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change history:

version	change description
05	Updates / new items: 3.3. Label of standard supply parts ; 3.5. Application of the label ; 6. Durability / storage capability / solderability of electr. Components ; 7.3. THT reel ; 7.7. Tray ; 7.10.1. Palettes Permitted types of palettes ; 7.10.2. Cardboard packaging ; 8. Packaging according to component types ; 9. Declaration of consent
06	layout adjustment, new template
07	Appendix amendment
08	Update item 3.3 - Data matrix value 0 changed to 1
09	Update item 3.3 - General value 0 changed to 1
10	Update item 4 - ESD- protective packaging Update item 6 - Storage property / shelf life for electronic components
11	Update item 8 – UL Labels on packaging
12	Update item 2 – 2D code on delivery notes

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1. Aim

This packaging specification serves the purpose of defining the forms of delivery to the electronic and mechanic production of E.G.O. Produktion GmbH & Co. KG / E.G.O. Polska Sp. Z o.o.. Deviations from this specification must be coordinated in writing with purchasing and production for each individual case.

This agreement is an integral part of the supply relationship between the parties and applies to the whole extent of supplies (products) sent from the supplier to EGO in Oberderdingen.
If the type of packaging is defined in existing contracts between the parties, such as in current, valid supply specifications, quality assurance agreements (QSVs) or other supply contracts as well as existing EGO order documents, such as order texts in orders, technical drawings, datasheets etc., the terms in the existing contracts are given priority. However, the effectiveness of the remaining clauses in the packaging specification remains unaffected.

2. Obligatory details on delivery notes

Within the scope of clear allocation and particularly within the scope of traceability, the following obligatory information must always be provided on the delivery papers/notes accompanying the goods:

- Supplier / manufacturer batch number
- EGO material number
- Supplier / manufacturer
- Quantity / quantity unit per batch (pieces, panel.....). If several orders are covered with one delivery, all ordering codes have to be written on the delivery note
- Order number (order, supply plan, framework contract etc.)
- Delivery note with date
- For reel goods: confirmation of individual components or reference to datasheet (incl. version) with construction overview.
- For plastic parts: confirmation of the material used including re-granulation proportion
- 2D code for automatic posting
  Structure: [)><RS>06<GS>V<GS>K<GS>4K<GS>P<GS>2S<GS>Q<RS>…
  - 06 – Code type
  - V – Supplier code assigned by EGO (V content optional)
  - K – EGO order number
  - 4K – Line number of the order (4K content optional)
  - P – EGO material number (18 digits)
  - 2S – ASN number / SID number
  - Q – Material quantity

3. Marking of the products

- Machine readable label markings with barcodes and clear text - following EIA 556.
- Deviations from this specification must be arranged with EGO in writing.
- The printing has to be wiping proof.

3.1. Clear text

The clear text can be printed in any font. The size should be adapted to suit the size of the label. The barcode and clear text must be able to be clearly allocated.

3.2. Label layout

Declaration of the target data is compulsory. In addition, the EGO number can be applied to the label. The label *(picture 1)* is not full-scale. Changes to the layout and size of the label are possible after coordination.

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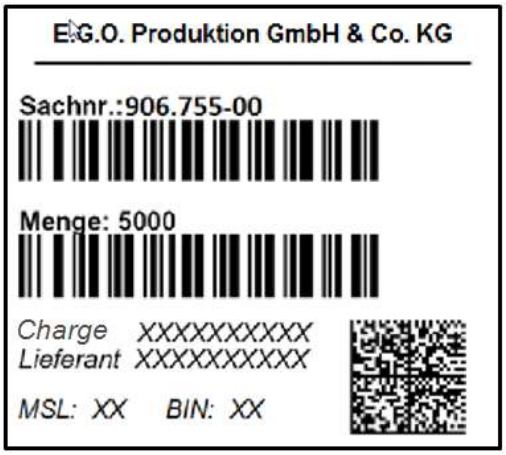
3.3. Label of standard supply parts

General

- The part number corresponds to the EGO article number and must be clearly indicated on the label.
  The following formatting is mandatory:
  - Point separation according to the order code: for example => 900.000-00, 75.455.455
  - Only digits and the above-mentioned point separation may be included.
  - Index references are only allowed in the following form: 900.000-00.

  Not allowed are other index separators such as: 900,000 / 00 or similar.
- The indication of quantity may not contain thousands separators.



- The part number and the quantity must be displayed with bar code + plain text and must be also included in the Data Matrix code on the label.
- The words “part number" and " quantity " may not be contained in the barcode.
- The supplier name and the batch must be indicated as plain text on the label.
- The MSL level (moisture sensitivity) is to be specified as plain text and additionally in the Datamatrix code.
- For optoelectronic components (LEDs, displays, …) the BIN (brightness class) must be specified as a clear text and additionally in the Datamatrix code.
  Only one brightness class can be specified. If no brightness class is present, the value "1" must be entered.

Picture 1

Barcode

- The bar code is to be executed in code 128th
- The barcode height must be at least 7mm.
- The data in the barcode are aligned left to arrange. Spaces are not allowed

Datamatrix

- The bar code is to be executed in code 128th
- Datamatrix Size: approx. 16 mm x 16 mm, module width: 12dots
- Code structure is as follows:
  Part number $ Supplier batch $ Quantity $ Supplier $ Manufacturer description $ Random number $ MSL $ BIN
- Part number corresponds to E.G.O. Article number.
- The supplier batch must contain a clear reference to the delivery and to the supplier.
- The quantity can not contain thousands separators.
- The random number consisting of at least 4 points and is changing from label to label.
  Repetitions must be avoided.
- If it is uncritical then MSL should contain the value "1". The field can not be empty.

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- BIN Brightness class can be specified with a maximum of one brightness class. If brightness class does not exist, enter the value "1". The field can not be empty.

Preferred label size:
Articles: 60 mm X 70 mm; outer packaging: 150 mm X 100 mm

Number of labels per delivery:
- 1 label on the smallest packaging unit
- 1 label per pack

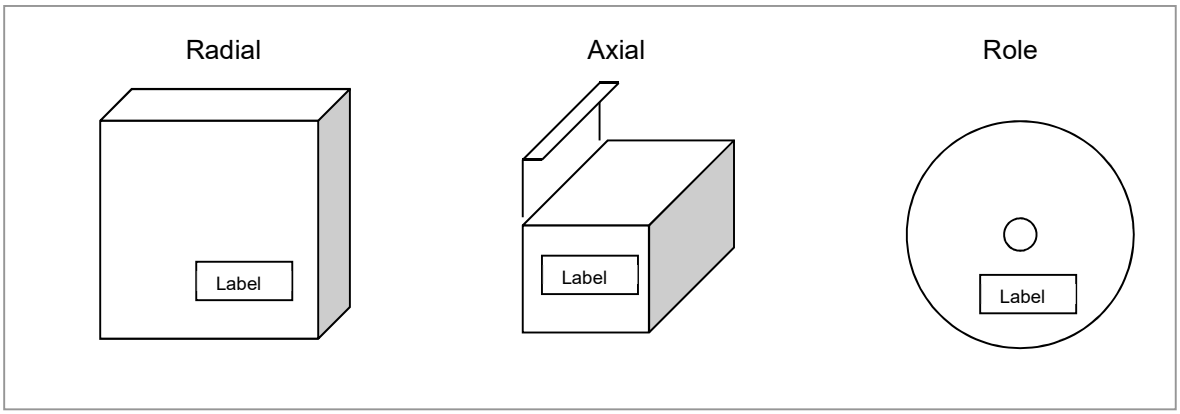
All packaging units (from wrapping through to the smallest packing unit e.g. transport packaging, outer carton or reels) must be identified with the respective labels.

3.4. Labeling of the transport packaging

In addition to the above-mentioned label the respective delivery note number must also be provided on each transport packaging.

3.5. Label on package

The attachment of the label to the transport packaging is basically freely selectable.
The correct readability must be ensured and it must have a minimum distance of 5 cm from a package edge to the edge of the label.
On the product packaging the label is to be attached if possible according to picture 1.
Each product package (elementary package) may contain only 1 label and 1 batch even if this results in reduced quantities.



Picture 1

Caution:
In the case of parts which are subject to a dry duty, the label must be removable and once again reusable in order to apply it to the roll (Picture 2).

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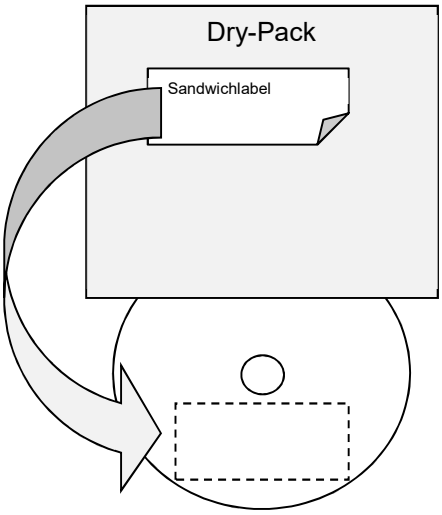

Picture 2

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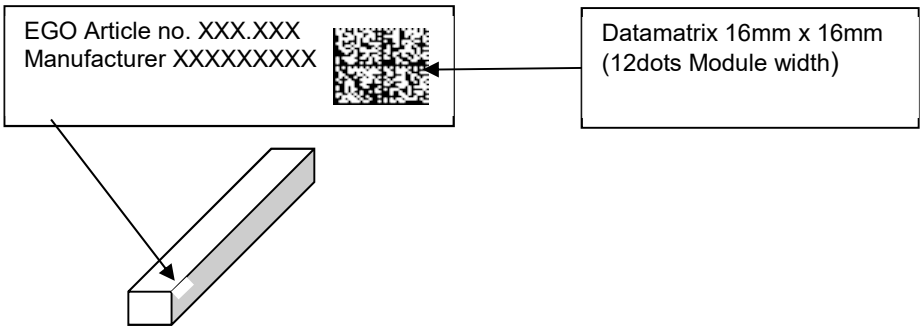
Optional
Labels with Datamatrix code on sticks according to pictures 3.



Picture 3

4. ESD- protective packaging

Packaging materials must conform to ESD and must not generate any loads themselves.
ESD protective packaging must be observed the general requirements of the standard DIN EN 61340-5-3 / IEC 61340-5-3.
Packaging materials that are in direct contact with electronic components must be marked with the ESD classification symbol given in IEC 60417-6202 (shown in accordance with Figure 4).

Primary function code *	Primary function	ESD classification symbol
S	Electrostatic discharge shielding	
F	Electrostatic field shielding	
C	Electrostatic conductive	
D	Electrostatic dissipative	

Figure 4 - Primary function code / ESD classification symbols

Polystyrene may not be used in any way for packaging electronic products due to the ESD regulations.

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5. Moisture protective packaging

The moisture protective packaging (DryPack) is intended to protect components against absorbing moisture during transport to the customer until they are processed, including EGO storage periods.
This requirement is valid for all parts which are marked at chapter 6. Packaging must have the features in accordance IPC-M-109. The packaging must also be able to be resealed several times after opening.

Other Dry-Pack features are:

- Opaque multi-layer bags, antistatic, shielding, aluminum barrier layer (inside or outside) and airtight seal
- Desiccant
- Moisture measurements strips (indicators)
- Dry-Pack identification with printing (currently with details of storage periods and processing information).
- The label must be removable and restickable.

6. Storage property / shelf life for electronic components

To the E.G.O. electronics manufacturing may no electronic components are supplied, if the date of manufacture does not exceed the following standard of usability of electronic components.

Material group	Max. workability
SMD components	18 months
THT components	12 months

In exceptional cases, a written request must be sent to the central EGO email address:
“od.quality-electronic@egoproducts.com“ / subject: "request component exceeded storage time".

Superimposed components are generally only released for delivery with reservation.
The final approval is given by EGO after internal approval and a positive special test
(usually without further feedback to the supplier)

The delivery of superimposed components must be marked and delivered separately
=> no delivery via Kanban.

All expenses / additional costs of the special tests can be charged to the supplier.
Unusable goods / components are charged to the supplier and returned.

7. Types of packaging

7.1. General requirements

- Usually the delivery form is described by our ordering code
- The components have to be delivered in dry condition
- In order to keep the solerability of at least six months after delivery to EGO the components have to be packed with appropriate material
- Electronic components may not be contaminated or damaged by the packaging material
- Wear gloves when packing electronic components manually

7.2. SMD reel

- Reel thickness: 8mm,12mm,16mm, 24mm, 32mm, 44mm, 56mm
- Reel diameter: preferred 7“, 10“, 11“, 13“
- Container sizes: more than 5000 pieces should be aimed for

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7.3. THT reel

- Reel thickness: 30mm, 55mm, 70mm, 75mm, 80mm, 85mm
- Reel diameter: 12“, 13“, 14“, 20“, 22“

7.4. Ammopack

- Standard 340mm*200mm*55mm
- 12.7 mm hole matrix is always given priority, in exceptional cases: 15mm

7.5. Stick

- Specific to component

7.6. Bulk material

- Specific to component
- Safe supply must be ensured
- No damages may be caused by "pouring" the materials
- The parts may not get caught
- The parts may not be pressed
- The pins may not be bent upon delivery

7.7. Tray

- Specific to component
- Coordination with O-DWE-IE necessary for orientation detection and gripping depression
- Simple and rapid removal must be guaranteed

7.8. Box

- Specific to component

7.9. EGO rental packaging

- Specific to component
- EGO rental packaging can be used for various special EGO parts (such as foam cylinders) upon request.
- The rental packaging is made up of base, cover and inserts (EGO part number 152.241 and 152.240)

7.10. Transport packaging

To avoid damages during transportation, all products have to be protected with sufficient transport packaging. For any changes or adaptions, QM-Supplier has to be informed via PCN for a special release.

7.10.1. Palettes Permitted types of palettes

- Preferred: euro-pallets (or after consultation container palettes 1150x750 mm)
- One-way palette
- Other types of palletes only after consultation with E.G.O.

Prohibited types of palettes:

- Palettes without heat treatment

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Palettes have to be built up according the following requirements:

- All palettes have to be carried easily by palette truck
- The skid of all palettes have to run longitudinal
- The longitudinal skids of the palettes should have voids in lateral direction to handle them by fork-lift truck

Regulations for delivery of several palettes:

- Mixed palettes have to be avoided, products with the same material number should be combined to the same palette
- Clear idendifiability has to be guaranteed: each palette has to be clearly marked with the corresponding number of the delivery note and the delivery address

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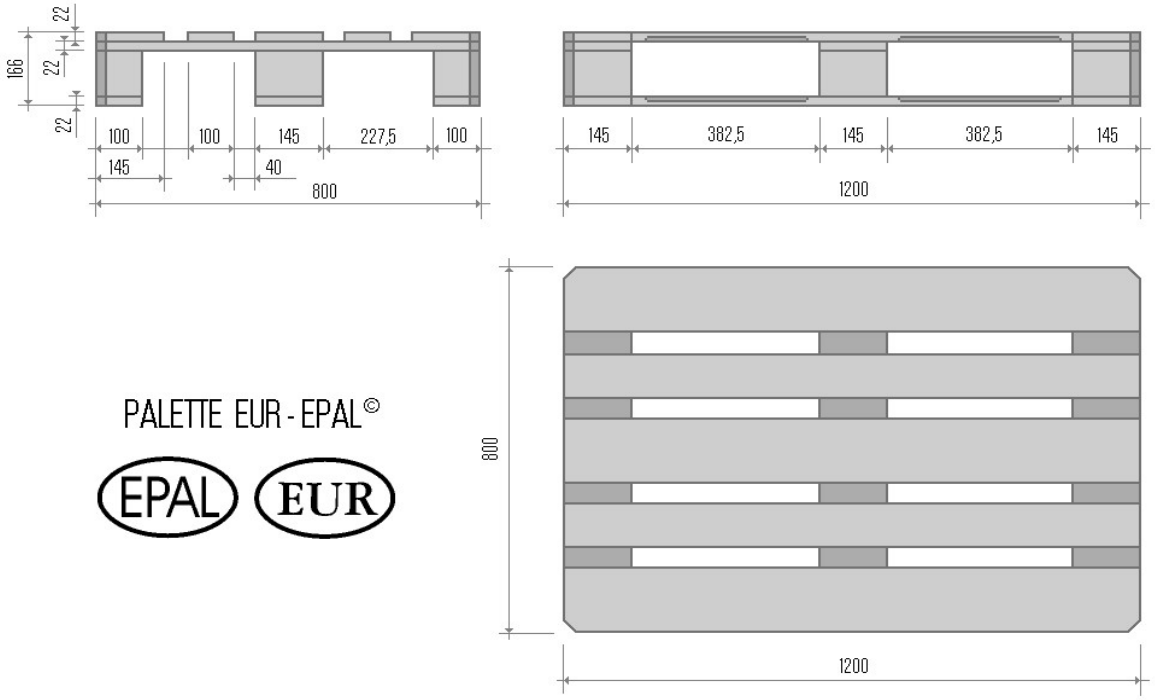
Dimensions according to picture 5
The maximum height of the loaded euro-pallet is **1000mm.** Any other dimensions, up to **1400mm** must be clarified with EGO in advance.



Picture 5

Exchange criteria
Only euro-pallets in perfect condition will generally be exchanged as exchange pallets. This means:

- Undamaged base and covers
- No protruding nails and screws
- Undamaged inner and outer blocks
- Correct identification of blocks
- Standardized according to EPAL and ISPM 15

Identification
A euro-pallet must display the following identification to be handled as such:

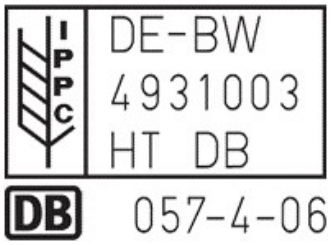
- The EPAL identification on the left corner block.
- The supplier code - the tester's signature clip or a round test nail on the center block of both long sides for repaired euro-pallets.
- The European pallet pool EUR sign on the right corner block.

Weight loads of a euro-pallet
Maximum delivery weight at E.G.O. => Maximum of 800kg per pallet
The EUR flat pallet is laid out as follows:

- 1000 kg (nominal load), if the load is distributed in any way on the surface of the pallet
- 1500 kg, if the load is evenly distributed on the surface of the pallet
- 2000 kg, if the load is fully and evenly placed in a compact form on the whole pallet surface

When stacked, the additional load on the bottom pallet is a maximum of 4000 kg if it is on a level, horizontal and rigid surface and the load is applied fully and horizontally. For electronic components, there may be no direct load on the packed components.

Heat treatment (HT) [or gassing with methyl bromide (MB)]*
The wood used for packaging must be subjected to heat treatment (HT treatment) with a core temperature of at least 56 °C for a period of at least 30 minutes (source: FVO, 2003: Guidelines for regulating wood packaging material in international trade, ISPM No. 15, FAO Rome, page17 of English text version). The pallets have to be marked by the welding on both center blocks on the long side (according to picture 6).



Picture 6

Use of methyl bromide*
The use of methyl bromide* is banned in the EU. (Directive (EC) no. 2037/2000)
Palettes for deliveries to Mexico or China have to be coordinated with the accordingly production site.

7.10.2. Cardboard packaging

- If cardboard is used as transport packaging, it has to be reduced to the minimum, without reducing the protective characteristics.
- Nested cardboards have to been avoided as transport packaging.

7.10.3. Wood packaging

- The use of wooden lagging and wooden boxes for transportation packaging is not allowed

7.10.4. Strapping

- Strapping of single cardboards should be avoided (exception: cardboard boxes – bigger than 800 x 500 x 500 mm if necessary)
- Palettes can be strapped if necessary
- Strapping should be reduced to the minimum, without reducing the protective characteristics
- Only plastic strapping products are allowed

8. Packaging according to component types

Component	Version	Packaging	Dry pack	ESD
Resistors				
Resistors	THT	Ammopack, paper reels		required
Resistors	SMD	SMD reel - 5,000 and more should be aimed for.		required
Axial components	THT	Strapped reels, Ammopack		required
Radial components	THT	Strapped reels, Ammopack		required
Preferred: Ammopack, because placement errors can occur due to the tension on straps with large or heavy reels. For components without beading, there may be problems with the casting compound.				
Capacitors				
Capacitors for automatic assembly	THT	Reels, Ammopack or stick		required
Radial capacitors	THT	Reels		required
Capacitors for manual assembly	THT	Tray or loose		required
Preferred: reels or stick. With Ammopack, there is the danger of the component bases bending. Film capacitors with ready-cut pins should be delivered in the stick. Specification according to separate agreement and approval by O-DWE-IE				
Inductances				
Inductances must be delivered in sturdy plastic trays. Container suggestion: several trays in a carton stacked on top of each other + cardboard layer for separation. The number and size varies depending on component size. A suitable tray for manual assembly must be taken. For heavy components a sturdy tray, which cannot bend is used.				
Diodes				
Axial diodes	THT	Reel		required
Diodes	THT	Ammopack		required
Diodes	SMD	SMD reel		required
Radial components	THT	Stick		required
TO ; DO, SOT, IC -packaging	THT	Stick		required
Transistors				
IGBT	THT	Stick		required
Transistors	THT	Stick		required
Transistors	SMD	SMD reels		required
TO ; DO, SOT, IC - packaging	THT	Stick		required
Integrated digital circuits				
IC Digital	SMD	SMD reels	required	required
Component	Version	Packaging	Dry pack	ESD
Integrated analogue circuits				
IC Analogue	SMD	SMD reels	required	required
Four-layer components				
Triac	THT	Stick	required	required

Component	Version	Packaging	Dry pack	ESD
Opto				
7-segment displays	THT	Stick	required	required
7- segment displays	SMD	SMD reel	required	required
Multifunction displays	SMD	SMD reel	required	required
LED	THT	Reel	required	required
LED	SMD	SMD reel	required	required
Optocoupler	THT	Stick	required	required
Optocoupler	SMD	SMD reel	required	required
Phototransistors	SMD	SMD reel	required	required
Switching elements				
Automatic assembly relay	THT	Stick		required
Automatic assembly relay	THT	Tray or loose		required
Buzzer	THT	Ammopack		required
Buzzer	SMD	Reel		required
Modules				
BGR light channel	Agreed specifically. Generally; modules packed in plastic film and then stacked loosely in a carton. Special measures for components prone to scratches			
BGR supporting plate	Generally in a mesh box wrapped in film, stacked			
BGR housing	Individual (depending on whether these should be conditioned). A box system should be optimally used for non-conditioned parts.			
Fans				
Fans	Standardized carton tray Simple and rapid manual removal of the fans must be guaranteed (without additional film packaging). Specification according to separate agreement and approval by O-DWE-IE.			
Cable				
Packaging must be labeled with a UL-label when UL-cables are delivered. UL-cables have the ending "(UL)" in the drawings' designation.				
Flat ribbon cable	10 pieces bundled with 2 rubber bands, in a carton as bulk materials			
Braids	Bundled in a carton as bulk materials			
Cable lugs	Bundled in a carton as bulk materials			
Power cables	25 pieces, bundled in a carton as bulk materials			
Pin headers and trays				
Pin headers	Bulk materials in little bags with 300 pieces			
Pin trays	Bulk materials in a carton			
Drawing parts				
Drawing parts refer to all components produced from a drawing by EGO or a third party, and therefore does not refer to catalogue products The form of delivery is generally specified in the SAP basic data text/order text (individual agreement) **The form of packaging for drawing parts must be specified in writing - verbal arrangements are not sufficient.**				

Metal components	
Double flat plug	Bulk materials in a bag, in carton (2000 pieces per box)
Single flat plug	Reel
Connecting terminals	Bulk materials with 700 pieces in a carton
Inductor terminals	Bulk materials with 700 pieces in a carton
Pressure spring	Bulk materials
Support plates	Packaging should be agreed with the supplier. Refer to supply specification (metal construction parts) 90.35101.026
Refer to point 6.6 bulk materials	
Cooling elements	
Cooling elements	The form of delivery is specified in the SAP basic data text/order text (individual agreement)
966.026	24 pieces, upright in a packaging unit with partitions
966.027	5 trays with 20 pieces per carton.
Housing parts	
Housing parts	These should be delivered in a carton or box so that transport damages are ruled out.
Plastic components	
For conditioned parts, there is the danger of them drying out if the containers are too large As an aid for light conditioning (PE packaging with up to 5%-10% weight ratio of water / 4 weeks minimum storage before processing.) cloths such as Kimtech Prep Process 7643 cleaning cloths with the article number 960.068 can be used for deliveries to E.G.O. Elektro-Gerätebau GmbH. Exact details should be coordinated in individual cases. Caution: all components which come into contact with electronics may not display any water marks on the surface during processing.	
Spacers	Bulk materials in a bag Spacers that are conditioned should be delivered in a carton with 4 bags, each with 5000 pieces. Refer to point 9 on conditioned components or SAP basic data texts
Foam cylinder	Bulk materials in EGO rental carton. The following delivery specifications are to be observed: 90.35101.011 and 90.35101.012 Refer to point 6.9 on EGO rental packaging
Light channels	Bulk materials in a bag in a carton. The EGO specification 90.03302.274 must be observed for painted parts *Refer to 4.3 on bulk materials*
Induction coil	
The packaging requirements of induction coils are described in the following delivery instructions: - 90.35101.031 - 90.35101.035 - 90.35101.037	

Printed circuit boards
- Only complete PCBs copies without any bad PCB have to be delivered - All PCBs have to be packed in the right position - The single trading bin has to be large enough, so that it may be closed after withdrawing single parts. - X-out PCBs are not allowed to be delivered. Exceptions have to be discussed with the purchasing dept. - Paper underliner are not allowed - The foil packaging has to reach the ESD requirements according to chapter 4

Declaration of consent

Supplier/company:

Postcode: Place: Street:

Telephone: Fax:

Contact person / department: Telephone extension:

The supplier mentioned before has reviewed, taken notice of it and commits himself to meet the requirements of the:

E.G.O. delivery specification LV61040000, Version 12

Any deviations to this delivery specification have to be defined in the addendum below and approved by E.G.O.

In case of question, please contact the below-listed contact persons or the responsibles of the plant ordering from the delivery schedule:

Contact person	Telephone	Email
Mr. Tobias Beissmann	(+49) 07045 45-67884	tobias.beissmann@egoproducts.com

Date: Authorized signature(s) supplier:

Deviations to the delivery specification

item	Deviation

Date: Authorized signature(s) E.G.O. :