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EUR box pallets
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Bundles
e tc

If you have any questions relating to packaging please contact the responsible GE Packaging Engineer representative.
### Definition of terms

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packaging agreement</td>
<td>Packaging planning agreed between the supplier and GE Jenbacher GmbH &amp; Co. OHG.</td>
</tr>
<tr>
<td>General Packaging</td>
<td>Specific packaging requirements for Jenbacher gas engines: basis to develop 'fit for purpose' packaging.</td>
</tr>
<tr>
<td>Guideline</td>
<td>Packaging systems in terms of specific quality and delivery requirements.</td>
</tr>
<tr>
<td>Packaging data sheet</td>
<td>The packaging data sheet is used for the packaging proposal from the supplier. The type of packaging used is also documented in the packaging data sheet.</td>
</tr>
<tr>
<td>Supplier deviation request (eSDR)</td>
<td>A documented method for allowing materials, processes or dimensions that deviate from the purchase order documents.</td>
</tr>
<tr>
<td>P23E-AL-0255 REV. J</td>
<td>GE Energy's general requirements concerning marking, preservation, packaging and shipping.</td>
</tr>
<tr>
<td>Article</td>
<td>Items with the same part number.</td>
</tr>
<tr>
<td>Inner packaging</td>
<td>Type of packing that is in direct contact with the parts; used to separate and/or to secure parts.</td>
</tr>
<tr>
<td>Single packing unit</td>
<td>Packaging that contains only one article (items with the same part number).</td>
</tr>
<tr>
<td>Outer packing unit</td>
<td>Combines several single units into one delivery unit.</td>
</tr>
<tr>
<td>Transport packing unit</td>
<td>Type of packaging that enables items to be handled during transportation and protects them from stresses and external influences during transportation, storage and handling.</td>
</tr>
<tr>
<td>Auxiliary loading aids</td>
<td>Auxiliary aids to secure a load, e.g. boards, chains, girders.</td>
</tr>
<tr>
<td>Loading aid</td>
<td>For heavy and/or oversized parts that are not transportable using standard packing systems. Loading aids are used for transportation and storage purposes. Loading aids may be e.g. transport frames made from wood or metal, wooden beams or the like.</td>
</tr>
<tr>
<td>Strapping</td>
<td>Used to make the load stay firmly in place during transportation and use (e.g. to secure load on a pallet).</td>
</tr>
<tr>
<td>Transit support</td>
<td>Means of securing a load during transportation.</td>
</tr>
<tr>
<td>Stackability</td>
<td>Ability to stack several layers of packing without damage. Requirements for stacking are plane surfaces and adequate stability.</td>
</tr>
<tr>
<td>Overhang</td>
<td>A part that overhangs the sides of a pallet.</td>
</tr>
<tr>
<td>Anti corrosive packaging</td>
<td>Type of packaging that protects parts from corrosion.</td>
</tr>
<tr>
<td>VCI</td>
<td>Volatile Corrosion Inhibitor.</td>
</tr>
<tr>
<td>One-way packing</td>
<td>Packaging that is used for a single delivery.</td>
</tr>
<tr>
<td>Returnable packing/multi-way packaging</td>
<td>Packaging that is suitable for multiple use on different forms of transport.</td>
</tr>
</tbody>
</table>
## Icon legend

### Single packaging / Inner Packaging
- **Corrugated board box**
- **Returnable boxes**
- **Bags, Pouches**
- **Mould receptacle**
- **Intermediate layer**
- **Crossed compartment/divider**

### Outer packaging
- **Corrugated board box**
- **Returnable boxes**

### Transport packaging
- **Outer packing unit on pallet**
- **Heavy parts on pallet**
- **Box pallet**
- **Wooden box**
- **Returnable box**
- **Bundle**
- **Loading aid**
Introduction

Scope

Packaging functions

Process
  Packaging data sheet
  Supplementary explanations
  Overview of standard container

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Scope

This packaging guideline is the contractual basis for delivery of parts to GE Jenbacher GmbH & Co OHG. It constitutes a supplement to the general conditions of purchase.

GE Energy's Jenbacher packaging guideline is an additional document for specifying the packing system.

Objective

The Packaging Guideline familiarises suppliers with the packaging requirements of GE Jenbacher GmbH & Co OHG as a basis on which to develop an optimised packing system. Its aim is to develop a rationalised packing system based on the continuous flow of material from the supplier to the work site, taking all qualitative, environmental and economic aspects into consideration. The following instructions should guarantee a rational, uninterrupted flow of materials by the use of standardised packaging and consolidated consignments.

The objective is to meet the requirements concerning environmental protection and logistics based on the criteria of:

- Ecological priorities and environmental compatibility
- Logistics requirements (flow of parts)
- Quality assurance
- Safety at work (EHS)
- Economic efficiency

Responsibilities

The supplier is responsible for the development of fit-for-purpose packaging systems which are in accordance with the requirements of the product, the Jenbacher Gas Engines General Packaging Guideline and all applicable regulations established by federal, state, provincial and local governments, including those applicable to the location where the package will be discarded.

For all disposable packaging, the use of sustainable materials which are accepted for recycling worldwide is required. Packaging waste, wasteful and/or excessive over-packaging should be avoided as specified in EU Directive 94/62/EG.

It is the responsibility of suppliers, both internal and external, to ensure that all items being shipped are properly and adequately preserved, protected and packed for safe arrival at their destination.

Failure to comply with the general packaging guideline may lead to a corrective action request. Furthermore the supplier may be held liable for any additional costs associated with repackaging work, handling operations or waste disposal, as well as for reductions in quality due to inadequate or contaminated packaging.
Packaging functions

Irrespective of the choice of packaging type, ensure that deliveries meet the following requirements:

- Parts to be delivered without any deterioration of quality and free of contamination
- Transport packing units should make for safe and easy handling during unloading and handling with ground conveyors
- Rational loading units and efficient capacity utilisation
- Stackability
- Sufficient transit support
- Safe and easy handling while removing parts from their packing
- Proper marking
- Use of recyclable materials
- One article (one part number) to be delivered per single packing unit
- If mixed containers cannot be avoided, parts must be properly organised
- Packaging alternatives such as returnable packing systems should be considered
- Means of separation to be provided when shifting or rubbing could cause damage
- All fragile parts must be properly cushioned

Packaging must perform several functions during transportation, storage and use.

- **Protection function** Protection from physical damage and environmental hazards, sufficient stability to withstand the maximum stacking height.
- **Loading and transportation** Transport packaging should be designed to be held, lifted, moved, set down and stowed easily and safely. Transportation packaging must be constructed in such a way that it is suitable for shipment thereby ensuring that it meets all the demands of handling, storage and transportation.
- **Storage function** Packaging should be designed to perform the required storage functions.
- **Convenience** Convenience of use and safe handling by users.
- **Communication** Visibility of relevant consignment details and supplier data.
- **Compliance function** Environmental acceptability and ease of recycling and/or disposal and compliance with legal and regulatory requirements.
- **Guarantee function** By delivering an undamaged packing unit the supplier ensures that details on the packaging correspond to the content of the packaging.
- **Rationalisation** Efficient loading and storage units in terms of dispatch type, route and weight, shipping space utilisation, storage space utilisation as well as handling security during loading, unloading, storing, opening and disposal.
Packaging predefinition process

The packaging predefinition process is based on the general packaging guideline and the packaging data sheet. The aim is to draw up a cooperative packaging agreement between the supplier and GE Jenbacher GmbH & Co OHG.

Packaging agreement
The general packaging guideline plus packaging data sheet are forwarded to the supplier, together with the GE terms of purchase. On the basis of the packaging guideline, the supplier draws up a packaging proposal and forwards it to the GE Packaging Engineer Representative. If the supplier already has an existing packaging procedure document, this document can be used instead of the packaging data sheet. By forwarding the proposal to GE Jenbacher GmbH & Co OHG, the supplier is approving the packaging data sheet. Packaging prototypes or first samples/zero series in prototype packing are to be supplied on request. If changes are required, a change proposal will be sent to the supplier. The packaging data sheet is approved by GE Jenbacher GmbH & Co OHG, Planning Warehouse Quality, by generating the Index [VP-TLNR00-LINR00-00].

The objective is to conclude the packaging agreement before the first series delivery. Quality requirements, as specified in the packaging guideline, must be fulfilled, also after approval of the agreement. The acceptance of a packing system does not release the supplier from his responsibility to ensure a damage-free delivery. By default, the supplier may be held liable for any additional costs, associated with repacking work, handling operations or waste disposal, as well as for reductions in quality due to inadequate or contaminated packaging.

Communication
Send your packaging proposal via email
GE Packaging Engineer representative
Re: VP Supplier Name Part Name Proposal A

Change of packaging via email
GE Packaging Engineer representative
Re: VP Supplier Name Part Name Change for Index X

Variations:
Inform the responsible SQE via SDR (Supplier deviation request)

If you have any questions relating to packaging concerns please contact the responsible GE Packaging Engineer representative.
Deviation request

Deviations from the agreed specification are to be coordinated with GE Jenbacher GmbH & Co OHG. The responsible SQE is to be informed via SDR. A copy of the approved SDR form is to accompany the affected delivery.

Change of packaging

Change of packaging can be requested by the supplier or GE Jenbacher GmbH & Co OHG. This procedure follows the same process as the packaging agreement.

If changes are required, the supplier or GE Jenbacher GmbH & Co OHG issues a packaging change request, in the form of a packaging proposal. By forwarding the proposal to the GE Jenbacher GmbH & Co OHG, the supplier is approving the packaging data sheet.

Packaging prototypes or first samples/zero series in prototype packing are to be supplied on request. If changes are required, a change proposal will be sent to the supplier.

By generating a new Index [VP-TLNROO-LINROO-01] the changed packaging data sheet is approved by the GE Jenbacher GmbH & Co OHG, PWQ. The new index replaces the old one completely.
Example: Packaging data sheet

![Packaging data sheet](image)

### 1/2

#### JWN 890 110 | Packaging data sheet

Jenbacher gas engines

<table>
<thead>
<tr>
<th>Index</th>
<th>Supersedes version dd.</th>
<th>Other documents</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1. JWN 890 110</td>
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<tr>
<td></td>
<td></td>
<td>2. FS 00-0002</td>
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<table>
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<tr>
<th>Supplier</th>
<th>LNR</th>
<th>GE Jenbacher GmbH &amp; Co OHG</th>
</tr>
</thead>
</table>

<table>
<thead>
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<th>Contact</th>
<th>Released by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place</td>
<td>Date</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Phone/Email</th>
<th>Name</th>
<th>Released by</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Place, Date</td>
</tr>
</tbody>
</table>

#### Type of transport

- [ ] Short Distance Truck
- [ ] Sea Transport
- [ ] others
- [ ] Long Distance Truck
- [ ] Air Transport (as required)

#### Type of storage

- [ ] Outdoor
- [ ] Indoor

#### Special requirements:

**Packaging sub unit and inner packaging**

<table>
<thead>
<tr>
<th>Packing</th>
<th>Material</th>
<th>Recycling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- [ ] Packaging means:
- [ ] Inner packaging:
- [ ] Packaging sub unit:
- [ ] Closure:
- [ ] further packaging means:

<table>
<thead>
<tr>
<th>Total number of parts/sub unit</th>
<th>Outer dimensions LxWxH in mm</th>
<th>Total weight in kg</th>
</tr>
</thead>
</table>

**Outer and transport packaging**

<table>
<thead>
<tr>
<th>Packing</th>
<th>Material</th>
<th>Recycling</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- [ ] Packaging means:
- [ ] Packaging equipment:
- [ ] Outer packaging unit:
- [ ] Closure:
- [ ] Transit support means:
- [ ] further packaging means:

<table>
<thead>
<tr>
<th>Quantity of sub units/layer</th>
<th>Number of layers</th>
<th>Total number of parts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outer dimensions LxWxH in mm</th>
<th>Total weight in kg</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Stacking factor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
</tbody>
</table>
Example: Packaging data sheet
### Supplementary explanations

<table>
<thead>
<tr>
<th>Item</th>
<th>Notion</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>white field</td>
<td>Filled in by GE</td>
<td></td>
</tr>
<tr>
<td>grey field</td>
<td>To be filled in by the supplier</td>
<td></td>
</tr>
<tr>
<td>picture field</td>
<td>To be filled in by the supplier</td>
<td>Please use horizontal fields for landscape picture formats and vertical size fields for portrait picture formats.</td>
</tr>
</tbody>
</table>

- **Part Number**: Article code (GE)
- **Packaging sub unit**: Data referring to single and/or inner packaging
- **Designation of sub-unit**: Name/specification of single packaging type used
- **Dimensions**: Length x width x height of single packing unit in mm
- **Inner packaging**: Additional used packing materials used to secure and/or separate parts, such as intermediate layers, moulded inserts, ...
- **Packaging aid**: Auxiliary packing materials
- **Total weight**: Total weight of the single packing unit in kg
- **Stacking factor**: Number of single packing units that can be stacked e.g. 0 = stacking not possible, 2 = 2 units can be stacked, ...
- **Closure**: Type of closure, e.g. tape
- **Description**: Complementary description of the packing sub-unit
- **Transport packaging**: Data referring to transport and/or loading unit
- **Designation of loading unit**: Name/specification of base carrier used e.g. euro pallet, box pallet
- **Dimensions**: Length x width x height of load unit, e.g. base pallet
- **Outer packing**: Name/specification of outer packing unit
- **Packaging aid**: Auxiliary packing materials
- **Closure**: Type of closure, e.g. strapping
- **N° of layers**: Number of layers
- **N° of sub units/layer**: Number of parts per layer
- **Total weight**: Total weight of transport unit
- **Total height**: Total height of transport unit
- **Stacking factor**: Number of transport packing units that can be safely stacked
- **No. of parts/transport unit**: Number of parts per transport unit
- **Description**: Complementary description of the transport packing/loading unit
# Standard container

## External packing/loading unit

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Euro pallet</td>
<td>1200x800 mm</td>
<td>1000 kg</td>
</tr>
<tr>
<td>One-way pallet</td>
<td>1200x800 mm</td>
<td>1000 kg</td>
</tr>
<tr>
<td>DB Box pallet/Gitterbox</td>
<td>1200x800 mm</td>
<td>1000 kg</td>
</tr>
<tr>
<td>Wooden box on pallet</td>
<td>1200x800 mm</td>
<td>1000 kg</td>
</tr>
<tr>
<td>Crate on pallet</td>
<td>1200x800 mm</td>
<td>1000 kg</td>
</tr>
<tr>
<td>Wooden box</td>
<td>Oversized parts</td>
<td></td>
</tr>
<tr>
<td>Crate</td>
<td>Oversized parts</td>
<td></td>
</tr>
<tr>
<td>Industrial containers</td>
<td>1200 x 800 mm</td>
<td>1000 kg</td>
</tr>
<tr>
<td>Returnable containers</td>
<td>1200 x 800 mm</td>
<td>1000 kg</td>
</tr>
<tr>
<td>Auxiliary loading aids</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Packing sub-unit

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schäferbox LF 532/531</td>
<td>500x300 mm</td>
</tr>
<tr>
<td>Returnable containers</td>
<td>500x300 mm</td>
</tr>
</tbody>
</table>

Corrugated board boxes derived from 1200x800 mm
- Single wall corrugated board
- Double wall corrugated board
- Tri-wall corrugated board

Waterproof coated corrugated board equipped for overseas shipments

## Internal packaging/single packaging/inserts

- Pouches/bags
- Cardboard boxes
- Corrugated board boxes
- Moulded inserts
- Intermediate layers
- Crossed compartment inserts

## Packaging aids

<table>
<thead>
<tr>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foldable pallet collar</td>
<td>1200x800 mm</td>
</tr>
<tr>
<td>Pallet collar</td>
<td>1200x800 mm</td>
</tr>
<tr>
<td>Stretch film/Shrink film/Film hood</td>
<td></td>
</tr>
<tr>
<td>Plastic strapping/Metal strapping</td>
<td></td>
</tr>
<tr>
<td>Edge protectors/Corner protectors</td>
<td></td>
</tr>
</tbody>
</table>

## Cushioning materials

- Paper plus system
- Air bubble film
- Air cushion pad
- Wrapping paper
- Foam film

## Anti-corrosive packaging materials

- VCI film
- VCI paper
- VCI vapour capsule
- Oil paper
- Wax paper
- Waterproof corrugated board
- Desiccant bags
General requirements

<table>
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<th>Requirement</th>
<th>Page</th>
</tr>
</thead>
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<td>Approved materials</td>
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<tr>
<td>Anti corrosive packaging</td>
<td>16</td>
</tr>
<tr>
<td>Height restrictions</td>
<td>18</td>
</tr>
<tr>
<td>Weight restrictions</td>
<td>18</td>
</tr>
<tr>
<td>Labeling</td>
<td>19</td>
</tr>
<tr>
<td>Single packing unit</td>
<td>21</td>
</tr>
<tr>
<td>Outer packing unit</td>
<td>21</td>
</tr>
<tr>
<td>Transport packaging</td>
<td>21</td>
</tr>
</tbody>
</table>

The choice of packing method is dependant on product characteristics, and protection requirements, transportation mode and structural conditions on supplier's site.
Approved materials

Environmental targets regarding packaging planning
Prevention of packaging waste; reusability of packaging; ease of recycling; recovery of packaging materials; reduced use of packaging materials.

To meet environmental requirements, the marking of packaging and packaging materials for recycling purposes as specified in DIN 6120, is required. Ensure that one-way packaging is clearly and visibly marked with the standard symbols (symbols and abbreviations as specified in DIN 6120) and/or those recognised by the waste disposal industry. The identification must not restrict recyclability.

Approved packaging materials
In general, environmentally compatible materials deemed suitable and accepted worldwide for recycling are to be used for all one-way packaging. Composite materials and loose fill materials such as packaging chips should be avoided.

Packaging material must not affect the cleanliness of parts.

Paper/cardboard/  
corrugated board
Comprising papers and cardboard made of materials not hazardous to paper production

Plastics
• For one-way use: PE, PP  
• For multi-way use: PE, PP, PS  
• Film: PE  
• Foam: PE, PP, PS
Maximum 5% printed area for all applications.

Anti-corrosion paper/film
• VCI papers, for which there is evidence that its materials can be recycled with paper/cardboard.  
• VCI film, which it has been shown can be recycled with plastic film

Corrosion protection packaging materials may not contain any nitrosamine compounds, secondary amine compounds, heavy metals or nitrite.

Oil or waxed paper may be used whenever the use of VCI materials is not applicable.

Desiccant bags as specified in DIN 55 473  
Minerals: Aktivton, perlite, silica gel, vermiculite

Wood
Non-impregnated solid wood and plywood.

For shipments from outside the EU or shipments scheduled to be sent outside the EU, wood treatment conforming to ISPM No. 15 is required.

ISPM No. 15 requires that wood packaging materials must be either heat-treated or fumigated regardless of the country of export. The requirement includes proper marking of all treated materials in accordance with the IPPC standard.

Strapping
for sensitive articles: PP (black)  
for heavy parts: metal strapping

Closures
Adhesive tapes and packaging straps as well as adhesive labels and product labels must not restrict the recyclability of the carrier material. Use of neutral tape is recommended.

Metals
Steel, aluminium

In general, the use of neutral packaging materials is recommended.
Anti-corrosive packaging

Preservation must be applied in accordance with the relevant drawing and the P23E-AL-0255 specification unless agreed otherwise.

All machined, bright finished or other critical surfaces that are sensitive to corrosion require sufficient corrosion protection, as specified in the terms of transport and storage. In particular, machined castings, forging parts such as connecting rods, cylinder liners or crankshafts are highly sensitive to corrosion and require special protection. Other aspects that require special corrosion protection are the external conditions during transport, such as formation of condensation as a result of temperature changes combined with elevated levels of relative humidity, seawater, dirt and gases in the air, such as SO2, salts, hygroscopic dust, all of which promote corrosion, or hygroscopic packaging materials with an elevated water content.

Use anti-corrosive packaging such as capping, wrapping, plugging, covering or other suitable methods to protect parts from corrosion, dust, moisture, abrasion or any other damage that is detrimental to the appearance or function of the part. As specified in the protection requirements, the use of one or more kinds of methods is recommended.

Where applicable, you are recommended to use VCI materials, such as VCI film or VCI paper which can be recycled with ordinary film/paper. Oil or waxed paper may be used whenever the use of VCI materials is not appropriate.

The method adopted dictates how VCI materials are used. An item to be protected may be tightly wrapped in VCI paper or VCI film. To ensure the effectiveness of the method, metal surfaces must be clean. Complete and close fitting of the packing is advisable to ensure that the gas is not continuously removed from the packing unit due to air movement. This can be achieved by ensuring that the container is well sealed. The grade of VCI packaging material to be used depends on the size, weight and geometry of the item(s) and handling/transport considerations. The appropriate type of VCI material will be used, depending on the metallurgy of the item.

Acceptable methods for sealing VCI packaging materials include taping, stapling, heat-sealing, skin-packing or other appropriate methods to keep VCI material and VCI chemical vapours securely around the item and to prevent rain or moisture from entering the package.

Before delivery, containers should be examined to ensure that all parts are properly preserved, wrapped, covered or sealed and packed. Any damaged VCI films must be repaired or replaced.

Example of incorrect use

Example of correct use

Properly protect all blind holes and/or through holes, by capping or plugging. Caps and plugs must be a tight fit, so that they will not become loose during transportation, handling and storage. Ensure that external threads and other protruding components are properly protected from physical damage and other external influences.
Parts that are susceptible to corrosion must be packed in a dry non-corrosive environment for the duration of shipment and storage, for a minimum of 6 months. The type of anti-corrosive packaging material to be used is dependant on the sensitivity of the items, the terms of transport, the duration of transport and storage conditions.

Examples:

Wrapping:
To be effective, wrapping must be done in a way that completely covers the part.

Film hood: PE film/VCI film/ …
Outer packaging: Wooden box/box pallet/crate/container …
Intermediate layer: VCI paper/VCI film covered board/ …
Lining/inner bag: VCI film/VCI paper/PE film
Height restrictions

Height restrictions for small parts storage

The maximum height for packages which are scheduled to be stored in the small parts store is:
- 260 mm
- 400 mm

Height restrictions for delivery on standard pallets

- P0: maximum height: 540 mm
- P1: maximum height: 690 mm
- P2: maximum height: 1050 mm
- P3: maximum height: 1400 mm
- P4: maximum height: 1800 mm
Choose the lowest required height!

Height restrictions for oversized parts

The maximum height for packages which are scheduled to be stored in the long parts store is 1000 mm.

Weight restrictions

Packages scheduled for manual handling
Packages which are scheduled for manual handling should not exceed a weight of 20 kg. Packages weighing more than 20 kg must always be skidded/palletised and the total weight of the package must be clearly and visibly marked on the top of the box.

Loading units
The maximum permitted total weight for pallets/box pallets/wooden boxes/returnable containers is 1000 kg. Exceptions must be approved in writing. The total weight of the package must be clearly and visibly marked on top of the box.
Labelling

Every single packing unit which contains one article is to be clearly and visibly marked on top with the GE part number and the number of parts inside.

```
Part # (Jenbacher gas engines)
Quantity
```

Every outer packing unit containing several single packages (all of them containing the same article) is to be clearly and visibly marked on top with the GE part number and the number of single packages inside.

```
Part # (Jenbacher gas engines)
Number of single packing units
Total weight in kg
```

Every outer packing unit containing several single packages (containing several articles) is to be clearly and visibly marked on top with the GE part number and the number of single packages inside.

```
“Mixed Parts”
Part Numbers list (Jenbacher gas engines)
total weight in kg
```

Each shipment must contain a consignment note placed inside a water-resistant envelope securely affixed on top. Please find details on the next page.

```
Consignment note
Complete vendor name and address
Country of Origin
Shipment date
Total weight in kg
Part # / Quantity (Jenbacher gas engines)
or
“My Mixed parts” / Part Numbers list (Jenbacher gas engines)
```
Labelling

Consignment note

Data content:  Supplier data
Consinee data
Destination warehouse
Location, date
Term of delivery / Mode of dispatch
Purchase order number/Orderer/Order date
Total number of packages
Order code/Part number/Quantity/Designation

EAN 128 Barcode

Data content:  30 Quantity delivered
400 Order number and order code
90 Supplier’s delivery note number and date (YYMMDD)

Alternative for the order code:  02 Part number (Jenbacher gas engines)

E.g.

Consinee:
GE Jenbacher GmbH & Co OHG
Achenseestraße 1-3
A-6200 Jenbach
Consultant

Email
Terms of delivery
Mode of dispatch
Code Jenbacher part number Quantity
Designation
Order number Order date
Orderer

0010 TlNr. XYZ 10 pieces Article XYZ
Specific article data
Net weight

Order number, Order position, Quantity
Single packing unit

Single packing units may be corrugated board boxes, pouches, cardboard boxes, returnable containers, ...

The single packing unit is the first-line packing unit. It is only allowed to contain one article (parts with the same part number).

Each single packing unit must be clearly and visibly labelled on top with:

- Quantity
- GE part number

Please find detailed information on page 22.

Outer packing unit

Outer packing units may be a corrugated board box, returnable containers, etc.

An outer packing unit combines various single packing units. There are two possible ways of identifying them:

- Transport packing units containing one article must be clearly visible labelled on top with:
  - Quantity
  - GE part number

- Transport packing units containing various articles: mark them clearly on top and ensure they are clearly separated.

Please find detailed information on page 23.

Transport packing unit

e.g. pallet plus load, box pallet, returnable containers, wooden boxes, oversized parts with loading aid, etc.

An outer packing unit may contain one or more articles. There are two possible ways of identifying them:

- Transport packing units containing one article must be clearly and visibly labelled on top with:
  - Quantity
  - GE part number

- Transport packing units containing several articles: mark them clearly and visibly on top and ensure that the label is in a conspicuous place.

Please find detailed information on page 24.
Single packing unit

Internal packaging
Internal packaging is used to protect parts from damage due to mechanical stresses such as impact, jolting or vibration in transit and/or to protect parts from corrosion. Internal packaging and cushioning materials should be easy and quick to remove and be recyclable.

Cushioning material
Cushioning material should be easy to remove and dispose of, e.g. air bubble film or air cushion pads. Approved materials are listed on pages 15. Loose fill materials such as packaging chips, shredded materials, newspapers etc. should be avoided. Parts must never be in direct contact with loose fill materials.

Correct: air bubble film  air cushioning pads  wrapping paper
Incorrect: loose fill materials  packaging chips  wood wool

Positioning the load
Place the load in the box so that the weight is evenly distributed. The size of the box should be consistent with the load. If the load is smaller than the box, all spaces should be filled, so that the load is cannot shift during transportation and handling.

Correct:  Incorrect:

Inserts
To guarantee safe transport and handling and/or to save space, the use of suitable inserts, such as intermediate layers, dividers, crossed compartment inserts or mould receptacles, is recommended. It is recommended that all parts are placed in such a way that they are easy to identify and cannot get lost.

Correct: Mould receptacle  Intermediate layer  Dividers
Incorrect: Parts must be properly protected and easy to identify

Inserts may also be used to replace single packing and to save space.

Closures
Packing units must be closed properly so as to protect items from external influences, maintain interior cleanliness and keep the contents intact while providing safe and easy opening.
Outer packing unit

An outer packing unit combines several single packing units.

Positioning the load
Place the load in the box so that the weight is evenly distributed. The size of the box should be consistent with the load.
If the load is smaller than the box, all spaces should be filled, so that the load cannot shift during transportation and handling.

Box size is consistent with the size of the item.
Spaces filled with cushioning material.
Not acceptable: Parts not/not properly secured.

Cushioning material
Cushioning material is used to fill spaces and to protect items from damage due to mechanical stresses such as impact, jolting or vibration in transit. Where the use of cushioning material is appropriate, it is recommended that it should be easy and quick to remove and be recyclable.
Cushioning material should be easy to remove and easy to dispose of.
Loose fill materials such as packaging chips, shredded materials, newspapers etc. should be avoided.

Closures
Packing units must be closed properly so as to protect items from external influences, maintain interior cleanliness and keep the contents intact while providing safe and ease opening.

Opening
Packaging should be safe and easy to open without risk of injury.
e.g.

— Part 1 — Part 2 — Part 3 —
Transport packing unit

Transportation packing units must be constructed in such a way that they are suitable for shipment, thereby ensuring that they meet all the demands of handling, storage and transportation. This applies to all aspects: protection of the parts, protection of the environment from the parts, or issues relating to handling, packing, storage, securing, e.g. ensuring that items can be safely and easily handled with a forklift and by manual lifting. A transport packing unit is a piece of equipment plus load, e.g. pallet (plus load), a EUR box pallet, a wooden box or a returnable container.

Positioning the units

Packing units on a pallet require an outer packing unit as well as strapping for ease of handling of the pallet without loosening the transit support.

Pallet with corrugated board box, fastened with strapping
Pallet covered with PE film fastened with strapping
Pallet with pallet collar fastened with strapping
Pallet with wooden box construction fastened with
Pallet with load covered with PE film fastened with

When arranging transport packing units, ensure efficient utilisation of space and even distribution of weight. Where applicable, apply bonded stockpiling to guarantee load stability during transportation, storage and use.

Diagram: space utilisation
Diagram: distribution of weight
Diagram: bonded stock piling

Closures

Packing units must be closed properly so as to protect items from external influences, maintain interior cleanliness and keep the contents intact while providing safe and ease opening.

Transit support

Loads must be in a state which does not, in any way, affect safety during transport. A load is secured appropriately for shipment if, when loaded and handled in a proper manner, it is unable to injure people or damage handling or transportation equipment or other cargo.

To arrange rational loading, units must allow secure stacking. Otherwise, ensure that loading units, which are not suitable for stacking, are marked accordingly.

Movable parts must be tied down, wedged or padded. This also applies to disassembled parts that are not packed separately.

Inserts

When packing heavy and/or oversized parts into wooden boxes, crates, loading aids or pallets, ensure that the inserts are constructed so as to ensure that the load is properly secured to prevent it from shifting.
## Standard packaging

### Single packing unit
- Plastic pouches  
  - Page 26
- Cardboard articles  
  - Page 27
- Returnable containers  
  - Page 28

### Outer packing unit
- Cardboard articles  
  - Page 27
- Returnable containers  
  - Page 28

### Transport packaging
- Euro pallet (multi-way)  
  - Page 29
- One-way pallet specification  
  - Page 30
- Pallet covering box, corrugated board  
  - Page 31
- Pallet with film hood (stretch/shrink film)  
  - Page 32
- Pallet with wooden pallet collar  
  - Page 33
- Pallet with heavy load  
  - Page 34
- Bundles on pallets  
  - Page 35
- Wooden box on pallet  
  - Page 36
- Wooden crate on pallet  
  - Page 37
- Wooden boxes  
  - Page 38
- Wooden crates  
  - Page 39
- EUR box pallets  
  - Page 40
- Returnable containers  
  - Page 41
- Loading aid  
  - Page 42

The choice of packing method is dependant on product characteristics, and protection requirements, transportation mode and structural conditions on the supplier's site.
**Pouches**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Appropriate for weight and volume of packed items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements</td>
<td>Material quality suitable for type, requirements and quantity of the article. Use VCI bags for parts which are susceptible to corrosion. Please find list of approved materials on page 15.</td>
</tr>
<tr>
<td>Closure</td>
<td>Zip fastening, sealed by welding, taped.</td>
</tr>
<tr>
<td>Use</td>
<td>Single packing unit (containing one part number) Pouches are not permitted as stand-alone containers. They should be placed in a secondary container for shipping. Mainly used for bulk items such as screws.</td>
</tr>
<tr>
<td>Essential conditions:</td>
<td>Characteristics of unacceptable pouches:</td>
</tr>
<tr>
<td></td>
<td>• Cracks</td>
</tr>
<tr>
<td></td>
<td>• Puncture, leak</td>
</tr>
<tr>
<td></td>
<td>• Improper closure</td>
</tr>
</tbody>
</table>

**Example of correct use**

![Diagram of pouches and bags](image-url)
### Corrugated board / Cardboard articles

**Dimensions**

For small parts, cartons **500x300 mm** in size or smaller are recommended for use.

Otherwise pallet cartons **1200x800 mm** in size or package sizes suitable for pallet size 1200mm x 800 mm are recommended for use (conforming to DIN 55510)

<table>
<thead>
<tr>
<th>Size</th>
<th>1200x800</th>
<th>600x400</th>
<th>600x133</th>
<th>120x133</th>
<th>600x100</th>
</tr>
</thead>
<tbody>
<tr>
<td>600x400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>600x200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Constructions**

Easy to open, stackable

**Permissible total weight**

- Stand-alone container without pallet: 20 kg
- Container suitable for manual handling: 20 kg
- Pallet-container: 1000 kg

**Requirements**

The box quality must ensure secure stacking stability and withstand the stress impact during transportation, handling and storage. Adapted to stacking height and terms of transport, at least complying with DIN 55468.

When stacking pallet cartons, stacking stability can be achieved by the use of e.g. wood blocks. In this case, the use of inner cushioning material between the top of the parts and top of the box is recommended.

**Closure**

Adhesive tape, Staples ensure that prongs of all staples should be completely bent into a closed position. Lining/cover sheeting is to be used in a proper way so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact.

**Stackability**

To arrange rational loading units, boxes must allow secure stacking. Ensure that pallets which are not suitable for stacking are marked accordingly on top.

**Use**

Corrugated board boxes can be used as single packing units or as outer packing units. Ensure that corrosion-sensitive parts are not in direct contact with the carton. Ensure that parts are properly secured inside the container so that there will be no damage or loss during transportation and handling.

**Essential conditions:**

Characteristics of unacceptable corrugated board boxes:
- vertical or horizontal cracks
- flexed edges
- high moisture content
- cracks

<table>
<thead>
<tr>
<th>Example of incorrect use</th>
<th>Example of correct use</th>
</tr>
</thead>
</table>

**Carton as single packing unit:**

- corrugated carton
- inserts: e.g. moulded insert
- Lining/inner bag
- inserts: e.g. intermediate layers

**Carton as outer packing unit**

- corrugated carton
- single packing units
**Returnable container**

**Dimensions**
500 x 300 mm

**Constructions**
Schäferkiste LF 531 / LF 532
Alternative small load carriers (KLT) with the same measurements may be used, subject to approval.

**Permissible total weight**
20 kg

**Requirements**
Please find approved materials on page 15.

**Closure**
The use of lids is recommended. Lining/cover sheeting is to be used in a proper way so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact.

**Stackability**
Interconnection system for safe stacking is recommended.

**Use**
Returnable boxes can be used as single packing units or as outer packing units. Ensure that parts are properly secured within the container so that there will be no damage or loss during transportation and handling.

**Essential conditions:**
Containers must
- be free of contamination
- safely and securely stackable
- stable on surfaces

---

**Example of a returnable container**

---

**Example of correct use:**

**Container as a single packing unit:**

- Lid
- Container
- inserts

**Container as an outer packing unit:**

- Lid
- Container
- single packing units
Euro pallet

Dimensions 1200 x 800 mm

Constructions Euro pallet conforming to DIN 15146

Permissible total weight 1000 kg

Requirements Please find approved materials on page 15.

Stackability Ensure that pallets are stable on surfaces and are safely and securely stackable

Use Pallets are used to build rational loading units. Use corrugated pallet cartons, pallet collars, stretch film etc. to secure load on the pallet.

Essential conditions: Characteristics of non-acceptable pallets:
- damaged upper or lower edge or middle board
- missing, split or otherwise damaged blocks
- transversely or diagonally broken boards
- missing boards
- nails and/or screw shanks protruding
- strong contamination

Example of incorrect pallet

Example of correct pallet

- Complete and intact blocks
- Plane side surfaces
- Stay stable on surfaces
- Complete and intact boards
- Complete and intact nailing
- No contamination hazardous to the load.
### One-way pallet

**Dimensions**

- **LxW:** 1200x800 mm
- **Max. height:** 1800 mm with pallet

**Construction**

- 4-way pallet
- **Permissible total weight:** 1000 kg

**Requirements**

Please find list of approved materials on [page 15](#).

**Stackability**

Ensure that pallets are stable on surfaces and are safely and securely stackable.

**Use**

One-way pallets should only be used when Euro pallets are not available.

**Essential conditions:**

- Characteristics of unacceptable pallets: (see also [page 29](#)).
  - damaged upper or lower edge or middle board
  - missing, split or otherwise damaged blocks
  - transversely or diagonally broken boards
  - missing boards
  - nails and/or screw shanks protruding
  - severe contamination
  - uneven side surfaces
### Pallet Covering Box, Corrugated Board

**Dimensions**
- LxW: 1200x800 mm  
- Max. height: 1800 mm with pallet

**Constructions**
- Euro pallet, 4-way pallet
- 3-ply corrugated fibreboard.

**Requirements**
- Waterproof coated corrugated board for overseas shipments.
- Depending on the requirements, material quality must ensure secure stacking stability and withstand the stress impact during transportation, handling and storage. Adapted to stacking height and terms of transport, conforming to DIN 55468.

**Closure**
- Adhesive tape, staples [ensure that prongs of all staples are completely bent into a closed position]. Lining/cover sheeting is to be used in a proper way so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact.

**Stackability**
- Ensure that pallets that are suitable for stacking provide sufficient stacking strength by providing e.g. internal wood blocks inside the carton. Firm surface on top is required for safe and secure stacking.
- Ensure that pallets which are not suitable for stacking are marked accordingly on top.

**Use**
- May be used as a single or outer packing unit.

**Pallet**
- Please find details on page 29/30

**Overhang**
- Avoid overhang in longitudinal direction, the max. permissible overhang on each side is 15 mm.

**Essential Conditions**
- Please see essential conditions for pallets page 29 and essential conditions for corrugated board page 27.

**Edge Protectors / Strapping**
- Strapping must be applied using proper tension. Excessive tension may cause the container and/or pallet to fail. When strapping to corrugated cartons, use of corner and/or edge protectors is recommended to prevent the collapse of carton edges. Avoid longitudinal strapping.

**Example of incorrect use**

**Example of correct use:**

![Correct Use Diagram]
**Pallet cover: shrink, stretch wrapping, film hood**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>LxW: 1200x800 mm</th>
<th>Max. height</th>
<th>1800 mm with pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructions</td>
<td>Euro pallet, 4-way pallet</td>
<td>Permissible total weight</td>
<td>1000 kg</td>
</tr>
</tbody>
</table>

**Shrink wrapping**
Sharp-edged items should be shrink-wrapped using edge protectors. When shrink wrapping pallet loads, the film should be placed such that it extends over the lower edge of the pallet deck, ensuring that the cargo cannot slip.

**Stretch wrapping**
Sharp-edged items should be shrink wrapped using edge protectors. Stretch wrapping should only be used for light weights and firmly consolidated cargo. When stretch wrapping is applied, the pretension should not exceed the compressive strength of the item being packaged. Though, if low levels of pretension are applied, securing of the cargo in transit is also reduced. When stretch wrapping pallet loads, the film should be placed such that it extends over the lower edge of the pallet deck, ensuring that the cargo cannot slip.

**Closure**
Lining/cover sheeting is to be used in a proper way so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact.

**Stackability**
Ensure that pallets which are not suitable for stacking are marked accordingly on top.

**Use**
Used to secure one or more single packing units on a pallet.

**Pallet**
Please find details on page 29/30

**Overhang**
Avoid overhang in longitudinal direction, the max. permitted overhang is 15 mm on each side.

**Essential conditions:**
Please find essential conditions for pallets on page 29.

**Edge protectors/Strapping**
Strapping must be applied using proper tension. Excessive tension may cause the container and/or pallet to fail. When strapping to corrugated cartons, use of corner and/or edge protectors is recommended to prevent the collapse of carton edges. Avoid longitudinal strapping.

**Example of incorrect use**

**Example of correct use**

Outer packaging:
- shrink film or
- stretch film or
- film hood

**Edge protectors**

**Vertical strapping**
## Pallet collar

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>LxW: 1200 x 800 mm</th>
<th>Max. height: 1800 mm with pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructions</td>
<td>• ÖBB pallet collar</td>
<td>• Foldable pallet collar</td>
</tr>
<tr>
<td>Permissible total weight</td>
<td>1000 kg</td>
<td></td>
</tr>
<tr>
<td>Requirements</td>
<td>Acceptable collars must be free of contamination, allow safe and secure stacking and remain stable during stacking.</td>
<td></td>
</tr>
<tr>
<td>Closure</td>
<td>Collar lid if required. Lining/cover sheeting is to be used in a proper way so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact.</td>
<td></td>
</tr>
<tr>
<td>Stackability</td>
<td>Ensure that pallets which are not suitable for stacking are marked accordingly on top.</td>
<td></td>
</tr>
<tr>
<td>Use</td>
<td>Used to secure parts or packing units on a pallet. When packing heavy and/or oversized parts, ensure that the load is properly secured to prevent shifting.</td>
<td></td>
</tr>
<tr>
<td>Pallet</td>
<td>Please find details on page 29/30</td>
<td></td>
</tr>
<tr>
<td>Overhang</td>
<td>Avoid overhang in longitudinal direction, the max. permissible overhang is 15 mm on each side.</td>
<td></td>
</tr>
</tbody>
</table>

### Essential conditions:
- Characteristics of unacceptable collars:
  - missing, split or otherwise damaged boards
  - transversely or diagonally broken boards
  - improper function of foldable collar
  - nails and/or screw shanks protruding
  - strong contamination

Please find essential conditions for pallets on page 29.

### Example of incorrect use

![Incorrect use example]

### Example of correct use:

![Correct use example]

- Outer packaging: pallet collar
- Vertical Strapping
### Heavy parts on pallets

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>LxW: 1200x800 mm</th>
<th>Max. height: 1800 mm with pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructions</td>
<td>Please find pallet details on page 29/30</td>
<td></td>
</tr>
<tr>
<td>Permissible total weight</td>
<td>1000 kg</td>
<td></td>
</tr>
<tr>
<td>Requirements</td>
<td>Heavy and/or oversized items which are shipped directly on the pallet must be centred. When packing heavy and/or oversized parts, ensure that the load is properly secured to prevent shifting. Ensure sufficient and secure strapping to prevent cargo shifting. Depending on part-protection-requirements the use of film or VCI film is recommended.</td>
<td></td>
</tr>
<tr>
<td>Closure</td>
<td>Lining/cover sheeting is to be used in a proper way so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact.</td>
<td></td>
</tr>
<tr>
<td>Edge protectors / Strapping</td>
<td>Strapping must be applied using proper tension. Excessive tension may cause the parts and/or pallet to fail. When strapping items, the use of corner and/or edge protectors is recommended to prevent the part from damage.</td>
<td></td>
</tr>
<tr>
<td>Stackability</td>
<td>Ensure that pallets which are not suitable for stacking are marked accordingly on top.</td>
<td></td>
</tr>
<tr>
<td>Use</td>
<td>Centre the load on the pallet and/or distribute the weight evenly. To protect the parts from corrosion and contamination, a film hood/shrink film/stretch film should be used. This packing unit is only allowed to contain one part number.</td>
<td></td>
</tr>
<tr>
<td>Overhang</td>
<td>When applicable, avoid overhang in longitudinal direction, the max. permissible overhang is 15 mm on each side.</td>
<td></td>
</tr>
<tr>
<td>Essential conditions:</td>
<td>Please see essential conditions for pallets page 29.</td>
<td></td>
</tr>
</tbody>
</table>

#### Example of incorrect use

Ensure that all parts are properly secured on the pallet!

#### Example of correct use:

- Edge protectors
- Vertical strapping
- Cover sheeting

---

Example of incorrect use: [Image]

Example of correct use: [Image]
**Bundles on pallets**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>LxW: 1200 x 800 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructions</td>
<td>Long parts can be bundled and secured on pallets. The pallet size should be suitable for the bundle length and the ends of the bundle must be properly secured against damage during transportation, storage and handling. Bundles must be secured to a pallet to ensure safe and easy handling during unloading and handling with forklift/manual lifting. Bundles must be fixed on the pallet in a way that provides the parts to remain stable on the pallet during unloading and handling as well as while opening the bundle.</td>
</tr>
<tr>
<td>Permissible total weight</td>
<td>1000 kg</td>
</tr>
<tr>
<td>Requirements</td>
<td>Ensure sufficient and secure strapping to prevent the cargo shifting. Depending on part-protection requirements, the use of film or VCI film is recommended. Acceptable containers must be free of contamination, safely and securely stackable and stable on surfaces.</td>
</tr>
<tr>
<td>Closure</td>
<td>Lining/coverage is to be use in a proper way so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact.</td>
</tr>
<tr>
<td>Strapping</td>
<td>Strapping must be applied using proper tension. Excessive tension may cause the item and/or pallet to fail. When strapping parts, the use of corner and/or edge protectors is recommended to prevent surfaces from damage.</td>
</tr>
<tr>
<td>Stackability</td>
<td>Construction and material quality should guarantee safe stacking during transport and handling and be appropriate to the weight of the items. Ensure that bundles which are not suitable for stacking are marked accordingly.</td>
</tr>
<tr>
<td>Use</td>
<td>A bundle should contain only one item type. Sensitive parts must be protected by using intermediate layers and/or outer wrapping to protect sensitive surfaces and the ends of the product from damage.</td>
</tr>
<tr>
<td>Pallet</td>
<td>Please find details on page 29/30</td>
</tr>
</tbody>
</table>
| Essential conditions: | • Provide safe and stable stacking  
                          • Must be stable  
                          • Free from contamination |

**Example of incorrect use**

**Example of correct use**
Wooden box on pallet

For all parts shipped in wooden boxes, consider using an alternative packing system which could also meet the requirements while being more efficient!

<table>
<thead>
<tr>
<th>Dimension</th>
<th>1200 x 800 mm</th>
<th>Max. height:</th>
<th>1800 mm with pallet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constructions</td>
<td>Box constructions conforming to DIN 55499</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Permissible total weight</td>
<td>Depending on box construction, max. 1000 kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Requirements</td>
<td>Ensure that the load is properly secured to prevent it slipping. Ensure sufficient and secure strapping to prevent the cargo shifting. Depending on part-protection requirements, the use of anticorrosive paper, film or VCI film is recommended.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closure</td>
<td>Closures must be of the proper type and provide safe and easy opening. Lining/cover sheeting is to be used in a proper way so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strapping</td>
<td>Strapping must be applied using proper tension. Excessive tension may cause the box to fail.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stackability</td>
<td>Construction and material quality should guarantee safe stacking during transport and handling and be appropriate for the weight of the items. Ensure that units, not suitable for stacking are marked accordingly.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use</td>
<td>Internal transit support is used to protect parts from damage due to mechanical stresses such as impact, jolting or vibration in transit. This can be done by internal structures which keep the parts in position and prevent them from slipping. The structures are individually designed to meet requirements. This packing unit should contain one article.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pallet

Please find details on page 29/30

Essential conditions:

Acceptable containers must be free of contamination, safely and securely stackable and stable on surfaces.

Characteristics of unacceptable boxes:

- missing, split or otherwise damaged boards/block
- transversely or diagonally broken boards
- nails and/or screw shanks protruding
- strong contamination

Example of incorrect use

Example of correct use:

Box construction conforming to DIN 55499

Euro pallet or four-way pallet
Wooden crate on pallet

For all parts shipped in wooden crates, considered using an alternative packing system which could also meet the requirements while being more efficient!

**Dimensions**
- 1200 x 800 mm
- **Max. height:** 1800 mm with pallet

**Crate construction**
Conforming to DIN 55405
Crates made from boards, battens or laths. Strengthened by diagonal battens and/or parallel laths or battens with spaces between them. Corners in the form of three-way corners. Open crates lined with film. Closed crates lined with plywood, chipboard or fibreboard.

**Permissible total weight**
Depending on box construction, max. 1000 kg

**Requirements**
Ensure that the load is properly secured to prevent it slipping. Depending on part-protection requirements the use of anticorrosive paper, film or VCI film is recommended. Acceptable containers must be free of contamination, safely and securely stackable and stable on surfaces.

**Closure**
Lining/cover sheeting is to be used in a proper way so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact.

**Strapping**
Strapping must be applied using proper tension. Excessive tension may cause the crate to fail.

**Stackability**
Construction and material quality should guarantee safe stacking during transport and handling and be appropriate for the weight of the items. Ensure that units, not suitable for stacking are marked accordingly.

**Use**
Open crates should be lined as per requirements. Internal transit support is used to protect parts from damage due to mechanical stresses such as impact, jolting or vibration in transit. This can be done by internal structures which keep the parts in position and prevent them from slipping. The structures are individually designed to meet requirements. This packing unit should contain one article.

**Pallet**
Please find details on page 29/30

**Essential conditions:**
Acceptable containers must be free of contamination, safely and securely stackable and stable on surfaces.

Characteristics of unacceptable boxes:
- missing, split or otherwise damaged boards/ block
- transversely or diagonally broken boards
- nails and/or screw shanks protruding
- strong contamination

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Example of incorrect use:
- Three-way-corner
- Crate lined with film (Using proper film quality)

Example of correct use:
- Three-way-corner
- Crate lined with film (Using proper film quality)
Wooden box

For all parts shipped in wooden boxes, consider using an alternative packing system which could also meet the requirements while being more efficient!

Constructions
Conforming to DIN 55499
Wooden boxes must provide safe and easy handling during unloading and handling with forklift/manual lifting.

Basic types

Permissible total weight
Depending on box construction, max. 500 kg

Requirements
Components which are shipped in wooden boxes must be placed in a way that the load is properly secured from getting out of place. Depending on part-protection-requirements the use of anticorrosive paper, -film or VCI film is recommended. Acceptable containers must be free of contamination, safely and securely stackable and stable on surfaces.

Edge protectors / Strapping
Strapping must be applied using proper tension. Excessive tension may cause the box to fail. The use of corner and/or edge protectors is recommended to prevent the box from damage.

Closure
Should provide safe and ease opening and is to be used in a proper way so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact. Lining/cover sheeting is to be used in a proper way so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact.

Stackability
Construction and material quality should guarantee safe stacking during transport and handling and be appropriate for the weight of the items. Ensure that boxes which are not suitable for stacking are marked accordingly.

Use
This packing unit should contain one article. Inserts serve mainly to secure the item in the box and to transmit the forces acting on the lid to the box bottom. Internal transit support is used to protect parts from damage due to mechanical stresses such as impact, jolting or vibration in transit. Boxes with a large lid area have additionally to be provided with lid supports.

Essential conditions:
Acceptable containers must be free of contamination, safely and securely stackable and stable on surfaces.
Characteristics of unacceptable boxes:
• missing, split or otherwise damaged boards/ block
• transversely or diagonally broken boards
• nails and/or screw shanks protruding
• severe contamination

Example of incorrect use

Example of correct use
Wooden crates

For all parts shipped in wooden crates, consider using an alternative packing system which could also meet the requirements while being more efficient!

Dimensions

Crate construction
Conforming to DIN 55405
Crates made from boards, battens or laths. Strengthened by diagonal battens and/or parallel laths or battens with spaces between them. Corners in the form of three-way corners. Open crates must be lined with film. Closed crates must be lined with plywood, chipboard or fibreboard.

Permissible total weight
depending on box construction

Requirements
Ensure that the load is properly secured from getting out of place. Depending on part-protection-requirements the use of anticorrosive paper, film or VCI film is recommended. Acceptable containers must be free of contamination, safely and securely stackable and stay firm on surfaces.

Closure
Lining/cover sheeting is to be used in a proper way so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact.

Strapping
Strapping must be applied using proper tension. Excessive tension may cause the crate to fail.

Stackability
Construction and material quality should guarantee safe stacking during transport and handling and be appropriate for the weight of the items. Ensure that units not suitable for stacking are marked accordingly.

Use
Open crates should be lined as per requirements. Internal transit support is used to protect parts from damage due to mechanical stresses such as impact, jolting or vibration in transit. This can be done by internal structures which keep the parts in position and prevent them from slipping. The structures are individually designed to meet requirements. This packing unit should contain one article.

Essential conditions:
Acceptable containers must be free of contamination, safely and securely stackable and stable on surfaces.

Characteristics of unacceptable boxes:
• missing, split or otherwise damaged boards/ block
• transversely or diagonally broken boards
• nails and/or screw shanks protruding
• strong contamination

Example of incorrect use
Example of correct use

Three-way-corner
Crate lined with film
**EUR box pallets**

**Dimensions**
1200 x 800 mm

**Constructions**
EUR box pallets conforming to DIN 15155

**Permissible total weight**
1000 kg

**Requirements**
Place components so that the weight is evenly distributed. Ensure that the load is properly secured to prevent it slipping. Avoid damage to the box pallet by improper placement. Depending on part-protection requirements, the use of anticorrosive paper, film or VCI film is recommended. Acceptable containers must be free of contamination and stable on surfaces.

**Closure**
Lining/cover sheeting is to be used in a proper way so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact.

**Stackability**
Box pallets must be in a condition that allows safe and secure stacking.

**Use**
This packing unit should contain one article.

**Essential conditions:**
Characteristics of unacceptable box pallets:
- deformed stacking frame or corner uprights
- hinged front panels can not be opened/closed
- bent floor frame/feet that impede safe stacking
- torn lattice
- missing or broken boards
- missing or illegible identification markings
- contamination due to rust or dirt so that freight can be contaminated

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**Example of incorrect use**

- Avoid overfill
- Avoid overload
- Parts must be easy to identify; parts must be properly secured

**Example of correct use:**

- Efficient space utilisation
- Layers separated by intermediate layers
- Box pallet
- Intermediate layer
- Lining/inner bag
# Returnable container

<table>
<thead>
<tr>
<th><strong>Dimensions</strong></th>
<th>1200 x 800 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Constructions</strong></td>
<td>Boxes must provide safe and easy handling during unloading and handling with forklift and manual lifting.</td>
</tr>
<tr>
<td><strong>Permissible total weight</strong></td>
<td>1000 kg</td>
</tr>
<tr>
<td><strong>Requirements</strong></td>
<td>Acceptable containers must be free of contamination, safely and securely stackable and stable on surfaces.</td>
</tr>
<tr>
<td><strong>Closure</strong></td>
<td>The box should provide safe and easy opening and reclosing. Box closures must be of the proper type so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact.</td>
</tr>
<tr>
<td><strong>Stackability</strong></td>
<td>Construction and material quality should guarantee safe stacking during transport and handling and be appropriate for the weight of the items. Ensure that boxes which are not suitable for stacking are marked accordingly.</td>
</tr>
<tr>
<td><strong>Use</strong></td>
<td>This packing unit is recommended to contain one articles. Ensure sufficient and secure transit support to prevent cargo shifting. Depending on the sensitivity of parts, the use of anticorrosive paper, film or VCI film is recommended.</td>
</tr>
</tbody>
</table>

**Essential conditions:**

- Must provide safe and stable stacking
- Must be stable
- Must be free from contamination

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*Example of a returnable container*
Loading aid

Heavy and oversized items that are not transportable using standard packing systems should be transported using loading aids. It is recommended that all disassembled parts, which belong to the item, be tied down or at any rate attached to the item, or to the loading aid, so that all parts belonging together, are easily and clearly identifiable and cannot get lost.

**Constructions**
Loading aids can be transport frames made from wood or metal, wooden beams or the like. Additionally they must be stable on the floor and must provide proper means for securing the load. Loading aids must be shaped in a way that allows safe and easy handling during unloading and handling with the forklift and the scheduled means of transportation. Furthermore they must be properly secured to the item, so that the loading aid and item can always be handled as one unit.

**Requirements**
Properly protect all blind holes and/or through holes, by capping or plugging. Caps and plugs must be a tight fit so, that they will not come loose during transportation, handling and storage. Ensure that external threads and other protruding components are properly protected from physical damage and other external influences.

**Closure**
Linings/cover must be used in a proper way so as to protect parts from external influences, maintain interior cleanliness and keep the contents intact.

**Strapping**
Strapping must be applied using proper tension. Excessive tension may cause the item to fail. When strapping items, the use of corner and/or edge protectors is recommended to prevent surfaces from damage.

**Stackability**
Construction and material quality should guarantee safe stacking during transport and handling and be appropriate for the weight of the items. Ensure that units which are not suitable for stacking are marked accordingly.

**Use**
Sensitive parts of the product must be protected by using intermediate layers, capping, outer wrapping or the like to protect them from damage. Sensitive parts such as sensitive surfaces or protruding parts must be properly secured to prevent damage.

**Essential conditions:**
- Must provide safe and stable stacking
- Must be stable
- Must be free from contamination

**Example of incorrect use**

Feet must be properly secured so that they can’t get lost while opening the packing.

**Example of correct use:**

Ensure that parts are properly secured and that the unit is easy to handle.