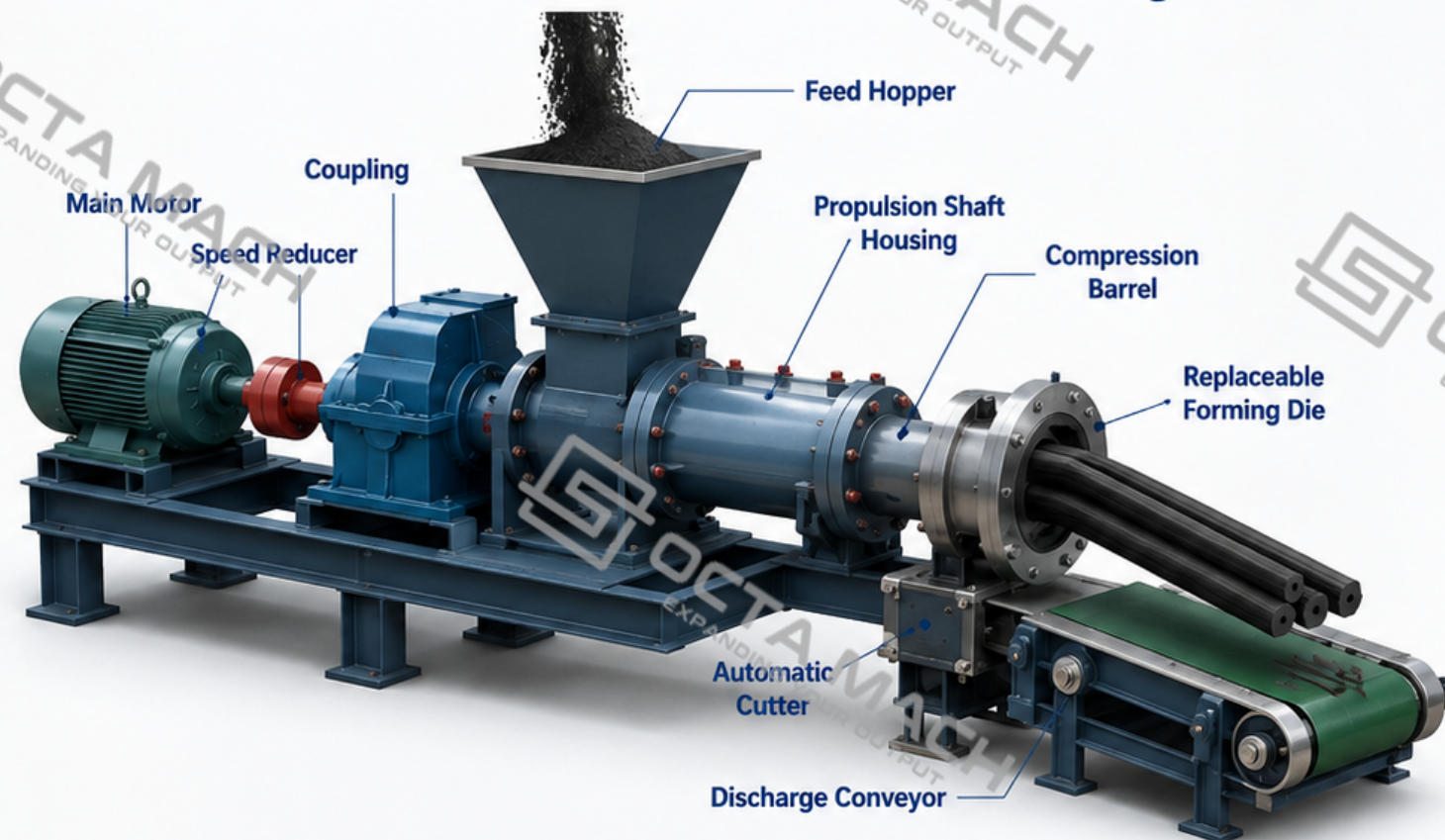


Product Overview and Confirmed Model Range



MBJ140



1–2 t/h
Nominal Capacity

11–15 kW
Motor Power

$\Phi 140$ mm
Spiral Impeller

MBJ180



2–3 t/h
Nominal Capacity

18.5–22 kW
Motor Power

$\Phi 180$ mm
Spiral Impeller

MBJ300



4–6 t/h
Nominal Capacity

90 kW
Motor Power

$\Phi 270$ mm
Spiral Impeller

MBJ450



8–12 t/h
Nominal Capacity

220 kW
Motor Power

$\Phi 420$ mm
Spiral Impeller



Confirmed Models:
MBJ140–MBJ450



Nominal Capacity:
1–12 t/h



Nominal Rod Size:
 $\Phi 18$ –30 mm



Forming Method:
Continuous Screw Extrusion



Product Definition

The MBJ-series machine conveys and progressively compresses prepared coal or carbon powder through a replaceable forming die to produce continuous fuel rods.



Technical Boundary

Prepared powder only – hard-rock lumps cannot be fed directly.

Confirmed Technical Parameters and Preliminary Model Selection

Parameter	MBJ140	MBJ180	MBJ300	MBJ450
Nominal Capacity	1–2 t/h	2–3 t/h	4–6 t/h	8–12 t/h
Motor Power	11–15 kW	18.5–22 kW	90 kW	220 kW
Main-Shaft Speed	46–60 r/min	39–60 r/min	132 r/min	118 r/min
Nominal Round-Rod Size	Φ20–30 mm	Φ20–30 mm	Φ18–30 mm	Φ20–30 mm
Number of Spiral Vanes	5	5	4	4
Spiral Impeller Diameter	Φ140 mm	Φ180 mm	Φ270 mm	Φ420 mm
Overall Dimensions	1900 × 1100 × 1170 mm	2210 × 1370 × 1440 mm	3605 × 1025 × 955 mm	5130 × 520 × 1480 mm*
Working Current	Not Listed	Not Listed	130–160 A	320–360 A
Maximum Catalogue Feed Size	<5 mm	<5 mm	<5 mm	<5 mm
Catalogue Reference Moisture	12–14%	12–14%	12–14%	12–14%

*The MBJ450 width shown in the supplied catalogue should be reconfirmed before foundation or layout design.



MBJ140

Small production and representative material trials



MBJ180

Small-to-medium continuous production



MBJ300

Medium industrial production



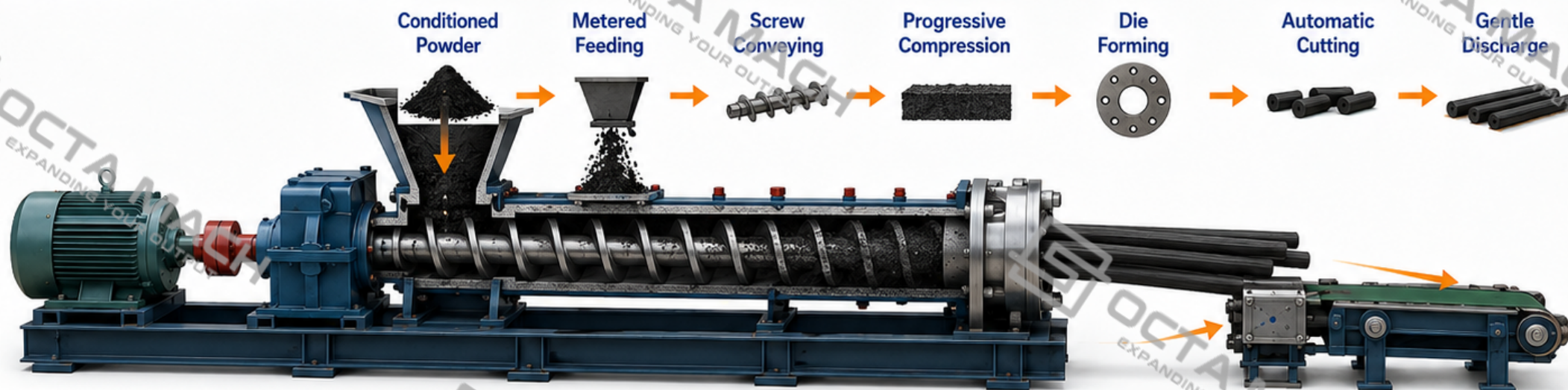
MBJ450

High-capacity continuous production

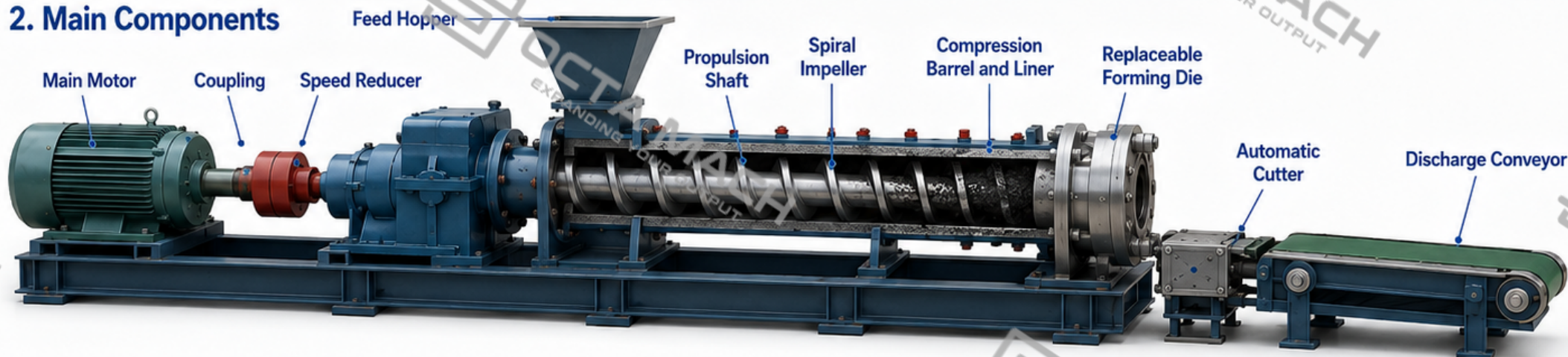


Nominal capacity depends on feed preparation, material formulation, rod profile, operating stability and representative feed testing.

1. Screw Extrusion Process



2. Main Components



Stable Feeding

Maintains consistent pressure at the forming die



Progressive Compression

Builds density through screw movement and die resistance



Low-Drop Handling

Limits deformation and breakage of fresh rods



The material is compressed as a conditioned powder. It is not melted during extrusion.

Feed Preparation and Material Suitability

1 Feed Preparation



2 Material Suitability

✓ Primary Applications	Representative Testing Required	✗ Not Suitable for Direct Feeding
Pulverized Coal Coal Dust Coking-Coal Fines Coke Powder and Coke Fines	Lignite Powder Anthracite Powder Coal Gangue Powder Carbonized Charcoal Powder Selected Mineral Powder	River Pebble Granite Basalt Quartz Diabase Andesite

3 Feed Risks

Oversize Particles Die blockage and local weak points 	Uneven Moisture Unstable extrusion and rod deformation Too Dry Optimal Too Wet	Poor Binder Distribution Inconsistent green and dry strength Poor Distribution (Weak) Uniform Distribution (Strong)	Abrasive Mineral Powder Accelerated screw, barrel and die wear
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Boundary Note: Raw sawdust, wood chips, straw and coconut shells must not be shown as direct feed. Biomass must first be carbonized when the process is intended to produce charcoal rods.

Coal Rod Quality Factors and Forming-Die Options

1 Factors Controlling Coal Rod Quality

Balanced feed preparation, stable extrusion and careful handling are essential for producing strong, uniform coal rods.



Typical Risks When Factors Are Out of Control

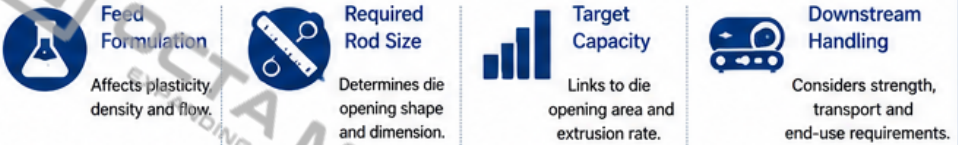


2 Forming Dies and Finished Rod Profiles

Changing the forming die allows the machine to produce a wide range of coal rod shapes for different applications.

Die (Cross Section)	Finished Rod	Description and Typical Use
		Solid Round Die → Solid Round Rod Most common profile. Used for general industrial fuel rods.
		Hollow Round Die → Hollow Round Rod Lower weight and faster ignition. Used in boilers and gasification systems.
		Hexagonal Die → Hexagonal Coal Stick Improved packing and air flow. Used in stoves and industrial furnaces.
		Square Die → Square Coal Bar Stable stacking and conveying. Used in grills and fixed-bed applications.
		Plum-Flower Die → Plum-Flower Coal Rod Higher surface area and good airflow. Used in BBQ charcoal and briquette fuel.

Key Inputs for Die Selection



Technical Note: A smaller die opening does not automatically produce a stronger coal rod. Excessive restriction can increase motor load, reduce capacity and accelerate wear.

Production-Line Configuration, Inspection and Safe Operation

1 Complete Production Line



2 Pre-Shipment Inspection

1		No-Load Rotation and Abnormal-Noise Inspection	Verify smooth rotation and check for abnormal noise or vibration.	
2		Motor, Reducer and Coupling Check	Check installation, alignment, fastening and lubrication.	
3		Screw and Die Dimensional Inspection	Measure screw, barrel and die key dimensions and clearances.	
4		Loaded Extrusion Test with Representative Material	Run the machine with customer material to verify output and performance.	
5		Operating-Current Recording	Record loaded current to confirm it is within the catalogue range.	
6		Rod Cross-Section and Length Measurement	Check rod diameter, shape and length against requirements.	
7		Green-Rod or Drop Test under an Agreed Procedure	Conduct drop test (e.g. 2 m) or other agreed method to verify green strength.	
8		Spare Die and Wear-Part Verification	Check spare die, screw, liners and wear parts for quantity and condition.	

3 Coal and Carbon Powder Safety

Controlled Dust Collection

- Enclose dust sources at transfer points.
- Use effective dust extraction systems.
- Maintain filters and ducts regularly.

Electrical Grounding and Bonding

- Ground all equipment and conveyors.
- Ensure reliable bonding to prevent static discharge.
- Check grounding continuity routinely.

Ignition-Source Control

- Prohibit open flame and smoking.
- Control hot work and electrical sparks.
- Use suitable explosion-protected equipment.

Machine Guarding

- Install guards on moving parts.
- Keep guards in place and in good condition.
- Do not remove guards during operation.

Industrial Housekeeping

- Clean dust and spills promptly.
- Keep the floor and equipment clean and organized.
- Prevent dust accumulation.

Final machine configuration, acceptance criteria and process performance must be confirmed in the model-specific technical specification and approved test procedure.