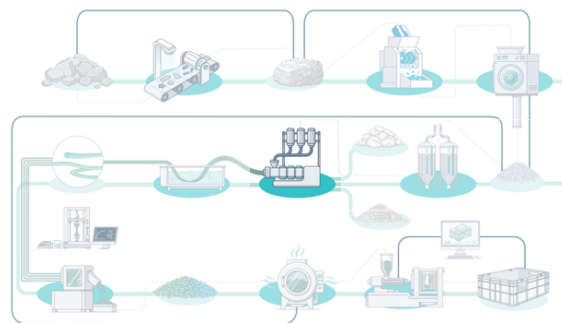


Name:

Extruder Compounding Machine



What is it?	This industrial equipment is specifically designed to blend and formulate polymers with other components. Unlike a standard extruder, which merely melts and shapes a homogeneous material, the primary purpose of a compounding machine is to modify the properties of the plastic. To achieve this, it combines the base polymer with additives, colourants, reinforcing fillers (such as fibres or particulate material), or even other types of plastic to create a thoroughly homogeneous and upgraded blend. To achieve this level of intimate mixing and force material integration, the vast majority of these machines use a twin-screw system.
What is it for?	The mixing and extrusion process inside a compounding extruder follows a strict sequence to ensure additives are dispersed at a microscopic level without degrading the plastic: • Feeding: The base polymer (usually in pellet or powder form) and additives (pigments, heat stabilisers, flame retardants, reinforcing fillers, etc.) are accurately dosed and enter the machine through the feed hopper. • Melting and shear: As the screws rotate, they push the material along a heated barrel. The combination of temperature and mechanical friction (shear force) generated by the screws completely melts the plastic. • Intensive mixing (Kneading): In specific screw zones, the flight design changes to "knead" and grind the mixture. This ensures solid additives are broken down and evenly distributed throughout the molten plastic matrix. • Degassing (Venting): As the material advances through the extruder body, vacuum ports are applied to extract moisture, trapped gases, or residual monomers that could weaken the final material or leave bubbles. • Extrusion and pelletising: Finally, the molten and perfectly homogenised plastic is pushed through a multi-strand die head, emerging as continuous strands. These hot strands are cooled in a water bath and immediately cut to transform into new modified plastic pellets, ready to be injection moulded or blow moulded.
At what stage of the recycling process is it located?	The primary use of these machines in the plastics industry is polymer transformation to manufacture reinforced plastics, masterbatches, and biodegradable or recycled plastics produced from recycled materials with additives to restore mechanical properties lost during their lifecycle.



