Directive
Packaging in Procurement

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Directive
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1. Objective and Purpose

These location-independent Packaging Instructions regulate how goods can and should be delivered to maxon. The specifications described in these Packaging Instructions form the basis for the delivery of goods (manufactured products and merchandise) to maxon.
The focus is on compliance with international regulations as well as the protection of our products and employees. The Packaging Instructions are binding and are considered part of the product specification.

2. Scope

These location-independent Packaging Instructions apply to all suppliers of the maxon Group.

3. Process Responsibility

The contact person at the maxon Group is responsible for the content and any related questions.

4. Glossary of Terms

Term	Explanation
Goods / parts	All purchased materials consumed or used in the production process, as well as merchandise and spare parts.
Articles / items	Parts or goods managed under a specific article number.
Packaged goods	Parts, goods, or articles to be packaged.
Packaging	Designation for the material used to enclose/wrap the packaged goods; can consist of various packaging layers that protect the goods and the personnel handling them.
Primary packaging	Packaging in direct contact with the product, protecting it from influences such as corrosion, moisture, electrostatic charge, or leakage.
Secondary packaging	Encloses the primary packaging and provides additional protection against mechanical and climatic stress.
Tertiary packaging	Enclosure/wrapping, or grouping of several secondary packages into a transport unit, usually pallets or containers.
Packaging material / element	Container in which the goods are packed, e.g., container insert, KLT (small load carrier, from the German term “Kleinladungsträger”), bag, mesh sleeve, etc.
Packaging auxiliaries	Accessories for closing, securing, or protecting packaging materials and load units, e.g., stretch film, edge protectors, corrosion protection paper, strapping band, filler material.
Single-use packaging	Packaging intended for one-time use and recycled after use.
Reusable packaging	Packaging designed for multiple cycles of use and that is reused.
Preservation	Temporary protection against adverse influences, used for a limited time to maintain the product condition.
ESD (electrostatic discharge)	A discharge resulting from a large potential difference in electrically insulating material, usually caused by friction (triboelectricity), which can cause a short, high electrical pulse.

5. General Packaging Regulations

It is the responsibility of the supplier (internal and external) to ensure that all delivered goods are properly and adequately preserved, protected, and packaged so that they reach their destination safely. The supplier must comply with the Packaging Instructions and take into account any national and international regulations.
For both single-use and reusable packaging, maxon requires the use of materials suitable for material recycling. Priority should be given to reusable packaging.
In doing so, maxon, together with its suppliers, follows the waste hierarchy principle of “Reduce, Reuse, Recycle” in their ecological waste management, thus making a consistent contribution to waste reduction.
Reusable and single-use packaging must be defined according to ecological and economic aspects, and only necessary packaging should be used. Reusable and single-use packaging have to be recyclable in an environmentally friendly manner.

Regardless of the choice of packaging type, the following delivery requirements must always be fulfilled:
- Damage-free delivery of parts
- Delivery exclusively in clean packaging
- Formation of efficient load units
- Optimal space utilization
- Stackability
- Stability regarding consistency, shape, and volume
- Easy unloading by means of industrial trucks, such as forklifts
- Sufficient transport securing means
- Compliance with specified standard dimensions
- Easy part removal / optimal handling in the manufacturing process
- Correct identification through standardized labeling in compliance with regulations/standards
- Recyclable materials
- Safeguarding of protection against corrosion and ESD

5.1 Determining the Packaging

The packaging is always determined by the supplier, based on the requirements of the maxon Packaging Instructions. It is therefore the supplier's responsibility to implement the stipulations of the Packaging Instructions sensibly.
Regardless of this, maxon is entitled at any time to mandate the packaging to be used, e.g., in the case of fragile parts with special requirements.
However, this does not release the supplier from the responsibility for ensuring that the parts are delivered to the delivery location without damage.
If the specified packaging is not used or if stipulations from the Packaging Instructions are ignored, maxon reserves the right to charge the supplier a processing fee for additional handling and repacking costs or waste disposal.
The supplier will be held liable for any loss in quality resulting from inadequate or dirty packaging. Deviations in justified cases, e.g., alternative packaging for series launches or extraordinary lead times, must be agreed with maxon prior to the delivery. The delivery note must include the comment “Alternative Packaging” in such cases.
The packaging specified or approved by maxon can be changed by maxon at any time during the series process after the first delivery.

5.2 Packaging Dimensions

Packaged components are stored at maxon in small load carriers (KLT). To avoid extra work during packaging, the primary packaging with the components must not exceed the following dimensions.

Internal dimensions of a maxon KLT:

1. LxWxH: 355 x 255 x <51.5
2. LxWxH: 355 x 255 x <103
3. LxWxH: 355 x 255 x <154.5
4. LxWxH: 355 x 255 x <206

6 Safety and Environment

For all materials delivered by the supplier to maxon, at a minimum the respective national legal requirements applicable to the maxon site regarding packaging, transport, storage, and substances contained must be met. Similarly, the environmental regulations applicable in the manufacturer's and to the delivered countries must be applied.

6.1 Dangerous Goods

Dangerous goods are substances that can pose a specific danger to people, animals, the environment, or public safety and order during transport in public spaces (road, rail, water, air).

If hazardous substances are delivered, country-specific requirements (laws/standards) regarding labeling and transport must be strictly followed. Safety data sheets for these must be provided before or with the delivery to maxon. The outer packaging must be labeled according to the relevant standards.

6.2 Approved and Non-Approved Packaging Materials

To minimize the logistical effort for separating and collecting materials by type and to optimize the material recycling process, only certain recyclable materials are permitted.

For all plastics, a recyclability of ≥ 70% is required (from 2035 ≥ 80%). By 2030, the minimum recycled content must be at least 35%.

Material Type	Approved Materials	Non-approved Materials
I. Composite Materials		Composites are generally not permitted
II. General plastics - Thermoformed inserts - Protective caps - Extruded packaging - Others	PS, PP, PE, PA, PET, ABS, PLA ***PS (Polystyrene) should preferably be white, anthracite, or black.*** ***PET must be manufactured in transparent colors (transparent white, transparent green, transparent yellow).***	PVC, PC, molded parts made of polystyrene foam and other rigid foams (check exclusions!) See also Doc 4579853 Plastics with recycling code 7 (Bisphenol A)
III. Foams	PE, PP	PUR
IV. Films, pouches, bags	LDPE, HDPE	
V. Paper and cardboard	Corrugated cardboard, solid board	
VI. Strapping bands	PP, PET	Steel bands
VII. Wood	Compliant with IPPC standard Wood wool only in exceptional cases.	Impregnated, painted, or coated wood; wood wool; single-use pallets
VIII. Filler material	Paper, foam	Packing peanuts, molded parts made of polystyrene foam or rigid foam

Table 2.1: Approved and non-approved materials. Primary packaging should preferably not be made of cardboard or wood!

In justified exceptional cases, non-approved materials may be used after written approval by the contact person at the maxon Group.

In general, all raw materials must comply with the REACH regulation.

Please refer to the conformity assessment procedure to apply which is in the maxon website.

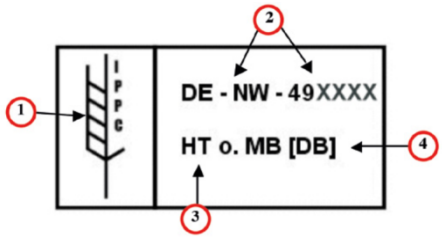
In packaging materials, the cumulative concentration of lead, cadmium, mercury, and chromium (VI) must not exceed the limit value defined in the EU Packaging Directive (94/62/EC).
Furthermore, for future orders, the supplier must observe the industry-specific list of prohibited substances (blacklist) and the list of substances requiring declaration (gray list) during part manufacture and packaging selection.
For the transport of lithium batteries and/or equipment containing lithium batteries, the regulations regarding packaging, labeling, handling, and accompanying documents described in Section 2.8.3 of these Packaging Instructions must be observed.

6.3 Special Requirements for Wood Materials

Solid wood packaging materials have to be treated and marked in accordance with IPPC (International Plant Protection Convention) standards.

IPPC marking requires the following information:
① Wheat ear symbol with the letters IPPC,
② Registration number of the company, including the ISO country code and regional identifier,
③ Treatment method (HT for Heat Treatment or MB for Methyl Bromide fumigation),
④ If applicable, DB for debarked wood (not required by the IPPC standard)

Example: Symbol for IPPC marking:



6.4 Weight Restrictions

Packages and load carriers (pallets) must not exceed the maximum permissible weight.
To minimize the risk of injury to maxon employees, ensure that the maximum permissible weight (gross weight) of an individual package does not exceed 15 kg. Packages weighing over 15 kg must be labeled and always delivered on designated load carriers.

6.5 Positioning of Goods and Packages

Packaged goods must be arranged in the packaging or packaging material so that weight is evenly distributed. The size of the packaging should correspond to the goods being packed. To secure the goods from shifting during transport and handling, all voids in the packaging material must be filled. The packages must not exceed the base dimensions of the load carriers.

6.6 Stackability of Load Units

One of the most important properties of load units and packages is their stackability. This must ensure that, for example, pallets can be stacked on top of each other with or without stacking aids without any impairment. If stackability is not possible due to the nature of the goods or the packages, the load units must be labeled accordingly.

6.7 General Corrosion Protection

Corrosion is the attack and destruction of materials through chemical or electrochemical reactions with environmental agents. Corrosive agents are substances surrounding the parts that act on the material and cause corrosion, e.g., dirt, gases, salts, or dust. Any parts sensitive to corrosion, as well as all machined and ground surfaces, require special protection and must therefore be preventively protected against corrosion.

Preventive measures include corrosion protection on the material itself and protection through adequate packaging. The type, nature, and timing of corrosion protection measures depend on:

- the required protection according to drawings or applicable documents,
- the sensitivity of technical surfaces to corrosion and other harmful influences (dust, dirt, discoloration, etc.),
- transport conditions and duration,
- general storage conditions (humidity <65% and temperature range 10-40 degree centigrade and duration of 2 years,

According to DIN EN ISO 8044, corrosion is the reaction of a metallic material with its environment, which can lead to measurable changes and functional impairments. These are mostly electrochemical, but can also be chemical or metal-physical in nature.

Corrosion-promoting media include corrosive gases (e.g., oxygen, chlorine, sulfur compounds), salts (such as sodium chloride), and humidity. If air temperature rises, air absorbs more water vapor; if it falls, excess water can condense and the moisture then promotes corrosion.
During transport and storage, especially in certain regions, temperature fluctuations and environmental influences like saline air or pollution create additional corrosion risks.

Desiccant Method:
A desiccant is placed inside a closed package.
This desiccant absorbs humidity and prevents or reduces electrochemical corrosion.
All desiccants must comply with the REACH regulation.

VCI Method:
VCI stands for Volatile Corrosion Inhibitor. VCI inhibitors form a protective layer on the metal within closed packaging, thus preventing corrosion. For effective protection, the correct VCI product must be selected; the distance between VCI paper and the product should be max. 200 to 300 mm, and additional measures are needed for foam packaging as the protection is only effective to a limited extent there.

Application:
Goods should be clean and dry before packaging; corrosive sensitive metal parts must always be packed using gloves. VCI paper is only effective in closed containers or bags and covers a maximum of two to three times its own surface area. It must be stored in a cool place away from light. The durability/expiration dates of the products, as specified by the manufacturer, must be taken into account.

6.8 Preservative Agents

- To protect the health of our employees who come into contact with the materials, only corrosion protection agents that pose no health risk are to be used.
- Substances that are carcinogenic, mutagenic, or toxic to reproduction (CMR substances) must not be contained in the corrosion protection agent.
- Only corrosion protection agents that are not labeled as hazardous substances in accordance with the Hazardous Substances Ordinance and CLP Regulation (EC) No. 1272/2008 may be used.
- **Exception**: If corrosion protection is sprayed onto the items prior to shipment and the hazard only exists during the spraying process itself, a corrosion protection agent classified as hazardous may be used.
- In-house, corrosion protection agents, such as Ballistol and Anticorit RPC 5000, that are exempt from labeling requirements have proven effective. Before use, it must be verified whether these substances provide good protection against local environmental influences (manufacturing and storage) and during transport.
- To avoid process problems, e.g., during cleaning and bonding, no silicones may be used.
- Lubricants containing PFAS are not permitted.
- The use of SVHC substances is generally prohibited.
- When using other substances, prior approval from maxon based on the respective safety data sheet is required.

Corrosion protection Non-ferrous metals require additional protection if transport or environmental influences could cause optical changes (tarnishing) or corrosion (e.g., pitting corrosion in aluminum due to strongly acidic or basic environments). To protect the health of our employees who come into contact with the materials, only corrosion protection agents that pose no health risk are to be used.		
	YES	1) Corrosion protection agents free of labeling requirements under the Hazardous Substances Ordinance (GefStoffV) and CLP Regulation (EC) No. 1272/2008 2) In-house, maxon uses Ballistol and Anticorit RPC 5000 (Fuchs Lubricants), among others 3) VCI paper (VCI: Volatiles Corrosion Inhibitor)
	NO	1) Substances that are carcinogenic, mutagenic, or toxic to reproduction (CMR substances) 2) SVHC substances in corrosion protection (SVHC: Substances of Very High Concern, see REACH regulation) 3) Corrosion protection agents labeled as hazardous substances under the Hazardous Substances Ordinance and CLP Regulation (EC) No. 1272/2008. **Exception**: If corrosion protection is sprayed onto the items prior to shipment and the hazard exists only during the spraying process itself, a corrosion protection agent classified as hazardous may be used. 4) Silicone-based corrosion protection (to avoid process problems when cleaning or bonding) 5) Corrosion protection containing PFAS
	Subject to approval	1) If substances other than Ballistol and Anticorit RPC 5000 are to be used, approval must be based on the safety data sheet, which must be provided.

When other products are used, e.g., by suppliers, a prior review by the Hazardous Substances Officer and Production Engineering must be conducted.
(Fire protection, PPE, skin protection, separation from cleaning media?)

6.9 Corrosion Protection Packaging

Regardless of the type of corrosion protection, parts must be delivered such that they are protected from corrosion and surface damage during transport and 12-month storage.
Lids, films, plugs, covers, or other suitable means are appropriate for surface protection. If necessary, corrosion protection, such as VCI film/paper, must be applied, which can be recycled as regular film/paper.
Before delivery to maxon, ensure that corrosion-sensitive parts are properly preserved, wrapped, or sealed and packaged. In this context, “properly” means:

- Implementation of corrosion protection on the material according to specifications
- External protection against corrosive agents
- External protection against surface damage or abrasion of the corrosion protection
- External protection against impairment of appearance and functionality

The selected corrosion protection system must not impair the appearance or functionality of the parts.

6.10 Electronics Packaging Requirements

To reliably protect sensitive electronic components, suitable packaging must be used that protects against both corrosion and electrostatic discharge (ESD). Conventional plastic packaging is unsuitable for electronics as it cannot dissipate electrical charges. Instead, special ESD packaging is required to prevent dangerous discharges and ensure safe storage and transport.

ESD packaging must be tested and guaranteed by the supplier. Each individual packaging element must indicate this; the ESD symbol is sufficient.

Example of Various ESD Packaging

Pink ESD bags typically offer low ESD protection, which is sufficient for many applications.

Black ESD bags typically offer medium protection. Electrically conductive and heat-sealable bags made of copolymer PE film with carbon additive.

Silver ESD bags typically offer the highest level of protection for highly sensitive components. Metalized HIGHSHIELD® shielding bags made of electrostatically shielding metalized LDPE film.

6.10.1 ESD Packaging Requirements in acc. with the DIN Standard

According to DIN EN 61340-5-3, electrostatic packaging is divided into three categories and marked with corresponding letters: (S), (C), and (D).

Electrostatically conductive: Packaging with a surface resistance of: >= 1 x 10^2 ohms and < 1 x 10^5 ohms is marked with the letter (C) in conjunction with the ESD protection symbol.

Electrostatically dissipative: Packaging marked with the letter (D) in conjunction with the ESD protection symbol has the following surface resistance: >= 1 x 10^5 ohms and < 1 x 10^{11}

Shielding – Protection against electrostatic discharge: Packaging marked with (S) offers particularly high protection for sensitive electronic components due to its special structure. It slowly dissipates electrostatic discharge, preventing damage to the products. This packaging is ideal for highly sensitive electronics as it uses the Faraday cage principle to distribute voltage evenly and ensure maximum safety.

Note:
Packaging with very high surface resistance (> 1 x 10^{11} ohms) is insulating and does not provide sufficient protection against ESD. Therefore, they are unsuitable for ESD protection.
According to DIN EN 61340-5-1, ESD packaging should have a surface resistance between 1x10^2 – 1*10^{11} ohms. Since environmental influences such as humidity can affect discharge behavior, it is advisable to limit surface resistance to between 1 x 10^4 and 1 x 10^9 ohms to ensure controlled discharge.

	Complete ESD packaging includes desiccants and humidity indicators in addition to the bag to prevent moisture damage. Correct **labeling** with warning labels minimizes risks from improper handling.

Durability/expiration dates of ESD products:
ESD packaging may have an expiration date; this must be observed at all times.

6.10.2 ESD Protection in General

Special ESD measures are required to effectively protect electrostatic sensitive devices (ESDS). This includes suitable packaging as well as conductive workstations, grounding straps, and tools with dissipative handles. Especially during sea transport, additional attention must be paid to moisture protection to avoid damage to sensitive electronics. In general, permanent ESD protection is preferred.

6.11 Lithium Batteries

Since January 1, 2009, new regulations apply to the transport of lithium-based batteries and cells. For air transport, IATA DGR (Dangerous Goods Regulations) are authoritative. In European road transport, the ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road) applies, whereas for maritime transport the IMDG Code (International Maritime Dangerous Goods Code) must be observed.
For eligibility for simplified transport, i.e., exemption from full dangerous goods requirements, shipments must meet the following conditions since January 1, 2009:

6.11.1 Transport by Air

- Lithium-ion cells and batteries: Cells with a nominal energy of max. 20 Wh, batteries with a nominal energy of max. 100 Wh
- Lithium metal cells and batteries: Cells containing max. 1 g of lithium, batteries containing max. 2 g of lithium in total
- Packages must pass a 1.20 m drop test without damage to the contents
- Inner packaging must completely enclose the batteries/cells
- Batteries/cells must be packaged in such a way that they are protected against short circuits
- Batteries/cells must be protected from contact with conductive materials
- All packages (except those with no more than four cells installed in equipment or no more than two batteries installed in devices) must bear a special lithium battery label including a phone number on the outside.

Kennzeichnung für UN 3480/
UN 3481

Kennzeichnung für UN 3090/
UN 3091

Shape and format must not deviate from IATA specifications. It must be printed in color. Format: 120 x 110 mm.

Each shipment (except packages with no more than four cells installed in equipment or no more than two batteries installed in devices) must be accompanied by a document (e.g., air waybill) containing the following information:

- Indication that the package contains lithium-ion or lithium-metal batteries/cells;
- Indication that the package must be handled with care and poses an ignition risk if damaged;
- Indication that special procedures must be followed if the package is damaged, including inspection and repacking if necessary;
- Provision of a telephone number for additional information.

6.11.2 Transport by Road / Sea

- Lithium-ion cells and batteries: Cells with a nominal energy of max. 20 Wh, batteries with a nominal energy of max. 100 Wh
- Lithium metal cells and batteries: Cells containing max. 1 g of lithium, batteries containing max. 2 g of lithium in total
- Packages must pass a 1.20 m drop test without damage to the contents
- Inner packaging must completely enclose the batteries/cells
- Batteries/cells must be packaged in such a way that they are protected against short circuits
- Batteries/cells must be protected from contact with conductive materials

Each shipment (except packages with no more than four cells installed in equipment or no more than two batteries installed in devices) must be labeled with the following information:

- Indication that the package contains lithium-ion/metal batteries/cells;
- Indication that the package must be handled with care and poses an ignition risk if damaged;
- Indication that special procedures must be followed if the package is damaged, including inspection and repacking if necessary;
- Provision of a telephone number for additional information.

There is no mandatory shape and format for the labeling.

Labeling for lithium-ion batteries / Labeling for lithium-metal batteries

If the transport is subject to labeling requirements, the forwarder/driver must be provided with the same information as on the packaging, e.g., in the packing list or delivery note.

6.12 Packaging Requirements for Painted or Coated Components

Painted or coated parts must not touch each other or other hard objects; the packaging must provide effective contact protection. Parts must only be packed when dry and protected from moisture. For small to medium parts, workpiece trays are recommended; for larger parts, use special inserts or packaging. Ensure that parts have minimal room to move; packaging auxiliaries like foam or bubble wrap may be required.

7 Labeling

Each individual package containing a part must be clearly and visibly labeled on the top side. Each outer package must be clearly labeled on at least one visible exterior surface to ensure clear and rapid identification of the individual packages.
Labeling must include at least the following details:

- maxon part number + batch (When required)
- Order number
- Part designation
- Quantity
- Part revision
- Ordered maturity level
- Production date
- Place of manufacture

The supplier must ensure that every load carrier, container, and package is labeled.

Mandatory additional labeling according to the Packaging and Packaging Waste Regulation (PPWR):

- Material labeling according to the EU-wide harmonized system
- Percentage of recycled content
- Recyclability information
- Clear labeling of reusable packaging
- Disposal instructions

Labeling applies to all packaging components from primary to tertiary, as well as packaging aids.

7.1 Shipping Documents

Each delivery must be accompanied by at least the following shipping or freight documents:

- Delivery note

Shipments will only be accepted with complete freight documents. Other documents requested by maxon, such as quality documents, must be enclosed in a separate envelope, separate from the delivery note. Each package must include a packing list with a precise table of contents and the order number.

7.1.1 Delivery Note

A delivery note (packing slip) is a document providing information on the delivered parts. It contains information, such as quantity, designation, weight, etc. It should preferably be placed inside the package (on top of the parts), but external attachment to the package in a self-adhesive pouch is also acceptable.
The key contents of a delivery note are listed below:

- Delivery note number
- Name and address of the sender
- Name and address of the recipient
- Date of the delivery note
- Name or signature of the packer

- Gross weight, net weight
- Delivery note line items
- Name of the buyer (contact person)
- Order number
- Order date
- Order item/position
- maxon part number
- maxon part designation
- Supplier part number
- Delivery quantity (per order item) in units of measure
- maxon unit of measure
- Type of load carrier (if required)
- Number of empty units
- Manufacturing date, expiration date (if required)
- Batch/lot number (if required)
- For electronic components, the serial number list of individual parts must be included

To allow rapid identification and avoid errors in goods receipt, delivery notes is desired to be provided with a barcode (optional). Upon request, the delivery note must feature a barcode according to delivery specifications.

8 Standard Packaging

maxon requires materials designed for material recycling for all single-use and reusable packaging/load carriers. However, the use of reusable packaging and load carriers is preferred.
To keep costs low by avoiding expensive special packaging, standard packaging should be used.
Standard packaging is classified into maxon specific standard reusable packaging (e.g., thermoformed trays (blisters), molded foam inserts, cardboard inserts) and commonly used standard packaging (e.g., corrugated cardboard or cardboard cartons, mesh sleeves, etc.).
maxon distinguishes between three packaging types: inner packaging (primary packaging), outer packaging (secondary packaging), and load carriers (tertiary packaging).

- The purpose of the inner packaging is to cushion or secure parts within the outer packaging according to their sensitivity.
- The purpose of the outer packaging is to resist forces (pressure, inertia, etc.) from the inside and outside.
- The load carrier protects the goods during transport and ensures safe transport and storage. This must be safeguarded by testing in accordance with the customary UPS or ISTA standards.

The choice of packaging type depends on protection requirements, transport method, and the terms of delivery. Besides standard packaging, packaging auxiliaries and cushioning, such as bubble wrap and packing paper, are used to ensure safe transport and storage. Corrosion protection packaging like VCI film can also be used. The supplier is responsible for ordering packaging; unauthorized disposal of maxon reusable packaging will be charged to the supplier.

8.1 Inner Packaging (Primary Packaging)

Inner packaging is required for part protection and handling reasons. Inner packaging encloses the goods and must only contain parts of a single type.
Inner packaging can be either reusable or made of single-use materials.

Examples of reusable inner packaging:

- Plastic inserts (such as thermoformed trays or blisters)
- Specific foam inserts
- Dividers or interlayers made of plastic or cardboard

Parts must be packed exclusively in clean reusable packaging. Dirty packaging must be cleaned by the supplier before filling; the supplier bears the costs. Reuse of used reusable packaging is only permitted if the packaging offers the same protection and standard as new packaging.
Examples of single-use inner packaging:

- Bags or plastic pouches
- Corrugated cardboard or cardboard packaging
- Mesh sleeves
- Inserts, liners, or solid board cut-outs

If there are no specifications in the maxon Packaging Instructions or from maxon itself, the decision on the necessity, development, and implementation of the inner packaging lies with the supplier. maxon reserves the right to review this.

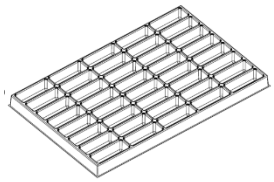
Preferably, no paper or cardboard should be used in the primary packaging.

8.1.1 Bags or Plastic Pouches

For bulk goods or small parts requiring no special surface protection, bags or plastic pouches are recommended. The packaged goods may come into direct contact with each other.

	Vacuum-sealing small parts is only allowed in exceptional cases due to risk of injury/damage and requires approval from maxon. Typical example: Small rolling bearings, sealing rings, …

8.1.2 Plastic Inserts (Thermoformed Trays / Blisters)

	For small to medium parts needing increased protection against transport damage, maxon recommends thermoformed trays. These trays support the safe transport of parts and improve the material flow from supplier to maxon by enabling efficient handling, easy part removal, stackability, stability, and optimal space utilization.

The following objectives are pursued with the recommendation of maxon thermoformed trays:

- Damage-free part delivery
- Stability regarding consistency, shape, and volume
- Optimal space utilization
- Stackability
- Easy part removal / optimal handling in production

Ordering maxon Thermoformed Trays

In the case of small to medium-sized parts that require special protection against transport damage, maxon may mandate the use of maxon thermoformed trays at any time.

8.1.3 maxon Specific Foam Inserts / Dividers

Parts with specific surface treatments or geometries, such as external threads, special coatings etc., require special protection for transport and storage.
In this case, part-specific inserts and dividers may be used. The type and use of liners or inserts are individually coordinated and agreed upon between maxon and the supplier depending on the particular case.

8.1.4 Mesh Sleeves

Mesh sleeves are used for parts that require special protection, e.g., external threads, material, etc., but are not suitable for thermoformed tray packaging due to their dimensions, shape, or weight. This form of protection offers a simple and cost-effective alternative.	

8.2 Outer Packaging

Outer packaging protects against pressure, shock, and vibration. It can also serve as inner packaging or bundle several inner packages. Inner packaging should be placed to distribute weight evenly and match the size of the outer packaging. If the inner packaging is smaller, voids must be filled to prevent shifting.
Generally, packaging volume and weight must be minimized to that which is absolutely necessary. Empty space (filled with packing material) must not exceed 60% relative to the primary packaging.

8.2.1 Reusable Containers / Small Load Carriers (KLT)

Small load carriers (KLTs) are mostly standardized plastic containers for part transport and storage. The common system is the VDA-KLT in accordance with DIN 30 820 or VDA 4500.

8.2.2 Corrugated Cardboard / Solid Board Packaging

Corrugated cardboard and solid board packaging are suitable for use as inner or outer packaging. If used for both inner and outer packaging, puncture resistance should be tested. Corrugated cardboard carries heavier loads than solid board.
Corrugated cardboard packaging must have a recycled content of at least 35%.

8.3 Load Carriers

A load carrier protects the package and ensures safe transport and storage. Examples include Euro pallets, single-use pallets, and reusable containers.
By 2030, 100% of pallets for internal/domestic EU transport must come from a reuse system.
Plastic pallets not in a closed reusable system must have 35% recycled content by 2030 per PPWR.

8.3.1 EURO Pallet

Euro pallets with the international standardized dimensions of 1200 x 800 x 140 mm are used in accordance with DIN 15146 Part 2.

A Euro pallet must always have specific features to remain eligible for use. If markings are missing, the pallet is no longer exchangeable and cannot remain in the pool cycle.	

8.3.2 Single-Use / Disposable Pallet

A single-use or export pallet is for one-way transport to the recipient (maxon) and is made of wood or plastic depending on the specification. **Corrugated cardboard pallets are not permitted**. Unlike reusable pallets, there is no pool or exchange; the end recipient disposes of the pallet. Single-use pallets may only be used with approval from the maxon contact person.

8.4 Packaging Auxiliaries

Packaging auxiliaries are used, for example, to seal packaging securely and increase stability, thus improving protection of the packaged goods. A distinction is made between packing aids, cushioning materials, and corrosion protection agents.

Packing Aids Packing aids like pallet collars, stretch films, edge protectors, and shrink films protect packaging during transport. Cushioning materials, such as packing paper, foam, or bubble wrap, are used to secure and cushion contents.	
Cushioning Material Cushioning materials secure and pad the packaged goods within the packaging. Examples include packing paper, foam film, and bubble wrap.	
Corrosion Protection Agents Corrosion protection agents like VCI film, bags, paper, or desiccants provide reliable corrosion protection.	

8.5 Cleaning and Disposal of Load Carriers and Packaging

Packaging and load carriers are inspected by maxon or the supplier before return or reuse; unusable material is removed. The owner handles repairs or disposal; if ownership is unclear (e.g., pool system), the current possessor is responsible. The supplier ensures parts are delivered in clean packaging. Any required cleaning and label removal is carried out by the supplier or a service provider.

8.6 Contact

If you have questions regarding these instructions, please contact your respective maxon contact person directly.