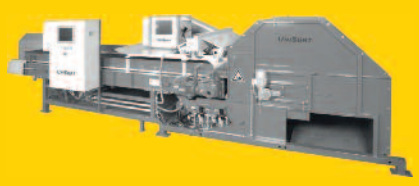
RTT STEINERT

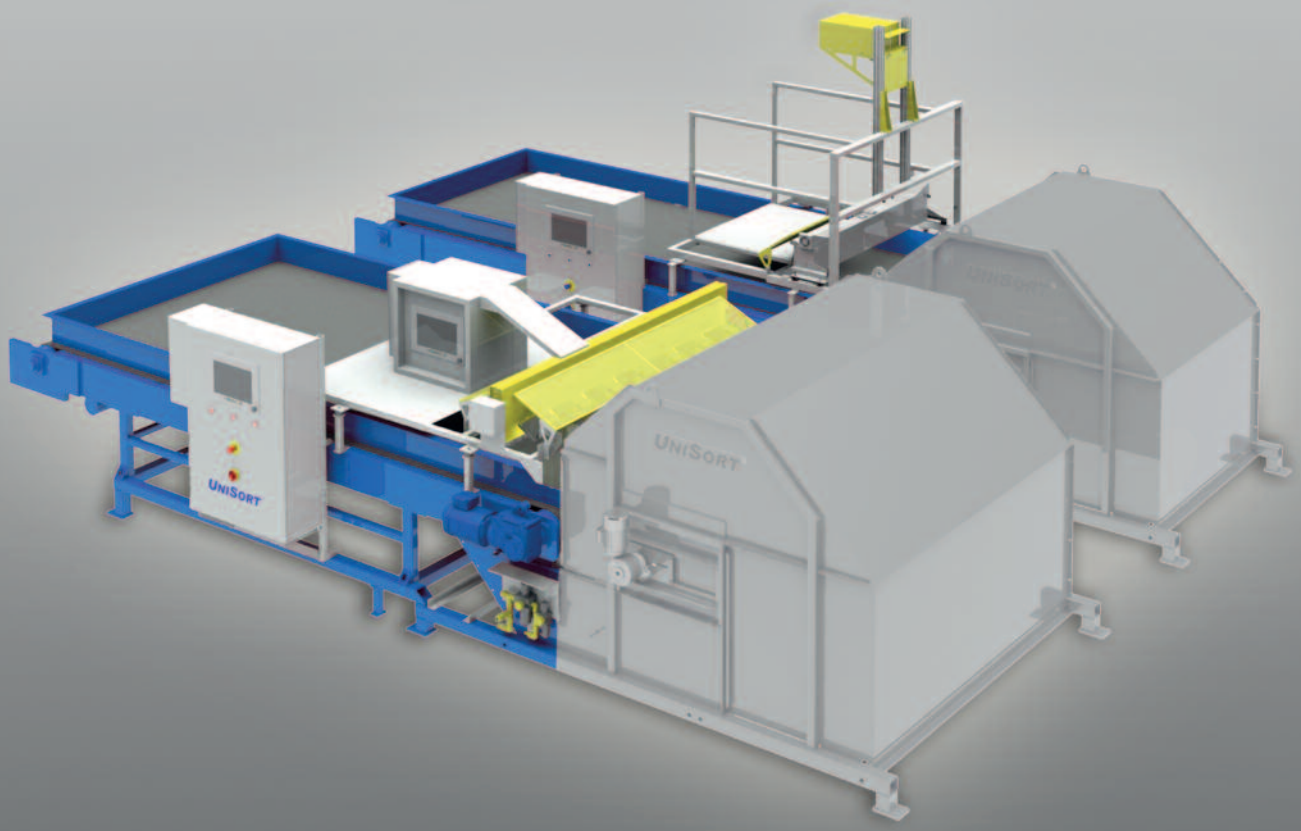
UniSort® P

Sorted by NIR.

UniSort® P – Selective recycling
of plastics, wood, paper and cardboard.



UniSort® P – The all-rounder for material separation, also available as Master-Slave unit.

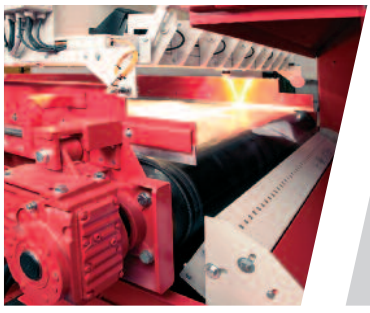


Technology ensuring sustainability.

The UniSort® P series applies fast near-infrared (NIR) sensors which receive the light reflected from the material to be sorted from cameras or fiberglass systems. It is a particular feature of this series that the complete NIR spectrum is analyzed. This permits plastic materials, wood and paper to be identified and separated, a process that is difficult to implement with other technologies. Working widths of up to 2.8 m (110") are possible, Master-Slave units allow for up to 4 m (157").

With this sorting unit series, RTT STEINERT has introduced one of the most advanced and efficient systems to the market.

Together with other sorting equipment made by the STEINERT group, such as the metal separators and the UniSort® C color-based sorting system, a wide range of unique recycling products is available. With constant attention to the overall process, the staff of the STEINERT group are experts in the interface and therefore guarantee the most economical solution for each specific application.



Applications

The UniSort® P series was developed for the accurate identification and separation of plastic materials, wood, paper and cardboard in household waste, bulky refuse and industrial waste as well as waste material mixtures.

Other important tasks are the removal of chlorous substances from refuse-derived fuels and the recycling of cardboard beverage boxes and PET bottles.

Thanks to the fact that the machine has been designed for high-performance operation, it is also possible to separate fine-grained plastic materials, for example material originating from electronic scrap or ground plastic bottles, by material types.

Types

The resolution of the optical systems used is dependent on the throughput and sorting task, but they all have a high sensitivity and are energy-saving.

The multi-spectral analysis method applied across the entire working width made it possible to build the unique Master-Slave machine type (see the general drawing). Only one spectrometer is required to simultaneously carry out several sorting jobs on different conveyor belts or a longitudinally split belt – an extremely economical solution especially when low material quantities are handled.

The low-cost evaluation of complete NIR spectra permits a fast switch-over from one sorting task to another, without the need for time-consuming extra installation work.

In the case of standard sorting tasks, the material is fed on conveyor belts, whereas chutes are used in the fine-grained material sorting process.

Tried and tested complete systems

Though high-resolution identification is an essential part of the task, other system processes have an equally important impact on the sorting result. This is why the feeding and discharge equipment of the RTT STEINERT sorting systems are mostly delivered together with well-matched feeding devices, highly efficient blow-off nozzles and discharge hoods optimized under fluid mechanics aspects.

A unique active nozzle control system takes care of the precise opening and closing of the nozzles – which saves approx. 30 % of the compressed air demand and results in an even better separation of the products and higher throughput rates.

Options

A third product flow can be achieved by installing one more nozzle bar.

A kit comprising the main components sensor, controller and nozzle bar is available for refitting work, technological updates and plant construction work. This kit can be matched with the individual requirements such as the working width.

For more complex tasks, the system can be complemented by a color identification unit and/or an (induction-based) metal detector. An example of such a complex task is the simultaneous removal of the troubling materials PVC and metals from refuse-derived fuels.

Good serviceability

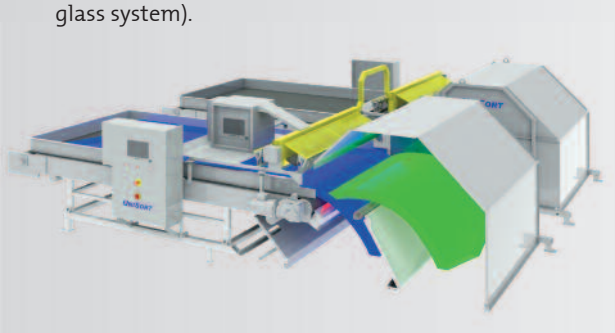
The system is easy to include in plant-specific data networks, and a cost-saving remote maintenance option is also offered. The direct inclusion of RTT STEINERT GmbH in the worldwide service network of STEINERT Elektromagnetbau GmbH provides a reliable support to our customers around the globe.

Technical data

Sorting speed:	max. 3.5 m/s
Resolution:	min. 3 mm
Sorting width:	max. 2.8 m (110") Master-Slave design: up to 4 m (157")
Grain size:	min. 10 mm (½")
Nozzle grid pitch:	31, 25, 12.5 or 6.25 mm (1¼", 1", ½", ¼")
Throughput:	
Grain size 60 – 250 mm: (2½ – 10")	2 – 7 t/h•m
Grain size 10 – 60 mm: (½ – 2½")	0.8 – 3 t/h•m

Working principle

The material stream is evenly distributed across the working width and fed to an identification system. An optical system directs the light reflected from the objects to highly sensitive NIR sensors. The sensor system identifies the objects at the correct positions whereupon precise ejection pulses from compressed-air nozzles blow the recognized objects out of the material stream (figure: Master-Slave design with fiber-glass system).



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