

# 包装行业破碎机解决方案

## Processing: Size Reduction Solutions for the Packaging Industry

新型规格齐全的设备首次亮相，技术创新和具有特色的设计是其突出亮点。

*The new and complete range makes its debut, characterised by innovative technical and design-based features.*

当今，所有工业产品的设计思路都充分考虑了尽可能对不合格品进行再生和回收利用。在有些领域，例如食品和饮料包装行业，经常作出的决定是不更换原料，以保持现有的回收渠道和方法。在研究和发展部门，开发可回收原料的需求影响和决定了选择。正因为如此，在塑料领域，造粒机已经扮演了重要的角色，已经进行了专门设计，以回收塑料加工中的废料，使其可以重复使用。

百旺 (Piovan) 已经重新开发了回收利用领域的产品，推出了非常高质量的设备，可以满足全部塑料领域所有回收利用的需求。应用于包装、医药、汽车、纺织和电子行业的塑料，在任何情况下，一贯的做法是回收利用，对造粒机的效率和可靠性日益增长的需求证实了这一现实状况。为此，百旺推出了新型全范围造粒机，产品范围涵盖了小型、中型和大型设备。

适用于薄膜和切边的造粒机

*Granulator for Film and Edge Trim*



中大规格的造粒机，型号N35-60

*Medium Large Size Granulators N35-60 Model*

**能源利用最佳化:** 工业标准是40 Wh/kg 新的百旺标准降低到了25 Wh/kg:

最重要的是，所有新机器都装有绝对独一无二的切线锯切系统。旋转刀片相对于固定刀片成斜度并尽可能接近切割圆的几何切线，从而切割精度得到提升和实现了最佳化。通过这种方式，使用较小的电机就能实现较高的加工能力，且格外带来了好处：粉尘释放和热量产生降到了最低水平。产品的这些特点保证了破碎加工中更为合理的切割和更好的尺寸一致性。没有如此高质量的粉碎单元，除了会产生不合格的产品外，将有着较高的粉尘含量，因此更难于处理。

**创新的设计和制造方法使得百旺新型破碎机比目前市场上见到的同类产品领先一步:**

切割单元由机加工件组装而成，而不是采用铸造件或焊接件。这种设计采用高度精密的部件进行构建，能够提升破碎切割的效率和提高产品的质量，同时，由于磨损的部件能够更换，因此提高了破碎机的使用寿命。百旺破碎机另一个与众不同的特性是可提供订制化服务。即使最基本的型号也可以修改以满足客户加工的特殊需求。

### N35-60: 当代最先进的破碎机:

百旺新型破碎机产品范围中非常具有特色的一款产品是 N35-60, 这是一款包含了所有上述特性的产品, 除此以外, 配备了可90°调节的料斗, 这样就保证了当采用输送带喂料时, 在四个装填位置输送带的方向总是可以适合于破碎机的料斗入口。维护工作也因此得到了简化, 且只需要更小的工作空间。

N35-60是三种造粒机系列产品的一部分, 特别适合于大块物料, 例如注射模塑食品容器、大瓶子或罐子(中空成型)、大容器、箱子(滚塑成型工艺)。这些物体通常又大又轻, 所以容易反弹, 难于切碎。

### 百旺破碎方案:

节省能耗表现出色: 百旺造粒机同样配备了高能效的电气系统和控制系统, 现在全部输送系统实际上都已得到改进, 当一周7天每天24小时使用的情况下, 可以实现节能省电。即使造粒机不是连续工作, 仍然可以优化峰值负载以减少能量的消耗。

例如, 在中空成型的情况下, 造粒机在开机阶段被高频率使用, 然而当设备正常运转时, 只需要间歇地破碎百分之20到30的产品。在一个模塑成型和另一个模塑成型之间有着一连串的空闲周期, 在此期间造粒机不起作用, 而电机保持着运转。在这种情况下, 能源节省系统介入并管理这一空闲周期, 并优化能源消耗。

根据不同的应用, 百旺新系列高效率制粒机能够保证节能百分之15到35。

Nowadays, all industrial products are designed with a view towards recovering and recycling as many reject components as possible. In certain sectors, for example in the Food & Beverage packaging sector, a decision is often made not to change raw material, in order to continue the existing recycling channels and methods. The need to develop recyclable materials influences and determines choices in the research and development sector. For this reason, granulators have assumed a fundamental role in the plastics sector, having been specifically designed to recover plastics processing waste and make it reusable. Piovan has redeveloped its range of recycling products introducing very high quality machines able to satisfy all recycling needs throughout the plastics sector. In all cases where plastic is used in the packaging, medical, automotive, textiles and electronics sectors, recycling is common practice, confirming the need for increasingly efficient and reliable granulators. Piovan has therefore introduced a new range complete with small, medium and large granulators, characterised by innovative technical and design-based features.

### Optimised energy utilization: drop from the industry standard of 40 Wh/kg to the new Piovan standard of 25 Wh/kg

Most importantly, all new machines are fitted with an absolutely unique tangential cutting system. The rotary blades are inclined with respect to the fixed blades and are positioned as close as possible to the geometric tangent of the cutting circle, therefore optimising and improving cutting precision. In this way, high production capacities are achieved using smaller mo-

tors, with the additional benefit of minimising dust production and heat generation. These features ensure a more regular cut and more dimensionally consistent regrind.

Without a cutting chamber of this quality, the regrind, in addition to being irregular, will also have a higher dust content and will therefore be more difficult to process.

### Innovative design and manufacturing methodologies put the new Piovan granulators a step ahead of current solutions available in the market

The cutting chamber is made from machined pieces, which are then assembled rather than being cast or welded. This design has enabled the construction of high-precision components that improve the efficiency of the cut and the quality of the ground product, while improving the life of the granulator, as worn pieces can be replaced. Another distinctive feature of the Piovan granulators is the possibility for customisation. Even the most basic versions can be modified to suit the specific needs of the process.

### N35-60: the state-of-the-art granulator

One of the very distinctive models of the new Piovan range of granulators is the N35-60, a machine encompassing all of the characteristics described above, in addition to featuring a 90° adjustable hopper for four loading positions, ensuring that if fed by conveyor belt, the direction of the belt can always suit the granulator hopper inlet. Maintenance is therefore simplified and less operating space is required.

N35-60 is part of a family of three granulators designed specifically to process large pieces or such as injection moulded food containers; large bottles or cans (blow moulding); tanks, bins, (rotational moulding process). These objects are normally quite large and light and can therefore bounce and be difficult to cut.

### Piovan size reduction solutions: excellent results using less energy

Piovan granulators are also fitted with energy efficient electrical and control systems: the entire transmission system has in fact been revised to achieve effective energy savings when used 24/7. Even if the granulator doesn't work continuously, it is possible to optimise peak loads to reduce energy consumption. For example, in the case of blow moulding, the granulator is used heavily at start-up, while during operation it is used intermittently to grind 20 to 30 percent of production. Between one mould and another there are a series of idle periods in which the granulator is inoperative, even if the motor remains on. The energy saving system intervenes in this case to manage the idle periods and optimise consumption.

The new range of Piovan high-efficiency granulators guarantees energy savings between 15 and 35 percent depending on the application.

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