



BELT CLEANERS

CARRYBACK REMOVAL SOLUTIONS
FOR ALL APPLICATIONS

L3651 UK



PROBLEM



CONSEQUENCES OF CARRYBACK

Carryback is material that sticks to the belt past the discharge point and then drops off along the conveyor's return run.

Without belt cleaners, prevalent carryback causes...

- Reduced operating efficiency and profitability through increased expenses for maintenance and cleanup and the loss of material.

- Material buildup on rolling components leading to seized idlers, wandering belts and increased power consumption.

- Lower plant morale as employees sense the "I don't care if it's dirty" attitude.

- Unsafe working conditions caused by material accumulation on floors and walkways, creating fire hazards, slip/trip hazards.

- Health hazards and environmental concerns created by airborne material.

- Unfavorable attention from neighbors and regulatory agencies.



SOLVED



CARRYBACK REMOVAL SOLUTION

Belt cleaner systems from Martin Engineering make conveyor systems cleaner, safer and more productive.

With belt cleaners, minimized carryback results in...

Improved maintenance planning and conveyor availability as emergency outages, unscheduled downtime and “hurry-up” repairs are reduced.

Reduced maintenance expenses by lower labor costs for fewer and faster service procedures. Improved manpower utilization by fewer belt tracking and material cleanup chores.

Maximized equipment life by fewer replacements of prematurely worn components damaged by fugitive material and buildup.

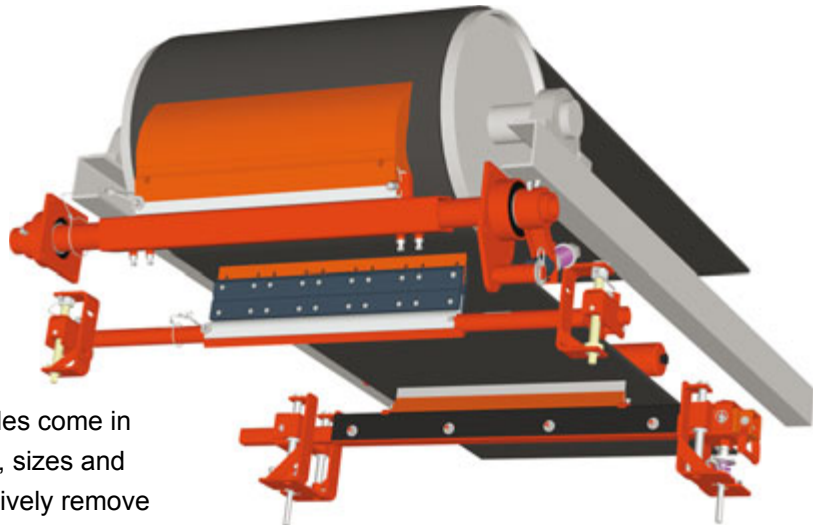
Improved working conditions and plant safety and morale by better housekeeping.

Improved community relations and regulatory compliance by reducing environmental pollution.

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ANATOMY OF A BELT CLEANER



BLADES

Martin belt cleaner blades come in a large array of shapes, sizes and materials to most effectively remove any type of material carryback while protecting the belt and its splices.

Both metal and non-metal blades are available, including urethane, rubber, ceramic, mild and stainless steels and tungsten carbide.

MARTIN® CARP Blade Design

Patented Constant-Angle/Constant-Area Radial Pressure blade design maintains consistent cleaning through all stages of blade wear.

TENSIONERS

Belt cleaner tensioners provide pressure to keep the blades against the surface of the belt to ensure consistent contact and cleaning performance.

MAINFRAMES

Belt cleaner mainframes are the backbones that support the blades and must be designed to handle the forces and burdens of the conveyor system and its material load.

MARTIN® QUICK-CHANGE™ (QC) BELT CLEANERS

One-pin blade replacement makes belt cleaner blade replacement an easy, one-minute, no-tool operation performed from outside of the chute. Simply remove the R-clip and slide the hitch pin out of the mainframe extrusion to release the blade.

MARTIN® TRAC-MOUNT™ BELT CLEANERS






Segmented blades installed on a track-mounted cartridge allows all blade segments to be installed and removed quickly and easily. Simply unbolt the entire cartridge from the mainframe or slide each blade out of the cartridge from either end.



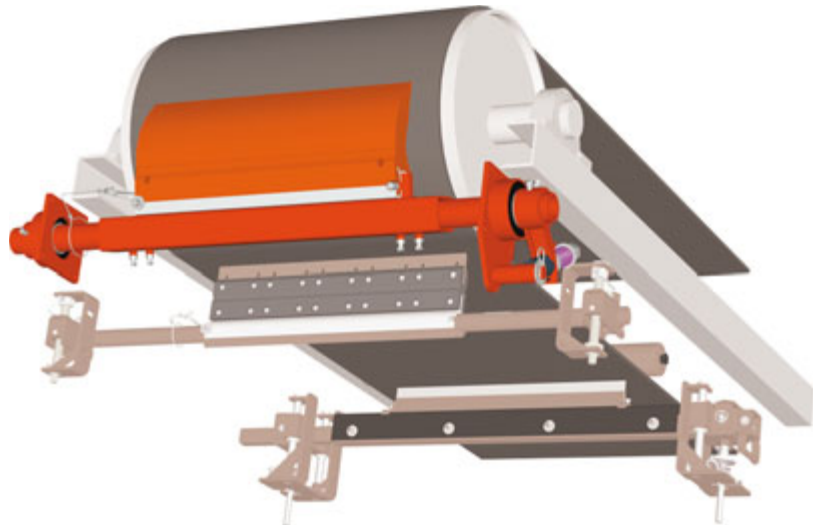
MARTIN® HIGH-PERFORMANCE URETHANES

Martin Engineering is the worldwide leader in the development of high-performance urethanes for specialized applications. Available for any Martin pre-cleaner, as well as any pre-cleaner supplied by another manufacturer.

SELECTION GUIDE

	Application description	Typical materials	Temperature range
	Orange Standard MARTIN® Urethane is suitable for most belt cleaner applications, including abrasive conditions and exposure to solvents or oil.	Bauxite, coke, coal, refuse, steel/ore, etc.	-30°C to 70°C
	Brown Chemical-Resistant Urethane provides improved resistance to chemicals and reduced absorption of water in high-moisture environments.	Limestone	-40°C to 70°C
	Green High-Temperature Urethane withstands exposure to intermittent temperatures of up to 350°F (177°C).	Clinker	-40°C to 121°C
	Tan Low-Rigidity Urethane is ideal for dry products such as sand and gravel.	Gravel, dry sand	-30°C to 70°C
	Blue Low-Adhesion Urethane is ideal for sticky or tacky materials.	Cement, glass, wood chips	-30°C to 70°C

PRE-CLEANER SELECTION GUIDE



MARTIN® PRE-CLEANERS

As the first stage in a multiple cleaner system, the pre-cleaner removes the majority of material adhered to the belt, leaving only a thin layer of sticky fines.

Pre-cleaners are generally tensioned at low pressure—roughly 13.8 kPa—against the belt. Low blade-to-belt pressure allows the pre-cleaner to be positioned at a peeling angle against the belt. The use of higher pressure at this angle would endanger the belt, splice or cleaner itself.

Pre-cleaners are typically installed on the face of the head pulley, just below the material trajectory. The cleaner should be constructed to avoid material buildup and installed so that it is out of the material stream.

SELECTION GUIDE

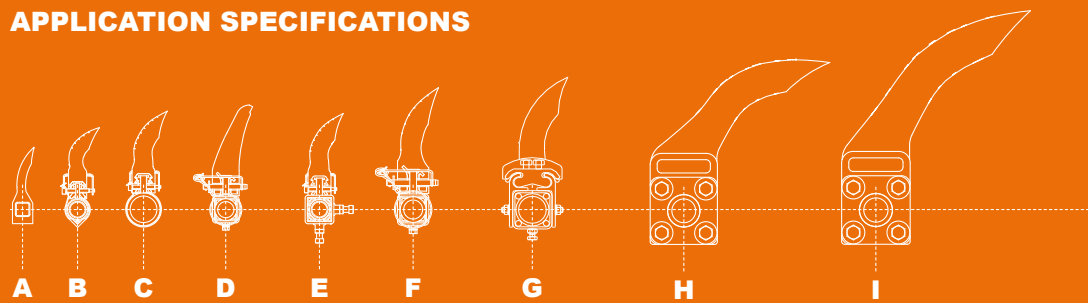
Required Data

- Belt width
- Head pulley diameter
- Cylindricity of head pulley
- Reversing
- Type of belt splices
- Belt speed
- Material characteristics
- Application temperature

Selection Process

- (1) Use your conveyor's belt width, head pulley diameter and maximum belt speed to determine the appropriate pre-cleaner listed in the table on the opposite page to match your system.
- (2) Use your conveyor's material characteristics and application temperature to identify the appropriate urethane for your belt cleaner in the table on page 7.

APPLICATION SPECIFICATIONS



Belt Cleaner	Belt width (mm)	Pully diameter (mm)	Max. belt speed (m/s)
(A) Compact	300-1400	150-500	1.8
(B) PIT VIPER™	400-2000	300-800	2.5
(C) QC™ #1 Performance-Duty	400-2200	300-1000	4.6
(D) QC™ #1 Metal-Tipped	400-2400	300-800	4.6
(E) QC™ #1 Heavy-Duty	400-2400	300-1000	4.6
(F) QC™ #1 Extra Heavy-Duty	400-3000	400-1200	6.1
(G) DURT TRACKER™ ZHD/XHD	400-3000	over 400	6.1
(H) SHD-600	1000-3000	600-1200	10
(I) SHD-1200	1000-3000	over 1200	10

PRE-CLEANERS



MARTIN® COMPACT

Technical data sheet **L3667+E**

Assembly P/N **33464** | Blade P/N **33463**

Low-profile blade and internal mainframe for tight spaces. Needs only as little as 171 mm of clearance on pulleys as small as 180 mm in diameter. Blades slide easily on and off of stainless steel square-tube mainframe for simple service.



MARTIN® PIT VIPER™

Technical data sheet **L3736**

Assembly P/N: **PV1S+E** | Blade P/N: **PV**

Designed specifically for wet, sticky sand and gravel applications.



MARTIN® QC™ #1 PERFORMANCE-DUTY

Technical data sheet **L3799**

Assembly P/N **38556+E** | Blade P/N **35381**

Maximum durability and performance across a wide range of duties and applications.

*QC™ Heavy-Duty
Pre-Cleaner*

MARTIN® QC™ #1 METAL-TIPPED

Technical data sheet **L3823**

Assembly P/N **QC1H+E** | Blade P/N **QC1HC**

QC™ design gets tough with a tungsten-tipped steel insert. Not for use on belts with mechanical splices—vulcanized belts only.

MARTIN® QC™ #1 HEAVY-DUTY

Technical data sheet **L3370**

Assembly P/N **35382+E** | Blade P/N **35381**

Rugged blade and sturdy mainframe for wider, high-tonnage belts.

MARTIN® QC™ #1 EXTRA HEAVY-DUTY

Technical data sheet **L3799**

Assembly P/N **35899+E** | Blade P/N **35897**

Rugged, system-engineered construction suits tough applications.



MARTIN® DURT TRACKER™ XHD

Technical data sheet **L3370-01**

Assembly P/N **32333+E** | **32136 OR+E** / **32136 L+E**

More than twice the size of ordinary cleaners—big blades for big jobs. Massive blades secured in an all-metal track provides effective cleaning in applications with high-speed belts, large pulleys, high volumes or large lumps of material. Assembly and service requires only hand tools.



MARTIN® SHD

Technical data sheet **L3439**

Assembly P/N

SHD600 **41046** / SHD1200 **41047**

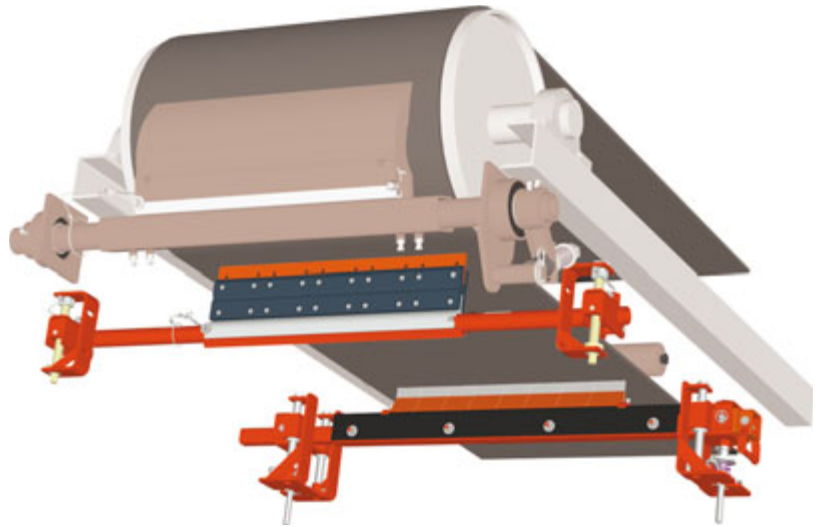
Blade P/N

SHD600 **35522 OR+E/L+E** /

SHD1200 **35523 OR+E/L+E**

Built for the widest, fastest, most heavily-loaded belts in the world. Steel I-beam mainframe supports heavy loads while thick, robust blades resist abuse and dissipate heat for extended wear life. SHD Cleaner and SHD Spring Tensioner are system engineered to deliver constant pressure and consistent cleaning without the need for adjustment throughout the life of the blade.

SECONDARY CLEANER SELECTION GUIDE



MARTIN® SECONDARY CLEANERS

Installed at the point where the belt is leaving the discharge pulley, secondary cleaners remove residual fines that remain on the belt past the pre-cleaner. Its location is typically close enough to the material trajectory that the cleanings will return to the main material stream.

Additional tertiary cleaners can be installed to provide final cleaning. These cleaners can be the same model as the secondary cleaner, or of a different design to allow efficient cleaning and maintenance within the available space.

As these cleaners are typically installed away from the pulley, they should be placed at or near a point where the belt is against a roller. Firm support prevents the cleaning pressure from raising the belt line and reducing cleaning efficiency.

SELECTION GUIDE

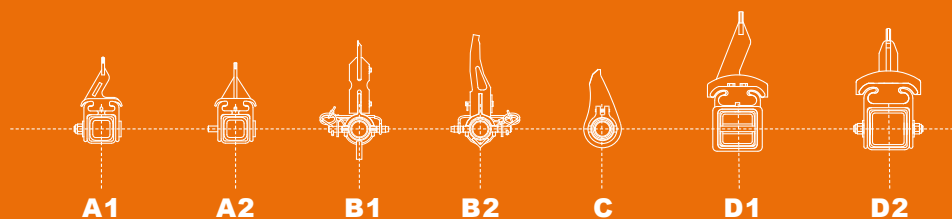
Required Data

- Belt width
- Belt speed
- Type of belt splices
- Reversing
- Material characteristics
- Application

Selection Process

- (1) Check your conveyor's belt width and speed against the specifications listed for the secondary cleaners in the table on the opposite page.
- (2) If your belt features multiple mechanical splices, or a mechanical splice in poor condition, avoid using tungsten carbide blades as rapid wear or damage to both blade and splice may result.

APPLICATION SPECIFICATIONS



	Belt width (mm)	Max. belt speed (m/s)	
(A1) DT2S Inline	400-2400	3.5	
(A2) DT2S Reversing	400-2400	3.6	
(B1) SQC2™ (SQC2™ Blades)	400-2400	5.1	
(B2) SQC2™ (SAF-3™ Blades)	400-2400	5.1	
(C) QC™ #2	400-2400	5.1	The use of tungsten carbide blades on belts with multiple or "bad" mechanical splices can cause rapid wear in both the cleaning edge and the splice.
(D1) DT2H Extra Heavy-Duty Inline	400-2400	6.1	
(D2) DT2H Extra Heavy-Duty Reversing	400-2400	6.1	

AVAILABLE BLADE MATERIALS

Belt cleaner	Mild steel	Stainless steel	Tungsten carbide	Urethane	Ceramik
DT2S	X	X	X		
SQC2™			X		
QC™ #2		X	X		X
DT2H			X	X	

SECONDARY CLEANERS



Acid-resistant tips available. Blade buffers available in molded rubber, flame-retardant rubber and urethane.

MARTIN® SQC2™

Technical data sheet **L3686**

Assembly
SQC2™ blade
SAF-3™ blade

P/N **SQC2**
P/N **SC-10002**
P/N **38231**

Individually-cushioned tungsten carbide blades provide effective cleaning without risk to belt, splice or blade. Rubber blade buffers cushion impact of each blade individually, maintaining consistent cleaning pressure. Blade cartridge allows quick and easy removal of all blade segments for rapid return to service. Compact design allows installation in tight spaces while narrow profile resists material buildup.



DT2S with in-line blade

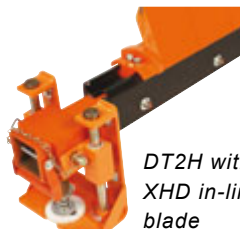
MARTIN® DT2S & DT2H

Technical data sheet **L3686 / L3690**

DT2S assembly
DT2S inline blade
DT2S reversing blade
DT2H assembly
DT2H inline blade
DT2H reversing blade

P/N **DT2S**
P/N **36316**
P/N **31104**
P/N **DT2H**
P/N **36937**
P/N **32494**

Split-track blade cartridge slides in and out on a stainless steel mandrel for quick and easy service performed from outside of the chute. DT2S features a lean profile minimizes space requirements, allowing installation in spaces as narrow as 178 mm. DT2H features massive XHD blades and a rugged steel mandrel to stand up to challenging conditions.



DT2H with XHD in-line blade



Includes integrated spring tensioner

MARTIN® QC™ #2

Technical data sheet **L3452**

Assembly P/N **35700+E** | Blade P/N **35697**

One-pin blade replacement makes belt cleaner blade replacement an easy, one-minute, no-tool operation. Unique teardrop blade profile absorb radial stress while spring tensioners provide linear relief. Individual 76 mm wide blades independently conform to the profile of the moving belt.



MARTIN® PIN LATCH

Technical data sheet **N/A**

Assembly P/N **N/A** | Blade P/N **N/A**

Tungsten carbide-tipped segmented blades on a square mainframe with a simple pin mechanism allowing quick and simple service. Unique blade construction allows cleaner to smoothly adapt to and ride over mechanical splices without damaging the splice, belt or blade. Simple installation does not require alignment or setting of the blade. Service is made simple with a unique pin latch mechanism and integrated tool. One-part blade and buffer require no nuts and bolts.

SPECIALTY BELT CLEANERS



SPECIALTY CLEANER SYSTEMS

For unusual applications, special belt cleaners may be required. Let Martin Engineering help you achieve your belt cleaning goals, no matter how unique or challenging the application.



MARTIN® WASHBOX™

As the belt passes through this modular belt cleaning system, carryback is softened with water for easy and effective removal by the system's secondary cleaners. Single or dual assemblies for belt widths 400-2200 mm.



MARTIN® CHEVRON BELT CLEANERS

Technical data sheet **L3370-11**

Inline assembly	P/N 33705
TORSION ARM™ assembly	P/N 36881+E
Rubber blade	P/N 32757
Urethane blade	P/N 32262

Blades with fingers remove carryback while gently stepping over belts with ribs, chevrons and cleats.

Available for belt widths 400-2400 mm and max belt speed 2.5 m/s.



MARTIN® PM HIGH-TEMPERATURE BELT CLEANER

Technical data sheet **L3370-12**

Assembly	P/N 21042+E
Stainless steel blade	P/N 16960
Tungsten carbide blade	P/N 27924

All-steel construction can withstand service temperatures up to 315°C. Features overlapping blades on coil-spring arms.

Available for belt widths 400-2400 mm and max belt speed 3.8 m/s.



Strip Brush Cleaner

MARTIN® BRUSH BELT CLEANERS

Technical data sheet **L3431**

Brush cleaner with interior drive	P/N 40850
Brush cleaner with exterior drive	P/N 41580

Powered rotary action provides effective cleaning performance on difficult applications including belts with ribs, cleats, grooves or chevrons or belts carrying stick materials or stringy fibers.

Available for belt widths 400-2000 mm.

MOUNTS & TENSIONERS



MARTIN® TWIST™ TENSIONER

Technical data sheet **L3314**

Twist™ Tensioner

Twist™ Dual Tensioner

P/N **31443-I+E**

P/N **31443-2RI+E**

Rugged yet simple tensioner uses the force stored in a twisted rubber sleeve to provide steady pressure allowing even, consistent and effective cleaning. Easy to set and designed to overcome the need for periodic retensioning.



MARTIN® AIR TENSIONERS

Technical data sheet **L3370-16**

Shockmount air paddle

Plant air connection

P/N **32745**

P/N **31772-AS**

Patented design uses an air spring (air bag) to store pressure. Martin Engineering recommends using the **MARTIN® Plant Air Connection Kit** to connect air tensioner(s) to plant air systems for consistent cleaning pressure while reducing maintenance requirements.



MARTIN® SPRING TENSIONERS

Technical data sheet **L3370-16**

Standard-Duty

XHD

P/N **38180**

P/N **38003+E**

Incorporates steel spring to provide pressure for efficient cleaning. Simple-to-adjust spring easily tensions to proper pressure.

MARTIN® MANDREL MOUNT

Technical data sheet **L3343**

Mandrel Mount P/N **34280**

Allows the entire mainframe and blades assembly to slide out of cleaning position in one piece, allowing fast and easy blade replacement performed outside of the chute.

QC™ #2 AND SQC2™ TENSIONERS WITH SINGLE-SIDE ADJUSTMENT

Optional hand-driven mechanical device makes maintenance of hard-to-reach cleaners quick, simple and safe by allowing workers to adjust the tension of the entire cleaner from just one side of the conveyor.

MARTIN® HANGER MOUNTS

Technical data sheet **L3370-16**

Hanger Mount (pair)

XHD Hanger Mount (pair)

SAF2™ Hanger Mount

P/N **27382+E**

P/N **41256**

P/N **34233+E**

Hanger mounts are used to support a cleaner and tensioner assembly in the cleaning position on conveyors without chute enclosures. Available in stainless steel.

ACCESSORIES



MARTIN® VIBRATING DRIBBLE CHUTE

Technical data sheet **L3370-14**

Vibrating dribble chute

Dribble sheet liner

Overload protection

P/N **31546+E**

P/N **31494+E**

P/N **31546-OL**

Vibrator with a unique isolation mount and low-friction chute liner prevents buildup in dribble chutes. Rubber-lined bracket transfers vibrations to the liner without metal fatigue in the chute.



Rubber door



Steel door

EVO® INSPECTION DOORS

Technical data sheet **L3432**

Rubber door

Steel door

Round steel door

Extended-height steel door

P/N **CYAR**

P/N **CYA**

P/N **CYARD**

P/N **CYAE**

EVO® Inspection/Access Doors feature a low profile that minimizes dust accumulation on the door and frame while providing a dust-tight seal. It provides safe and secure entry to critical maintenance areas. The handle of the door stands less than 50 mm above the enclosure wall, so there's minimal "sill" area where material can accumulate.



Can be supplied with roller or use existing.

MARTIN® PRESSURE ROLLER BRACKET

Technical data sheet **L3370-15**

Pressure roller brackets

SAF-2/QC#2/SQC2 brackets

Universal brackets

P/N **32290**

P/N **34542**

P/N **37954**

Martin® Pressure Roller Brackets hold a roller above a secondary cleaner to maintain belt position for effective cleaning pressure.

MARTIN® CARRYBACK CAPTURE SYSTEM

Technical data sheet **L3806**

Carryback capture system P/N **CCS**

Martin® Carryback Capture System scavenger conveyor technology improves belt cleaning in tough conditions. Carryback falls into the collecting trough where an electrically-driven hydraulic cylinder pushes a steel blade across a steel collecting deck, moving captured material to a point where it returns to the main conveyor discharge.







GLOBAL LOCATIONS

 UNITED STATES

 AUSTRALIA

 BRASIL

 CHINA


 UNITED KINGDOM

 FRANCE

 GERMANY

 INDIA

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 PERU

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