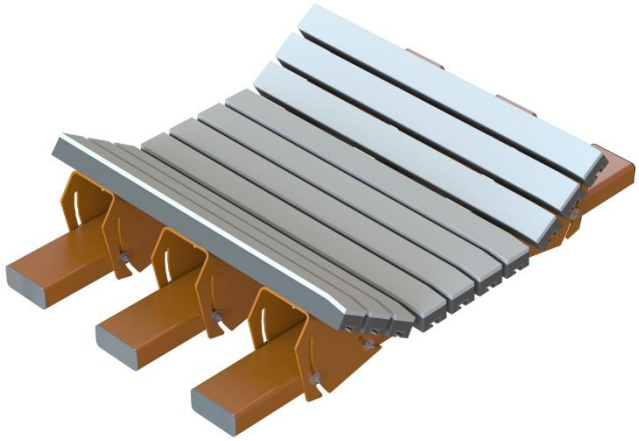
Martin® Impact Cradles MD / LD

Medium Duty (MD)



Light Duty (LD)

Operating Instructions

Version: 0
Language: ENG
M3493E UK 2025-05 Imp Crdl

Table of Contents

1 General

NOTE

Before starting work these operating instructions must be read and understood completely

1.1 About these operating instructions

These operating instructions apply solely for Impact Cradles and are intended for those persons who install Impact Cradles, commission them, and monitor their usage.

The operating instructions must be kept for the lifetime of the Impact Cradles and be made available in an orderly condition to all persons entrusted with work with and on the Impact Cradles.

1.2 Intended usage

The impact cradles are used on belt conveyors and are used to support conveyor belts, mainly in the loading area and in the area of the settling zones. They are installed under the conveyor belt and support its running side.

Depending on the design, they serve to absorb the impact of falling bulk material and / or to guide the conveyor belt level.

They may only be used

- in industrial areas above ground
- according to the technical data in the documentation
- in the installation position as described in the documentation

The usage of the Impact Cradles is only considered to be as intended if the following conditions are also fulfilled:

- Before starting initial work, the personnel must have been instructed on the work on the system and on all relevant issues of occupational health and safety
- Any personal protective equipment required must be worn
- The provisions of the operating instructions must be observed in full.

Operation of the Impact Cradles under deviating conditions and unauthorised modification of the cleaners is considered as improper usage

Special product variants of the Impact Cradles can also be used in ATEX zones 22 and 21 under certain circumstances.

1.3 Personnel qualification

Only authorised and qualified personnel may be entrusted with work with and on the Impact Cradles. Persons are considered qualified if they have the qualification of a skilled worker and meet all the following requirements:

- completed professional training or at least 5 years of professional experience in the field,
- technical experience,
- knowledge of the relevant occupational health and safety regulations.

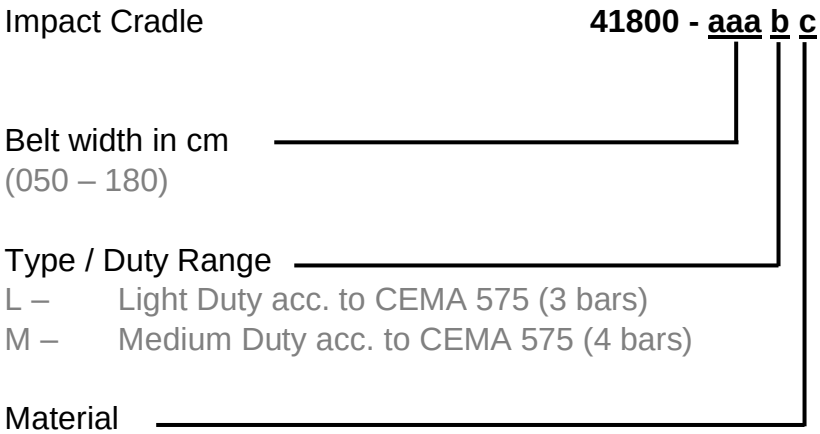
The persons must

- be able to assess the tasks and risks assigned to them,
- be able to recognise potential dangers in advance,
- be physically and cognitively able to operate the conveyors and Impact Cradles safely,
- have been trained and instructed appropriately,
- have read and understood these operating instructions.

Work on earth connections (Protective Bonding Kits), cabling, switching, control, regulation, automation and all electrical components may be carried out only by trained electricians.

1.4 Part number

Impact Cradle **41800 - aaa b c**



1.5 Technical Data

The Impact Cradles are suitable for the following operating parameters:

	Operating parameter
Belt widths:	500 – 1.800 mm
Belt speed:	Max. 3,3 m/s
Temperature range:	-30 – 80 °C
Duty Range	Light Duty (3 bars) / Medium Duty (4 bars) acc. to CEMA 575
Trough Angles:	10° – 45°
Reversing operation	Yes

2 Safety

2.1 General safety instructions

DANGER

Entanglement in moving or rotating parts

Body parts and/or clothing may get caught and pulled in by moving or rotating parts of the machinery.

- *Before any installation or maintenance work is carried out, ensure that all power sources to the conveyor belt system and its accessories are switched off and secured against inadvertent switching on.*
- *Apply Log-Out / Tag-Out / Try-Out (LOTOTO) Procedures*
- *Apply warning signs*

DANGER

Automatic start-up of the conveyor

Serious or fatal injuries due to unintentional start-up of the conveyor.

- *Switch off the conveyor before starting work and secure it against being switched on again.*
- *Follow safe procedures to prevent unintentional restart.*

WARNING

Flying objects

Objects left on or in the conveyor can fly around uncontrollably when the conveyor is switched on and can hit and injure persons.

- *Before switching on the conveyor, remove all foreign objects such as tools, devices, etc. from the belt!*

WARNING

Danger of injury due to unapproved component parts

Unapproved parts can directly or indirectly cause personal injury or damage to property.

– *Only use accessories and spare parts that are distributed by the manufacturer or are explicitly approved (in writing)!*

2.2 Personal protective equipment

Persons carrying out work on Impact Cradles must wear suitable personal protective equipment.

Minimum requirements:

Symbol	Meaning
	Wear head and eye protection
	Wear at least ankle-high foot protection
	Use gloves
	Use fall protection, if required

2.3 Safety markings on the system

The safety markings on the Impact Cradles must be kept in good condition and clearly visible at all times.

If parts of the system are replaced, ensure that the spare parts are or will be provided with appropriate safety markings.

3 Installation

DANGER

Entanglement in moving or rotating parts

Body parts and/or clothing may get caught and pulled in by moving or rotating parts of the machinery.

- *Before any installation or maintenance work is carried out, ensure that all power sources to the conveyor belt system and its accessories are switched off and secured against inadvertent switching on.*
- *Apply Log-Out / Tag-Out / Try-Out (LOTOTO) Procedures*
- *Apply warning signs*

DANGER

Automatic start-up of the conveyor

Serious or fatal injuries due to unintentional start-up of the conveyor.

- *Switch off the conveyor before starting work and secure it against being switched on again.*
- *Follow safe procedures to prevent unintentional restart.*

WARNING

Risk of falling down

Impact Cradles are often mounted and operated in heights. There may be a risk of falling down.

- *Therefore, use a fall protection device when installing in higher working areas!*

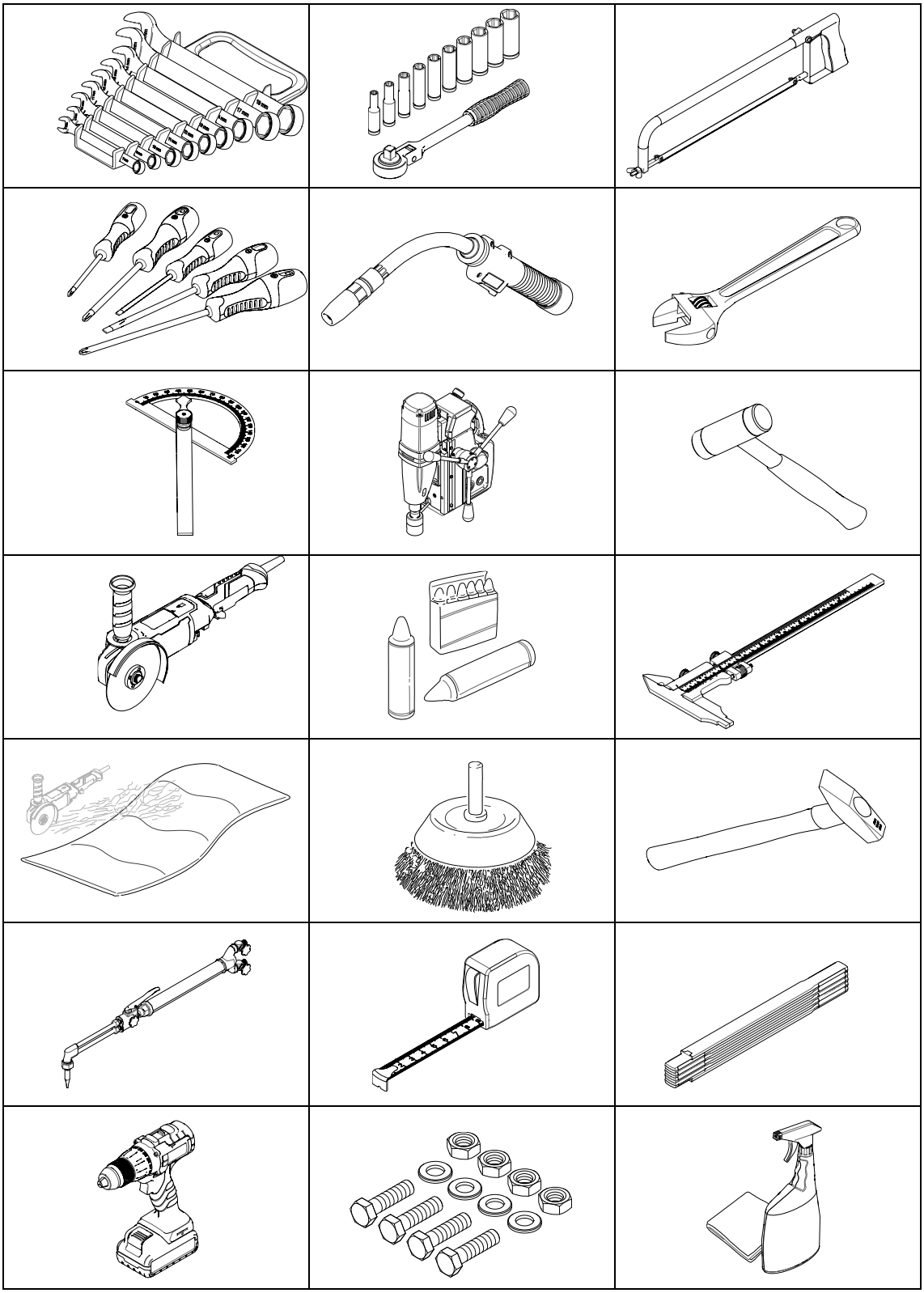
WARNING

Working in confined spaces

Areas in which Impact Cradles are installed are often difficult to access and include confined spaces. It is often necessary to work in difficult positions.

- *Determine whether occupational safety measures are necessary that go beyond the usual measures!*

3.1 Required maximum of tools and materials



3.2 Unpacking/transportation

WARNING

Heavy weight

The Impact Cradles may have weights that require handling by lifting devices.
Handling Impact Cradles by hand can cause serious skeletal injuries.

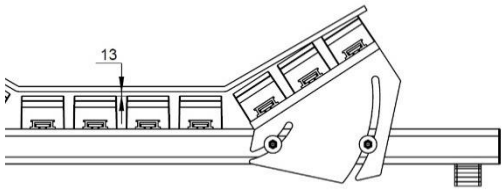
- *Use suitable aids if the load is > 25 kg per person!*

When unpacking, all components must be checked for completeness and intactness.

3.3 Requirements for installation

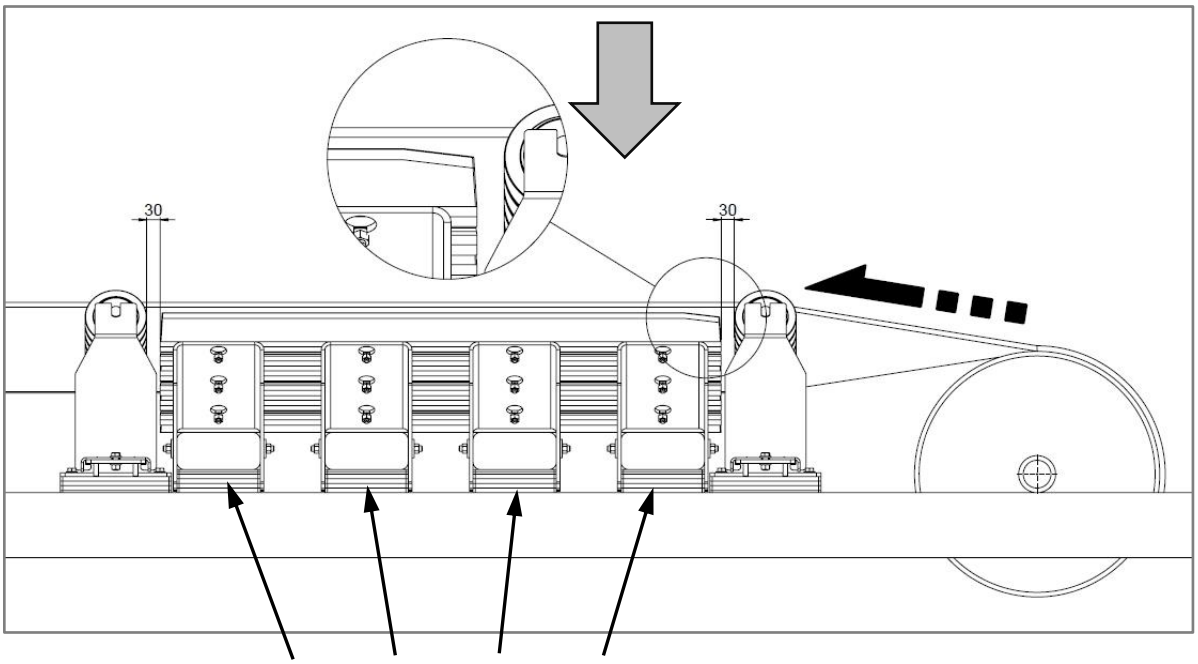
Make sure impact cradle surface is approx. 13 mm below troughed belt and approx. 6 mm below flat belt in empty condition.

This allows the belt to absorb impact while avoiding continuous friction and wear if the belt is running empty.

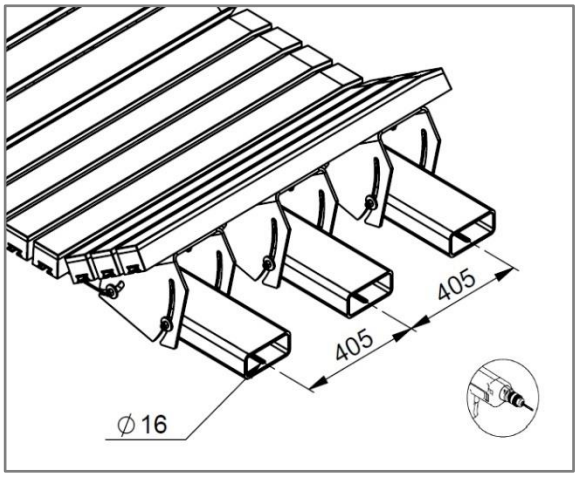


When installing one or more Impact Cradles, it is necessary to verify there is adequate power in the conveyor drive to compensate for the additional frictional drag.
Consult Martin Engineering for additional information.

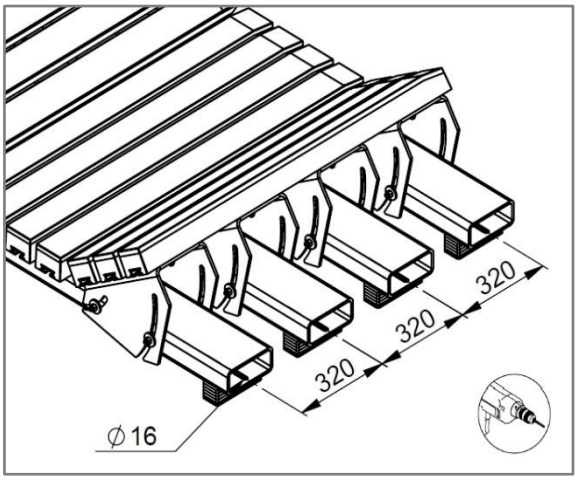
3.4 Determining the installation position



The installation of the stations is variable in height. The correct height can be adjusted by using shims. The correct height is set when the station is in line with the idlers mounted in front of and behind it. The instructions in chapter 3.3 Requirements for installation must be followed, according to which the bottom (horizontal) bars should be at a distance of 13 or 6 mm from the belt.



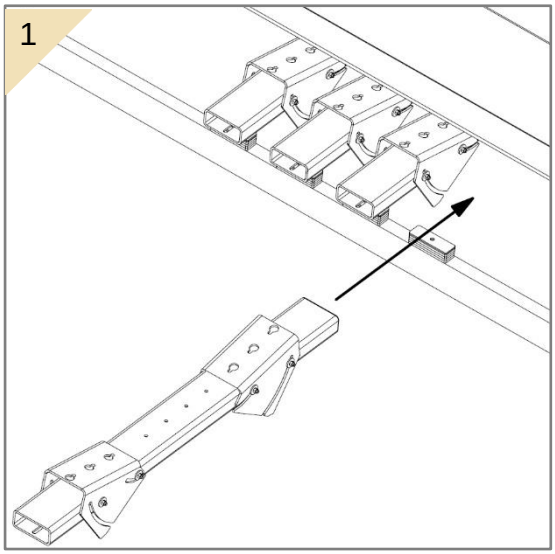
Light Duty (LD)

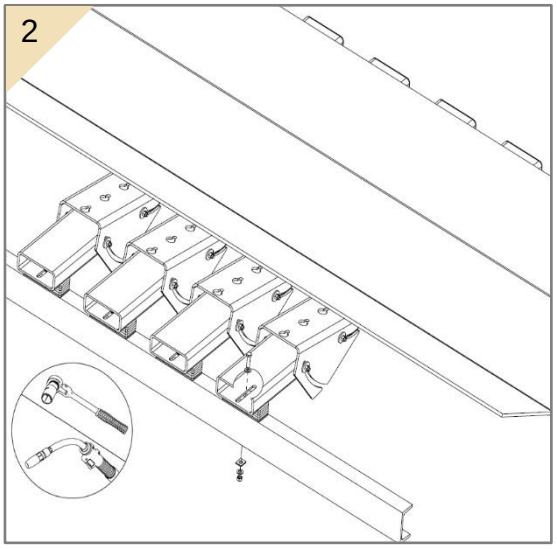


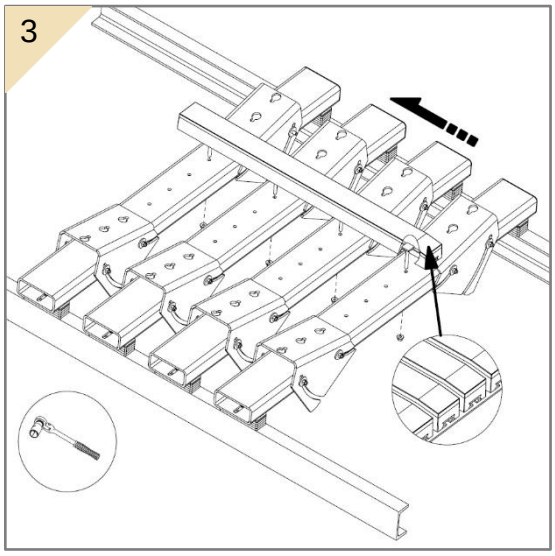
Medium Duty (HD)

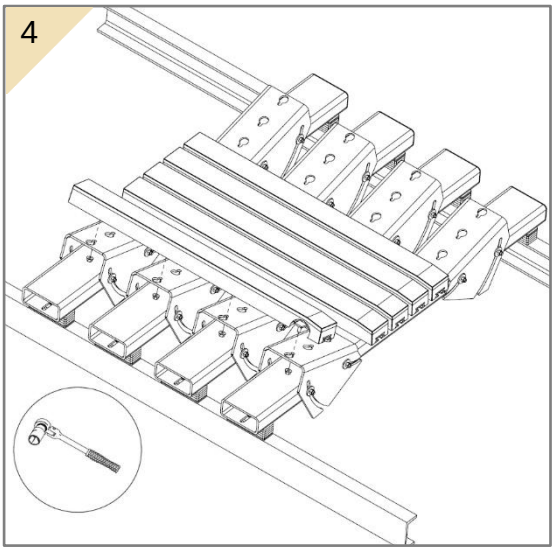
Notice: If the beams protrude sideways, they should be shortened and flush with the conveyor structure.

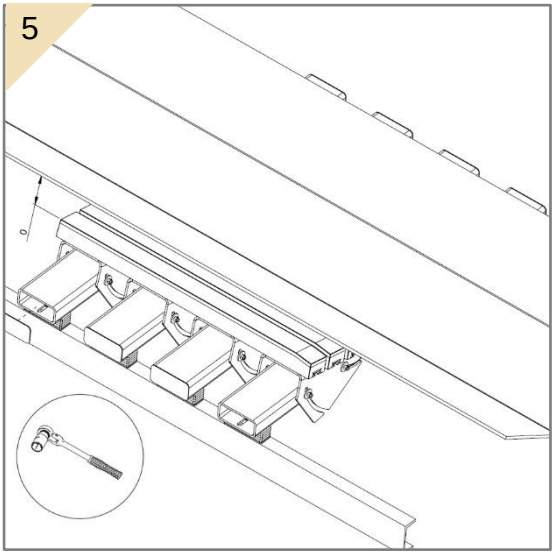
3.5 Mounting the Impact Cradles











3.6 Placing labels

3.6.1 Safety label

The safety label (safety marking) below must be attached to the conveyor system in the immediate vicinity of the Impact Cradles:

3.6.2 Other labels

The labels below are attached to the product:

1. Sticker showing the address of the Martin Engineering branch and the designation of the product

4 Maintenance / Repair

WARNING

Danger of injury due to unapproved component parts

Unapproved parts can directly or indirectly cause personal injury or damage to property.

– *Only use accessories and spare parts that are distributed by the manufacturer or are explicitly approved (in writing)!*

4.1 Maintenance

Interval	Task
Weekly	Check that all securing parts are tightened. Tighten any loose connections as required.
	Clean all warning labels. Replace any warning labels which are illegible.
	Check bars for wear. If top covering on bars is worn through to core material, replace bars.

4.2 Troubleshooting

Symptom	Corrective Action
High impact bar wear rate.	Impact cradle is installed too close to belt. Make sure impact cradle surface is 13 mm below troughed belt and 6 mm below flat belt.
Impact bars worn unevenly.	Belt is unevenly loaded, wear liners are improperly installed, and/or impact bars are not parallel to belt travel. Inspect loading area and wear liners, and modify transfer point if necessary.

5 Disassembly / Recycling / Disposal

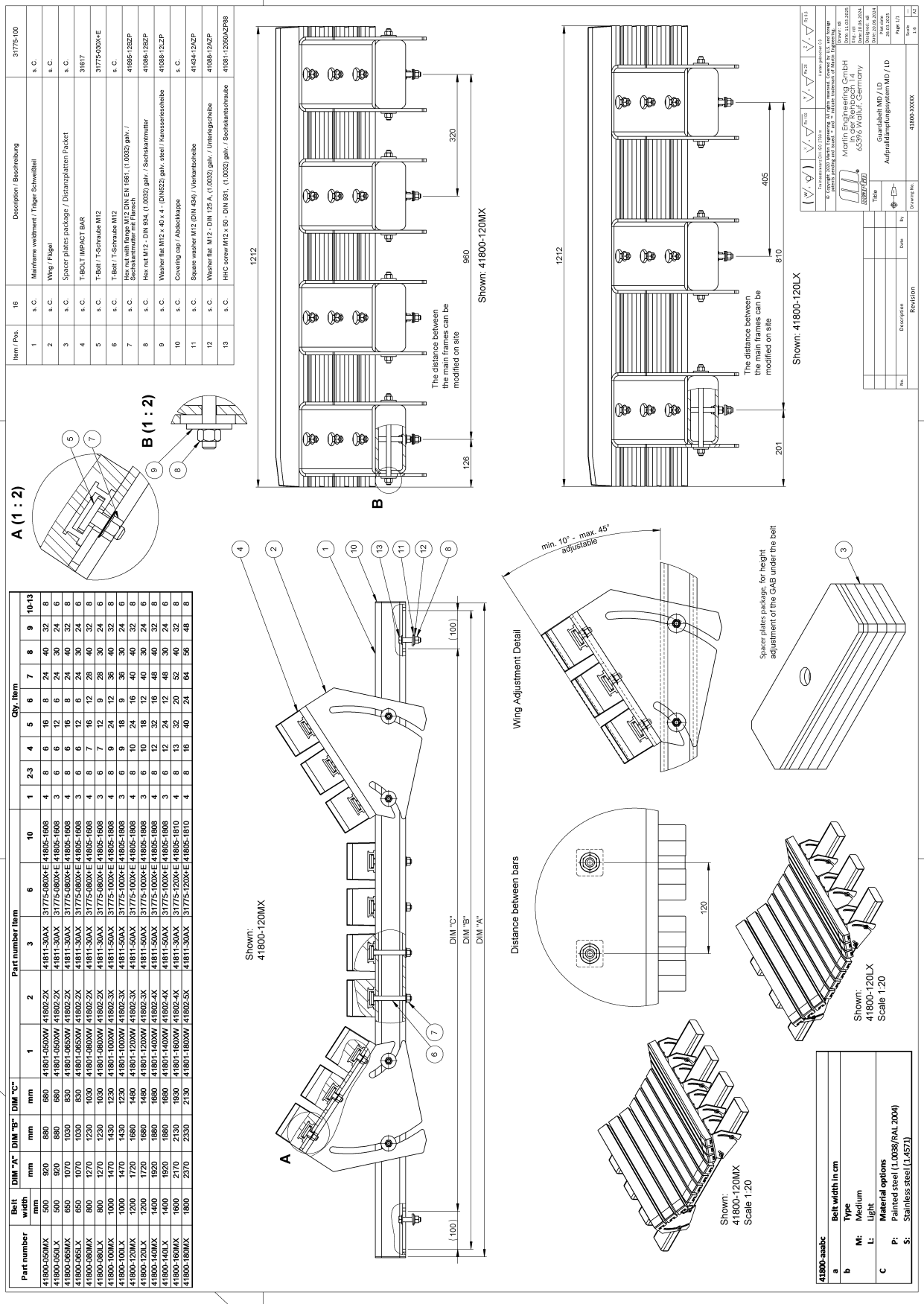
1. Disassemble Impact Cradles by material groups as far as possible.
2. Contact official bodies (disposal centres, authorities) and request information about proper disposal or recycling possibilities.
3. Recycle the different materials.

Only materials that cannot be reasonably recycled may be disposed of. Disposal must be carried out professionally.

Material groups that can be fed into a recycling process include:

- Sheet steel
- Steel profiles
- Plastics
- Rubber
- Non-ferrous metals
- Electrical cables
- Electrical components (with copper content)
- Lubricants

6 Scope of delivery and spare parts



Item / Pos.	16	Description / Beschreibung	31775-100
1	s. C.	Mainframe weldment / Träger Schweißteil	s. C.
2	s. C.	Wing / Flügel	s. C.
3	s. C.	Spacer plates package / Distanzplatten Packet	s. C.
4	s. C.	T-BOLT IMPACT BAR	31617
5	s. C.	T-Bolt / T-Schraube M12	31775-030X+E
6	s. C.	T-Bolt / T-Schraube M12	s. C.
7	s. C.	Hex nut with flange M12 DIN EN 1661, (1.0032) galv. / Sechskantmutter mit Flansch	41895-12BZP
8	s. C.	Hex nut M12 - DIN 934, (1.0032) galv. / Sechskantmutter	41086-12BZP
9	s. C.	Washer flat M12 x 40 x 4 - (DIN522) galv. steel / Karosserieschebe	41088-12LZP
10	s. C.	Covering cap / Abdeckkappe	s. C.
11	s. C.	Square washer M12 (DIN 434) / Vierkantscheibe	41434-12AZP
12	s. C.	Washer flat M12 - DIN 125 A, (1.0032) galv. / Unterlegscheibe	41088-12AZP
13	s. C.	HHC screw M12 x 50 - DIN 931, (1.0032) galv. / Sechskantschraube	41081-12050AZP88

Part number	Belt width	DIM "A"	DIM "B"	DIM "C"	Part number / Item					Qty. / Item								
					1	2	3	6	10	1	2-3	4	5	6	7	8	9	10-13
	mm	mm	mm	mm														
41800-050MX	500	920	880	680	41801-050XW	41802-2X	41811-30AX	31775-080X+E	41805-1608	4	8	6	16	8	24	40	32	8
41800-050LX	500	920	880	680	41801-050XW	41802-2X	41811-30AX	31775-080X+E	41805-1608	3	6	6	12	6	24	30	24	6
41800-065MX	650	1070	1030	830	41801-065XW	41802-2X	41811-30AX	31775-080X+E	41805-1608	4	8	6	16	8	24	40	32	8
41800-065LX	650	1070	1030	830	41801-065XW	41802-2X	41811-30AX	31775-080X+E	41805-1608	3	6	6	12	6	24	30	24	6
41800-080MX	800	1270	1230	1030	41801-080XW	41802-2X	41811-30AX	31775-080X+E	41805-1608	4	8	7	16	12	28	40	32	8
41800-080LX	800	1270	1230	1030	41801-080XW	41802-2X	41811-30AX	31775-080X+E	41805-1608	3	6	7	12	9	28	30	24	6
41800-100MX	1000	1470	1430	1230	41801-100XW	41802-3X	41811-50AX	31775-100X+E	41805-1808	4	8	9	24	12	36	40	32	8
41800-100LX	1000	1470	1430	1230	41801-100XW	41802-3X	41811-50AX	31775-100X+E	41805-1808	3	6	9	18	9	36	30	24	6
41800-120MX	1200	1720	1680	1480	41801-120XW	41802-3X	41811-50AX	31775-100X+E	41805-1808	4	8	10	24	16	40	40	32	8
41800-120LX	1200	1720	1680	1480	41801-120XW	41802-3X	41811-50AX	31775-100X+E	41805-1808	3	6	10	18	12	40	30	24	6
41800-140MX	1400	1920	1880	1680	41801-140XW	41802-4X	41811-50AX	31775-100X+E	41805-1808	4	8	12	32	16	48	40	32	8
41800-140LX	1400	1920	1880	1680	41801-140XW	41802-4X	41811-50AX	31775-100X+E	41805-1808	3	6	12	24	12	48	30	24	6
41800-160MX	1600	2170	2130	1930	41801-160XW	41802-4X	41811-30AX	31775-120X+E	41805-1810	4	8	13	32	20	52	40	32	8
41800-180MX	1800	2370	2330	2130	41801-180XW	41802-5X	41811-30AX	31775-120X+E	41805-1810	4	8	16	40	24	64	56	48	8

41800-aaabc

- **a** Belt width in cm
- **b** Type
  - M: Medium
  - L: Light
- **c** Material options
  - P: Painted steel (1.0038/RAL 2004)
  - S: Stainless steel (1.4571)

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