



Tec**T**ronix **S**ystems inc.

General information and
installation instructions for
Metal Detectors

9-18812 96th Avenue
Surrey, BC Canada, V4N 3R1
Tel: (001) 604 607-6028 Fax: (001) 604 607-6026
e-mail: service@metal-shark.com

Customer Name: _____

Location: _____

Date in Service d/m/y: _____

We would like to take this opportunity to thank you for purchasing your Metal Detector from Tectronix. The confidence you have placed in our product is sincerely appreciated and we will endeavour to provide the best service and support possible.

Please take the time to read the User Manual completely as this provides you with the expertise necessary to install and adjust the system according to your requirements. In addition to this, you will learn about the sophisticated options provided by the **GENIUS** or **SENSITY** electronics.

If you have any problems in the set up and operation of your system, the Tectronix team are available to assist you.

Tectronix Systems inc.
9 – 18812 96th Avenue
Surrey, British Columbia
Canada, V4N 3R1

Telephone: (001) 604 607-6028
Fax: (001) 604 607-6026
E-mail: service@metal-shark.com



Contents

1	Introduction	4
1.1	Fields of applications	4
1.2	Symbols used	4
1.3	Legal basis	4
1.4	Overall view	5
2	Technical data	5
3	Design and method operation	6
3.1	Functional principle	6
3.2	Combination scopes	7
4	Safety	8
4.1	Use to the intended purpose	8
4.2	Notifications of danger	8
4.3	Danger in case of non-observance of the maintenance	8
4.4	Safety notes for the operator	8
4.5	Safety notes during operating and maintenance	8
4.6	Consequences of unauthorized modification	8
4.7	Inadmissible operation	8
5	Commissioning	9
5.1	Mechanical installation	9
5.1.1	OCTAGONAL	10
5.1.2	REGTANGULAR / SQUARE	10
5.1.3	FLAT	11
5.1.4	VT / ST	11
5.2	Connections	13
5.2.1	With Control Unit SENSITY	13
5.2.2	With Control Unit GENIUS	13
6	Maintenance	13
6.1	Periodic inspection of the coil	13
7	Spare parts / service	14
7.1	Spare parts drawing	14
7.2	Spare parts list	15
7.3	Service address	16
8	Shipping, transport, storing, preservation	17

1 Introduction

1.1 Fields of applications

- Product liability
- ISO 9000
- TQM (Total Quality Management)
- Protection of consumers and machines

1.2 Symbols used



= Important notes



= Danger notes

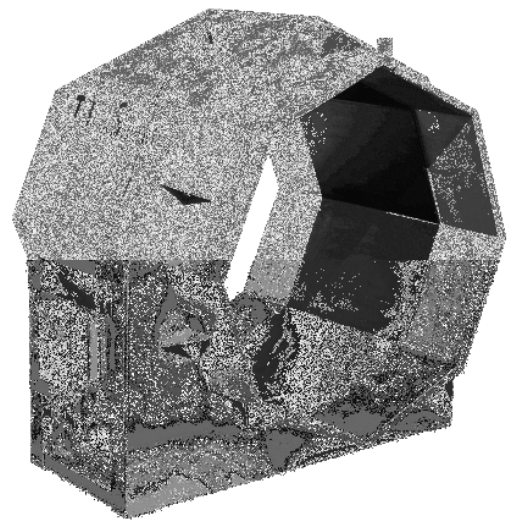


= Safety notes

1.3 Legal basis

This equipment complies with EMC guideline 89/336/EC and 93/97/EC.
This equipment complies with low-voltage guideline 73/23/EC and 93/68/EC.

1.4 Overall view



2 Technical data

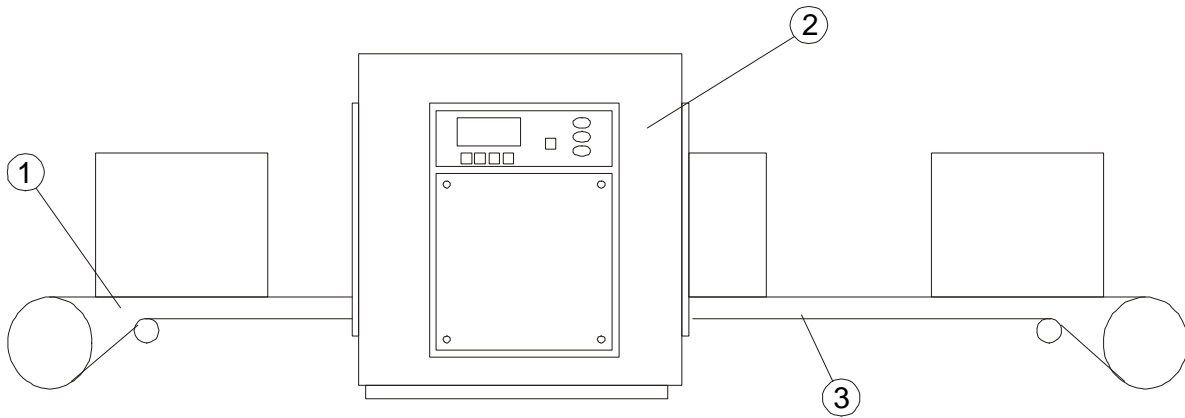
Housing	Stainless steel housing V2A
Weight	Depending on dimensions
Ambient temperature	-10°C to 65°C
Type of protection	Detector head IP 54, Control unit IP 65
Connecting cable	(to the control unit) up to 8 m standard
Can be combined with	Control unit SENSITY or GENIUS

Subject to changes due to technical innovation!

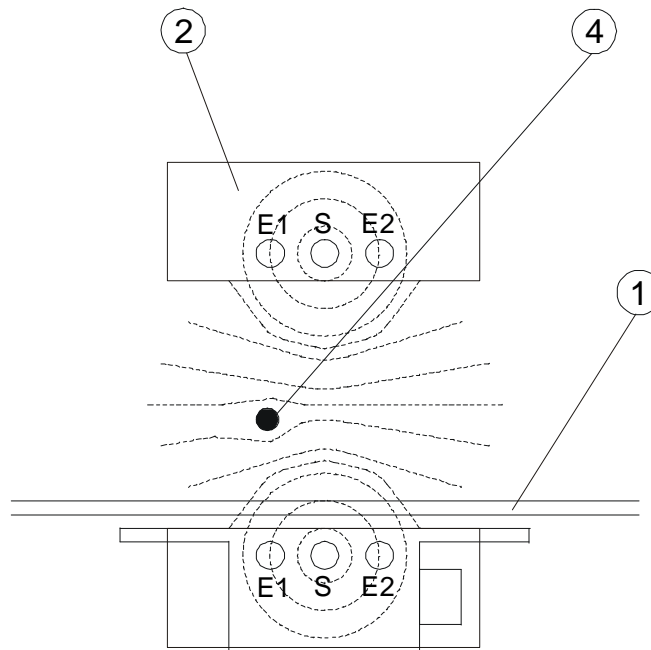
3 Design and method operation

3.1 Functional principle

The material to be inspected (bulk or lump material) passes the detector head (2) on a belt conveyor (1). The lower part of the belt can be put also through the detector head (3).



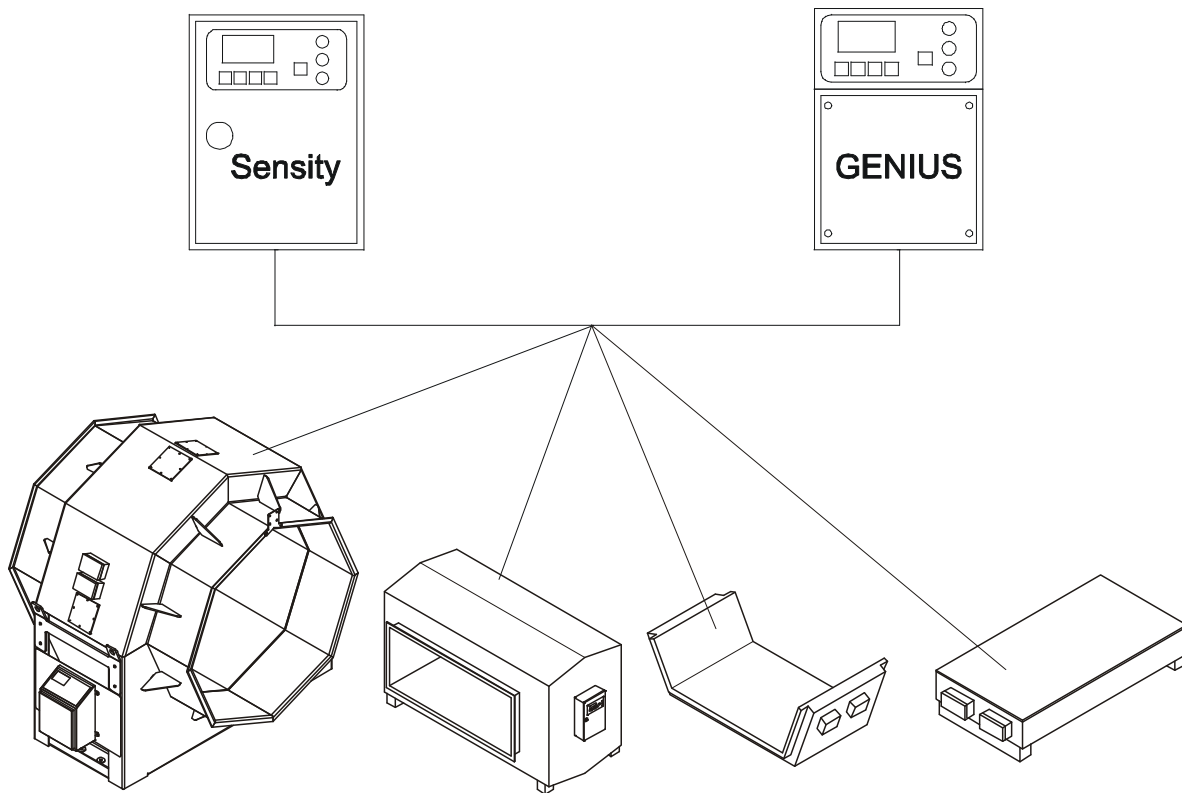
The material is penetrated within the aperture of the detector head by a high frequent electro-magnetic field, which is generated by the control unit and the transmitter coil. Two identical voltages are induced into the receiver coils, and are subtracted to zero if the system is in balance.



A metallic impurity (4) causes an unbalanced condition and the receiver responds. The control unit generates a signal, which triggers an output relay (see operational manual).

3.2 Combination scopes

Different Control units can be used to control the detector head:
SENSITY or GENIUS.



4 Safety

4.1 Use to the intended purpose

This equipment is determined to be used with conveyor hoses (-tubes) only in connection with the appropriate control unit (SENSITY, SENSITY-D or GENIUS).



4.2 Notifications of danger

People with cardiac pacemaker should not permanently stay in the area of the detection coil.



4.3 Danger in case of non-observance of the maintenance

There are no known risks or side effects emanating from the detection coil, if the equipment is not used to its intended purpose.



4.4 Safety notes for the operator

If potentially explosive materials are examined, the pertinent regulations must be observed.



4.5 Safety notes during operating and maintenance

Safe operation is only guaranteed with closed covers of the connection box.



4.6 Consequences of unauthorized modification

In case of unauthorized modification or repair work all the declarations and guarantees given by the manufacturer will become void.



4.7 Inadmissible operation

Operation out of the specifications given in the technical data. Operation under high mechanical static or dynamic loads (e.g. heavy system parts or strong vibrations).



5 Commissioning

5.1 Mechanical installation



Use only enough stable lifting harnesses for big and heavy detector heads.



Take care for a stable and vibration proof mounting!



Metal-free zone must be strictly observed!

Within the metal-free zone no metallic parts must be situated.
For moving metal parts (pusher) the metal-free zone extends.
The dimensions of the metal-free zone are given in the attached data sheet.



A non metallic slide (plastics or wood) must be used within the aperture as a belt support. **The sliding board and also the run back belt underneath should not touch the shaft walls inside of the detector head opening.** The recommended gap between slide and detector is min. 10 mm.



Do not mount or operate the detector near sources of interferences (electric motors, frequency and current converters). The required distance depends on the aperture size of the detector head and the power of the source of interference.



Control unit mounted apart of the detector head:

Changes of the connection cables between the detector head and the control unit must be reconfirmed by Tectronix. Only original cables must be used otherwise the CE-certification become un valid.

The connections cable must be installed separate from other power and control lines and carefully fixed or laid into a cable duct.



Installation of more then one coil:

In case that two or more coils are working in adjacent lines interferences can occur. Therefore you need to reconfirm Tectronix.

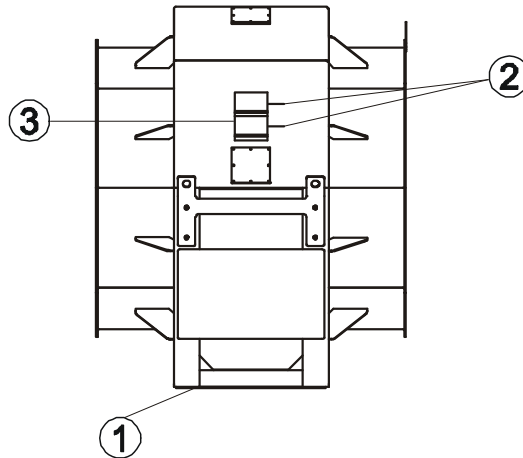
5.1.1 OCTAGONAL

Pay attention to the following order when mounting the OCTAGONAL to conveyor:



Do not remove the two 6 mm insulation shims or replace them by other materials. This parts are used as electrical insulators.

1. Disconnect the connection cable (2) (see also 5.2) if necessary when equipped with SENSITY Control Unit.
2. Put the belt and sliding board through the detector opening. Fasten the board and make sure that neither the sliding board nor the belt touches the shaft walls inside of the detector opening.
3. For mounting the detector head use only the insulation shims.
4. Connect connector cable (2) according to picture 5.2.



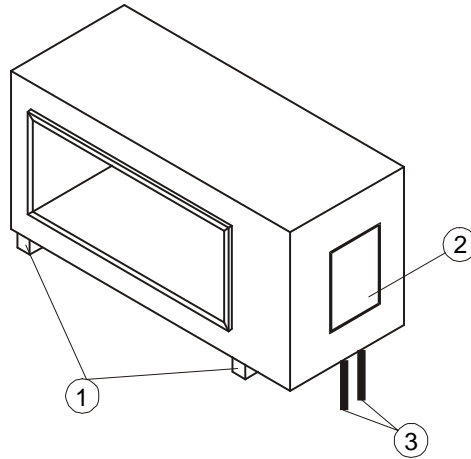
5.1.2 REGTANGULAR / SQUARE

Pay attention to the following order when mounting the coil to conveyor:



Do not remove the plastic bars or replace them by other materials. This parts are not only used as fastening elements but also as an electrical insulator.

1. If necessary disconnect the connection cable (3) (see also 5.2).
2. Put the belt and sliding board through the detector opening. Fasten the board and make sure that neither the sliding board nor the belt touches the shaft walls inside of the detector opening.
3. For mounting the detector head use only the plastic bars.
4. Connect connector cable (3) according to picture 5.2.



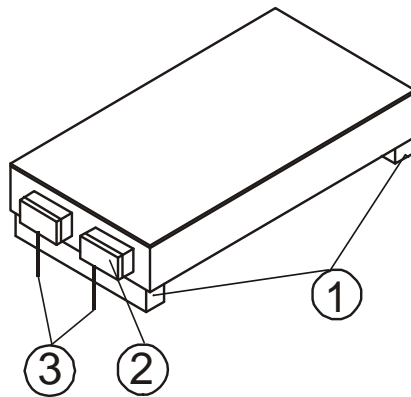
5.1.3 FLAT

Pay attention to the following order when mounting the coil to conveyor:



Do not remove the plastic bars or replace them by other materials. This parts are not only used as fastening elements but also as an electrical insulator.

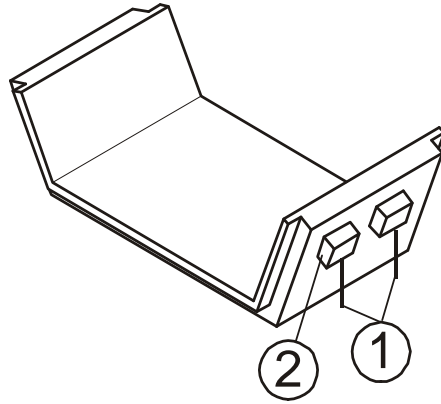
1. If necessary disconnect the connection cable (3) (see also 5.2).
2. Fasten the sliding board and make sure that neither the sliding board nor the belt touches the surface of the detector opening.
3. For mounting the detector head use only the plastic bars.
4. Connect connector cable (3) according to picture 5.2.



5.1.4 VT / ST

Pay attention to the following order when mounting the coil to conveyor chute:

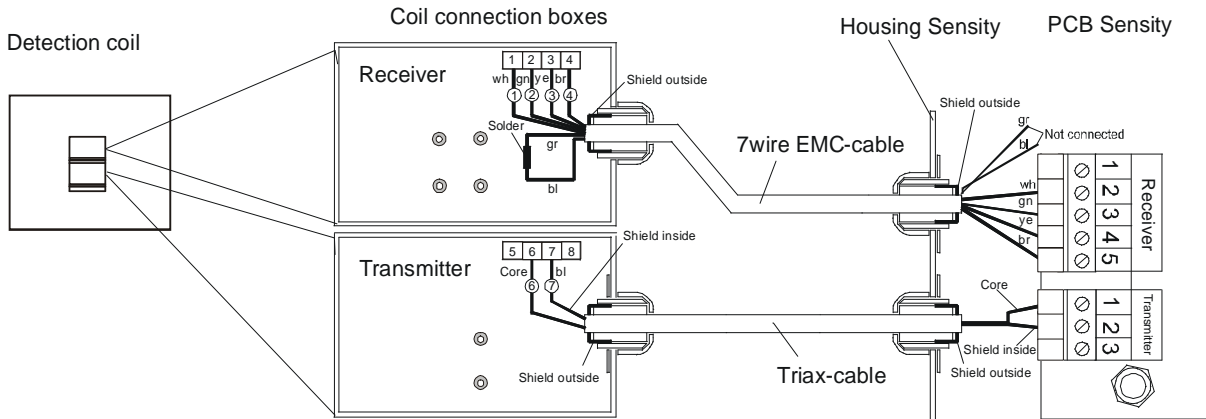
1. If necessary disconnect the connection cable (1) (see also 5.2).
2. Mount / Install the detector head into the conveyor chute.
3. Connect connector cable (1) according to picture 5.2.



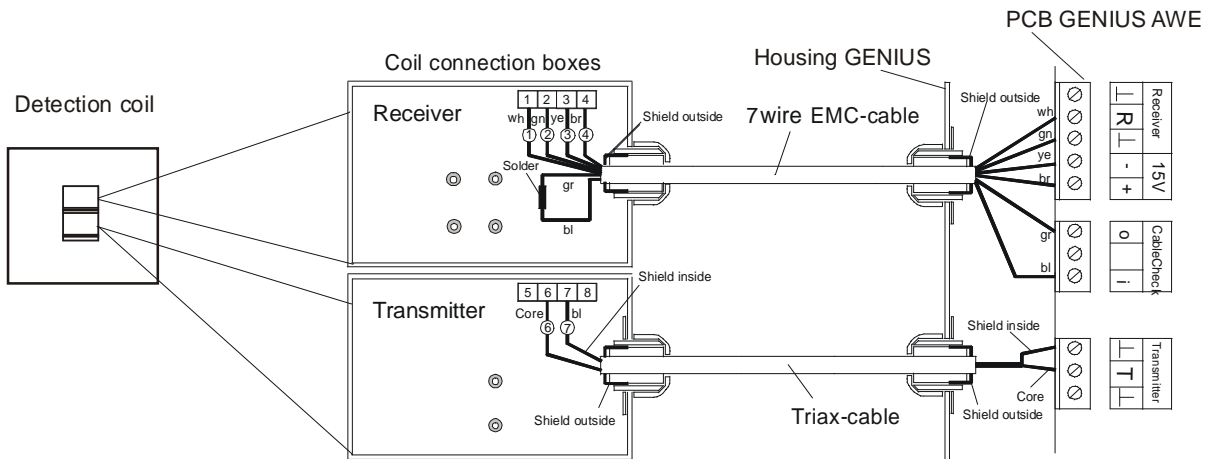
5.2 Connections

If the connection cable between detector head and control unit has been removed reconnect it according to the sketch:

5.2.1 With Control Unit SENSITY



5.2.2 With Control Unit GENIUS



green = gn blue = bl
 gray = gr brown = br
 yellow = ye white = wh

6 Maintenance

6.1 Periodic inspection of the coil

Although the coil is maintenance-free, it is useful to check the equipment periodically:

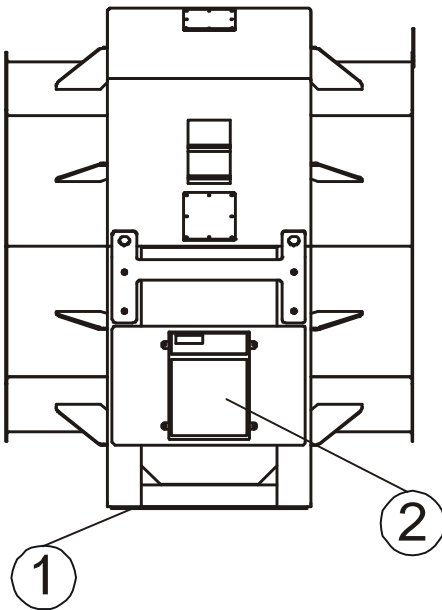
- Check for loose bolts or nuts at the plastic bars.
- Are there any objects laying on the detector head?
- Are there any objects in the detector passage between slide and detector (remains of bulky goods or accumulated dust)?

7 Spare parts / service

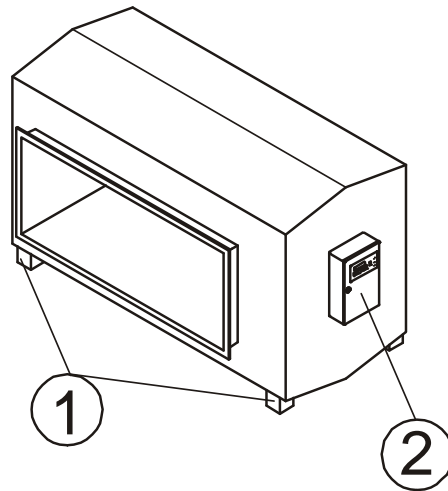
If you should have any questions please state equipment type and serial number!

7.1 Spare parts drawing

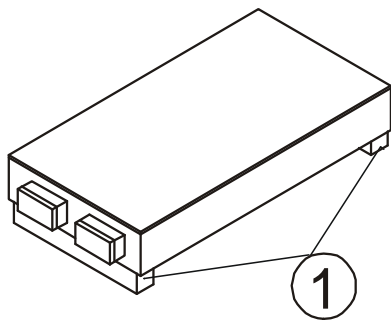
OCTAGONAL



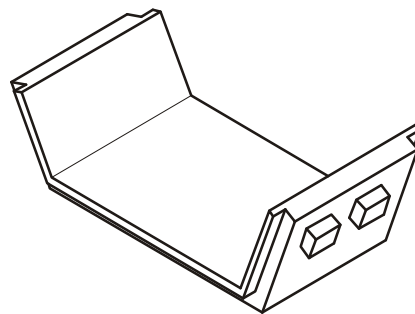
REGTANGULAR / SQUARE



FLAT



VT / ST



7.2 Spare parts list

POS.NO.	ARTICLE	ART.NO.	REMARKS
	OCTAGONAL		
1	Remathan insulation shims with screws		
2	Control unit		See appropriate operating instructions
	Electronic connection cable ¹⁾ (not shown)		
	REGTANGULAR / SQUARE		
1	Mounting elements with screws		
2	Control unit		See appropriate operating instructions
	FLAT		
1	Mounting elements with screws		
	Control unit (not shown)		See appropriate operating instructions
	Electronic connection cable ¹⁾ (not shown)		
	VT / ST		
	Control unit (not shown)		See appropriate operating instructions
	Electronic connection cable ¹⁾ (not shown)		

¹⁾ Please state the cable length when ordering!

7.3 Service address

Manufacturer's:

Tectronix Systems inc.
9-18812 96th Avenue
Surrey, British Columbia
Canada, V4N 3R1

Telephone: (001) 604 607-6028
Fax: (001) 604 607-6026
E-mail: service@metal-shark.com

Representative:

8 Shipping, transport, storing, preservation

1. Choose packing that is suitable for type and size of the shipment for export, sea or airfreight, national or international road transport. The packing must be chosen such that under normal transport conditions the goods cannot be damaged.

2. Depending on the size, weight and nature of the goods shipments are only packed suitable for road transport in cartons, carton pallets, etc..
As filling and protection material in the packing reinforced carton, corrugated cardboard, air cushion foil and paper chips are used.
Electrostatic sensitive components (electronic boards, electr. modules, etc.) must be packed in antistatic foil or bags prior to packing! (this is essential!).
On the outside of the packing additional warning labels such as: "Attention, electronic equipment, do not throw", etc., must be applied. The packing is sealed with adhesive tape and, in case of weights of more than 50 kg, additionally with wrapping tape.

- 2a. International road transport shipments are packed in accordance with point 2, larger and heavier shipments depending on the protection they require, are also protected against corrosion inside the packing.
Easily corroding parts must be packed in oil-paper or corrosion-protection foil prior to packing.
Care must be taken that inside the packing the packed components are protected against slipping.

- 2b. International air-freight shipments must be packed in wooden crates or in export pallets. Care must be taken that the goods are well fixed and protected inside the packing. Susceptible parts must be protected against corrosion (oil-paper, protective foil, corrosion spray, etc.).

- 2c. Sea-freight shipments must be packed in seaworthy export crates. These special crates may be obtained from special manufacturers.
The crates must be lined with oil-paper to make them resistant to sea-water and corrosion. In addition the goods must be protected against corrosion by spray or protective foil.

Care must be taken that inside the crate the goods are protected against slipping. After packing the sea-freight crates must be properly closed.

During loading care must be taken that the shipments are protected.
Proper acceptance and loading of the shipment must be certified by the carrier on the bill of loading, loading list, etc..