

## Packaging manual

### of Maschinenfabrik Bernard KRONE GmbH & Co. KG

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**Table of contents**

- 1. Introduction ..... 3
- 2. Scope ..... 3
- 3. Packaging requirements ..... 3
  - 3.1 General requirements ..... 3
  - 3.2 Material suitable for outdoor storage and corrosion protection ..... 4
- 4. Use of packaging ..... 4
- 5. Load carriers ..... 4
  - 5.1 Standard load carriers ..... 5
  - 5.2 Special load carrier ..... 5
- 6. Packaging agreement ..... 6
- 7. Empties management ..... 6
  - 7.1 Transfer of load carriers (triangular exchange) ..... 7
  - 7.2 Return of empties ..... 7
- 8. Material identification ..... 7
  - 8.1 Requirements for material labelling ..... 7
  - 8.2 Code 128 barcodes ..... 9
  - 8.3 Special provisions for prototype parts, other samples and rejected parts ..... 10

## 1. Introduction

To protect the products during transport, handling and storage, it is extremely important to select the correct packaging and packaging aids. This packaging manual is a guide and aid for the suppliers of Maschinenfabrik Bernard KRONE GmbH & Co. KG, hereinafter referred to as KRONE, and is used to standardise packaging. When considering environmental objectives, packaging planning should take the following ecological aspects into account:

- Avoidance: Limitation to what is necessary in terms of weight and volume (conservation of resources and reduction in transport volume)
- Reduction: Use and continuous improvement of reusable packaging made from recyclable materials.
- Material recycling: Use of environmentally friendly, recyclable materials for all types of packaging

With the help of standardised dimensions of load carriers, coordinated quantity contents per packaging, an optimum packaging design as well as correct and complete labelling, this packaging manual is intended to contribute to a smooth flow of materials.

## 2. Scope

This packaging manual is an integral part of the logistics agreement and therefore applies to all KRONE suppliers from the date of publication until it is updated or reissued in its current version. If required, this packaging manual will be amended and the amendments forwarded to the suppliers for their information.

## 3. Packaging requirements

### 3.1 General requirements

In addition to part-specific packaging characteristics, here are basic requirements for the packaging.

- Delivery of parts free of damage
- Safe transport
- Optimum space utilisation of the transport unit
- Optimum utilisation of the loading equipment
- Easy unloading
- Stackability
- Compliance with the specified standard dimensions
- Favourable parts removal
- Recyclable materials
- Avoiding the use of disposable materials
- Compliance with permitted/recommended lifting loads
- Weather resistance

- Transport using industrial trucks (forklifts)
- No soiling of the parts

It is essential to observe the regulations for securing loads and for the transport of hazardous goods. The supplier is liable for all damages resulting from non-compliance with statutory regulations. The use of cardboard or paper and delivery in buckets or similar containers must be avoided wherever possible. If several returnable load carriers are delivered in containers, the type and number of delivered load carriers must be recognisable from the outside. Unless otherwise agreed in writing between the supplier and KRONE, it must be possible to drive under load carriers and packages weighing more than 15kg (min. 100 mm ground clearance). Small load carriers and cardboard boxes containing bulk material must not weigh more than 15kg.

### **3.2 Material suitable for outdoor storage and corrosion protection**

Only weather-resistant packaging materials (no paper, cardboard or similar) may be used for materials which can be stored outdoors, e.g. untreated or painted metal parts. The unpainted surfaces of parts according to the component drawing must be provided with corrosion protection in accordance with the currently valid version of **KRONE company standard KWN 01 220**.

## **4. Use of packaging**

The supplier is responsible for careful handling of the packaging material. The packaging material provided by KRONE, especially the load carriers, is to be used only to transport the material from the supplier to KRONE and for storage at KRONE. Special arrangements must be agreed in writing.

## **5. Load carriers**

Delivery of parts in reusable packaging is generally preferred. The following list of KRONE load carriers is intended to give the supplier an overview and enable him to select the appropriate means of transport/packaging for the part to be delivered. When selecting mounts and containers, the following weighting of packaging requirements should be taken into account:

- |  |   |                                       |
|--|---|---------------------------------------|
| <ul style="list-style-type: none"> <li>➤ Suitability for stacking and storing</li> <li>➤ Weather resistance</li> <li>➤ Transportability</li> <li>➤ Load capacity</li> <li>➤ Durability</li> <li>➤ Stability</li> <li>➤ Multiple usability</li> </ul> | } | Very important packaging requirements |
| <ul style="list-style-type: none"> <li>➤ Production batch size</li> <li>➤ Ability to be folded</li> <li>➤ Purchase price</li> <li>➤ Modularity</li> <li>➤ Easy care</li> <li>➤ Flexible divisibility</li> <li>➤ Weight</li> </ul>                    | } | important packaging requirements      |

In general, ensure that the used load carriers can be stacked.

## 5.1 Standard load carriers

The following load carriers are regarded as KRONE standard load carriers:



	<p><b>Designation</b></p> <p>Type:</p> <p>Dimensions inside (LxWxH) in mm:</p> <p>Dimensions outside (LxWxH) in mm:</p> <p>Tare weight in kg:</p> <p>Load capacity in kg:</p> <p>Stacking factor:</p>	<p><b>G01</b></p> <p>EUR lattice box</p> <p>1200 x 800 x 800</p> <p>1240 x 835 x 970</p> <p>85</p> <p>1000</p> <p>3 (Assembly)/ 5 (bearing)</p>
	<p><b>Designation</b></p> <p>Type:</p> <p>Dimensions inside (LxWxH) in mm:</p> <p>Dimensions outside (LxWxH) in mm:</p> <p>Tare weight in kg:</p> <p>Load capacity in kg:</p> <p>Stacking factor:</p>	<p><b>P01</b></p> <p>EPAL Euro-pallet</p> <p>/</p> <p>1200 x 800 x 144</p> <p>25</p> <p>900</p> <p>Approx. 15 (without loading)</p>

Figure 1 KRONE standard load carrier

A list of further preferred load carriers can be found in the load carrier catalogue on our company website (link: <https://www.krone-agriculture.com/de/faszination-krone/logistik>).

## 5.2 Special load carrier

If separate load carriers are required and constructed for components, these load carriers must be used after approval of a packaging proposal by KRONE. The tare weight and permissible load capacity must be labelled on the load carriers. The ownership of the

transport containers is individually agreed and documented with the supplier. In order to prevent confusion, the supplier's own special load carriers must be labelled by the supplier.

## 6. Packaging agreement

When submitting an offer, the supplier is requested to complete the "Packaging proposal" form. The information contained in the enquiry regarding the desired packaging batch size and choice of load carrier should be taken into account as far as possible. The form is available for download in the logistics area of our company website (link: <https://www.krone-agriculture.com/de/faszination-krone/logistik>).

The packaging proposal must be returned to KRONE within 4 weeks of receipt of the enquiry

. The packaging proposal is then checked internally by the Quality assurance, Incoming goods, Logistics/Assembly line supply and Production departments. After positive acceptance, the packaging proposal becomes a regulation

If the proposal is not approved, the supplier is obliged to submit a new proposal in accordance with the change requests. The packaging requirement resulting from the proposal does not release the supplier from his responsibility to deliver damage-free goods. In the event of non-compliance with the jointly agreed packaging, the costs for repackaging work plus a lump sum will be charged to the supplier. Deviations in justified cases (e.g. pre-series packaging) require prior authorisation from Logistics.

## 7. Empties management

KRONE keeps an empties account for each supplier for the purpose of transparency. An account statement is sent to the supplier at regular intervals, but at least once a year for reconciliation. Complaints must be received by the responsible Empties management office within 14 calendar days of receipt of the account statement, together with a copy of the receipt (delivery note, empties receipt). Otherwise, the stock stated will be regarded as confirmed by the supplier. Differences in quantity must be clarified by the supplier with the support of the responsible KRONE packaging representative (contact details in the Logistics section of the company website). The incoming and outgoing postings are made exclusively in the KRONE goods receipt. When the load carriers are accepted, the quality is checked and recorded on the empties voucher. If an empties account shows permanently negative balances, KRONE is authorised to charge rental fees on the outstanding empties.

### Exchange partner

Unless otherwise agreed, Euro pallets (P01) and Euro lattice boxes (G01) are exchanged with the forwarding agent on delivery by the forwarding agent and booked to the latter's

empties account. Other returnable load carriers are always booked to the account of the respective supplier.

## 7.1 Transfer of load carriers (triangular exchange)

The KRONE empties management system records only incoming and outgoing empties at the Spelle plant. If a supplier passes on load carriers to other suppliers who in turn supply KRONE, this will result in differences in the account balances. The supplier is generally responsible for providing evidence of the whereabouts of the load carriers.

In order to avoid rental charges for transferred load carriers, the supplier must complete the "Transfer document" form within 30 calendar days of receiving the account statement. The transfer document must be countersigned by the recipient of the transferred load carriers and sent to KRONE Empties management. The form can be downloaded from the logistics section of our company website (link: [https://www.krone-agriculture.com/fileadmin/media/Faszination/Logistik/Downloads\\_DE/Weitergabebeleg\\_Ladungstraeger.pdf](https://www.krone-agriculture.com/fileadmin/media/Faszination/Logistik/Downloads_DE/Weitergabebeleg_Ladungstraeger.pdf)).

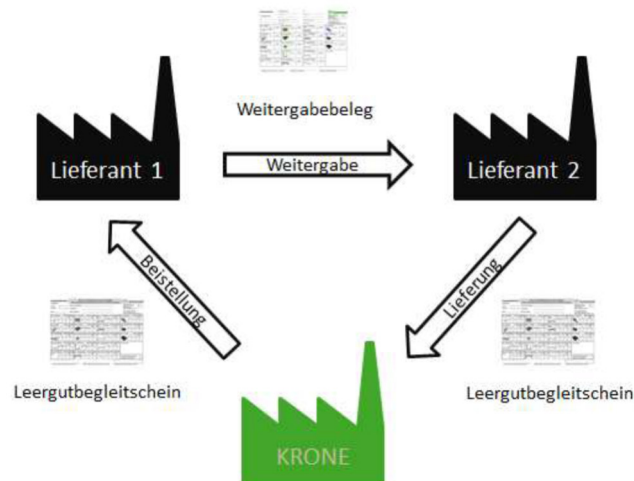


Figure 2 Triangular exchange of load carriers

## 7.2 Return of empties

KRONE generally prefers to exchange empties with the forwarding agent on a step-by-step basis. If load carriers are to be collected separately, a written collection order must be obtained from the KRONE goods receiving department prior to collection. Unless otherwise agreed, the supplier is responsible for returning the delivered load carriers. KRONE does not accept any rental fees for uncollected load carriers.

## 8. Material identification

### 8.1 Requirements for material labelling

In principle, the supplier must ensure that all materials delivered to KRONE are clearly labelled with a goods tag. In the event that only the load carrier is labelled, the supplier

must affix the labelling in such a way that the labelling is present and legible on the load carrier until the last part is removed from the packaging.

Weatherproof goods tags must always be used for labelling. The goods tags must be attached to the load carriers or components using suitable means. Adhesive receipts must not be used or stuck on.

There should be only one goods tag on a load carrier. Internal supplier labelling must be removed before shipping. When loading, ensure that the goods tags are not damaged or removed. Several materials on one load carrier are only permitted if there is no separate packaging agreement for the respective material that excludes this. In all cases, however, the individual material must be labelled and mixing of the different materials must be avoided.

Disruptions caused by missing, incomplete or illegibly labelled goods tags will result in considerable additional work for internal KRONE processes. In this respect, KRONE reserves the right to charge the supplier for the additional expenses incurred.

The template of VDA recommendation 4902 – The current version of goods tags (suitable for barcodes) can be selected as the goods tag. **Deviating from this, however, coding according to Code 128 must be used for the barcodes.**

(1) Warenempfänger Maschinenfabrik Bernard Krone GmbH Heinrich-Krone-Str. 10 48480 Spelle		(2) Abbaustelle - Lagerort - Verbrauchsstelle -		
(3) Lieferschein-Nr. (N) 12354862 		(4) Lieferantenanschrift (Kurzname, Werk, PLZ, Ort) Mustermann GmbH, Spelle		
		(5) Gewicht netto (KG) 250	(6) Gewicht brutto (KG) 270	(7) Anzahl Packstücke 1
(8) Sach-Nr. Kunde (P) 765432123 				
(9) Füllmenge (Q) 10 <sup>ST</sup> 		(10) Bezeichnung Lieferung Musterartikel		
(12) Lieferschein-Nr. (V) 0100254 		(11) Sach-Nr. Lieferant IT0001 		
		(13) Versanddatum D 01.01.08		(14) Änderungsstand Konstruktion
(15) Packstücknummer (S.M.G.) 44001030001 		(16) Chargen-Nr. (H) 5554321 		

Figure 3 VDA barcode recommendation

(1)	Goods recipient
(2)	Unloading point
(3)	Delivery note number
(4)	Supplier
(5)	Weight (net)
(6)	Weight (gross)
(7)	Number of packages
(8)	KRONE part number (order number)
(9)	Filling quantity in the package
(10)	Material designation
(11)	Part number supplier



(12)	Supplier number
(13)	Shipping date
(14)	Revision status
(15)	Package number
(16)	Batch number

If a goods tag other than the VDA standard is selected, it must include at least the following contents:

(1)	Goods recipient
(2)	Supplier
(3)	KRONE order number
(4)	Delivery note number
(5)	KRONE part number (order number)
(6)	Quantity of goods with unit
(7)	Material designation
(8)	Weight (net)
(9)	Weight (gross)
(10)	Shipping date

Ensure that all data on the goods tag matches the contents of the packages or load carriers. If several materials are delivered on one load carrier, it is imperative that each individual package on the load carrier is labelled with a goods tag in addition to the designation of the transport unit.

## 8.2 Code 128 barcodes

Code 128 (type A, B or C) is specified as the barcode. The check digit must be used with Code 128. Important: Code 128 (type A, B or C) is not the same as EAN128! All characters of the barcode character set are permitted.

The selection of the optimum character set sequence (for data encryption in the shortest possible form), including the start, code and switch characters, should be carried out automatically by the (printer) software. This must be checked by the supplier and, if required, appropriate software must be used.

## Height of the barcode

As a general rule, the height of the barcode in relation to the length of a barcode field should not be less than 15%. If possible, observe a minimum barcode height of 13 mm.

## Distance of barcode from edges and other characters

The distance from the start/end of the barcode field to edges, other bars or characters (= "quiet zone") should be at least 6.5 mm.



Figure 4 Distances from the barcode

## Quality requirements

The supplier of the goods tags to be printed is responsible for ensuring the print quality and the contrast between the print surface, the barcode printing ink and the adhesion/durability of the printing ink on the label.

### 8.3 Special provisions for prototype parts, other samples and rejected parts

Prototype parts are products and materials which are not or not completely manufactured under standard production conditions. Your packaging must be clearly labelled with the wording "PROTOTYPE" and the recipient at KRONE.

Initial samples are products and materials which have been manufactured entirely using standard operating resources and under standard conditions. Your packaging must be clearly labelled with the wording "INITIAL SAMPLE" and the recipient at KRONE.

Corresponding forms for samples and initial samples can be downloaded via <https://www.krone-agriculture.com/de/faszination-krone/logistik>.

Rejected parts are materials which are delivered to KRONE after written authorised exemption has been granted, despite defects identified at the supplier's premises. Your packaging must be clearly and visibly labelled with the wording "REJECTED PARTS".