

Packing-, Transport- and Storage- Procedure

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Packing-, Transport- and Storage- Procedure

1 Purpose and Scope

The aim of this procedure, as an integral part of the Purchase order, is to ensure that goods required for the execution arrive without damage or loss at the Site, providing minimum standards for the correct manufacture of suitable packaging solutions when shipping goods by any type of method of transport.

Manufacturers/Supplier's own experience and practice shall determine any improvements to ensure goods safely. Observance of these minimum requirements does not constitute a limitation to Supplier's full responsibility for the packaging itself.

Packaging is suitable for any means of transport, whether it is by sea freight, airfreight, road or railway.

Each type of goods shall be packed taking into consideration the following information:

- Protection requirements of the goods to be packaged
- Means of transport to be used.
- transport route and duration, storage/stop-over points and transshipment.
- Centre of gravity and weight issues.

Goods are packaged for a maximum of 24 months storage.

The packing, transport and storage-procedure serve as a mandatory requirement for creating a package for optimum product protection, taking into account logistical, economic and ecological aspects.

Based on these conditions are laws, norms and standards relating to packaging, wherein the current HPE packaging guidelines (Bundesverband Holzpackmittel, Paletten, Exportverpackung e.V.) must be adhered to as a minimum standard.

2 Packing

2.1 Preparation for Packing

Packaging shall protect goods and/or equipment from shocks, weathering and environment agents, preventing any damage and deterioration of its contents or loss during transport. In addition, the packing must withstand the various rough handling operations from collection up to the delivery point, taking into account the inland transport conditions from the entry ports to the Site.

2.2 Selecting the appropriate Packaging acc. to KSR Standard

Selecting the appropriate packaging is effected according to customer requirements and product-own specifications.

The following information will be required in order to find out the most suitable packaging for each type of goods:

- Characteristics of the goods: type, size, number of units, mobile or loose parts and whether it requires additional protection given its sensitivity to rust or other agents.

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- Characteristics of the packaging: measure, type of base, type of jacking, type of latch, characteristics of the material to be used, physical/chemical and mechanical protection, etc.
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- Means of transport
- Details of the route
- Details of warehousing
- Marking instructions
- Other data

Instructions for Packaging:

Packaging for float switches/Level Sensors:

<i>always from 31,5 kg</i>	<i>→ special box/wooden crate</i>
<i>with mounting plug longer than 3,5 m</i>	<i>→ special box/ wooden crate</i>
<i>with flange longer than 2,70 m</i>	<i>→ special box/wooden crate</i>

Packaging for level gauges:

<i>always from 30-35 kg</i>	<i>→ special box/ wooden crate</i>
<i>always from 2,60 m length</i>	<i>→ special box/wooden crate</i>
<i>RTJ-flange ((from 2“ 1500 or several 600lbs)</i>	<i>→ wooden crate</i>
<i>Trace-heating</i>	<i>→ wooden crate</i>
<i>Sight glass extender (mostly)</i>	<i>→ special box/wooden crate</i>
<i>Duplus-version</i>	<i>→ wooden crate</i>
<i>BZG/level gauges with tube Ø 88</i>	
<i>and from 1,40/1,60m length</i>	<i>→ special box</i>
<i>BZG/level gauges with tube Ø 76</i>	
<i>and from 1,40/1,60m length</i>	<i>→ special box</i>
<i>Liquid gas design</i>	<i>→ wooden crate</i>

Packaging for glass level gauges:

<i>Mostly due to the weight</i>	<i>→ wooden crate/grid box</i>
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2.3 KSR Packaging guideline

For reasons of procurement and type of goods the following criteria must be observed when goods are packed.

- For securing equipment weighting up to 31.5 kg and total length of cardboard box up to 2,70m is used bubble wrap, paper or foam.

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- In wooden cases the goods are secured by screwing on the floor of the crate or by foaming.



Material of Screws are ABC-Spax-S, steel, 4,5 x 50 and ABC-Spax-S, steel, 4,5 x 70. All screws, which are used for packing are of galvanized steel. Generally for screwing also washers are used to tighten and stabilize the goods,

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- Goods are not allowed to overhang the packaging; If goods are delivered on pallets, where appropriate, shall be used pallet frames.
- EURO-POOL -Pallets are used for pallet packed goods.
- The packaging must comply with a safely transport and securely storage for all usual means of transport and storage resources.
- An installation and operating instruction will be given per unit.
- We only use straps of metal or plastic (PE or PP). Stretch - or shrink films are to be avoided.
- Transport packaging must not consist of composite material.
- Cardboard boxes and corrugated cardboard have the RESY - wear signs (Organization for recyclable waste disposal).
- Shipping cardboard boxes must be sealed with paper, PE or PP adhesive tapes or staples.
- Packaging fillers or shims must be made of paper, paperboard or compostable material.
- Bags and films must be made of unmixed PE or PP.
- In general, plastic packaging are only used if necessary.
- Packaging in wooden crate is only used if needed and set by customer.
- Inside the crate is secured with foam or by screws on the bottom.
- All openings in equipment and materials are fully closed to protect against ingress of water, dirt, sand, etc.
- For covering the flanges are used DN 25/DN50 adhesive flange washers.



- If customer requires, all valves are closed for shipment.



- Special requirements could be agreed with customer

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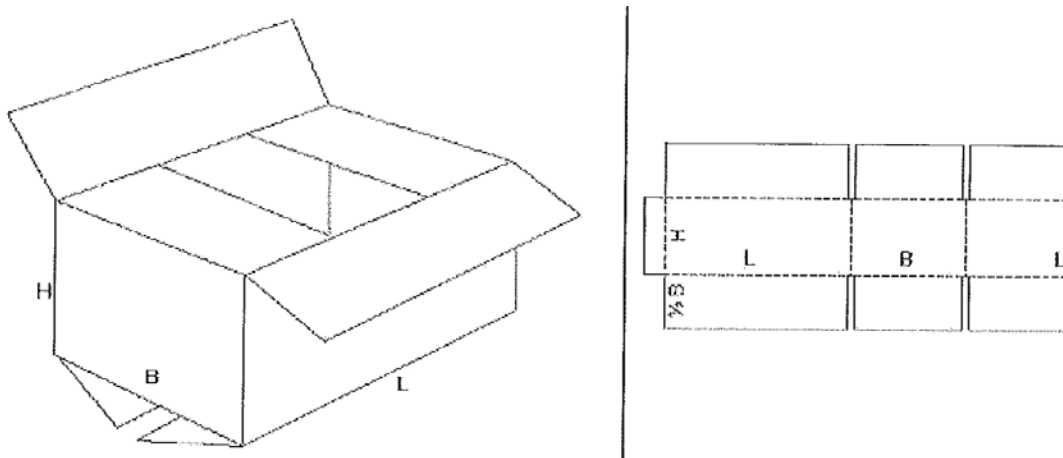
- If goods are not allowed to tighten directly on the crate, KSR takes plywood panels to fasten the goods. The material of the panels is plywood acc. To DIN 68 705-2 and is acc. To AW100 glued waterproof.

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2.4 Packaging material

2.4.1 Cartons and Cardboard boxes

The KSR cardboardboxes are all acc. to FEFCO 0201. Fefco denotes the type of carton. FEFCO 0201 is the most common of all cardboard constructions. It has collided bottom flaps and top flaps. To shut the carton is is used tape or strapping. Single-shaft and twin-shaft quality does not make a difference for Fefco.



2.4.2 Pallets

KSR uses two different pallets. One of them is the Inka pallet. The lightweight, nestable, closed at the bottom Mini Inca pallet consists of glued wood residues. The Mini Inca pallet is suitable for transport and storage. Due to its low weight, it is particularly easy to use and reduces the costs for shipping.

.Closed bottom protects goods from dirt and moisture from below

- No nails, splinters or sharp edges: reduced risk of injury and risk-free handling
- Arrangement of the feet ensures perfect load balancing
- Free certificates for export to Canada, USA, Mexico, Argentina, Brazil, Chile, Colombia, India, China, South Korea, Japan, Turkey, South Africa, Nigeria and other countries available on request
- Pallets made of wood and heated press meet, even without fumigation or heat treatment - the ISPM15 guidelines and are thus most easily exportable
- Empty pallets can be stacked into one another to save space and stored in such economically
- A resource-efficient recycling product, recyclable, biodegradable and therefore environmentally friendly
- Material: glued laminated wood

The other pallet is a standard pallet with dimension 40x40cm. These pallets are acc. to ISPM No. 15. Normally they are used to strengthen the bottom of a cardboard box

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2.4.3 Wooden crate






Wooden crates are build from our supplier only of softwood plywood. The crates are manufactured as standard from 12 mm thickness softwood plywood. The reinforcing bars are mounted inside and basically have the size 24/80 mm. For the bottom construction are used 24mm thick softwood boards. The bottom is built with cross runners 8/10 cm. Depending on the crate length are the distances between the squared timbers max. 110 cm. If a water barrier is desired for the cover it is used a 2mm thick PP plate and a strong 200my PE film. (between plywood and bracing).



The dimension of the crate depends on the dimensions of the goods.

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Crates are build and produced in accordance to ISPM 15 (International Standards For Phytosanitary Measures No. 15) and has to be marked with following symbols:

Designation	Symbol	Explanation
Fragile, Handle with care		The symbol should be applied to easily broken cargoes. Cargoes marked with this symbol should be handled carefully and should never be tipped over or slung.
This way up		The package must always be transported, handled and stored in such a way that the arrows always point upwards. Rolling, swinging, severe tipping or tumbling or other such handling must be avoided. The cargo need not, however, be stored "on top".
Sling here		The symbol indicates merely where the cargo should be slung, but not the method of lifting. If the symbols are applied equidistant from the middle or center of gravity, the package will hang level if the slings are of identical length. If this is not the case, the slinging equipment must be shortened on one side.
Keep dry		Cargoes bearing this symbol must be protected from excessive humidity and must accordingly be stored under cover. If particularly large or bulky packages cannot be stored in warehouses or sheds, they must be carefully covered with tarpaulins.
Centre of gravity (if required)		This symbol is intended to provide a clear indication of the position of the center of gravity. To be meaningful, this symbol should only be used where the center of gravity is not central. The meaning is unambiguous if the symbol is applied onto two upright surfaces at right angles to each other.

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Our crates are always marked as follows to fulfill all requirements:



2.5 Special packaging acc. to Customer requirements

- Special packaging are usually a demand from customer and are individually agreed with the customer.

2.5.1 KSR Standard of seaworthy packing

Under seaworthy packaging the KSR Kuebler Niveau-Messtechnik AG understands the packing of equipment into wooden crates.



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For this, the box is lined in protective foil, set in the unit, added desiccant and closing the foil by stapling /gluing.



- For the packaging of dangerous goods, the "Law on the Transport of Dangerous Goods" and existing natural for the individual modes of transport rules and regulations apply in the current version.

Optionally, country specific regulations must also be observed.

The shipment must take place in accordance with the delivery, in an approved and audited for dangerous goods packaging.

Especially for the packing of the product group "Magnets" are used UN-cartons for airfreight. The radiation to the outside is thus prevented. Thus, the magnets which are sent by airfreight must not be declared as dangerous goods.

Acc. to DIN 55473 2001-02 desiccants along with seaworthy foil are used to protect the packaged goods against air humidity during transport and stowage in order to inhibit corrosion, attacks by moulds and similar.

The required amount of desiccants must be calculated in accordance with DIN 55 474.

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Technical Data:

- Desiccants acc. To DIN 55473 Typ B
- Aluminium foil acc. to DIN 55531 od. TL 8135-0003-1
- PE-foil acc. to DIN 55530



2.5.2 Special Packing requirements

See at customer requirementsm or purchahse order of the customer.

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3. Marking, Shipping & Handling

3.1 Marking of the Packaging

The standard marking of KSR are the general regulations for crates which are explained in point 2.4.3

The packing list and delivery note will be placed on the crates on the front side that it is always visible.

Furthermore special customer marking requirements are possible as picture below. It depends on the regulations of the customer.



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3.2 Shipping & Handling

Instruments which are packed in wooden cases have special requirements for loading:

- by forklift or crane (see marking on boxes)
- Lifting and storage only in horizontal position (see marking on boxes)
- All typical transport methods can be used (Truck, rail, ship)

All documents for shipping are in English and clear and easily readable. Packing list, Proforma Invoice and all other necessary documents which should go with the shipment will be created in agreement with the customer.

Customer give as well instructions concerning the freight forwarder.

The packaging shall not be removed until just before mounting due to the packaging will provide the optimum protection during transport.

Check instruments for any damage that may have been caused by transport. Obvious damage should be reported immediately. We recommend an immediate site inspection after receiving the goods since the damage report will be accepted within two weeks of goods arrival at job site.

For removing the goods from the packaging the perforated strip has to be screwed out and removed. After that the level gauges can be lifted by hand or with straps by crane between the process connections.

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4. Storage

For storage we recommend a dry location with a humidity of 20 ... 85% and temperatures from -25°C ... + 60°C. The goods are to be protected against dirt and damage.

Instruments should be stored as maintained in original package in a dry and adequate warehouse condition advices as above.

KSR guarantees for two years storage only when goods are stored as advices above.

Please take care not to overload the packaging mechanically e.g. by stacking.