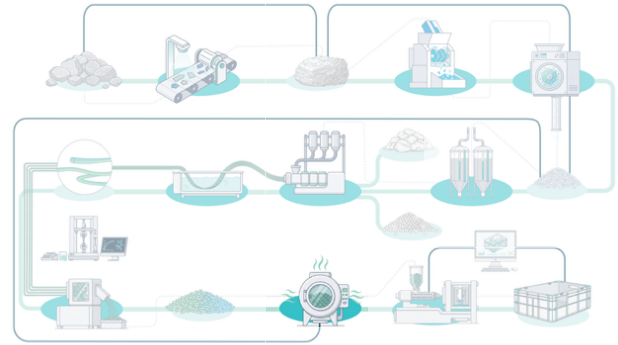


Name:

Vacuum Dryer Chamber



What is it?	The vacuum drying machine acts as the bridge between the raw pellet produced by the pelletiser and the finished plastic part (such as a plastic crate or the corner of an ottoman bed frame) generated in the injection moulding machine. Many plastic polymers are hygroscopic, meaning they absorb atmospheric moisture very easily. Attempting to melt moist pellets in an injection moulding machine causes the trapped water to become superheated steam, breaking the polymer chains (hydrolysis) and resulting in brittle finished parts with internal bubbles or surface streak marks (splay).
What is it for?	The primary function of this machine is to eliminate moisture from the pellets. Unlike a conventional hot-air dryer (which can take 3 to 4 hours), the vacuum dryer drastically accelerates the process using simple physics. By creating a vacuum inside the drying chamber, the boiling point of water drops dramatically (allowing water to evaporate at just 50 °C or 60 °C instead of 100 °C), and moisture from within the pellets evaporates and is drawn out almost instantaneously (typically taking only around 40 minutes). Because extremely high drying temperatures are not required, the plastic avoids thermal stress and oxidation. Once dried, the pellets are conveyed hermetically (often using the same vacuum system) straight to the injection moulding machine hopper.
At what stage of the recycling process is it located?	At the pre-moulding preparation stage, situated between raw pellet production and final component moulding.



