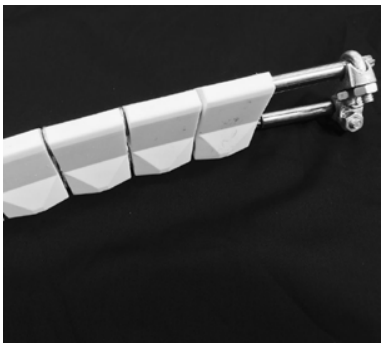
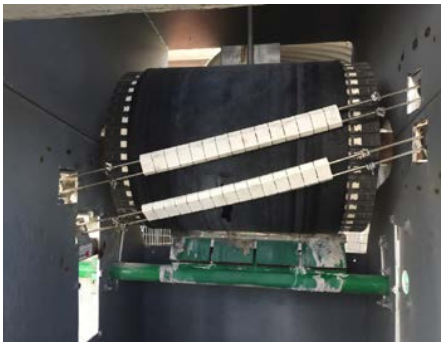
Installation Instructions - K-Smartscraper® Belt Cleaner

Product:	K-Smartscraper® Belt Cleaner
Overview:	The K- Smartscraper® Belt Cleaner is a lightweight, abrasion resistant cleaner offering quick and simple on site installation. Made with high quality ceramic tips and spring-tensioned fixed side holders, the K-Smartscraper® is self-adjusting and removes material without damaging the belt itself. Suitable for cleaning dry, encrusted, wet, powder, sticky and high temperature materials. • ***These instructions are suitable for belt width range 450mm-1200mm. For larger belt widths, please contact a Kinder Australia Field Applications Engineer.*** • ***The K-Smartscraper® is not suitable for use on Reversing conveyors, Conveyor belts with mechanical fasteners nor metal clips.*** • ***The K-Smartscraper® is not suitable for head pulleys which are equal or smaller than 449mm Dia (including lagging.)***


Step 1)

Isolate, lock and place a danger tag on the conveyor at the main positive isolator in accordance with the appropriate occupational health and safety regulations to prevent unauthorised starting.

Measure and obtain the following data, which will be used to calculate the upper and lower mounting points of the K- Smartscraper.®

a) Pulley Diameter (mm)

b) K-Smartscraper® install angle (15-25 Degree) See explanation on pg 2 "**INSTALLATION ANGLE**".

c) Belt Width (mm)

d) Belt Thickness (mm)

e) Chute Overall or Stringer Mounting Width (mm). If the distance between the edge of the conveyor belt and chute walls or stringers varies from side to side (is not centred) then measure this also.

f) Select Angle of Rotation (ß) (can be zero) below horizontal pulley line for central chip alignment (Degree). See figures 3 & 4 and explanation on pg 3 "**ANGLE OF ROTATION**".

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Section 1 - Pulley, Belt and Stringer Attributes	
Pulley Diameter (mm)	
Angle ß – (Angle of Rotation) (Degree)	
K-Smartscraper® install angle (15-25) (Degree)	
Belt Width (mm)	
Belt Thickness (mm)	
Chute Overall Width or Stringer Mounting Width (mm)	
Section 2 - Non-Centred Belt (Optional)	
W-L (mm)	
W-R (mm)	

INSTALLATION ANGLE

The belt cleaner installation angle is dependent on the pulley diameter and belt width. When the installation angle is less than 10 degrees, the ceramic chips may vibrate. When the angle is more than 30 degrees, the ceramic chips may wear prematurely due to increased tension applied as a result.

The angle recommended by Kinder Australia is between 15 – 25 degrees.

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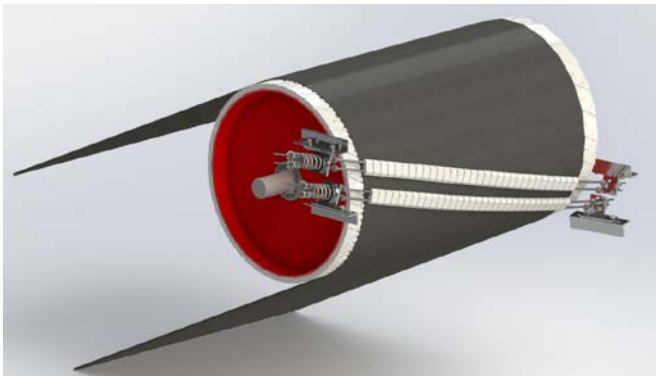
If the pulley diameter is small (e.g. <=500mm), the installation angle should be reduced to 10 to 15 degrees to allow the cleaner to wrap or flex effectively across the pulley face.

For added belt cleaning efficiency, and or if space is available, dual K-Smartscrapers® can be installed together on the one pulley.



ANGLE OF ROTATION

If your belt conveyor runs at medium to high speed and or has a low inclination angle, the recommended angle of rotation for the central chip alignment ß is 0°.

However, if your belt conveyor runs at low speed and or has a steep inclination angle, it is possible that your bulk material could make contact with the upper section of ceramic chips.

In order to protect the ceramic chips and to insure you are only cleaning what is left on the belt (i.e. carry back only), it is recommended that the angle ß is greater than 0°. Customers should always check upper and lower mounting points to ensure space is available.

Refer to Figure 3 and Figure 4 on pg 4

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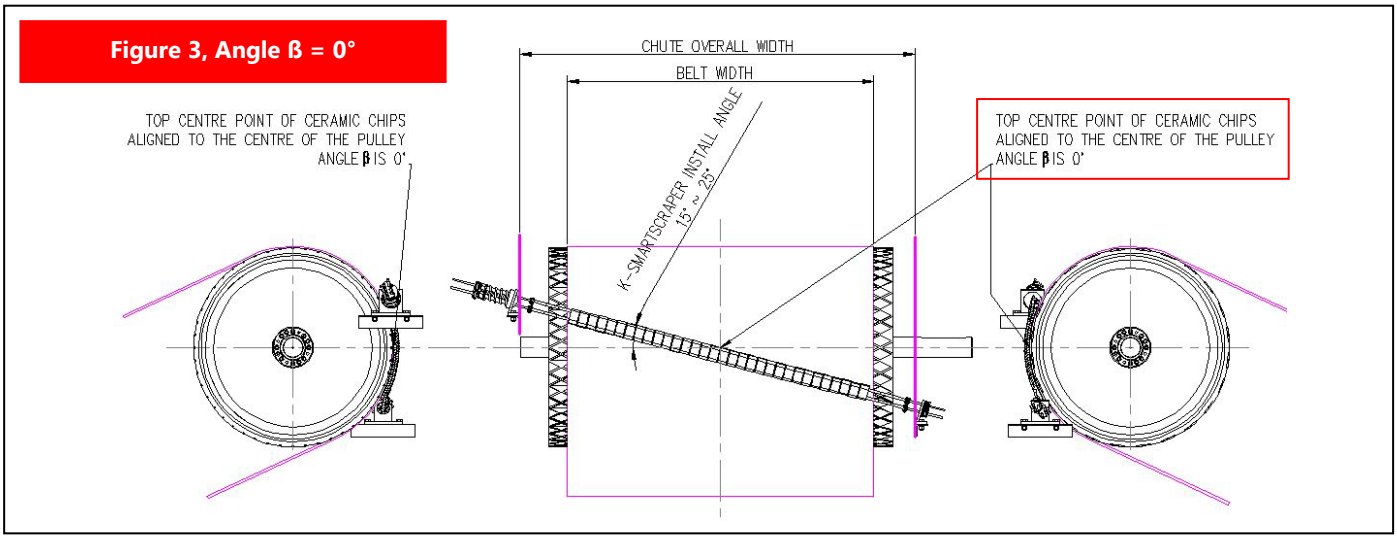

Figure 3, Angle ß = 0°

Recommended if belt conveyor runs at medium to high speed and or has a low inclination angle.

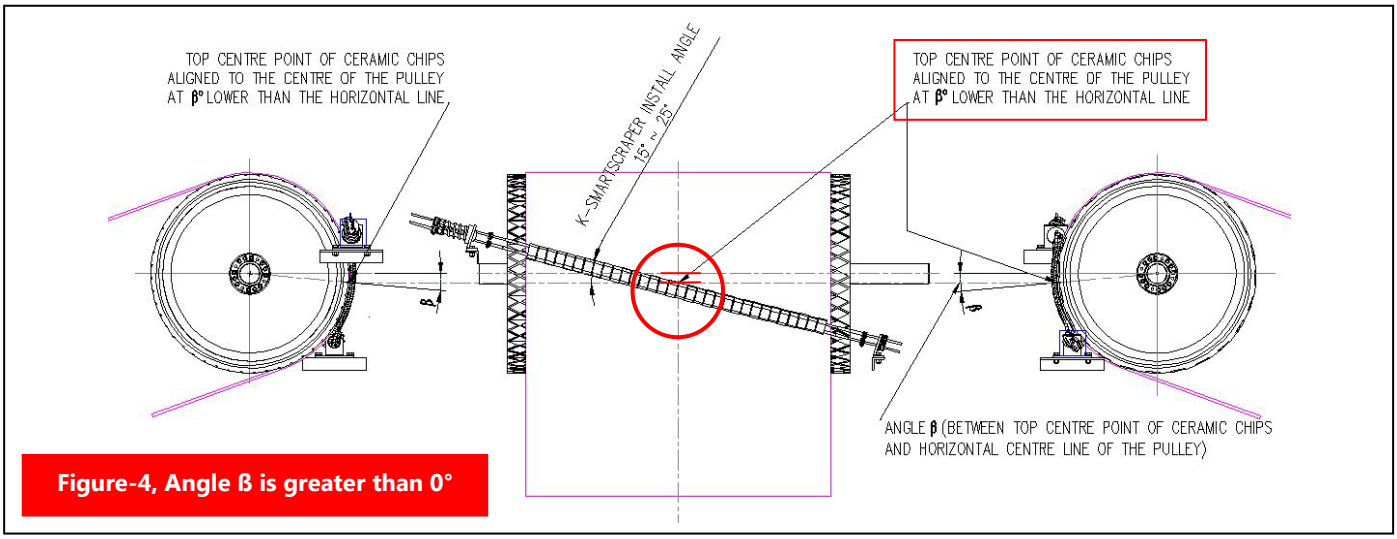

Figure-4, Angle ß is greater than 0°

Recommended if belt conveyor runs at low speed and or has steep inclination angle.

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Installation Instructions - K-Smartscraper® Belt Cleaner

Step 2)

Download the "K-Smartscraper® Mounting Location Worksheet" Excel document from the Kinder Australia website using the following link https://kinder.com.au/smartscraper-worksheet/

Step 3)

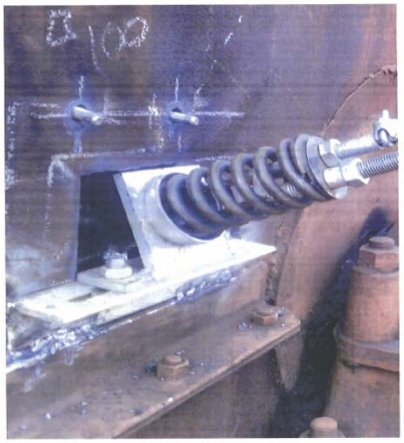
Using the K-Smartscraper® Mounting Location Worksheet input your data obtained from **Step 1,** into the available corresponding orange fields and press enter.

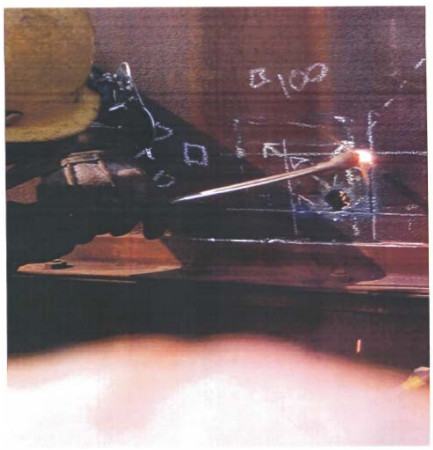
Then print sheets 2 Upper, and 3 Lower Mounting Positions of the Worksheet.

If you would prefer Kinder Australia to complete the Worksheet and send you the mounting templates, please send an email with your input data requesting this to **sales@kinder.com.au**

Step 4)

Cut/Machine square holes in the head chute as per the printed templates.





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If you do not have a head box/chute, and you are mounting the K-Smartscraper® directly from the conveyor stringer structure, then you may be required to fabricate supporting plates to accommodate the K- Smartscraper® mounting hardware.

Step 5)

Remove or add steel wire rope sleeves and/or ceramic chips to match the width of bulk material, ensuring that the sleeves do not extend the entire width of rope or are too close to the mounting brackets. This will prevent the cleaner from being tensioned.

Step 6)

Choose either right hand side or left hand side for upper point location. Leave the other side for lower point location. The tensioner can be installed on either side, upper or lower.

Step 7)

Refer to Drawing K3838 R1 on pg 7.

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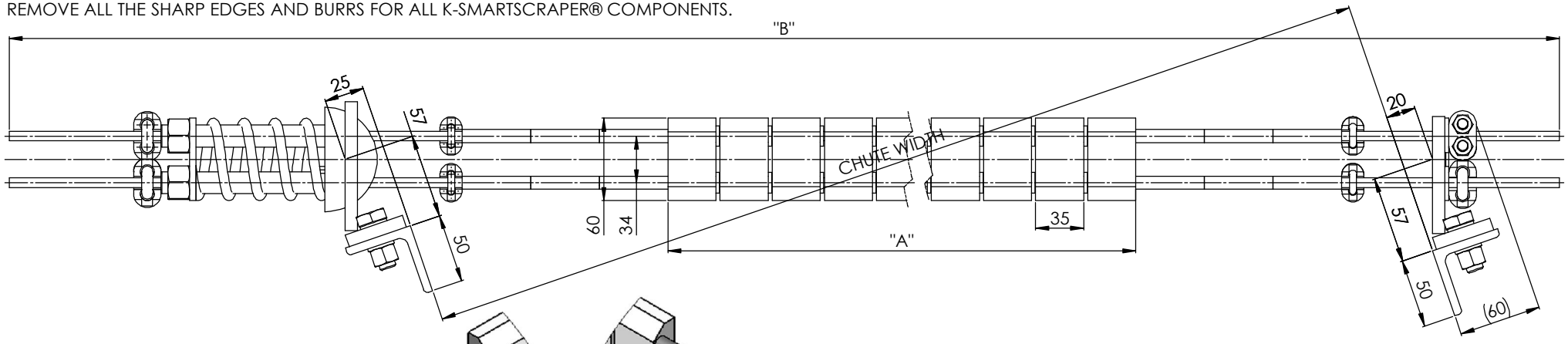
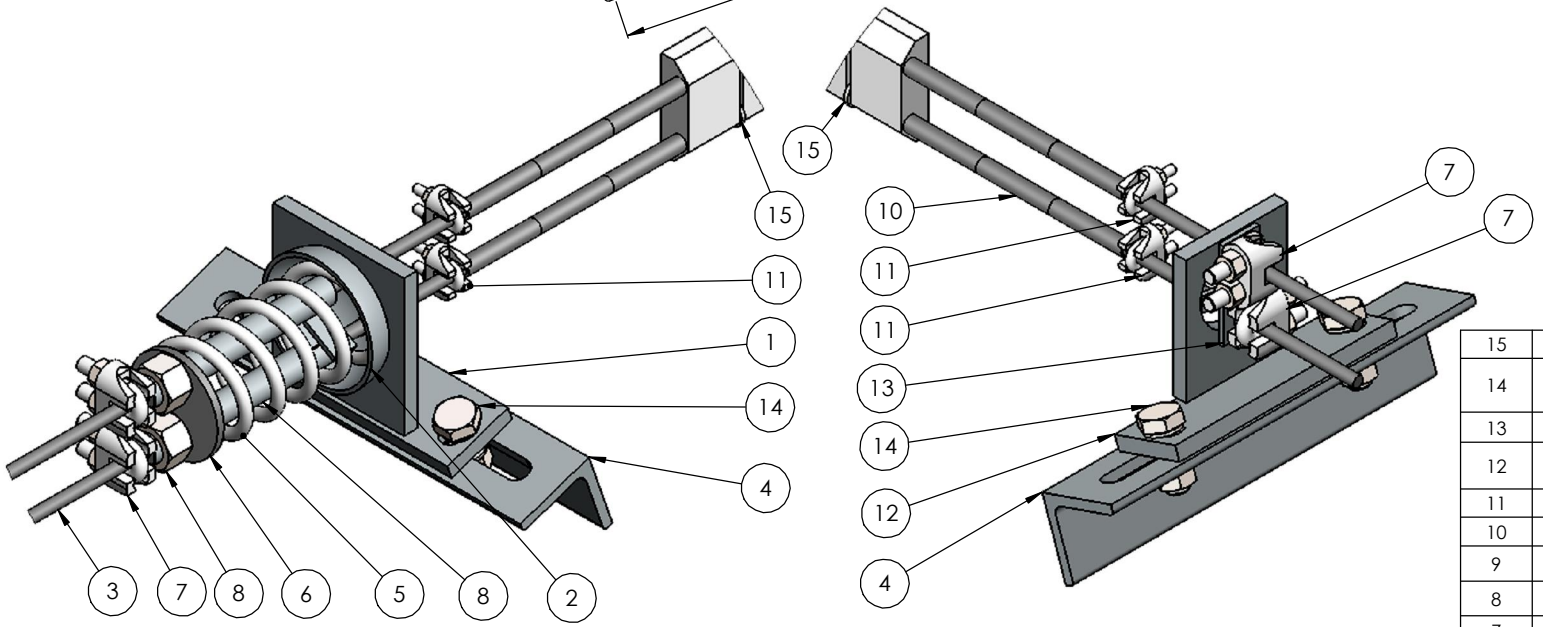
NOTE:
1) MATERIAL OF SUPPLIED SMARTSCRAPER COMPOMENTS MUST BE SAME AS MATERIAL LISTED IN BOM
2) TOTAL NUMBER OF CERAMIC TIPS OF SUPPLIED SMARTSCRAPER MUST BE SAME AS TOTAL NUMBER OF CERAMIC TIPS LISTED IN THE TABLE
3) REMOVE ALL THE SHARP EDGES AND BURRS FOR ALL K-SMARTSCRAPER® COMPONENTS.





BELT WIDTH	TOTAL NUMBER OF CERAMIC CLEANER TIPS	DIM "A" - O/ALL LENGTH OF CERAMIC CLEANER TIPS	DIM"B" - STEEL WIRE ROPE LENGTH	SPRING - ITEM 5
450	11	415	1070	SWG2, 110HT
500	13	491	1100	SWG2, 110HT
600	16	605	1250	SWG2, 110HT
750	19	719	1450	SWG2, 110HT
900	24	909	1700	SWG2, 110HT
1000	27	1023	1800	SWG2, 110HT
1050	28	1061	1900	SWG2, 110HT
1200	32	1213	2050	SWG00, 120HT
1400	38	1441	2300	SWG00, 120HT
1500	40	1517	2400	SWG00, 120HT

Item No.	Qty.	DwgNo	Description	Material
15		K3839	WASHER - SPRING M8	SS
14	4	K3839	BOLT - HEX HD M12 x 35LG + 1 x WASHER - FLAT M12+1 x NUT-HEX M12	SS 304
13	1	K3839	RECTANGULAR PLATE	SS 304
12	1	K3839	HOLDER - RECTANGLE PLATE	SS 304
11	4	K3839	STEEL WIRE ROPE CLIP - M5	SS 304
10	12	K3839	SS 304 WIRE ROPE SLEEVE	SS 304
9	32	K3839	CERAMIC CLEANER CHIP	CERAMIC
8	2	K3839	M16 BOLT & HEX NUT-TENSION SPRING	SS 304
7	4	K3839	STEEL WIRE ROPE CLIP - M8	SS 304
6	1	K3839	CIRCULAR PLATE	SS 304
5	1	K3839	SPRING - SEE TABLE	SPRING STEEL
4	2	K3839	ANGLE BRACKET	SS 304
3	2	K3839	STEEL WIRE ROPE	SS 304
2	1	K3839	DOME CAP	SS 304
1	1	K3839	HOLDER - DOME CAP	SS 304

DIMENSIONS IN MILLIMETERS — DO NOT SCALE — 3RD ANGLE PROJECTION

SCALE — DATE 29.10.15

DRAWN FZ — CHECKED CP — APPROVED

TITLE: Smartscraper Ceramic Tip Belt Cleaner

ORDER NO.

CUSTOMER

REF DWGS

MATERIAL STATUS — REVISIONS CONTROLLED DOCUMENT — DATA FROM DWG.

DIM IN mm: WHOLE No. | 1 DEC | 2 DEC | ANGLE
TOLS: ± 1.0 | ± 0.5 | ± 0.25 | ± 0.5°

A1

MATERIAL: — MASS:

KINDER BULK MATERIAL HANDLING SOLUTIONS
EMAIL: sales@kinder.com.au www.kinder.com.au

DRAWING NO. K3838 — REV. R1

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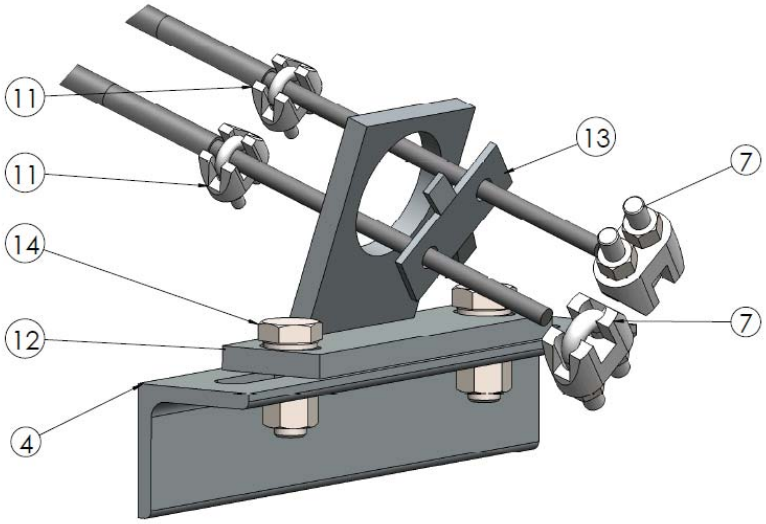
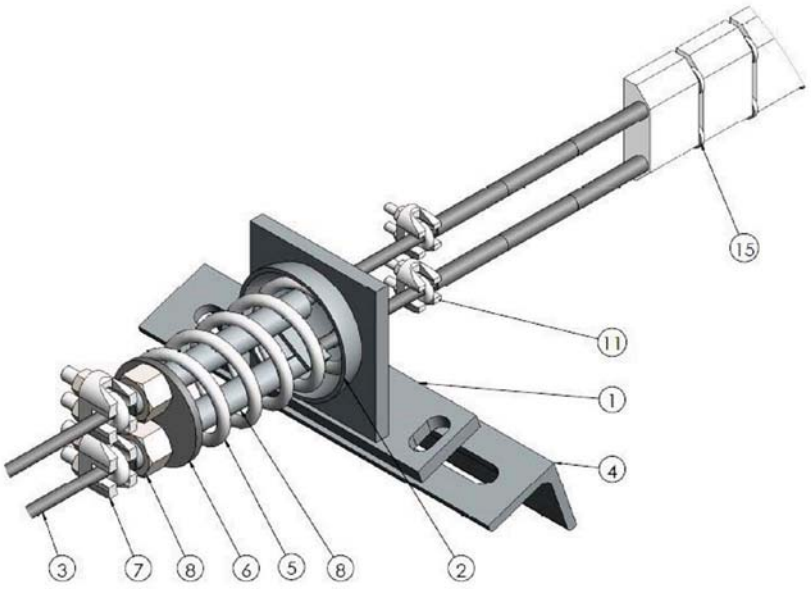


EXPLODED VIEW
ITEM 7 & 13 EXPLODED



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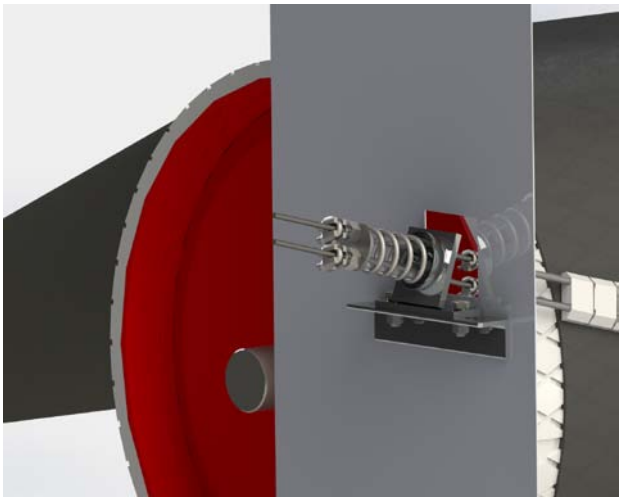
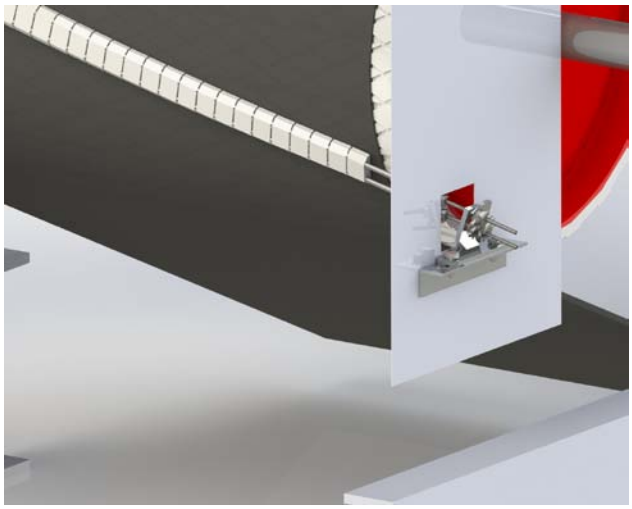
Temporarily weld both Angle brackets (item 4) in their suitable location. The Angle brackets can be installed above or below the cut out holes. Depending on your desired orientation, you may need to invert the “holder rectangle plate” and or the “Holder – dome cap” brackets.

Install all other parts to complete the assembly, insuring the flat faced ends of the ceramic chips are the leading cleaning edge. The pointed rear section is designed to stabilise the chip.





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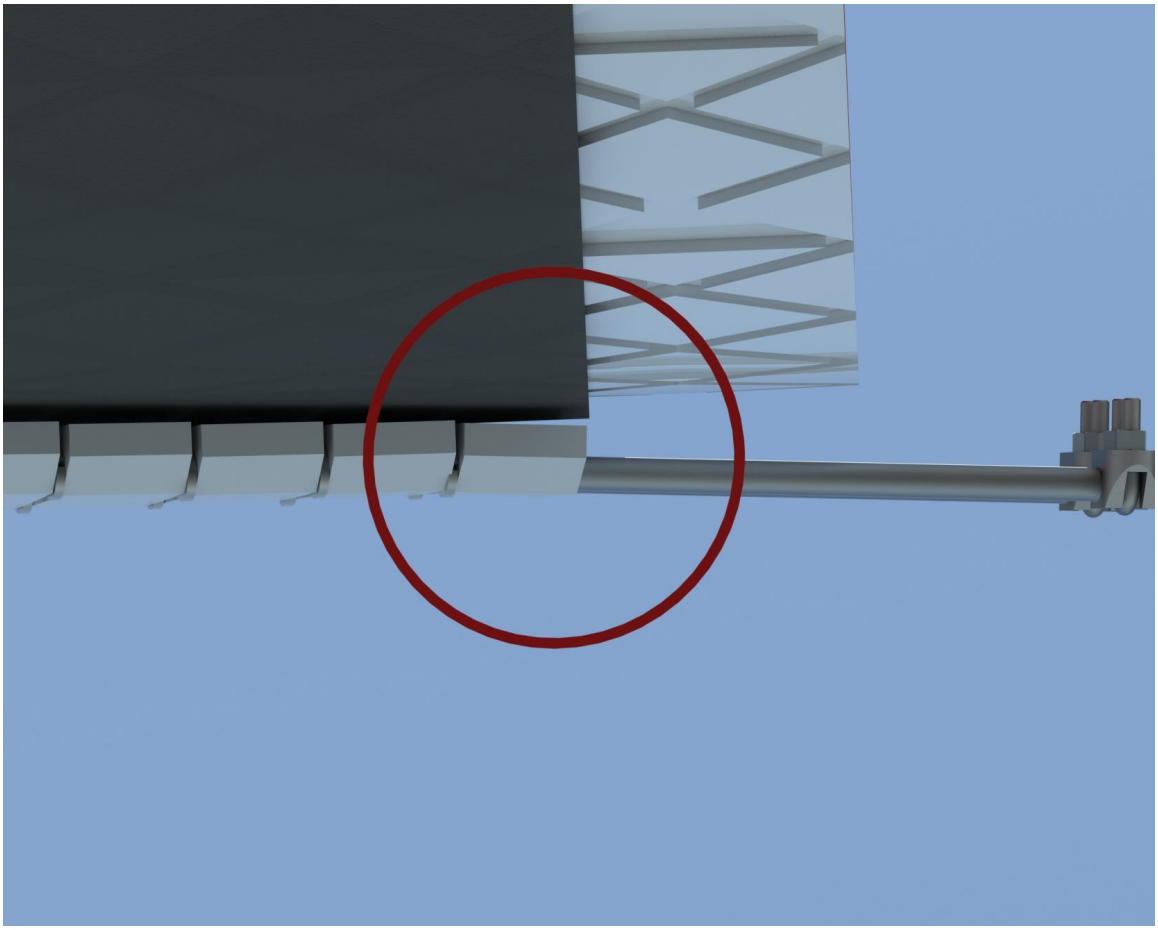
Step 8)

IMPORTANT NOTE: to reduce pressure build up occurring at the belt edge, the outer edge of each ceramic chip at either end of the K-Smartscraper® should sit approximately 2-3mm above/away from the surface of the conveyor belt.



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Step 9)

Using the table below, adjust the tensioning nuts (Refer - item 8) to achieve the required compression in the spring.

Belt Width (mm)	Compression (mm)
450	13
600	15
750	19
900	24
1000	26
1050	28
1200	32

Step 10)

Conduct a trial run first with temporary welding, allowing the conveyor to start and stop several times. Once you are happy with the installation, complete all welding.

Step 11)

Measure the compression length of the spring after running the conveyor for 2-3 days. Make any adjustments if necessary to re-tension.

Regular chip wear and tension inspections should be carried out as part of your normal maintenance routine.

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