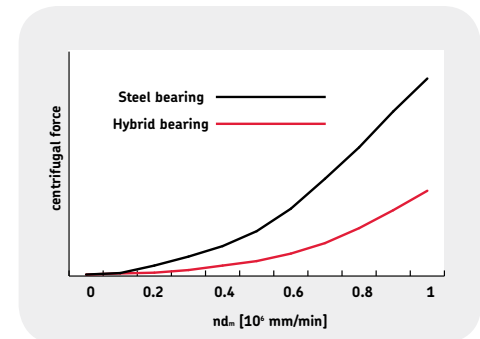
MRC® hybrid deep-groove ball bearings provide a highly effective solution for both new and installed electric motors and generators. They feature rings of bearing steel and balls of bearing grade silicon nitride.

This unique ceramic material insulates the bearing against passage of stray electrical currents while also providing extended grease life, further reducing lifecycle costs.

Because turnaround time is critical in the electric motor and generator repair business, a complete range of MRC hybrid bearings (including XL-bore sizes and sealed or shielded configurations) are in stock and readily available when you need them. That's the MRC brand advantage.



*Fluting created by electrical arcing*



*Hybrid balls = lower operating temperature*



**Complete range of hybrid ceramic ball bearings**  
stocked in both open and closed designs



**Open Design**

- 205S-HYB#1
- 206S-HYB#1
- 207S-HYB#1
- 208S-HYB#1
- 209S-HYB#1
- 210S-HYB#1
- 211S-HYB#1
- 212S-HYB#1
- 213S-HYB#1
- 214S-HYB#1
- 215S-HYB#1
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- 217S-HYB#1
- 218S-HYB#1
- 220S-HYB#1
- 222S-HYB#1
- 224S-HYB#1
- 226S-HYB#1
- 228S-HYB#1
- 230S-HYB#1
- 232S-HYB#1
- 236S-HYB#1
  
- 306S-HYB#1
- 307S-HYB#1
- 308S-HYB#1
- 309S-HYB#1
- 310S-HYB#1
- 311S-HYB#1
- 312S-HYB#1
- 313S-HYB#1
- 314S-HYB#1
- 315S-HYB#1
- 316S-HYB#1
- 317S-HYB#1
- 318S-HYB#1



**Two Shields**

- 205SFF-HYB#1
- 206SFF-HYB#1
- 207SFF-HYB#1
- 208SFF-HYB#1
- 209SFF-HYB#1
- 210SFF-HYB#1
- 211SFF-HYB#1
- 212SFF-HYB#1
- 213SFF-HYB#1
- 214SFF-HYB#1
- 215SFF-HYB#1
  
- 306SFF-HYB#1
- 307SFF-HYB#1
- 308SFF-HYB#1
- 309SFF-HYB#1
- 310SFF-HYB#1
- 311SFF-HYB#1
- 312SFF-HYB#1
- 313SFF-HYB#1
- 314SFF-HYB#1
- 315SFF-HYB#1



**Two Seals**

- 205SZZ-HYB#1
- 206SZZ-HYB#1
- 207SZZ-HYB#1
- 208SZZ-HYB#1
- 209SZZ-HYB#1
- 210SZZ-HYB#1
- 211SZZ-HYB#1
- 212SZZ-HYB#1
- 213SZZ-HYB#1
- 214SZZ-HYB#1
- 215SZZ-HYB#1
  
- 306SZZ-HYB#1
- 307SZZ-HYB#1
- 308SZZ-HYB#1
- 309SZZ-HYB#1
- 310SZZ-HYB#1
- 311SZZ-HYB#1
- 312SZZ-HYB#1
- 313SZZ-HYB#1
- 314SZZ-HYB#1
- 315SZZ-HYB#1

**Large bore sizes with ball guided cage**  
for grease lubricated wind power generation applications



**Steel ball guided cage**

- 320S-HYB#3
- 322S-HYB#3
- 322SF-HYB#3
- 324S-HYB#3
- 326S-HYB#3
- 328S-HYB#3
- 330S-HYB#3
- 332S-HYB#3

**Large bore angular contact with ball guided cage**  
for large HP vertical shaft electric motor applications



**Bronze ball guided cage**

- 7226PJDE-HYB#3
- 7228PJDE-HYB#3
- 7320PJDE-HYB#3
- 7322PJDE-HYB#3
- 7324PJDE-HYB#3



## Part numbering system

### Basic Conrad series

200S

300S

### Basic angular contact series

7000P

### Suffixes

HYB- Ceramic balls

#1- ABEC 1 Precision

#3- ABEC 3 Precision

### Sealing options

FF- Two shields

ZZ- Two contact seals



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Designation	Principal Dimensions				Mass
	d	D	B	$r_a$ max*	kg
205S-HYB#1	25	52	15	1.00	0.13
206S-HYB#1	30	62	16	1.00	0.20
306S-HYB#1	30	72	19	1.00	0.34
207S-HYB#1	35	72	17	1.10	0.29
307S-HYB#1	35	80	21	1.50	0.44
208S-HYB#1	40	80	18	1.10	0.35
308S-HYB#1	40	90	23	1.50	0.61
209S-HYB#1	45	85	19	1.10	0.41
309S-HYB#1	45	100	25	1.50	0.82
210S-HYB#1	50	90	20	1.10	0.44
310S-HYB#1	50	110	27	2.00	0.92
211S-HYB#1	55	100	21	1.50	0.59
311S-HYB#1	55	120	29	2.00	1.20
212S-HYB#1	60	110	22	1.50	0.71
312S-HYB#1	60	130	31	2.00	1.50
213S-HYB#1	65	120	23	1.50	0.92
313S-HYB#1	65	140	33	2.00	1.85
214S-HYB#1	70	125	24	1.50	0.99
314S-HYB#1	70	150	35	2.00	2.50
215S-HYB#1	75	130	25	1.50	1.05
315S-HYB#1	75	160	37	2.00	2.60
216S-HYB#1	80	140	26	2.00	1.12
316S-HYB#1	80	170	39	2.10	2.80
217S-HYB#1	85	150	28	2.00	1.80
317S-HYB#1	85	180	41	2.50	4.58
218S-HYB#1	90	160	30	2.00	1.96
318S-HYB#1	90	190	43	2.50	4.81
220S-HYB#1	100	180	34	2.00	3.08
320S-HYB #3	100	215	47	2.50	7.71
7320PJDE-HYB #3	100	215	47	2.50	7.71
222S-HYB#1	110	200	38	2.00	4.35
322S-HYB#3	110	240	50	2.50	9.42
7322PJDE-HYB #3	110	240	50	2.50	10.43
224S-HYB#1	120	215	40	2.00	5.16
324S-HYB#3	120	260	55	2.50	14.51
7324PJDE-HYB #3	120	260	55	2.50	14.51
226S-HYB#1	130	230	40	2.50	5.76
326S-HYB#3	130	280	58	3.00	17.23
7226PJDE-HYB #3	130	230	40	2.50	7.03
228S-HYB#1	140	250	42	2.50	7.64
328S-HYB#3	140	300	62	3.00	21.32
7228PJDE-HYB #3	140	250	42	2.50	8.61
230S-HYB#1	150	270	45	2.50	11.43
330S-HYB#3	150	320	65	3.00	25.40
232S-HYB#1	160	290	48	2.50	14.30
332S-HYB#3	160	340	68	3.00	29.93
236S-HYB#1	180	320	52	3.00	17.69

\* Radius  $r_a$  indicates maximum fillet radius on shaft or in housing which bearing corner will clear.

