

## Gear pump assisted compounding and extrusion

Nowadays gear pumps and screen changers combined with specially developed controllers have to be considered not only as state of the art equipment in extrusion lines for high quality end products but also as an acknowledged instrument for improving the overall efficiency and user-friendliness of compounding and extrusion lines.

Together with extruders in the broad sense, kneaders, co-rotating twin-screw extruders, single-screw plasticizing extruders, etc., they constitute crucial components of a production line that is being called upon to meet steadily rising demands in terms of quality and economics.

Employing a gear pump into the process of compounding applications, the gear pump takes the function of delivering **constant flow** of polymer to the pelletizer or die, widely **independent of their pressure requirements**. Due to the excellent pressure built up capabilities of the gear pump the compounder or mixer then can concentrate on its main function of mixing and melting the polymer.

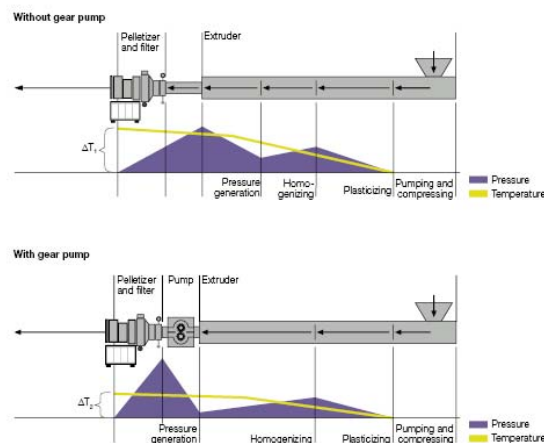
The positive displacement characteristics of a gear pump significantly reduces the specific energy input (SEI) into the polymer melt. This reduces the average temperature increase of the polymer melt stream. The same characteristic also decreases the variations of the pellets, or in case of direct extrusion processes, allows keeping tighter tolerances in your end product. Additionally less waste and off-spec material will improve the profitability of the whole plant by saving raw material costs too.

The flow optimized melt channels and components built into in our gear pumps and screen changers minimize residence time and therefore eliminate degradation caused by stagnation of the conveyed polymer.

Gear pumps are used both in new extrusion lines as well as retrofitting existing ones. In both cases, the objective is to step up production, achieve a more uniform product, enhance flexibility, improve product quality, or simply handle the polymer more gently.

To further increase the quality of the end product Maag Pump Systems recommends the use of continuous screen changers, suitable for non interrupted processes like compounding, in addition to its gear pumps.

To avoid a high screen change frequency for the processing of very high contaminated polymer, the use of screen changers providing a very big filtration area, which can regenerate(self cleaning) their filters automatically by reversing the melt stream, are recommended. It is decisive, that already filtered material will be used for the back flushing(self cleaning) only.



The Maag continuous screen changer CSC-BF 4F, including a self cleaning of the filters with a back flush system, is perfect for this job. 75% of the screen surface is in production during the effective and short back flush process with minimal material waste.

In normal operation mode the CSC-BF 4F offers 95% open surface of the screens to clean the products. As the back flush sequence proceeds automatically, the screen's lifetime can be multiplied. This reduces the expenditure of service time for the screen changing only.

With special options this version is also available as pressure and volume constant execution.

Maag Pump Systems increases the productivity of compounding applications with reference to a long experience and many projects in this market. The product range includes gear pumps, screen changer and associated systems and control units to ensure safe and reliable production.