GQ AGRI

Comprehensive Guide to Bar Row and Round Row Screw Oil Press Machines

Reliable screw oil press design suitable for various oilseeds. Understand the differences between bar row and round row oil presses and avoid the mistakes 20% of oil mill owners make. Choose the right equipment for your crop to ensure consistent yields and sustainable on-farm processing.

Empowering Small Farms, Transforming Rural Economies.

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Directory

Introduction.

The key to lucrative edible oil production is efficient oil extraction. In the case of medium-scale oil mills, the screw design of the oil press is decisive in determining the yield, quality of the oil and the durability and ease of operation. The two classic designs prevail in this segment, the Bar Row screw oil press and the Round Row screw oil press. Both of the machines have spiral pressing systems, but differ considerably in chamber construction, tolerance of an oil gap, wear properties, and crop flexibility. The way to design variations to suit the realities of agriculture is seen in their use in areas like the Senegal peanut mill, Ghana palm kernel processors, or coconut farm in the Philippines.

Bar Row Screw Oil Press.

The Bar Row oil press uses a pressing chamber constructed of parallel strips of strips creating small oil passageways. Oil gaps of 0.25 mm lead to high-pressure chamber to achieve high oil yields and reduced residual cake. This design is especially useful to farmers who process high-oil-content crops like peanuts, palm kernels, cotton seed, and sunflower seeds. The Bar Row machine also has clean crude oil as another hallmark that has few suspended solids.

The bar rows are organized in modular way to ensure that the parts can be substituted once worn to reduce down time. The machine has handy functions including electric reverse to clear off blockages fast making it appealing to the unskilled operators. Although replacing the bars takes professional workmanship and logistics, the reward is always high extraction efficiency.

The operators in Southeast Asia and Africa usually prefer the Bar Row design where the supply of electricity is intermittent. The machine is easily restarted even under the changing voltage or short interruptions and it can proceed running with minimal losses. One of the factors that have made it the stalwart of peanut and coconut processing in most medium-size mills is its capacity to maintain high throughput in harsh working conditions.

Round Row Screw Oil Press.

The Round Row oil press has a concentric ring shape chamber, and the oil gaps between the rings are approximately 1.5 mm in average. This geometry forms a stable pressure environment allowing a continuous running operating life with minimal risks of collapsing under hard or fibrous feedstocks like cottonseed and palm kernel. Even though the oil yield is reduced by wider gaps, the machine maintains a larger portion of the natural nutrients, flavors and aromas of the oil, thus applicable in processors that are more concerned with quality.

The round row design has fewer and larger parts compared to the bar row machine that makes it easy to tear down and reassemble. Significant repair or end of season maintenance is thus more rapid and less expensive. This would be the simplicity of the structure that goes to the credit of the machine regarding its reliability and longevity under a wide variety of agricultural environments.

In West Africa and Latin America, farmers usually select the Round Row press in crops such as castor bean, rapeseed and cottonseed. A pressure spike can be formed by these seeds, and they are not as forgiving of the fine oil gaps. Pressure is distributed more uniformly on the ring assembly, and it minimizes the possibility of machine stoppages in the peak harvesting seasons. The Round Row press will be a reliable option to mill owners who do not need a high yield on a single day but prefer a long-term consistency.

Key Differences Between Bar Row and Round Row Oil Presses.

- **Pressing Chamber Design and Oil Gap**

The pressing chamber of a Bar Row screw oil press is made of strip-shaped bars closely spaced, leaving little channel gaps, of the order of 0.25 mm. This design puts greater pressure on compress, enhance oil production, and less residual oil on the cake. By comparison, concentric ring assemblies are used in a Round Row screw press and have broader separation of approximately 1.5 mm. The increased distance reduces compression pressure, and it results in a small amount of residual oil, but the softer press does not subject the oil to too much mechanical pressure.

- **Maintenance and Daily Operation**

Bar Row presses have an advantageous electric reverse mechanism, so blockages can be quickly cleared without disassembling the press. The given feature significantly lowers the downtime during periods of high production and eases the everyday operation. Less quick to unblock, round row presses have fewer and larger parts, allowing them to be removed and serviced during scheduled maintenance. Because of this, they are generally easier to use when it comes to complete end-of-season repairs and long-term maintenance projections.

- **Oil Quality vs Extraction Aggressiveness**

The Round Row and Bar Row presses generate oils that are close in terms of natural aroma, nutrition content and general quality. Bar Row press produces a little cleaner crude oil as the channel gaps are narrow and hence less solids are suspended in the product. Both systems may run 24 hours to process hard seeds and nuts, yet neither system is intended to process very delicate cold-pressed oils, which must be run with separate hydraulic systems. The distinction between the two is mainly

the fineness of residual solids and also not the difference in the nutritional content of the oil.

- **Handling Hard or Fibrous Seeds**

The tight tolerances of Bar Row presses make it more likely to be clogged when handling fibrous or coarse seeds like cotton seed or palm kernel and inadequately controlled seed moisture. Round Row presses are less sensitive to such feedstocks; their sturdy concentric ring assemblies can safely tolerate abrupt pressure spikes without deformation to achieve a longer service life in the case of hard or shreddy seeds.

- **Component Wear and Spare-Part Strategy**

In long-cycle production, the bar row oil press has many bar components and wears unevenly, which can be replaced selectively. The circular mill has fewer and more standardized ring segments, so the annular grinding discs can be repaired or replaced according to wear
conditions.

Practical Considerations for Bar Row and Round Row Screw Press.

- **Raw Material Oil Content and Type**

Crops that contain more oil such as peanuts, palm kernels, and other nuts are usually preferred in Bar Row screw oil press. The reduced channel distances provide more compression resulting in higher extraction efficiency, faster processing and less oil left in the cake. Round Row presses may be more appropriate to the lower-oil content or more delicate textures of seeds, like sesame or flax. Their broader spacing results in less compression and thus the oil natural properties are retained without compromising satisfactory extraction performance. The press to be selected must be in harmony with the content of oil and other physical characteristics of the raw materials so that the yield and quality is maximized.

- **Maintaining and Operator Skill**

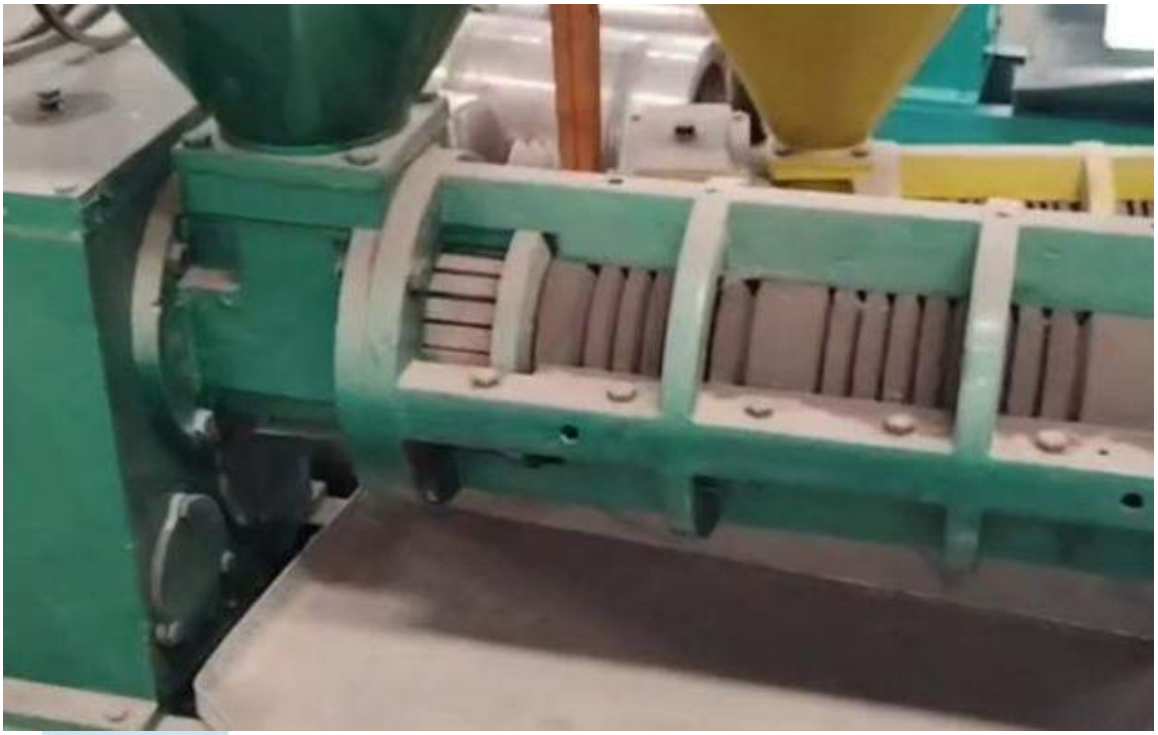
Bar Row presses are easier for operators with limited technical experience to manage on a daily basis. The electric reverse function allows blockages to be cleared quickly without dismantling, significantly reducing downtime. Round Row presses require more deliberate intervention to remove clogs, as the machine must be stopped and disassembled. However, their simpler component layout makes long-term servicing and part replacement more straightforward, which can be advantageous for mills with extended operational lifespans. Selecting the right press type involves balancing immediate operational convenience with long-term maintenance considerations.

- **Production Volume and Oil Quality**

Bar Row presses are an ideal choice in mills that have high daily throughput because it can extract as much oil as possible with a minimum of trash. This renders them particularly useful in the crops of peanuts, soybean and palm. Round Row presses offer a somewhat less productive result; however, it remains stable and reliable in the case of more difficult crops such as cottonseed or rapeseed. Both designs yield oil of comparable nutritional quality, however, Bar Row presses yield a much cleaner crude oil, whilst Round Row presses maintain a lot of the natural aroma and taste.

- **Energy Supply and infrastructure**

In localities where power is erratic, Bar Row presses are preferable since they can easily get back to work when power goes off meaning that production is not lost. Round Row presses are cheaper, and less flexible to interruptions, but can be operated effectively in constant power conditions where they can operate continuously at high loads. Mills need to access their local energy situation as well as crop type and market needs before they choose equipment.



Conclusion.

It is noted in the wide field application in southeast Asia, Africa and South America that the profitability of the product in the long term, the quality of the product, and the yield of the oil is directly dependent on the choice of the correct screw press type. The bar Row oil presses offer optimum efficiency and clean clearance and the Round Row presses offer high reliability with fibrous crops and prolonged service. The right decision will save time, avoid unwarranted wasta, and guarantee the stability of operations over the years of factory usage.

GQ Agri focuses on solutions, which are created based on field experience with consideration of crop type, scale production, and the local energy conditions. Our Bar Row and Round Row screw press machines are intended to offer reliable operation, affordable pricing and flexibility to medium processors in the emerging markets. With equipment choice and operational needs matched up, farmers and mill owners are able to reduce risks and achieve more returns on investment.

About us.

GQ Agri specializes in reliable, scalable edible oil equipment for emerging markets. Our mission is to empower smallholder producers and agricultural entrepreneurs across Southeast Asia, Africa, and Latin America with tools that enhance quality and value.

Our portfolio is engineered for practical needs, diverse crops, and real-world production environments. If you are uncertain which machine best fits your processing line, we provide free consultations and technical analysis. Let us help you choose wisely and build confidently.