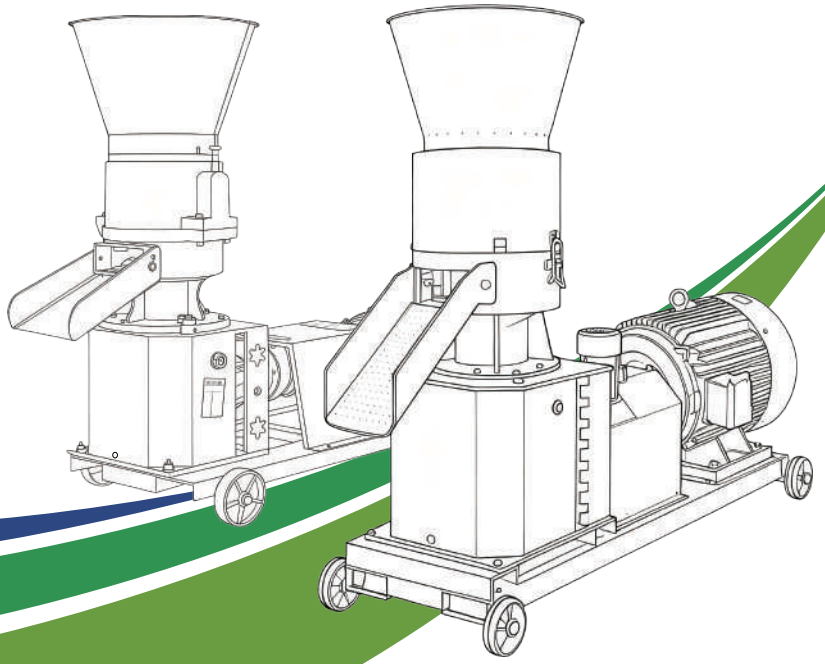
KAWISE

FLAT DIE FEED PELLET MACHINE

Operating Instructions

- *rotating die type*
- *rotating roller type*



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The flat die feed pellet machine is used to press powdered materials into solid feed pellets for livestock and poultry. It improves feed quality and storage, and the following guide explains basic operation, gap adjustment, and maintenance.

I.Product Overview

Application

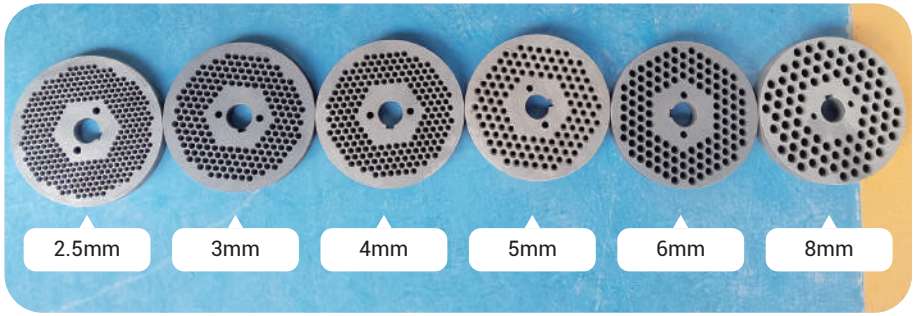
This pellet machine is designed for making feed for various animals, including chickens, ducks, pigs, cattle, sheep, deer, horses, quails, pigeons, rabbits, fish, and shrimp.

Working Principle

It presses powder feed into firm, uniform pellets through the pressure between rollers and the die. The high temperature during extrusion helps kill bacteria and improves feed taste and storage stability.

Die Options

Die hole sizes can be selected based on animal type and feed formula. The standard die is 4 mm, and optional sizes from 2.5 mm to 8 mm are available to meet different production needs.



1.1 Machine Classification

According to different standards, the machine can be classified as follows:

By structure

Rotating Die Type (KD)

Rotating Roller Type (KR)

By power source

Electric Motor

Diesel Engine

Gasoline Engine

PTO Drive

1.2 Machine Structure

1.Feed Hopper
2.Grinding Chamber rollers and die
3.Adjustment Bolts (KD)
4.Discharge Outlet
5.Gearbox
6.Motor Diesel / Gasoline engine / PTO interface
7.Mobile Wheels
8.Lifting Hook

1.3 Safety Warnings

- Add lubricating oil before use; the machine is shipped dry.
- Do not touch moving parts during operation.
- Always cut off power or stop the engine before service or cleaning.
- Keep metal, stones, and other hard objects out of the feed.
- Ensure the motor meets rated power before running.

II. Operation and Use

2.1 Lubrication Before Start-up

Bearing Lubrication

Use a grease gun to slowly inject lithium grease through the nipple.
Stop when pressure rises or new grease appears at the seal.

Gearbox Lubrication

Before first start, add hypoid gear oil through the gearbox oil port.

For gearboxes with an oil sight window, fill oil to half of the window height, at the red mark in the middle. Insufficient oil may cause gear wear and overheating, while excessive oil may result in leakage or foaming.


1 Main Shaft Oil Injection Port


2 Rear Axle Oil Injection Port


3 Inspection Hole


4 Oil Drain

The recommended oil volume varies by model and gearbox type, as shown below.

Table 1 Gearbox– Rotating Die Type (KD Series)

Model	Oil Volume (L)
KD-125	4.5 L
KD-150	4.5 L
KD-160	4.5 L
KD-210	10 L
KD-230	10 L
KD-260	20 L
KD-300	25 L
KD-400	50 L
KD-500	70 L
KD-600	90 L

Table 2 Gearbox – Rotating Roller Type (KR Series)

Model	Oil Volume (L)
KR-190	5 L
KR-210	10 L
KR-260	20 L
KR-300	40 L
KR-400	75 L
KR-500	110 L

Precautions

- Perform oil filling or draining only when the machine is stopped to avoid burns or damage.
- Use the specified type of gear oil; do not mix with other oils.
- Clean the oil port before filling to prevent impurities from entering the gearbox.

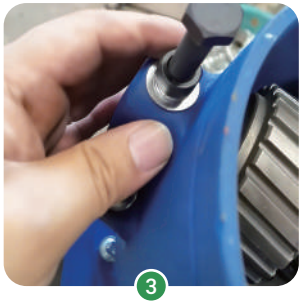
2.2 Adjusting the Roller and Die Gap

The machine is preset before delivery, but the gap between rollers and die may need readjustment after long transport or when the die is replaced.

2.2.1 Adjusting Rotating Die Type (KD Series)

Turn off the machine and ensure it's fully powered off.

Locate the roller adjustment bolts and adjust the gap to 0.1-0.3 mm.



After adjustment, re-tighten the locking nuts.

Gap Checking

Use a feeler gauge to check the roller–die gap(See fig. 2, section 2.2.2.), or insert an A4 paper and rotate the die manually. If the paper is jammed, torn, or leaves no mark, the gap is incorrect and must be readjusted.
Smooth idle operation without noise or vibration indicates proper clearance.

2.2.2 Adjusting Rotating Roller Type (KR Series)

1. Turn off and disconnect the power.
2. Secure the die to prevent movement.
3. Loosen the locking nut above the pressure roller and adjust:
   - Turn clockwise to tighten (reduce the gap).
   - Turn counterclockwise to loosen (increase the gap).

   Recommended gap: 0.1-0.3 mm.
4. After adjustment, re-tighten the locking nut.

Gap Checking

Use a feeler gauge to check the gap. Alternatively, rotate the pressure roller: if you feel even friction and no jamming, the gap is correctly set.

2.3 Running-in a New Die Plate

Before normal use, the new die should be run in.
Mix corn flour with cooking oil at a 10:1 ratio to make the conditioning material. Feed it slowly into the inlet and let the machine run at low speed for about 10–30 minutes.
This process smooths the inner wall of the die holes, reducing blockage and wear, and improving pellet discharge.

2.4 Checking the Die Rotation Direction

Before starting, confirm that the die rotates in the correct direction.
After startup, the die should rotate as indicated by the arrow on the machine body (usually counter-clockwise when viewed from the discharge side). In normal operation, pellets should discharge slightly to the right.
If the rotation is incorrect, stop the machine immediately and correct it by adjusting the motor wiring sequence or power output direction to prevent blockage, die damage, or abnormal wear.

2.5 Machine Preheating

Before pelletizing, preheat the machine, especially diesel or gasoline types. This warms the die and rollers, reduces resistance, and stabilizes discharge.
Feed a small amount of conditioning material once the machine runs normally. When steam appears above the hopper, the machine is ready.
Preheat for about 5 minutes. If pellets form evenly and flow well, start normal production.

Precautions

- Do not run empty or without oil.
- In cold weather, extend preheating time.
- Feed materials promptly after preheating to avoid clogging.

2.6 Shutdown Protection

Before stopping the machine, run a short pre-shutdown cycle to prevent material in the die holes from solidifying, clogging, or rusting. This also reduces friction at the next start.

Steps

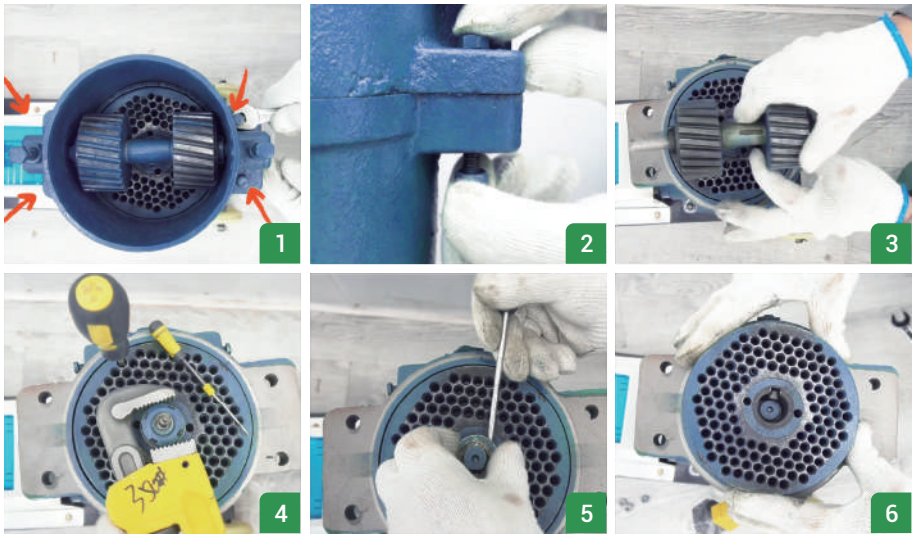
1. Stop feeding and let remaining material discharge.
2. Add a mix of corn flour and cooking oil (10:1) through the feed inlet.
3. Run the machine at low load for 1–2 minutes to coat the die holes with oil.
4. Turn off the power or stop the engine.

2.7 Replacing the Die and Rollers

Most dies can be used on both sides.
The die and rollers are wearing parts with a service life of about 300–500 hours.
Check their condition every month. If heavy wear is found, replace them as a matched set.

2.7.1 Rotating Die Type (KD Series)

1. Turn off the power or engine and wait until the machine stops completely. Openthe top cover and clean any remaining material around the die, rollers, and outlet.
2. Loosen the roller adjustment bolts and lock nuts, lift the rollers, and remove them. Unscrew the die fixing bolts with a wrench. If the die is tight, tap it gently with a rubber hammer or pull it out evenly.
3. Align the locating holes of the new die with the shaft pins, place it flat, and secure it firmly. Install the new rollers. For small-hole dies, place the spacer ring under the die to keep it level with the mounting surface (spacers are included with the machine).
4. Adjust the roller–die gap using the bolts (see Section 2.2.1). Turn the rollers by hand to check for smooth rotation. Tighten the lock nuts, reinstall the hopper, and run the machine empty for 1–2 minutes. If it runs smoothly, feed a small amount of material to test pellet quality.



2.7.2 Rotating Roller Type (KR Series)

1. Turn off the power and make sure the machine has completely stopped. Remove the feed hopper and safety cover. Use a wrench to loosen the main shaft bolt and take out the roller assembly from the bearing seat.
2. Loosen the die bolts. Insert a screw into the center hole of the die and pull it out gently along the spindle direction.
3. Align the new die with the bearing center and place it flat on the mounting surface. Tighten the side bolts to secure it firmly.
4. Insert the positioning pin into the bearing seat, fit the new roller along the pin, add the washer and bolts, and tighten them evenly.
5. Adjust the gap between the roller and die (see Section 2.2).
6. Reinstall the safety cover, turn on the power, and run the machine briefly to check smooth pellet discharge.

2.8 Pellet Length Adjustment

Pellet length is mainly determined by the distance between the cutting knife and the die. Adjusting this distance allows control over pellet length. The adjustment methods vary slightly between different machine types.

2.8.1 Adjusting Rotating Die Type (KD Series)

1. Locate the knife adjustment screw (above the discharge outlet).
2. Use a wrench to loosen the screw and adjust the knife position:
   - Turn upward: produces shorter pellets.
   - Turn downward: produces longer pellets.
3. After adjustment, tighten the screw to fix the knife in place.

2.8.2 Adjusting Rotating Roller Type (KR Series)

1. Ensure the machine is powered off. Remove the roller and die. (see Section 2.7.2)
2. Locate the knife assembly ("L"-shaped plate) and loosen the nut connecting it to the bearing.
3. Adjust the knife angle to set pellet length:
   - Tilt upward: shorter pellets.
   - Tilt downward: longer pellets.
4. Tighten the nut, then reinstall and secure the die and roller.

III. Common Problems and Solutions

Poor or no pellet discharge

Possible Cause	Solution
Die not properly run-in / Hole surface rough	Run in with oily material (see 2.3)
Die holes blocked	Stop the machine and clean holes with a wire or compressed air
Roller–die gap too wide	Readjust the gap (see 2.2)
Material too dry or poor flow	Adjust moisture to 12–16% and mix evenly
Machine not preheated	Run empty for 3–5 minutes before feeding (see 2.5)

Soft Pellets or Excessive Powder

Possible Cause	Solution
Moisture too high (soft pellets)	Reduce to 12–16% or add dry mix
Low roller pressure (soft pellets)	Tighten roller bolts to increase pressure
Poor binding formula (more powder)	Add oil or binder
Weak motor or unstable speed (more powder)	Check motor and load to meet specifications
Worn or large die holes (poor forming)	Inspect the die and replace if needed

Rough Pellet Surface

Possible Cause	Solution
Die holes not smooth or worn	Polish or replace the die
Feed too dry or uneven	Adjust moisture and mix evenly
Roller pressure unstable	Check and tighten roller bolts
Insufficient lubrication	Add a small amount of oil to the feed

Motor Stops or Overload Trips

Cause	Solution
Too much feed or blockage	Stop and clear the hopper and die, then reduce feed
Roller–die gap too small	Adjust the gap (see 2.2)
Die holes blocked	Clean the die before restarting
Foreign objects inside	Remove objects and check to prevent reentry
Motor or wiring fault	Check wiring, current, and overload device
Die installed backward	Reinstall and adjust the die direction correctly (see 2.4)

Models with 22 kW or larger motors are equipped with a soft-start cabinet to reduce starting current and protect the motor and drive system.

Pellet Machine Overheating

Cause	Solution
Long continuous operation	Stop to cool and reduce load
Insufficient lubrication	Add grease or clean bearings
Blocked die holes	Stop and clean the die
Poor ventilation	Check cover and improve airflow

For long-term operation, install an oil pump and air-cooling unit to improve cooling, reduce temperature rise, and keep the machine running stably.

IV. Power Specifications by Model

Rotating Die Type Spec

Model	Motor Power (kW)	Diesel Engine (HP)	Gasoline Engine (HP)
KD-125	4.5	6	170F (7.5 HP)
KD-150	4.5	6	190F (13 HP)
KD-160	5.5	8	190F (13 HP)
KD-180	5.5	8	192F (15 HP)
KD-210	7.5	15	—
KD-230	11	18	—
KD-260	15	22	—
KD-300	22	35	—
KD-400	37	85	—

All electric models use 4-pole pure copper motors built to national standards.
Voltage and frequency can be customized as required, and units can be refitted with diesel or gasoline engines if needed.

Rotating Roller Type Spec

Model	Power (kw)
KR-190	5.5
KR-190P	7.5
KR-210	11
KR-260	18.5
KR-300	30
KR-400	45
KR-500	75

All rotating roller models are equipped with 6-pole motors, 380V 50Hz three phase, voltage customizable, equipped with a high torque six pole motor, running speed 960 rpm.

Recommended Flagship Equipment

Forage Chopper

Hammer Mill

Extruder

Stainless Steel Mixer

Self-Priming Crusher

Kernel Cracker

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For Any Other Questions, Please Contact Us

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