

## Introduction

# Mid-Speed Coal Mill

Beijing Power Equipment Group Co., Ltd. (BPEG) produced the first domestic 151 bowl-type mid-speed coal mill in 1958. To date BPEG has become the biggest mid-speed roller coal mill manufacturer both at home and abroad. ZGM series coal mills include 8 models and 73 specifications, having the strengths of wide applicability to different coal types (including soft coal, anthracite, brown coal, meager lean coal, etc.), high pulverizing efficiency, low power consumption, long operating life, reliable performance, and convenient maintenance. Currently they're widely applied to coal power preparation systems in electrical, metallurgy, building materials, and chemical industries.

Additional to strong producing capability of coal mills, BPEG has also accomplished independent designing and manufacturing of its auxiliary equipment including vertical planetary gearbox, high starting torque motor, electronic weighing belt coal feeder, lubrication unit, hydraulic unit, slide gate, and the control system. Therefore, we're devoted to providing customers with complete solutions and services to pulverizing systems.



### ● Cooperative Production and Technology Introduction

**1981** Manufactured the MPS 190 mid-speed roller coal mill, cooperating with Germany Babcock for the first time.

**1985** Introduced the specified technology for MPS coal mill from Germany Babcock.

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### Development

### ● Product Innovation

**2009** New series of coal mill passed product certification of China Machinery Industry Federation.

**2013** Successfully developed the energy-efficient coal mill.

**2016** ZGM-A type coal mill passed product certification of China Machinery Industry Federation.

### ● Problem Tackling

**1994** MPS225 coal mill applied to Taizhou power plant.

**2000** ZGM123 coal mill applied to Panshan power plant.

**2001** ZGM 113 coal mill applied to Jungar power plant.



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## Characteristics



### Outstanding Output

The three rollers of the ZGM coal mill are arranged with 120° angle between one and another. They adjust the grinding pressure regarding different coal types, and have the advantages of big roller diameter, low grinding table rotary speed, little grinding resistance, and great grinding-in conditions, all resulting in improving the output.

Utilization of differentiation mould lines design has the advantages of high grinding efficiency. Especially in later period of service life, it still guarantees stable output, with maximum decrease less than 5%.

### Low Power Consumption

Advanced variable hydraulic loading technology enables automatic adjustment of grinding roller loading force according to the output arrangement. It ensures stable operation in underload conditions without unusual vibration. On the premise of continuous safe operation, the minimum output of each coal mill can be adjusted to 25% of maximum output, which is remarkably economical.

### Wide Coal Powder Fineness Adjustment Range

Application of rotary classifier effectively lowers the resistance, and improves the coal powder fineness ( $R_{90} \leq 10\%$ ), which enables sufficient coal combustion so as to meet environment protective emission requirements.

### Long Service Life of Wear-Resistant Parts

Based on traditional high-chromium iron and build-up welding wear-resistant parts, we have developed the new ceramic composite material, which prolongs the service life of wear-resistant parts, especially for coal with high abrasion index.

### High Stability

The loading pressure is transferred by the gearbox to the base, while the static system transfers the loading pressure evenly. The housing of the coal mill is relieved from pressure, therefore even under high loading force, the coal mill still operates stably.

### Convenient Maintenance

According to the site conditions, two options are available: rotary of rollers, and parallel shift of classifier.

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## Parameters

Model	Main Motor Power kW	Rotary Speed r/min	Output t/h(HGI=50, Mt=10%, R90=20%, Aar≤20%)
ZGM50	100~132	36.2~48.1	8~10.1
ZGM65	125~200	31.9~42.4	12~23.5
ZGM80	220~335	28.7~38.2	21~38.3
ZGM95	355~500	26.4~35.1	33.2~55.9
ZGM113	500~750	24.2~32.2	50~86.1
ZGM123	710~900	23.2~30.9	71.8~105.5
ZGM133	900~1120	22.3~29.7	87.3~127.4
ZGM145	1120~1400	21.3~28.3	109.4~165.1

## Scope of Supply

### Main Body

Including bottom housing, housing, classifier, core grinding devices, etc.

### Auxiliaries

Including gearbox, motor, lubrication unit, hydraulic unit, slide gate, and corresponding control system.



Gearbox



Main Motor



Lubrication Unit



Hydraulic Unit



Dynamic Classifier



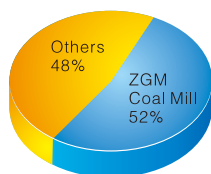
Discharge Device

# Mid-Speed Coal Mill

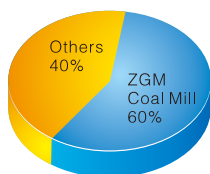
## Achievements

### Market Share

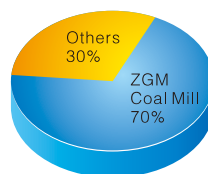
Coal mills produced by BPEG is leading in suppliers for similar equipment in electrical, metallurgy, construction materials, chemical and so on industries. We've occupied over 50% of electrical market, and over 75% of non-electrical market.



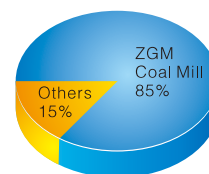
Electrical Market Share



Metallurgy Market



Construction Materials Market Share



Chemical Market Share

### Projects

#### Projects in Domestic High-end Electrical Market

Project	Customer	Model	Quantity	Date
Ningxia Yuanyanghu Power Plant II	Shenhua Guohua Energy Ningxia Coal Electricity Co., Ltd.	ZGM133G	12	2015.03
Fujian Kemen Power Plant III	Fujian Huadian Kemen Power Generation Co., Ltd.	ZGM123N	12	2015.05
Jiaozuo Danhe Power Plant II	State Power Investment Henan Power Co., Ltd. Qinyang Power Generation Company	ZGM133G	12	2016.02
Shaanxi Zhaoshipan Leilongwan Power Plant	Shaanxi Energy Zhaoshipan Coal Electricity Co., Ltd.	ZGM123G	12	2016.02
Inner Mongolia Shenglu Power Plant I	Shandong Leader International Trading Limited	ZGM123G	12	2016.12

#### Projects in Overseas Market

Project	Customer	Model	Quantity	Date
Kazakhstan Ekibastuz Power Plant	TianCheng Electric Co., Ltd	ZGM113G	6	2014.10
Pakistan China Power Hub Generation Power Plant	Northwest Electric Power Design Institute Co., Ltd. of China Power Engineering Consulting Group	ZGM113K	12	2016.10
Philippine GNP(+1) Coal-Fired Power Plant	Shanghai Electric Power Construction CO., Ltd.	ZGM133N	14	2016.09
Shenhua Guohua Indonesia Java Power Plant	Shandong Leader International Trading Limited	ZGM133G	14	2016.11
Bangladesh Payra Power Plant	Sinogy Engineering Co., Ltd.	ZGM113G	12	2017.02

#### Projects in Non-electrical Market

Project	Customer	Model	Quantity	Date
Shenhua Ningmei 4 million tons/year Indirect Coal Liquefaction Project	China United Engineering Corporation	ZGM80K	50	2012.12
Zhongtianhechuang Erdos Coal Intensive Processing Exemplary Project	ZhongTianHeChuang Energy Co., Ltd.	ZGM80G	23	2014.02
Shenhua Ningmei 4 million tons/year Indirect Coal Liquefaction Project	China Huangju Contracting & Engineering Co., Ltd., Wuhan Engineering Co., Ltd.	ZGM133N	42	2015.04
Zhejiang Petroleum and Chemical Corporation 40 million tons/year Refining-Chemical Integration Project	Zhejiang Petroleum and Chemical Corporation	ZGM80G	35	2016.10