

IOM – Super-GTM Secondary Belt Cleaning System

Kinder Australia Product:	Super-G TM Secondary Belt Cleaning System
Product Category:	Belt Cleaning System Products
Issue Date:	19.7.23
Revision:	4



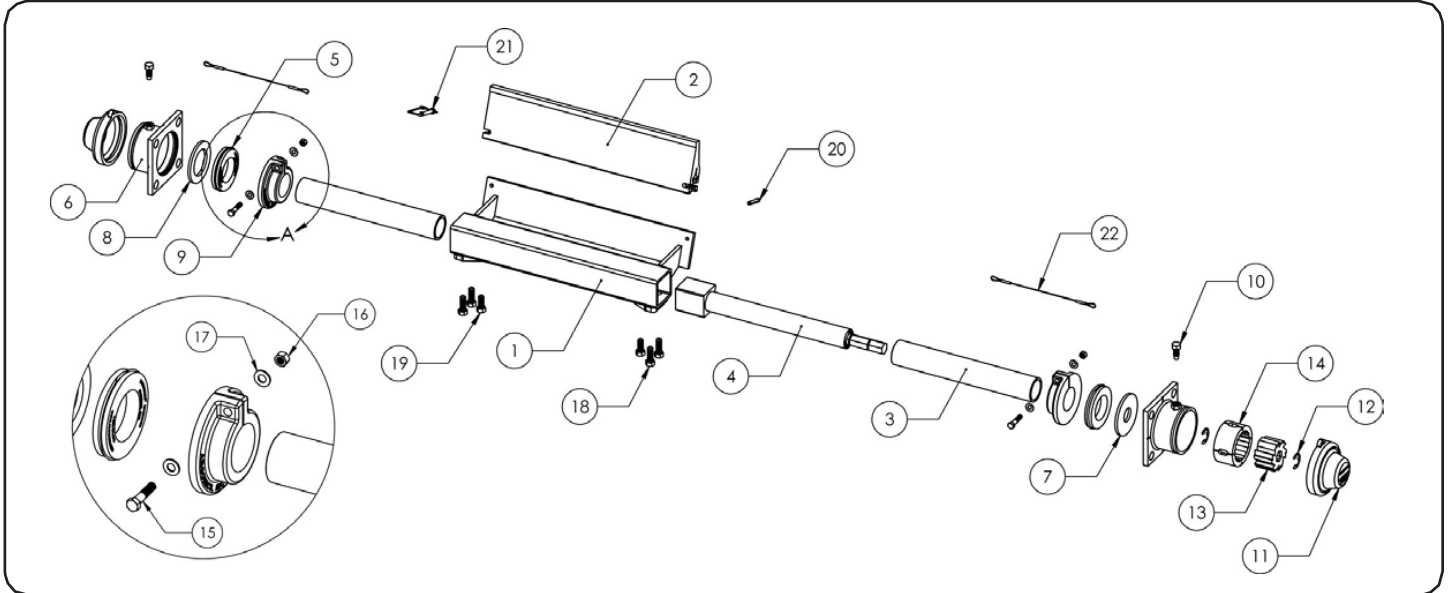
⚠ WARNING ⚠

Always obey all applicable safety rules.

Be sure all power to the conveyor has been disconnected and controls are locked out.

IOM – Super-G™ Secondary Belt Cleaning System

Safe Torque™ Ratchet System – Assembly Breakdown



Number	Part Number	Quantity	Description
1	K-CLE-CP-SG-“XX”A	1	Mainframe
2	K-CLE-CP-SG-“XX”-G83	1	Blade
3	K-CLE-CP-AR-12B / CP-AR-22B	2	Stub End / Extended Stub End
4*†	K-CLE-CP-AR-1-1375-E-B93 / K-CLE-CP-AR-1-2075-E-B93	1	1" Perma-Torque Tensioner / 1" Extended Perma-Torque Tensioner
5	K-CLE-CP-AR-23-RT-B93	2	Standard Inner Snap Seal
6†	K-CLE-CP-AR-30R	2	Standard Ratchet Mounting Spool
7*†	K-CLE-CP-AR-41F	1	Standard Ratchet Spool Washer
8	K-CLE-CP-AR-41F-ST	1	Std. Rat. Spool Washer - Single Tensioner
9	K-CLE-CP-AR-LC5-G83	2	Standard Locking Collar
10	K-FAS-1/2x1.25-HEXHD-Z	2	½" x 1 ¼" Long Hex Set Screw Zinc Plated
11†	K-CLE-CP-AR-52B-Y83	2	Standard Dust Cap
12*†	K-CLE-CP-AR-98407A156	2	Retaining Ring
13*†	K-CLE-CP-AR-22C-G83	1	Standard Inner Ratchet Catch
14*†	K-CLE-CP-AR-32C-G83	1	Standard Outer Ratchet Catch
15†	K-FAS-3/8x1.75HEXHD-Z	2	3/8" x 1 ¾" Long Hex Set Screw Zinc Plated
16†	K-FAS-3/8-NUT-Z	2	3/8" Zinc Plated Steel Nut
17†	K-FAS-3/8-WASHER-Z	4	3/8" Zinc Plated Steel Washer
18	K-FAS-1/2x1.5-HEXHD-SS	4	½" x 1 ½" Long Hex Set Screw SS
19	K--FAS-1/2x1.25-HEXHD-SS	2	½" x 1 ¼" Long Hex Set Screw SS
20	K-CLE-CP-AR-303	1	Spring Pin ½" x ¾" Zinc Plated
21†	K-CLE-CP-AR-275	1	Safety Snap Pin 5/16" x 2 ¾"
22	K-CLE-CP-AR-120105	2	Wire Rope Lanyard; 12" Long 3/64" Wire

* Systems 36" and above come standard with dual tensioners and require double of each of the noted parts

†Parts available as fully assembled Perma-Torque™ Tensioner

IOM – Super-G™ Secondary Belt Cleaning System

Installing the Super-G™ Secondary Belt Cleaner

Installation Tools Required

- | | |
|------------------|---------------------------------|
| -Tape Measure | -Welder or Drill |
| -Cutting Torch | - ½" & ¾" Open End Spanner |
| -Level | -24mm Open End Spanner |
| -Scribe or Chalk | -1" Open End Spanner or Shifter |

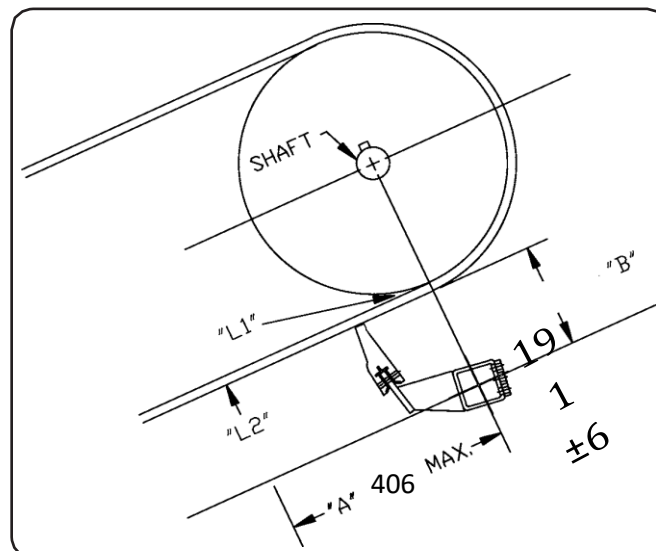
Bolts, lock washers and nuts for mounting are not supplied

Note:

This Super-G™ Secondary belt cleaning system is designed to be used on conveyor pulleys of 356mm in diameter and larger.

Step One: Layout

Place a level across the width of the belt where the belt leaves the head pulley (L1) and make a mark on each side of the mounting structure wall. Repeat this process within the 406 maximum mounting area (A) shown in the illustration below. This will be your L2 mark. Now measure perpendicular to the belt 191(B) down from your marks and scribe a line between these two points. **This line should be parallel with the belt and 191±6mm down.** The Super-G™ system can be mounted anywhere along this line. Make sure that both sides of the mounting structure wall are marked consistently. If no structure is available at this location, a mounting structure will need to be added. The ideal location is directly below and perpendicular to the pulley shafts centre (see illustration).

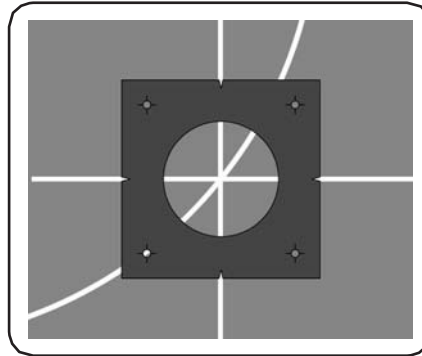


**You are only allowed to deviate ±6 mm
on the "B" dimension.**

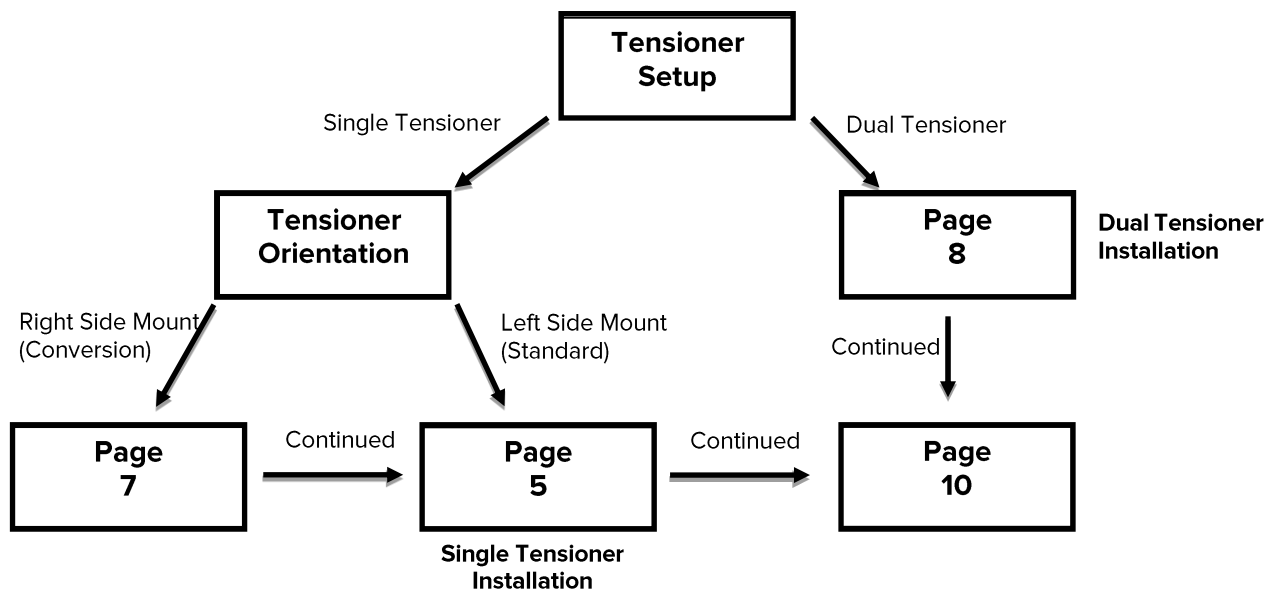
IOM – Super-G™ Secondary Belt Cleaning System

Step Two: Mounting Template

After you have determined the mounting location for your belt cleaning system, align the template (see page 12 of this guide) with your bisected horizontal and vertical on the mounting structure wall and transfer the centre hole, bolt holes and perimeter of the template to the chute wall using your scribe.



Repeat the layout procedure on the opposite mounting structure.
For single tensioner, follow instructions on page 3. For dual tensioner, turn to page 5.



IOM – Super-G™ Secondary Belt Cleaning System

INSTALLATION – Single Tensioner – Left Side

Step Three (A): Mounting systems equipped with a single tensioner

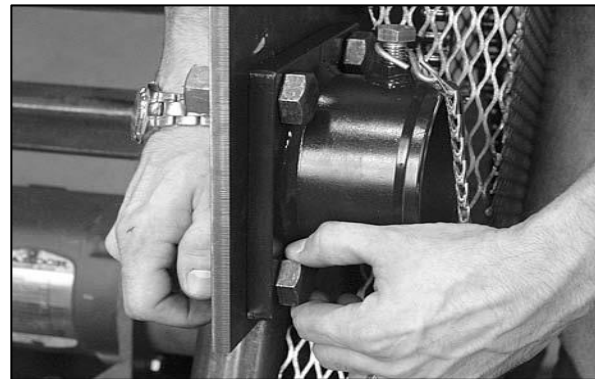
Cut the tensioner hole which was scribed on the mounting structure (your finished hole should be approx. 90mm in diameter).

NOTES:

- For Bolt In Only - Using the bolt circles that you scribed as a guide, drill four 20mm diameter holes to accept M16 grade 8.8 bolts.



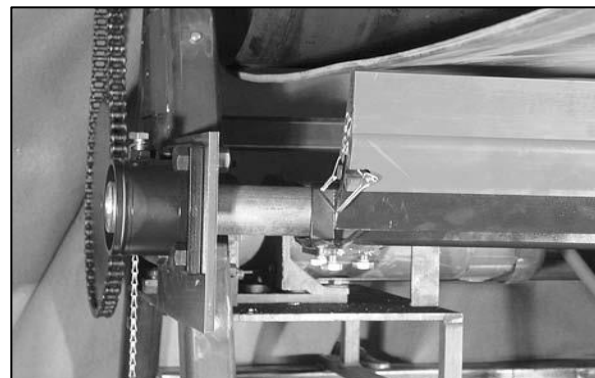
Remove the urethane locking collars from the stub ends.



Remove the mounting spool from the non-tensioner side of the system. Line up the spool with the holes in the chute wall, then bolt it into place using four M16 grade 8 bolts and lock washers. You can also choose to stitch weld on the flat sides of the mounting spool.

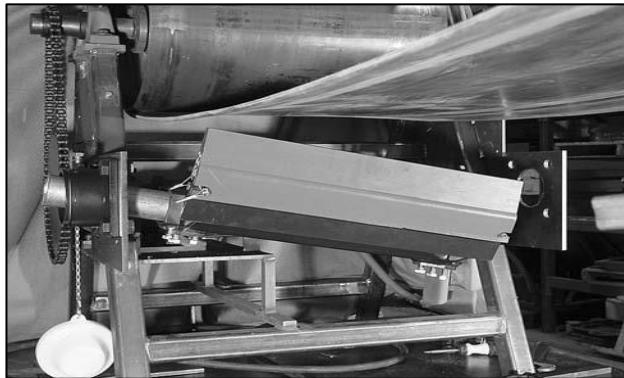


Using a ½" open spanner, loosen the three setscrews located on the bottom of each end of the mainframe. Remove the entire tension cartridge from the left side of the mainframe.

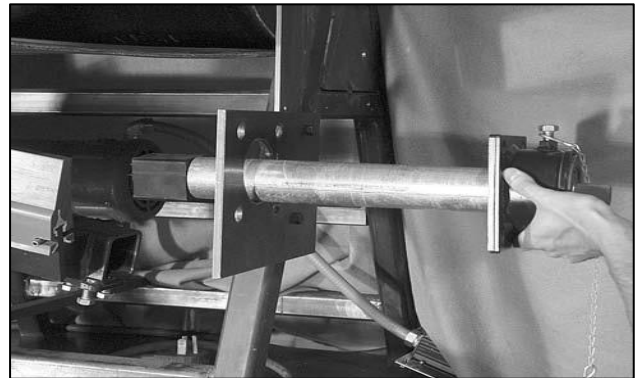


Lift the mainframe into position. Insert the stub end into the mounting spool on the non-tensioner side.

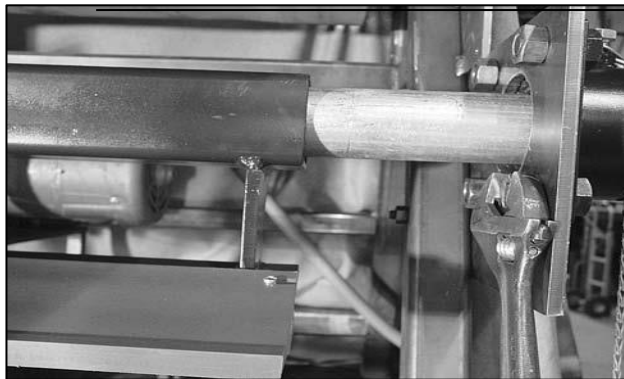
IOM – Super-GTM Secondary Belt Cleaning System



Temporarily retighten the three setscrews to hold the mainframe in place. Then carefully lower to let system hang in place.



On the other side of the chute, slide the tensioner cartridge through the chute wall and insert it into the mainframe.



Temporarily retighten the setscrew on tensioner side to stabilise system. Bolt or stitch weld the mounting spool on the tensioner cartridge to the chute wall.



Loosen the setscrews and centre the mainframe and blade to the belt. Tighten the setscrews to secure the stub ends.



Install the urethane locking collars by sliding them over the stub end, snugging them to the chute wall. Tighten the bolts to secure.

IMPORTANT

At the top point of the mounting spool, the inner ratchet must always point away from the load pulley.

PROCEED TO TENSIONING INSTRUCTIONS ON PAGE 10

IMPORTANT

Check for free rotation, minimal lateral movement of the assembly shaft, consistent contact of the blade to the belt. Adjust if necessary, realign, and tighten all mainframe set screws.

IOM – Super-GTM Secondary Belt Cleaning System

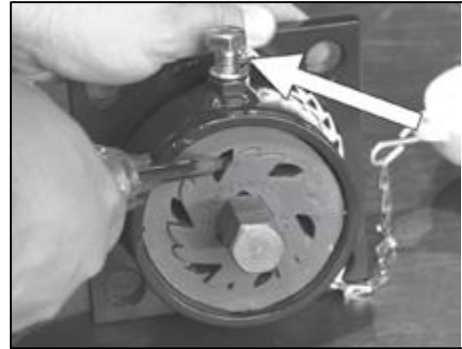
INSTALLATION –Right Side Tensioner Conversion

Tensioner Conversion Instructions

To mount a single tensioned Super-GTM system with the tensioner on the right side instead of the left side, you will need to switch the entire tensioning spool to the other side of the mainframe, as well as the direction that the ratchet gears are oriented. It is recommended that you perform this conversion on the ground before the system is mounted.



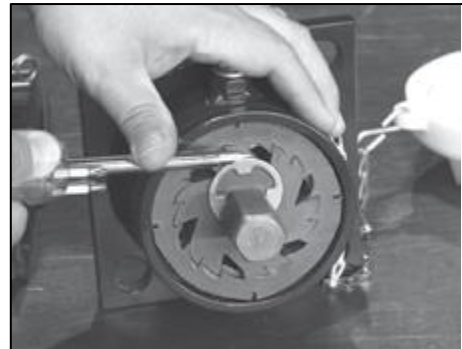
Remove the retainer clip from the hex rod using a flat blade screwdriver. Be sure not to lose the retainer clip.



Unscrew the setscrew at the top of the mounting spool and remove both the inner ratchet and outer catch. Make sure you note what direction the gears are pointing.



Flip both the inner ratchet and outer catch so the gear teeth are pointed in the opposite direction and slide both back on to the hex rod.



Align the outer catch notch to the top of the mounting spool, tighten the set screw then re-insert the retaining clip to the outer groove of the hex rod.



Your Super GTM system comes with the tensioner mounted on the left. You will need to switch the entire mounting spool assembly to the right of the mainframe.

IMPORTANT

At the top point of the mounting spool, the inner ratchet catch must always point away from your conveyor load pulley.

Return to the installation instructions located on page 5.

IOM – Super-G™ Secondary Belt Cleaning System

INSTALLATION – Dual Tensioner

Step Three (B): Mounting systems equipped with a dual tensioner

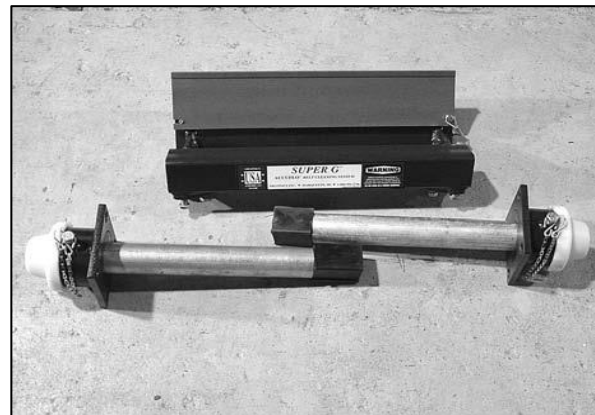
Cut the tensioner holes which were scribed on the mounting structure (your finished holes should be approx. 90mm in diameter).

NOTES:

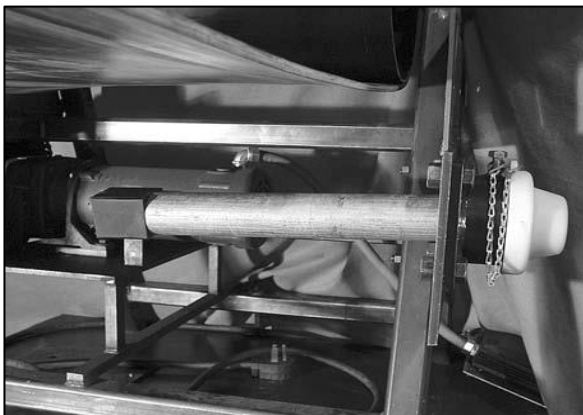
- For Bolt In Only - Using the bolt circles that you scribed as a guide, drill four 20mm diameter holes to accept M16 grade 8.8 bolts per mounting spool.



Remove the urethane locking collars from the stub ends.



Remove both tension cartridges from the mainframe.

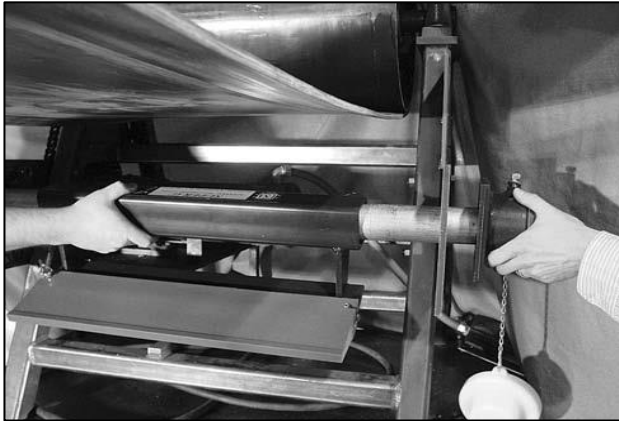


If there is room, slide the first tensioner cartridge through the chute wall and line up the mounting spool with the template that was transferred to the chute wall. Now bolt or weld into place.

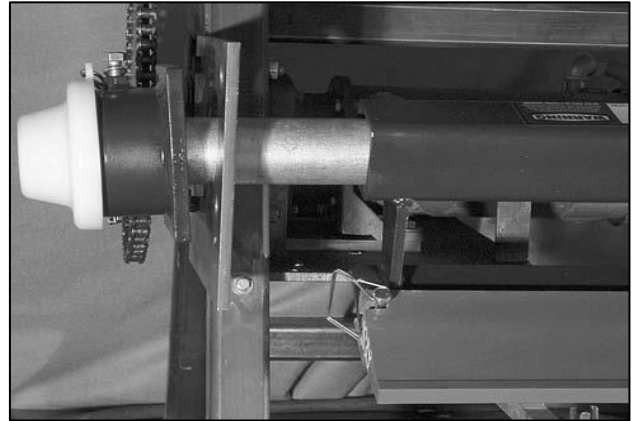


Lift the mainframe into position. Slide the mainframe onto the cartridge, then temporarily retighten the three setscrews on the tensioner side to stabilise system.

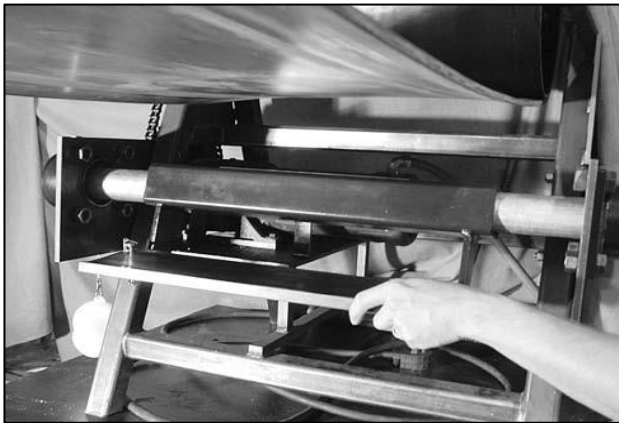
IOM – Super-GTM Secondary Belt Cleaning System



If there is not a lot of room between the chute walls, hold the mainframe in place and slide the tension cartridge into the mainframe. Bolt or weld the mounting spool into position and tighten the setscrews.



Slide the second tensioner cartridge through the chute wall and insert into mainframe. Temporarily retighten the setscrew on tensioner side to stabilise system. Bolt or stitch weld the mounting spool on the tensioner cartridge to the chute wall.



Loosen the setscrews and centre the mainframe and blade to the belt. Tighten the setscrews to secure the stub ends.



Install the urethane locking collars by sliding them over the stub end, snugging them to the chute wall. Tighten the bolts to secure.

IMPORTANT

Check for free rotation, minimal lateral movement of the assembly shaft, and consistent contact of the blade to the belt. Adjust if necessary, realign, and tighten all mainframe set screws.

IMPORTANT

At the top point of the mounting spool the inner ratchet catch must always point away from the load pulley.

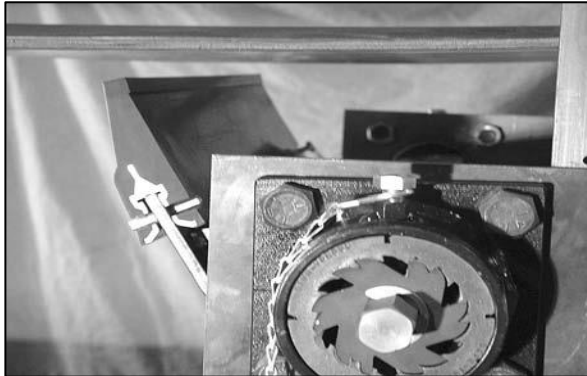
Proceed to the tensioning instructions on page 10

IOM – Super-G™ Secondary Belt Cleaning System

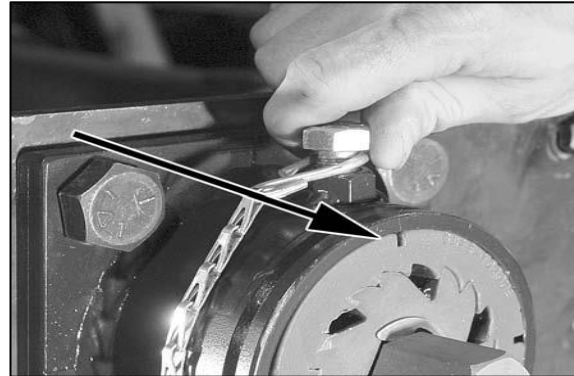
INSTALLATION – Tensioning

Step Four: Tensioning

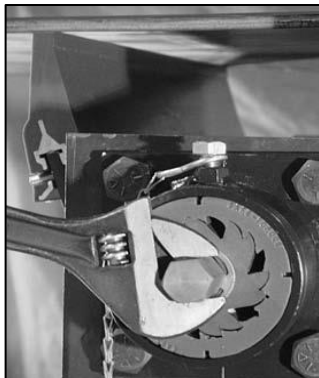
The Super-G™ system is equipped with our patented internal Perma-Torque™ tensioner and our Safe Torque™ ratchet system. The Perma-Torque™ is an adjustable elastomeric tensioner. The tensioner may be adjusted from a recommended minimum of 14 Nm of force to a maximum of 95 Nm. Excessive tension could damage the tensioner as well as the Safe Torque™ ratchet system. Five (5) clicks, or 100° of rotation is recommended for most applications.



To tension, first position the alignment notch on the outer ratchet catch with the mounting spool set screw. Grab the blade and rotate to align the ratchet notch.

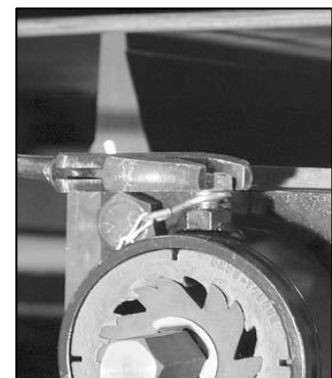


When notch is aligned, tighten the setscrew. (Arrow indicates proper notch position)



Use a 1" socket wrench on the exposed tensioner hex rod and turn the tensioner up and towards the pulley until the blade contacts the belt. Start tensioning by counting the clicks until you have reached the desired rotation. Five (5) clicks or 100° of rotation is the factory recommended setting. Repeat the same number of clicks on the opposite side for a dual tensioner system. Re-attach the dust cap(s).

Guideline for tensioning belt cleaning systems			
Belt Width in mm.	No. Of Clicks	Tensioning Force (Nm)	
600-750	4	68	Single Tensioner
775-950	5	81	
975-1550	4	68	Double Tensioner
1575-2150	5	81	
2175-2500	6	95	



Releasing Tension

When you need to release tension, just loosen the mounting spool set screw. You will see the outer ratchet rotate as the tension is released.

Installation of your Super-G™ belt cleaning system is now complete.

IMPORTANT

Do not over tension or excessive blade wear will occur.

IOM – Super-G™ Secondary Belt Cleaning System

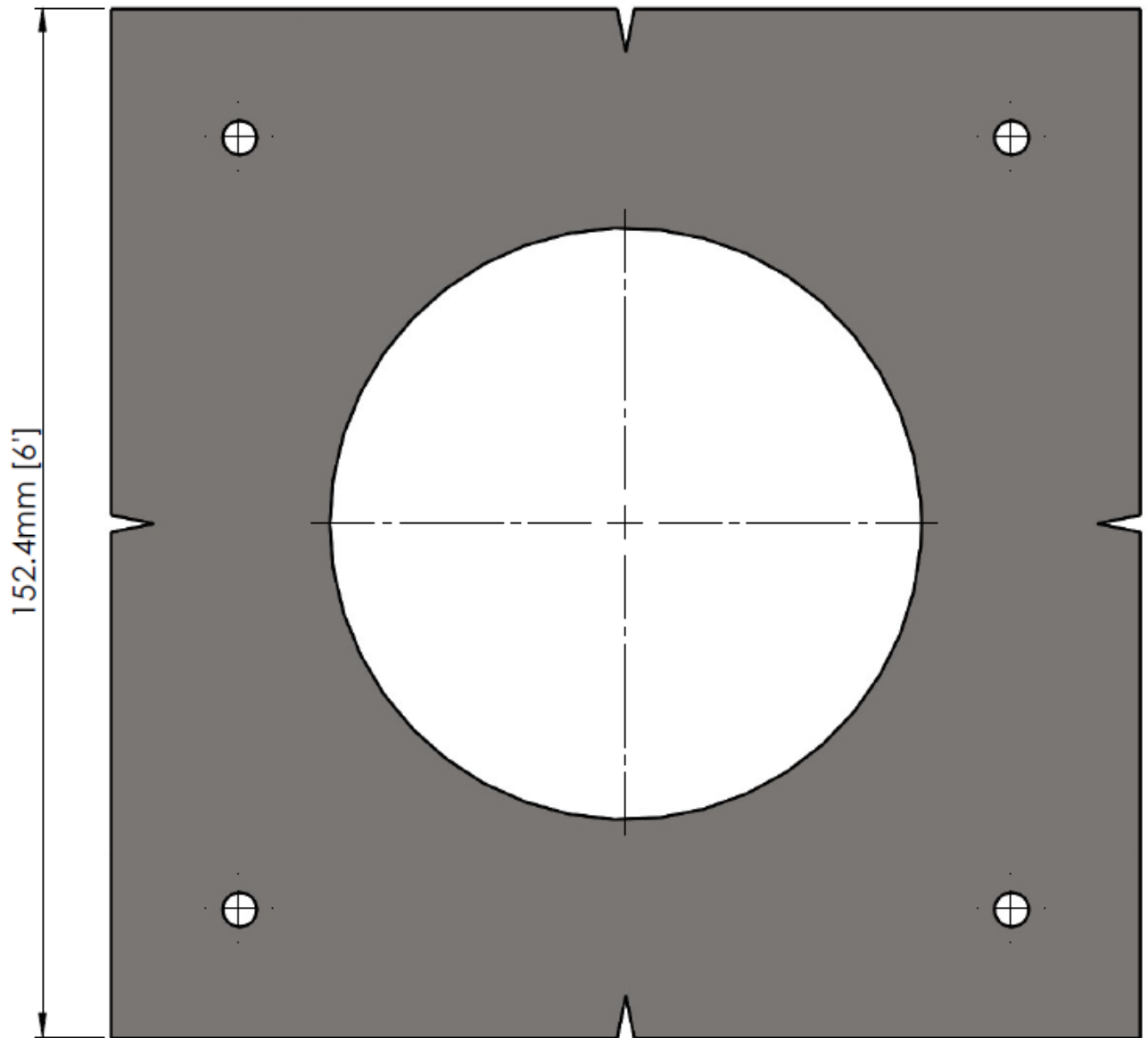
TROUBLESHOOTING GUIDE

Problem	Probable Cause	Suggested solution
Excessive/Uneven blade wear or damaged blade	Cleaner under/over tensioned	Ensure tension was set correctly – See tensioning table on pg. 10
	Cleaner installed in wrong location	Ensure the blade is the correct “A” and “B” distances from the pulley and adjust if necessary – See pg. 3
	Wrong urethane for operation	Consult Kinder for proper urethane selection
	Mechanical splice damaging blade	Repair, skive or replace splice
	Damaged belt	Fix damaged area or replace belt
	Cleaner not square to head pulley	Ensure the blade is not angled across the belt and that the mounting points are level and aligned, adjust if necessary – See pg. 3 for correct installation position
Wear only on centre of blade (smile effect)	Blade wider than material path	Replace with shorter blade that reaches just outside material path
Vibration or noise	Cleaner at wrong distance	Use info on pg. 1 to ensure that the correct install dimensions have been used. Adjust if necessary.
	Cleaner running on empty belt	Use a spray pole to lubricate belt when running dry
	Cleaner under/over tensioned	Ensure tension was set correctly – See tensioning table on pg. 10
	Cleaner not securely fastened	Check all bolts and nuts for damage and ensure they are securely fastened.
	Cleaner not square to head pulley	Ensure the blade is not angled across the belt and that the mounting points are level and aligned, adjust if necessary – See pg. 3 for correct installation position
	Material build-up in chute	Clean up build-up on cleaner and in chute
Poor cleaning performance	Cleaner under/over tensioned	Ensure tension was set correctly – See tensioning table on pg. 10
	Cleaner installed too high	Ensure “B” dimension is within tolerance of $\pm 6\text{mm}$.
	Tungsten blade worn out or damaged	Install a new blade and check for possible causes of wear/damage
Blade pushed away from pulley	Cleaner tension too low	Increase tension or add a second tensioner if required.
	Sticky material is overpowering cleaner	Ensure that set screw is seated in the notch of the outer ratchet catch (see page 10 for install guide)
		Increase tension or add a second tensioner if required
		Replace with shorter blade (just outside material path), use a harder urethane and increase tension of system
		Replace with larger sized cleaner
	Cleaner not set up correctly	Ensure tension, distance and position are correct and check bolts and nuts are tightened correctly.
Blade flipping through	Cleaner installed too far from pulley	Ensure the install dimensions are correct and adjust if necessary – See pg. 1 for correct values
	Cleaner too small for pulley	If cleaner does not reach just outside material path, then replace with larger sized cleaner.

IOM – Super-G™ Secondary Belt Cleaning System

Mounting Template

Transfer the drawing below to cardboard and use as your mounting spool template.



Ensure template is to scale upon printing

IOM – Super-G™ Secondary Belt Cleaning System

MAINTENANCE – INSPECTION

The following process should be considered when preparing the job and work instruction sheets.

IMPORTANT

Under no circumstances should a physical inspection of any belt cleaner be undertaken with the conveyor in operation.

Step One: Ensure all personnel are qualified and competent. Identify the conveyor and its associated equipment. Isolate, lock and danger tag the conveyor at the main positive isolator in accordance to the appropriate health and safety regulations in force at your site to prevent unauthorised starting.

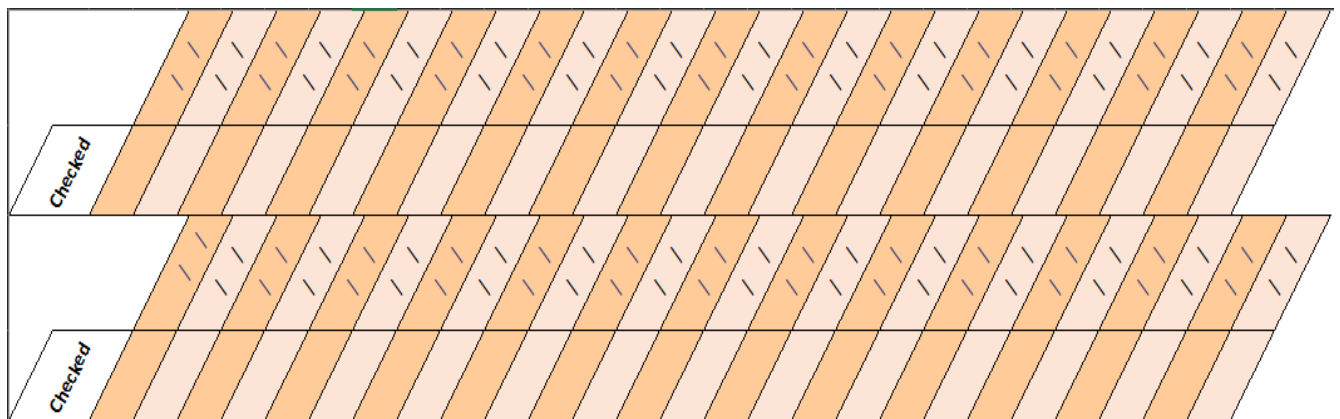
Step Two: Inspect the condition of the belt, using the inspection door if safety compliant, as well as the condition of the cleaner and blades. If the blades are excessively worn or damaged schedule a blade change at the next available opportunity. (See Maintenance – Replacement on pg. 14 for procedure)

Step Three: If necessary, and if plant rules allow, hose any material build-up from the blades and mainframe. Do this through the safety mesh screen.

Step Four: Check the Perma-Torque™ tensioner settings and adjust if necessary. These tensioners are designed to be tensioned once for the duration of a blade's lifetime.

MAINTENANCE – SCHEDULE

After a fresh installation inspection of the Super-G™ Secondary Belt Cleaning System should occur **every day** for the first **3 days**, then **once per week** for the **first month**, and then **monthly** until the next installation period. Use the chart below to help track of inspections.



IOM – Super-G™ Secondary Belt Cleaning System

MAINTENANCE – RAPTOR BLADE REPLACEMENT

Shut down and lock out conveyor as per steps 1-3 of Maintenance – Inspection.



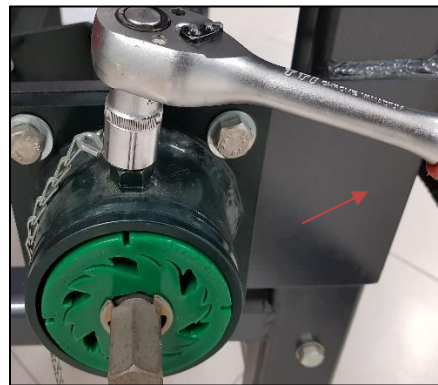
Remove the polyurethane dust caps and safety screen inside inspection door.



Use a 3/4" socket wrench to loosen the mounting spool set screw to release the tension.



Use a 1" socket wrench to back the blades away from the belt.



Tighten the mounting spool set screw when a notch is aligned to lock into one of the four locking positions.

IMPORTANT

Tightening the screw when the notch is not aligned may damage the tensioning system.

IOM – Super-GTM Secondary Belt Cleaning System



Loosen and remove the safety snap pin



Remove the blade from the cleaning system mainframe.



Clean and inspect the blade. If worn excessively or otherwise damaged, replace with new.

Upon completion of replacement secure the retaining clips, re-tension the system as per the tensioning instructions on pg. 10.

Remove all tools and debris from the belt and replace all access screens and guards.

Remove locks and tags and restart belt. Observe the belt to ensure expected action and effectiveness.

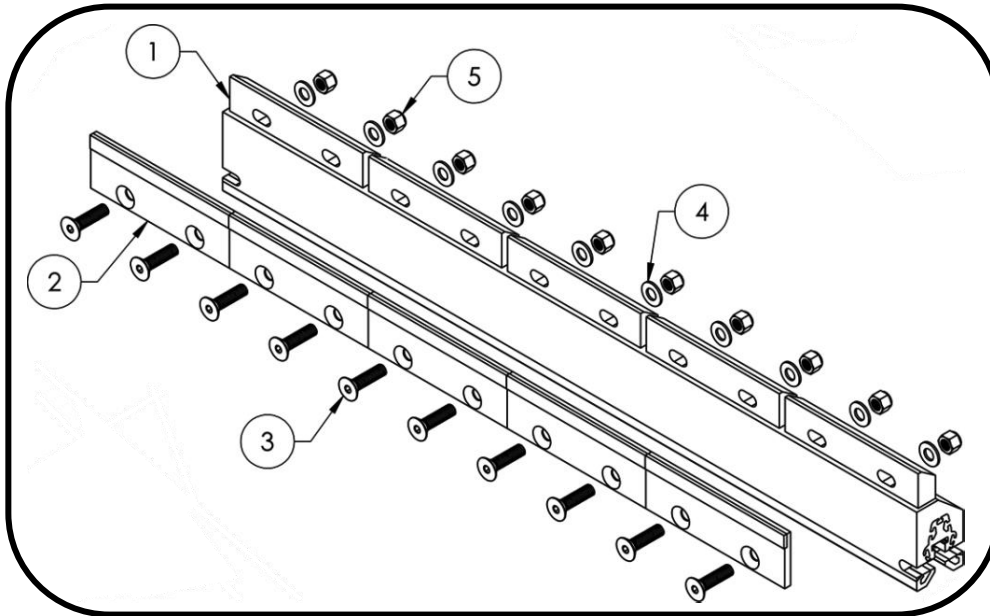
IOM – Super-G™ Secondary Belt Cleaning System

MAINTENANCE – TUNGSTEN BLADE REPLACEMENT

Installation Tools Required

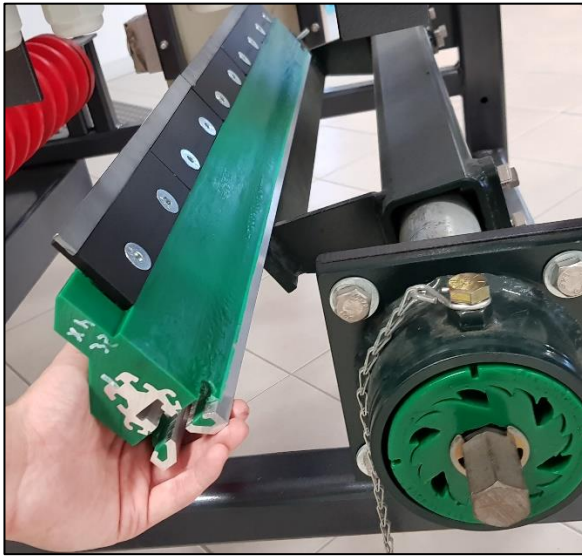
- 5.5mm Hex Socket Key
- 14mm Open End Spanner

The tungsten blade features individual 6" long tungsten blades. These blades allow for the replacement of just the tungsten blade tips rather than the entire blade holder.



Number	Part Number	Quantity	Description
1	K-CLE-CP-B"XX"-G80	1	Tungsten Blade – Urethane Holder
2	K-CLE-CP-TH-B06A-T	Varies	6" Tungsten Blade Tip
3	K-CLE-CP-SG-288Z	Varies	3/8" Zinc Plated Flat Head Screw
4	K-FAS-3/8-WASHER-Z	Varies	3/8" Zinc Plated Steel Washer
5	K-FAS-3/8"-NYLOC-NUT	Varies	3/8" Zinc Plated Nyloc Nut

IOM – Super-GTM Secondary Belt Cleaning System



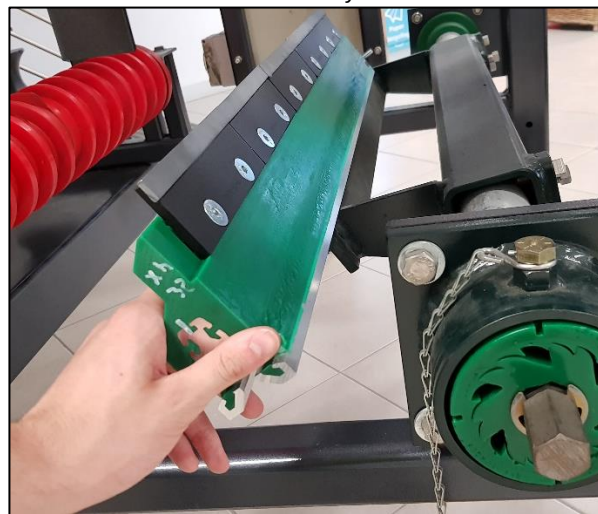
Release tension and remove the blade as per the instructions above.



Remove the nuts, screws and washers attaching the tungsten tips to the urethane holder with the wrench and hex key.



Replace the tungsten tip with a new one and reattach the with the same tools.



Once repaired replace the blade and return the system to its original state.