

TM 1500

Tank Technology

YOUR INNOVATION.
OUR CHALLENGE.



Low-pressure extruders for entry-level hotmelt processing

Our extruders TM 1500-30 and TM 1500-45

Requirements made of component protection resilience:

Technology continues to develop all the time with increasingly comprehensive areas of application. At the same time, there is constant growth in the requirements made of the specifications for the parts being used. This trend is also particularly significant for the physical and chemical resilience of component protection.

Whether in the automotive branch or electronics industry, communications technology, the medical industry or white goods, special problems arise when components are exposed to chemical substances and mechanical strains as

well as very high temperatures and vibrations, where active component protection is required.

Flexibility is the trump card when processing hotmelt materials in low-pressure extrusion technology. Manufacturers of electrical and electronic components expect component protection systems to offer fast, flexible solutions of a constantly high quality.

The way top quality materials are made available to the process is just as important as the specific rating of corresponding tools and processing systems.



Possibilities of modern tank systems

Optimum specifications for commercially available tank systems used in hotmelt technology are extensively well-known. The material is melted gently in volumes of 1 to 12 kg, passing through several heating zones before being fed to the module heads and nozzles by gear pumps and heated material hoses. Modern melting systems also permit homogeneous widespread heating of the materials. Optimised discharge surfaces help to keep the hotmelt flow constant. Heating phases in modern tank systems are minimised by weekly timers and stand-by temperature settings, with direct data transfer to and from handling systems. Automated drying and replenishing systems also prevent unnecessary overfilling of the tank units.

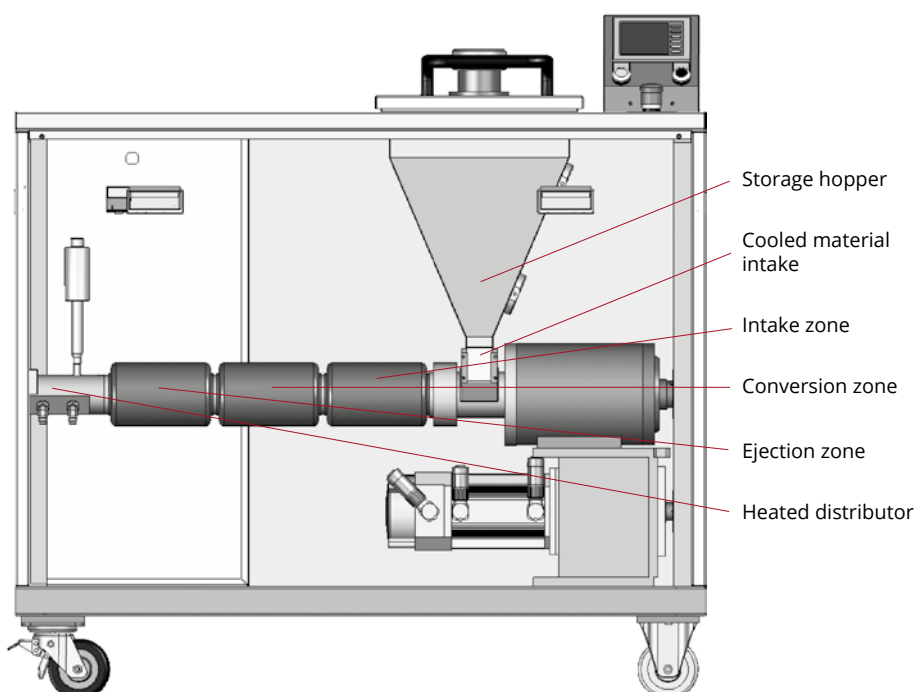
Extruders for particularly high demands

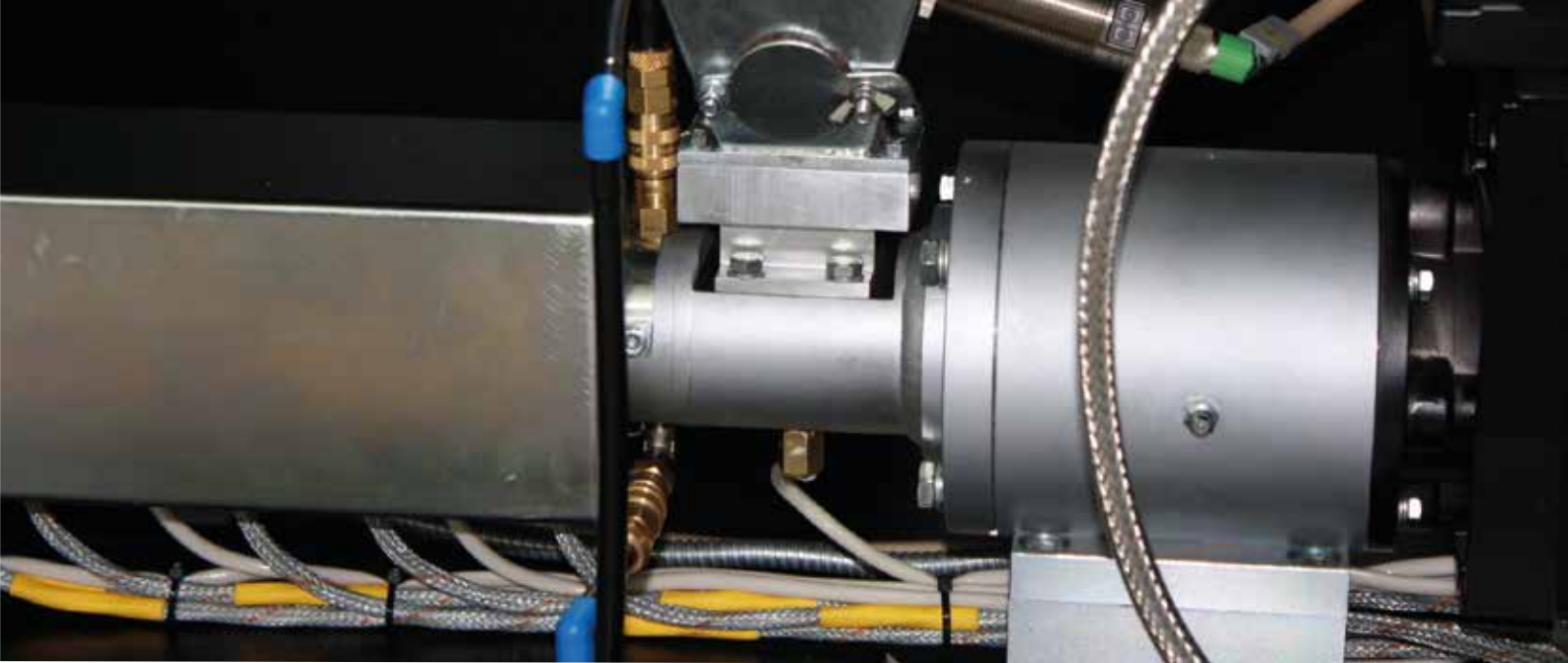
Even so, a tank unit cannot provide certain essential functions involved in processing hotmelt materials. This is where extruders come in with the possibility of fulfilling the high quality demands made of modern production. The advantages of an extruder consist in processing a wide range of different materials, specific melt-on-demand without unnecessary heating phases, reduced material change times and simplified maintenance and service.

Using extruders specially for hotmelt materials is nothing new. Particularly where thermal stability is concerned, material specifications demand gentle melting. Many hotmelts change their characteristics already after ten to sixteen hours, which can cause changes to the microstructure of the materials. Discolouring of the materials and slight burning in the melt are the first signs of this process.

Comparing extruders and tank units

An extruder functions in an essentially different way than a tank unit. The material is kept pre-dried at room temperature in the hopper and supplied as needed for processing, thus ruling out any thermal load on the material particularly during the storage phase, even during short production breaks. Needless to say that level and pressure sensors control the quantities involved for automatic control via pressure and feed rate.



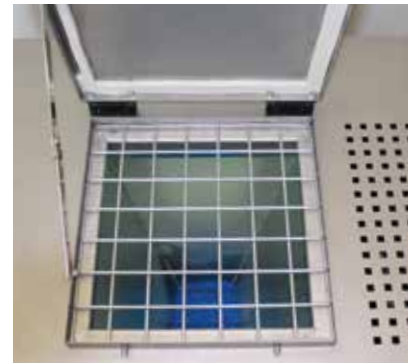


The extruder is also a safe method of exposing the material to the shortest possible stress of heating up during the production process. The hotmelt is fed into the material screw, where the materials are tumbled and thus heated up in various zones. Extruders have three different sections: the intake zone, the conversion zone and the ejection zone. Additional heating applied from the outside achieves a homogeneous temperature increase in all three zones. A chilled backflow barrier prevents already melted material from flowing back into the storage hopper. The melting process is also monitored by weekly timers and stand-by modes.

Using extruders for many different materials

In principle, extruder technology offers not just the possibility of processing hot-melt materials. It can also process a wide range of different materials thanks to its basic technical structure and the design of the screw technology. According to the typical basic material data, extruders can also process polyester, EVA, polyolefine and polyamide, with melting temperature and processing pressure as the defining criteria. However, it is advisable to consult the manufacturers involved in each case.

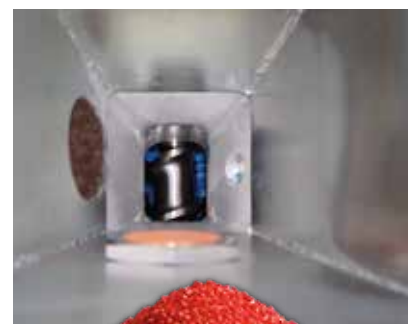
The material is filled into a hopper-shaped storage container that can be covered with a sight glass, thus protecting the storage container and the material from air circulation, dust and moisture. The granulate is not exposed to any thermal loads. A range of different granulate shapes is possible in consultation with the machine manufacturer, although the granulate must always be pourable.



For brilliant colours and high material quality

The lack of thermal loads in the storage tank make it possible to use coloured materials. In tank units, the hotmelt often discolours; that does not happen here, so that brilliant colours are preserved throughout the whole production process.

Modern extruders have level monitoring systems and automatic replenishment systems with integrated drying sections to safeguard consistently high material quality in terms of moisture level and pourability. This automated step helps to ensure a constant quality in both raw materials and also final products.



TM1500 | Specifications

deutsch	english	TM1500-30	TM1500-45
Artikelnummer	article number	904660	904575
Bedienpanel	Touchpanel	AST 3211	AST 3211
Steuerung	control	Vipa V200 S7-300 kompatibel	Vipa V200 S7-300 kompatibel
MPI-Netzwerkfähig	MPI-network	MPI	MPI
Vergussdruck min/max	melting pressure min/max.	0-50 bar	0-50 bar
Förderleistung (TH 865) Materialabhängig	output (TH 865) depends of material	9 KG/std.	20 KG/std.
Material Temperaturbereich	material temperature range	0-245 °C	0-245 °C
Anzahl Heizkreis	amount heating circles	12 pcs	12 pcs
Anzahl Schlauchanschlüsse	amount hose connectors	4 pcs	4 pcs
Schlauchanschlußgewinde	hose connection thread	1/2" UNF	1/2" UNF
Einzugstemperierung	entry area tempering	15-50 °C extern	15-50 °C extern
Betriebsspannung AC	operation voltage AC	400 V ~50 Hz60Hz	400 V ~50 Hz60Hz
Leistungsaufnahme max.	power input max.	400 V ~50 Hz60 Hz 8,5 KW 16 A	400 V ~50 Hz60 Hz 14 KW 32 A
Abmaße	dimensions	H 1000/1200 x B 600 x L 1200mm	H 1150 /1350 x B 900 x L 1830mm
Gesamtgewicht Maschine	total weight machine	ca. 260 KG	ca.770 KG
Anschlußstecker	plug	16 A CEE	32 A CEE

Easy and convenient: material change, processing and metering

Even material change is easily handled in an extruder when using coloured materials. In contrast to tank systems, there is no need for time-consuming cleaning of the tank section and gear pump. After material that is no longer needed has been removed at the bottom of the hopper, the new material is simply filled in, thus eliminating any elaborate cleaning and maintenance in this section.

The rating of the screws and their geometry depends primarily on the choice of hotmelt materials. Temperature control in the extruder and the screw speed also dictate the output. Extruders for processing hotmelt products work in a pressure range of up to maximum 50 bar at a melting temperature of up to 245°C, with output varying between 2 kg/h and 35 kg/h.

The melted material is fed to a heated reservoir for bridging high feed quantities and also safeguards constant material pressure. Metering or volume metering heads can be connected directly to the reservoir, although it is also possible to connect up to maximum four hot glue hoses to connect extruder and volume metering heads to have the greatest possible scope for modular design.

Extruders in hotmelt technology - Advantages at a glance

Extruders offer advantages in hotmelt technology that normal tank systems simply do not have:

- Specially developed for processing hotmelt materials
- Available as stand-alone solution or with system connection
- Compatible with all standard hotmelt handling systems
- Other materials can also be processed, such as polyester, EVA and polyolefine
- Material is stored at room temperature, coking of the hotmelt is avoided
- Continuous, gentle melting with melt-on-demand
- No interruptions to the production process when replenishing
- Short material change times
- Easy maintenance and servicing

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