Horizontal ring die wood pellet mill introduction

Pellet mill is called pellet machine, pellet maker, pellet press, pelletizer, pellet making machine. Which is main machine in wood pellet line. Horizontal ring die pellet mill is one kind of the pellet mills, it is retrofit over products according to the characteristics of biomass fuel particles based on our feed pellet machine, it mainly used for pressing flammable biomass materials such as sawdust from soft wood and hard wood, wood chips, wood shavings, straw, stalk, grass, rice husk, bagasse, peanut shell, sunflower husk, coconut shell, EFB, and any other biomass material to pellets, so it is the most popular and most utility pellet mill among the three kind pellet mills.

Horizontal ring die wood pellet mill structure

Ring die pellet mill is made up of base frame, motor, coupling, gearbox, main shaft, hollow shaft, rollers, ring die, force feeding system, feeding system, and control system.

The feeding system use frequency control technology to control the feeding speed by VFD, thus to reduce the change of block in the machine, from the feeder auger, raw material go to force feeder by gravity.

Feeder auger

The force feeder push the raw material go to pelletizing room, because force feeder system, this machine can suitable for soft raw material and hard raw material.

Force feeder

In pelletizing room, there is feeder scraper, rollers, ring die, main shaft and hollow shaft, the rollers are fixed on main shaft which is stable during machine working, but the roller shell is running, the ring die is fixed on the hollow shaft by hoop, the ring die is running during machine working. After material go to pelletizing room, the rollers and scraper will press the material into holes on ring die, the material will press out from the holes to get pellets. The diameter and effective extrusion length of the holes decide the size of final pellets, the ratio between effective extrusion length of hole on ring die and diameter of the hole is called compression ratio, which is an important data of the ring die, it decide the quality of final pellets. According to character of different raw material, we can make special compression ratio ring die for one kind raw material, so just change the ring die can make the pellet mill suitable for different raw material.

Pelletizing room

gearbox

The main shaft is inside of hollow shaft, and back side of main shaft goes to the gear box, the gear box connect to motor by coupling, the motor give power to the whole machine.

Main shaft and hollow shaft

The ring die, rollers, main shaft, hollow shaft is installed in the pelletizing room in a horizontal level, that is why this kind of pellet mill is called horizontal pellet mill.

Why choose horizontal ring die pellet mill

1. Have feeding auger and force feeder, assure the machine suitable many different kind of raw material with both low bulk density and high bulk density.
2. Electric panel use VFD control the rotating speed of feeding auger and force feeder to control the feeding speed, thus to reduce the material block in pelletizing room. Electric panel have electromotor integrative protector to protect the motors in case of overload.
3. In case the pelletizing room is blocked, the door of pelletizing room is easy to open and clean.
4. Due to it's horizontal structure, it is easy to maintain and change spare parts.
5. Ring die lifter, make the work to change ring die far more easy.

Ring die

roller assembly

6. At back side of main shaft can connect automatic grease lubricator, which can add grease to roller bearings and main shaft bearing automatically, thus can save labor.
7. Equipped with pellet cutter to adjust size of pellets.

How to choose a suitable pellet mill

There are three kind pellet mills: Horizontal ring die pellet mill, Vertical ring die pellet mill and Flat die pellet mill.

1. Horizontal ring die pellet mill, during machine working the rollers are stable, the ring die is rotating, adopt force feeder system, it can suitable for both low bulk density and high density raw material, this character decide it have the most widely usage. If you want to make biomass fuel pellets, but you do not know which pellet mill to choose, just take a horizontal ring die pellet mill.
2. Vertical ring die pellet mill, during machine working the rollers are running, ring die is stable, the rollers, ring die and shaft is installed in a vertical level, due to it's structure, it is much more suitable for low bulk density raw material, such as peanut shell, sunflower husk, powder chopped from straw, because these kind of raw material is soft and bulk density is low, so it is easier to press into pellets in this kind of pellet mill. So, if your raw material is peanut shell, sunflower husk, straw and low bulk density soft raw material a vertical ring die pellet mill is much more suitable for you.
3. Flat die pellet mill, during machine working the rollers is running and flat die is stable, this kind of pellet mill is small and capacity is low,the biggest machine capacity is 500kg/h. If you produce pellets in small quantity, flat die pellet mill is your best choice, it is usually chose by home using, farmer, small quantity

producer and beginners of pellet making.

Usage of final pellets

Pellets produced from biomass material are widely used for boilers, furnace, home heating, powerplants, nowadays it is also used for animal bedding.

Horizontal ring die pellet mill technical data:

Model	MZLH350	MZLH420	MZLH508
Capacity	400-600kg/h for wood pellets	1000-1200kg/h for wood pellets	1500-2000kg/h for wood pellets
Main Power	55 Kw	90 Kw	132 Kw
Feeder Motor Power	1.5 Kw	2.2 Kw	2.2 Kw
Fore Feeder Power	0.75 Kw	1.1 Kw	1.5 Kw
Ring Die Diameter	350 mm	420 mm	508 mm
Ring Die Speed	150 RPM		
Ring Die Material	20 CrMnTi		
Ring Die Work Temperature	≤ 80℃		
Feeder Auger Speed	12-120RPM		
Roller Number	2		
Feeding material size	<5mm		
Feeding material moisture	12-15%		
Pellet Size	6mm, 8mm, 10mm or customized		
Noise	≤86dB(A)	≤90dB(A)	≤90dB(A)
Demission	2700*1000*2050mm	2900*1100*2150mm	3100*1250*2250mm
Weight	2100Kg	3000Kg	3900Kg

Sawdust

rice husk

final pellets