



General Packaging and Shipping Standards

Valid from: 12/2017

Version: 1.2

KRACHT GmbH – Gewerbestr. 20 – 58791 Werdohl, Germany

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1. Revision status

Revision no.	Date	Author	Changes
00	31/03/2017	H. Rosier	First version
01	12/07/2017	H. Rosier	Update article 14
02	08/12/2017	H. Rosier	General revision

2. Scope

These Packaging and Shipping Standards are a component of every inquiry, every individual or blanket order, and are valid for all goods that are delivered by KRACHT, regardless of their destination, inasmuch as no deviating written special agreements have been made.

3. Updates

This document is subject to ongoing legal, environmental, and market changes, and will be updated as required. The current valid document will be published on our website, <http://www.kracht.eu>.

4. Packaging quality requirements

Every package will undergo stress such as jolts, vibration, and pressure, as well as environmental influences such as moisture, dust, and dirt during transport. The KRACHT packaging standards should be seen as minimum requirements. If, in the experience of KRACHT, additional measures are necessary to protect the goods, these will be performed as agreed with the customer. As a matter of principle, packing will be implemented in such a way that the packaged goods and their packaging can be transported and stored without damage. In the process, it should also be ensured that the packaging can withstand multiple transshipments during transport.

In the selection of the shipment packaging and pallets, attention must be paid to the correct size (shipment contents plus padding) and to sufficient stability. For very heavy products or products that are not suited to packaging made of cardboard due to their format or mode of dispatch, packaging made of wood (crates) or components of wood (wood stacking frames) may be used. In the use of wooden packaging, care should be taken that any import regulations or requirements of the recipient country (e.g. China, Australia) are fulfilled and that any shipping documents necessary for import or certificates in accordance with applicable law are accessible.

The more sensitive to pressure and jolts and the heavier and larger the shipped goods are, the more rugged the exterior packaging will be designed to be. If multiple products are packaged into one package, padding must be used to create distance between individual products.

The climatic influences during air or sea transport (e.g. water condensation, temperature swings, saline air, contact with sea water, etc.) will be specially considered with respect to protection against corrosion and selection of appropriate packaging.

KRACHT is committed to environmentally friendly and space-saving packaging. Enclosure possibilities will be considered, provided that there is no agreement to the contrary with the customer.

5. Packaging material used

The use of recyclable and reusable materials will be prioritized for packaging. All packing materials that are used shall correspond to the current statutory provisions in Germany and the EU:

- Non-returnable packaging from regenerative raw materials (e.g. cardboard packaging, wood)
- Non-reusable packaging from regenerative raw materials (e.g. wood)
- Filler and padding materials from regenerative raw materials (e.g. paper)
- Product protection materials (e.g. PE (polyethylene) and VCI film (volatile corrosion inhibitor))
- Strap made of PP (polypropylene) and PET (polyethylene terephthalate)



For all packaging materials made of wood that are transported overseas (“wet borders”), compliance with the IPPC Standards (International Plant Protection Convention) ISPM 15 (International Standard for Plant Protection Measures), with corresponding labelling, shall be guaranteed. The materials used are in an untreated condition (no paint or coating, no impregnation). For overseas shipments, the provisions of the recipient country shall be taken into consideration for wood packaging. Certificates of proof shall be provided upon request.

Detailed information about IPPC and the individual country provisions may be found in **Annex I**.

Fig. 1: IPPC symbol

6. Packaging sizes

The packaging sizes shall be appropriately selected in reference to the size of the packaged goods.

7. Corrosion protection

As regards orders with longer transport and storage times (e.g. China, USA), all sensitive materials – in addition to any corrosion protection applied in the manufacturing process – shall be protected against corrosion with separate packaging material (VCI film).

8. Labelling

8.1 Materials

As far as technically feasible, all packaging or packing aids shall receive a materials label as per the packaging ordinance or the European packaging guidelines (see **Annex II**). The labelling shall be clearly visible and legible on the packaging.

8.2 Handling symbols

For increased care in cargo handling work, all packaging shall be marked with handling symbols as per ISO R/780 (International Organisation for Standardization) and DIN 55 402 (German Institute for Standardisation).

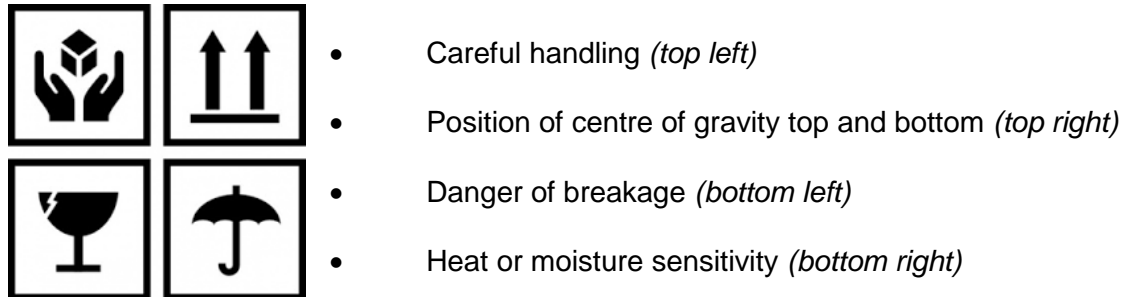


Fig. 2: Handling symbols

9. Load securing

If a shipping container is sent on a pallet, sufficient immobilization on and with the pallet shall be ensured. In the process, care shall be taken that the container is secured against sliding. Plastic bands made of polypropylene shall be used for this purpose.

10. Identification of the package and contents

The designation and description of the contents of the package shall correspond completely and exactly with the packing list. A copy of this packing list shall be attached to the package in a protective bag when pick up the goods.

11. Product or customer-specific packaging requirements

If the general packaging standard is not sufficiently detailed to determine packaging or if not appropriate for the customer order concerned, KRACHT will determine, by way of specific provisions for one or more components, what types of packaging should be used for shipments to the customer. KRACHT will indicate these specific provisions to the customer in the order, in the drawing, or in another specification. KRACHT will ensure compliance with this packaging customer provision.





12. Extensions and additional agreements

If additional requirements exist due to customer provisions, e.g. air freight etc., this shall be agreed separately from this document.

13. Types of loading equipment

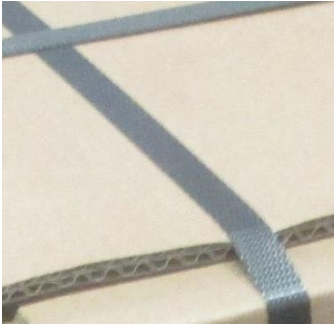
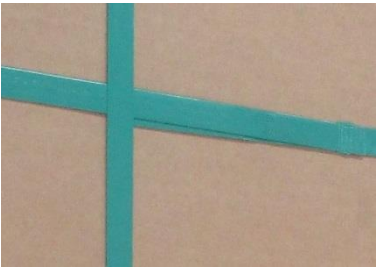

Deliveries shall be made exclusively with the loading equipment listed hereinafter:

Loading equipment	Measurements in mm (L x W x H)	Image
Euro pallet (DIN 15146)	1200x800x144	
Euro pallet cage	1240x835x970	
Expendable pallet 1	1500x1000x144	
Expendable pallet 2	800x600x144	
Expendable pallet 3	800x600x144	
Expendable pallet 4	730x470x144	
Expendable pallet 5	560x360x144	




Loading equipment	Dimensions in mm (L x W x H)	Image
Small wood stacking frame	600x800x	
Large wood stacking frame	1200x800x	
Small cover	600x800x50	
Large cover	1200x800x50	





14. Packaging equipment (materials)

Code	Image	Description
PE film		Product protection
VCI bag		Corrosion protection
VCI film		Corrosion protection
Corrugated paper		Paper padding / separation material
PadPak® paper		Paper padding material
Cushion packaging		Product protection

Code	Image	Description
Box with straps, not palletized		PET plastic band, black
Pallets with straps, Wooden crates		PET plastic band, green
Adhesives closures		

15. Types of packaging (packages)

Code	<u>Maximum</u> dimensions (L x W x H)	Weight
Box, not palletized	308 x 195 x 140 mm 	< 30 kg
Box on an expendable pallet	570 x 380 x 570 mm 	> 30 and < 300 kg
Box on a Euro pallet	1200 x 800 x 700 	> 30 and < 700 kg
Expendable pallet with wooden stacking frame incl. cover	600 x 800 x 920 mm 	> 30 and < 500 kg

Code	Maximum dimensions (L x W x H)	Weight/ Information
Euro pallet with wooden stacking frame incl. cover	1200 x 800 x 1005 mm 	> 30 kg + < 700 kg
Wooden crates	Customization 	Systems
Wooden planks	4000 x 200 x 300 mm 	> 1.20 m
Expendable pallet	600 x 800 x 500 mm 	product individually

16. Packing process

16.1 Overland transport

16.1.1 Boxed goods up to 30 kg

An appropriate interior tray (box floor) and the appropriate cardboard box size will be selected according to product quantity and weight. According to the specific product, the products will be lined with plastic film, so that the box will not be soaked through with any oil remnants from the test process. Honeycomb boards and corrugated paper serve to protect layers of several products. The products will be affixed to the tray with strapping film and finally packed into the box. PadPak® will serve as padding and fill material. Finally, the box will be sealed with plastic bands.

16.1.2 Detailed example of a packing process for KP1 gear pumps

Step 1: Placement of the products incl. spacer on the box tray (inlay/box floor)



Step 2a: Fixation of the products to the tray by strapping with stretch film



Step 2b: Fixation of the products on the inlay by strapping with stretch film



Step 2c: Fixation of the products on the inlay by strapping with stretch film



Step 3a: Box filling (the box with its opening facing downwards is slipped over the inlay)



Step 3b: Box filling (fill material for additional fixation)



Step 3c: Box filling (fill material for additional fixation)



Step 4: Box closure (band strapping: up to 3x around the width and 2x around the length)



16.1.3 Pallet goods up to 700 kg

Box and pallet sizes will be determined according to product type and number. The entire box will be lined with PE film to prevent the box from being soaked through with any oil remnants from the testing process. Corrugated paper sheets and corrugated paper serve as dividing layers, and PadPak® serves as a padding material. The box will be sealed and simultaneously affixed to the pallet with PE plastic bands.



Fig. 3: Euro pallet with pallet box, sealed with PE film



Fig. 4: Pallet box fixed and sealed with bands

16.2 See and air freight

16.2.1 Box goods up to 30 kg



Fig. 5: Pump in a VCI bag

In addition to the stipulations under 12.1.1, the individual products shall be packed in VCI plastic bags to protect against corrosion.

16.2.2 Pallet goods up to 700 kg

Pallet, wooden frame, and cover sizes will be determined according to product type and quantity. The entire wooden crate will be lined with PE film to provide additional protection for the products. Corrugated paper sheets serve as dividing layers, and PadPak® serves as a padding material. Products that are at risk of corrosion will be packaged individually in VCI plastic bags (see Fig. 7, p. 19). The wood stacking frames will be sealed with a cover, and the total structure will be affixed to the pallet with plastic bands.



Fig. 6: Modular construction of a Euro pallet with wood stacking frames and cover



Fig. 7: Products in corrosion protection bags (VCI bag)

16.2.3 Detailed example of a packing process for KF pump units

Step 1: Selection of the correct pallet, frame, and cover sizes



Step 2: *The wooden crate is lined with corrugated paper*



Step 3: *The wooden crate is lined with film*



Step 4: *Positioning of the products in the crate*



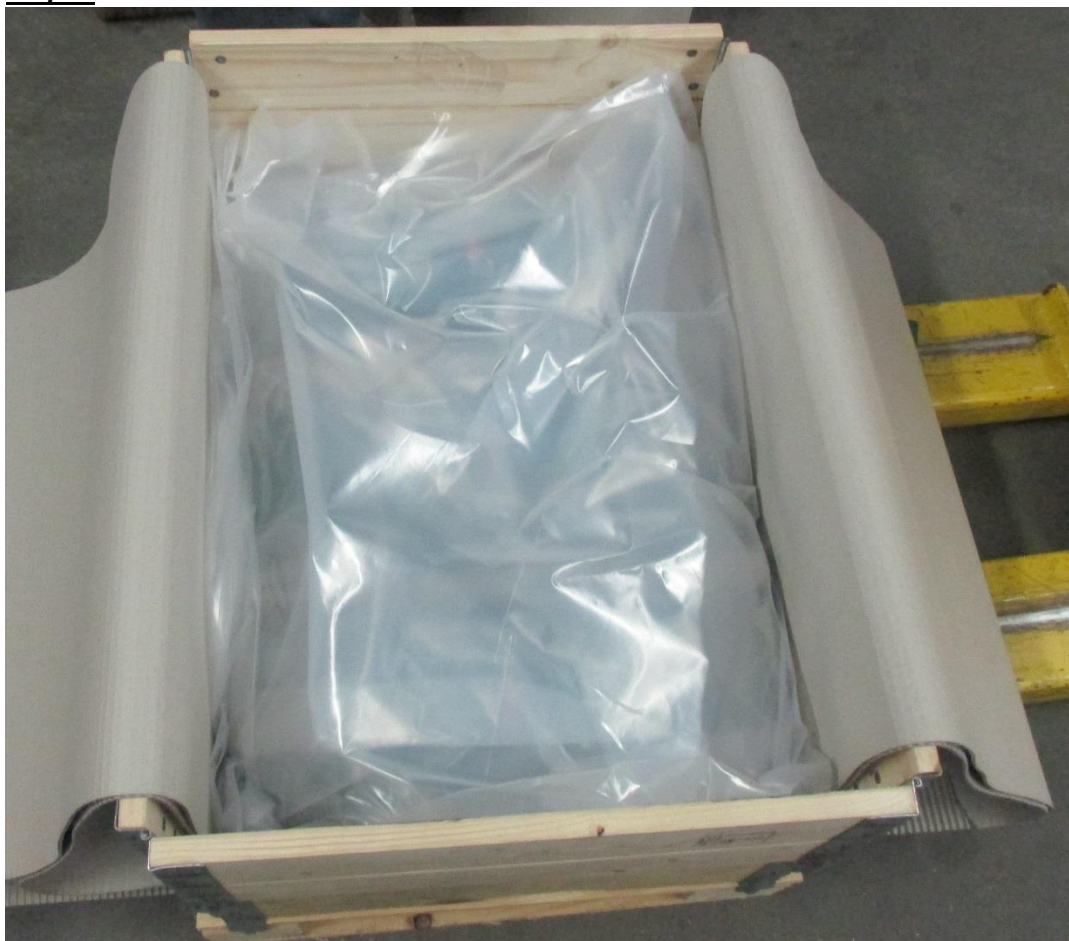
Step 5: *The products are protected with film*



Step 6: *Padding in between products*



Step 7: *The crate film is tucked in*



Step 8: Addition of padding and fill material



Step 9: Cover closure and crate fixing with plastic banding



16.2.4 Systems

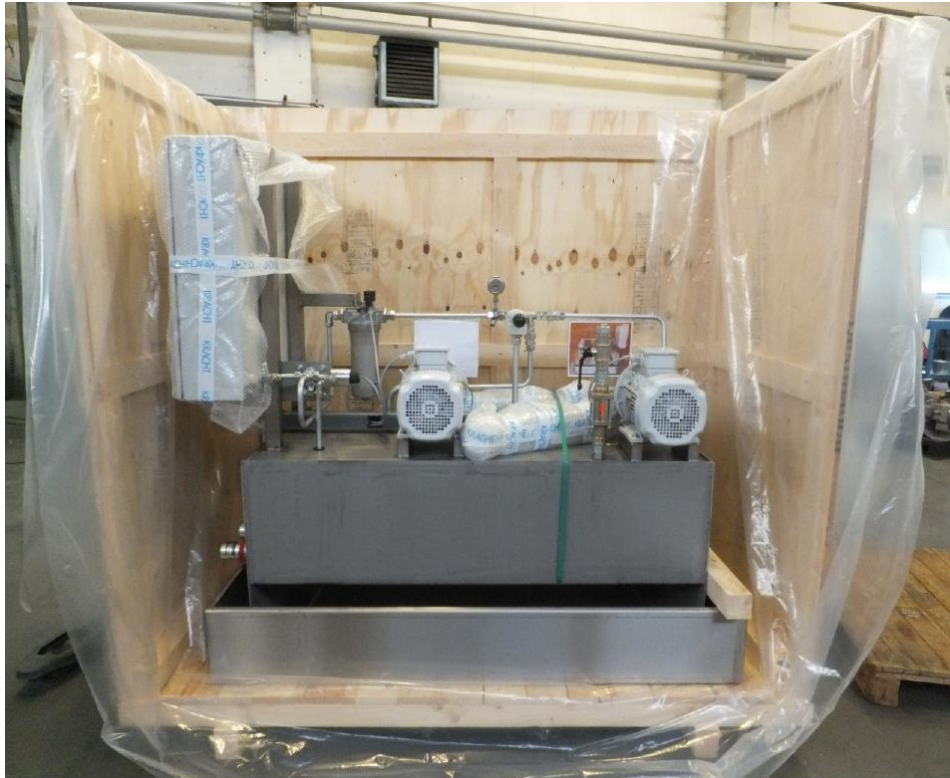
For the shipment of complete systems, individual wooden crates will be made to measure. The entire wood crate will be lined with film to give the product additional protection against dust and climatic conditions. For maritime transport, the entire system will also be sealed airtight for additional protection against corrosion. Scantlings fastened to the interior prevent the system from sliding during transport. The crate, which is finally nailed shut, is also closed with plastic bands.

16.2.5 Detailed example of a packing process for systems

Step 1: The wooden crate is lined with PE film



Step 2: *The system is placed inside the wood crate*



Step 3: *The film is wrapped around the system*



Step 4: The wooden crate is closed with a side cover

IPPC
Labelling



Step 5: Banding around the wood crate



17. Shipping and transport

17.1 Framework agreements between customers, logistics service providers, and KRACHT

- 17.1.1 Transport under “carriage free” shipping conditions shall be performed exclusively by the contracted carriers of KRACHT and their subcontractors.
- 17.1.2 Higher transport costs that result from carriage by logistics service providers other than those chosen by KRACHT shall be borne by the customer if this was requested by the customer.
- 17.1.3 The transport time is generally the standard time of the respective logistics service provider (see **Annex III**), unless otherwise agreed between KRACHT and the customer.
- 17.1.4 Insurance and packaging components are included in “carriage free” shipments, unless agreed otherwise.
- 17.1.5 Unless otherwise agreed, delivery shall be made on a per-contract basis.

17.2 Notification of readiness for dispatch

- 17.2.1 Notification of readiness for dispatch “ex works” will be communicated to the customer by email, unless otherwise agreed. This applies regardless of whether this concerns a freight or package shipment.
- 17.2.2 The notification of readiness for dispatch shall be made with the standardized Kracht form, “Shipping Order”.
- 17.2.3 Multiple deliveries on one shipping day will be combined into one notification and one - shipment.
- 17.2.4 In the notification of readiness for pick up, the following information will be provided to the customer or their service provider:
 - Order number (8 digits)
 - Shipment number (6 digits)
 - Collection address
 - Collection time
 - Type of package (loading equipment)
 - Number of packages
 - Shipment weight (gross weight)
 - Type of shipment: package or freight shipment
 - Name, telephone number, and email address of the contact person

17.3 Logistics and transport service provider

- 17.3.1 Depending on the point of delivery, the type and number of the package(s), various logistics service providers will be used by KRACHT for the transport. In case of KRACHT being the freight payer, the corresponding selection will be determined according to **Annex III**.
- 17.3.2 Deviations and special cases, such as special or rushed transport, will be coordinated between the customer and KRACHT in advance. The additional costs for this shall be borne by the customer if explicitly desired or if not caused by KRACHT.

17.4 Delivery address

- 17.4.1 If the customer has not communicated a different delivery address to KRACHT in the order, the customer address shall generally serve as the delivery address.
- 17.4.2 The delivery address may not be a post box address.

17.5 Shipping label

17.5.1 Every package shall include a standard KRACHT shipping label with the following information:

- Recipient's address (name, street, postal code, city, country)
- Shipment number
- Print date
- Order number
- Package x of y
- Barcode

17.5.2 Individual shipping labels that follow customer provisions require a special consultation.

17.6 Dates, delivery

In the event of KRACHT as freight payer or "carriage free" shipments, the prompt delivery to the agreed point of delivery is the responsibility of KRACHT. The transit times of the service providers used will be correspondingly considered. For "ex works" shipments, the date is considered to have been met with the provision of the goods in our plant (notification of readiness for dispatch). In this respect, reference is made to the stipulated Incoterms, under consideration of the location information.

17.7 Accompanying papers and documents

The proper freight and accompanying papers will be transferred to the contractual carrier.

17.7.1 Consignment note

17.7.1.1 For each shipment, a shipping order or CMR will be given to the carrier, forwarding agent, or logistics service provider.

17.7.1.2 The shipping order shall contain the following information:

- Sender
- Shipment number
- Customer delivery address with customer number
- Customer order number
- Type of shipment
- Number and type of the packages in the shipment
- Total weight of the shipment
- Dimensions of the packages
- Pick-up times

17.7.1.3 The CMR consignment note shall contain the following information:

- Customs number of sender
- Sender
- Customer delivery address
- City and country of destination
- Day and city of consignment collection
- Attached documents (delivery note and invoice number)
- Carrier
- Number and type of the packages in the shipment
- Total weight of the shipment
- Incoterm

17.7.2 Delivery note

17.7.2.1 The original delivery note shall be attached to each shipment. The delivery note will be placed on the top side of the package with a delivery note pocket, such that it is clearly visible. It will not be included with the freight documents. If a shipment consists of multiple packages, the delivery note will be attached to the first package.

17.7.2.2 The delivery note will contain information about all items of the complete shipment.

17.7.2.3 Specifically, the delivery note shall contain the following information:

- Customer order number
- Customer contact person
- KRACHT order number
- KRACHT contact information (contact person, tel. no., fax, email)
- KRACHT reference
- Item no.
- Article no.
- Article code
- Quantity
- Product weight in kg (net weight)
- Customer article number (if known)
- Customs tariff number (8 digits = combined nomenclature)
- Item description
- Delivery conditions
- Net and gross shipment weight
- Type and quantity of packages
- Transport service provider
- Country of origin of the goods

17.7.2.4 The delivery note number and the customer order number will also be printed on the delivery note and the packing list as "Code 128 barcode".

17.7.3 Invoice

17.7.3.1 Invoices made out to German and European customers/shipping addresses will be sent directly to the customer by mail, unless otherwise agreed (e.g., by email).

17.7.3.2 For other countries, an original invoice will also be attached to the post or email mailing to the customer for each shipment. The invoice will also be attached to the package with the customs papers, or given to the transport service provider together with the consignment note.

17.7.4 Packing list

17.7.4.1 If a shipment consists of multiple packages, an individual packing list will be enclosed with each package in addition to the delivery note.

17.7.4.2 The shipment details of the packing list are identical to the delivery note, with the difference that only the details of the package concerned are printed on the packing list. In the packing list, each item is listed on a separate page.

17.7.4.3 Specifically, the packing list shall contain the following information:

- Sender
- Recipient
- Transport service provider
- Invoice no.
- Delivery note number and shipment number if relevant
- Type and quantity of packages
- Item weight in kg (net and gross weight)
- Package dimensions in cm
- Shipment weight in kg (net and gross weight)
- Order no.
- Pallet number and number of the shipping unit (NSU)

17.7.5 Customs documents

- 17.7.5.1** If goods are shipped to a third party country by KRACHT, KRACHT will create all necessary customs documents for the export of the shipment.
- 17.7.5.2** "Ex works" shipments (EXW) are excepted from this principle. The customer or a service provider commissioned by them are responsible for the creation of these documents. Deviations require a separate agreement.
- 17.7.5.3** In the event of Point 17.7.5.2, the customer shall make a corresponding export certificate available to us within 4 weeks after export.
- 17.7.5.4** Preference source documents or any national source certificates will only be created at the customer's request.
- 17.7.5.5** The customs documents of a shipment shall contain, in detail, the accompanying export documents (AED), invoices, and delivery notes.

17.8 Pick up and loading times

KRACHT shipping is generally staffed from Monday to Friday from 07.⁰⁰ to 15.⁰⁰. The lunch break is from 12.⁰⁰ to 12.³⁰.

Differing times must be coordinated with KRACHT in advance.