



# High-Precision Bearings for High-Speed Wire Rod Finishing Mills

## Engineering Application Solution (Cooperating Factory Model)

This bearing series is designed as a **high-precision bearing solution for high-speed wire rod finishing mills and sizing/reducing mill units.**

The bearings are **manufactured by long-term cooperating professional bearing factories**, while we are responsible for **application-based selection, operating-condition matching, verification, and supply support**, providing a reliable alternative to imported bearings for steel plants operating under **high speed, heavy load, and continuous duty conditions.**

These products are **not general-purpose industrial bearings**, but **engineering-oriented bearings optimized for critical positions of high-speed wire rod finishing mills**, with targeted configurations in materials, structure, machining accuracy, and service conditions.

## 1. Applicable Equipment and Operating Conditions

### Applicable Equipment

- High-speed wire rod finishing mill stands
- Reducing / sizing mill units
- Laying head systems
- Speed reducers, speed increasers, roll boxes, and associated drive shaft positions in the finishing area

### Typical Operating Conditions

- Line speed range: **78 – 105 m/s** (up to **120 m/s** in specific applications) • Long-term continuous operation
- High rotational speed with impact and dynamic loads
- Harsh environments including elevated temperature, mill scale, dust, moisture, and cooling water

## **2. Bearing Types and Application Configuration**

Bearing configurations are selected according to load characteristics and operating requirements of different mill positions:

### **2.1 Angular Contact Ball Bearings**

Primarily used in roll boxes, drive shafts, and selected speed reducer positions. These bearings can carry combined radial and unidirectional axial loads and are typically arranged in matched pairs or sets. Proper internal clearance is reserved during assembly to meet high-speed operating requirements and extend service life.

### **2.2 Cylindrical Roller Bearings**

Mainly applied in speed reducers, speed increasers, and heavily loaded drive shaft positions. These bearings offer high radial load capacity and stable performance under high load and high speed. The separable design facilitates installation and maintenance.

### **2.3 Deep Groove Ball Bearings / Four-Point Contact Ball Bearings**

Used in selected gearboxes, idler shafts, and special structural positions. Compact design with good high-speed capability.

### **2.4 Oil Film Bearings (Plain Bearings)**

Applied in laying heads and specific high-speed finishing mill positions. Manufactured with a Babbitt alloy base and multilayer electroplated structure, offering low friction, low noise, and high load-carrying capacity. These bearings can be installed directly as replacements without mechanical or structural modifications to existing equipment.

## **3. Materials and Structural Configuration**

### **Bearing Steel**

High-purity bearing steel with stable chemical composition and high fatigue strength, suitable for high-speed, heavy-load, and continuous operating conditions.

### **Cages**

High-strength cage materials designed for stability and fatigue resistance under high rotational speeds, ensuring structural reliability during long-term operation.

## Rolling Elements

High-precision balls or rollers with strict control of hardness, surface roughness, and geometric accuracy, effectively reducing vibration and abnormal wear.

## 4. Engineering Application Reference Data

The following tables provide **typical engineering application reference data** for high-speed wire rod finishing mills and related equipment, intended to assist users in preliminary bearing selection based on position, load, and speed requirements.

All bearings listed are manufactured by **long-term cooperating professional bearing factories**, with selection and application validation based on actual mill operating conditions.

### Angular Contact Ball Bearings

Bearing No.	Drawing Ref. (Morgan / SMSMeer)	D (mm)	D (mm)	B (mm)	Weight (kg)	Application Position	Cr(kN)	Cor(kN)	MaxSpeed (rpm)
162250C	F0364033/ 804237	130	230	80	14.5	Speed reducer/ gear reducer	308	386	4,500
162250E	F0364034/ 804236	120	215	80	12.4	Long shaft	286	345	5,000
162250J	F0364031/ 800820A	50	110	54	2.5	No.1–10 bevel box / drive shaft	122	102	15,000
162250K	F0364024/ 801686	40	100	50	1.9	No.1–6 bevel box idler shaft	104	85	16,000
162250L	F0364050/ 804864	40	80	36	0.8	Roll box	53	44	15,000
162250LA	F0364042/ 804712	40	100	50	2.1	No.3–10 roll box	97	80	15,000
162250JA	F0364052/ 807123	55	120	58	3.2	Drive shaft	129	107	14,000
162250LB	F0364028/ 800821	35	80	42	1.0	Roll box shaft	70	52	17,000
162250Y	F0364022/ 801684	130	200	33	3.8	Long shaft	121	131	8,000

### Cylindrical Roller Bearings

Bearing No.	Drawing Ref.	D (mm)	D (mm)	B (mm)	Weight (kg)	Application Position	Cr( kN)	Cor( kN)	MaxSpeed (rpm)
162250B	F0364047/ 804811	200	320	48	15.0	Speed reducer /gear reducer	382	575	3,600
162250D	F0364037/ 804623	140	220	36	5.3	Speed reducer	211	294	7,000
162250F	F0364035/ 804569	120	180	28	2.8	Long shaft	156	214	9,000
162250G	F0364029/ 803156	130	200	33	3.6	No.1–6 bevel box	237	299	8,000
162250H	F0364023/ 801681	60	130	31	1.9	Drive shaft	165	168	11,000
162250S	F0364048/ 804810	170	265	42	8.3	Speed increaser	316	447	5,000
162250V	F0364046/ 804809	140	250	42	8.7	Speed increaser / gear reducer	450	569	3,000
162250GC	F0364032/ 801682	130	200	46	5.1	Drive shaft	330	473	7,000

## Deep Groove Ball Bearings / Four-Point Contact Ball Bearings

Bearing No.	Drawing Ref.	D(mm)	D(mm)	B(mm)	Weight (kg)	Application Position	Cr(kN)	Cor(kN)	MaxSpeed(rpm)
162250KA	F0364053/ 807121	45	100	25	1.0	Bevel box idler shaft	53	32	12,000
162250U	F0364041 / 6034	170	260	42	8.4	Speed increaser	153	149	4,000
162250W	F0364054/ 807122	140	250	42	9.1	Speed increaser / gear reducer	160	154	4,000
162250MA	F0364043/ 804974	50	120	49.2	2.8	No.1-2 roll box	83	111	12,000

## Laying Head Bearings

Bearing No.	Drawing Ref.	d(mm)	D(mm)	B(mm)	Weight (kg)	Application Position	Cr(kN)	Cor(kN)	MaxSpeed(rpm)
M438106C	7040MP.UA.100	200	310	51	14.0	Drive shaft	225	290	2,200
M438106A	7220B.MP.UA	100	108	34	3.63	Hollow shaft	142	124	4,250
M438106B	N226E.M1	130	230	40	7.3	Drive shaft	425	445	3,500
M438106D	F759036- 568906	400	500	46	19.5	Hollow shaft	375	395	2,600

## 5. Supply and Technical Support

Bearings are supplied through long-term cooperating professional manufacturers. Selection and delivery are confirmed according to customer equipment type, operating speed, load conditions, and on-site service requirements. Support includes standard supply, alternative solutions, and engineering coordination for replacement applications.

## 6. Statement

The parameters and performance data presented herein represent typical engineering reference values under standard operating conditions. Final bearing selection shall be confirmed based on actual equipment design, operating speed, load conditions, and lubrication system. Final technical conditions shall be subject to mutually agreed technical specifications.

