JHM GROUP

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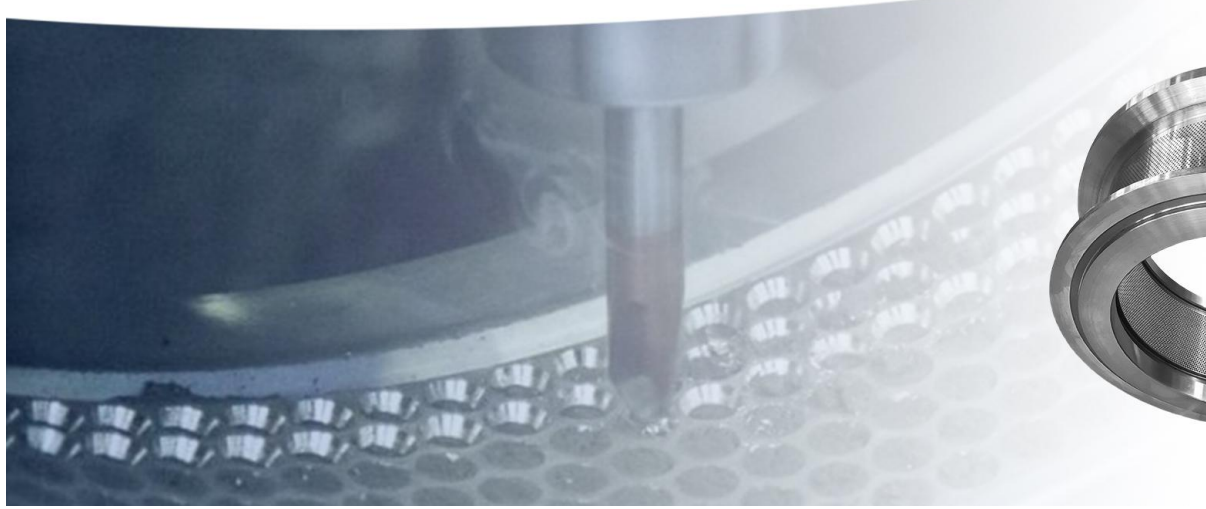
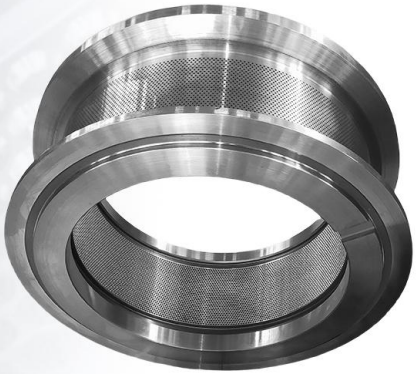
USER'S MANUAL OF RING DIE





About JIUHE



As a leading manufacturer of the pellet mill spare parts in China, JIUHE Machinery has been specialized in producing ring die, rollers and other spare parts of main brand pellet mill since 2003.

With years' development, JIUHE products have been sold to more than 30 countries and areas all over the world, and built an enviable reputation for our standards of workmanship, service through our commitment to high standards of quality, attention to detail, together with customer care.

"Lead of technology, pursuit of excellence", our company philosophy moves every employee from JIUHE Machinery. Our purpose is to develop long-term sustainable relationships with our clients, suppliers and staff, and strive to provide high performance and minimize costs.

The axial position of the roller and pellet die work track should be inspeced regularly. The tolerance should be controlled no more than 1.5mm. The condition that the roller press on the pellet die edge shall be completely avoided.


Correct position of ring die and pressure roller


Wrong position of ring die and pressure roller

The magnet in the pellet production line should be workable, iron or hard piece should not enter the press room.

The safety pin in the pellet mill should be workable. When hard piece enters the press room, the safety pin should break.

Maintenance: cleaning the iron piece on the work track, unblocking the blocking hole channel, take out the broken bolt.

Stock: store the pellet dies in the dry, ventilated and clean place. If it is not used for a long time, the hole channel should be filled up with non-corrosive oil material, and the pellet die surface should be painted with anti-rust oil.

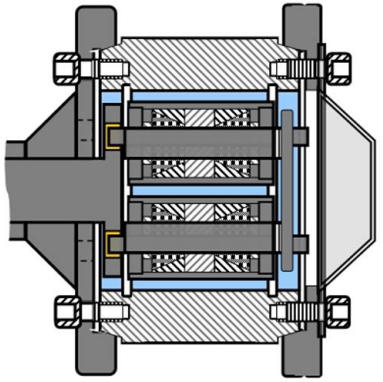
When starting a new pellet die, a set of new roller shell must be equipped. The new pellet die can not be equipped with used roller shell. The pellet die with flat work track, shall be used together with the roller shell with flat work track, to guarantee the level of the pellet die work track, and the even of the pressure.

Gap between the pellet die and roller shell

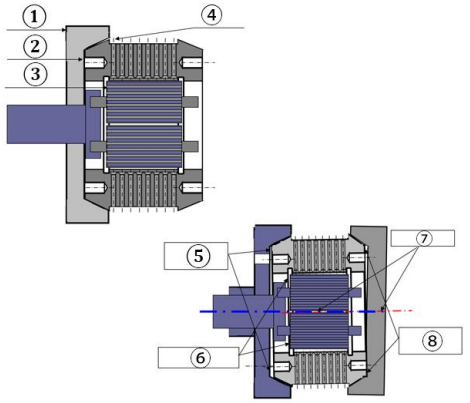
The theoretical distance between the pellet die and roller shell shall be around 0.1-0.3mm. When turning around the pellet die, the roller shell shall turn around, too, when turning around the roller shell, the pellet die shall not turn around. (A4 paper can be used to test. Put a paper between them, and turn around the pellet die. It can leave indentation on the paper, but not break it, which means the gap is reasonable.)

Installation of Clamp Type of Pellet Die

When installing the screw type of pellet die, it must guarantee that the bevel of the quill shaft can tighten the die, and there is no connection between the bottom of quill shaft and pellet die. Dial indicator should be used during installation, and control the radial runout to be less than 0.15mm. The wear of the quill shaft should be inspected regularly.



Demonstration of correct installation of screw ring die



Demonstration of incorrect installation of screw ring die

①: Quill Shaft
②: Pellet die edge touches quill shaft
③: Poition of roller is unsuitable
④: Pellet die Recess in quill shaft
⑤: Both ends of pellet die are installed asymmetrically
⑥: Both ends of roller are installed asymmetrically
⑦: Disalignment of pellet die and main shaft
⑧: Both ends of pellet die are installed asymmetrically

The wear and tear of the scraper should be inspected regularly. It must be changed if used out. The degree (normally 40°-45°) between the pellet die and scraper should also be checked regularly, to guarantee the even feeing, which can help improve the condition of the work track wear out, and increase the pellet die production, together with its working life.

The wear and tear of the cutter should be inspected regularly. When the cutter is not sharp, or has breaks on the edge, it must be maintained or rpaired in time. The angle (normally 5°-10°) between the pellet edge and the cutter, direction, front and back of the cutter should be installed and ajusted correctly.

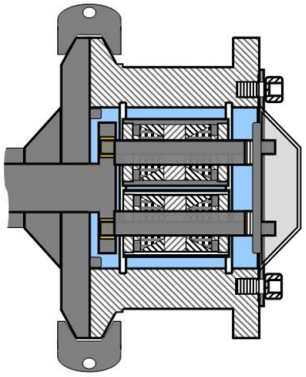
As one of the most important spare parts in pellet production industry, the reasonable application of pellet die, plays an important role in it. In order to decrease the production cost, together with improve the production efficiency, please read this operate manual carefully before using the pellet die, and follow the procedures below strictly.

First of all, customers need guarantee the compression ratio of the pellet die shall match the pellet formula, so that the capacity and quality of the pellet can reach their target.

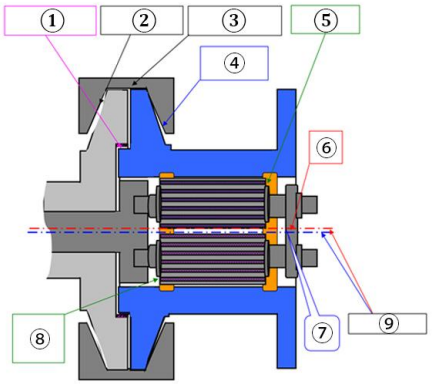
When using the pellet die, roller shell with corresponding surface design shall be matched according to the hole diameter of pellet die, to achieve the complementary between the two items.

Installation of Clamp Type of Pellet Die

When installing the clamp type pellet die, it must guarantee that the bevel of the clamp can tighten the pellet die, and there is no connect point between the bottom of clamp bevel, pellet die, and bottom of quill shaft. The gap between the pellet die and quill shaft should be less than 0.3mm. Dial indicator should be used to measure the concentricity during installation, and control the radial runout to be less than 0.3mm. When the wear ring wears out more than 0.2mm, it should be replaced.



Demonstration of correct installation of clamp ring die



Demonstration of incorrect installation of clamp ring die

①: Wearing out of ring fails to position pellet die
②: Wearing out of clamp and quill shaft fails to fix the pellet die
③: Clamp touches edge of pellet die and quill shaft
④: The bevel of clamp and pellet die can't be fixed
⑤: Position of roller is unsuitable
⑥: Center line of main shaft
⑦: Center line of pellet die
⑧: Roller pressed pellet die edge
⑨: Disalignment of pellet die and main shaft

Rinse of Pellet Die

When rinsing the pellet die, normally there are two ways:

1. with pellet

Take the pellets just produced (the crushed size of the raw material, and the hole diameter of the hammer mill screen should not be larger than the hole channel diameter of the pellet dies to be washed). The amount of pellet depends on the size of the pellet die, such as, inner diameter is no bigger than 558mm, which needs around 50kg~100kg of pellets. The moisture content is best when the pellet is just produced and hot, so it is not necessary to add more water. Mix the pellet with 5%-10% oil (vegetble oil is best) while the pellet is hot, to rinse the hole channel of pellet die. You can also put this material into a bag sealed with a film for next pre start of pellet die.

2. with powder

Take the mixed raw material (the crushed size of the raw material, and the hole diameter of the hammer mill screen should not be larger than the hole channel diameter of the pellet dies to be washed). The amount of powder depends on the size of the pellet die, such as, inner diameter is no bigger than 558mm, which needs around 50kg~100kg of powder. Mix the powder with 4%-6% water, and 5%-10% oil (vegetable oil is best) evenly. If necessary, knead the material by hand to ensure there are no lumps because small lumps of material shall be problem for rinsing the pellet die with small hole size. Mixing thoroughly before rinsing the hole channel of

pellet die is extremely important. Hard piece, such as corn, is strictly prohibited from adding into the powder.

The speed of rinsing the pellet die hole channel should be from slow to fast. Once the die is warming up, the feeding speed should be increased. If lampblack occurs during rinsing, more oil shall be added. Normally 15-30 min rinsing shall be enough. After rinsing, take 5kg raw material and mix with 10% oil, to fulfill the pellet hole channel to finish the rinse of pellet die.

Pre start of pellet machine

Steps of pre start of pellet machine shall be as follows:
release the steam condensate→turn on the main motor→open the pellet machine sight hole→rinse pellet die with oil material for 1-3 mins→open the unloading flap→ turn on the feeder and conditioner (10% of speed under normal production for feeder, and 60% of normal temperature for conditioner.) →Release raw materials with agglomerated water masses (around 20kg), →close the unloading flap→adjust the feeding speed, and steam temperature according to increase of the main motor current and steam temperature.

Normal adjustment shall be as follows:

20% of normal production, 70% of normal degree
40% of normal production, 80% of normal degree
60% of normal production, 85% of normal degree
80% of normal production, 95% of normal degree
After around one hour's stable working, check change of the current and temperature, and increase the production and temperature again.
90% of normal production, 98% of normal degree
100% of normal production, 100% of normal degree

Attention during production

When hard piece enters the press room, the pellet machine shall shack, it's necessary to stop the machine and clean the hard piece.
The agglomerated water in the steam pipe can be released completely, and not enter the press room.
The pressure of the steam should be constant, and the difference of raw material temperature in steam shall be no more than ±1°
The raw material in the press room should be continuous, and should avoid the condition that lacks the raw material or arch.

Shut off of pellet machine

Close steam value→turn off feeder→turn off conditioner→fill up the die hole channel with oil raw material→turn off main motor