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Packaging Guideline

for deliveries to the plant J Voith Austria GmbH | VTAS ST. Georgen am Steinfelde

In order to effectively handle the large volumes of goods arriving at our plant in St Georgen am Steinfelde, we use largely standardised packaging materials.

The use of our packaging is integrated into the entire material flow - from the packing process at your site, the supplier, through shipping, transport, receiving, any processing in production and storage, to removal for assembly. It is therefore very important that you carefully consider the systems and processes described in this manual that result from this integration.

This manual contains descriptions and instructions for the use of our packaging. These should be of mutual benefit to your shipments to us. In addition, we would like to draw your attention to the Voith Turbo "Global Logistics Directive".

Voith Austria GmbH | VTAS
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1 General Information

The right packaging protects employees from accidents at work and the material from damage and mishandling along the entire logistics chain. At the same time, the entire process chain is optimized: Starting with the packaging process at the supplier, through shipping, transportation, goods receipt, incoming goods inspection, storage, right up to processing in production and removal for assembly. The supplier is responsible for compliance with the general and special packaging guidelines. VTAS reserves the right to inspect the packaging at the supplier's premises at any time. On the following pages we have compiled descriptions and instructions for the selection, design, requirements, labeling and use of packaging. We ask you as a supplier to read the following instructions carefully and to comply with them.

Contact person:

If you have any further questions or if your packaging deviates from the standards specified by Voith, please contact the operational purchaser responsible for you.

Delivery times:

MO-TO

06:30 – 11:30 12:30 – 14:30 **FRI**

06:30 – 11:30 Closed on bridge days!

Aim of the packaging system:

With this packaging manual, the suppliers of Voith Turbo in St. Georgen am Steinfelde (VTAS) are informed about the logistical requirements of VTAS in order to ensure an efficient and trouble-free material flow between suppliers and VTAS. This packaging manual must be observed for all deliveries. The packaging manual supplements the existing contractual agreements. On the following pages we have compiled descriptions and instructions on the selection, design, requirements, labeling and use of packaging. We ask you as a supplier to read the following instructions carefully and to comply with them.

Unit continuity:

Unit continuity means that one and the same item number is always packed in the same way (supplemented by palletizing images if necessary). In this way, the goods handling system can be systematized.

Prescribed application:

This packaging manual regulates the use of the packaging approved by Voith. In the event of deviations from these regulations, written approval must be obtained prior to delivery.

Responsibility of the supplier:

If no packaging instructions have been agreed with the supplier, damage-free delivery of the parts must nevertheless be ensured. VDA recommendation 4560 must be observed.

The supplier is also responsible for:

- Use of standardized reusable load carriers from an economic and ecological point of view
- improved environmental balance
- o more effective material handling
- increased occupational safety
- o comprehensive quality assurance
- Materials must not overhang the load carrier.
 - Observe the weight limit of the load carriers.
 - Different material numbers must be spatially separated and must not be stacked on top of each other.
 - Goods tags must be used to label the materials.
 - The delivery bill and shipping order must be given to the truck driver.

If there are different unloading points, separate forwarding orders must be created and the materials packed on different load carriers. The additional requirements for the procurement of the supplier's own containers.

- Information in the event of changes to the container allocation
- Notification of changes to the delivery location for empties
- for the transportation and development of packaging for sample parts or pre-series parts.
- for the provision of sample packaging
 - o proper load securing must be observed.

These standards and their consistent implementation also help us to meet the sustainability standards to which we are committed as a company.

Further information can be found here:

supplier-ecosystem.html

General requirements for packaging and packaging aids

Packaging should always be planned and standardized from an economic and ecological point of view. Standardized packaging leads to standardized processes with learning effects and fewer opportunities for errors. This results in extensive quality assurance, more effective material handling, increased occupational safety and an improved environmental balance. The packaging guidelines are to be understood as a minimum requirement. Transport damage caused by inadequate packaging shall be the charge of the supplier. If, based on the experience of the supplier or VTAS, additional measures are required to protect the materials, these must be carried out in consultation with the responsible operational purchaser and documented using a special packaging data sheet.

Technical cleanliness

Special requirements for technical cleanliness are specified in the respective drawings if this requirement applies. In this case, coordination with the responsible purchaser is absolutely necessary and binding. See: VN-3221

Small load carries:

The maximum weight for individual cartons is 10 kg. In exceptional cases, the weight may be up to 15 kg if a suitable stable cardboard box is used. Outer packaging (container, box) and additional packaging (foil, foil bag, workpiece carrier, etc.) protect the parts from mechanical damage and corrosion. Standardized and poolable VDA small load carriers according to DIN 30 820 or VDA recommendation 4560 are to be used as standard. The following special returnable packaging is available for parts with larger dimensions or bulky geometry:

- stacking frames for Euro or industrial pallets
- Stackable special containers / workpiece carriers

Large load carriers

If transport in lattice boxes is required, this may only be done after consultation.

When packing, it must be ensured that the goods can be stacked. The packaging must be utilized in terms of size, i.e. the pallets must be fully and evenly loaded with goods.

The following applies in all cases: single-variety pallets, i.e. only one article number per pallet.

Inner packaging

In order to ensure the protection of the products and at the same time enable good handling, various types of inner packaging in KLT, transport boxes or pallets with pallet collars must be used.

These are subdivided into

Reusable inner packaging

Thermoformed blister packs

- Plastic intermediate layers
- Disposable inner packaging
- Plastic thermoforming moulds
- Cardboard blanks
- Films
- Corrosion protection paper

Permitted packaging materials:

Only reusable packaging made from recyclable materials may be used. Environmentally compatible, recyclable materials that are widely accepted for recycling must be used for all disposable packaging VCI film may only be used colourless. See VDA recommendation 4560.

Packaging material made from food (e.g. popcorn) should not be used.

Product tags must not affect the packaging material to such an extent that the material can no longer be recycled. (see VDA Recommendation 4560). The following table provides an overview of the permitted packaging materials.

Туре	Recommended material	Example of non- recommended material
Cartonage	Paper free from substances and cardboard	Paper and cardboard with water- insoluble coatings or adhesives

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Corrosion protection paper	VCI papers that are	Paper with incompatible
	demonstrably recyclable	additives, incompatible
	together with paper/cardboard	impregnated or impregnated
		paper
Plastics	Moulded parts: PE, PP Protective caps: PE Films: PE (colourless) Foams: PE, PP, PS Strapping: PP (black)	Plastic mixtures, rubber compounds, metal-plastic composite films, incompatible impregnated and VCI plastic films, coloured VCI plastic films, coloured VCI film. The following plastics are hardly recyclable or contaminate the recyclate and should not be disposed of. and should be avoided in view of future legislation (e.g. EU packaging regulation) see VDA
CCD protection	Discipative films	4560- Chapter 5.1.2
ESD protection	Dissipative films Should be made of PE	Shield films
	Colour: Pink	Poorer recyclability Use only if surface resistance
	Surface resistance up to	$10^{4}\Omega$ is required
	$10^{10}\Omega$	10 422 is required
Metals	Steel, also galvanised or painted, aluminium	
Wood	Unsaturated solid wood and plywood, wood wool	Chipboard, coated or varnished wood
Textil	Cellulose fibres (e.g. cotton, sisal, hemp)	Wax linen
Glas	Only if absolutely necessary for reasons of chemical compatibility with the filling product	Glass wool
Minerals	Active clay, perlite, silica gel, vermiculite	Mineral wool

Table 1: see VDA recommendation 5007, 2017

1.2 Preservation and storage

The goods must be preserved in accordance with the order and delivery instructions or in accordance with the information on the packing slip. The goods must be preserved in such a way that they do not corrode.

- Parts made of steel and cast iron that are at risk of corrosion must be protected against corrosion on all sides with solvent-free corrosion protection oil (e.g. Castrol Rustilo 650), even if the packaging data sheet does not contain any precise information. Corrosion-prone spare parts made of steel and cast iron must be protected against corrosion on all sides with solvent-free anti-corrosion oil (e.g. Castrol product 498/1) by immersion.
- If VCI film is used, the outer packaging must prevent damage to the VCI film during transport.

- The corrosion protection must be applied to clean, chip-free, burr-free and dry surfaces.
 Special application instructions for the respective corrosion protection agent must be observed. The protection period is at least 6 months. Wax-based protective agents must not be used
- All parts made of non-rusting materials (e.g. stainless steel, aluminium, bronze, plastic, etc.)
 are not preserved. They must be clean and free of burrs and chips

1.3 Load securing

The vehicle owner is responsible for proper packaging and load securing, see Road Traffic Regulations (StVO).

- The keeper may only use vehicles that are in proper condition.
- The keeper must ensure that the load securing equipment is authorised, tested and in proper condition
- The driver is responsible for carrying out the load securing.

Regulations and tools

- VDI 2700 contains guidelines for load securing.
- Load securing must correspond to the state of the art.
- VDI 2700 stipulates, among other things, that the vehicle owner is obliged to provide sufficient load securing equipment such as anti-slip mats and suitable lashing straps.
- The lashing straps must be permanently labelled in accordance with DIN EN 12195-2.
- The driver must secure the load in accordance with VDI 2700. In addition, he is obliged to check the load securing after the start of the journey and to improve it if necessary.

Please address technical packaging questions to:

If you have any further questions or if your packaging deviates from the standards specified by Voith, please contact the operational purchaser responsible for you.

2 Packaging planning process and definition

The supplier must always be involved in the packaging planning. The supplier must send a packaging proposal to Voith Turbo's packaging planning department. In this context, it is important that existing containers from the packaging catalogue (see chapter 7) are used as far as possible. If the required containers are not in the catalogue, the containers from the catalogue should be used if possible. It is possible for Voith's supplier to provide appropriate packaging material in order to carry out a packing test. The packaging proposal must be documented in Voith's packaging data sheet (in writing, pictorially). The packaging planning procedure applies to all parts (standard parts, sample parts, series parts, etc.). The further procedure for determining packaging is described in sections 3.2 to 3.3.

Packaging data sheet (VDB)

All relevant packaging data is managed per article number in an ERP system. The control and planning systems at Voith access this data. The packaging data is recorded using the packaging data

VOITH

sheet (VDB). The packaging data sheet is completed by the supplier when the packaging is first defined or changed and sent to the packaging planning department. After an internal check with the departments concerned, the data on the packaging data sheet is defined and transferred to the packaging system.

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2.2 Standard packaging

Step	Interface	Activity

Purchasing Auftragsvergabe inkl. Festlegung der Verpackungskonditionen



3

Parts supplier Supplier sends a packaging proposal with the completed packaging data sheet (form) to the

Packaging planner using the Voith packaging (see section 7) and taking taking into account the legal requirements

Packaging planning Review of the packaging proposal in coordination with:

- Disposition
- Supplier Quality
- Assembly planning
- Logistics planning
- Production planning

If approved, step 4, otherwise adaptation of the VDB's proposal

Packaging planning Defining the packaging data sheet and transferring the data into the Voith internal system



Packaging planning Dispatch of the packaging data sheet (specification) to the Suppliers



5

6 Parts supplier Sending of the signed VDB to the

Packaging Planning within 12 working days

2.3 Special load carriers and workpiece carriers

Ste	p Interface	Activity
1	Purchasing	Contract award
1 2 1	Parts supplier Joint carriers	development of suitable packaging planning Packaging/workpiece
3	Packaging plan	ning Review of the packaging proposal in coordination with:
4	Purchasing Coordinaterial	 Disposition Supplier Quality Assembly planning Logistics planning Production planning ation of cost allocation and procurement of parts supplier packaging
5	Packaging plan	ning Defining the packaging data sheet and transferring the
1	data into the Voith inter	rnal system
6	Packaging planning	Dispatch of the packaging data sheet (specification) to the supplier
7		Parts supplier Transmission of the signed VDB to the
•		Packaging Planning within 12 working days

B Labelling of goods and packaging

To ensure the identification and traceability of supplied parts, it is necessary that both the transport packaging/loading unit and the product packaging/inner packaging are labelled with valid goods tags in accordance with VDA 4994 V2.0. The goods tags must not be covered by packaging or other materials. Please ensure that the serial number is clearly labelled on the outside of the packaging. **Transport packaging/loading unit**

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A load unit is a container or package that is usually loaded or unloaded individually with industrial trucks during transport.

Product packaging/ Inner packaging:

Product packaging refers to individual packaging at the supplier's and customer's premises that is used up to the point of consumption.

In the case of simplified (single-stage) load units, both aspects are combined. With single-stage packaging, the outer packaging/loading unit is also the inner packaging.

The goods (designation, material number, etc.) must also be labelled in the form of a barcode. If possible, a QR code that complies with the VS3268 standard should also be used.

VS3268DE.pdf Lieferanten Ökosystem | Voith

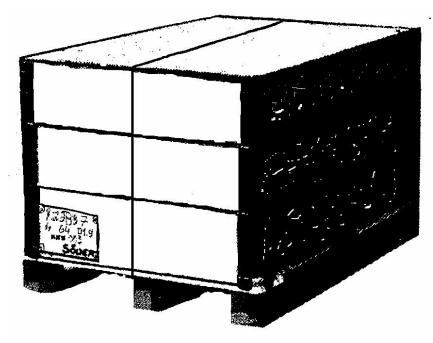


Figure 1: Two goods tags on each pallet unit. The goods tags must not be attached above or below the strapping.



Figure 2 Load unit goods tag

3.2 Goods hangers for large load carriers

Each individual container (small load carrier) must be labelled with the Voith internal material number, the barcode, the material designation and the filling quantity of the container.

When using disposable or reusable containers that do not permit the use of the classic KLT label due to their height, a label measuring 210 x 42 mm (KLT2 according to VDA 4994) can be used.

Small load carriers according to VDA

Integrated label holders (see illustration) are provided on all sides for labelling and marking the KLT boxes. In this context, it is important that no self-adhesive labels are used. The supplier is responsible for ensuring that the KLT is labelled in accordance with VDA recommendation 4994.



Figure 3 KLT according to VDA



Figure 4 Single label in KLT2

3.3 Goods tags for initial samples

If Voith's order includes the delivery of FIRST SAMPLE goods, the delivery unit must be labelled with a yellow "FIRST SAMPLE" goods tag in addition to the normal goods tag. This goods tag must be attached to the right-hand side of the delivery unit in the same way as the normal goods tag. In addition, the goods in guestion must be labelled as initial samples.

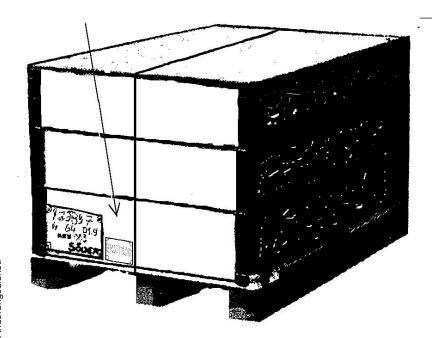


Figure 5 Two goods tags on each pallet unit. The goods tags must not be attached above or below the strapping.

4 Delivery note

The delivery note must be attached to the consignment as an accompanying shipping document. The supplier must observe VDA recommendation 4987. Barcode delivery notes must always be used for deliveries to our plant. The barcode is integrated into our logistics concept and considerably simplifies the recording of incoming goods.

5 Cleaning Voith's own reusable containers/workpiece carriers

The standard Voith load carriers listed under item 7.4 are cleaned by Voith after parts removal. In addition, special load carriers/workpiece carriers that are not listed under item 7.4 are also cleaned. Separate agreements exist with the respective suppliers for this purpose.

6 Packaging at Voith

6.1 Request for packaging material

The packaging must be designed in such a way that the packaged goods and the packaging can be transported, handled and stored undamaged.

Container requirement The stock of Voith's own reusable packaging must not exceed the requirement of 15 working days.

Frames, covers and plug-in combs are provided by us free of charge if required and are the property of Voith Austria GmbH | VTAS, St. Georgen plant. Other packaging material and necessary consumables such as strapping, plastic bags, rust protection paper, etc. are not included. They must

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be provided by you free of charge (do not use corrugated cardboard). The use of special and inner packaging can be found in the part-specific packaging data sheets.

Please always specify when requesting packaging material:

- Your supplier number at Voith
- Full details of type, size and quantity of packaging
- Delivery address
- Delivery date

Please request the required quantities of empties at least 12 working days before the required

In order to jointly achieve an economical material flow, we reserve the right to return deliveries that do not comply with the regulations at your expense or to invoice the additional costs.

6.2 Components and specifications for a pallet unit

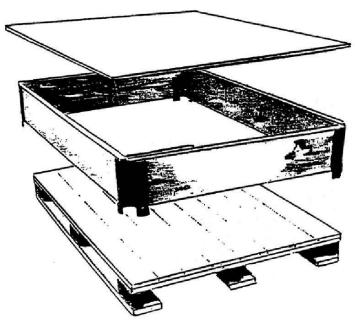


Abbildung 1 Aufbau Paletteneinheit

Pallet lid

Pallet frame (foldable)

Palette

Please note:

- - Maximum weight per pallet unit (gross) 700 ka
- - Maximum number of frames per pallet 3 Pieces

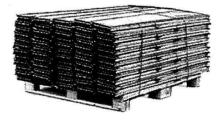
6.3 Large load carriers

Euro Paletten

Exchange via forwarding agent



Frame



50 pieces on one pallet

Part number	Designation	Material	Length	Width	Height
001.000581	Euro-Palette	Wood	1200 mm	800 mm	144 mm
001.000582	Frame for Euro pallet	Wood	1200 mm	800 mm	190 mm
001.002414	Interlayer for Euro pallet	Wood	1160 mm	745 mm	
001.000416	Euro- Mesh box	Steel	1200 mm	800 mm	920 mm
001.000580	Industrial pallet (VTM)	Wood	1200 mm	1000 mm	144 mm
001.000578	Frame for industrial pallet	Wood	1200 mm	1000 mm	190 mm
001.002014	Interlayer for industrial pallet	Wood	1140 mm	940 mm	10 mm
001.000579	Lid for industrial pallet with frame	Wood	1200 mm	1000 mm	
	Wooden spacer for Euro and industrial sizes	Wood			
001.002526	Mesh mat intermediate layer	Plastic	1120 mm	920 mm	2 mm

Table 1 Large load carriers/ intermediate layers

6.4 Small load carriers

Small load carriers according to VDA:

Sachnummer	Bezeichnung	Werkstoff	Länge (außen)	Breite(außen)
001.002927	KLT 3214	Plastic	300 mm	200 mm
001.000576	KLT-4321	Plastic	400 mm	300 mm

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001.000548	KLT 4328	Plastic	400 mm	300 mm
001.002734	KLT 4314	Plastic	400 mm	300 mm
001.002735	KLT 6414	Plastic	600 mm	400 mm
001.000618	KLT 6421	Plastic	600 mm	400 mm
001.000583	KLT 6428	Plastic	600 mm	400 mm
001.002156	KLT- Covering bonnet	Plastic	-	-
001.000691	KLT- Intermediate plates	Plastic	330 mm	240 mm
001.000575	KLT Lid D32	Plastic	300 mm	200 mm
001.000619	KLT Lid D64	Plastic	600 mm	400 mm
001.000559	KLT-Lid 43	Plastic	400 mm	300 mm

Table 2 Small load carriers according to VDA

7 Material without specified packaging

7.1 Disposable packaging

- Disposable packaging should be avoided wherever possible. Exceptions must always be agreed with the Voith specialist departments.
- They are always provided by the supplier and must fulfil the following requirements:
 - o damage-free, problem-free handling by industrial trucks (DIN 15140)
 - o locking devices appropriate for the size and weight
 - o easy removal of parts
 - o environmentally friendly material
 - o Protection against moisture
 - Standard dimensions of the load unit and modular design
 - o Permissible total weight per package max. 10 kg

7.2 Packaging/container, if there is no packaging definition yet:

- Selection of the smallest possible container from the Voith standard container programme.
- High packing density.
- Avoidance of unnecessary additional packaging/filling material.
- · Use necessary outer packaging sparingly.
- Suitable materials, taking into account the disposable/reusable solution.
- Disposable packaging must be designed in such a way that optimum functionality is achieved in terms of simple, ergonomic and cost-effective handling of the inner packaging and the parts.

Regardless of the choice of packaging type, the following requirements must be met:

- Damage-free delivery of parts (no impairment of quality)
- Optimum utilisation of the containers and formation of rational loading units

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- Labelling of each individual container (fix VDA or sticker with transparent adhesive dots or in label holder)
- Transport securing
- Problem-free unloading of transport vehicles by industrial trucks
- · Compliance with the specified standard dimensions
- Favourable parts removal
- When delivering parts on (wooden) pallets, make sure that they do not exceed the width or length of the pallet. This also applies to packed parts (e.g. in cardboard boxes).

8 Allocation of costs/ assumption of costs

As the supplier, you are responsible for the proper use and handling of the packaging. Damaged or lost packaging material from Voith will be charged to you. Please note that you as the supplier are responsible for ensuring that the appropriate packaging is available to you for on-time delivery.

You should therefore order the packaging in good time, i.e. at least **12 working days before the dispatch date!** Additional costs (e.g. repackaging, special transport) incurred due to late or incorrect packaging orders shall be borne by the supplier.

8.1 Procurement of standard load carriers Voith

The standard Voith load carriers listed under point 7 are procured by Operational Purchasing. The containers owned by Voith may only be used for transport to the St. Georgen plant.

8.2 Procurement of special load carriers

The cost allocation of the load carriers and workpiece carriers to be procured is negotiated between the supplier and Voith.

9 Inventur

If you wish, we can ask you to carry out a quarterly inventory of the Voith packaging material you have. In the case of pallet cages, the inventory is carried out monthly. If necessary, we can request unscheduled inventories. The respective quantities must be recorded in an inventory log. You will be invoiced or charged for any missing quantities.

Please ensure that the inventory report is returned on time.

Please note that as a supplier you are obliged to comply with the regulations described in this manual. We look forward to working with you in a spirit of partnership.

Voith Austria GmbH | VTAS

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