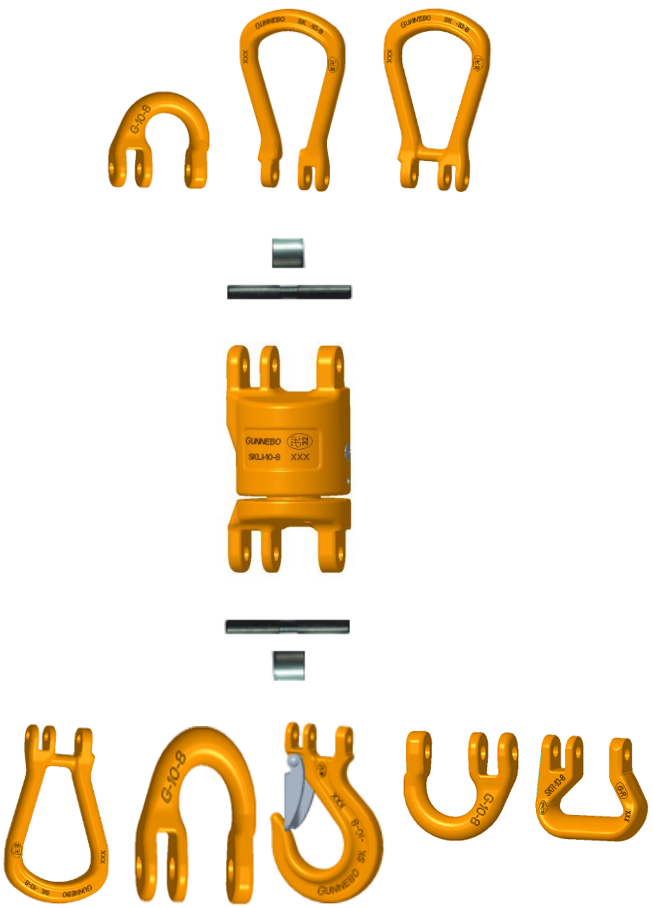
User Manual

SK system



SKT | SKO | SKG | SKLI | SKA | ESKN/SKN | SKR

Gunnebo Industries
Stinavägen 1, Växjö, Sweden
www.kitocrosby.com

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1 Introduction and EC declaration

This manual is an original instruction in accordance with:

Directive 2006/42/EC on machinery, section 1.7.4 Instructions and Annex II Declarations.

It also meets the requirements in:

Standard EN 1677:2008, Components for slings - Safety - Part 1: Forged steel components.

This manual is valid for SK system. See General Description for an overview of the included variants.

This manual is valid together with Gunnebo Industries' instruction for slings and lifting guide.

All manuals are continuously updated and are only valid in their latest version, which can be downloaded from www.kitocrosby.com.

1.1 EC declaration of conformity

The Engineering Manager is the authorized person to compile the technical file.

We declare that the lifting component described in this user manual fulfils all the relevant provisions of the Directive 2006/42/EC as a partly completed machine.

The main use of the product is to be incorporated as part of a CE-marked lifting assembly but must not be put into service until the final lifting assembly has been declared to be in conformity with the provisions of the Directive 2006/42/EC.

Our quality management system complies with ISO 9001:2015 and is certified by LRQA Sverige AB for and on behalf of Lloyd's Register Quality Assurance Limited (certificate identity number: 10140613).

Information about harmonized and national standards/technical specifications that apply, and the valid version of this user instruction are available at www.kitocrosby.com.

If the products are modified without approval from Gunnebo Industries, this declaration becomes invalid.

Växjö, December 2025

Fredrik Sandberg

Engineering Manager

1.2 Abbreviations

EC	European Commission
LRQA	Lloyd's Register Quality Assurance
WLL	Working Load Limit

Table 1: Abbreviations

2 Safety precautions

2.1 Warnings, cautions and notes

Carefully read the instructions before using the lifting equipment.

The following signs are used in the instructions, to alert about potential dangers and safety related issues.

Warning!

A warning alerts about a situation which, if not avoided, could result in injury, or death.

Caution!

A caution alerts about a situation which, if not avoided, could result in minor or moderate injury, or damage to the equipment or other property.

!

Note!

Notes are added to give more information.

2.2 General safety precautions

The rigger is responsible for the lifting operation, and for following all related safety regulations. The rigger must understand the limitations of the equipment.

The rigger is a competent person, with the knowledge to select correctly dimensioned lifting equipment, and to ensure its safe condition.

Before each lifting operation, check that the lifting system parts and connecting parts are correctly attached to each other.

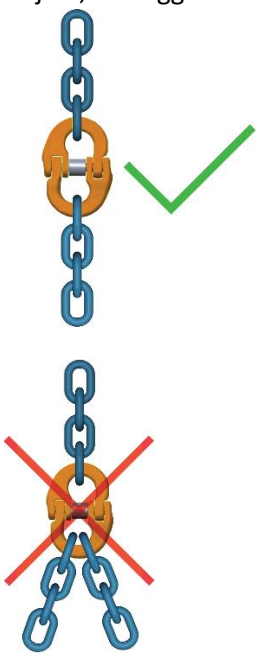
2.3 Lifting precautions

Warning!
Make sure that the SK system aligns with the pull direction. Check that the lifting chain/steel wire/synthetic textile band is not twisted or rotated.

Warning!
Do not point load the ESKN/SKN hook.

Warning!
Do not lift an object without checking that the latch of the ESKN hook is closed. Lifting without the latch being closed can cause the load to drop.

Warning!
Insert only one object into the SK part. In the case of more than one object, the rigger must make a risk assessment.



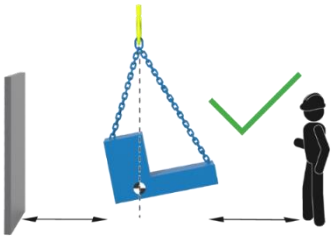
Warning!
Side loading is not allowed on any lifting components. Side loading can cause the load to swing or cause the equipment to fail.

Warning!
Visual function check:
Before each operation check that the SK system and connecting parts are correctly attached to each other.

Warning!
Only use the SKN Hook without latch after the person responsible for the lift has performed a risk assessment.

Warning!
The SKLI/SKLU swivel allows rotation to position the load during the lift. Do not use for continuous rotation.

Note!
When lifting asymmetric loads, be aware of sudden movement of the load. Keep distance.



3 General description

All measurments shown in images, and technical data can be found on the website www.kitocrosby.com.

Chain size		SKLI	SKLU[1]	SKG	SKO	SKR	SKT	SKN	ESKN	SKA
Grade		8	8	8	8	8	8	8	8	8
Metric (mm)	Imperial (inch)									
7/8	9/32 / 5/16	x		x	x	x	x	x		x
10	3/8	x		x	x	x	x	x		x
13	1/2	x		x	x	x	x		x	x
16	5/8	x		x	x	x	x		x	x
18/20	/ 3/4	x		x	x	x	x		x	x
22	7/8		x			x	x			x
26	1		x			x	x			x

[1] Roller bearing swivel not electrically insulated (uninsulated)

Table 2: Overview of included variants

Figure 1: Roller bearing swivel SKLI/SKLU

Figure 2: Round sling Coupling SKR

Figure 3: Master Link SKG (closed)

Figure 4: Half-Link SKT (includes locking set SKA)

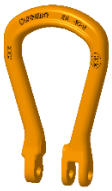


Figure 5: Master Link SKO (open)

Figure 6: Sling Hook ESKN with latch

Each Product is marked as follows:

- Manufacturer identification (GUNNEBO SWEDEN)
- Product name, chain size, material grade
- Batch/traceability code
  The traceability code consists of letters and numbers that identify which plant the product was made in, the year and the batch. This enables tracing the product back through the manufacturing process, all the way back to the specific raw material.
- German professional worker association (BG H32)

Gunnebo Industries issue:

- manufacturer´s certificate according to EN 1677-1 and
- 3.1 material certificate acc. to EN 10204

The following standards apply:

- EN 1677: 2008
- ISO 8539:2009
- ASTM A952/A952M-02
- AS 3776:2015
- SANS 1595:2003

Authorized resellers may provide their own documentation and will be able to provide the original certificates upon request.

4 Intended use and restrictions

4.1 Intended use

The SK system can only be used for lifting when the user has a valid certificate. Authorized resellers may provide their own documentation and will be able to provide the original certificates upon request.

The SK system consists of a universal swivel coupling, SKLI, and connected parts. All components are manufactured from alloy steel, for use with Grade 8 chain.

Combined with SKG, SKO, SKR, SKT and ESKN/SKN it can also be used for steel wire and synthetic lifting slings.

The SK system enables a broad variety of combinations to adapt to different lifting challenges.

The SK system parts can be part of customized lifting equipment.

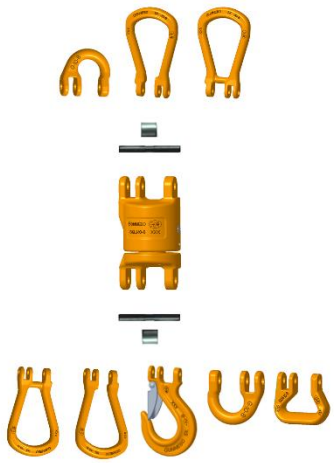


Figure 7: SK System parts

A secure assembly with standardized dimensions within each size range, eliminates faulty assembly of components with different working loads. For example SKLI-10-8 can only be paired with:

- SKG-10-8
- SKO-10-8
- SKR-10-8
- SKT-10-8
- SKN-10-8

When paired together, the Working Load Limit (WLL) is equal for all. See WLL values in the Gunnebo Industries product catalogue, www.kitocrosby.com.

System combination table for the SKLI system

Example: The top connection it is acceptable to combine an SKR with an ESKN at the bottom.

Top / Bottom	SKG	SKO	SKR	SKT	ESKN/SKN

Table 3: System combination table for SKLI system

For example, SKLI-10-8 can be combined with:

- SKG-10-8
- SKO-10-8
- SKR-10-8
- SKT-10-8
- or ESKN/SKN-10-8.

The connection is made with SKA-10-8 consisting of load pin and locking collar.

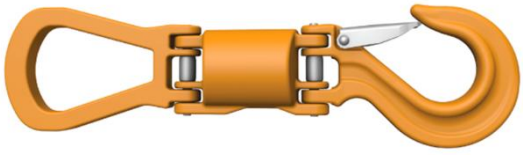


Figure 8: SKLI-10-0, ESKN-10-8, SKO-10-8

The SKLI swivel uses lubricated roller bearings and sealing to ensure full rotation ability even at max working load limit. This enables secure positioning before, during and after the lift.

SKLI swivel has electrical insulation and may be used for welding operations on suspended loads. The product is tested to resist 1000 V. Follow statutory regulations regarding use and maintenance. The SKLU has the same functionality as the SKLI but is not electrically insulated and not intended for welding.

Figure 9: SKLI Swivel electrically insulated tested for max 1000V

The SK components can be paired together without the SKLI/SKLU swivel. The intended use could be to attach a synthetic sling to a chain sling or vice versa to enable a flexible attachment for a special application.

Figure 10: SKG-10-8 paired with SKT-10-8

Combination table of SK parts without using the swivel SKLI/SKLU

	SKG	SKO	SKR	SKT	ESKN/SKN

Table 4: System combination table of SK parts without using the swivel

For example, SKG-10-8 can be combined with:

- SKG-10-8
- SKO-10-8
- SKR-10-8
- SKT-10-8
- ESKN/SKN-10-8

The connection is made with SKA -10-8.

The Master links SKG/SKO have a closed or open link. Both can be connected to the lower or upper connection of the swivel SKLI/SKLU or to SKR, SKT or ESKN/SKN. The connection is made with the Load pin and locking collar set, SKA.

Figure 11: SKG (closed), SKO (open), and SKA (Pin and collar)

The couplings SKR and SKT are intended to be combined with chain of Grade 8 and a synthetic textile lifting sling, respectively. Choose the correct WLL for the textile band with regard to the SKLI components used, adapted to the lifting combination.

Figure 12: SKR and SKT

The Hooks are available with spring latch ESKN and without SKN. It is recommended to use a hook with a latch.

Figure 13: ESKN and SKN

The SK system can only be used for lifting when the user has a valid certificate.

Authorized resellers may provide their own documentation, and can provide the original certificates upon request.

SK system - Example of use

Figure 14: Welded object electrically insulated to crane with the SKLI swivel

SK system parts adapted to enable a tailor-made lift

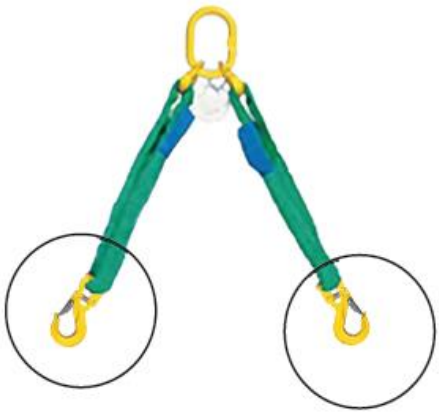


Figure 15: SK system parts combined to enable connection to synthetic round sling

The SK system can be adapted to customer specific demands.

4.2 General limitations of use

- Always use a latch. Make a risk assessment before using SKN.
- Use only Gunnebo short link chain.
- Never modify, repair, or reshape the product by welding, heating or bending as this will affect the nominal WLL.
- Do not heat-treat the product as this may affect the WLL.
- Do not galvanize or subject the product to any plating or coating process without approval of the manufacturer.
- Do not use the product in alkaline or acidic conditions.
- Do not expose the product to aggressive chemicals, such as acids, alkalines and their vapors.

4.3 Use in exceptionally hazardous conditions

The rating of lifting accessories in European Standards assumes the absence of exceptionally hazardous conditions.

Exceptionally hazardous conditions include offshore activities, the lifting of persons, and lifting of potentially dangerous loads such as molten metals, corrosive materials, or fissile materials.

In such cases a competent person should assess the degree of hazard and adjust the working load limit accordingly.

4.4 WLL reduction at elevated temperatures

The general service temperature is -40 °C/-40 °F to +200 °C/392 °F.

For temperatures higher than +200° C/392 °F, the following apply:

Service temperature	New load capacity in % of original WLL
200-300 °C 392-572 °F	90%
300-400 °C 572-752 °F	75%
> 400 °C > 752 °F	Not allowed

Table 5: WLL reduction at elevated temperatures

4.5 Fatigue

It is important to understand that fatigue failure can occur even if the prescribed WLL is not exceeded.

Scenarios in which the SK system is subjected to variable load over a prolonged period of time, will carry the risk of fatigue. Consider this when dimensioning and deciding service intervals.

The SK system is designed for a maximum of 20 000 load cycles.

4.6 Additional marking

If markings such as project code, and serial number are added, it must be done in a way that does not reduce the strength, corrosion resistance, or the legibility of the manufacturer's own marking.

The following methods are recommended for marking:

- marking tape
- engraving tool
- low stress punches

Figure 16: Recommended areas for punched or engraved marking

5 Instructions prior to use

Read and understand this manual before using the SK system. Read the Safety precautions.

For further recommendations regarding safe use of the SK system in sling applications, see Gunnebo Industries' instruction for safe use of slings and lifting guide. Download the Lifting guide and Instructions for sling at www.kitocrosby.com.

5.1 Verification prior to first use

Before first use ensure that:

- The SK system is precisely as ordered.
- The manufacturer's certificate is in order.

5.2 Inspection prior to each use

Inspect the SK system for obvious damage or deterioration before each use in accordance with local regulations.

Check also against the items listed under Inspection. If there is any doubt regarding meeting these criteria, do not use the product for lifting operation.

5.3 Before loading

- Determine the weight of the load and the center of gravity.
- Check the conformity of the load with the WLL of the lifting equipment for the specific working configuration.
- Ensure that the Product has been correctly assembled in accordance with the Assembly instructions.
- Ensure that no obstacles obstruct the lift and prepare the landing site.

6 Assembly

Only a qualified person may assemble the SK system. When the SK system is incorporated as a part of a lifting sling, it must be part of the certification and WLL rating of the complete sling.

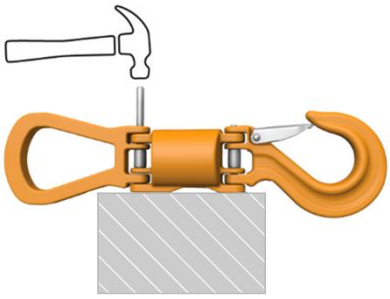
All parts in the system are assembled/disassembled in the same way. See the configuration tables in Intended use and restrictions. See below for general instructions showing SKG-10-8 and SKLI-10-8.

SKG-10-8 assembled with SKLI-10-8

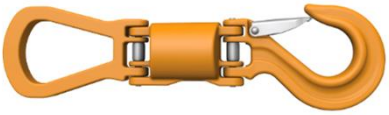
Prerequisite:

- A hammer
- A locking pin and collar (SKA).

1. Place the SKLI on a solid support.
2. Put the locking collar in place to connect the SKG with the SKLI.
3. Tap lightly with a hammer on the load pin to drive it into position.



4. Check that the load pin sticks out evenly on each side. Make sure that it is locked by the collar.
5. Make sure that all markings are readable on the the connected parts.

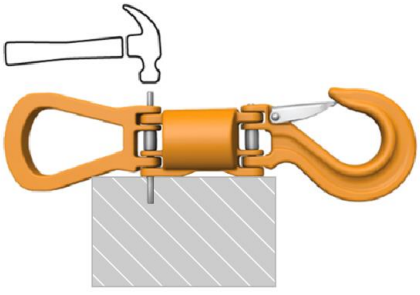


Disassembly

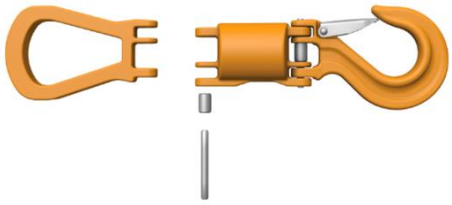
Prerequisite:

- A hammer
- A pin tool, which must be smaller in diameter size than the load pin.

1. Place the SKLI on a solid support with opening for the load pin.
2. Position a pin tool on top of the load pin.
3. Tap lightly with the hammer to drive the load pin from its position.



The SKLI is disassembled.



6.1 Spare parts

Available spare parts:

- Locking set SKA
- Latch with spring and rivet for ESKN
- Open close trigger with spring and flexible pin

See www.kitocrosby.com for article numbers or the Gunnebo Industries Product Catalogue.

6.2 Limitations

Only use the described components in this instruction. Do not use other parts in the SK system.

The Swivel SKLI/SKLI will require maintenance with repeated use.

Check that the spring function of the retainer pin is working and that it secures the load pin. If it does not work do not use the SK system before it has been replaced.

7 Maintenance

When performing maintenance or inspection, always read and follow the Safety Precautions.

7.1 Inspection

During service, lifting equipment are subjected to conditions which affect their safety. Therefore ensure that the equipment is safe for continued use. See Safety Precautions.

Withdraw the SK system from service and refer the product to a competent person for thorough examination if any of the following is observed:

- The SK system markings are illegible.
- More than 10% reduction of dimension at any point.
- Cuts, nicks, gouges, cracks, excessive pitting or corrosion, heat discoloration, bends, distortion, or other defects.

7.2 Examination

A competent person should thoroughly examine the product at least once every year. The inspection should be carried out more frequently if deemed necessary, taking into consideration the following points.

- Local, national, or branch-specific regulation.
- The service condition of the Product.
- Use in demanding environments (such as corrosive or extreme temperature).
- Use where the Product is subjected to repeated loads that may induce metal fatigue.

Maintain records of examinations. Before examination, clean the product so it is free from oil, dirt, and rust.

Any cleaning method which does not damage the parent metal is acceptable. Methods to avoid are those using acids, overheating, removal of metal or movement of metal which may cover cracks or surface defects.

See also Safety Precautions.

7.3 SKLI /SKLU Swivel

This description is applicable to SKLI but can also be used for the non-electrically insulated Swivel type SKLU. The insulation parts M and L are in this case not included.

The Swivel type SKLI uses lubricated roller bearings and sealing to ensure full rotation even at max working load limit. SKLI prevents the sling legs from twisting. SKLI has electrical insulation and may be used for welding operations on suspended loads. The product is tested to resist 1000 V. Follow statutory regulations regarding use and maintenance.

Annual maintenance is normally sufficient. Carry out more frequent maintenance if necessary due to working conditions. On delivery the swivel is lubricated with bearing grease, type Texaco Multifak EP 2 or equivalent quality.

Wear of load bearing parts must not exceed 10% of original dimensions.

Rotate the swivel in both directions while loaded by approximately 5% of max WLL. The swivel should rotate easily. If not or if the sealing is suspected to be damaged, dismount the swivel and inspect it.

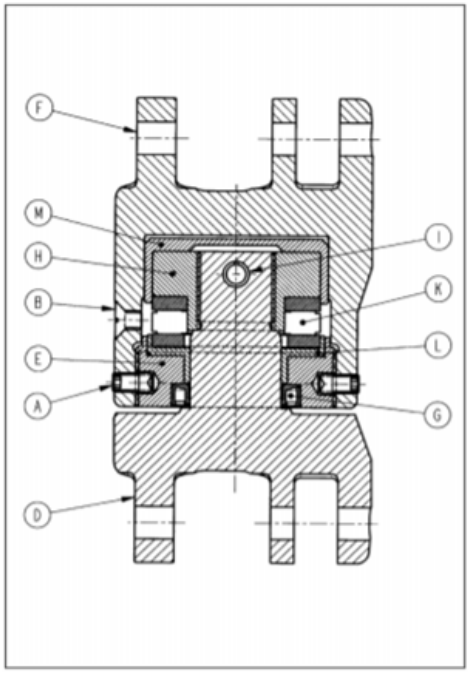


Figure 17: SKLI Swivel

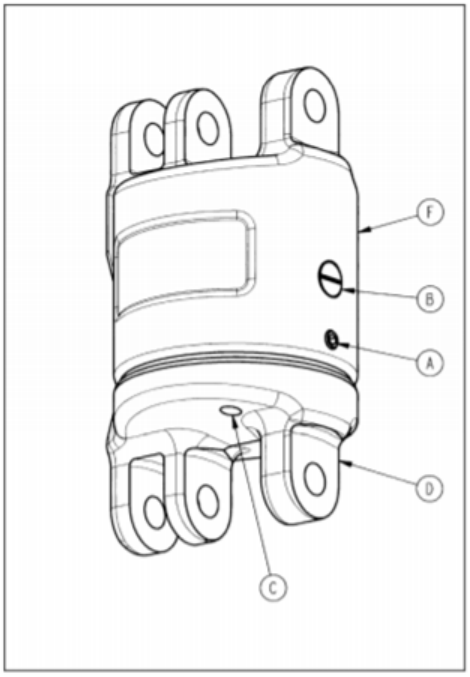


Figure 18: SKLI Swivel

For lubrication

See also Safety Precautions.

To lubricate the SKLI Swivel:

1. Dismount the screw (B) and mount a grease nipple.

2. Add grease until the grease appears between the house and the shank.

3. Remount screw (B).

Remove and change the sealing (G)

See also Safety Precautions.

To remove and change the sealing (G):

1. Dismount the stop screw (A) and the screw (B).

2. Rotate the shank until the carrier holes (C) in shank (D) and carrier (E) are in line with each other.

3. Insert a pin of suitable diameter through the carrier holes (C).

4. Remove the housing (F) from the shank assembly.

5. Remove the spring pin (I) from the nut (H).

6. Remove the nut.

   Note:
   Each nut and shank are machined together and must be used together.

7. Remove and inspect the bearing (K). Replace the bearing if damaged.

8. Remove the carrier (E) and renew the sealing.

9. Inspect the housing and the shank.

Assembly

See also Safety Precautions.

To assemble the SKLI after removing and changing the sealing (G):

1. Check that the seal is correctly mounted.
   The spring inside the seal is visible.

2. Assemble all shank parts in reverse order step 5-8. Make sure the bearing-halves are correctly mounted.
   A. Mount the one with the largest inner diameter (marked GS) inside the insulation bush (L).
   B. Mount the one with smallest inner diameter (marked WS) towards the nut. Do not forget to mount insulation bush (M).

3. Mount the shank assembly into the housing in reverse order step 1–4.
   A. Screw the housing on and turn until it stops.
   B. Loosen it until the locking holes are in line with each other (approx 1/2 of a revolution).
   C. Add a few drops of locking fluid type Loctite 242 to the stop screws and mount the stop screws. Secure well.

4. Lubricate the swivel according to instructions above.

7.4 Repair

A competent person with relevant knowledge and technical skills must do the repairs. The product shall only be returned to service after approval by a designated person.

Maintain records of repairs.

Any replacement component or part of the Product should be in accordance with the appropriate European Standard for that component or part. Use only original Gunnebo spare parts.

Discard or replace components that are cracked, visibly distorted or twisted, severely corroded or have deposits which cannot be removed.

Remove minor damage such as nicks and gouges by careful grinding or filing. The surface should blend smoothly into the adjacent material without abrupt change in the section. The complete removal of the damage should not reduce the thickness of the section at that point to lesser than the manufacturer's specified minimum dimensions or by more than 10% of nominal thickness of the section.

7.5 End of use/Disposal

Recycle as general steel scrap.