

# Ring Die Biomass Pellet Mill

## Complete Product Guide & Manual

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MKLH Series

Gear Drive

VFD Feed

6 Models

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### What This Machine Is

The MKLH series ring die biomass pellet mill is the main machine that presses biomass waste into dense fuel pellets: sawdust, wood shavings and other wood waste, plus rice husk, rice straw, wheat straw and sunflower seed husk. The series covers six models, from 0.6 t/h to 4 t/h, with ring dies from 350 to 768 mm. Pick the model by output, or run several in parallel to make a complete pellet line.

### Why It Gets Specified

Four reasons. Stable, precise drive: high-precision gear transmission runs the machine smoothly, and the serpentine spring coupling is compact, safe and quiet. Durability: quality imported bearings and oil seals in the feeder and drive train, plus a dedicated ventilation cooling system for continuous high-output runs. VFD feeding: the variable-frequency feeder motor adjusts feed rate to the material's character, protecting pellet quality and forming rate. Purpose-built design: the machine is reworked for biomass pelleting — dedicated feeder, reinforced drive parts, and custom dies, rollers and clamps.

### How the Ring Die Biomass Pellet Mill Works

Four stages:

1

#### Feed

Crushed and dried material enters the VFD feed auger.

2

#### Even feeding

The feeder delivers material evenly into the pelleting chamber, rate set by the VFD.

3

#### Pressing

Between the high-speed rotating die and the strongly pressed rollers, high pressure and friction heat force the material through the die holes.

Cutting and discharge

Knives cut the extruded strands into fixed-length biomass pellets.

Two things to remember: feed rate is the forming-rate control — when material moisture or particle size changes, adjust the VFD feed before anything else; die working temperature should stay  $\leq 85^{\circ}\text{C}$  — if it climbs, check feed moisture and roller clearance.

Specifications

Full spec for all six MKLH models:

| Model   | Capacity(t/h) | Main motor(kW) | Feed auger(kW) | Feeder(kW) | Die ID(mm) | Die speed(rpm) | Pellet size(mm) | Rollers |           |
|---------|---------------|----------------|----------------|------------|------------|----------------|-----------------|---------|-----------|
| MKLH350 | 0.6           | 55             | 1.5            | 0.75       | 350        | 150            | 6/8/10/12       | 2       | $\leq 86$ |
| MKLH420 | 1.0           | 90             | 2.2            | 1.1        | 420        | 150            | 6/8/10/12       | 2       | $\leq 86$ |
| MKLH508 | 1.5           | 110            | 2.2            | 1.1        | 508        | 150            | 6/8/10/12       | 2       | $\leq 86$ |
| MKLH558 | 1.8–2         | 132            | 2.2            | 1.1        | 558        | 150            | 6/8/10/12       | 2       | $\leq 86$ |
| MKLH678 | 3             | 220            | 3              | 1.5        | 678        | 150            | 6/8/10/12       | 2       | $\leq 86$ |
| MKLH768 | 4             | 315            | 4              | 2.2        | 768        | 150            | 6/8/10/12       | 2       | $\leq 86$ |

Capacity varies with feed type, moisture and die aperture — reference values shown. Die speed is 150 rpm across the series.

## Where It Gets Used

Feedstock: wood-processing waste recovery (sawdust, shavings), farms and crop-straw processing plants, comprehensive waste utilization stations. Downstream: industrial biomass boiler fuel, biomass power plants, district heating, commercial and domestic biomass stoves.

## Installation and Commissioning

1. **Positioning** — set the foundation per the drawing, level the machine, fix down and isolate the base.
2. **Drive check** — check gearbox oil level and serpentine spring coupling alignment.
3. **Electrical** — wire the motor and confirm phase sequence; set the VFD feeder parameters per the manual; verify overload protection.
4. **Die and rollers** — verify die mounting direction and torque; set roller clearance per the manual (pre-condition a new die).
5. **No-load run** — jog, then run continuously; watch die rotation, noise and whole-machine vibration.
6. **Load run** — start with a little dry feed, check pellet quality and motor current, then ramp to rated capacity.

⚠ Lift by the designated points only — never by motors or couplings; keep personnel clear of the lift zone.

⚠ During operation, stay clear of the feed and discharge openings; stop and lock out before clearing or die changes.

⚠ The die and discharge area run hot — never touch them in operation; stop immediately on abnormal vibration, noise or overheating.

Follow the operating rules strictly and keep an operator on site during runs. Select the model by feedstock and target capacity — don't overload a small machine. Have the manufacturer's technician on site for the first load run.

## Running and Maintenance

The die and rollers are the core wear items: check die-hole wear and roller clearance, and replace or flip at the wear limit — a dropping forming rate or rough pellet surface are the signals. Die working temperature should stay  $\leq 85^{\circ}\text{C}$ ; if it climbs, check feed moisture and clearance. The VFD feeder is the forming-rate adjuster: when feed moisture or particle size changes, adjust the feed first.

The gear transmission gets scheduled oil checks; the imported bearings and oil seals are the basis of steady running — lubricate on schedule and watch for seal aging. The ventilation cooling system needs regular cleaning to keep the chamber cool. Daily round: motor current, noise ( $\leq 86/90$  dB(A)) and whole-machine vibration — a sudden noise rise points at the die, rollers or bearings first.

