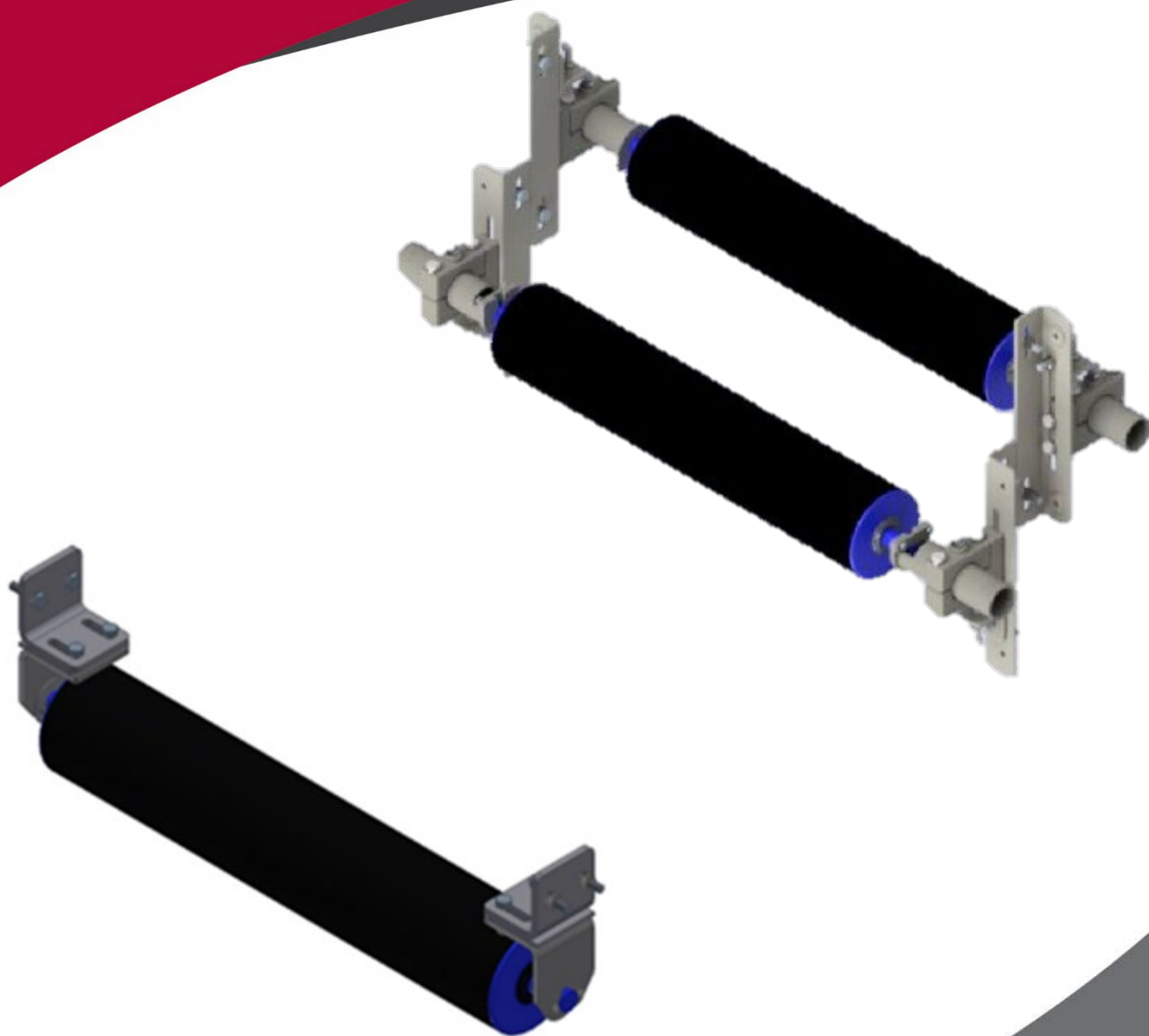


Pressure Stabilising Roller Assemblies



TSGlobal
Conveyor & Polyurethane Specialists

Installation, Operation and Maintenance Manual

Revision History

Rev	Date	Description	Document Owner
00	04/11/2015	TUFF Pressure/Stabilising Roller Assembly	Ray Macarthur
01	22/06/2023	Pressure/Stabilising Roller Assembly new template	Alexandra McBeath
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Section 1 – Important Information

General Information

TS Global is pleased that you have selected one of our products for your conveyor system.

This manual will assist in the understanding and operation of the product and allow it to perform at its maximum efficiency.

For safe and efficient operation, it is essential that the information and guidelines presented be properly understood and implemented. This manual will provide safety precautions, storage advice, installation instructions, maintenance procedures, recommended spares and troubleshooting tips.

If, however, you have any questions or problems that are not covered in this manual, please contact the nearest authorised distributor, or visit our website. www.tsglobal.net.au

All persons directly responsible for the installation, operation and maintenance of this product should read this manual thoroughly. Whilst we have attempted to make the installation and service tasks as simple as possible, optimum performance from the product will require correct installation, regular inspections, adjustments, and maintenance to maintain maximum efficiency.

User Benefits

Ensuring the correct installation and regular maintenance tasks are performed, our product will provide the following benefits to your operation:

- Increase conveyor availability and reliability.
- Reduced man-hour labour requirements.
- Lower maintenance costs.
- Increased service life for the cleaner and other conveyor components.
- Reduction in Safety Hazards around conveyor.
- Reduction in Environmental Impact.

Service Option

This product is designed to be easily installed and serviced by your on-site personnel, however, if you would prefer a complete turn-key service, please contact TS Global for a list of your nearest distributors.

Warranty

The warranty provided by TS Global Pty Limited (“TS Global”) is set out in the TS Global Terms and Conditions of Sale at clauses 6.1 to 6.5 inclusive. Those clauses are set out below: -

6.1 Subject to these conditions of sale, TS GLOBAL warrants that the Goods are free of defects both in material and workmanship and are of merchantable quality. The liability of TS GLOBAL pursuant to this warranty or any other warranty implied by operation of any statute including the Competition and Consumer Act 2010 (Cth) (as amended) shall be limited to the cost of replacing defective Goods, the cost of obtaining equivalent Goods, or the cost of repairing the Goods at TS GLOBAL’s discretion provided that in all such cases any costs of dismantling and reassembly shall be borne by the Customer.

6.2 The warranty set out at clause 6.1 is subject to the following:

- a) the warranty applies for a period of 12 months commencing on the date of invoice of the Goods;
- b) the warranty does not apply to consumable components that are subject to normal wear and tear;
- c) the Customer must provide TS GLOBAL with either an invoice number or purchase order number referencing the defective Goods;
- d) the defects to the Goods must have arisen solely from faulty materials or workmanship; and
- e) the damage to the Goods must not arise from:
 - i. incorrect installation of the Goods contrary to the instructions contained within TS Global’s Installation and Operation Manuals;

- ii. improper adjustment, calibration or operation by the Customer;
- iii. the use of accessories including consumables, hardware, or software which were not manufactured by or approved in writing by TS GLOBAL
- iv. any contamination or leakages caused or induced by the Customer
- v. any modifications of the Goods which was not authorised in writing by TS GLOBAL;
- vi. any misuse of the Goods by the Customer;
- vii. any use or operation of the Goods outside of the physical, electrical or environmental specifications of the Goods;
- viii. inadequate or incorrect site preparation;
- ix. inadequate or improper maintenance of the Goods; or
- x. incorrect handling of the Goods.

6.3 If the Goods are not manufactured by TS GLOBAL the guarantee of the manufacturer of those Goods is accepted by the Customer and is the only guarantee given to the Customer in respect of the Goods. TS GLOBAL agrees to assign to the Customer on request made by the Customer the benefit of any warranty or entitlement to the Goods that the manufacturer has granted to TS GLOBAL under any contract or by implication or operation of law to the extent that the benefit of any warranty or entitlement is assignable.

6.4 Except as provided in these conditions, all express and implied warranties, guarantees and conditions under statute or general law as to merchantability, description, quality, suitability, or fitness of the Goods for any purpose or as to design, assembly, installation, materials or workmanship or otherwise are expressly excluded. TS GLOBAL is not liable for physical or financial injury, loss, or damage or for consequential loss or damage of any kind arising out of the supply, layout, assembly, installation or operation of the Goods or arising out of TS GLOBAL's negligence or in any way.

6.5 Nothing in these conditions shall be read or applied so as to exclude, restrict or modify or have the effect of excluding, restricting or modifying any condition, warranty, guarantee, right or remedy implied by law (including the Competition and Consumer Act 2010) and which by law cannot be excluded, restricted or modified.

This Warranty Statement must be read in conjunction with TS Global's Terms and Conditions of Sale which can be located on our website www.tsglobal.net.au

Section 2 – Safety Considerations, Precautions and Correct Storage

Before installing, operating, inspecting, or maintaining this product, it is important to follow and understand all relevant site and statutory regulations. Please review the following safety information.



All statutory and site regulations must be followed before undertaking the following activities. Failure to follow site safety procedures exposes workers to uncontrolled hazards which can result in serious injury or in extreme cases, fatality.

Personal Protective Equipment (PPE) must be worn to control the foreseeable hazards associated with conveyor belts. Confined space, tensioning devices and heavy components create a worksite that may expose a worker to harm. Mechanical devices such as cranes or chain blocks can reduce exposure to harm.

Once hazards have been identified, the installer should undertake written Job Hazard Analysis according to site requirements. The installer must identify all hazards and apply appropriate controls before proceeding with the installation or servicing of this equipment.

There are installation, maintenance and operational activities involving both isolated and operating conveyors. Each has a safety protocol, and it is your responsibility to be familiar with the site's requirements.

Operating Conveyors

There are two routine tasks that should be performed while the conveyor is running:

- Inspecting the performance and operation of the product.
- Dynamic troubleshooting.

Isolated Conveyors

The following activities are performed on isolated conveyors:

- Installation
- Parts replacement
- Repair
- Cleaning

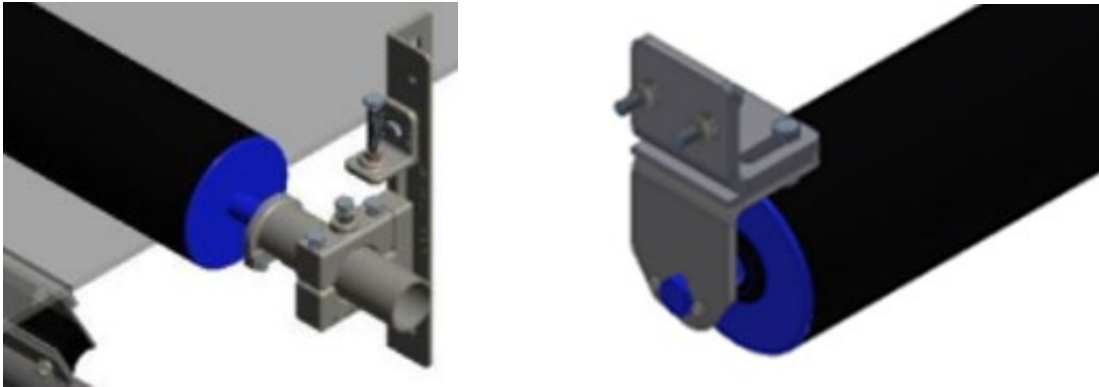
Correct Storage

Provided goods remain stored within boxes or on pallets wrapped with plastic, TS Global products can be stored outside in all weather conditions. If packaging is damaged or removed, TS Global recommends that the products be stored under cover and out of direct sunlight to minimise deterioration of any componentry.

Section 3 – Choosing the Correct Kit for the application.

TS Global Offer two different pressure roller mounting kits.

- Adjustable pressure roller kit (shown Left) which provides simple access and adjustment of the pressure roller to the belt.
- Fixed Pressure Roller Kit (shown Right) provides secure mounting for rollers with limited side clearance and access.



Both Fixed and adjustable roller kits are available with a 14mm or 22mm slot for the roller. When choosing which pressure roller kit consider the following-

The Adjustable Mounting Bracket

Advantages:

- Accurate adjustable belt and roller height positioning for the belt cleaners.
- Easily adjustable tension on the belt for belt stability and roller loading.
- Keeper Plate secures the roller shaft to prevent the roller falling out when belt tension is released.
- Standard availability for 14mm and 22mm roller slots
- Easy roller removal and replacement.
- Uses standard roller from site.
- Easily adjusted for roller width.

Disadvantages:

- Belt wander may hit Mounting bracket in some cases where it is mounted inside the back of a chute or conveyor structure.

The Fixed Mounting Bracket

Advantages:

- Suitable for mounting between conveyor stringers with minimal space
- Suitable to mount from inside the back of a chute.
- Roller position is fixed for constancy after roller replacement.
- The washer secures the roller shaft to prevent the roller falling out when belt tension is released.
- Mounting brackets are well clear of any belt wander.

Disadvantages:

- Generally, it is not easily adjustable once installed.
- More difficult to change the roller in most circumstances.
- Spacers must be used to adjust roller to belt pressure.

Section 4 – Installation Instructions

Adjustable Mounting Kit Installation Instructions

Checklist

- Check that the product size is correct for the belt width and site rollers.
- Check the product and make sure all the parts have been supplied.
- Review the “Tools Needed” listed in section 4 of the Installation instructions.
- Check the conveyor site:
 - Will the product be installed on or in a chute?
 - Is the install on an open stringer requiring mounting brackets?

Before you begin:

- Familiarise yourself with the main components of this product (Fig. 1a).
- Determine the install location and check for clearances (Figs. 1b).
- Follow all safety precautions and site hot work procedures when using a cutting torch.
- If welding, protect all fastener threads and the belt from Hot material.

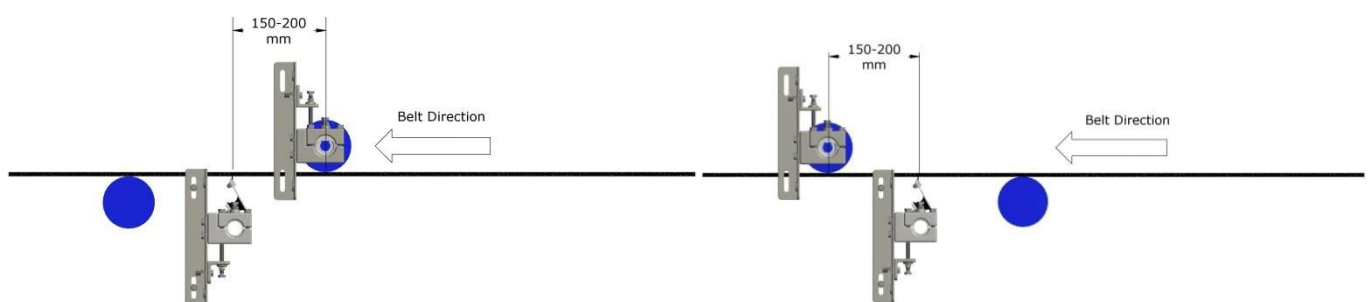
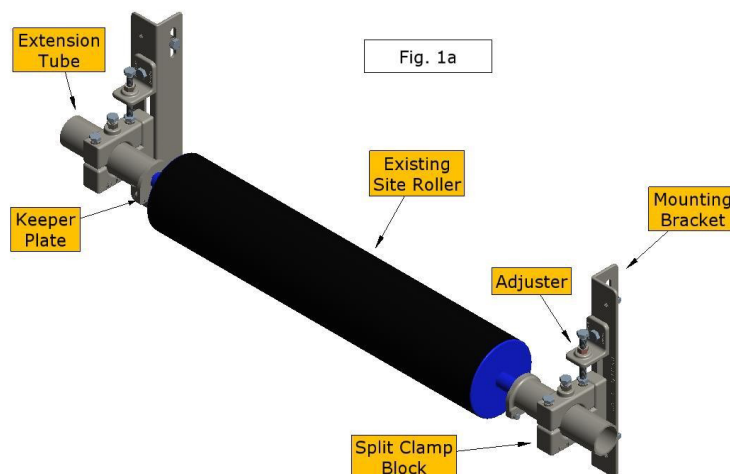


Fig. 1b

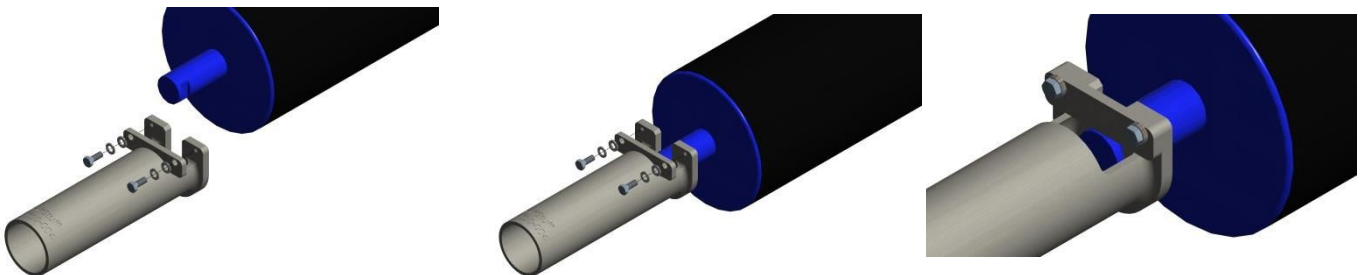
Suggested Tools Required for Installation

- Spanners- 19mm and 10mm
- 300mm Adjustable Wrenches
- Measuring Tape and Steel Rule
- Drill and 13mm drill bits
- Angle Grinder
- Welding and Cutting Equipment as per site compliance.
- Square and Spirit Level,
- Marking Pen
- (2) 150mm G Clamps

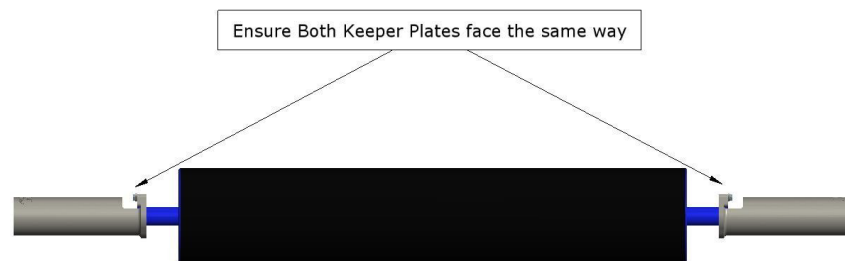
Step 1

Locate the extension tube on end of the roller and fit over the mounting slot in the return roller.

Fit the keeper plate in position and secure with fasteners supplied.

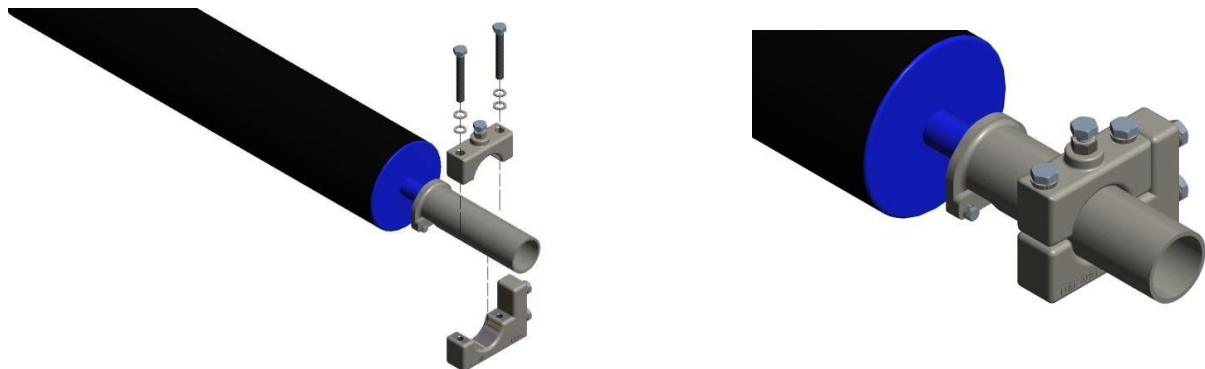


Repeat on the opposite side ensuring that the keeper plates on both sides are facing the same way.



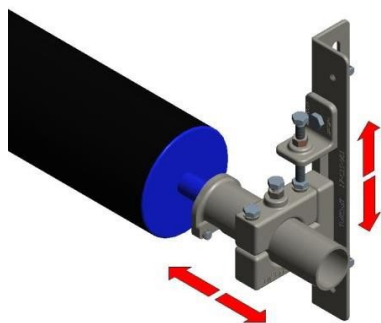
Step 2

Install the Split Clamp Blocks onto the extension tubes and lightly tighten all bolts. (Note the mounting assemblies will come pre-assembled)

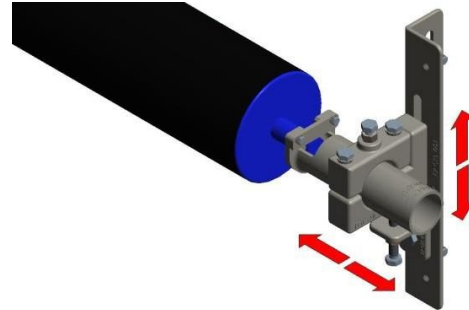


Step 3

Fit the two adjuster angles onto the mounting brackets and secure in position using the fasteners supplied. Ensure that these adjuster angles are positioned vertically to facilitate the next step which is to adjust the roller and adjuster blocks into position i.e.: the roller must have slight clearance above or below the belt at this time. Ensure the roller is square to the belt centreline and lock the adjusting blocks into position.



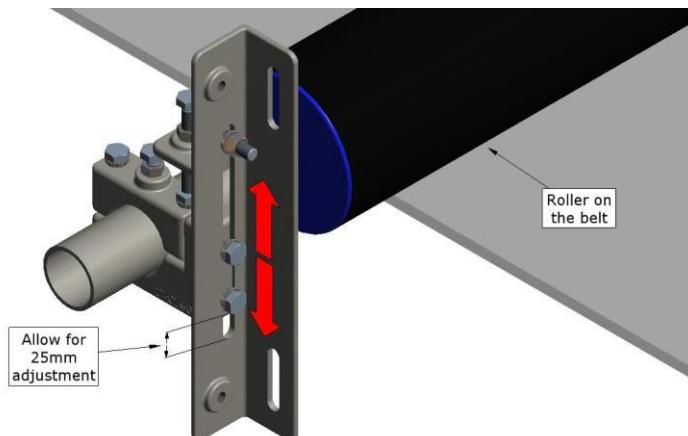
Assembly for roller above the belt



Assembly for roller below the belt

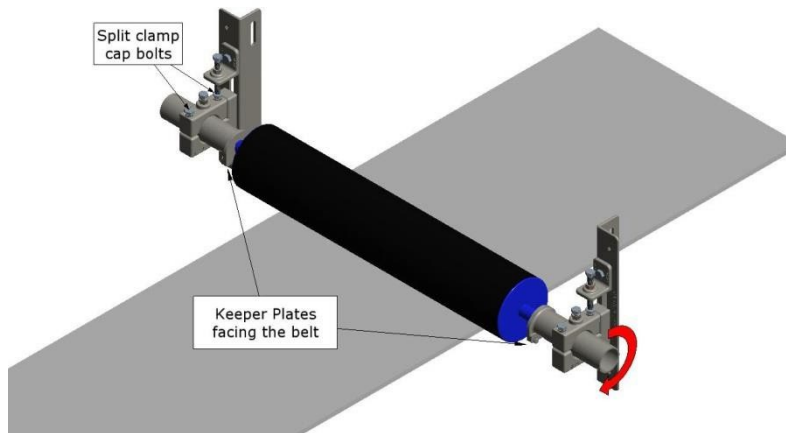
Step 4

Pass the return roller across or below the conveyor belt and secure in a safe manner, ready for installation. Adjust the mounting assemblies to best suit the attachment points. Based on the site configuration of the conveyor structure and surrounding steelwork weld or bolt the slotted mounting brackets into position on either side of the belt, ensuring sufficient vertical adjustment to facilitate installation and future removal of the return roller.



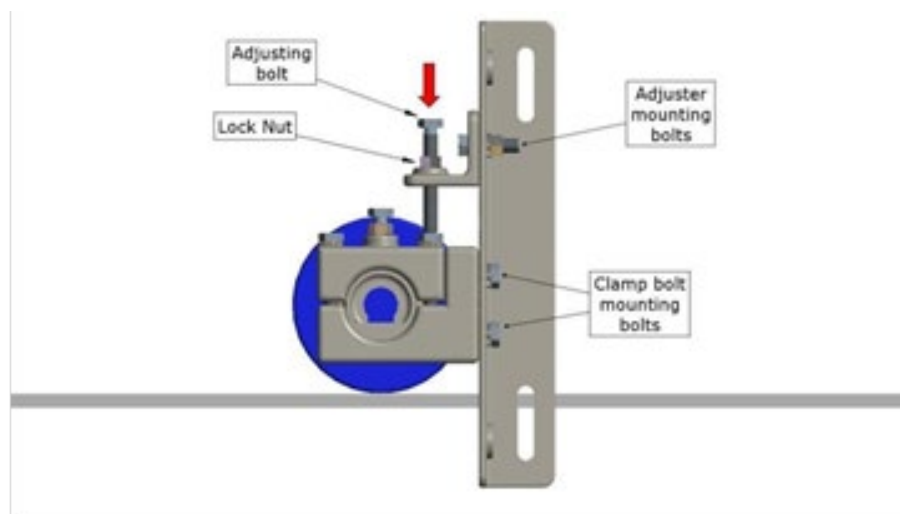
Step 5

Loosen the split clamp cap bolts and rotate the extension tubes such that the keeper plates are facing the belt. This is to ensure that the extension tubes are forcing the roller onto the belt and not the keeper plate. Make sure that the roller is positioned centrally to the belt in the horizontal plane.



Step 6

Tighten the Adjuster mounting bolts. Loosen the split clamp mounting bolts and using the adjusting bolts adjust the roller to contact the belt, obtaining an even contact pattern across the full width of the belt. Only light tension is required.



Step 7

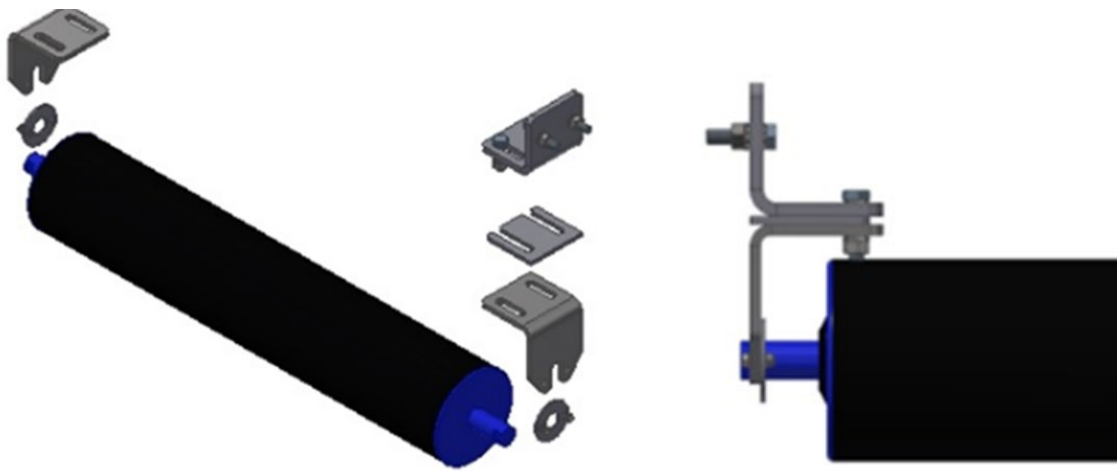
- Check that even contact has been applied across the belt.
- Check security of all mounting brackets and ensure that all fasteners have been tightened.

Section 4 – Installation Instructions

Fixed Mounting Kit Installation Instructions

The Fixed Mounting Pressure Roller Kit Parts

- 2 x Mounting Angle bracket.
- 4 x M12 Stainless Steel Set Screws.
- 2 x Packers.
- 2 x Roller Bracket.
- 2 x Keeper washers with M6 retaining screws.
- The roller is not included must be provided separately.



Checklist

- Check that the product size is correct for the belt width and site rollers.
- Check the product and make sure all the parts have been supplied.
- Review the “Tools Needed” listed in section 4 of the Installation instructions.
- Check the conveyor site:
 - Will the product be installed on or in a chute?
 - Is the install on an open stringer requiring mounting brackets?

Before you begin:

- Familiarise yourself with the main components of this product (Fig. 1a).
- Determine the install location and check for clearances (Figs. 1b).
- Follow all safety precautions and site hot work procedures when using a cutting torch.
- If welding, protect all fastener threads and the belt from weld spatter.

Suggested Tools Required for Installation

- Spanners- 19mm and 10mm.
- 300mm Adjustable Wrenches.
- Measuring Tape and Steel Rule.
- Drill with 13mm drill bits.
- Angle Grinder.
- Welding and Cutting Equipment as per site compliance.
- Square and Spirit Level.
- Marking Pen.

- (2) 150mm G Clamps.

Step 1

Locate the roller brackets on end of the roller and fit over the mounting slot in the return roller.

Fit the keeper plate washer in position and secure with the fasteners supplied.

Repeat on the opposite side ensuring that the keeper plates on both sides are facing the same way.



Step 2

Assemble the mounting bracket onto the roller bracket.

Note: The packer is only used if required to adjust the roller pressure onto the belt.



Step 3

Safely pass the return roller across the conveyor belt in the desired position. Use the roller with the brackets to mark out the position that the roller is required.

Use a level along the roller shell to ensure the roller is level. Measure the bracket to structure to ensure the roller is square to the belt so that it does not affect belt tracking.

Step 4

Based on the site configuration of the conveyor structure and surrounding steelwork, weld or bolt the slotted mounting brackets into position on either side of the structure.

Ensure sufficient access to facilitate installation and future removal of the return roller.

Make sure that the roller is level and positioned centrally to the belt in the horizontal plane.

Step 5

- Check that even contact has been applied across the belt and roller is level and square to the belt.
- Check security of all mounting brackets and ensure that all fasteners have been tightened.
- Use the packer to adjust the roller pressure onto the belt if required.

Section 5– Pre-Operation Checklist and Testing

Pre-Operation Checklist

- Recheck that all fasteners are tightened properly.
- Check the roller contact area on the belt.
- Be sure that all installation materials and tools have been removed from the belt and the conveyor area.

Test Run the Conveyor

- Remove isolation.
- Run the conveyor for at least 15 minutes and inspect the product performance.
- Check all components for proper positioning and tensioning.
- Adjust as necessary. In some case this may require isolation of the conveyor.

NOTE: Observing the product when it is running and performing properly will help to detect problems. If vibration occurs or material passing tips refer to section 6.

Section 6 – Maintenance

TS Global products are designed to operate with a minimum maintenance, however, to maintain superior performance some service is required. When the product is installed, a regular maintenance program should be established. This program will ensure that the product operates at optimal efficiency and problems can be identified and rectified before reduction in performance occurs.

Routine Visual Inspection (Recommended every 4 weeks)

A visual inspection of the cleaner and belt can determine:

- If roller is set correctly.
- If the belt looks clean or if there are areas that are dirty.
- If the roller is worn out and need to be replaced.
- If there is damage to other cleaner components.
- If fugitive material is built up on the cleaner or in the transfer area.
- If there is cover damage to the belt.
- If there is vibration or bouncing of the cleaner on the belt.
- If a snub pulley is used, a check should be made for material build up on the pulley.
- Significant signs of carry back.

If any of the above conditions exist, a determination should be made on when the conveyor can be stopped for maintenance.

Routine Physical Inspection (Recommended every 3 months)

When the conveyor is not in operation and isolated, undertake a physical inspection of the product to perform the following tasks:

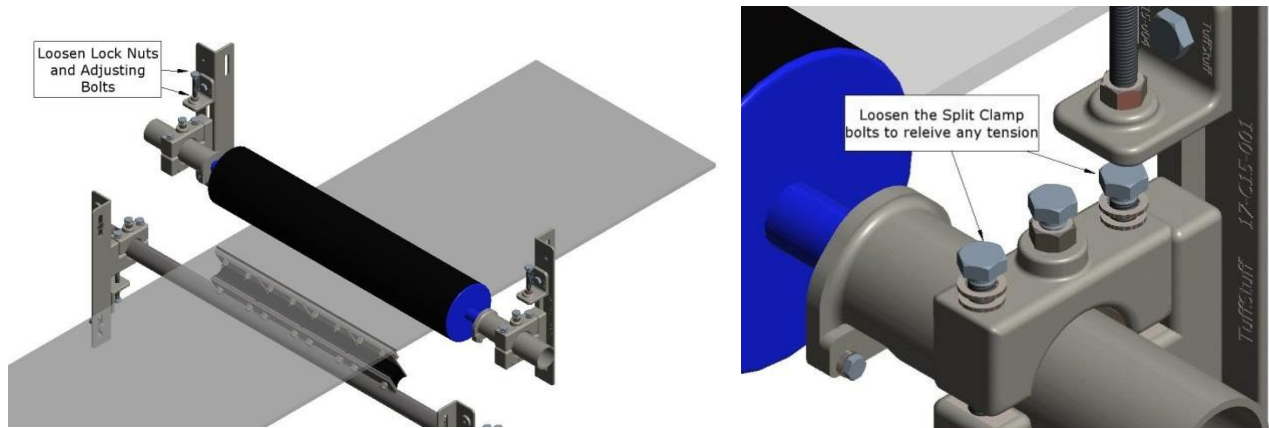
- Clean material build-up off cleaner.
- Closely inspect the roller for wear and any damage and replace if needed.
- Ensure full contact of roller across belt.
- Inspect all fasteners for tightness and wear. Tighten or replace as needed.
- Replace any worn or damaged components.
- Check the tension of the roller to the belt. Adjust the tension if necessary, using the steps in section 4 or 6.
- When maintenance tasks are completed, test run the conveyor to ensure the cleaner is performing correctly.

Roller Replacement Instructions for adjustable pressure roller kit

Prior to commencing roller replacement, isolate conveyor as per site regulations.

Step 1

Loosen the Lock nuts and Adjusting bolts and then loosen the Split Clamp bolts to relieve any tension from the roller.



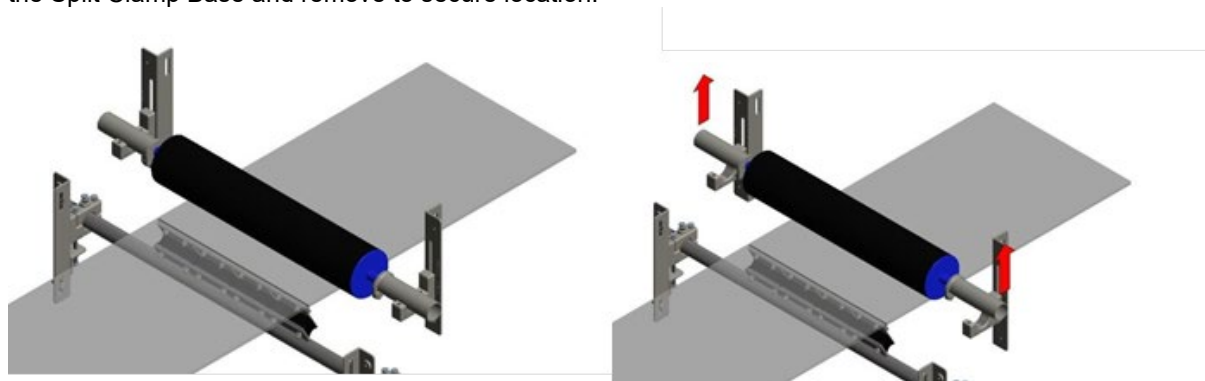
Step 2

Remove the Adjusters and the Split Clamp Caps and place in a secure position.



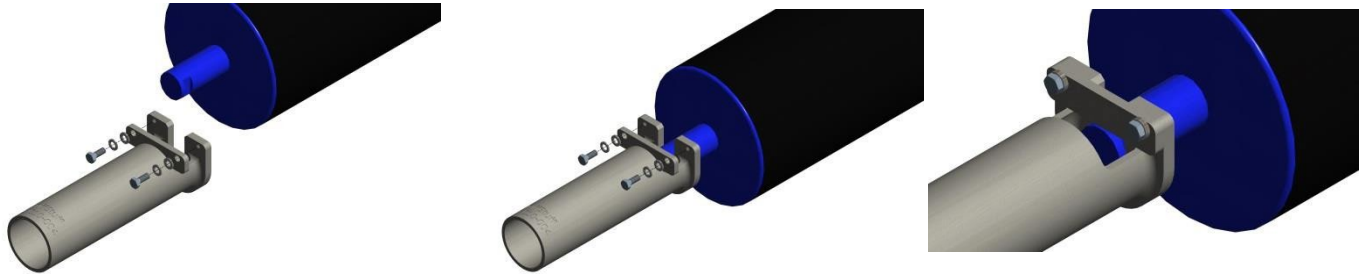
Step 3

With Clamp Blocks removed the roller will be supported in the Split Clamp Base. Safely lift the roller out of the Split Clamp Base and remove to secure location.

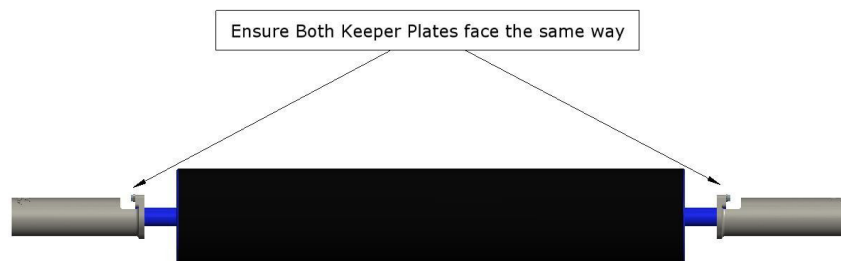


Step 4

Locate the extension tube on end of the roller and fit over the mounting slot in the return roller. Fit the keeper plate in position and secure with fasteners supplied.

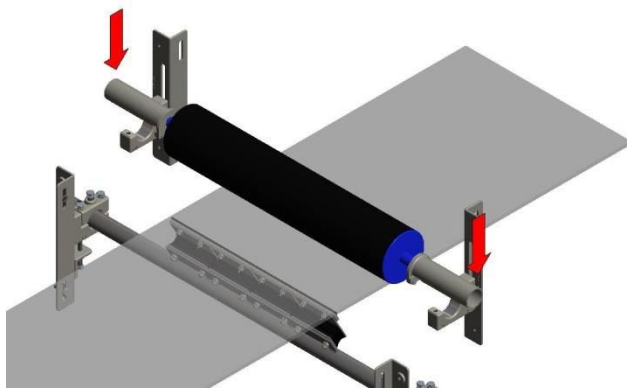


Repeat on the opposite side ensuring that the keeper plates on both sides are facing the same way.



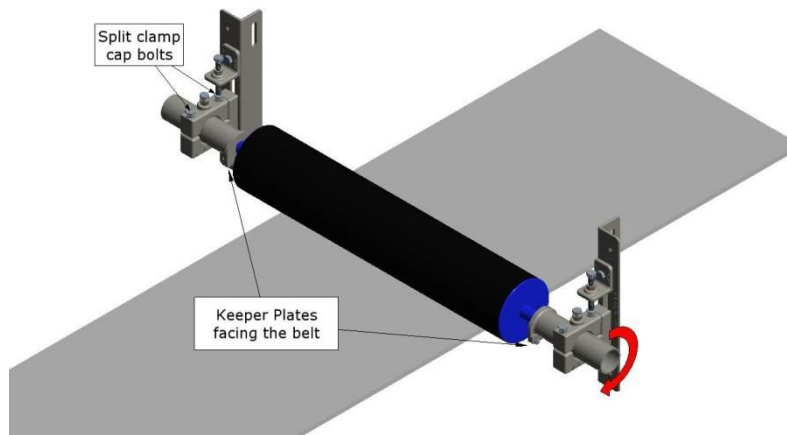
Step 5

Locate the extension tube on end of the roller and fit over the mounting slot in the return roller. Fit the keeper plate in position and secure with fasteners supplied.



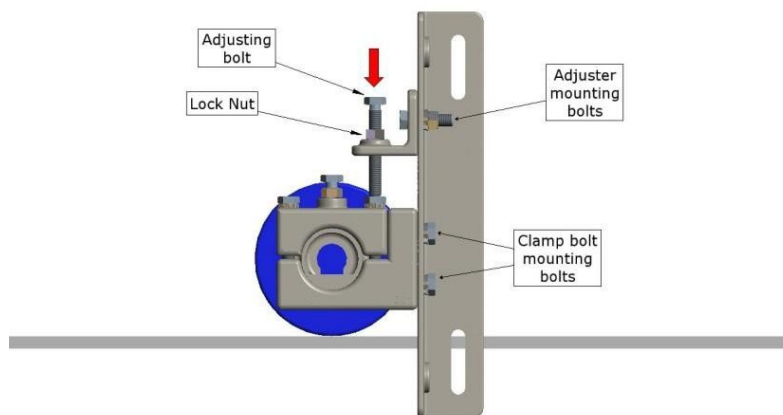
Step 6

Loosen the split clamp cap bolts and rotate the extension tubes such that the keeper plates are facing the belt. This is to ensure that the extension tubes are forcing the roller onto the belt and not the keeper plate. Make sure that the roller is positioned centrally to the belt in the horizontal plane.



Step 7

Tighten the Adjuster mounting bolts. Loosen the split clamp mounting bolts and using the adjusting bolts adjust the roller to contact the belt, obtaining an even contact pattern across the full width of the belt. Only light tension is required.



Step 8

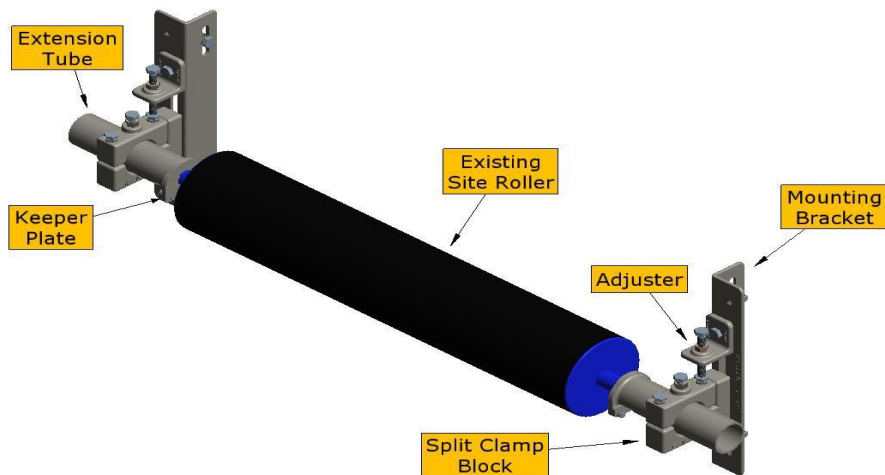
- Check that even contact has been applied across the belt.
- Check security of all mounting brackets and ensure that all fasteners have been tightened.

Section 7 – Troubleshooting

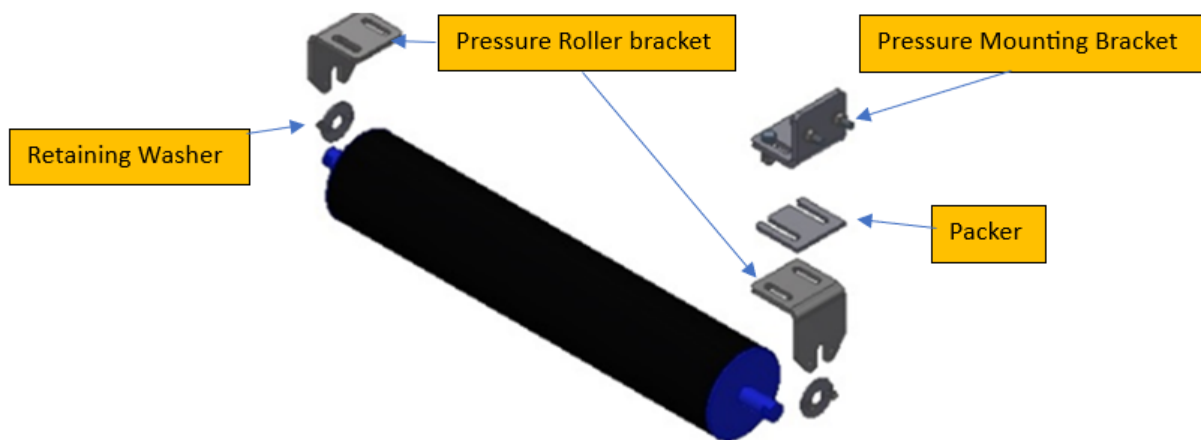
Problem	Possible cause	Possible solution
Vibration	Faulty Roller	Replace Roller
	Material Build Up on Roller	Clean Roller
	Mounting Bolts Loose	Tighten All fasteners
	Belt Flap	Adjust Pressure Roller
	Roller Over tensioned	Adjust Pressure Roller
	Roller under-tensioned	Adjust Pressure Roller
Material build-up on cleaner	Cleaners not functioning effectively	Ensure cleaner is set up properly (check tip angle with gauge)
	Build-up in chute	Ensure cleaner is not located too close to back of chute, allowing build up
	Cleaner being overburdened	Install additional TS Global secondary cleaners
	Excessive sticky material	Frequently clean unit of build-up. Introduce Spray Bar and Water Control Manifold
Roller falls out	Keeper plate fails due to bolts shearing from the pressure applied to bolts.	Rotate pipe adaptor as item has been installed incorrectly. Slot must always face down.
Noise	Roller moving within slot of the Fixed angle bracket or Adaptor pipe.	Ensure correct roller selection has been made, this is identified when initially mounting either kit. 1mm clearance within slot

Section 8 – Replacement Parts

Refer to Drawings.



Pressure Stabilising Roller Parts Table	
Description	Part Number
Tuff Universal Mounting Bracket	17-C15-001
Tuff Clamp Block	17-C14-002
Tuff Adjuster Bracket	17-C15-004
Adaptor Pipe Suit 14 AF Slots	22-C10-003
Adaptor Pipe Suit 22 AF Slots	22-C10-004
Tuff Pressure Roller Fixed Angle Roller Bracket	22-C10-007
Tuff Pressure Roller Fixed Angle Packer	22-C10-006
Tuff Pressure Roller Fixed Angle Roller Mount	22-C10-005
Retaining Washer	50-C11-022





TSGlobal

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