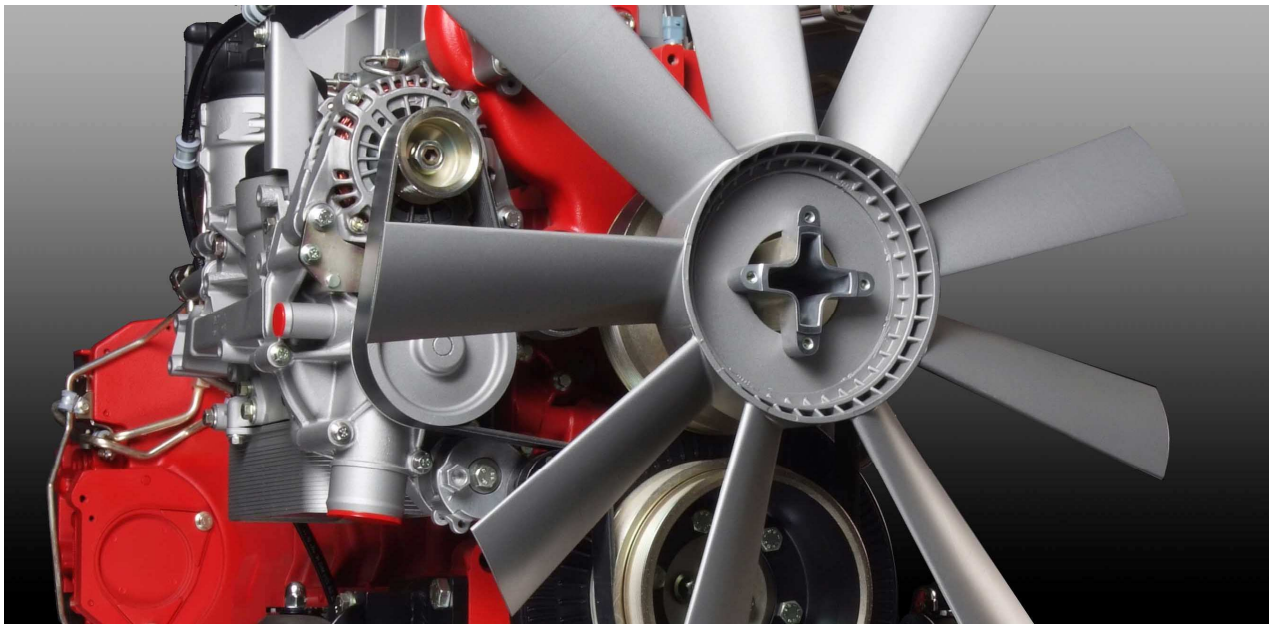
Packing Manual
DEUTZ AG



Parts & Engine Packing
for Series Production

Status 2010

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Introduction

The Packing Handbook of DEUTZ AG is a reference work for everyone involved with packing in goods transit: customers, suppliers, incoming goods, warehousing, shipping stations, empty goods stations, forwarding agents.

It summarizes all general information that is important for daily work with packaging and products in accordance with DEUTZ specifications and which has to be observed.

Proper and economical packaging for DEUTZ engine parts and DEUTZ engines is an important component of the logistics chain. The packaging must correspond to the various requirements in respect to quality, production technology, warehousing technology, transport and handling. To this end, the people involved with packing in the various processes continually require information. This information is summarised in the Packing Handbook and can be consulted quickly and easily as and when required.

Since the beginning of 1990, Deutz AG has pursued the consistent use of standardised recyclable containers and packing systems, supplemented by special packaging that is adapted to the components and engines.

For this purpose, DEUTZ has its own specialist department involved with all aspects concerning the packing of components and engines.

This recognised technical knowledge and the competence of the DEUTZ Packing Planning is presented in a concise way here. The DEUTZ packing will continue to develop in the future as well and form an important element of the economical material supply. This Packing Handbook will consequently be extended further and updated with the aim of providing all technical areas in the logistics chain with the requisite information.

Not all detailed information on the relevant packing of components and engines can be described within the context of this Packing Handbook. Further information such as specifications or handling guidelines, also from other technical departments at DEUTZ Global Logistics, is available for this.

Packing Planning

Every component and end product has relevant packing data at DEUTZ in order to ensure an economical material flow corresponding to the requirements of modern logistics. On this basis the following points are observed:

- Protection of the products
- Retention and improvement of quality
- Delivery in line with assembly and products
- Assurance of occupational safety, cleanliness and order
- Compliance with statutory/official regulations
- Fulfilment of customer requirements
- Minimisation of packing costs
- Uniformity in the workflows over the entire logistics chain
- Time saving, avoidance of expense
- Rapid material flow
- Ergonomic handling
- Clear, simple and rapid information
- Standardisation

Planning process:

Step 1: Classification of the products according to geometry, value, procurement sources, quantities and quality requirements

Step 2: Selection of the possible packing system taking into account the spatial circumstances (warehouse, production):
- Use of a standard system (e.g. small load carrier)
- Development of own containers
- Use of standards
- Use of existing packing systems

Step 3: Calculation / Profitability calculation with determination of packing type and filling volume per material, representative for product groups

Step 4: Presentation in the technical departments internally and externally with meetings and agreements at suppliers, Incoming Goods, Quality Assurance, Warehousing, Production, Purchasing, Materials Scheduling and Controlling.

Step 5: Definition of the packing per product with documentation, packing data in SAP and specifications

Step 6: Information to all areas involved

Step 7: Monitoring the packing

Packing Planning

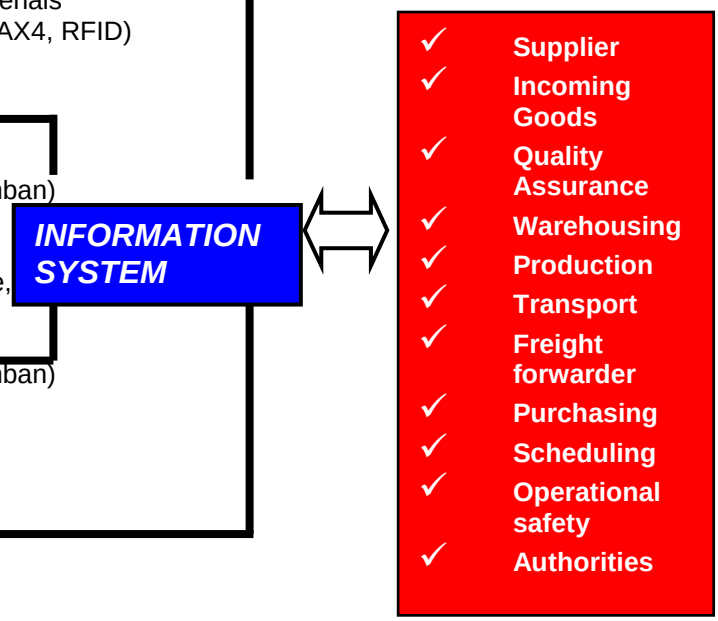
Packing system in the area of Incoming Packing and Production

Definition of packing specifications
- Precise allocation of container type and filling volume per material according to logistic needs (consumption, inventory, capital)
- Specifications for the packing of high-quality materials
- Standardisation of the labelling (e.g. VDA 4902, AX4, RFID)

Monitoring the packing
- Admonition procedure and supplier monitoring
- Feedback
- Material flow (materials scheduling capacity, Kanban)

Optimisation of the material provision
- Storage space optimisation, warehouse structure, incoming goods, transport
- Storage space optimisation in Production
- Material flow (materials scheduling capacity, Kanban)

Container management
- Exact definition of the container types
- Monitoring of empty goods collection points
- IT container booking
- Container procurement
- Container account management



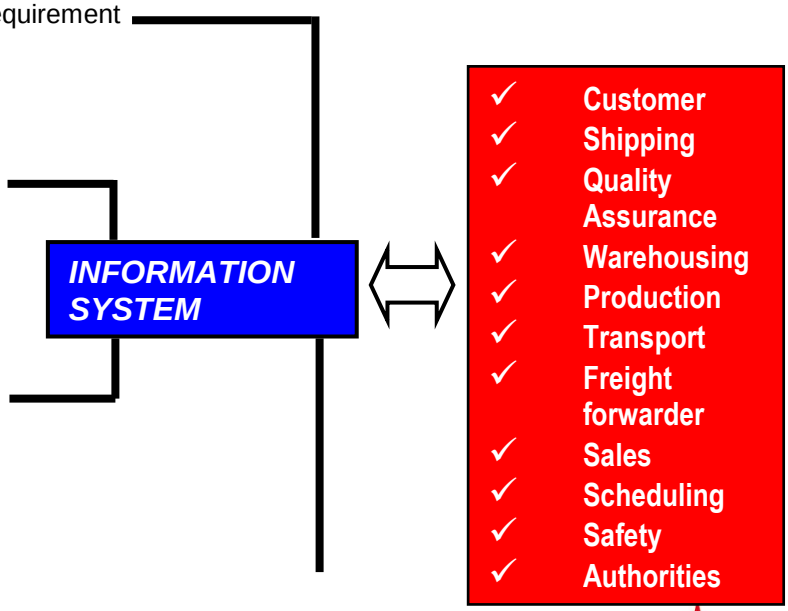
Packing system in Shipping CBU / CKD

Definition of packing specifications
- Precise allocation of the part or order to the packing type according to specification and customer requirement
- Formulation of specifications
- Standardisation of the shipping papers

Monitoring the packing
- Quality of the packing materials
- Instruction of the shipping stations
- Feedback

Optimisation of the shipping
- Order preview
- Optimisation of the material provision
- Workflow optimisation

Packing material procurement
- Processing the orders
- Selecting suitable materials
- Cost control



Incoming Goods Packing Control

The logistics systems of the DEUTZ AG plants are designed in respect to a specified, standardised packing for an optimal material flow in the area of warehousing, assembly and transport. Each individual part for production and assembly is linked to a packing specification. The defined packing specifications are coordinated to the part geometry, quality and consumption quantities and are communicated to the suppliers in the orders and packing data sheets.
Compliance with the packing specifications is a prerequisite for a smooth flow of materials from the supply to the installed engine. If the material flow is disrupted, this will lead to extra expense or quality losses.
Incoming Goods receives material and forwards it to the warehouse, from where it is issued to Assembly and Production in line with needs.
The material should therefore be packed in Incoming Goods, before putting into storage, in accordance with the standard (= packing specification). If this is not the case, extra expense will result due to e.g. label printing, counting, weighing, rejection and repacking work.

Workflow of the packing control

Orders
The supplier receives the packing specifications for the ordered part with the relevant framework agreements and individual orders. The required empty containers should be ordered from DEUTZ 14 days before needed and sent by the responsible regional forwarding agent.

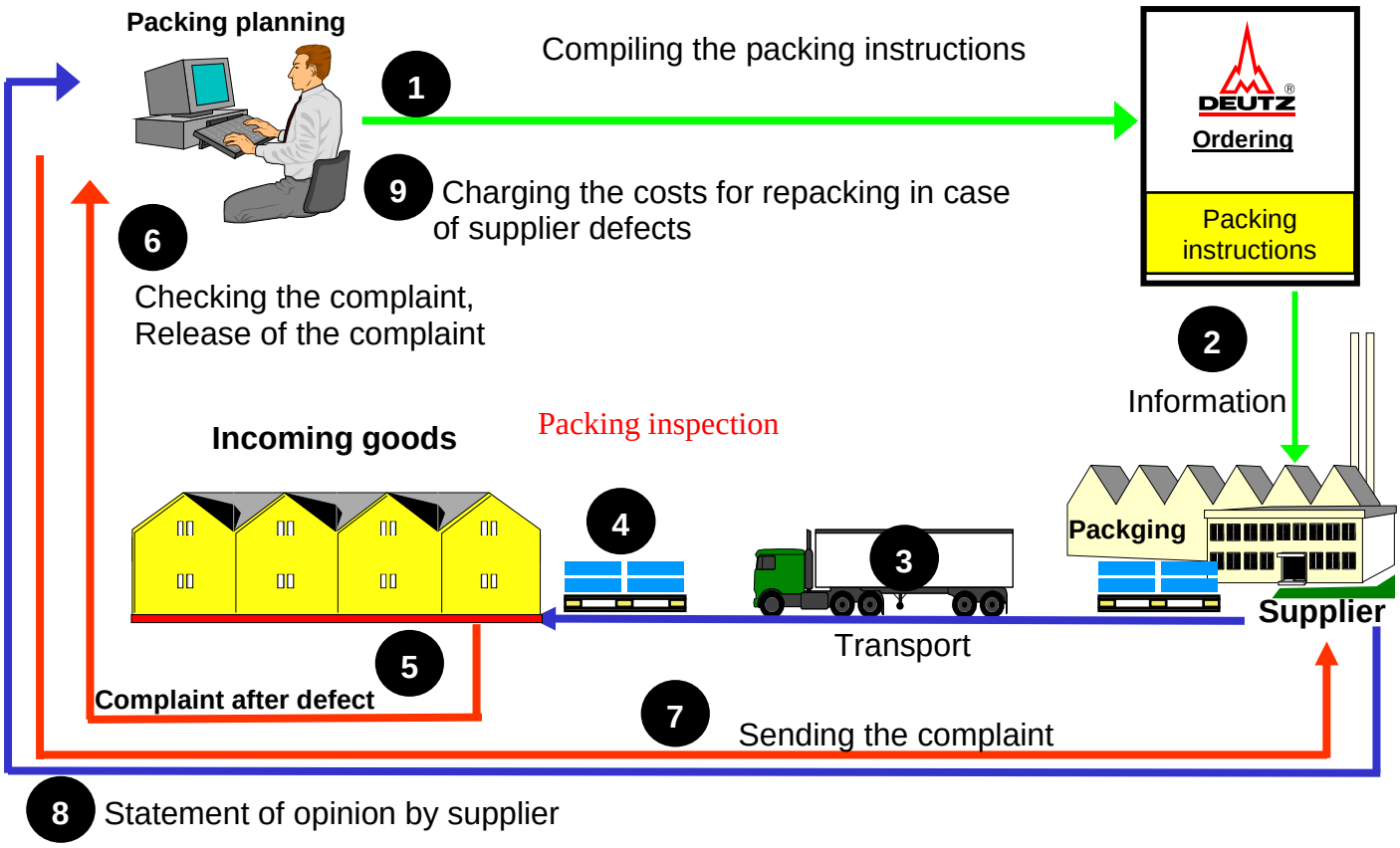
Receipt of goods
The driver of the forwarding company will hand over the freight papers to the Incoming Goods office. The material access is then booked with SAP. The goods receipt certificate and containers labels are created by this. An employee at Incoming Goods will then check the delivery based on the packing specification marked on the labels and goods receipt certificate and characterise the goods receipt according to a 10-point catalogue. The papers are then given to the Incoming Goods office for processing. In the second goods receipt stage, container and packing data as well as the classification of the packaging used are booked.

Processing
The incoming goods evaluation is checked on a daily basis. In the case of complaint-relevant evaluations, a complaint letter (mail or fax) for the shipping is printed out. The check in respect to the plausibility of the data for the incoming goods is performed daily. If the complaint concerning the incoming goods is not justified, it is neutralised in SAP by indicating the reason for the deletion. Deleted admonitions are saved for statistical purposes.
Send complaints remain in SAP for 14 days in order to check objections by the suppliers. The complaint can be neutralised within a 14 day period if the supplier objections are justified.
After 14 days without complaint or objection, the supplier will be charged 40€ per repacked transport unit in order to cover the expense for extended administration and repacking.

Incoming Goods Packing Control

Note
The packing control and potential complaints do not serve the purpose of encumbering suppliers. Faults and defects leading to an inadequate delivery are to be revealed by the control and direct information.

Graphic representation of the workflow



Reusable Packaging

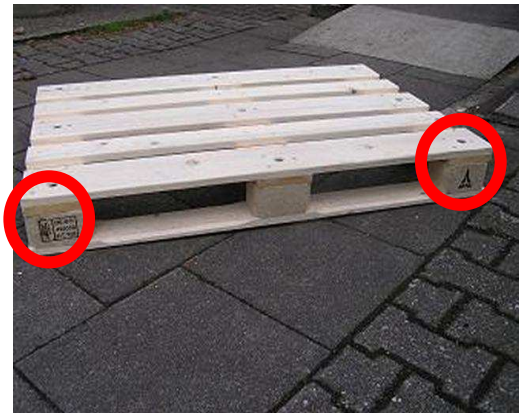
Principles for the use of reusable packaging:

- Environment protection is promoted by less packaging waste and raw material resources are conserved on more sustainable basis
- The statutory requirements (Packing Ordinance) are satisfied through the use of reusable packaging
- Secure transport containers support health and safety at work
- There is less waste in the companies without disposable packaging and it is therefore cleaner at all areas
- Materials are protected by the reusable packaging and hence the quality is improved
- The handling is simplified, saving valuable work time
- Packing costs for the parts procurement are low
- Reusable containers are control elements in the assembly and materials scheduling compliant material supply
- DEUTZ reusable containers are valuable and must be treated with care
- Customers and suppliers of DEUTZ AG are supplied with reusable packaging for transport purposes in line with materials and needs. The use of DEUTZ recyclable containers for company-internal use or storage is not permitted
- The basis for a secure and production compliant delivery is a functioning system of container supply

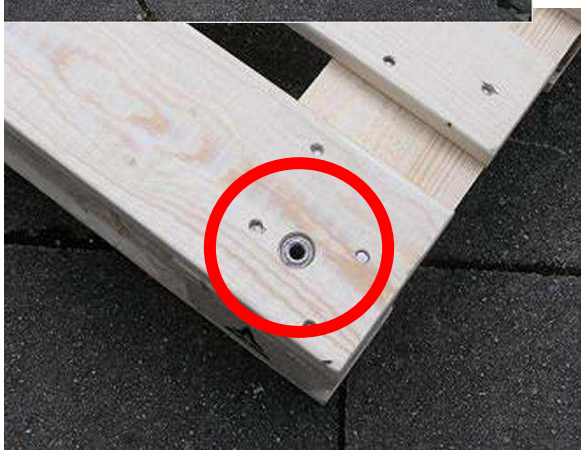
Note:

Deliveries with materials packed with EURO pallets or EURO mesh boxes have no longer been permitted at DEUTZ AG since January 2009. Incoming Euro pallets/mesh boxes must be replaced 1:1 at the Incoming Goods on the same day, a later exchange is not possible. DEUTZ AG will not reimburse replacement fees for EURO empty containers. Please only use DEUTZ' own pallets (P1X) or containers (K1, C3E5, PCB1) as indicated in the Deutz packing instructions.

Reusable Packaging
Standard pallet DEUTZ P1X



Identification with DEUTZ logo and IPPC stamp



Pallet blocks riveted

Reusable Packaging

Standard container large load carrier (GLT)

DEUTZ K1 (wood)

Dimensions
Outer
120x78x89 cm
Inner
118x78x73 cm
Weight 39 kg
Load max
800kg

DEUTZ C3E5 (steel)

Dimensions
Outer
120x78x97 cm
Inner 109x78x76 cm
Weight 110 kg
Load max.
1000kg

Standard intermediate layers (special workpiece carriers as per Packing Specification, on request)

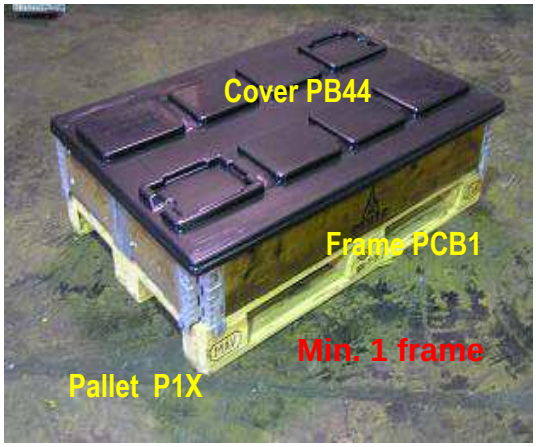
ZW1302 plastic hollow cavity pallet

ZW1280 wood ZW1281 plastic

Reusable Packaging

Standard container large load carrier folding frame system

DEUTZ P1X pallets with folding frame (foldable in the middle)



Frame dimensions
Outer :
1200x800x200 mm
Inner
1140x750x200 mm
Weight 9 kg
Load max.
800kg

Matching base and intermediate layer
ZW1299 1130x745x6 mm plywood
Cover PB44 made from ABS plastic

Recusable Packaging

Container for raw parts

DEUTZ CA2

Dimensions
Outer
100x80x70cm
Inner 99x79x60 cm
Weight 70 kg
Load max. 1200kg

DEUTZ CB3

Dimensions
Outer
120x100x70 cm
Inner 116x96x60 cm
Weight 100 kg
Load max. 1200kg

DEUTZ CA3

Dimensions
Outer
100x80x70 cm
Inner 96x76x60 cm
Weight 82 kg
Load max. 1200kg

Reusable Packaging

Standard container VDA C-KLT

KLT43 ..

KLT 4314, 40x30x14 cm (334x247x103mm)
KLT 4 321,40x30x21cm (334x247x169mm)
KLT 4328, 40x30x28cm (334x247x236mm)
KL43 cover
ZW4331 intermediate layer

KLT64..

KLT 6414, 60x40x14 cm (532x346x98mm)
KLT 6421, 60x40x21cm (532x346x164mm)
KLT 6428, 60x40x28cm (532x346x231mm)
KL64 cover
ZW6431 intermediate layer

Securing and covering plate for pallet
SP1218 / A1218

Small load carrier stack on P1X pallet with KLT4314

The use of R-KLT is possible, RL-KLT cannot be used.
Workpiece carriers as per packing instructions available on request

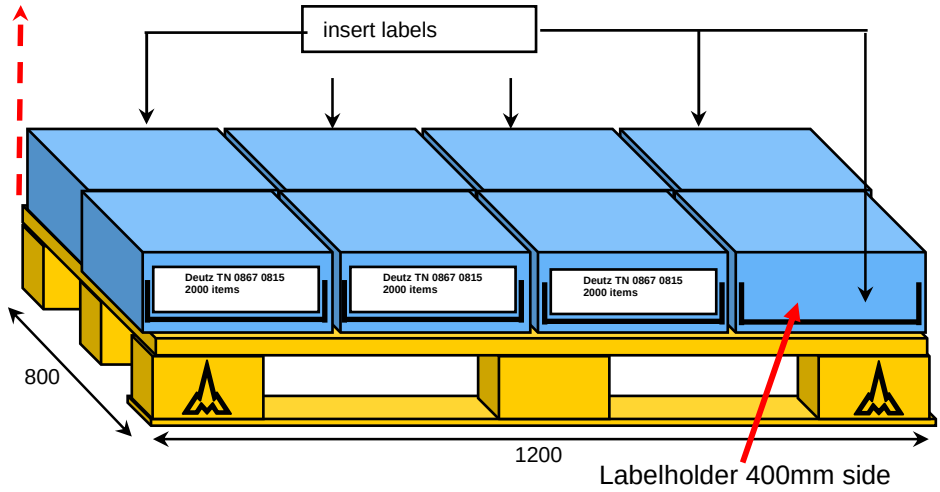
Reusable Packaging

Standard container KLT (small load carrier)

Label position & stacking

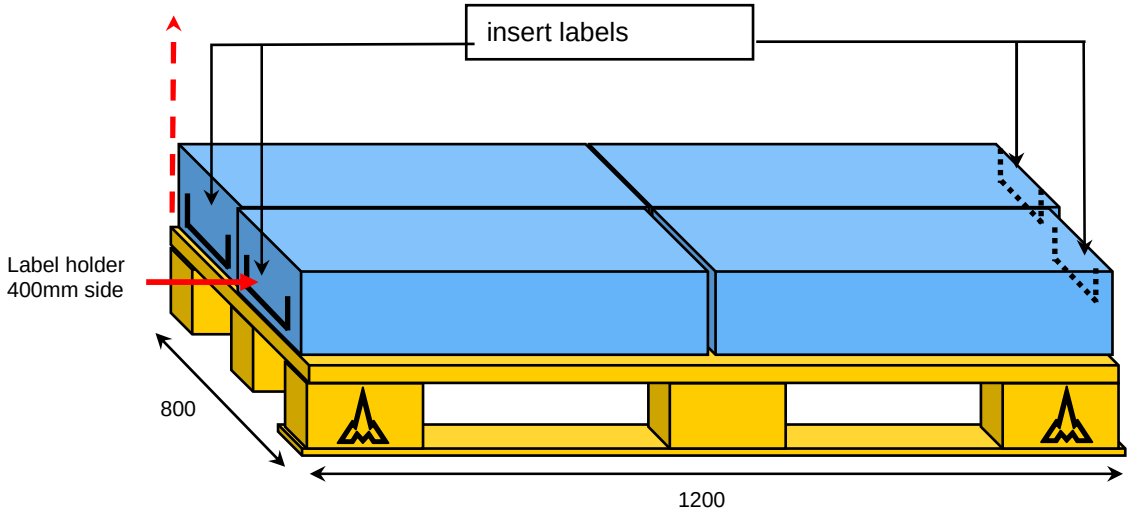
1. KLT 43

KLT4314 four layers max., KLT4321 three layers max., KLT4328 two layers max.



2. KLT 64...

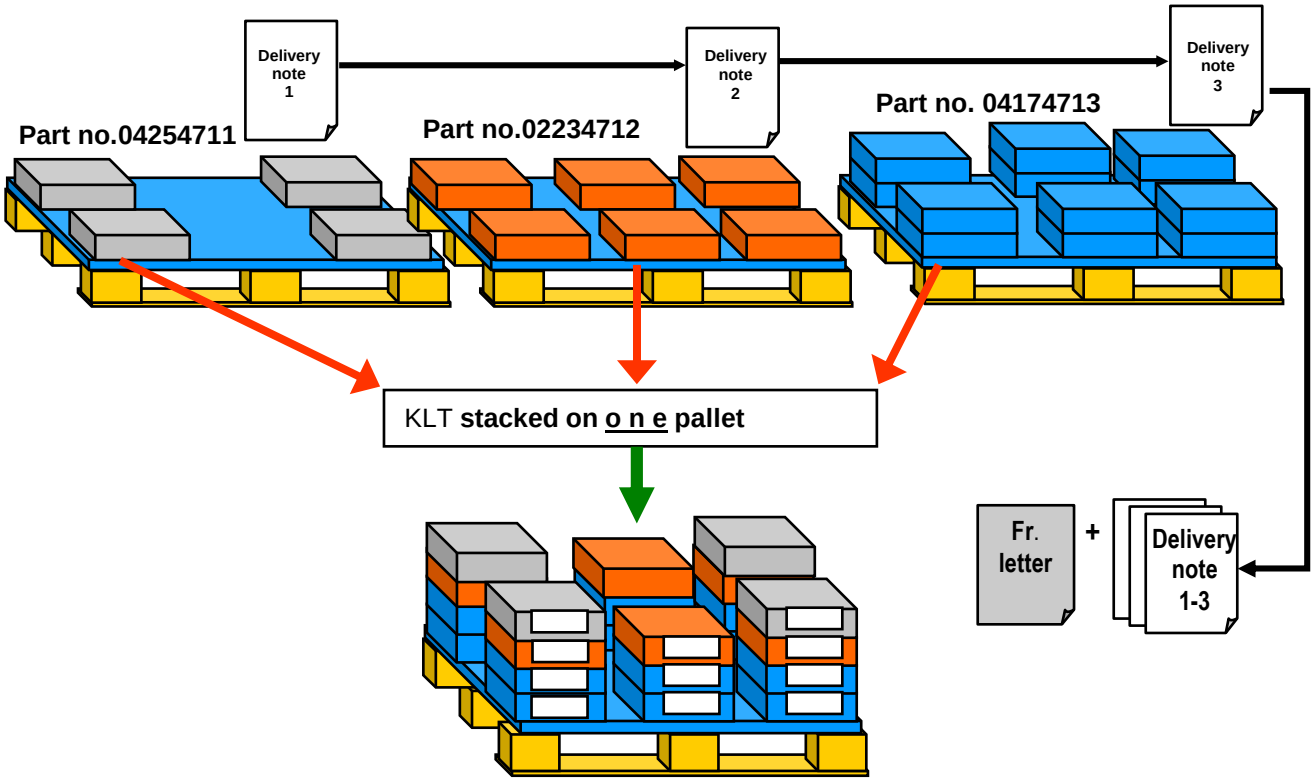
KLT6414 six layers max., KLT6421 four layers max., KLT6428 three layers max.



Recyclable Packaging

Standard container KLT (small load carrier)

Shipping with mixed small load carrier pallets, example:



Small load carriers with the most number of articles in the lower most small load carrier layer, further small load carriers stacked by number. Fill up potential gaps in the small load carrier with empty small load carriers to be able to put on the covering plate.

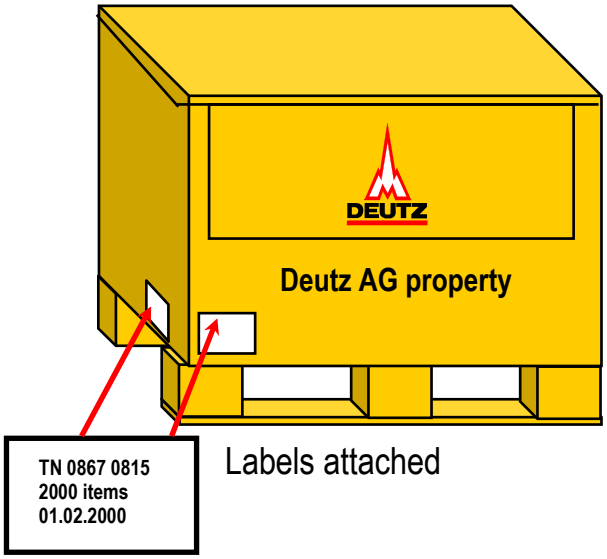
Every small load carrier on the mixed pallet must be identified with an individual label in order to avoid mixing up parts.

Reusable Packaging

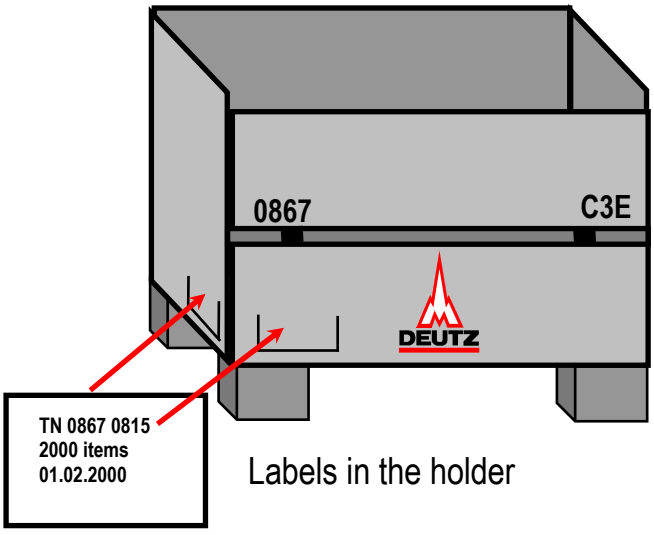
Standard container large load carrier (GLT)

Label position

DEUTZ wooden folding container K1 & pallet frame



DEUTZ sheet steel container type C3E.

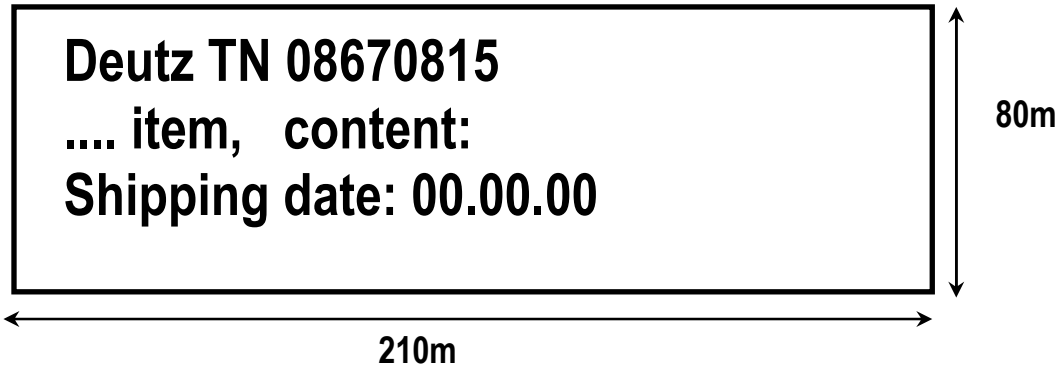


Always remove old labels before use!

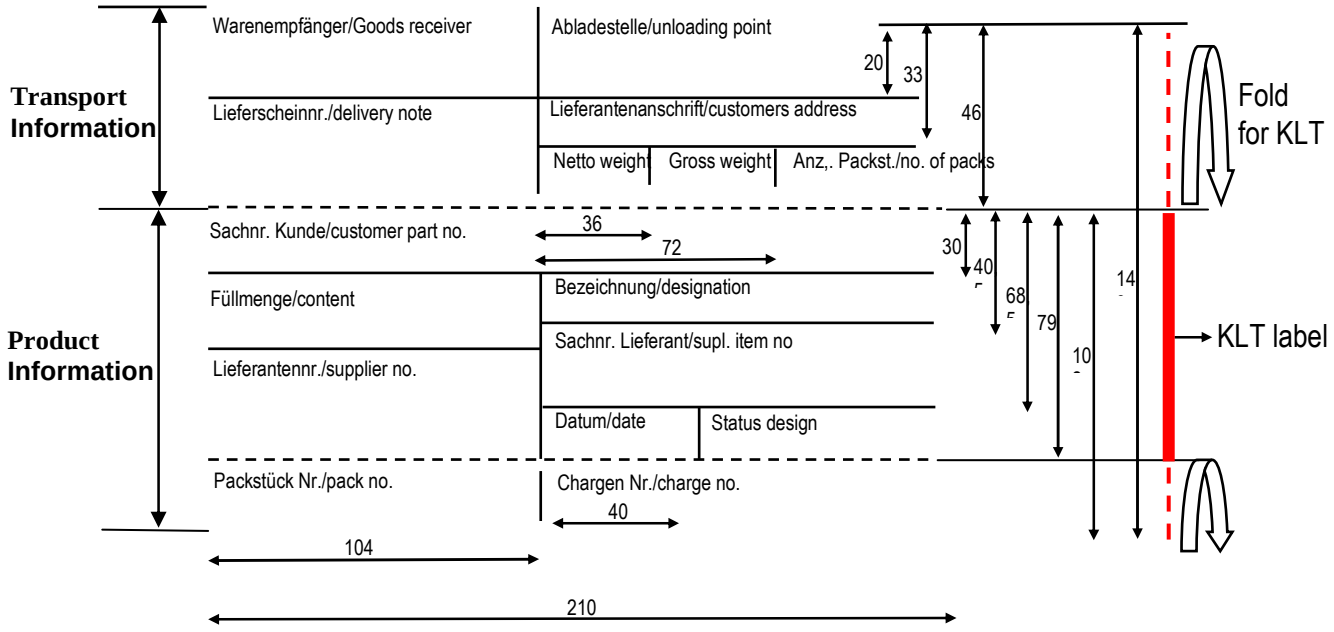
Reusable Packaging

Format of the labels

Minimum requirement per packing item / handling unit:



VDA label 4902 version 3:

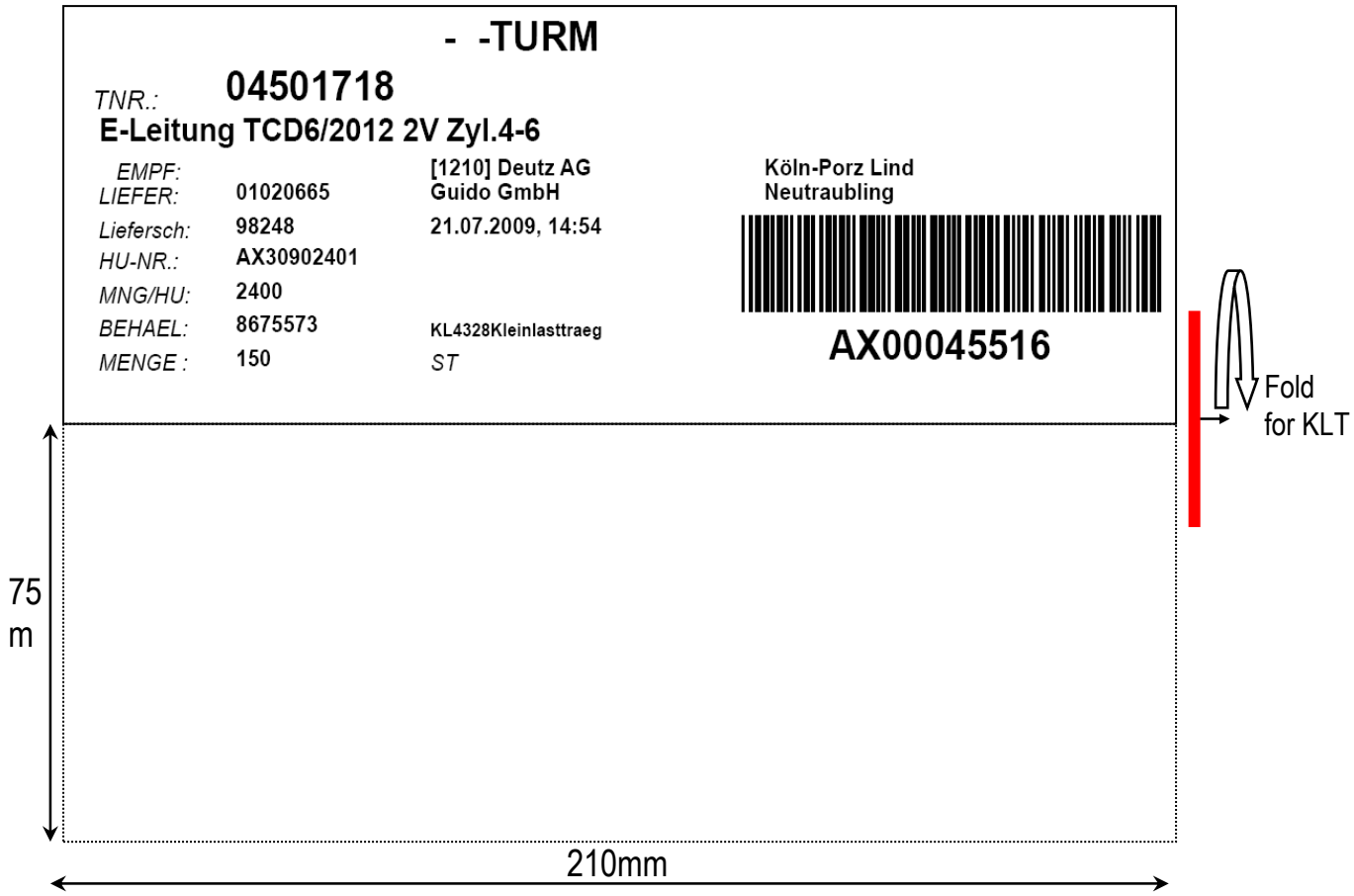


Reusable Packaging

Labels for shipping processing via the AX4 platform

The Internet-based platform (AX4) developed by AXIT AG is used to improve the exchange of data between DEUTZ AG, suppliers and freight forwarders (logistics service providers).
In this way, all suppliers have the option of handling material orders by DEUTZ AG via the Internet in a transparent and straightforward manner and creating labels before shipping for the DEUTZ standard. Further information on this in the AX4 Handbooks of DEUTZ AG.

Example:



Reusable Packaging

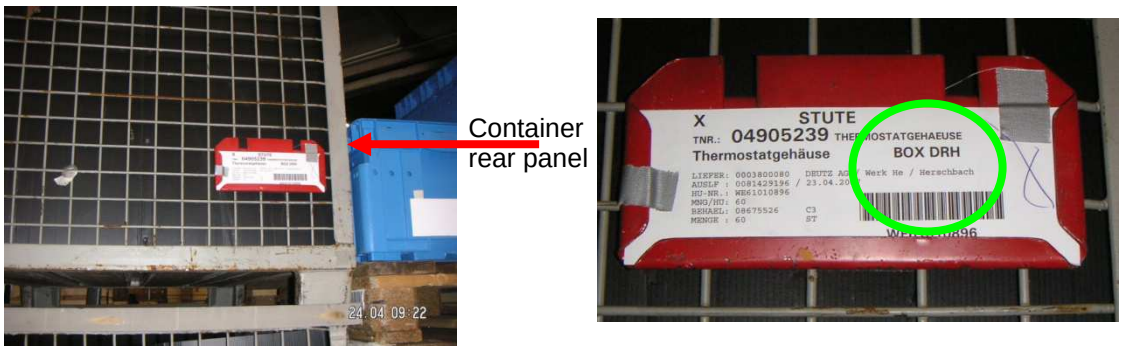
Label position on the large load carrier

1. C3E1 – 7 Sheet steel containers

Label holder, label inserted

Label on front

2. Label for “BOX DRH”



Short container side viewed from container flap **RIGHT**

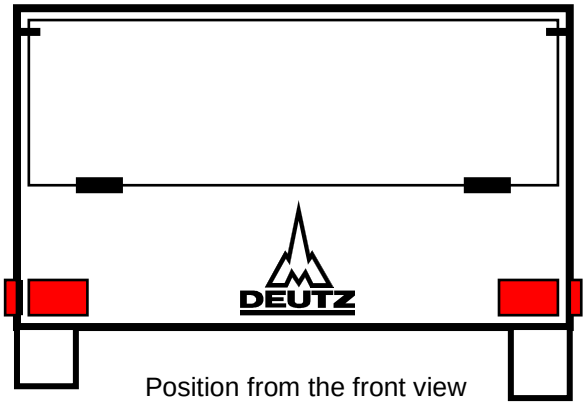
3. Label for K1 wooden boxes and pallet folding frames

Label attached, short container side viewed from container flap **LEFT**

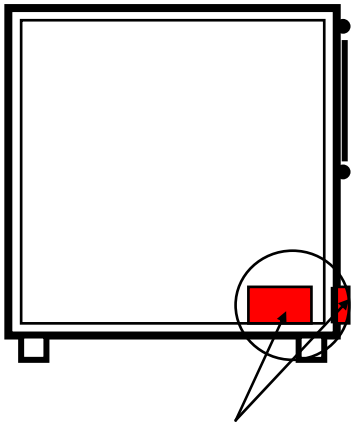
Reusable Packaging

Label position on the large load carrier

4. Label position for reading area of barcode scanner

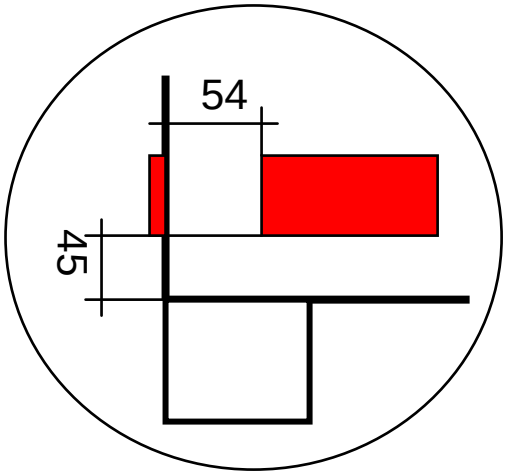


Position from the front view



Position from the face view
LEFT from view front / fold-side container

Gaps min.,
+ 30mm tolerance

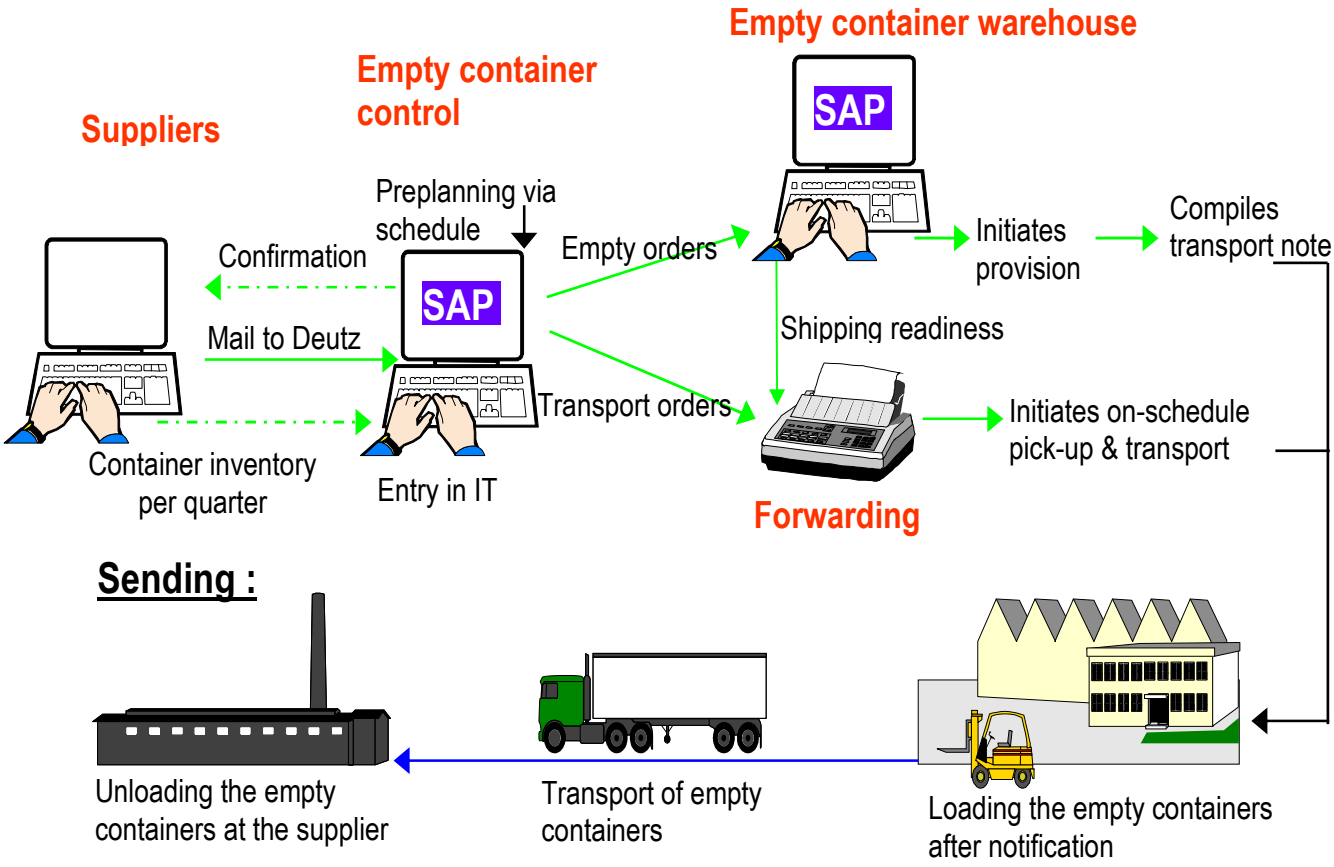


Reusable Packaging

Container ordering:

DEUTZ AG provides its suppliers with empty containers free of charge for transport purposes. In order to receive empties, we require your empties request with the current address by mail *packorder@deutz.com*, at least 10 working days before needed. The fax message must include: your supplier number, type and quantity of the containers. After receiving your order, we place a reservation on one of our empty container stations. You will receive a confirmation by fax with all data for the empty container delivery, which is also noted on the transport order for the forwarding agent responsible. The empty containers will then be sent to you within the next 10 working days. You can find out the sending date after the transport scheduling of the responsible regional forwarding agent.
If you are paying for the freight, the transport must be organised by you, whereby the pick-up must be notified at the relevant empty container station at least 24h beforehand.

If you only send low quantities or small volumes (less than 30kg per packing item = parcel service, less than one pallet), you can supply the parts in a disposable package suitable for the load.



Reusable Packaging

Cleanliness and cleaning of DEUTZ containers

According to DEUTZ Specification 01700000

Principle:

Recyclable transport containers are only to be used for the transport and storage of engine components. The use is specified for certain components through the division into cleanliness stages in the relevant packing specifications. Use other than that intended as a disposal container for domestic refuse, chemical substances or other contaminating materials is not permitted.

Multiple transport containers are part of the capital assets of DEUTZ AG and must be treated with care.

The submitting plant is responsible for the cleanliness of the container used for the packing.

Dirty containers must not be used for the packing of components and must be returned to the submitting plant.

The empty container stations of the DEUTZ plants are responsible for cleaning the containers:

- Removal of packing materials from the containers
- Removal of all labels
- Separation of marked and defective containers
- Sorting out remaining parts
- Sorting the empty containers according to type
- Provision of the empty containers according to cleanliness levels

Handover of the empty containers for washing in suitable facilities if required

Reusable Packaging

Cleanliness and cleaning of DEUTZ containers

Cleanliness specifications

The cleanliness of containers is divided into three categories. The containers of each category are to be used for the packing of components, depending on the quality requirement of the component. Containers with a degree of soiling outside the categories must undergo a suitable cleaning.

Category 1 (Light soiling):

- no goods labels, stickers etc.
- free of intermediate layers, films, paper
- without loose dirt, cuttings etc.
- no liquid residues (oil, grease)
- insides dry
- LIGHT oil wetting allowed

Category 2 (Hand clean):

as category 1 and

- Thoroughly freed of firmly adhering dirt (manual cleaning)
- No oil/grease residues

Category 3 (New/washed):

as category 2, without visually discernible or quality-relevant dirt

Reusable Packaging

Cleanliness and cleaning of DEUTZ containers

Description of the cleanliness levels

A) Small load carrier including lid (KLT)

Hand clean

Residual waste and loose particles removed, less residual dirt, discolorations

New/ washed

Without particles
No residual dirt
discolorations possible

Soiled for washing

Heavy soiling which cannot be removed manually
oil, grease etc. adhere to small load carrier

NOT be washed: Locking plates SP1218 and covering plates 1218

B) Large load carrier (GLT)

Hand clean

Residual waste and loose particles removed
less residual dirt
less adhesions

New/ Washed

Without residual waste and loose particles
without residual dirt
without adhesions

Soiled for washing

NOT be washed:

Wooden containers (K1),
Mesh baskets (C3/CB3/CA3),
Old containers (CA2)

Heavy soiling outside/inside, oil/ grease/ adhesions can not be removed manually

Reusable Packaging

Cleanliness and cleaning of DEUTZ containers Description of the cleanliness levels

C) Intermediate layers/Workpiece carriers

Hand clean

Loose particles removed
less residual dirt
less adhesions

New/ washed

Without residual dirt
without adhesions

Soiled for washing

Oil/ Grease/ Adhesions not removed manually can

NOT be washed:

Wooden intermediate layers (ZW1280), hollow cavity plates, compartment frames, board

Container Account Management

All containers which DEUTZ supplies to customers and suppliers are economical goods whose value is also an element of the capital assets of DEUTZ AG.
Containers from the DEUTZ empty container stock are also recorded correspondingly in the inventory.

DEUTZ empty container stocks that are not in the availability area of DEUTZ AG, i.e. empty container stocks at customers and suppliers, therefore have to be recorded and controlled as well. At DEUTZ all incoming and outgoing containers are logged via its integral SAP databases and transactions.

To monitor and coordinate the containers in circulation, customers and suppliers receive a loaned good account statement at the beginning of each quarter. All container incoming and outgoing movements are listed according to quantities in this account statement.
The account statement includes a letter, a balance sheet, an overview of the container movements in the last quarter and a response form.

After receiving the account statement by email, fax or post, the container stocks should be determined based on your own container inventory management or, if necessary, with a physical record. These inventories should then o n l y be entered on the response form of the DEUTZ container account statement and sent by mail to *packkonto@deutz.com* to DEUTZ.

At DEUTZ the quantities determined are then compared and checked. Here container requirement forecasts, average turnaround times, stock and plausibility are checked. If discrepancies are ascertained, the DEUTZ empty container administration will then contact the customer or supplier if charges have to be issued: container rental on account of company-internal use, loss or disappearance of containers, damage, usage other than that intended.

Container account statements that are not answered will be claimed with up to three admonition stages. After the third admonition without response, the charge for the return procurement value of the containers according to the balance will appear on the customer or supplier account.

Import Packing

Sea- And Airfreight Packing For Suppliers From

Outer Europe

Asia-Pacific

Asia

Africa

North and South America

I M P O R T A N T N O T E

ALL packing materials in use made from wood such as boxes, crates, pallets, boards must be

- free of bark

- treated against pests (heat treated / methyl bromide gas)

- free of harmful chemicals

- matching the guidelines of the United Nations Food and Agriculture Organization (FAO International Standards for Phytosanitary Measures = ISPM 15 / European Guidelines No. 2000/29/EG, confirmed by IPPC stamp on woods and IPPC certificate of packing manufacturer

All consignments which do not follow those rules might be blocked by European customs, sent back to suppliers charged or destroyed by order of authorities directly.

Import Packing

Sea- and Airfreight Packing: Large Parts

Suitable packing with protection against dust, dirt, moisture and damage.

Packing material:

- NEFAB box type Ex Pak S with DEUTZ logo
- max. dimensions 120x80x100 cm
- intermediate layers made of corrugated board or dry plywood
- max. gross weight 1000kg
- stable, safe 4-way pallet
- wood free of bark and treated against pests
- dry preservation with VCI plastic bag and VCI paper sheets

Only one kind of part (part number) per box, DRY & CLEAN parts, FREE of water, oil, grease, wax, metal chips and particles

Examples

Import Packing

Sea- and Airfreight Packing: Small Parts

Suitable packing with protection against dust, dirt, moisture and damage, cardboard boxes stapled in sea-freight box

Freight box outer packing:

- NEFAB box type Ex Pak S with Deutz logo
- max. dimensions 120x80x100cm
- intermediate layers made of corrugated board or plywood
- max. gross weight 1000kg
- stable, safe 4-way pallet
- wood free of bark and treated against pests
- dry preservation with VCI plastic bag and VCI paper sheets

Cardboard box stapled in freight box :

- 53x34 or 32x24 cm outer dimensions,
- height on request max. 23 cm.
- made out of stable corrugated board or millboard
- parts set up safely, intermediate layers when necessary
- only one kind of part (part number) per box
- max. 15 kg per cardboard box

Examples

Only one kind of part (part number) per box / bag DRY & CLEAN parts FREE of water, oil, grease, wax, metal chips and particles

Import Packing

Sea- and Airfreight Packing: VCI Preservation

How does VCI work?

VCI generally come in solid form, for convenience in handling. Volatility is simply a means of transport. Protective vapours disseminate within an enclosed space until equilibrium, determined when the partial vapour pressure is reached. The inhibiting process starts when
the vapours come into contact with the metal surface and condense to form a thin barrier of micro-crystals. In the presence of even minute traces of moisture, the crystals dissolve and develop strong ionic activity.
The result of such activity is adsorption of protective ions onto metal surfaces, with the concurrent formation of a molecular film that promotes breakdown of contact between the metal and an electrolyte. The presence of an invisible monomolecular film does not alter any of the important properties of the metal, even in precise electronic applications, where properties such as conductivity, or dimensional tolerances are critical, and where even minute deviations could cause malfunction.
VCI migrates to distant metallic surfaces. This ability enables VCI to protect metals without direct contact with metals. VCI needs only to be placed in the vicinity of the metals to provide protection. VCI will migrate to metallic surfaces through the vapour phase and the inhibitor will be adsorbed on the surface. The protective vapours will distribute within the enclosed space until equilibrium is reached. Equilibrium is set by the compound's partial vapour pressure.
Too high vapour pressure will cause the inhibitor to be released to such an extent that a protective concentration cannot be maintained. On the other hand, a low-vapour-pressure inhibitor is not used up as quickly and can thus assure more-durable protection, but more time is needed for a protective vapour concentration. This raises the risk of corrosion during the initial period of saturation, and if the space is not sealed, a protective concentration may never be reached.

VCI Packing Materials:

VCI paper or VCI plastic bags are usually used for packing. This standard dry-preservation is known worldwide and there are different suppliers for VCI. DEUTZ recommends the brands of

EXCOR (www.excor.com) or Brangs & Heinrich (www.brangs-heinrich.de)

VCI paper can be used to wrap parts or as layer inside the container with sheets. Plastic bags with VCI are used for covering the whole interior of a bin to make it resistant to moisture from the outside.

Import Packing

Sea- and Airfreight Packing: NEFAB Box

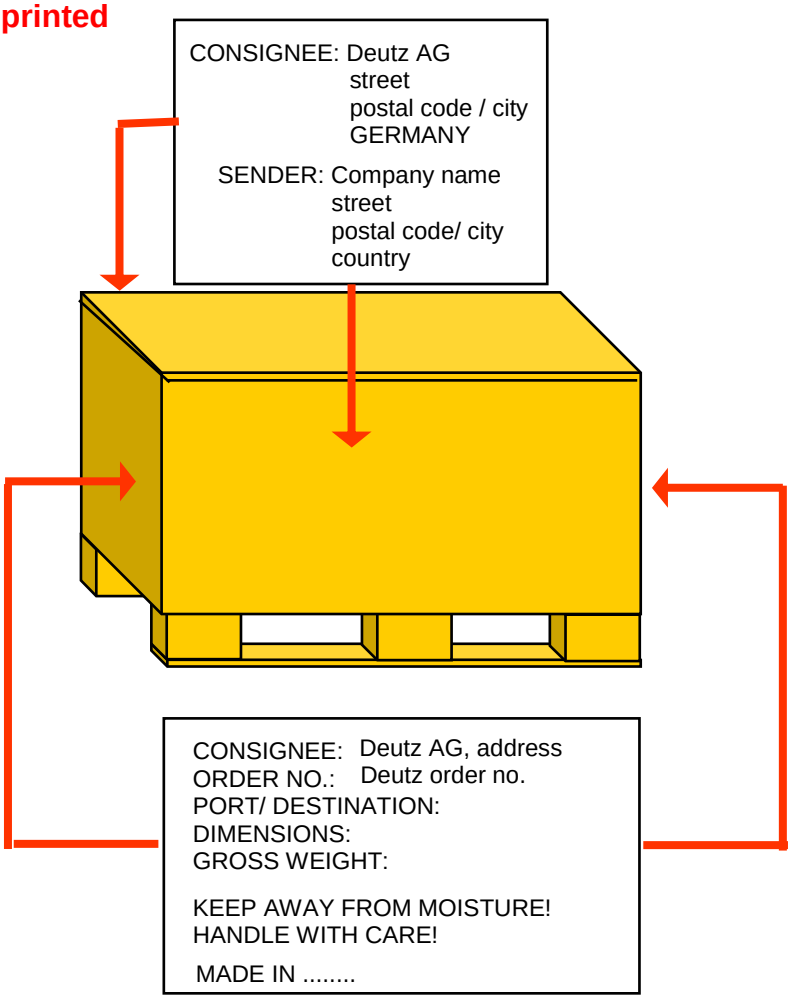
Box suggested by DEUTZ for all exports with IPPC certificate inbound Germany from outer Europe

For worldwide purchase contact see local dealer list at: www.nefab.com

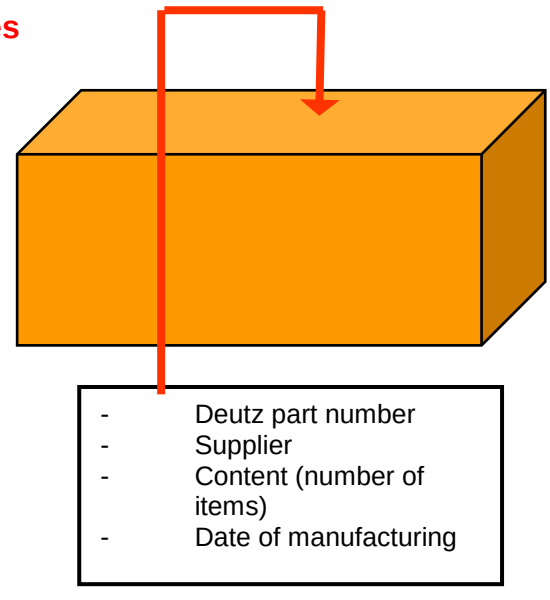
Import Packing

Sea- and Airfreight Packing: Labelling

Labelling sea/airfreight box, water-resistant printed

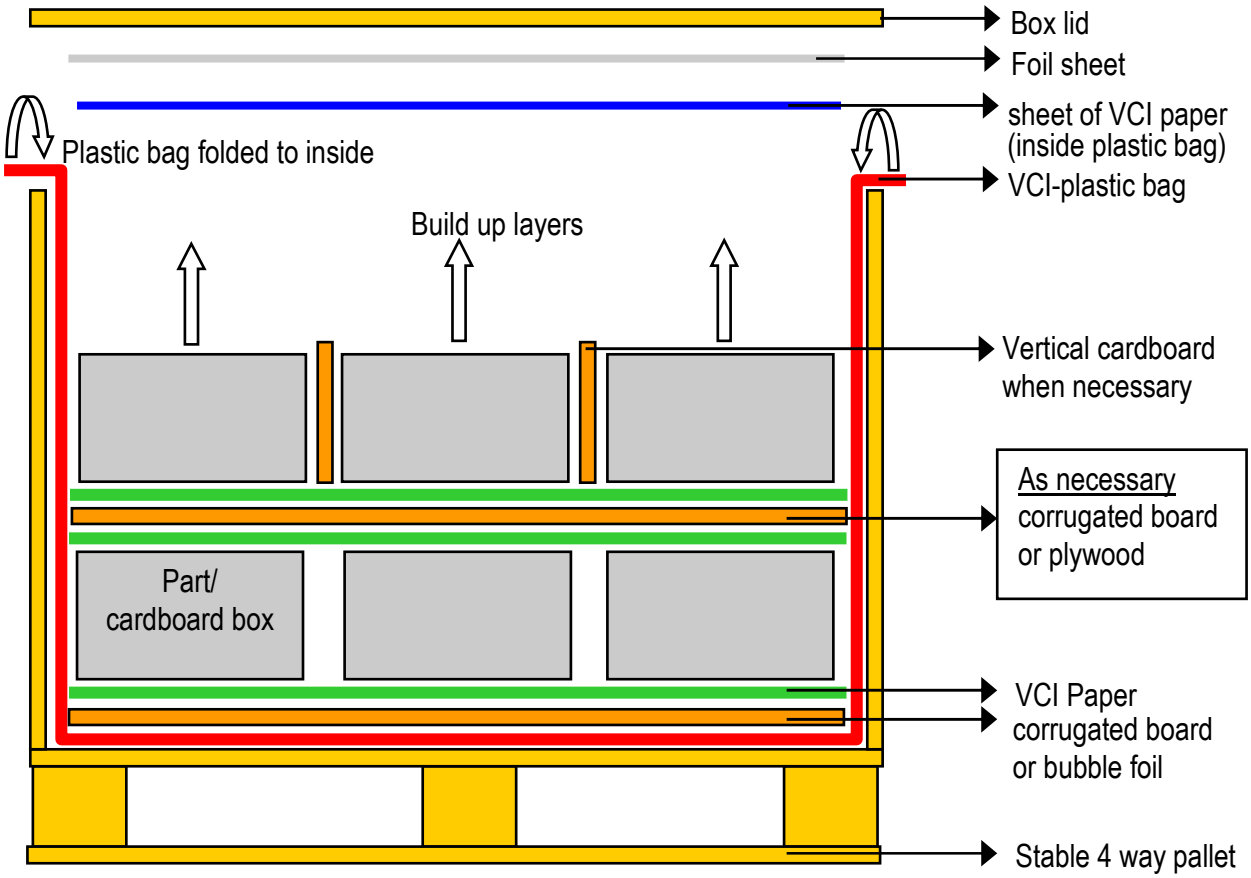


Single cardboard boxes



Import Packing

Sea- and Airfreight Packing: Packing Set-up



Engine Packing (CBU)

Determination of the packaging used:

The packing of engines (CBU) is oriented to the requirements of the customer, the transport route and the technical possibilities resulting from the geometrical data of the engine.

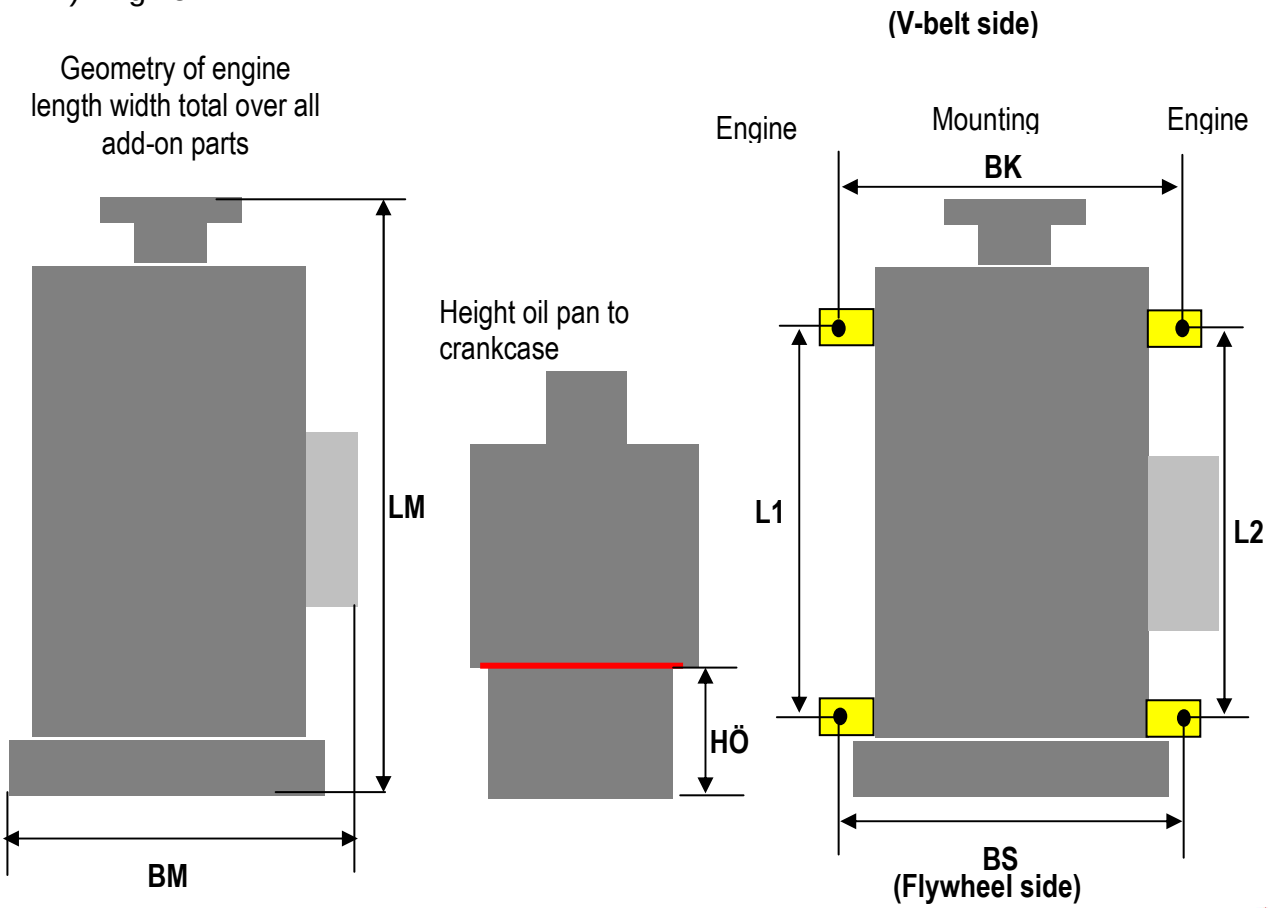
The criteria for selection are:

- dimensions: length, width, height, form of the oil pan and weight of the engine
- recyclable steel transport frames or wooden transport frames
- mounting / Engine suspension
- geographical location of the recipient site
- land transport (truck), container transport, sea or air transport (general cargo)
- economic viability
- availability of an existing frame type for the relevant engine design

The customers of DEUTZ AG select in coordination with Sales/installation consultants the relevant engine transport frame from the packing area of the notebook which documents the available modules (=packaging variants).

Reference dimensions for engine & transport frame

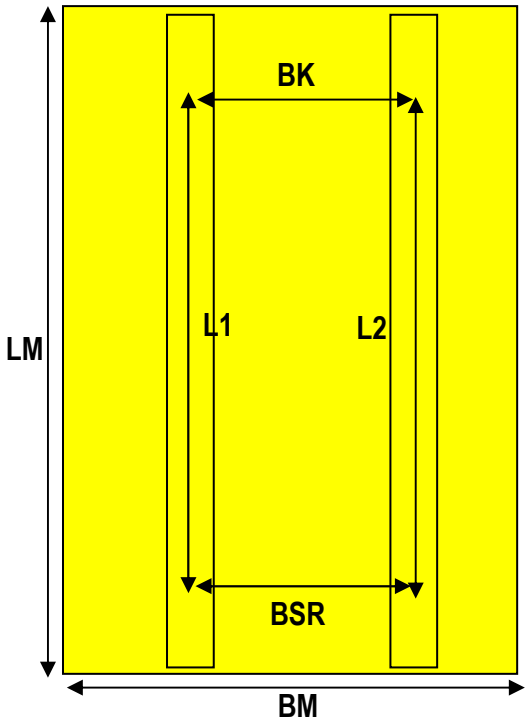
A) Engine



Engine Packing (CBU)

Reference dimensions for engine & transport frame

B) Transport frame



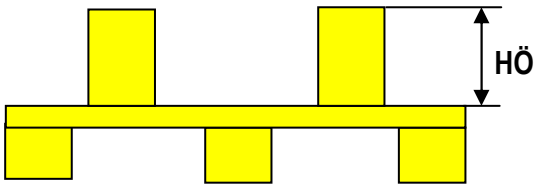
LM = Max. length of engine over all add-on parts

BM = Max. width of engine over all add-on parts

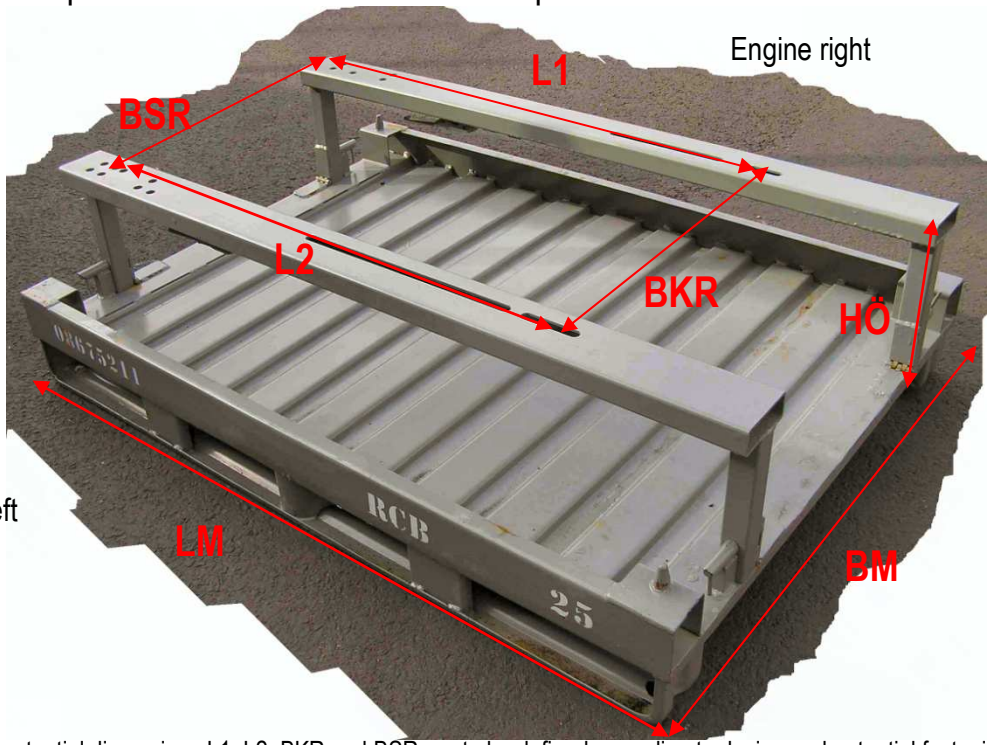
BSR = Width of gap transport bracket/ engine suspension from hole to hole (centre) flywheel side

BKR = Width of gap transport bracket/ engine suspension from hole to hole (centre) V-belt side

HÖ = Height from lower edge of oil pan (oil sump), to lower edge of crankcase (sealing surface): mounting bracket



C) Sample dimensions on the steel transport frame

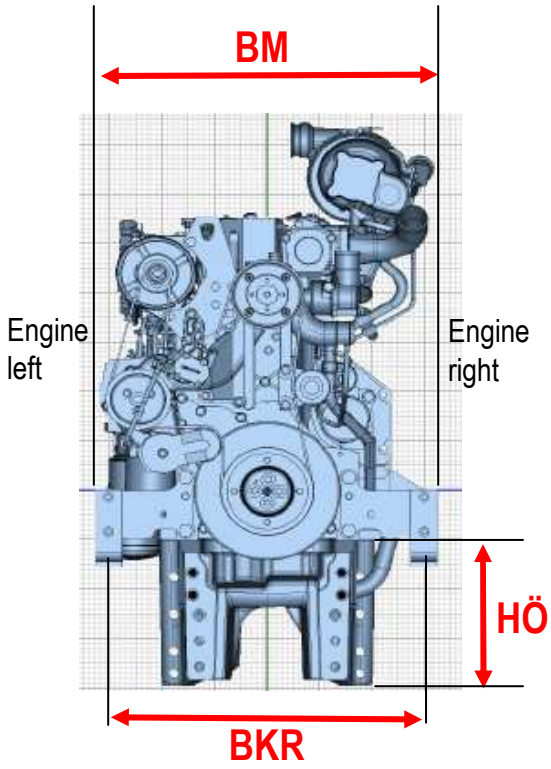


The potential dimensions L1, L2, BKR and BSR are to be defined according to design and potential fastening points into n variants e.g. L1a, L1b, L1c

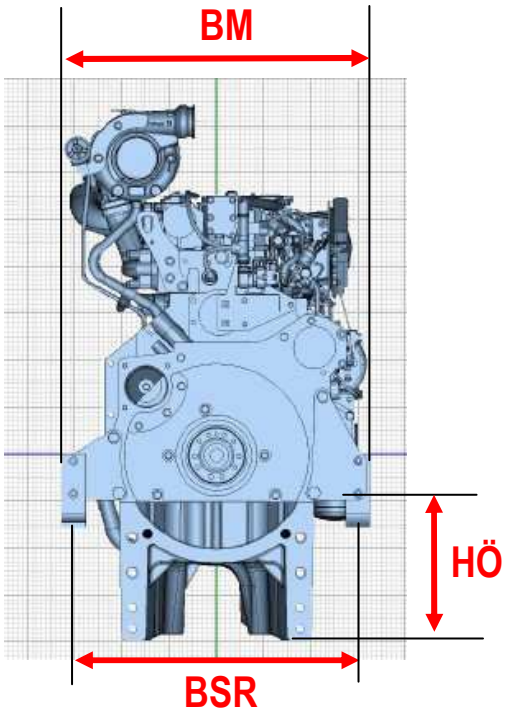
Engine Packing (CBU)

Reference dimensions for engine & transport frame

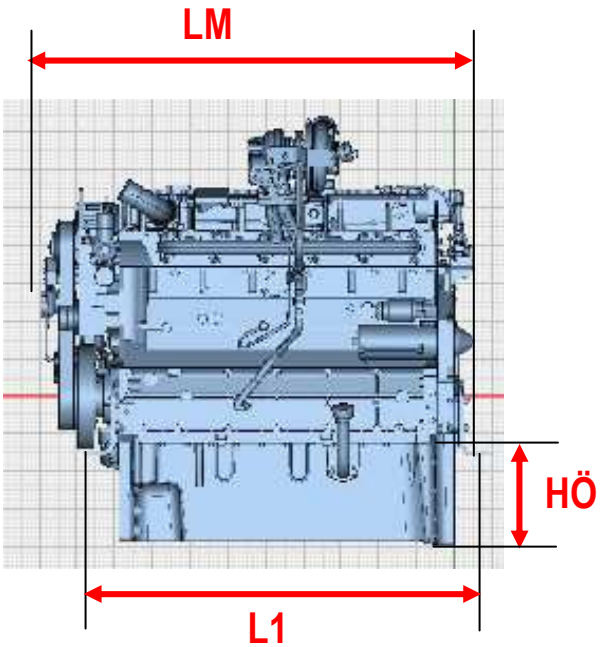
D) Dimensions on the engine



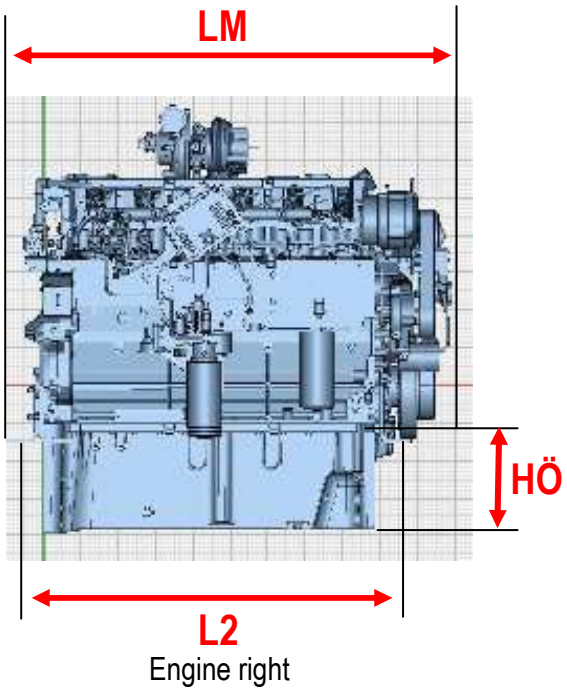
View V-belt side



View flywheel side



Engine left



Engine right

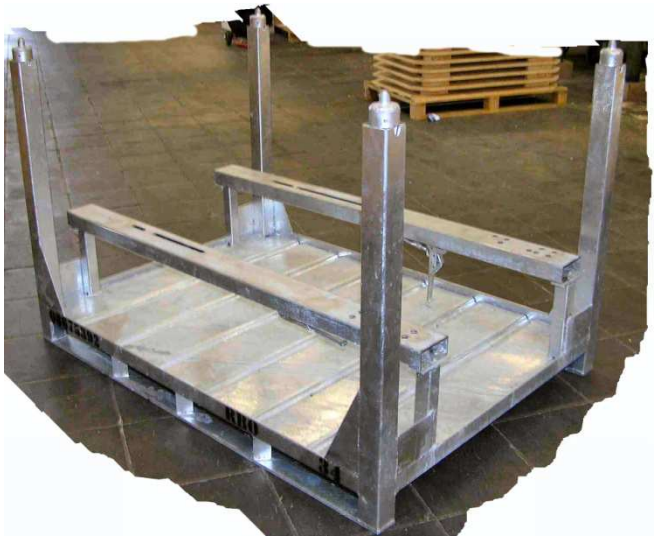
Engine Packing (CBU)

Steel transport frame

Simple steel pallet

Patented steel pallet with folding supports and clamping lock

Steel frame for double-layer loading



Engine Packing (CBU)

Wooden transport frame, variant examples

Simple 2-way frame

Simple 4-way frame

Frame with open cross-member structure

Frame with pallet base

Engine Packing (CBU)

Example of carrying and loading sequence

Engines at conveyor end

Aligning

Attachment of fasteners

Mounting

End check

Transfer to exit

Buffer before exit

Outgoing goods

Floor conveyor truck on WA

Automatic loading onto truck

Unloading with roller conveyor in store

Transfer to store

Exit from store

Preparation for shipping

Loading onto truck

Engine Packing (CBU)

Processing steel transport frames in circulation

In order to avoid later irregularities in the transport frame account management, we request that you observe the following points:

Outgoing transport frames at DEUTZ AG
The number of frames being shipped can be seen on the shipping papers. These documents are enclosed with every delivery. Changes to the unit number data on the shipping papers are ***not permitted.***

Transport frame returns to DEUTZ AG
For the return of the DEUTZ transport frames or the fastening material, you will receive a filed out form, in which the number per type of frames to be returned or the fastening material are to be entered. This printed form is to be enclosed as an accompanying paper for ***every*** consignment.

We point out that empty transport frames or fastening material may only be returned to the address indicated on the printed form as described in the Appendix to the Packing Handbook.

In order to ensure an optimum transport price, the forwarding agent who has sent the engines must be commissioned with the return of the empty items.

The empty items should be loaded as follows:

Steel transport frame
Stack to maximum 2000 mm without strapping band

Fastening material
Separated according to type (front/rear/right/left) in a suitable container.

For technical production reasons, transport frames and fastening material can only be returned separately.

DEUTZ AG provides containers for the return of the fastening material; these can be requested by **fax: 0049 (0) 221 / 822 3372**.

Engine Packing (CBU)

Processing steel transport frames in circulation

Account statement

The entire incoming and outgoing movements of the transport frames are summarised in the "Account Statement for Transport Containers".

An account statement is sent to the customer once a quarter for confirmation purposes. The confirmation must be made immediately or resultant differences must be indicated straightaway. If no differences have occurred and the confirmation (account statement with your stamp) is present, the shipping and return receipts confirmed in this account statement can be erased.

Use other than that intended

The use of DEUTZ' own transport frames/containers for other purposes is prohibited, i.e.:

DEUTZ steel transport frames must not be given to third parties.

Steel transport frames that are demonstrably destroyed, damaged or lost will prompt DEUTZ AG to invoice the casual party

Steel transport frames must be returned to DEUTZ AG after a maximum turnaround time of four weeks so that the supply of engine assemblies with means of transport can be ensured and engines can be delivered on schedule.

Engine Packing (CBU)

Accessories enclosure:

On the sales side the criteria of customer wishes, parts scope, bulkiness and weight are used to determine whether a disposable enclosure or a collective enclosure should be sued when delivering the engines.

A) Individual enclosure:

Before packing, all parts are checked by two employees for parts number, designation, quantity and damage (visual inspection, dual checking principle).
Only after this are the parts packed vibration-free and padded in the shipping cartons. Only packaging material from the DEUTZ order list is approved. The packing may only be carried out by trained personnel. Problems arising when packing components due to technical or qualitative reasons must be reported to the Shipping Management of DEUTZ AG Logistics.

Workflow / Material flow:

1. Taking the order-relevant, picked parts spectrum out of the warehouse.

2. Provision of the packing units according to an article list on the packing table.

Parts list

Parts order layout

Parts per packing item

Packaging

Grouping, storage condition until engine shipping.

Engine Packing (CBU)

Accessories enclosure:

B) Collective enclosure:

A packing item is formed for each order, containing all loose parts for the entire order.
This enclosure must be provided separately on a shipping pallet.
Orders with collective enclosure are prepared and handled before packing in the same way as for the individual enclosure. The smallest possible packaging material is selected for packing in the carton/sea crate. A weight restriction of max. 1t / pallet must be observed here. The packing items must be secured on the shipping pallet with a strapping band or shrink-wrapping.

4. Individual and collective enclosure shipping:

Individual enclosure on the engine:
The individual enclosure boxes or cartons must n o t be fastened on the engine. Exception: flat and lightweight containers in the polythene bag (max. 500g) which are fastened securely with adhesive tape on the protective film of the engine. Enclosures (max. 500g) for engines without film protection hood are fastened with clips at a suitable place to prevent damage.
Individual enclosures > 500g must be fixed on the transport frame with cable ties/ adhesive tape, without the contour (total length / width) of the frame dimensions being exceeded.
If the dimensions of the packing items do not allow this, the individual enclosure must be provided with the order separately on a disposable pallet. The individual packing items must be secured together, as with the collective enclosure.

The following generally applies:

The geometrical data of the packing items from the orders must be checked before putting into storage and entered in the shipping and warehousing IT. If discrepancies between the data and the actual circumstances are discerned before loading (loading volume too large), the order data must be adapted.

Examples:

Not on engine

Projection

Loose stowage

Exception on engine

The collective enclosure is provided for the order on disposable pallet.

Engine Packing (CKD)

Various customers and licensees order their engines as "**C**ompletely **K**nocked **D**own" supply scopes. This means that DEUTZ ships the engines and the engines are then
constructed at the customer or licensee in their own assembly.
The parts are shipped in the export and the packing is carried out by service providers
who procure these parts from the series production business.
The same conditions apply here for the packing, as for the procurement of engine parts from outside Europe.
Customers and order-specific special features are taken into account when packing the components.
Comparable, general instructions for the packing are available to the import for this, in order to ensure optimum parts protection.

1.) DIN, standard and small parts (bulk goods such as screws, buts, washers, sealing rings etc.)

- Weigh loose parts, count
- Fill parts into polythene bag, close bag and mark with parts number and quantity
- Line carton with VCI paper
- Place filled polythene bag in carton
- Fold VCI paper closed, close carton
- Place carton in transport unit (crate)

2.) Stack packaging in individual carton (e.g. sleeve, hose line, holder, console, crankshaft, pistons, piston rings, bearing shells, bearings, fuel pumps, small V-belt pulley, tensioning pulley, precision parts, exhaust turbocharger)

- Line carton with VCI paper
- Place filled polythene bag in carton
- Place/ Lay/ Stand parts in the carton
- If required use intermediate layer/ divider/ padding material
- Fold VCI paper closed, close carton
- Place carton in transport unit (crate)

3.) Simple packing in the sea box (e.g. metal plates, V-belts, plastic lines, oil lines, lube oil pumps)

- Line sea crate with VCI film bag
- Place parts in transport unit
- Close VCI film bag, put on covering film

Engine Packing (CKD)

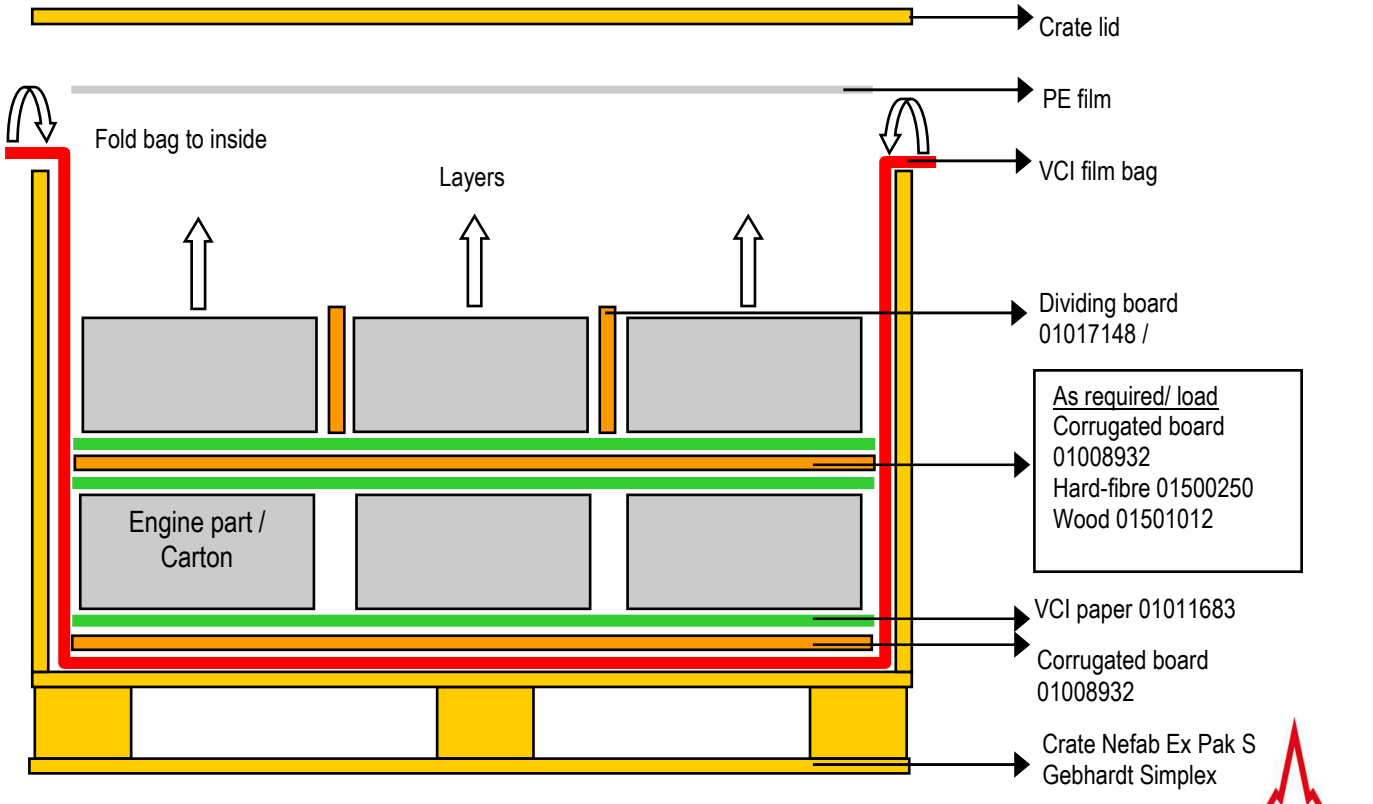
4.) Simple layer packing in the sea crate (e.g. oil filter, air filter, fuel filter, pre-separator, camshaft, connection housing, flywheel, large V-belt pulley, front cover)

- Line transport unit (crate) with VCI film bag
- Place parts slip-free in the transport unit (parts mutually support one another)
- According to requirements, use corrugated board/ hard-fibre/ wood + VCI sheet as intermediate layer
- Close VCI film bag, put on covering film

5.) Layer packing with vertical inserts/compartment frames (e.g. starter, Geno, crankcase, flywheel, cylinder tube, injection pump, cooler, MAG, cylinder head, oil bath air filter, exhaust turbocharger)

- Line transport unit (crate) with VCI film bag
- Insert corrugated board as base layer, add VCI sheet
- Line up parts in the layer, insert dividing board/compartment frame between parts
- Cover layer with VCI
- Depending on load, corrugated board/ hard-fibre/ wood + add VCI sheet
- Form further layers, cover last layer with VCI sheet and corrugated board
- Close VCI film bag, put on covering film

6.) Crate packing diagram



Engine Packing (CKD)

7. Notes on the CKD packing

- Series packing material such as VCI paper, wooden pallets and neutral packing. must be reused (material must be clean)
- Packages for individual shipping Southeast Asia (China, Korea) must be supplemented with wax linen.
- Use as few packing materials as possible, as many materials as necessary.
- Parts shipping in series recyclable packaging (small load containers, K1, Gibo) is possible after time comparison and coordination with DEUTZ Global Logistics.
- Line cartons in individual shipping (without sea crate) with VCI paper or insert VCI film bag, wrap round the outside with suitable film or coated cartons.
- Changes to packing materials and methods of working must be approved by DEUTZ Global Logistics.
- Question and optimisations in respect to packaging must be clarified with DEUTZ Global Logistics before shipping.

Appendix

Notes on Corrosion Protection

1. The Problem of Corrosion

Corrosion on components leads time and again to complaints and faults, in particular during the corrosive climate in the months from October to May. The reasons for corrosion are discussed in detail, analysed and the causal agent is sought depending on the individual case. Finally recurrent errors in the handling of the components and corrosion protection are explained and recorded. At the same time, the corrosion protection is often associated with the transport p a c k i n g .

However, corrosion protection, which is both a component of the parts quality as well as the parts packing, is crucial.
It is often not clear when and how corrosion has resulted, as packing alone is not the cause of corrosion but rather all external factors that give rise to corrosion: Damp, air, pollutants, storage, climate, transport, handling.
The search for the causes of corrosion and their avoidance is therefore a general task, which requires a common basis in order to correctly tackle the problem of corrosion.

2. Causes and Formation of Corrosion

Corrosion according to DIN EN ISO 8044: "C*orrosion is the interaction between a metal and its environment which results in changes in the properties of the metal and which may often lead to impairment of the function of the metal, the environment, or the technical system of which these form a part. In most cases this reaction is of an electro-chemical nature; but sometimes it can be also of a chemical or metal-physical nature".*

Corrosion can be a chemical reaction between a metal and a reactive or unstable gas, liquid or another substance.
Corrosion can be caused by an electrical reaction between two different metals.
Corrosion can be an electro-chemical reaction between dust or fungi and a metal surface.

Corrosion changes the chemical and physical structure of the metal

Appendix

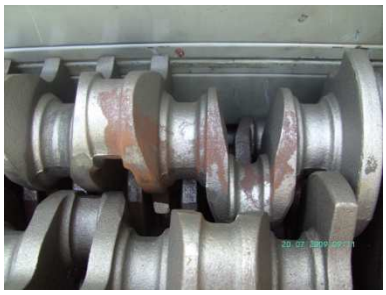
Notes on Corrosion Protection

3. Types of Corrosion

Types of corrosion occurring in practice

Overall corrosion / general rust "flash rust"





The surfaces are discoloured but not damaged. A cleaning or reworking is usually possible.

Pitting corrosion

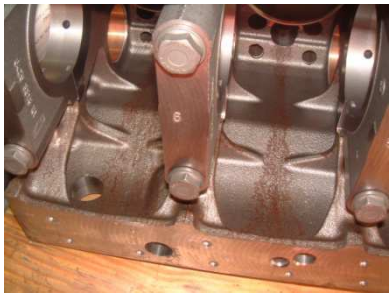


The surfaces have undergone significant attack and have a rough surface as though "eaten", usually irreparable

Stress corrosion cracking, crystalline corrosion, crevice corrosion and contact corrosion have so far not been determined as a damage characteristic in the area of transport and packing.

4. Causes of Corrosion, Examples

Processing residues (wash water):
The component was not completely dried after processing and liquid runs out of the bore holes over the component during shipping and storage. Evaporation of the liquid resulted in corrosion.
Cause: Residual moisture
Measures: Drying after processing, blowing out all holes and cavities, additives in the wash water, suitable dry preservation



Incorrect storage (rain water, ice, snow)
The components were exposed to the weather without protection before and during shipping. The short-term preservation was consequently washed off and massive corrosion resulted in a short time due to air and moisture.
Cause: Effects of the weather
Measures: Dry, protected storage and transport

Appendix

Notes on Corrosion Protection

4. Causes of Corrosion, Examples

Condensation (climate)
The component packed in a damp environment or (air) humidity from the environment has precipitated on the component due to the climate: dew, “perspiration” condensation
Cause: Air humidity around component over several weeks
Measures: Pack in a dry environment, closed packaging with suitable dry preservation

Ambient air & storage time
The components were in the dry store only with short-term preservation over a longer period of time. After the active period of the short-term preservation, corrosion begins evenly on all surfaces.
Cause: Storage too long, incorrect preservation
Measures: Long-term preservation, stock checking

Body fluids
The component was touched with moist hands or sweat dripped on the surfaces. Corrosion results partially at the contact points
Cause: Incorrect handling
Measures: Gloves, suitable clothing, air-conditioned rooms

Damp packaging
Water has penetrated the packaging during transport and the components were in direct contact with water. Corrosion results at the contact points
Cause: Storage or transport during precipitation
Measures: Dry storage, loading and transport in a dry, additional packaging material e.g. film

Appendix

Notes on Corrosion Protection

5. Corrosion Protection Methodes

Treated surfaces

Metallic surfaces are sealed using various methods so that no ambient influences can have a corrosive effect. Materials are brought into direct, permanent contact with the metal here. Galvanisation: e.g. chrome plating, nickel plating, zinc plating, chromating
Painting: Priming, rust protection coat, paint coat, stove enamel finishing
Oil blackening.
Corrosion is possible due to mechanical damage (scratches, cracks, fractures) to the applied surfaces.
Release for application: The surface treatment is clearly specified in the documentation (parts drawing, production specifications, standard) and required by DEUTZ on the construction side.

Additives in cleaning media (wash water)

Components are washed after processing, the wash water containing 2-5% corrosion protection additive. After the components have been c o m p l e t e l y dried, residues of the additive remain on the components and form a very thin, usually invisible, temporary corrosion protection film. This protective film protects the surfaces for several weeks against corrosion from ambient influences (air humidity and the harmful materials it contains). The prerequisite for a good effect is storage in heated and closed rooms. Direct contact with water (rain, fog, condensation) removes the protective film as does touching the surfaces.
The components can be used without further cleaning. The corrosion protection is adequate for short storage times < 6 weeks and road transport. Additives and wash water must not have any corrosive constituents and must be applied according to the manufacturer's instructions.
Release for application: The additives in the wash medium are described in the technical description and safety data sheet. All ingredients must be known and corresponding protective measures must be indicated. The release is issued by a note on the design drawing, and/or in the production specifications, or in the order text, as the cleaning media are a component of the production process.

Adhesive corrosion protection agents (oil, grease, wax, paraffin)

Metallic surfaces are sealed with liquid substances so that corrosive ambient influences are countered. Chemicals usually containing oil and/or grease are used for this, these being applied using an immersion bath, spray or brush. Corrosion protection oils are primarily utilised nowadays, with greases and waxes only being used for long-term preservation. The agents can be applied easily and have to be thoroughly removed before using the component so that the component
functioning is not impaired. The components have to be dry before application, so that moisture is not trapped and no corrosive joints result. The corrosion protection film is damaged by touching the preserved components. Oils and greases attract particles (dust, cuttings etc.) and packaging (cardboard, film) adheres to the surfaces, thereby causing undesired reactions that are corrosive on the metal surfaces. Likewise, moisture entrapped
by oils can lead to corrosion on the surfaces.
Release for application: Only by clear indication on the design drawing for the component.

Desiccant bag (“silica Gel”)

Such agents are not corrosion protection but only serve to absorb the air humidity in a package for a limited period of time. Many desiccant bags are produced on a mineral salt basis and can promote corrosion when stored or transported for longer periods. Desiccant bags whose filling is made from alumina are safe, but only for absorbing air humidity.
Release for application: Only as additive in packing instructions.

Appendix

Notes on Corrosion Protection

5. Corrosion Protection Measures

Dry preservation with VCI paper or VCI film

VCIs are volatile corrosion inhibitors contained in various packaging materials such as paper, film or deposits. Gaseous corrosion inhibitors form from air and VCI within a closed VCI packaging. The active agents in the closed packaging form an invisible protective film on metallic surfaces. The VCI saturated ambient air in the closed packaging also displaces air humidity.
The VCI corrosion protection volatilises after opening the packaging as soon as the components come into contact with ambient air. The components do not need to be treated before use after unpacking. The corrosion protection is sufficient for medium storage times of up to 12 months and longer (depending on the type of storage and if it is suitable without restrictions for sea, air and road transport. The prerequisite for VCI corrosion protection is the correct application in accordance with the manufacturer's instructions and the packing of dry, residue-free components.
Release for application: VCI packages are generally released at the incoming and outgoing goods. However, the datasheets and technical specifications of the manufacturers of the relevant VCI packaging materials must be available. If this does not involve manufacturers approved by Deutz (Cortec/ Excor, Finck&Co, Brangs&Heinrich), individual releases for the relevant application will be necessary.

Dry conservation with Intercept film

Intercept corrosion protection is based on a reaction between particles in the ambient air and the porous copper particles contained in the Intercept film. In contrast to conventional preservation, treatment occurs without further chemicals and the air around the components is free of the agents causing corrosion. Gas emissions and other undesirable side effects do not occur. Intercept does not have any negative effects on non-metals such as plastic, rubber, fabric. The ultraviolet resistance of the Intercept film is also ensured after yeas when stored in the open air. The effect of Intercept does not volatilise when opening and closing the package again either. A guarantee for up to 12 years corrosion protection is given by the manufacturer. For safe packaging, desiccant bags with alumina for absorbing residual moisture within the foil packaging must be used. The number of such bags must be specified.
Release for application: A corresponding warranty declaration and the handling instructions of the manufacturer (Comptrade / Partner) must be available for the relevant application. An internal cost invoice may have to be compiled if the costs vary significantly in comparison to other preservation methods and requirements.

Appendix

1. Overview of the DEUTZ Packaging

Large load carriers

Container	For crankshaft 1012/13	0867 5202	C3E1	Crankshafts from Porz plant
Container	For camshaft 1012/13	0867 5203	C3E2	Camshafts from Porz plant
Container	For crankcase 1012/13	0867 5264	C3E3	Crankcases 1012/13/2013
Container	For crankcase 1011	0867 5265	C3E4	Crankcases 1011
Container	Steel container, folding	0867 5320	C3E5	Cylinder head, flywheel, Öwa, SAE
Container	For camshaft 912/913	08675350	C3E6	Camshafts from Deutz plant
Container	Order picking box	0867 5188	CCB27	Order picking at Porz plant
Container	FM order picking box	0867 5311	CCB28	None
Euro mesh box	800 x 1200 mm	0867 5226	C3	Transport container
Folding box	1200 x 800 x 930 mm	0867 5150	K1	Transport container
SmartBox	1200x800x1000 plastic	0867 5407	GLT1280	Transport container

Paletts, wooden frames and accessories

Euro pallet	1200 x 800 mm	0867 5527	P1	Transport pallet
Deutz pallet Euro format	1200 x 800 mm	0867 5438	P1X	Transport pallet with riveting
Mounting frame	Wood 1200x800x200	0867 5353	PCB1	Mounting frame for Euro pallet
Industrial pallet	1000 x 1200 mm black	0867 5012	PB1	Transport pallet
Pallet	1200 x 800 mm marked green	0150 1017	-	Storage pallet
Pallet	400 x 800 mm disposable	0150 1035	-	Shipping material
Pallet	1200 x 800 mm disposable	0150 0800	-	Shipping material
Pallet	800 x 600 mm disposable	0150 0801	-	Shipping material
Pallet	1200 x 800 mm	0150 0849	-	Shipping material
Pallet	1000 x 1200 mm	0150 0850	-	Shipping material
Cover for mounting frame	1000 x 1200 mm plastic	0867 5370	PB44	Cover for PCB1
Intermediate layer	745 x 1150 x 6	0867 5429	ZW1299	Intermediate layer for PCB1 (ZW1305 ung.)
Pallet	1100x1350x156	0867 5420	PB46	Cooling system 250 KvA, SM3 Stute
Mounting frame	1100x1350x200	0867 5421	PCB2	Cooling system 250 KvA, SM3 Stute
Intermediate layer / Cover	1100x1350x10	0867 5422	ZW1303	Cooling system 250 KvA, SM3 Stute

Small load carriers & accessories

Small load carrier	400 x 300 x 147 mm	0867 5571	KL4314	Transport container
Small load carrier	400 x 300 x 213 mm	0867 5572	KL4321	Transport container
Small load carrier	400 x 300 x 280 mm	0867 5573	KL4328	Transport container
Small load carrier	600 x 400 x 147 mm	0867 5574	KL6414	Transport container
Small load carrier	600 x 400 x 213 mm	0867 5550	KL6421	Transport container
Small load carrier	600 x 400 x 280 mm	0867 5551	KL6428	Transport container
Small load carrier	400 x 300 x 280 mm	0867 5406	KL4129	Small load carrier conductive, black
Cover for small load carrier		0867 5552	KL 64	Small load carrier
Cover for small load carrier		0867 5575	KL43	Small load carrier
Intermediate layer	For small load carrier type 43..	0867 5577	ZW4331	Small load carrier
Intermediate layer	For small load carrier type 64..	0867 5579	ZW6431	Small load carrier
Locking plate	Locking plate	0867 5553	SP1218	Small load carrier
Cover plate	Cover plate for small load carrier set pallet	0867 5554	A1218	Small load carrier
Small load carrier	600 x 400 x 147 mm	0867 5595	KL6413	Small load carrier for cylinder head gaskets, purple
Small load carrier	800x 600 x 147	0867 5596	KL8612	Small load carrier for cylinder head gaskets, purple
Small load carrier	600 x 400 x 280 mm GREY	0867 5440	KL6430	For oil dipsticks
Cover for small load carrier	GREY	0867 5441	KL65	For oil dipsticks

1. Overview of DEUTZ Packaging

Workpiece carriers

Workpiece carrier	For control rod 1012/13	0867 5201	PB4	K1
Workpiece carrier	Cover for C3E1 - 6	0867 5258	PB41	Steel container C3E1,2,3,4,5
Workpiece carrier	Cover for crankcase 912/13	0867 5295	PB42	For crankcase 912/1913
Workpiece carrier	Cover for crankcase 912/13	0867 5296	PB43	For crankcase 912/1913
Workpiece carrier	For control rod 1011/12	0867 5198	WST001	KLT6428
Workpiece carrier	For crankshaft 1011	0867 5230	WST003	C3E1
Workpiece carrier	For camshaft 1011	0867 5236	WST004	C3E2
Workpiece carrier	1200 x 770 x 320 mm	0867 5237	WST005	Compartments for VD1011, Gibo
Workpiece carrier	For cylinder head 1011	0867 5240	WST007	K1, C3E5
Workpiece carrier	For cylinder head 1012/13	0867 5244	WST009	C3E5, Gibo
Workpiece carrier	For cylinder head 912/913	0867 5245	WST010	Gibo
Workpiece carrier	For gear wheels	0867 5246	WST011	K1
Workpiece carrier	For crankcase 1011	0867 5266	WST012	C3E4 vertical / board
Workpiece carrier	1170 x 770 x 150 mm	0867 5268	WST013	Compartments for fan wheel, K1
Workpiece carrier	For lube oil pump 1011F	0867 5269	WST014	Gibo
Workpiece carrier	1170 x 770 x 60 mm	0867 5271	WST016	Compartments for flywheel
Workpiece carrier	For valve tappet 1011	0867 5284	WST017	KLT6428
Workpiece carrier	For piston 1011/1013	0867 5312	WST019	K1
Workpiece carrier	For roller tappet 1012/13	0867 5316	WST020	Grey+Green= Bosch, White=INA
Workpiece carrier	For valve tappet 1012/13	0867 5319	WST021	KLT6428
Workpiece carrier	1140 x 770 x 9.5 mm wood	0867 5321	WST022	For oil pan B/F4M 1012/13
Workpiece carrier	1140 x 770 x 9.5 mm wood	0867 5322	WST023	For oil pan B/F6M 1012/13
Workpiece carrier	For cast crankshafts Cologne	0867 5332	WST024	C3E1, Gibo
Workpiece carrier	Cooler casing	0867 5340	WST027	Casing for cooler
Workpiece carrier	For cylinder head 1015	0867 5341	WST028	C3E5, Gibo
Workpiece carrier	For shaft fuel pump	0867 5343	WST029	KLT4314
Workpiece carrier	For bearing shells	0867 5597	WST031	Federal Mogul
Workpiece carrier	For MAG	0867 5367	WST041	Mass compensation gear 912/913
Workpiece carrier	1800 x 790 x 350 mm	0867 5371	WST042	Compartments for VD912/913, Gibo
Workpiece carrier	Cylinder tube 912, 2-part base and stamped part	0867 5380	WST045	Cylinder tube 912/913/914 Euro format
Workpiece carrier	Piston cooling nozzle TCD 2013 4V	0867 5383	WST049	KLT6421 / Piston cooling nozzle
Workpiece carrier	Compartment frame 118x76x16cm light grey	0867 5389	WST050	For oil cooler housing 2012/13 with screws
Workpiece carrier	Workpiece carrier for injection pumps 2011	0867 5391	WST052	Injection pumps 2011
Workpiece carrier	Workpiece carrier cylinder head 2013 4V truck	0867 5396	WST053	Cylinder head TCD 2013 4V / 4+6-cyl.
Workpiece carrier	Valve train 2013 4 V	0867 5401	WST058	Valve control TCD 2013 4V / 4+6-cyl
Workpiece carrier	Workpiece carrier cylinder head gasket 2013 4V	0867 5398	WST055	Cylinder head gasket TCD 2013 4V / 4-cyl.
Workpiece carrier	Workpiece carrier cylinder head gasket 2013 4V	0867 5397	WST054	Cylinder head gasket TCD 2013 4V / 6-cyl.
Workpiece carrier	Workpiece carrier deflection lever measuring mechanism 2011	0867 5390	WST051	Deflection lever front cover 2011
Workpiece carrier	Insertion compartments 1160x740x175mm 4-com.	0867 5410	WST059	VAH ALU f. TCD2012/13 2V 6-cyl.
Workpiece carrier	Welded compartments 1162x740x175mm 7-com.	0867 5411	WST060	VAH ALU f. TCD2012/13 2V 4-cyl.
Workpiece carrier	Welded compartments 1160x741x175mm 3-com	0867 5412	WST061	VAH plastic f. TCD2013 4V 6-cyl.
Workpiece carrier	Welded compartments 1160x740x175mm 5-com.	0867 5413	WST062	VAH plastic f. TCD2013 4V 4-cyl.
Workpiece carrier	For oil cooler housing 2012/13 2V	0867 5415	WST063	Oil cooler housing 2012/13 Hengst 414/415
Workpiece carrier	For oil cooler housing 2012/13 2V with cup-shaped filter	0867 5416	WST064	Oil cooler housing 2012/13 Hengst 412/413 cup-shaped filter
Workpiece carrier	For oil cooler housing 2013 4V Hall 41	0867 5417	WST065	Oil cooler housing 2013 4V Hengst 416/417 TRUCK
Workpiece carrier	Impact protection crankcase 91X	0867 5419	WST066	Crankcase 91X impact protection

Workpiece carrier	For crankcase 2009	0867 5439	WST071	For crankcase 2009
Workpiece carrier	For cylinder head 2009	0867 5442	WST072	For cylinder head 2009
Workpiece carrier	For piston < 100mm	0867 5463	WST073	For piston
Workpiece carrier	For piston > 100mm	0867 5464	WST074	For piston
Workpiece carrier	For SCR type: X850	0867 5466	WST077	For SCR catalytic converter X850
Workpiece carrier	For SCR type: X911/711 base	0867 5467	WST076	For SCR catalytic converter X911/711
Workpiece carrier	For SCR type: X911/711 rear	0867 5468	WST075	For SCR catalytic converter X911/711

1. Overview of DEUTZ Packaging

Intermediate layers

Intermediate layer	For container C3E3	0101 1764	ZW	C3e3
Intermediate layer	1140 x 770 x 9.5 mm wood	0867 5194	ZW1280	Gibo
Intermediate layer	1140 x 770 x 3 mm plastic	0867 5197	ZW1281	Gibo
Intermediate layer	1170 x 760 x 10 mm plastic	0867 5241	ZW1285	Crankcase 1011, C3E4 middle layer 2 part
Intermediate layer	1120 x 720 x 10 mm plastic	0867 5242	ZW1286	Crankcase 1011, C3E4 base layer
Intermediate layer	1095 x 920 x 9.0 mm wood	0867 5280	ZW1287	CB3
Intermediate layer	1300 x 980 x 4 mm plastic	0867 5297	ZW1288	Crankcase 912/13 4L
Intermediate layer	505 x 190 x 2 mm spacer	0867 5335	ZW1289	Spacer crankcase 2013
Intermediate layer	For flywheel 912/913	0867 5336	ZW1290	RB22, vertical
Intermediate layer	For crankcase 1012/13	0867 5337	ZW1291	Abrasion-proof crankcase Porz
Intermediate layer	Insert compartments/Cavity	0867 5356	ZW1293	For compartment division Gibo/Pallet
Intermediate layer	Insert compartments/Cavity	08675357	ZW1294	For compartment division Gibo/Pallet
Intermediate layer	Comprising 0867 5356 + 0867 5357	0867 5362	ZW1295	
Intermediate layer	1200 x 1000 mm wood for crankcase blanks	0867 5366	ZW1297	PB1
Intermediate layer	1160x740x5mm plastic hollow cavity	0867 5409	ZW1302	For clean parts
Intermediate layer	1470x980x4mm PE black	0867 5423	ZW1304	Crankcase 912/13 6L
Intermediate layer	1170x770x10 plywood with strips	0867 5430	ZW 1306	Oil pan Agri Power 2013 4V
Intermediate layer	1150 x 745 x 6 plywood	0867 5429	ZW 1299	For PCB 1 base + intermediate layer

Prisms

Prisms	Middle prisms blue	0867 5272	-	Crankshaft 1012/13 f. C3E2
Prisms	Base prisms blue	0867 5273	-	Crankshaft 1012/13 f. C3E2
Prisms	Middle prisms green	0867 5274	-	Crankshaft 1012/13 f. C3E2
Prisms	Base prisms green	0867 5275	-	Crankshaft 1012/13 f. C3E2
Prisms	Base prisms natural 1190mm	0867 5277	-	Crankshaft 1012/2013 4-cyl. F. C3E1
Prisms	Base prisms red 780mm	0867 5278	-	Crankshaft 1013 6-cyl f. C3E1
Prisms	Middle prisms red 780mm	0867 5279	-	Crankshaft 1013 6-cyl f. C3E1
Prisms	Base prisms brown 1190mm	0867 5282	-	Crankshaft 1013 4-cyl f. C3E1
Prisms	Middle prisms brown 1190mm	0867 5283	-	Crankshaft 1013 4-cyl f. C3E1
Prisms	Base prisms natural 780mm	0867 5358	-	Crankshaft 1012/2013 6-cyl. F. C3E1
Prisms	Middle prisms natural 780mm	0867 5359	-	Crankshaft 1012/2013 6-cyl. F. C3E1
Prisms	Middle prisms natural 1,190mm	0867 5360	-	Crankshaft 1012/2013 4-cyl. F. C3E1
Prisms	Prism yellow 1190mm (both sides)	0867 5425	-	Camshaft 91x 3/4 Cyl C3E2 & C3E6
Prisms	Prism yellow 780mm (both sides)	0867 5426	-	Camshaft 91x 5/6 Cyl C3E2 & C3E6

Labelling

Insertion pocket	216 x 100 metal parts blank	0101 7044	-	Label holder f. C3E1-5
Insertion pocket	Red painted for Euro mesh box	0101 1620	-	Label holder f. C3, CB3...
Label loop	1.8 x 50 mm oval	0100 8295	-	Hook for label pockets
Adhesive labels	Goods labels for engine shipping	0101 1731	-	Shipping material
Label	3x cross perforated, DIN A4 single sheet	0101 7524		Label material WE
Label	Blank	0101 7032	-	Shipping paper/ Container label
Form	Technical order confirmation	0103 1437	-	
Accompany paper pocket	Self-adhesive 230x165mm C5 neutral	0101 7542		Label pocket for containers etc.
Shipping certificate empties	2x cross perforated, DIN A4 single sheet			

1. Overview of DEUTZ Packaging

Standard cardboard

Paperboard containers	200 x 133 x 120 mm	0100 7056	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	300 x 240 x 200 mm	0100 7062	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	400 x 300 x 300 mm	0100 7064	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	570 x 230 x 133 mm	0100 7073	universal	Shipping, enclosure
Paperboard containers	800 x 240 x 300 mm	0100 7076	universal	Shipping, enclosure
Paperboard containers	300 x 200 x 120 mm	0100 7669	universal	Shipping, enclosure
Paperboard containers	400 x 150 x 120 mm	0100 7670	universal	Shipping, enclosure
Paperboard containers	400 x 400 x 80	0100 7723	universal	Shipping, enclosure
Paperboard containers	750 x 700 x 1050 mm	0100 8256	universal	Engine paperboard
Paperboard containers	1100 x 880 x 1120 mm	0100 8259	universal	Engine paperboard
Paperboard containers	1300 x 880 x 1120 mm	0100 8260	universal	Engine paperboard
Paperboard containers	600 x 400 x 400 mm	0100 8261	universal	Shipping, enclosure
Paperboard containers	1600 x 800 x 1120 mm	0100 8344	universal	Engine paperboard
Paperboard containers	1180 x 780 x 800 mm	0100 8699	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	580 x 240 x 235 mm	0100 8934	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	1180 x 780 x 500 mm	0100 8935	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	690 x 240 x 235 mm	0100 8936	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	940 x 240 x 235 mm	0100 8937	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	560 x 240 x 300 mm	0100 9324	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	900 x 880 x 1120 mm	0100 9515	universal	Engine paperboard
Paperboard containers	1000 x 700 x 1050 mm	0101 1572	universal	Engine paperboard
Paperboard containers	680 x 450 x 450 mm	0101 1599	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	800 x 600 x 600 mm	0101 1631	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	400 x 400 x 200 mm	0101 1634	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	1000 x 400 x 300 mm	0101 1642	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	820 x 320 x 460 mm	0101 1650	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	1180 x 580 x 300 mm	0101 1653	universal	Shipping, enclosure / spare parts shipping
Paperboard containers	2200 x 820 x 950 mm	0101 1747	universal	Engine paperboard, multipack
Paperboard containers	800 x 600 x 330 mm	0101 7050	universal	Shipping, enclosure
Paperboard containers	1150 x 250 x 250 mm	0101 7124	universal	Shipping, enclosure
Paperboard containers	200 x 133 x 120 mm neutral	0101 7127	universal	Shipping, enclosure
Paperboard containers	300 x 200 x 120 mm neutral	0101 7128	universal	Shipping, enclosure
Paperboard containers	400 x 150 x 120 mm neutral	0101 7129	universal	Shipping, enclosure
Paperboard containers	400 x 300 x 200 mm neutral	0101 7130	universal	Shipping, enclosure
Paperboard containers	600 x 400 x 400 mm neutral	0101 7131	universal	Shipping, enclosure
Paperboard containers	300 x 240 x 200 mm neutral	0101 7132	universal	Shipping, enclosure
Paperboard containers	400 x 400 x 200 mm neutral	0101 7133	universal	Shipping, enclosure
Paperboard containers	560 x 240 x 300 mm neutral	0101 7134	universal	Shipping, enclosure
Paperboard containers	570 x 230 x 133 mm neutral	0101 7135	universal	Shipping, enclosure
Paperboard containers	800 x 240 x 300 mm neutral	0101 7136	universal	Shipping, enclosure
Paperboard containers	800 x 600 x 600 mm neutral	0101 7137	universal	Shipping, enclosure
Paperboard containers	800 x 600 x 330 mm neutral	0101 7138	universal	Shipping, enclosure
Paperboard containers	1150 x 250 x 250 mm neutral	0101 7139	universal	Shipping, enclosure
Paperboard containers	1410 x 750 x 1120 mm neutral	0101 7170	universal	Engine paperboard
Paperboard containers	1110 x 750 x 1120 mm neutral	0101 7171	universal	Engine paperboard

1. Overview of DEUTZ Packaging

Accessories

Staples	GSW 16-32	0100 9519	-	Shipping material
Edge protection	For 19 mm steel band	0100 9518	-	Shipping material
Edge protection	8 x 10	0138 5262	-	Shipping material
Edge protection	6x8x243 folded	0101 7118	-	Shipping material
Edge protection	8x8x230 folded	0101 7119	-	Shipping material
Adhesive tape	Transparent 50 mm	0101 1743	-	Shipping material
Adhesive tape	Paper wet adhesive or printed	0101 7043	-	Shipping material
Nail	121 x 3.8	0101 7046	-	Shipping material
Cardboard	Cut 2.3 x 750 x 1000	0100 1278	-	Shipping material
Paraffin paper	Sodium bicarbonate 500 wide	0100 4077	-	Shipping material
Paraffin paper	Sodium bicarbonate 1000 wide	0100 5478	-	Shipping material
Lead seal	12.7 mm	0100 3839	-	Shipping material
Lead seal	19 mm	0100 3841	-	Shipping material
Lead seal	For plastic strapping band	0101 7041	-	Shipping material
Lead seal	Apex steel 19 mm	0100 3841	-	Shipping material
Padding	940 x 235 mm	0100 8938	-	Shipping material
PVC band	Transparent 38 mm	0100 5506	-	Shipping material
PVC band	38 mm wide brown	0100 5555	-	Shipping material
PVC band	With printed label container for repair	without	-	Shipping material
PVC band	With printed label container for washing	without		Shipping material
Grooved nail	120 x 3.8	0101 1760	-	Shipping material
Grooved nail	2.5 x 60	0101 1550	-	Shipping material
Round-head nail	3.1/80	0101 7045	-	Shipping material
Round-head nail	121 x 3.8	0101 1750	-	Shipping material
Strapping band	Apex steel 12.7 mm	0100 3835	-	Shipping material
Strapping band	Magnus steel 19 mm	0100 3836	-	Shipping material
Strapping band	Plastic 11.5 mm	0101 7040	-	Shipping material
Strapping band	Plastic 12.5 mm	0101 1725	-	Shipping material
Wax linen	Self-adhesive 333 mm wide	0100 8244	-	Shipping material
Wax linen	Self-adhesive 1000 mm wide	0100 8245	-	Shipping material
Wax linen	1000 mm wide	0101 1546	-	Shipping material
Wax linen	500 mm wide	0101 1547	-	Shipping material
Corrugated board	1250 x 160 mm	0100 7576	-	Shipping material
Corrugated board	1250 x 400 mm	0100 7588	-	Shipping material
Corrugated board	1250 x 650 mm	0100 7591	-	Shipping material
Corrugated board	1350 x 1050 mm	0100 8932	-	Shipping material
Corrugated board	1050 x 230 VCI coated	0101 7148	-	Shipping material
Corrugated board	1050 x 570 VCI coated	0101 7178	-	Shipping material
Corrugated board	1350 x 230 mm	0150 0251	-	Shipping material
Corrugated board	700 mm wide	0100 5520	-	Shipping material
Corrugated board	1350 x 1050 VCI coated	0100 9823	-	Shipping material
Cut	430 x 450 mm	0101 1601	-	Shipping material
Cut	650 x 370	0101 1608	-	Shipping material
Cut	300 x 437 mm for TN 0101 1747	0101 1748	-	Shipping material
Cut hard fibre	1350 x 1050 x 3.2mm	0150 0250	-	Shipping material

1. Overview of DEUTZ Packaging

Boxes

STANDARD shipping

Box ExPak S	1400x1000x1070	0150 1436		Export / Import FAW KG
Box ExPak S	1400x1100x870	0150 1435		Export / Import FAW KG & CKD
ExPakS	2100x1130x700			Shipping
ExPakS	1370x1070x730	0150 1443		Shipping

EXTERNAL suppliers

COOLING SYSTEMS

Box ExPak S	1900x1500x580	Nefab Zg. 1566		Cooling systems ULM enclosure
Box ExPak P	1550x1150x420	Nefab Zg. 1744		Cooling systems Cologne enclosure
Box ExPak P/S	1800x1220x530	Nefab Zg. 1498		Cooling systems Ulm enclosure old
Box ExPak P	1230x1090x530			Cooling systems Ulm enclosure new

ENGINES

ExPakPS3	1180x780x1000			Box sea/air freight
ExPakS	1370x1070x920	0150 1436		Box sea/air freight
ExPakP	380x280x250	0150 1437		Box sea/air freight
ExPakP	1180x780x1000	0150 1043		Box sea/air freight
ExPakP	1180x780x750	0150 1418		Box sea/air freight
ExPakP	1180x780x615	0150 1423		Box sea/air freight
ExPakS	1760x1250x1250	0150 1506		Box sea/air freight
ExPakS	1560x1250x1250	0150 1505		Box sea/air freight
ExPakS	1360x1250x1300	0150 1504		Box sea/air freight
ExPakS	1360x1250x1030	0150 1503		Box sea/air freight
ExPakP	900x770x1050	0150 1350		Box sea/air freight
ExPakP	980x830x1050	0150 1350		Box sea/air freight
ExPakP	1280x750x1400	0150 1353		Box sea/air freight
ExPakP	880x690x1050	0150 1367		Box sea/air freight
ExPakPS	1580x750x1400	0150 1347		Box sea/air freight
ExPakPS	1850x1050x1400	0150 1033		Box sea/air freight
ExPakS	1850x1050x1400	0150 1033		Box sea/air freight
ExPakP	1250x1050x1050	0150 1029		Box sea/air freight
ExPakS	1450x1050x1400	0150 1031		Box sea/air freight
ExPakPS	1780x980x1400	0150 1368		Box sea/air freight
ExPakPS	1580x980x1400	0150 1369		Box sea/air freight
ExPakPS	1650x1050x1400	0150 1032		Box sea/air freight
ExPakPS	1250x1050x1400	0150 1030		Box sea/air freight
ExPakP	1110x750x1150	0150 1300		Box sea/air freight
ExPakP	1410x750x1150	0150 1299		Box sea/air freight
ExPakP	1380x980x1400	0150 1370		Box sea/air freight
ExPakP	1180x750x1400	0150 1371		Box sea/air freight
ExPakP	1080x730x1050	0150 1373		Box sea/air freight
ExPakP	980x560x1050	0150 1372		Box sea/air freight
ExPakP	730x560x1050	0150 1348		Box sea/air freight
ExPakP	1100x750x1050	0150 1028		Box sea/air freight

1. Overview of DEUTZ Packaging

Engine transport frames

RBO22	800 X 600 X 320	0867 5173		Engine transport frame
RCB029	1200 X 1000 X 465	0867 5281		Engine transport frame
RBO2	800 X 600 X 285	0867 5144		Engine transport frame
RCB32	1300 X 950 X 1150	0867 5375		Engine transport frame
RBO21	1000 X 700 X 225	0867 5145		Engine transport frame
RBO34	1400 X 1000 X MIN. 925	0867 5392		Engine transport frame
RBO23	1000 X 700 X 290	0867 5174		Engine transport frame
RCB25	1400 X 1000 X 465	0867 5211		Engine transport frame
RBO33	1000 X 700 X 225	0867 5377		Engine transport frame
RBO36	1600 X 1000 X MIN. 925	0867 5393		Engine transport frame
RBO23	1150 X 700 X 200	0867 5346		Engine transport frame
RCB24	1200 X 800 X 465	0867 5532		Engine transport frame
RDD30	1800 X 1000 X 455	0867 5205		Engine transport frame
RDD30	1200 X 800 X MIN. 685	0867 5342		Engine transport frame
RCB26	1200 X 800 X MIN. 685	0867 5234		Engine transport frame
REE22	1510 X 2110 X 1150	0867 5143		Engine transport frame
Wood	1600 X 1000 X 450	01501552		Engine transport frame
Wood	1100 X 740 X 340	01501139		Engine transport frame
Wood	750 x 580 x 229	01501364		Engine transport frame
Wood	1200 x 800 x 290	01501515		Engine transport frame
Wood	1600 X 1000 X 450	01501546		Engine transport frame
Wood	1400 X 740 X 340 MM	01501135		Engine transport frame
Wood	750 X 580 X 189mm	01501375		Engine transport frame
Wood	1300 X 770 X 210 MM	01501517		Engine transport frame
Wood	1400X1000X489	01501486		Engine transport frame
Wood	1700X 1390 X 300 MM	01501427		Engine transport frame
Wood	750X580X229 MM for sea packing	01501380		Engine transport frame
Wood	1400X1000X410	01501519		Engine transport frame
Wood	1800X 1200 X 600 MM	01501450		Engine transport frame
Wood	1900 X 1390 X 300 MM	01501428		Engine transport frame
Wood	750X580X229 MM	01501387		Engine transport frame
Wood	1200X1000X490	01501520		Engine transport frame
Wood	1400X850X 369	01501444		Engine transport frame
Wood	2000X 960X 160 MM	01501092		Engine transport frame
Wood	1800X1000X380 MM	01501416		Engine transport frame
Wood	1200X 800X 270 MM	01501524		Engine transport frame
Wood	1600X1000X540 MM	01500854		Engine transport frame
Wood	2230X850X200 mm	01500984		Engine transport frame
Wood	1800X1000X529	01501445		Engine transport frame
Wood	1800X1000X310 mm	01501540		Engine transport frame
Wood	1200X1000X540 MM	01500831		Engine transport frame
Wood	820X550X180	01500983		Engine transport frame
Wood	1700X 1200 X 140 MM	01501451		Engine transport frame
Wood	1400X1000X510m	01501558		Engine transport frame
Wood	1400X1000X540 MM	01500828		Engine transport frame
Wood	1100X 750X 194 MM	01500978		Engine transport frame

1. Overview of DEUTZ Packaging

Engine transport frames

Wood	1900X 1300 X 140 MM	01501452		Engine transport frame
Wood	1200X 800X 424 MM	01500713		Engine transport frame
Wood	750X640X120 MM	01500525		Engine transport frame
Wood	1900X1200X	01501478		Engine transport frame
Wood	1300X 850X 269	01501441		Engine transport frame
Wood	1000X640X120 mm	01500630		Engine transport frame
Wood	1600X1000X329	01501484		Engine transport frame
Wood	TCD 2013 L06 4V	01501150		Engine transport frame
Wood	1400X1000X380 MM	01501322		Engine transport frame
Wood	1600X1000X380 MM	01501323		Engine transport frame
Wood	1000X580X209MM	01501487		Engine transport frame
Wood	1000X640X210 MM	01500489		Engine transport frame
Wood	1200X 800X 380 MM	01501321		Engine transport frame
Wood	1100X750X229MM	01501366		Engine transport frame
Wood	1400X1000X449 mm	01501489		Engine transport frame
Wood	1000X 850 x 269 mm	01501341		Engine transport frame
Wood	6971200X770X389 MM	01501362		Engine transport frame
Wood	1750x1240x300MM	01501513		Engine transport frame
Wood	750 X 580 x 229 mm	01501349		Engine transport frame
Wood	1800X1000X370m	01501560		Engine transport frame
Wood	1400X 1000X 430 MM	01501566		Engine transport frame
Wood	1400 x 880 x 490 mm	01501571		Engine transport frame
Wood	1300X 750X 360 mm	01504042		Engine transport frame

Appendix

2. Empty container storage sites

Vol.->	0.4	0.8	1.6	2.4	3.2	4	4.8	5.6	6.4	7.2	8	8.8	9.6	10.4	11.2	12	12.8	13.6
Storage site->	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
Container type																		
1. Small load carrier (KLT)																		
KLT4314	96	192	384	576	768	960	1152	1344	1536	1728	1920	2112	2304	2496	2688	2880	3072	3264
KLT4321	72	144	288	432	576	720	864	1008	1152	1296	1440	1584	1728	1872	2016	2160	2304	2448
KLT4328	48	96	192	288	384	480	576	672	768	864	960	1056	1152	1248	1344	1440	1536	1632
KLT6414	48	96	192	288	384	480	576	672	768	864	960	1056	1152	1248	1344	1440	1563	1632
KLT6421	32	64	128	192	256	320	384	448	512	576	640	704	768	832	896	960	1024	1088
KLT6428	24	48	96	144	192	240	288	336	384	432	480	528	576	624	672	720	768	816
2. Container																		
C3 Euro	2	4	8	12	16	20	24	28	32	36	40	44	48	**52**	56	60	64	68
C3E5	6	12	24	36	48	60	72	84	96	108	120	132	144	156				
K1	8	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272
C3E1,2,3,4	2	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68
3. Pallet / Mounting frame																		
P1/ P1X	15	30	60	90	120	150	180	210	240	270	300	330	360	390	420	450	480	510
P1/ P1X stack	30	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020
P1+PCB	40	80	160	240	320	400	480	560	640	720	800	880	960	1040	1120	1200	1280	1360
4. WST ZW empty in containers (2 containers per storage site)																		
WST003 K1	60	120	240	360	480	600	720	840	960	1080	1200	1320	1440	1560	1680	1800	1920	2040
WST004 K1	60	120	240	360	480	600	720	840	960	1080	1200	1320	1440	1560	1680	1800	1920	2040
WST005 K1	28	56	112	168	224	280	336	392	448	504	560	616	672	728	784	840	896	952
WST007 C3E5	50	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
WST009 C3E5	50	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
WST010 C3E5	30	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020
WST011 C3E5	50	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
WST014 K1	30	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020
WST017 K1	80	160	320	480	640	800	960	1120	1280	1440	1600	1760	1920	2080	2240	2400	2560	2720
WST019 K1	180	360	720	1080	1440	1800	2160	2520	2880	3240	3600	3960	4320	4680	5040	5400	5760	6120
WST020 K1	88	176	352	528	704	880	1056	1232	1408	1584	1760	1936	2112	2288	2464	2640	2816	2992
WST021 K1	88	176	352	528	704	880	1056	1232	1408	1584	1760	1936	2112	2288	2464	2640	2816	2992
WST022 C3E5	40	80	160	240	320	400	480	560	640	720	800	880	960	1040	1120	1200	1280	1360
WST023 C3E5	40	80	160	240	320	400	480	560	640	720	800	880	960	1040	1120	1200	1280	1360
WST024 C3E5	60	120	240	360	480	600	720	840	960	1080	1200	1320	1440	1560	1680	1800	1920	2040
WST025 K1	34	68	136	204	272	340	408	476	544	612	680	748	816	884	952	1020	1088	1156
WST027 K1	160	320	640	960	1280	1600	1920	2240	2560	2880	3200	3520	3840	4160	4480	4800	5120	5440
WST028 K1	60	120	240	360	480	600	720	840	960	1080	1200	1320	1440	1560	1680	1800	1920	2040
WST031 K1	200	400	800	1200	1600	2000	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000	6400	6800
WST032 K1	100	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200	3400
WST033 K1	100	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200	3400
WST041 K1	60	120	240	360	480	600	720	840	960	1080	1200	1320	1440	1560	1680	1800	1920	2040
WST045 C3E5	200	400	800	1200	1600	2000	2400	2800	3200	3600	4000	4400	4800	5200	5600	6000	6400	6800

Appendix

2. Empty container storage sites

Vol.->	0.4	0.8	1.6	2.4	3.2	4	4.8	5.6	6.4	7.2	8	8.8	9.6	10.4	11.2	12	12.8	13.6
Storage site->	1	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
4. WST ZW empty in containers (2 cntainers per storage site)																		
WST049 K1	104	208	416	624	832	1040	1248	1456	1664	1872	2080	2288	2496	2704	2912	3120	3328	3536
WST051 C3E5	90	180	360	540	720	900	1080	1260	1440	1620	1800	1980	2160	2340	2520	2700	2880	3060
WST052 C3E5	250	500	1000	1500	2000	2500	3000	3500	4000	4500	5000	5500	6000	6500	7000	7500	8000	8500
WST053 C3E5	40	80	160	240	320	400	480	560	640	720	800	880	960	1040	1120	1200	1280	1360
WST054 K1	26	52	104	156	208	260	312	364	416	468	520	572	624	676	728	780	832	884
WST055 K1	26	52	104	156	208	260	312	364	416	468	520	572	624	676	728	780	832	884
WST058 K1	14	28	56	84	112	140	168	196	224	252	280	308	336	364	392	420	448	476
WST059 K1	118	236	472	708	944	1180	1416	1652	1888	2124	2360	2596	2832	3068	3304	3540	3776	4012
WST060 K1	64	128	256	384	512	640	768	896	1024	1152	1280	1408	1536	1664	1792	1920	2048	2176
WST061 K1	40	80	160	240	320	400	480	560	640	720	800	880	960	1040	1120	1200	1280	1360
WST062 K1	32	64	128	192	256	320	384	448	512	576	640	704	768	832	896	960	1024	1088
WST063 K1	40	80	160	240	320	400	480	560	640	720	800	880	960	1040	1120	1200	1280	1360
WST064 K1	50	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
WST065 K1	50	100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700
ZW1280 C3E5	80	160	320	480	640	800	960	1120	1280	1440	1600	1760	1920	2080	2240	2400	2560	2720
ZW1281 C3E5	400	800	1600	2400	3200	4000	4800	5600	6400	7200	8000							
ZW1302 K1	260	520	1040	1560	2080	2600	3120	3640	4160	4680	5200	5720	6240	6760				
ZW1306 C3E5	20	40	80	120	160	200	240	280	320	360	400	440	480	520	560	600	640	680
ZW4331 C3E5	2160	4320	8640															
ZW6431 C3E5	960	1920	3840															

Vol.->	0.5	1	2	3	4	5	6	7	8	9	10	11	12	13
Storage site->	1	2	4	6	8	10	12	14	16	18	20	22	24	26
Container type	#Containers													
Pallet / Mounting frame														
PB1	15	30	60	90	120	150	180	210	240	270	300	330	360	390
PB1 stack	30	60	120	180	240	300	360	420	480	540	600	660	720	780
ZW1297 on PB1	40	80	160	240	320	400	480	560	640	720	800	880	960	1040
PCB2 on PB46	40	80	160	240	320	400	480	560	640	720	800	880	960	1040
Container														
CB3	3	6	12	18	24	30	36	42	48	54	60	66	72	78

Vol.->	0.5	1	2	3	4	5	6	7	8	9	10	11	12	13	13.5
Storage site->	1	2	4	6	8	10	12	14	16	18	20	22	24	26	27
Container type	#Containers														
Container															
CA3	3	6	12	18	24	30	36	42	48	54	60	66	72	78	81
CA2	3	6	12	18	24	30	36	42	48	54	60	66	72	78	81

Appendix

3. FAQ

Packaging regarding material deliveries

Where do I find packing instruction?
The packing instructions are included with the DEUTZ purchase order.

Who is responsible for packaging at Deutz?
The Global Logistics / Packing Systems department.

Are packing instructions binding?
As content of the DEUTZ purchase order, the packing instructions are a component of the supply agreement and binding in the same way as parts specifications.

What do I do if the parts do not match the packing instruction?
Inform the Global Logistics / Packing Systems department and coordinate the packaging.

Can packing instructions be adapted?
Containers and filling volumes can be adapted in coordination with the Global Logistics / Packing Systems department.

Do the packing specifications also apply for deliveries to DEUTZ Service?
In general, all packaging of series production can also be used for DEUTZ Service. The special individual part packages from the specifications of DEUTZ Service must be observed.

Are there special packing instructions for DEUTZ Service?
DEUTZ Service makes special agreements for the individual part packaging directly with the suppliers.

Appendix

3. FAQ

Empty containers, container traffic

Who pays the freight costs for DEUTZ containers?
The freight payer for full goods deliveries also pays for the empty container freight.

How do I order DEUTZ empty containers?
Informally by mail *packorder@deutz.com* indicating the supplier number and type + quantity of the empty containers.

Which forwarding agent is responsible for us?
The responsible regional forwarding agent is appointed by the DEUTZ Transport/Freight department, Tel. 0049 (0) 221 822 3713.

When will I receive the ordered DEUTZ containers?
As a rule, within a time period of no later than ten working days after ordering.

We have received defective/dirty DEUTZ containers, what do we do?
The containers can be returned with a separate delivery note in conjunction with full goods deliveries to an empty container warehouse of DEUTZ AG. Containers that are damaged or lost by forwarding agents, suppliers or customers will be invoiced to the causal party for the new procurement value.

We have received the wrong containers, how do I send these back?
The containers can be returned with a separate delivery note in conjunction with full goods deliveries to an empty container warehouse of DEUTZ AG.

Quantities different to those actually requested are on the empty container delivery note, why?
The amount of containers ordered did not correspond to the container requirement forecast or not enough empty containers were available at the time of loading.

Why were no delivery papers present in my empty container consignment?
Delivery papers are handed over at every loading. Delivery papers can be submitted incorrectly as a result of subcontracting forwarders and the handover of delivery papers to the head offices of the forwarding agents.

Why do I receive less empty containers than requested?
The amount of containers ordered did not correspond to the container requirement forecast or not enough empty containers were available at the time of loading.

DEUTZ empty containers have been damaged or lost, what has to be done?
The damage or loss must be reported in writing to the DEUTZ Container Management.

Can DEUTZ containers be sent to another address?
When there is a known own supplier number officially defined as a pick-up station by DEUTZ Purchasing.

Appendix

3. FAQ

Empty containers, container traffic

What packing can be used if no containers are available?
After release by DEUTZ alternative recyclable containers or load-compliant disposable packaging (cardboard boxes).

Are costs incurred for the use of Deutz containers?
DEUTZ AG provides containers free of charge for transport purposes. If the inventory control ascertains that containers are used for storage or for other company-internal purposes, container rentals or compensation fees will become due.

Container account

When is the loaned goods statement sent by DEUTZ?
The account statement is sent every quarter of the year.

How often do we receive a loaned goods statement?
Four times a year.

A container debt of DEUTZ containers has been identified in our loaned goods statement, is that the case?
As DEUTZ procures the DEUTZ containers itself before providing them,
it cannot be the case that DEUTZ owes its own DEUTZ containers to a supplier / customer.

Does the loaned goods statement mean that we have to send back loaned goods directly?
No, only the container inventory has to be indicated first of all. The return of empty containers will then be requested, if applicable.

Do we ourselves have to keep stock of the DEUTZ containers?
In your own interest, incoming and outgoing containers should be registered so that you can verify the whereabouts of DEUTZ' own containers at all times.

Can a weekly / monthly loaned goods statement be sent?
This is not possible owing to the high administrative expense. Individual information on container account statuses are possible at any time.

Appendix

3. FAQ

Engine transport frames

How do I send back engine transport frames?
Engine transport frames and fasteners should be returned to DEUTZ AG regularly and without delay after the installation of the DEUTZ engines at the customer. For this, you should issue your own delivery note with the type (DEUTZ parts number) and quantity of the engine transport frame being sent. As a result, the responsible forwarding agent (see further FAQ) is then commissioned for the transport.

Where are engine transport frame returned to?

Returns Engine Transport Frames Cologne (grey & galvanised racks, wood):
Stute Schreinerei c/o DEUTZ AG
Ottostr.1
51147 Köln-Porz-Eil
Tel. 0049 (0) 221 822 3769
Fax. 0049 (0) 221 822 3431

Returns Engine Transport Frames Ulm (blue racks):
DEUTZ AG
Shipping
Nicolaus-Otto-Str. 25
D-89079 Neu-Ulm
Tel. 0049 (0) 731 404 9371
Fax. 0049 (0) 731 404 9311

Who pays the freight costs for returning engine transport frames to DEUTZ?
The customer pays the freight in the case of engine deliveries with agreed Incoterm FCA (= "free carrier" deliveries). DEUTZ pays the freight in the case of engine deliveries with agreed Incoterm CPT (="carriage paid to" deliveries).

Do wooden engine transport frames have to be returned to DEUTZ?
Wooden transport frame can be returned on account of the statutory obligation for the return of packaging, but do not have to be returned.

Do engine fasteners have to be returned to DEUTZ?
Engine fasteners (transport brackets, transport holders etc.) which are not used for installing the engine should be returned to DEUTZ in suitable containers.

Appendix

3. FAQ

Engine transport frame

We receive engines on wooden engine transport frames instead of steel, why?
If steel transport frames are in circulation at customers or empty transport frames are not returned regularly in good time to DEUTZ, DEUTZ Assembly will often have no steel transport frames available. Wooden frames are used as an alternative packaging so that the engine construction does not stop and the engines can be sent to the customers.

The engine transport frames used are unsuitable for our purposes, how can that be changed?
When ordering engines, the customer specifies the engine transport frames from the modules on offer for the packaging together with DEUTZ Sales. If it turns out in practice that the transport frames are unsuitable, a suitable packaging module must be selected via DEUTZ sales and the corresponding change made to the orders.

Appendix

4. Addresses / Contacts

Packing Planning / Container Traffic
DEUTZ AG
Global Logistik / Verpackung
Ottostr. 1
D-51147 Köln-Porz-Eil
Tel. 0049 (0) 221 822 3704, 3133, 2984, 3710
packtech@deutz.com

Empty Container Centre Cologne
DEUTZ AG
Leergutzentrum
Hansestr. 70c
D-51149 Köln-Porz-Gremberghoven
Tel. 0049 (0) 221 822 3116
Fax. 0049 (0) 221 822 3431
packorder@deutz.com

Empty Container Warehouse DEUTZ Service
DEUTZ AG
Leergutplatz
Dillenburger Str. 106
D-51105 Köln-Kalk
Tel. 0049 (0) 221 822 6516
Fax. 0049 (0) 221 822 6519

Empty Container Ulm
DEUTZ AG
Leergutplatz
Nicolaus-Otto-Str. 25
D-89079 Neu-Ulm
Tel. 0049 (0) 731,404 9243
Fax. 0049 (0) 731 404 9311

Plant Herschbach Incoming Goods, Shipping & Empty Containers
DEUTZ AG
Komponentenwerk
Industriegebiet Sonnenberg 1
56249 Herschbach (Westerwald)
Tel. 0049 (0) 2626 765 128
Fax. 0049 (0) 2626 765 122

Appendix

4. Addresses / Contacts

Returns Engine Transport Frames Cologne (grey & galvanised)
Stute Schreinerei c/o DEUTZ AG
Ottostr.1
51147 Köln-Porz-Eil
Tel. 0049 (0) 221 822 3769
Fax. 0049 (0) 221 822 3431

Returns Engine Transport Frames Ulm (blue)
DEUTZ AG
Versand
Nicolaus-Otto-Str. 25
D-89079 Neu-Ulm
Tel. 0049 (0) 731,404 9371
Fax. 0049 (0) 731 404 9311

Stute Logistics Center Cologne, Incoming Goods & Shipping for Plant Cologne-Porz
Stute Verkehrs GmbH
Logistikzentrum Köln-Porz
Niderkasseler Str. 24
D-89079 Neu-Ulm
Tel. 0049 (0) 2203 9646-0

Incoming Goods Plant Ulm
DEUTZ AG
Wareneingang
Nicolaus-Otto-Str. 25
D-89079 Neu-Ulm
Tel. 0049 (0) 731 404 9380
Fax. 0049 (0) 731 404 9212

Incoming Goods Plant Cologne Deutz
DEUTZ AG
Wareneingang Geb.142
Danzier Str. Tor 18
D-51063 Köln-Mühlheim
Tel. 0049 (0) 221 822 2046
Fax. 0049 (0) 221 822 2074

Shipping Ulm
DEUTZ AG
Versand
Nicolaus-Otto-Str. 25
D-89079 Neu-Ulm
Tel. 0049 (0) 731 404 9371
Fax. 0049 (0) 731 404 9311

Appendix

4. Addresses / Contacts

CKD Shipping Cologne : SLW
SLW

Imprint

Published by

DEUTZ AG
Global Logistik
Ottostr. 1
D-51147 Köln-Porz-Eil

Author

Uwe Wess