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OEC Lab Extruders provide the perfect solution for industries requiring small batch processing. These versatile extruders can handle a wide variety of materials, making them invaluable for verifying performance expectations typically achieved with production extruders. They are essential for R&D testing, allowing companies to experiment with different materials and formulations without incurring high costs and material wastage.

Capable of processing polymers like PP, PE, PP-R, and ABS, OEC Lab Extruders meet diverse industry requirements and facilitate the optimization of process parameters, ensuring smooth scalability from lab-scale to full-scale production. They also excel in low-volume production, efficiently producing small quantities of specialized products, such as custom master batches and medical-grade materials.

In summary, OEC Lab Extruders are versatile, efficient, and cost-effective, making them indispensable for both R&D and low-volume production across various industries.



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Case Study

1. Client Success Story: Efficient Material Processing with Our Lab Extruder

One of our clients, who manufactures their own master batch, consistently requires new formulations and colours. Previously, they relied on their Ø45mm compounding unit, which consumed 50 kg of material to achieve the desired compound parameters. This process was both material-intensive and time-consuming.

Upon discovering our lab extruder, they decided to give it a try. The results were impressive. Their material usage dropped significantly from 50 kg to just 5 kg. This drastic reduction allowed them to fine-tune parameters and experiment with new formulations using the same 50 kg of material.

By adopting our lab extruder, the client not only optimized their material usage but also gained valuable time to innovate and perfect their products. This case exemplifies how our lab extruder can enhance efficiency and foster innovation in material processing.



2. Cost-Efficient Material Processing: A Significant Reduction in Trial Expenses

Our client's material processing, valued at approximately Rs. 550/kg, incurred substantial costs. A single trial with their previous equipment would amount to Rs. 27,500, including electricity expenses and machine space utilization.

However, with our Lab Extruder, the trial expenses plummeted to approximately Rs. 2,750 – a remarkable 90% reduction. This significant cost-saving measure, totalling around Rs. 24,750, highlights the efficiency of our equipment. Furthermore, the decrease in processing costs, compared to the heavy load requirement of a Ø45mm extruder, underscores the financial benefits of our solution.





Specifications

Model No.	: OEC 1125
Screw Diameter	: 25mm
Screw L/D Ratio	: 22:1
Screw Compression ratio	: 1:3
Main Drive	: 1.5 kW A.C. Motor, with suitable A.C. Drive (ABB Make) and suitable gear box
Output	: Up to 5 kgs/hr.
Screw RPM	: 20 to 80 RPM
Heating load	: 4 kW
1. Extruder	: 25mm single screw extruder mounted on M.S. fabricated body
(a) Screw	: Made of SS304, polished with mirror finish
(b) Barrel	: Made of high tensile alloy steel EN 41B, with nitride and hard chrome plating.
Heating zones	: 2 nos.
(c) Hopper	: Fabricated from SS 304 and has 2kgs capacity
(d) Die head	: Customizable as per customer's requirement
(e) Control Panel	: Comes in two configurations: PLC control base or Manual PID type control base with sync cards
(f) Cooling through	: Standard design made with SS 304 with recycling water system and stand
2. Pelletizing unit	: Cutting rotor made from D2 material 50 mm width for 2-5 strands cutting.
(a) Motor	: A.C. motor of 372W (0.5 HP) and suitable A.C.V.F. drive. (ABB make)
(b) Output	: 3 – 5 kgs/hr
3. Electric Load required	: 7kW 3phase – 50 Hz 440V A.C.
4. Space Requirement	: 2800mm (L) x 1000mm (B) x 1500mm (H)

Other ancillaries, like coiling unit or tube cutting unit (manual or pneumatic) are also available, and can be replaced with the pelletizing unit.

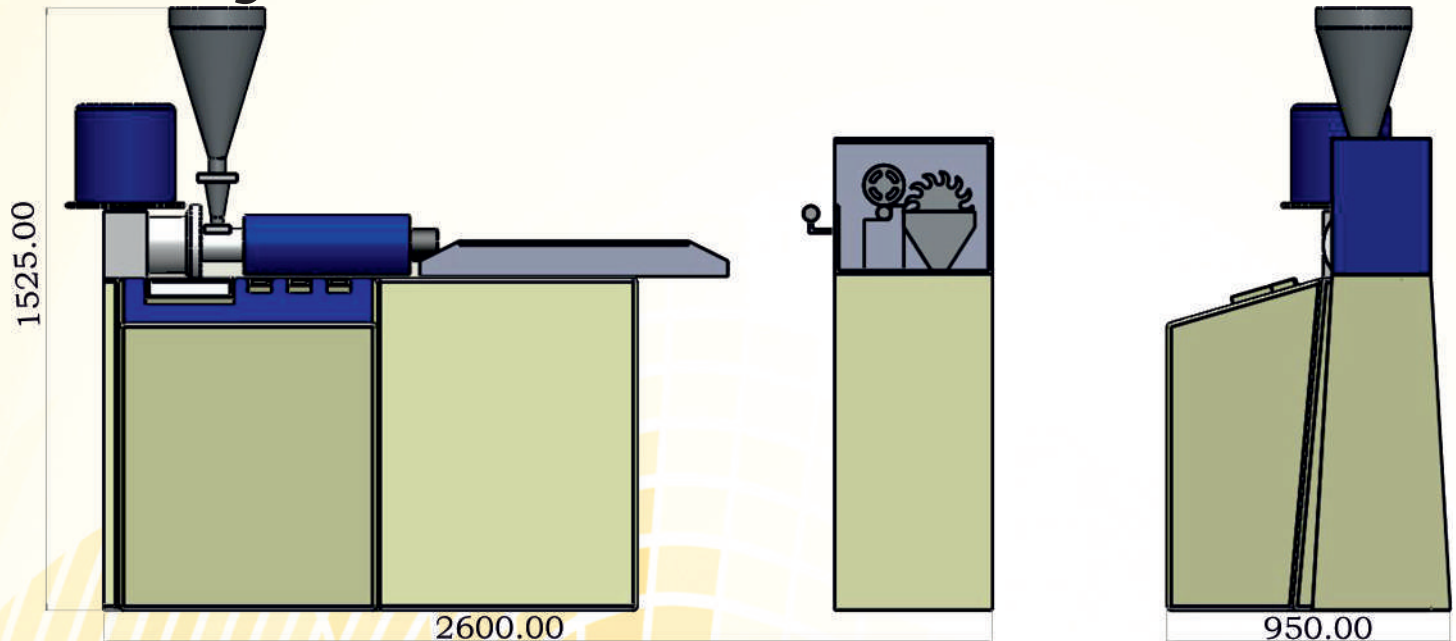


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Line Diagram



Advantages

- **Versatility:** Capable of processing various materials including PP, PE, PP-R, ABS, and more.
- **Waste Reduction:** Minimizes material wastage, optimizing resource utilization.
- **Batch Efficiency:** Enables multiple batch production, enhancing productivity.
- **Cost-Effective Operations:** Low changeover costs and simplified cleaning procedures save time and resources.
- **Scalability:** Facilitates the determination of processing parameters for seamless transition to large-scale production.
- **Energy Efficiency:** Significantly reduces energy consumption while enhancing product quality.
- **Cost Savings:** Enables the production of custom master batches at a fraction of the traditional cost.
- **Enhanced Security:** Protects intellectual property rights and trade secrets with lock-controlled PLC systems, ensuring confidentiality and control over formulations and parameters.

Application scope

- **Material Transformation:** Ideal for melting, plasticizing, and extruding various materials.
- **Small-Scale Master Batch Production:** Suited for low-quantity production of master batches.
- **Process Optimization:** Facilitates the refinement of extrusion process parameters for enhanced efficiency.
- **3D Printing Supplies Manufacturing:** Enables the production of materials essential for 3D printing processes.
- **Medical Grade Material Production:** Capable of producing high-quality materials suitable for medical pipe manufacturing.