

CleanScrape[®] Small Cleaner



Operating Instructions

Version: 0 Language: English M4082E ZA 2022-07 CSP1 S



Table of Contents

Т	Table of Contents 2				
1	1 General				
	1.1	About these operating instructions			
	1.2	General information on cleaners			
	1.3	Intended usage 4			
	1.4	Use in hazardous areas according to the ATEX directive			
	1.5	Personnel qualification			
	1.6	Technical data7			
	1.7	Requirements for the usage site7			
2	Safe	ety8			
	2.1	General safety instructions			
	2.2	Personal protective equipment			
	2.3	Safety markings on the system			
	2.4	Special safety instructions for usage in ATEX areas 10			
3	Pre	parations before installation11			
	3.1	Required maximum of tools and materials11			
	3.2	Checking the operating conditions 12			
	3.3	Unpacking/transportation			
	3.4	Identification of the correct installation position			
4	Inst	alling Belt Cleaner & Tensioner 18			
	4.1	Locating belt cleaner			
	4.2	Installing tensioner mount plate			
	4.3	Installing tensioner on outside chute wall			
	4.4	Installing tensioner on inside chute wall			
	4.5	Installing tensioner mount plate			
	4.6	Installing tensioner on inside chute wall			
	4.7	Tensioning cleaner			
5	Afte	r Installing Belt Cleaner 32			
6	Mai	ntenance / Servicing / Repair 34			
7	Tro	ubleshooting			
8	Disa	assembly / Recycling / Disposal			
9	Part	Numbers			



1 General



NOTE

Before starting work on the cleaner or the conveyor, these operating instructions must be read and understood completely!

1.1 About these operating instructions

These operating instructions apply solely for cleaners and are intended for those persons who install cleaners, commission them, and monitor their usage. The operating instructions must be kept for the lifetime of the cleaners and must be made available in an orderly condition to all persons entrusted with work with and on the cleaners.

All illustrations are schematic representations and make no claim to completeness.



1.2 General information on cleaners

Cleaners are used in the discharge area of the belt conveyor to remove adhering bulk material from conveyor belts. The cleaning result is increased by using multiple cleaners.

Pre-cleaners are installed at the head pulley, below the discharge parabola of the bulk material.

Secondary cleaners are installed behind pre-cleaners when viewed in the direction of belt travel and are used for fine cleaning of the conveyor belts. The typical installation position is behind the discharge pulley, but still inside the chute enclosure.

These operating instructions describe actions and measures for the use of cleaners on closed discharge enclosures of the conveyor. If the discharge area of the conveyor is not enclosed, the operator must take precautions to ensure that the cleaners can be relocated, installed, maintained, and repaired in the same way.

Furthermore, the operator must ensure that all necessary protective measures for safe operation of the system with cleaners have been taken.

Cleaners must be easy to check, clean and maintain. Appropriate means of access must be provided for this purpose.

1.3 Intended usage

Cleaners are used for mechanical removal of bulk material sticking on conveyor belts with smooth surfaces. They may only be used:

- in the industrial area above ground
- on the carrying side of the conveyor belts
- according to the technical data in the documentation
- in the installation position as described in the documentation

The usage of the cleaners 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 cleaners under deviating conditions and unauthorised modification of the cleaners is considered as improper usage.



1.4 Use in hazardous areas according to the ATEX directive

The standard version of the cleaner is NOT suitable for use in hazardous areas.

Martin Engineering offers special product variants that are suitable for use in ATEX zones 22 and 21 under certain circumstances. These product variants contain mandatory additional components or have special product characteristics.

Special instructions for the use of cleaners in ATEX zones must be observed.

Requirements for the use of these special product variants:

- Minimum ignition energy of the bulk material: >10 mJ
- Belt connections are vulcanised
- There are no substances in the bulk material which could generate impact sparks on the cleaners.
- Coatings (corrosion protection) have standard layer thicknesses (max.80µm)
- Earthing cables are properly installed (Bleeder resistance < $10^6\Omega$)



1.5 Personnel qualification

Only authorised and qualified personnel may be entrusted with work with and on the conveyors and cleaners. 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 cleaners safely,
- have been trained and instructed appropriately,
- have read and understood these operating instructions.

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



1.6 Technical data

	Operating parameter Size S	
Belt widths:	400 1000 mm	
Pulley diameter:	300 550 mm	
Polt apood:	4 m/s for conveyor belts with mechanical splices	
Deit speed.	6 m/s for conveyor belts with vulcanised splices	
Temperature range:	-25 +80°C	
Reversing operation:	Can remain in use, but no cleaning function	

1.7 Requirements for the usage site

For information on the required spatial requirements of the cleaner and the tensioner, see the following chapters.



2 Safety

2.1 General safety instructions



DANGER

Entanglement in conveyor belt

Clothing or body parts can become entangled in the conveyor and cause serious or fatal injuries.

Tensions may be released in the conveyor belt and cause movement of the bulk material without prior detection.

- Do not carry out any work on the conveyor belt while it is in operation or reach into the moving conveyor belt!
- Secure the conveyor against unintentional restart! Use lockout / tagout / blockout / testout procedures!
- Install suitable guards to prevent access to the infeed section!



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)!



WARNING

Working in confined spaces

Areas in which cleaners 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!



WARNING

Risk of falling down

Cleaners 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!



2.2 Personal protective equipment

Persons carrying out work on cleaners 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.

2.3 Safety markings on the system

The safety markings on the cleaners must be always kept in good condition and clearly visible.

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



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 cleaners 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.
- Install cleaners in such a way that no metal part can contact moving components even when the blade is completely worn.
- Use only tools and aids that are approved for use in the respective ATEX zone.
- Ensure that the cleaners are tensioned against the conveyor belt with the maximum forces / tension values specified.
- Ensure that the earth connections of the cleaners are installed correctly.
- Use only cleaners 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.



3 Preparations before installation

3.1 Required maximum of tools and materials





3.2 Checking the operating conditions

Before installation, check whether the cleaner is suitable for the application. For this purpose, it must be ensured that:

- the available space allows unobstructed installation, maintenance, and repair of the cleaner,
- the cleaner meets the requirements for the respective operation (ambient conditions, operating mode of the conveyor, properties of the bulk material, fire protection, explosion protection, etc.)
- a plugged conveyor chute may cause additional pressure against the cleaner and may cause damage belt. Ensure conveyor chute remains unplugged. Use a plugged chute sensor where appropriate.
- special product variants are used if the cleaners are operated in ATEX zones 22 and 21 and all explosion-related parameters and operating modes are observed.

Ensure the conveyor belt is free of damages. Especially belt edge damages and protruding parts of the conveyor belt can get caught in the cleaner and cause further damage

3.3 Unpacking/transportation



WARNING

Heavy weight

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

- Use suitable aids if the load is > 25 kg per person!
- Identify the centre of gravity! Ensure that the cleaner cannot tilt during the lifting process!
- Inspect shipping container for damage. Report damage to delivery service immediately and fill out delivery service's claim form. Keep any damaged goods subject to examination.
- Remove belt cleaner assembly from shipping container.
- If anything is missing contact Martin Engineering or a representative.



3.4 Identification of the correct installation position



- Provide the required possibilities for inspection and maintenance.

General Instructions



Correct Mounting Position

Figure 1: Belt Cleaner Mounting Orientation



Incorrect Mounting Position

Inspect belt cleaner mounting area for possible obstructions that could interfere with proper mounting. Refer to following guidelines:

- Ensure cleaner does not lie in path of material unloading from conveyor belt.
- The top side of cleaner should be no less than the 2 o'clock position. Material could strike the back of the cleaner causing wear which will lead to premature failure.
- The ideal installation angle is 17°–18°. Installation angles of 15°–21° are acceptable. Higher angles lead to increased wear on the blade.
- Belt width must not exceed a ratio of 3:1 to the head pulley diameter. For example, the maximum belt width for a conveyor with a 300 mm (12 in.) head pulley is 900 mm (36 in.).
- Chute walls must be strong enough to not flex as tension is applied to cleaner. If chute wall flexes inadequate tension may be applied to cleaner resulting in poor cleaning performance. Additional chute wall structure support may be added to prevent chute wall from flexing.



- The distance between the cleaner and the chute wall should be minimized. Martin Engineering recommends keeping the distance to 150mm (6 in.) maximum per side (see Figure 4). Excess cable could result in vibration that could damage the belt or the cleaner. If necessary, build a sub-wall to support the tensioners in the proper position. Consult Martin Engineering for installation assistance if parameters fall outside of this range.
- For typical installations, start with the bottom rope in the 6 o'clock position. The exact positioning of the top rope is a result of the installation angle.
- For belts with low product flow, lower the top rope until cleaner is out of material path. Cleaner angle must be 15° or greater.

Lack of service can contribute to poor belt cleaning performance. Follow local guidelines for access:

- Clearance for service outside the chute must be at least equal to the belt width.
- Cleaners must have service platforms. Cleaners should be mounted at least 600 mm (24 in.) above the work platform.



Typical Belt Cleaner Mounting Positions



Figure 2: Typical Belt Cleaner Mounting Positions







Figure 3: Low Product Flow Belt Cleaner Mounting Positions



Installations with Wide Chute Walls



Figure 4: Installations with Wide Chute Walls



The maximum distance between chute wall and edge of blade is 150 mm (6 in.). Excess free cable causes too much vibration resulting in damage to cleaner and components. If necessary, build a sub wall to support the tensioners.



4 Installing Belt Cleaner & Tensioner



DANGER

Entanglement in conveyor belt

Clothing or body parts can become entangled in the conveyor and cause serious or fatal injuries.

Tensions may be released in the conveyor belt and cause movement of the bulk material without prior detection.

- Do not carry out any work on the conveyor belt while it is in operation or reach into the moving conveyor belt!
- Secure the conveyor against unintentional restart! Use lockout / tagout / block out / test out procedures!
- Install suitable guards to prevent access to the infeed section!



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

Heavy weight

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

- Use suitable aids if the load is > 25 kg per person!
- Identify the centre of gravity! Ensure that the cleaner cannot tilt during the lifting process!





Figure 5: Belt Cleaner Location & Chute Wall Cutouts

4.1 Locating belt cleaner

- 1. On both sides of chute, find pulley center point (A).
- 2. Measure radius of head pulley including lagging and belt thickness (B).
- 3. On the far side of chute, start from center point (A), measure the total distance calculated in step 2 (B + 13 mm [1/2 in.]), and draw an arc on chute wall.
- 4. On the operator side of chute, start from center point (A), draw an arc on chute wall with a radius of (B + 13 mm [1/2 in.]). Draw an additional arc on chute wall with a radius of (B + 28.7 mm [1-1/8 in.]).



- 5. On the far side of chute:
 - a) If bolting fixed point bracket to chute wall, do the following:
 - (1) Position fixed point bracket on far side chute wall as shown in Figure 5. Align bolt hole on bracket with head pulley center line.
 - (2) Mark bracket hole locations.
 - (3) Drill or cut two 12.7mm (1/2-in.) holes for screws in far side chute wall.
 - (4) Mount fixed point bracket to inside of far side chute wall using countersunk screws and nuts.
 - b) If welding fixed point bracket to chute wall, do the following:
 - (1) Position fixed point bracket on far side chute wall as shown in Figure 5. Align bolt hole on bracket with head pulley center line.
 - (2) Weld bracket to chute wall. Weld completely around bracket. Do not skip weld.



Figure 6: Installing Fixed Point Bracket

- c) Install brackets (C) using nuts (B). Hand tighten nuts.
- Attach cleaner to far side bracket by inserting hex head screw and large flat washer (C) through cable eyelet (D) and fastening with flat washer and nut (E). Hand tighten nuts.





Figure 7: Tensioner Mount Plates



4.2 Installing tensioner mount plate

IMPORTANT

Tensioners used with CleanScrape® Small Cleaners can be installed on either the inside or the outside of the chute wall. Tensioners are shipped with the inside mounting plate (E) installed. If the application requires tensioners to be mounted on the outside of the chute wall, the outside mounting plate (C) must be used.



NOTE

Standard tensioner mounting location is on the outside of chute wall.

- 1. Determine if tensioner will be mounted on the inside or outside of chute wall.
- 2. If the tensioner will be installed on the outside of chute wall, the tensioner mount plate must be changed as follows:
 - a) Remove nuts (F).
 - b) Remove inside mounting plate (E) from tensioner assembly (A).
 - c) Install outside mounting plate (C) on tensioner assembly.
 - d) Install and tighten nuts (F).



Figure 8: Tensioner Mount Plate Verification





WARNING

The correct mounting plate must be used or damage to cleaner will result. Using the incorrect mounting plate results in cable being cut by roller and ultimately cleaner failure.



Figure 9: Installing Tensioner on Outside Chute Wall (Standard Installation)



4.3 Installing tensioner on outside chute wall

- 1. For installations on the outside of the chute wall:
 - a) Mark chute wall cutouts as shown in Figure 5.
 - b) Make sure centerline of tensioner intersects axis of pulley.
 - c) Cut holes in chute wall. Remove burrs and sharp edges.
 - d) Install outside mounting plate on tensioner. See Figure 7.
 - (1) Remove nuts (F).
 - (2) Remove inside mounting plate (E) from tensioner assembly (A).
 - (3) Install outside mounting plate (C) on tensioner assembly.
 - (4) Install and tighten nuts (F).
 - e) Position tensioner in desired location free from obstructions as shown in Figure 9. Make sure cleaner cables will not rub on chute wall cutouts. Reposition tensioner or enlarge cutouts as required.
 - f) Mark location of tensioner mounting plate.
 - g) Remove mounting plate from tensioner.
 - h) Bolt or weld mounting plate in location marked in Step 1.e.
 - i) Install tensioner onto mount plate.
- 2. Measure approximate cable length required and cut cable.
- 3. Assemble cable eyelet and clamp as shown in Figure 9.
- 4. Torque nuts on clamp to 10 Nm (7.5 ft lbs).
- 5. Attach each cable to tensioner.
- 6. Tighten tensioner adjustment nuts until cleaner is held firmly to belt.
- 7. Center cleaner on pulley and install a cable clamp on the far side upper cleaner cable. This clamp keeps the cleaner centered on the belt.
- 8. For reversing operation, use two clamps. One on the operator side and one on the far side.
- 9. Adjust fixed point bracket and tensioner bracket, so outer two elements on each side are away from the belt. Increase the number of elements off the belt as necessary in order to ensure the mechanical splices will pass.
- 10. Tighten all fasteners on fixed point brackets and tensioner mounts.
- 11. Tension cleaner according to instructions in *Tensioning cleaner*.





Figure 10: Installing Tensioner on Inside Chute Wall



4.4 Installing tensioner on inside chute wall

- 1. For installations on the inside of the chute wall:
 - a) Make sure centerline of tensioner intersects axis of pulley.
 - b) Position tensioner in desired location free from obstructions as shown in Figure 9.
 - c) Mark location of tensioner mounting plate.
 - d) Remove mounting plate from tensioner.
 - e) Bolt or weld mounting plate in location marked in Step 1.e.
 - f) Install tensioner onto mount plate.
- 2. Measure approximate cable length required and cut cable.
- 3. Assemble cable eyelet and clamp as shown in Figure 9.
- 4. Torque nuts on clamp to 10 Nm (7.5 ft lbs).
- 5. Attach each cable to tensioner.
- 6. Tighten tensioner adjustment nuts until cleaner is held firmly to belt.
- 7. Center cleaner on pulley and install a cable clamp on the far side upper cleaner cable. This clamp keeps the cleaner centered on the belt.
- 8. For reversing operation, use two clamps. One on the operator side and one on the far side.
- 9. Adjust fixed point bracket and tensioner bracket, so outer two elements on each side are away from the belt. Increase the number of elements off the belt as necessary in order to ensure the mechanical splices will pass.
- 10. Tighten all fasteners on fixed point brackets and tensioner mounts.
- 11. Tension cleaner according to instructions in *Tensioning cleaner*.





Figure 11: Multi-Functional Tensioner

4.5 Installing tensioner mount plate



When the multi-functional tensioner is used with CleanScrape[®] Small Cleaners, tensioner must be installed on the inside of the chute wall. Tensioners are shipped with the inside mounting plate (C) installed.





Figure 12: Multi-Functional Tensioner on Inside Chute Wall



4.6 Installing tensioner on inside chute wall

- 1. For installations on the inside of the chute wall:
 - a) Mark chute wall as shown in Figure 5.
 - b) The inside mounting plate is factory installed on the tensioner.



NOTE

Tensioner can be rotated up to 180 degrees. Tensioner may be mounted with cables facing downward, but this is not the preferred position as it can allow material to build up inside the spring caps and around the springs.

- c) Position tensioner in desired location free from obstructions as shown in Figure 12.
- d) Mark location of tensioner mounting plate.
- e) Remove mounting plate from tensioner.
- f) Bolt or weld mounting plate in location marked in Step 1.d.
- g) Install tensioner onto mount plate.
- 2. Measure approximate cable length required and cut cable.
- 3. Assemble cable eyelet and clamp as shown in Figure 12.
- 4. Torque nuts on clamp to 10 Nm (7.5 ft lbs).
- 5. Attach each cable to tensioner.
- 6. Tighten tensioner adjustment nuts until cleaner is held firmly to belt.
- 7. Center cleaner on pulley and install a cable clamp on the far side upper cleaner cable. This clamp keeps the cleaner centered on the belt.
- 8. For reversing operation, use two clamps. One on the operator side and one on the far side.
- Adjust fixed point bracket and tensioner bracket, so outer two elements on each side are away from the belt. Increase the number of elements off the belt as necessary in order to ensure the mechanical splices will pass.
- 10. Tighten all fasteners on fixed point brackets and tensioner mounts.
- 11. Tension cleaner according to instructions in Tensioning cleaner.





Figure 13: Measure Cleaner Angle

4.7 Tensioning cleaner

- 1. Measure angle of cleaner.
- 2. Determine tension required according to tensioning chart.
- 3. Tighten tensioners. Install and tighten jam nut against tensioning nut on each tensioner.
- 4. Make sure outer two elements on each side are away from belt.

	Belt Width		Upper Rope	Lower Rope
CSF Size	mm	(in.)	Force Required	Force Required*
	500	18	1.00 kN	0.85 kN
	501–650	24	1.20 kN	1.00 kN
Small	651–800	30	1.40 kN	1.20 kN
	801–900	36	1.50 kN	1.30 kN
	901–1000	42	1.60 kN	1.40 kN

*Lower rope should have 10% to 15% less force than upper rope.

Installation Checklist – Please make sure

 $\sqrt{}$ Pre-Cleaner blade is proper distance from belt surface on both sides of head pulley.

 $\sqrt{1}$ Pre-Cleaner blade tip does not lie in path of material flow.

 \checkmark Blade is centered on belt.



Attaching labels

Warning Labels

The following label must be attached to the conveyor system in the immediate vicinity of the cleaner:



Other labels

The following labels are attached to the product:



Martin Engineering GmbH In der Rehbach 14 65396 Walluf, Germany Tel: +49 6123 9782 0 www.martin-eng.de

CleanScrape[®] Primary Cleaner



5 After Installing Belt Cleaner



DANGER

Entanglement in conveyor belt

Clothing or body parts can become entangled in the conveyor and cause serious or fatal injuries.

Tensions may be released in the conveyor belt and cause movement of the bulk material without prior detection.

- Do not carry out any work on the conveyor belt while it is in operation or reach into the moving conveyor belt!
- Secure the conveyor against unintentional restart! Use lockout / tagout / blockout / testout procedures!
- Install suitable guards to prevent access to the infeed section!



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

Heavy weight

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

- Use suitable aids if the load is > 25 kg per person!
- Identify the centre of gravity! Ensure that the cleaner cannot tilt during the lifting process!



- 1. Thoroughly wipe chute wall clean above tensioner.
- 2. Place Conveyor Products Warning Label (see above) on outside chute wall visible to belt cleaner operator.
- 3. Additional safety labels are available from CEMA. For more information regarding CEMA safety labels visit www.cemanet.org.
- 4. Start conveyor belt. Observe belt cleaner operation for several revolutions of the belt. Properly shutdown belt and make appropriate adjustments. Return belt to service.
- 5. Run conveyor belt for one hour or at least 5 turns of the conveyor belt. Adjust belt cleaner as necessary.
 - a) Make sure all fasteners are tight. Tighten if necessary.
 - b) Inspect belt cleaner for the following:
 - (1) Wear. (A small amount of "break-in" wear may be found. This will stop once blades wear to conveyor belt contour.)
 - (2) Material build-up. (No material between blades and return side of conveyor belt should be found.)
 - (3) Ensure the tensioning of the cleaner is in line with the instructions, re-tension if required.
 - c) If wear, material build-up, or some other problem exists, see "Troubleshooting."
 - d) Monitor cleaner and after 7–10 days re-tension cleaner to overcome any thimble bedding in



6 Maintenance / Servicing / Repair



DANGER

Entanglement in conveyor belt

Clothing or body parts can become entangled in the conveyor and cause serious or fatal injuries.

Tensions may be released in the conveyor belt and cause movement of the bulk material without prior detection.

- Do not carry out any work on the conveyor belt while it is in operation or reach into the moving conveyor belt!
- Secure the conveyor against unintentional restart! Use lockout / tagout / blockout / testout procedures!
- Install suitable guards to prevent access to the infeed section!



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

Heavy weight

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

- Use suitable aids if the load is > 25 kg per person!
- Identify the centre of gravity! Ensure that the cleaner cannot tilt during the lifting process!



Interval	Component part	Activity
Daily	Cleaner	 Visual inspection to ensure no damages or build-ups occurred.
Monthly	Cleaner Labels	 Visual inspection for dirt and wear Remove dirt if necessary Replace worn components Check tension, re-tension if necessary.
		Check the screw connections for tight fit.Tighten any loose connections.

- 1. Remove any material from belt cleaner.
- 2. Make sure all fasteners are tight. Tighten if necessary.
- 3. Check tension on cleaner. Re-tension if necessary.
- 4. Wipe all labels clean. If labels are not readable, contact Martin Engineering or a representative for replacements.
- 5. Check blades for excessive wear. Replace blade if remaining carbide metal thickness is 2 mm (1/12 in.) or less.
- 6. Monitor cleaner and after 7-10 days re-tension cleaner to overcome any thimble bedding-in.
- 7. Remove equipment from service if there is any indication it is not functioning properly. Call Martin Engineering or a representative for assistance. Do NOT return equipment to operation until the cause of the problem has been identified and corrected.
- 8. Remove all tools from maintenance area.
- 9. Start conveyor belt. Observe belt cleaner operation for several revolutions of the belt. Service or adjust belt cleaner as necessary to ensure proper belt cleaner operation.



7 Troubleshooting



DANGER

Automatic start-up of the system

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

- Switch off the system 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!



NOTE

The cleaners are used for different bulk materials and demanding working and environmental conditions.

Errors and malfunctions can therefore occur in addition to those listed below. Please contact the manufacturer in such cases.



Symptom	Corrective Action		
Insufficient cleaning and carryback.	Check to see that cleaner is contacting the belt across the front edge of the cleaner. Inspect belt surface, belt edges, and pulley lagging. Recheck mounting dimensions and adjust as necessary. Gradually increase tension in 5-10% increments, maintaining 15% less tension on bottom rope, until cleaning is sufficient. Ensure tensioner spring in not totally collapsed and watch for chute flex.		
Belt is cleaner on one side than the other.	Check installation, ensure cleaner is properly mounted and make any adjustments. Cleaner is likely out on one side and needs to be moved closer to the belt, re-tension cleaner (see Figure 9).		
Blade dancing or vibration.	Check installation, ensure cleaner is properly mounted and make any adjustments. Cleaner is likely out on one side and needs to be moved closer to the belt, re-tension cleaner as described above (see Figure 9). Check tension on tensioner gauge to be sure of proper tension. Reset tension according to tensioning charts. Ensure blade is installed at proper angle. Ensure cleaner is centered on the pulley and excess cable on either side of belt does not exceed 150 mm (6 in.). Ensure chute wall is not flexing. Increase support as necessary.		
Cleaner is catching on mechanical splice.	Check that outer 3–4 elements are off the belt by at least 3–6 mm (1/8–1/4 in.) to allow for the splice to flow through the cleaner without catching. Increase gap as necessary to allow splice to pass.		
Material builds up in gaps.	Remove any excess material and check to ensure cleaner is properly located. Ensure bottom rope is properly positioned, adjust bottom rope on bottom side away from conveyor slightly by rotating bottom bracket. This will increase gap and allow material to be discharged more easily. Add more tension. Increase difference between tension on top and bottom rope to 15%.		



NOTE

Conveyor equipment such as conveyor belt cleaners are subject to a wide variety of bulk materials characteristics and often must perform under extreme operating or environmental conditions.

It is not possible to predict all circumstances that may require troubleshooting. Contact Martin Engineering or a representative if you are experiencing problems other than those listed in the "Troubleshooting" chart above.

Do not return the equipment to operation until the problem has been identified and corrected.



8 Disassembly / Recycling / Disposal

- 1. Disassemble cleaners 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



9 Part Numbers

This section provides product names and corresponding part numbers for CleanScrape[®] Cleaners and related equipment. Please reference part numbers when ordering parts:

CleanScrape[®] Small Cleaner







Figure 14: CleanScrape® Small Cleaner, P/N C1CSXRXXXXX

Item	Description	Part No.	Qty.
1	Blade 35mm LG Element	Table III	—
2	Wire Rope 5mm SS	C1CP51003S	
3	Wire Rope Thimble for 5mm Cable	C1CP51005S	4
4	Swage Sleeve for 5mm Cable	C1CP51004C	2
5	Wire Rope Clip 3/16 Galv	32264-02	3
6 (NS)	Installation Kit	Table III	1

NS = Not Shown

Table III. Part Numbers for CleanScrape[®] Small Cleaner, P/N C1CSXRXXXXX

Assembly Part No.	Part No. Item 1
C1CSXRXXXAXX	C1CBCSA
C1CSXRXXXBXX	C1CBCSB
C1CSXRXXXCXX	C1CBCSC

Assembly Part No.	Part No. Item 3
C1CSTRXXXXXX	C1CT1ST
C1CSSRXXXXXX	C1CT1SS
C1CSMRXXXXXX	C1CT2ST
C1CSFRXXXXXX	C1CT2SS

Germany

Martin Engineering GmbH In der Rehbach 14, 65396 Walluf, Germany Tel. +49 6123 9782 0; Fax +49 6123 75533 info@martin-eng.de; www.martin-eng.de

Spain

Martin Engineering Spain c/Balmes 297 1er 2a, 08006 Barcelona, Spain Tel. +34 876 245 114; Fax +34 93-2400545 info@martin-eng.es; www.martin-eng.es

Great Britain

Martin Engineering Ltd. Unit 33, The Tangent Business Hub, Weighbridge Road, Shirebrook, NG20 8RX, Great Britain Tel +44 115 946 4746 info@martin-eng.co.uk; www.martin-eng.co.uk

France

Martin Engineering SARL 50 Avenue d'Alsace, 68025 Colmar Cedex, France Tel +33 389 20 63204; Fax +33 389 20 4379 info@martin-eng.fr

Russia

OOO Martin Engineering Bolshaya Kalitnikovskaya str, 42, office 508, Municipal district Tagansky, Moscow, 109029 Russia Tel +7 495 181 33 43; Fax +7 499 720 62 12 info@martin-eng.ru; www.martin-eng.ru

Turkey

Martin Engineering Türkiye Yukarı Dudullu İmes Sanayi Sitesi, B Blok 205 Sokak No.6 34775 Ümraniye Istanbul, Turkey Tel +90 216 499 34 91; Fax +90 216 499 34 90 info@martin-eng.com.tr; www.martin-eng.com.tr

Italy

Martin Engineering Italy Srl Via Buonarroti, 43/A, 20064 Gorgonzola (MI), Italy Tel +39 02 9538 3851; Fax +39 02 9538 3815 info@martin-eng.it; www.martin-eng.it

Africa

Martin Engineering Africa Cnr Antwerpen & Arnhemsingel str, Die Heuwel, Witbank, Mpumalanga Tel +27 13 656 5135; Fax: +27 13 656 5129 feedback@martin-eng.co.za; www.martin-eng.co.za