

FOOD / PACKAGING / TRIM HANDLING

Venturi Systems Conveying **Plastic** **Endless Trim** in the Packaging Industry

A Spanish food packaging film manufacturer improved their trim handling efficiency by implementing 6 Venturi systems to optimize their extruder lines. This solution led to substantial benefits, including a 60% reduction in energy consumption, elimination of downtime, and significant cost savings, resulting in a return on investment (ROI) of 1.5.

THE CHALLENGE

A manufacturer of food packaging films located in Spain was looking to replace outdated equipment to improve trim handling efficiency from their extruder lines.

- The customer wanted 6 new individual Venturi systems to optimize efficiency from 6 extruders.
- The customer wanted to conserve floor space and discharge material at 2 opposite points of the factory where briquette machines were placed.
- The customer needed better air separation.
- The customer needed a more efficient system with enhanced safety features.
- The customer wanted to mitigate stops.



Before the system was installed, the continuous trim sometimes was not properly discharged into the compactor and as a result of this, some quality rejects were provoked by jams on the rolls.

THE FACTS

Production:

- Consumption of new blower = 22.000€/year saved
- Avoiding stops (0% Stop) = 40.000€/year saved
- Eliminated Compressed air = 9.000€/year saved
- Hours of maintenance reduced = 9000-12000€/year
- Improved safety through reduction of noise pollution by about 10%
- Breakdown, corrective maintenance, and stops eradicated.

Conveying distance:

- 10 - 25m and 5 bends

Trim thickness/Speed relation:

- 10 - 25 micron at 60-110 m/min
- 30 - 50 micron at 45-60 m/min
- 50 - 90 micron at 25-50 m/min
- 90 - 180 micron at 12-25 m/min

100%

DECREASE

IN DOWNTIME AND
PRODUCTION STOPS

60%

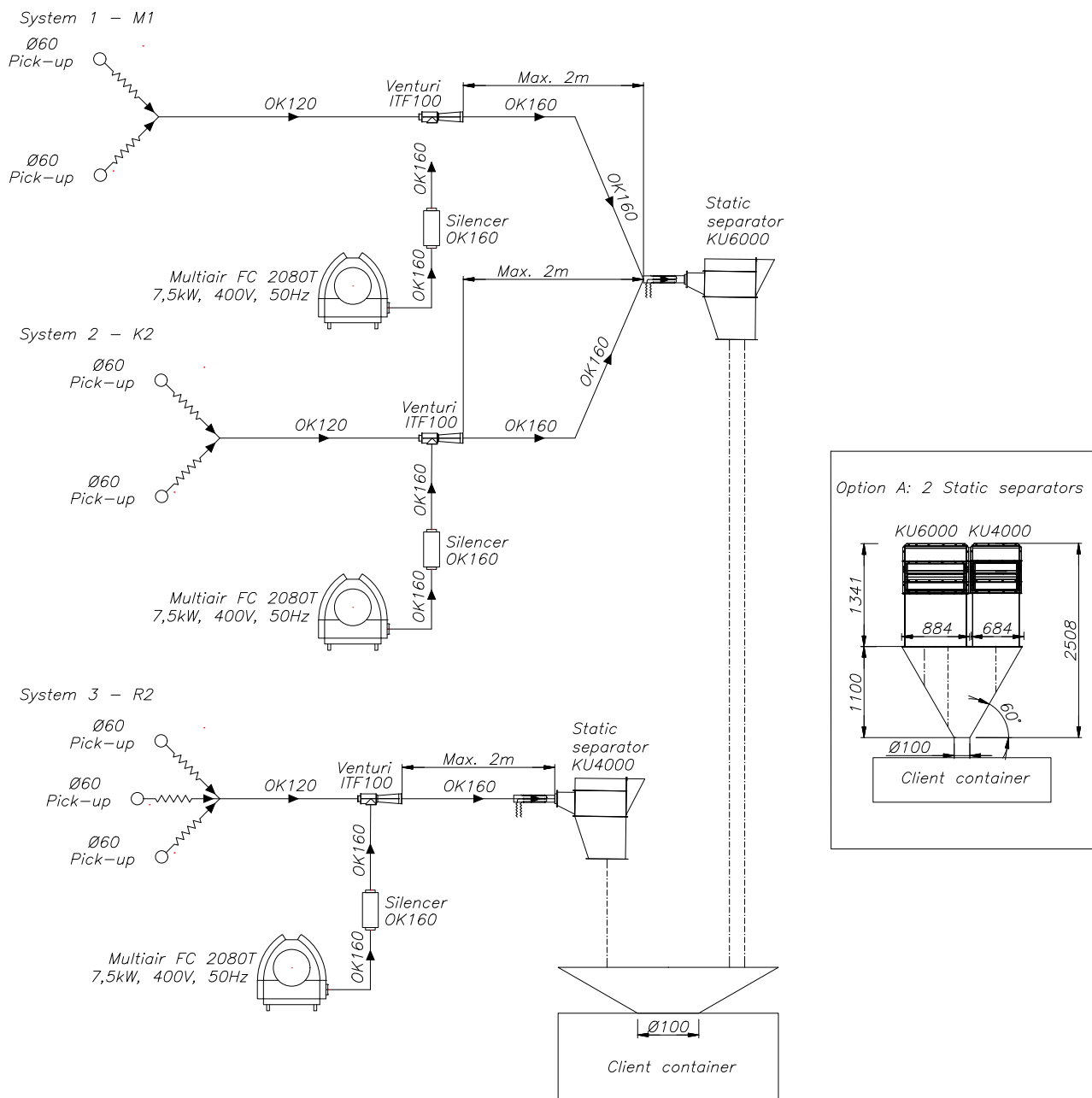
DECREASE

IN ENERGY
CONSUMPTION



THE SOLUTION

- Renew and optimize efficiency at 6 extruder machines.
- For each extruder, we installed 2xØ60 or 3xØ60mm pick-up points, each one ended by a steel flex hose of 1.2 meters.
- Both suction points joined into a common duct that will connect to an individual Venturi ITF 100 per machine.
- Upgrade the power to the high-pressure blower, MultiAir FC2080T, equipped with a frequency inverter and soundproof design.
- Main equipment has been placed on the top floor of the client's machines and each venturi system has been installed near the final section of the route, at approx. 1-2 meters before the static separator.
- Static separators have been chosen as the common discharge equipment.



THE ADVANTAGES AND BENEFITS

In the previous solution, the continuous trim sometimes was not properly discharged into the compactor and as a result of this, some quality rejects were provoked by jams on the Rolls.

- **ROI = 1.5 (150%)**
- **Eliminated downtime (0% stops)** by €40,000 annually.
- **Reduced energy consumption by 60%**, saving €22,000 annually.
- **Cost savings of approximately €9,000** by removing compressed air.
- **Reduced costs** for preventative and corrective maintenance by €9,000 - €12,000 annually.
- **Optimized space management** due to the smaller footprint of the MultiAir blower.
- Improved safety through **reduction of noise pollution by 10%** on the production floor.
- **Risks of interventions mitigated.**

