

The following paper is mandatory for the supplier. Should the supplier not be able to supply according to the guideline, Kostal has to be informed in advance. In case of material shortages the supplier can send a deviation request to Kostal.

1 Packing

1.1. Types of packing

Every Kostal factory defines its specific packaging.
It is intended to attain a standardized packing of all delivered parts.

General rule: Transports within a country have to be done in returnables.
Within Germany, they have to be done in Kostal returnables.

Packaging for international transports is defined either by the following chapters of this guideline or by special agreements between supplier and the receiving Kostal factory.

In certain cases part and customer specific packing can be defined such as:

- Equipped printed circuit boards in magazines
- Electrical elements in ESD- protected containers
- Painted parts in surface-protecting packing (e.g. blister foils, intermediate layers)
- Corrosion endangered parts in protection containers
- Trunk circuits with protection against hooking
- antistatic secondary packaging

If specific packing is defined between the supplier and Kostal the part has to be delivered in it. A deviation from this agreement is only possible with a deviation permission.

In any case the supplier is responsible for the part arriving in original condition at its destination by the use of an appropriate packing and by colli protection.

Generally, packagings and their components must not contain Polyurethan (PU)-foam or amines.

1.2 Load- and Packing units

1.2.1 Size of returnables

Packing	Length (mm)	Width (mm)	Height (mm)
Kostal KLT K 01	600	400	325
Kostal KLT K 02	600	400	220
Kostal KLT K 30	400	300	220
Kostal KLT K 35	400	300	120
Kostal KLT K 15	400	300	325
Kostal KLT K 40	300	400	225
Kostal KLT K 45	300	200	120
VDA KLT 6428	600	400	280
VDA KLT 6414	600	400	147
VDA KLT 4328	400	300	280
VDA KLT 4321	400	300	210
VDA KLT 4314	400	300	140
VDA KLT 3214	300	200	147

The numbers of packaging standard can be read under www.kostal.com/english/3-02-02-01.html .

1.2.2 Volumes and Weights

	Packing unit	Load unit
Maximum weight	20 Kg	950 Kg
Maximum dimensions for returnables	L 600 mm	1200 mm
	W 400 mm	1000 mm
	H 325 mm	see 1.2.3
Maximum dimensions for oneway packages	L 500 mm	1200 mm
	W 500 mm	1000 mm
	H 250 mm	see 1.2.3
Reels Elektronik (product packaging)	L 400 mm	
	H 400 mm	

1.2.3 Colli size and shape

Maximum load height 1.100mm for paper board container, 1.800mm K01 (if not agreed differently or exempted by Kostal, see also point 1.6).

The entire colli has to be able to be handled by floor conveying equipment.

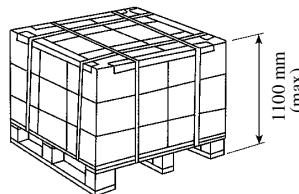
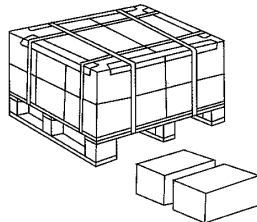
Entry width: 710 mm

Entry height: 100 mm

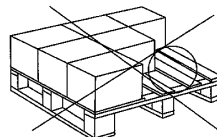
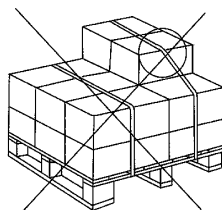
Minimal filling level pallets: 80 %

Minima filling level KLT: 80 %

CORRECT

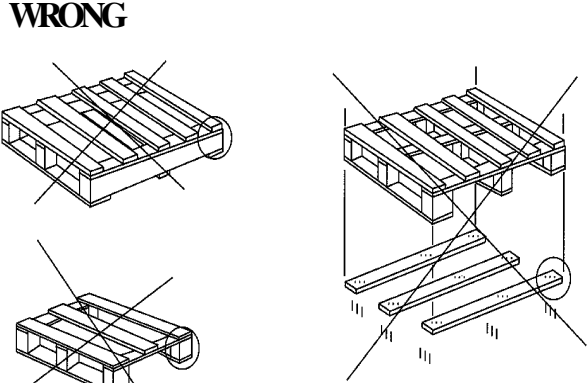
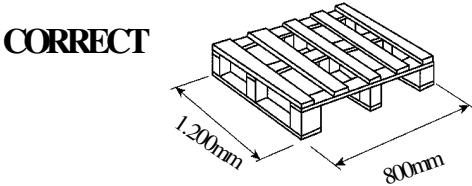


WRONG



1.3 Euro and One way pallets

Pallets must correspond to the construction under "CORRECT".
 Pallets with other dimensions or constructions require permission by Kostal.



Half size pallet

Pallet with 3 boards attached from bottom, as shown

1.4 Cardboard boxes

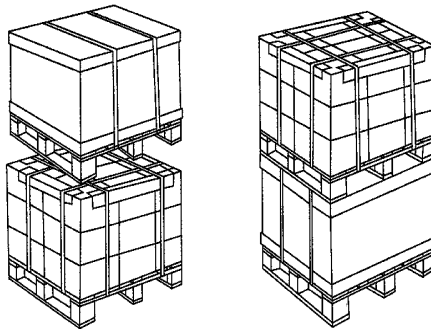
Use only with written permission in advance.

The individual packages may not exceed a weight of 20kg.

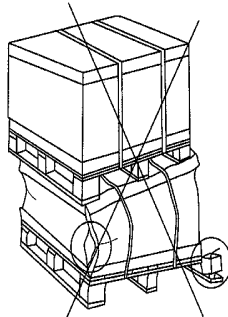
It is not allowed to stack on incomplete layers, as well as on pyramids.

Also make sure of a stable fit.

CORRECT



WRONG



1.5 Fastening

Bulk goods has to be filled up and closed in plastic sacs. Non-bulk goods are to be closed by carton covers. Alternatively empty tray layers can be used.

The fastening of cardboard boxes has to be done with tape, collis are held together by plastic strips.

Collis which consist of pallet and cardboard box layers have to be tied from two directions.

In no case plastic strips may cut into the cardboard.

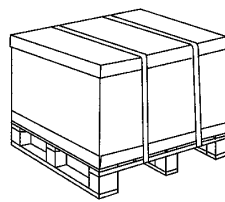
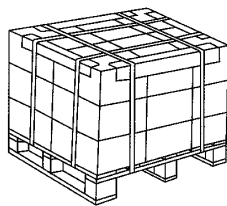
Corner reinforcements are to be used both vertically and horizontally where the security of the load is enhanced.

Collis has to be covered by a plastic overlay for rain protection.

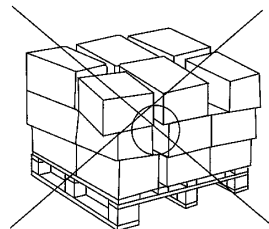
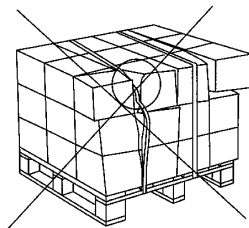
Flexible foil und steel strips are not permitted!

(exception: use of steel strips for the transport of tools)

CORRECT



WRONG



1.6 Small load carriers

1.6.1 Despatch containers VDA KLT and Kostal KLT

Layers have to be filled to cover as much surface as possible. If this is not possible, a smaller pallet should be used or the layer should be filled up with empty boxes.

All KLT have to be listed on the delivery note. Collis are to be packed adjacent to each other. Each KLT must have a VDA 4902 label attached. The label has to be attached in such a way that it is readable. The label is only to be placed in designated plastic bags or by self sticking tape.

Maximum stack height:

KLT 3214, 4314, 6414, Kostal K 35 u. K45	6 layers*
KLT 4321, Kostal K02, K 30 u.K40	4 layers**
KLT 6428, 4328, Kostal K01 u. K15	3 layers

* in special cases 8 layers, ** in special cases 5 layers

Collis, which are delivered with different delivery notes, has to be build up in layers. Layers are build up beginning with 4 boxes on the lowest level of the pallet. A mixture of layers with different delivery notes is not allowed. If necessary collis of one delivery note can be build up by a reliable cover in a double hub for transport optimisation needs.

1.6.2 Reels for electronic components

Electronic components must be reeled on plastic reels. Paper board reels as well as plastic materials based on Polyurethan (PU) or amines are not allowed.

Within one unit of a small load carrier the reels has to be packed in an ESD protective bag in case no extra ESD protection is planned by the vendor. In the case that the reels are not fixed by in product packaging in the load carrier extra fix has to be planned to guarantee a fix pick sequences.

1.7 Labelling Specification and Advance Shipping Notification

1.7.1 Labeling

This specification describes Kostal's standard Guidelines for producing labels with Bar coded data and how they must be applied to packaging. This is required to improve the productivity and control of material by allowing accurate and efficient capture of data for the following processes.

Receiving, Storage, Withdrawals, Replenishments, use in Manufacturing, Cycle counting, and other inventory controls. Kostal require vendors to adhere strictly to the following specification in integration with the Kostal EDI-Guideline.

Each Box and container whether intermediate or External packing, has to have a label per unit attached to identify its contents, Each pallet or shipping unit must also have a summary label which describes the contents of the unit, The labelling for these intermediate and final packaging units must conform to the standard **VDA 4902**.

Specification for labelling of Reeled Components

This specification of the product label is based on the VDA –norm 4902 and additional concerning the traceability to the VDA-recommendation 5005.

Bar code Symbology

Bar codes shall be of the 3-of-9 type and shall conform to the barcode symbology standard for 3-of-9 barcodes published by EIA-556A in accordance with (AIM) USS 39 Symbol specification. For the 2D bar code the Bar code Symbology must be of type PDF 417

Check Digits

Check digits shall not be used in the barcodes

Code Density and Dimensions

The Bar heights shall be a minimum of 4mm (0.15748 inch). The ratio of the nominal width of the wide to narrow elements shall be 2:1.

Reflectivity and Contrast

The printed barcode symbols shall meet the contrast and reflectivity requirements specified in EIA-556A, at all electromagnetic wave lengths from B663 to B900 nanometers.

Resting area / Quiet Zone

The minimum resting area for each bar-coded data element, (for both beginning and end of barcode) shall be 2mm (0.07874 inch)

Notation / Colour of printing

Background white (RAL 9010), black bar, resting area bright as described.

Data area Titles

Each data area shall contain it's title in the upper left hand corner.

Text writing

All text on the label must be readable to the human eye.









Label size

The label size has to be of 80 mm X 50 mm.

Print and paper type

Thermal transfer printing recommended, peelable label mandatory.

Label design

(1) Customer Part No. (P) 12345678912345-01 	
(2) Volume in package (Q) 123456 	(3) MS-Level  LEVEL 3
(4) Batch No. / Production Date (H) A12-010106 	
(5) Supplier No. (V) 123456789 	(6) PB-free  (7) Luminous Intensity Rank (LIR) C1
(8) Packaging unit No. (S) 123456789 	(9) 
(10) Designation Component description	

Nr.	field	Description	Bar-code	Identifier	Characters (max)	field nr. in VDA Norm 4902_V4
1	Customer Part No.	Material number Kostal, 14-digits – 2 digits Index	✓	P	22	8
2	Volume in package	Quantity of a Handling Unit due to packaging specification (without leading zeros)	✓	Q	7.3	9.1
3	MS-Level	MS-Level (Moisture Sensitive Level) of the article Field content (in corresponding to standard IPC/JEDEC J-STD-033A) 1. the MS-Level identification symbol 2. the highest MS-Level The MS-Level has to be specified for all SMD-devices. The determination of the MS-Levels takes place in corresponding to standard IPC/JEDEC J-STD-020C.	--			
4	Batch No. / Production Date	1. Ident. No. which the manufacturer of a batch allocates 2. Hyphen 3. Production Date Details for vendor to accurately trace back to their production run. Can be batch no., production date or both. In last case, both information have to be joint with hyphen. Unique for the life time application.	✓	H	10	1. = 16

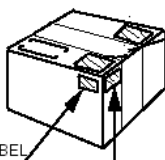
5	Supplier No.	Ident. No. which the customer allocates to a supplier	✓	V	9	12
6	PB-free	Information, if the article is PB-free or not. The field content is the PB-free symbol (see example), if the article is PB-free.	--			
7	Luminous Intensity Rank	Luminous Intensity Rank of LEDs	--	LIR	4	
8	Packaging Unit No.	Ident. No. which the supplier allocates to a packaging unit (without leading zeros). Unique for one calender year.	✓	S	9	15
9		2D-barcode (type PDF417) content: fields 1, 2, 4, 5, 7, 8 sequence of fields arbitrary data fields separated by "/" if there is a "/" in the data content, it has to be masked by a prefixed "/" example: given data content : batch 254K/18L content in barcode: /H254K//18L	✓			
8	Designation	Enter designation of delivery	--	--		10

Label placement methods, Examples

Placement 1

Box or Carton

should be located on two adjacent top of carton or box

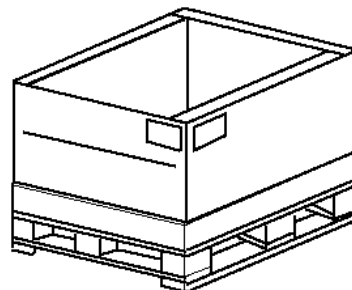


BAR CODE LABEL

Placement 2

Pallet Box

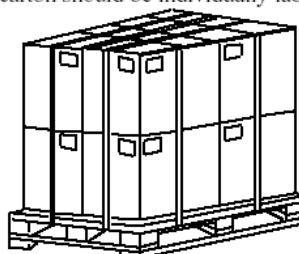
Identical labels should be located on two adjacent sides.



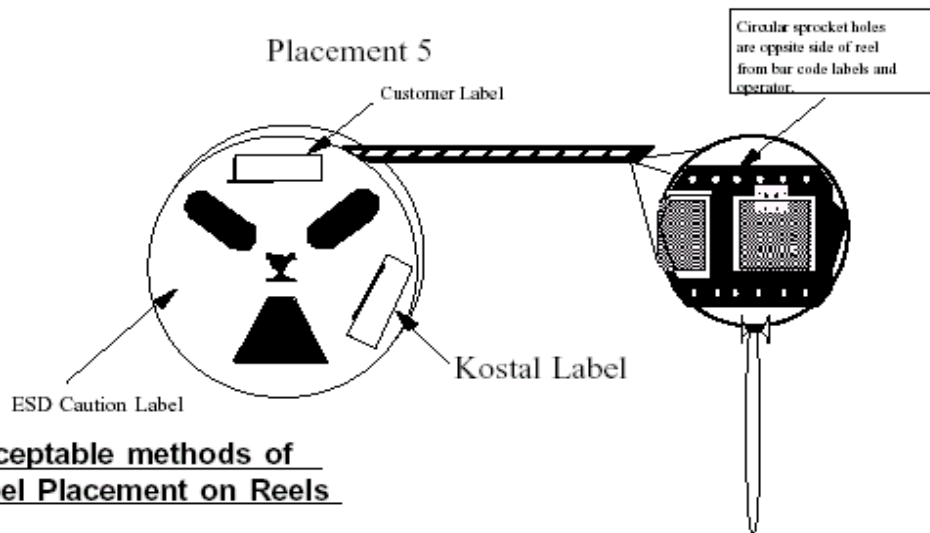
Placement 3

Carton on Pallet

Each carton should be individually labeled as describe above.

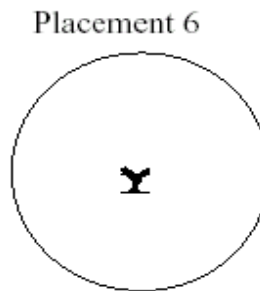


STANDARD

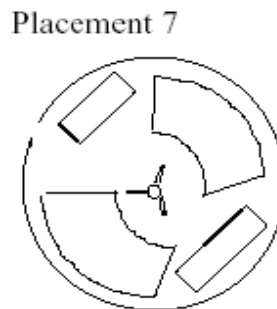


OTHER acceptable methods of Label Placement on Reels

Cardboard Reel Only



Small Reels

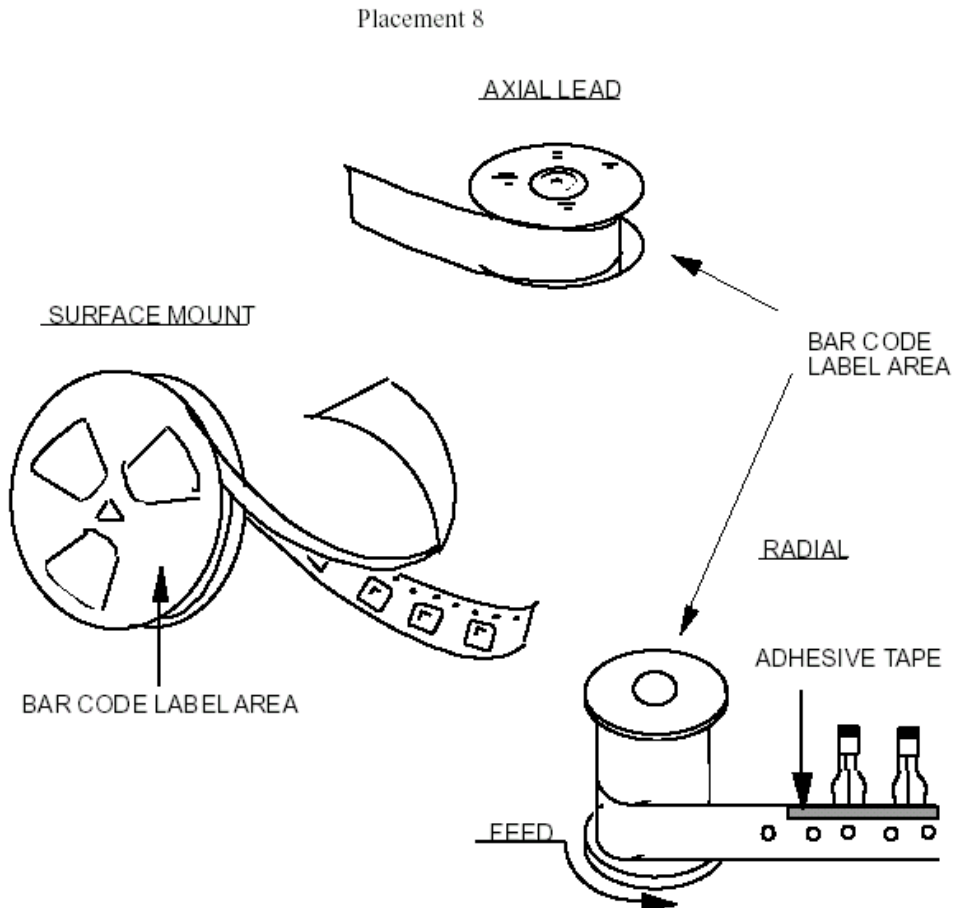


Note: Bar Code Labels must be applied on a flat surface to prevent damage to the label and to increase readability accuracy.

Note: All reels should be placed so the tape will unwind to the right off the top of the reel, the labels should be facing up towards the operator. See placement # 5

Feed Directions

LABEL PLACEMENT: The Bar Code label shall be applied facing you and accessible for wandling when installing in customer equipment.



Dry pack label placement

The specified labels are to be placed on all reels which are to be dry packed, and also applied to the dry pack itself.. The supplier must make every effort to place the Kostal label on the reel, prior to dry packing.

Note:

In the instance where the reels are dry packed without a Kostal label, Kostal Require a peelable label attached to the outside of the Dry pack, which is transferable to the reel when the dry pack is opened.

Application of Labels

For Reeled components

Bar code labels must be applied on a flat surface to prevent damage to the label and to ensure readability of information.

All labels on reels should be placed so the tape will unwind to the right off the top of the reel, the labels should be facing up towards the operator, (see placement number -5)

For intermediate packages or Shipping units, (when Using Returnable packing)

All labels applied to returnable containers must be removable without leaving a residue on the packaging, The supplier is responsible for all cost relating to cleaning returnable containers resulting from non compliance with this guideline.

1.7.2 Advance Shipping Notification

Deliveries has to be advised by an Advance Shipping Notification due to the Kostal EDI Guideline. In case that the vendor can not guarantee an EDI application the vendor is required to use the Kostal webEDI platform. Further requirements are regulated in the EDI and webEDI terms and conditions. All guidelines are available on the Kostal internet platform.

The structure of the packing in the ASN message has to follow the physical packing structure of big and small handling units in the delivery (the top layer contains the first packaging numbers in the ASN etc.).

1.8 Traceability

The vendor has to guarantee the traceability of production lots/charges as follows:

1. Different production lot/charges will be fixed on the position level of a delivery note. Within one position different lots / charges are not allowed.
2. Notification of each production lot/charge in the Advance Shipping Notification ASN.
3. Labeling due to the Kostal-standard 1.7.1.
4. Systematically and integrated administration of a production lot/charge and packaging numbers by the vendor
5. The Traceability period is defined by the traceability contract for the corresponding project and has to be fixed with each purchasing plant of the Kostal – Group.
6. The lot / charge number must be unique for the life time of an individual material.

1.9 Returnables

1.9.1 Standard

The planning, procurement and administration of returnables is regulated in the Kostal Packaging Guideline. The despatch returnables have to be returned clean and stacked on pallet in reverse to Kostal.

The supplier has to ensure that at any time sufficient packing is available. A bottleneck of Kostal despatch containers has to be indicated to the returnable department of the related Kostal plant immediately.

A delivery in deviating packing may take place only with deviating permission from Kostal. If the supplier packs parts in other packaging than previously agreed upon, Kostal will invoice appropriate handling and repacking costs to the supplier.

The definition and release of packaging materials belongs to each Kostal-plant.

Returnables may neither be pasted nor marked!

1.9.2 Exception to the rule

If specific packaging agreements apply, the following is valid:

One way packages

The one way packages are provided by the supplier, assuming that no different agreement exists. The expenses for waste disposal of the package are paid by the supplier. They are returned in no case.

Returnables (supplier's property)

If the supplier uses own returnables, this has to be agreed by Kostal beforehand. Kostal will treat the returnables in a suitable manner and send them back to the supplier not prepaid- provided no different agreements exist. The supplier carries the depreciation through normal wear.

Further aspects are regulated in the Kostal-Packaging Guideline.

1.10 Delivery

As a rule, pallets shall only carry one part number. If it happens that several part numbers have to be stacked, then every single packaging has to be marked separately and the pallet is indicated as mixed load.

1.11 Delivery to plant Hagen

Deliveries specially to plant Hagen must fulfill the following requirements.

Transport within Germany must follow in KOSTAL returnable containers, KOSTAL card board boxes and KOSTAL reels corresponding to the packaging instructions.

1.11.1 Delivery of semi-finished products and finished products

The dimension of a load unit must be: L 1200mm x B 800mm x max. H 1200mm. Maximum weight per Euro-pallet: 500kg. For deliveries of european suppliers Euro-pallets in good condition must be used. Barcode clips will be fastened on the pallet, which otherwise can't be processed automatically by scanner. Because of a contour check of each load unit, the indicated dimensions must be respected.

Minimum filling level per pallet is one layer. Incomplete layers of packaging units have to be completed with empty returnable containers.

Maximum stack height:

KOSTAL K35 and K45:	8 layers
KOSTAL K02, K30 and K40:	5 layers
KOSTAL K01 and K15:	3 layers

1.11.2 Delivery of raw materials (metal strips and plastic granules)

Maximum dimension per load unit: L 1200mm x B 1000mm x H 1200mm. Maximum weight per load unit: 1.250kg.

2 Transport

If not agreed differently, the transport takes place free to the receiving Kostal plant (Incoterms CIF, CIP etc.).

2.1 Parts receiving windows

Germany:

The reception area is occupied from Monday to Friday between 6.00 a.m. and 4.00 p.m.

International Kostal plants:

Information about the receiving time is given by each plant separately.

A standard delivery has to take place within the indicated opening hours.

Objective is to agree upon fixed times of delivery with the supplier.

In exceptional cases the delivery can - after consultation with Kostal - also take place outside of the regular opening hours.

2.2 Day of delivery

The day of delivery is the weekday specified in the order or in the call.

The punctuality of the delivery is measured in the vendor evaluation.

If a delivery window has been agreed with the Kostal reception department, it has to be kept.

2.3 Cost absorption

Transport costs caused by the supplier (special travels due to delay in delivery, returns due to early delivery or excessive quantity) are debited to the supplier. Furthermore will Kostal charge costs which are due to not kept agreements (e.g. investigation time because of missing Kostal part number, missing revision status etc.). These are charged to the suppliers account.

2.4 Transport damages

The supplier has to ensure that the parts arrive at the place of destination orderly. Damaged parts will be returned to the supplier.

If parts of the delivery quantity happen to be damaged, then Kostal has the right to refuse the complete delivery.

2.5 Delivery papers

Delivery notes and despatch orders are to be created in accordance with the appropriate VDA standard (VDA 4922, version 2; DIN4991).

Each despatch order has to be accompanied by a set of delivery notes as well as by all other necessary documents (customs papers such as EUR1, T1 etc.).

All related delivery notes belonging to the delivery have to be specified on the despatch order. One delivery note is to be used per part number and revision level. A delivery of different part numbers/revision levels/batch numbers within one delivery note is not permitted.

Necessary details on the delivery documents are the Kostal order number, the Kostal part number as well as the revision status, gross and net weight, volume, number of packages, the type and number of used despatch containers and the delivery note number.

2.6 Means of transport

Vehicles capable to dock on a ramp shall be used.