



Martin® Impact Cradles MD / LD

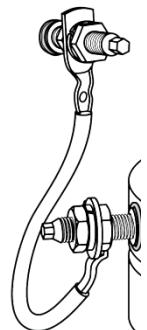
For the use in ATEX applications



Medium Duty (MD)



Light Duty (LD)



Operating Instructions

Version: 1
Language: ENG
ATEX M3493E UK 2025-10 Imp Crdl

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1 General

These operating instructions apply solely for the belt cleaner

Type: “Impact Cradle LD” part no. 41800-xxxLx

Type: “Impact Cradle MD” part no. 41800-xxxMx

in combination with the

Protective Bonding Kit part no. B-DE-Pro-2000



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 Martin® Impact Cradles and are intended for those persons who install Martin® Impact Cradles, commission them, and monitor their usage.

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

1.2 Intended usage

The Martin® 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 Martin® 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 Martin® Impact Cradles under deviating conditions and unauthorised modification of the Cradles is considered as improper usage.

1.3 Use in hazardous areas according to the ATEX directive

Requirements for the use in ATEX zones:

- Minimum ignition energy of the dust: >10 mJ
- Belt connections are vulcanised
- There are no substances in the bulk material which could generate impact sparks on the Cradles.
- Coatings (corrosion protection) have standard layer thicknesses (max.80µm)
- Conveyor belts have conductive or dissipative properties
- Idlers and pulleys are conductive and earthed
- Earthing cables (Protective Bonding Kits) are properly installed (Overall resistance to earth < 10⁶Ω)

1.4 Personnel qualification

Only authorised and qualified personnel may be entrusted with work with and on the Martin® 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.

1.5 Part number

Martin® Impact Cradle **41800 - aaa b c**

Belt width in cm _____
(050 – 180)

Type / Duty Range _____
 L – Light Duty acc. to CEMA 575 (3 bars)
 M – Medium Duty acc. to CEMA 575 (4 bars)

Material _____
 P – Painted Steel (1.0038 / RAL 2004)
 S – Stainless Steel (1.4571)

1.6 Technical Data

The Martin® 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
Impact Energy	Light Duty (3 bars) / Medium Duty (4 bars) acc. to CEMA 575
Reversing operation	Yes
Trough Angles	10° – 45°
ATEX Spec	CE II 2 D Ex h IIIC T180°C Db

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 Martin® 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 Martin® 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.

2.4 Special safety instructions for usage in ATEX areas



DANGER

Usage in ATEX zones 22 and 21

Combustible dust can cause explosions and thus cause serious or fatal injuries.

- *Ensure that all explosion-related parameters and operating modes are observed.*
- *Observe all instructions for usage in hazardous areas.*
- *Ensure that the bulk material meets the specified requirements before the conveyor is switched on.*
- *Ensure that the cradles are suitable for all explosion-related parameters and operating modes of the application.*
- *Ensure that the conveyor belts do not have any metallic connectors. All belt connections must be vulcanised.*
- *Ensure that the bulk material is free of foreign substances that could create an ignition source for the dust/air mixture.*
- *Ensure that any necessary metal-separating devices are operating effectively.*
- *Use only tools and aids that are approved for use in the respective ATEX zone.*
- *Ensure that the earth connections (Protective Bonding Kits) of the cradles are installed correctly.*
- *Use only cradles as special product variants that are suitable for use in potentially explosive areas.*
- *Measure the gas and dust content of the environment before using open flames.*
- *Prevent electrostatic charges, for example by cleaning plastic enclosures with a dry cloth.*
- *Work on earth connections, cabling, switching, control, regulation, automation and all electrical components may be carried out only by trained electricians.*
- *Ensure that all measures and approvals for hot work are fulfilled in order to avoid fires or explosions!*

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

Martin® 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!*



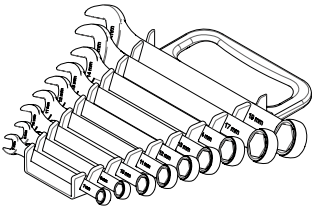
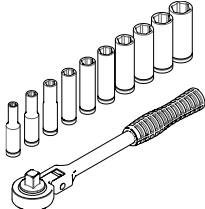
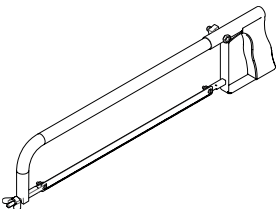
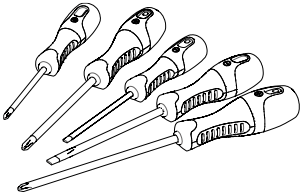
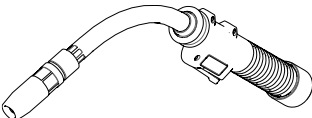
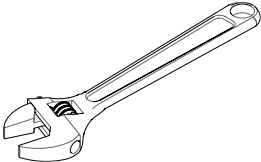
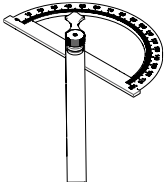
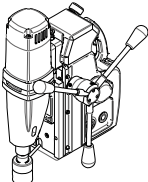
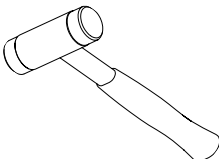
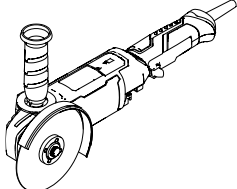
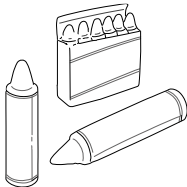
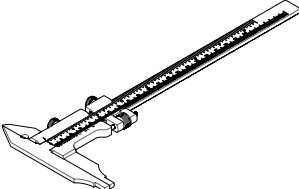
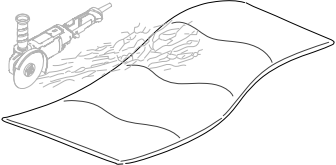

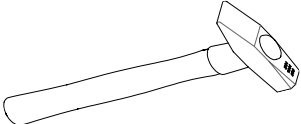
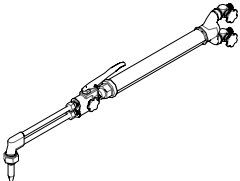
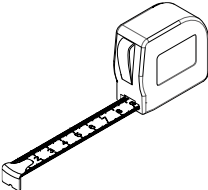
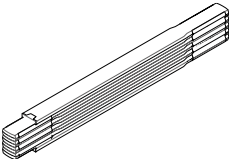
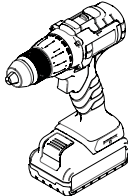
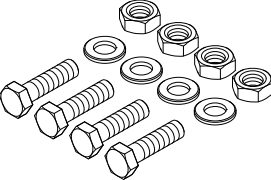

WARNING

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

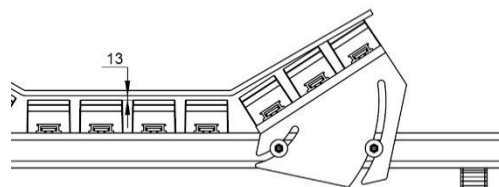
- Use suitable aids if the load is > 25 kg per person!

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

3.3 Requirements for installation

Make sure the Martin® Impact Cradle surface is approx. 13 mm below troughed belt and 6 mm below flat belt in empty condition.

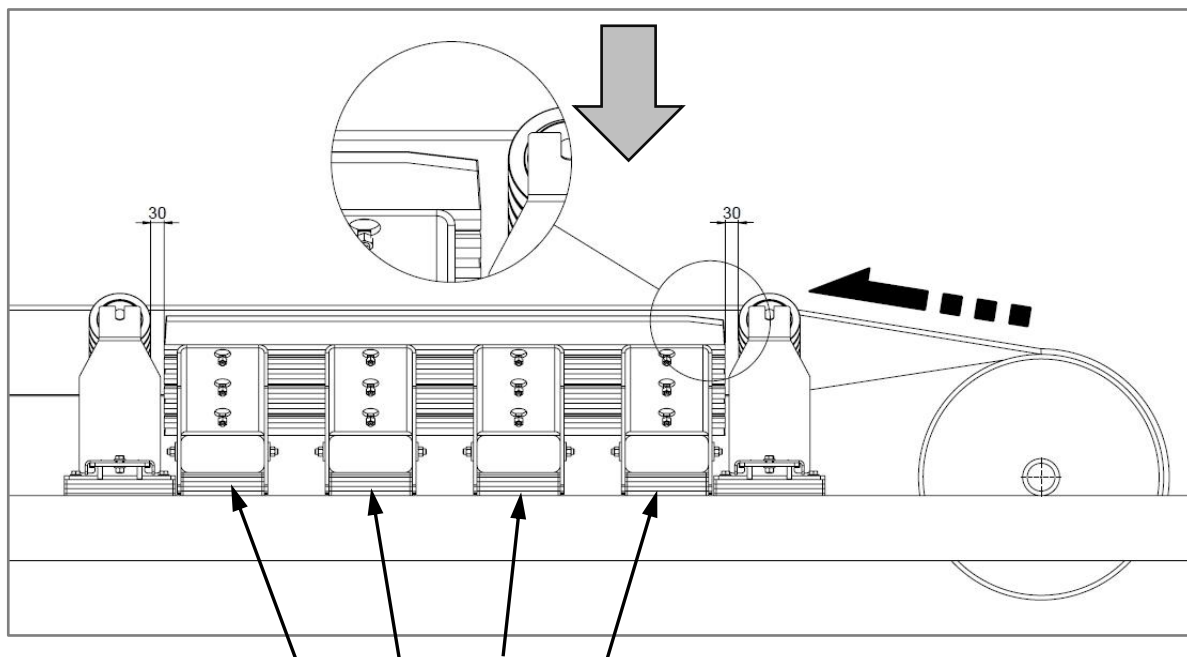
This allows the belt to absorb impact while avoiding continuous friction and wear if the belt is running empty.



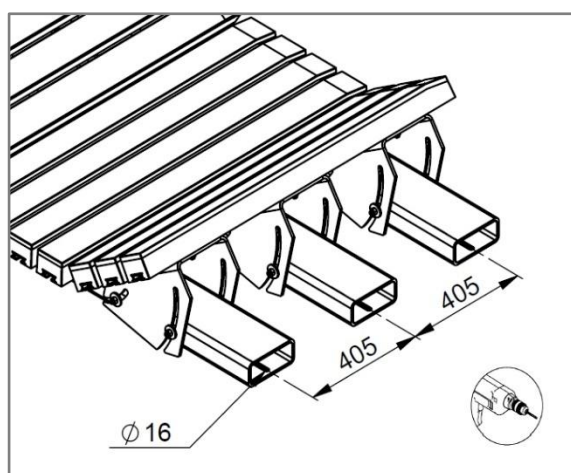
When installing one or more Martin® Impact Cradles, it is necessary to verify there is adequate power in the conveyor drive to compensate for the additional frictional drag.

Consult Martin Engineering for additional information.

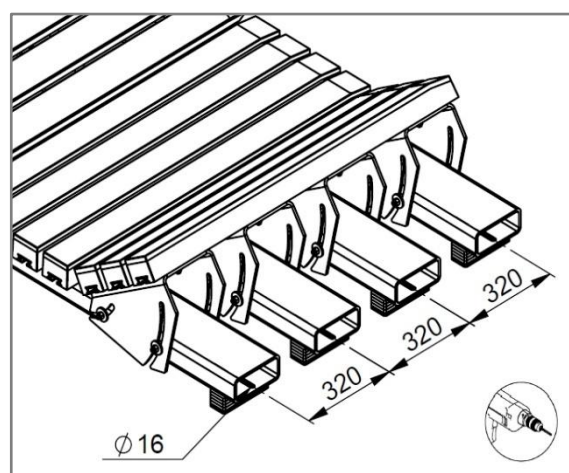
3.4 Determining the installation position



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.



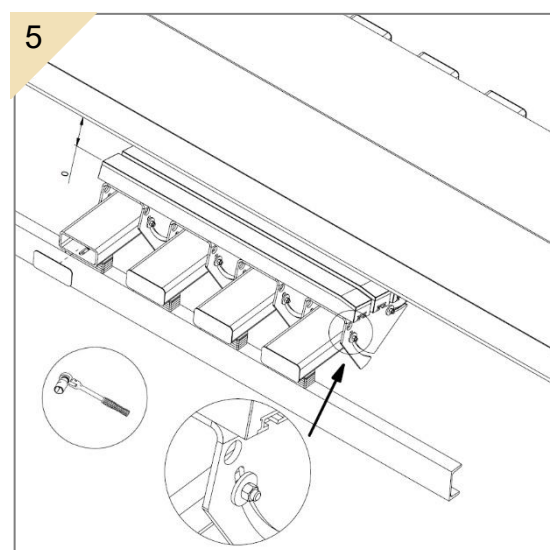
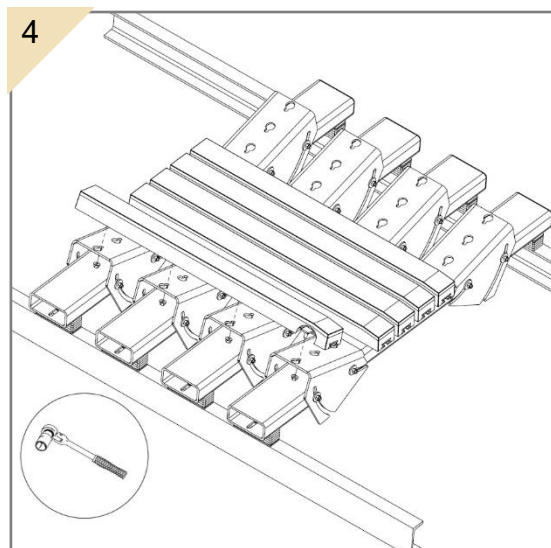
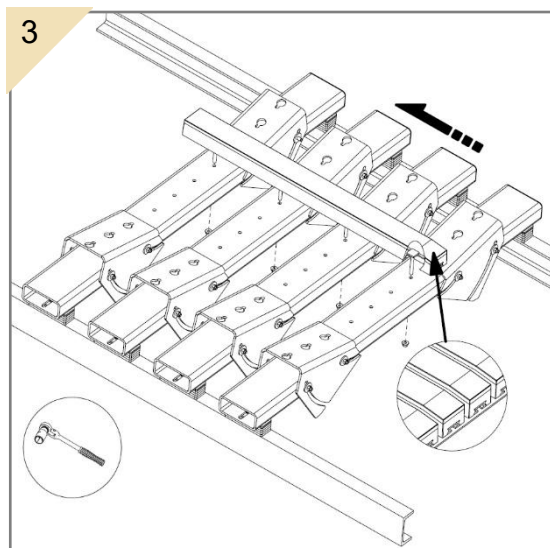
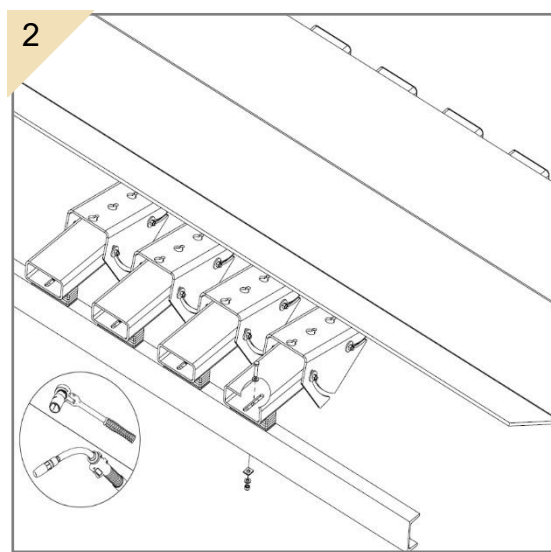
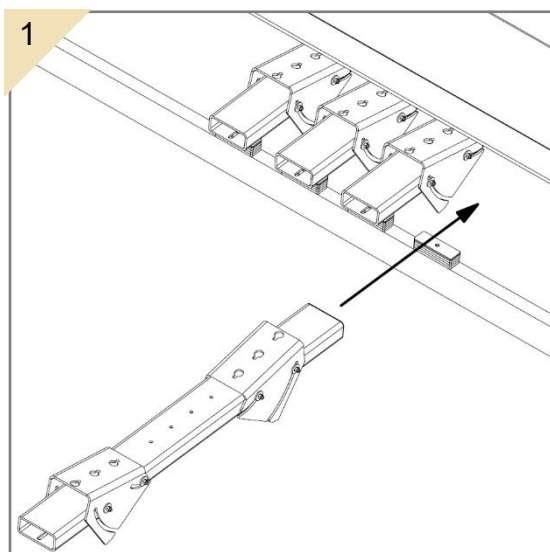
Light Duty (LD)



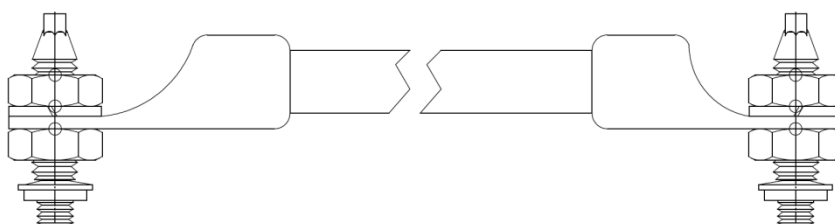
Medium Duty (HD)

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

3.5 Mounting the Martin® Impact Cradles



3.6 Installing Protective Bonding Kit



NOTES

The protective bonding kit is an integral part of the concept and necessary to be able to use Martin® Impact Cradles in ATEX areas

The purpose of the protective bonding kit is to discharge possible electrostatic charges from components.



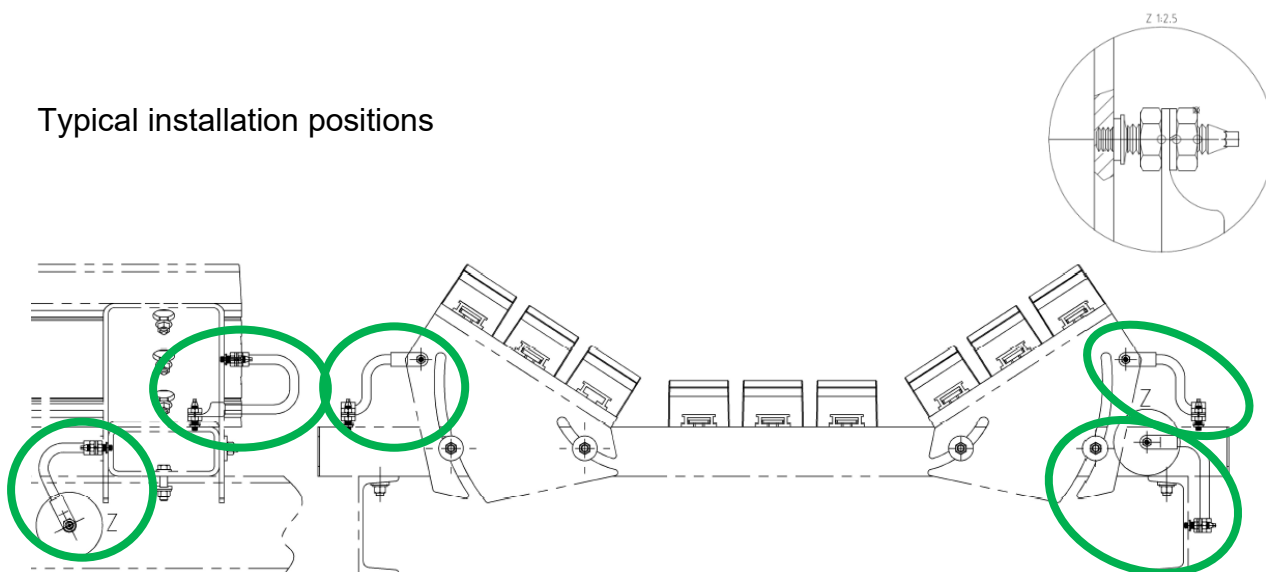
DANGER

Risk of explosion

- *It is important that the cable connections are always designed as electrically conductive with the lowest possible electrical resistance. This applies to the entire service life of the components.*
- *Insulated, conductive components must be equipped with earthing.*
- *The protective bonding kit must always be connected to an earthed component of the conveyor system, e.g. the conveyor steel structure.*
- *The mainframe of the Martin® Impact Cradles, as well as the wings must always be equipped with a protective bonding kit.*
- *The instructions for use and installation of the components of the protective bonding kit must be observed*

The protective bonding kit can be mounted in various locations on the cradles.
The typical installation is shown on drawing B-DE-Pro-2000_I6 and below

Typical installation positions



The following precautions must be observed during installation of the Protective Bonding Kit. It must

- Be protected from mechanical damages
- Be protected from chemical agents
- Not be tensioned
- Be easily accessible
- Be visible for inspections
- Be fully in accordance with the instructions of each single component (O&M manuals of the suppliers)
- Be in line with temperature range specifications (please refer to the O&M manuals of the suppliers)
- Be protected from vibrations
- Be easily accessible to measure bleeder resistance

3.7 Placing labels

3.7.1 Safety label

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



3.7.2 Other labels

The labels below are attached to the product:



4 Maintenance / Repair



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

Risk of explosion

Unsuitable spare parts that cause an increased risk of explosions, e.g. due to frictional heat, electrostatic charge, sparking, etc.

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

4.1 Maintenance



DANGER

Risk of explosion

Isolating materials with a thickness of less than 8 mm might get charged Unsuitable spare parts that cause an increased risk of explosions, e.g. due to frictional heat, electrostatic charge, sparking, etc.

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

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.



Additional requirements applicable for ATEX areas

Interval	Component part	Activity
Daily	Bonding Kits	<ul style="list-style-type: none"> Visual inspection (no visual damaged allowed)
Monthly	Bonding Kits	<ul style="list-style-type: none"> Verify and ensure that the Overall resistance to earth is < 10⁶Ω

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 Martin® 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.

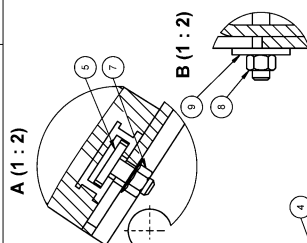
Only materials that cannot be reasonably recycled may be disposed of. Disposal must be carried out professionally.

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

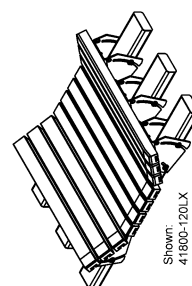
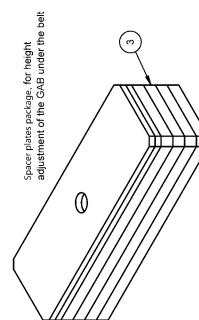
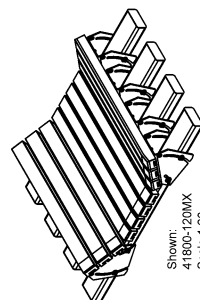
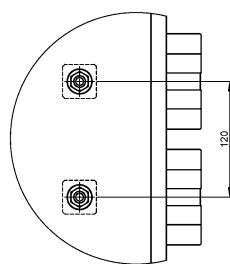
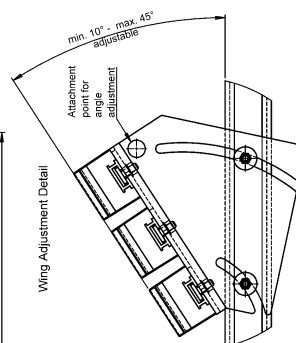
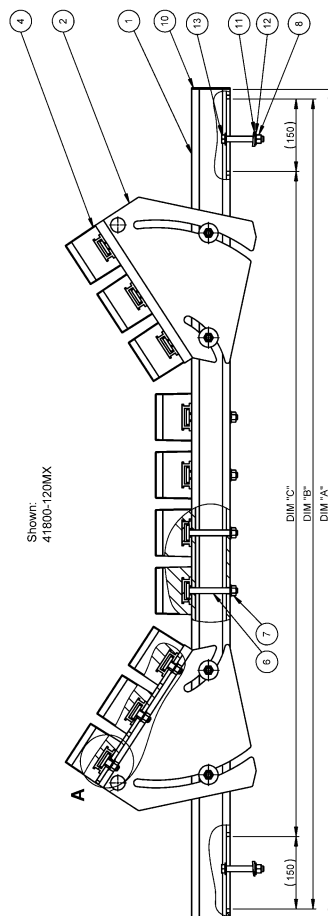
- Sheet steel
- Steel profiles
- Plastics
- Rubber
- Non-ferrous metals
- Electrical cables
- Electrical components (with copper content)
- Lubricants

6 Scope of delivery and spare parts

























Item / Anz.	Qty / Anz.	Description / Beschreibung	31775-100
1	s.c.	Marfante wettmatt / Tagger Schwämme	s.c.
2	s.c.	Wing / Flögel	s.c.
3	s.c.	Spacer plates package / Disziplinärrücken Ticket	s.c.
4	s.c.	T-BOLT IMPACT BAR	31817
5	s.c.	F-Box T-Sprinkle M12	31775-A004-E
6	s.c.	T-Box T-Sprinkle M12	s.c.
7	s.c.	Hex nut with Torque Arm DIN EN 1661 / 1 (00323) gsm / Schraube mit Dreharm	41085-1282P
8	s.c.	Hex nut M12 - DIN 934 / 1 (00323) gsm / Schraube Mutter	41086-1282P
9	s.c.	Washer flat M12 x 4,0 x 4 - (DIN6323) gsm / Scheibe / Scheibchen	41088-123P
10	s.c.	Covering cap / Abdeckkappe	s.c.
11	s.c.	Square washer M12 (DIN 434) / Vierkant Scheibe	41084-12AP2
12	s.c.	Washer flat - DIN 934 / 1 (00323) gsm / Unterlegscheibe	41086-12AP2
13	s.c.	HEX screw M12 x 40 - DIN 931 / 1 (00323) gsm / Schraube / Schraubenmutter	41081-1208AP2F88



Part number	Belt width	DM "A"	DM "B"	DM "C"	Part number item					Qty./item									
					1	2	3	6	10	1	2,3	4	5	6	7	8	9	10-13	
141800-0504X	500	920	880	580	41801-0500X	41802-X	41811-30AX	31775-0800X	41805-1608	4	8	6	16	8	24	32	8		
141800-0504X	500	920	880	580	41801-0650X	41802-X	41811-30AX	31775-0800X	41805-1608	4	8	6	16	8	24	30	6		
141800-0505X	650	1010	1030	730	41801-0650X	41802-X	41811-30AX	31775-0800X	41805-1608	3	6	6	16	8	24	40	32		
141800-0654X	650	1010	1030	730	41801-0800X	41802-X	41811-30AX	31775-0800X	41805-1608	3	6	6	12	6	24	30	6		
141800-0654X	800	1270	1230	930	41801-0800X	41802-X	41811-30AX	31775-0800X	41805-1608	4	8	7	16	12	28	40	32		
141800-0801X	800	1270	1230	930	41801-0800X	41802-X	41811-30AX	31775-0800X	41805-1608	3	6	7	12	9	28	30	6		
141800-1000X	1000	1470	1430	1130	41801-1000X	41802-X	41811-50AX	31775-1000X	41805-1808	4	8	9	24	12	36	40	32		
141800-1200X	1200	1740	1430	1130	41801-1000X	41802-X	41811-50AX	31775-1000X	41805-1808	3	6	9	18	9	36	30	6		
141800-1200X	1200	1680	1380	1080	41801-1200X	41802-X	41811-50AX	31775-1000X	41805-1808	4	8	10	24	16	40	40	32		
141800-1400X	1400	1920	1580	1280	41801-1400X	41802-X	41811-50AX	31775-1000X	41805-1808	3	6	10	24	16	40	40	32		
141800-1400X	1400	1920	1580	1280	41801-1400X	41802-X	41811-50AX	31775-1000X	41805-1808	4	8	12	36	16	48	40	32		
141800-1401X	1400	1920	1580	1280	41801-1400X	41802-X	41811-50AX	31775-1000X	41805-1808	3	6	12	24	12	48	30	6		
141800-1600X	1600	2170	2130	1830	41801-1600X	41802-X	41811-30AX	31775-1000X	41805-1810	4	8	13	32	20	52	40	32		
141800-1600X	1600	2210	2330	2030	41801-1600X	41802-X	41811-30AX	31775-1000X	41805-1810	4	8	16	40	24	64	56	48		



11800-aaabc	
a	Belt width in cm
b	Type M: Medium L: Light
c	Material options P: Painted steel (1.0038/RAL 2004)

  	  	  	  	  	  	  	  
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B	Home changed to Kmart® Impact Office	25.09.2025	(d)
A	charges started to rise from 100 to 150 and the screens from 50 to 80 and lifting notes for mops added	15.06.2025	(d)
46.	Description	Date	Re

A	from 50 to 80 and from 80 to 100 added	Date 15.06.2015	By rd
			Page: 1/1
			Scale —

7 Declaration of Conformity



EU declaration of conformity

according to ATEX directive 2014/34/EU

The manufacturer:

Martin Engineering GmbH
In der Rehbach 14
65396 Walluf, Germany

hereby declares, that the following product:

Belt Support system for belt conveyors

Type: "Impact Cradle LD" part no. 41800-xxxLx

Type: "Impact Cradle MD" part no. 41800-xxxMx

equipment category II 2 D

in combination with

the potential equalization kit part no. B-DE-Pro-2000

fulfils the relevant harmonisation legislation of the EU.

The following harmonised standards were applied:

DIN EN 1127-1: 2019-10

DIN EN ISO 80079-36: 2016-12

DIN EN 15198: 2007-11

Notified body: none



Walluf, 14/01/2025 Robert Whetstone, Managing Director

MARTIN ENGINEERING GMBH

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Managing director: Robert Nogaj, Robert Whetstone ■ VAT ID: DE 113863500
Nassauische Sparkasse ■ BLZ: 510 500 15, Acct: 472 016 334 ■ IBAN: DE97 5105 0015 0472 0163 34, SWIFT BIC: NASS DE 55 XXX
Commerzbank AG ■ BLZ: 510 800 60, Acct: 119 069 600 ■ IBAN: DE31 5108 0060 0119 0696 00, SWIFT BIC: DRES DE FF 510



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