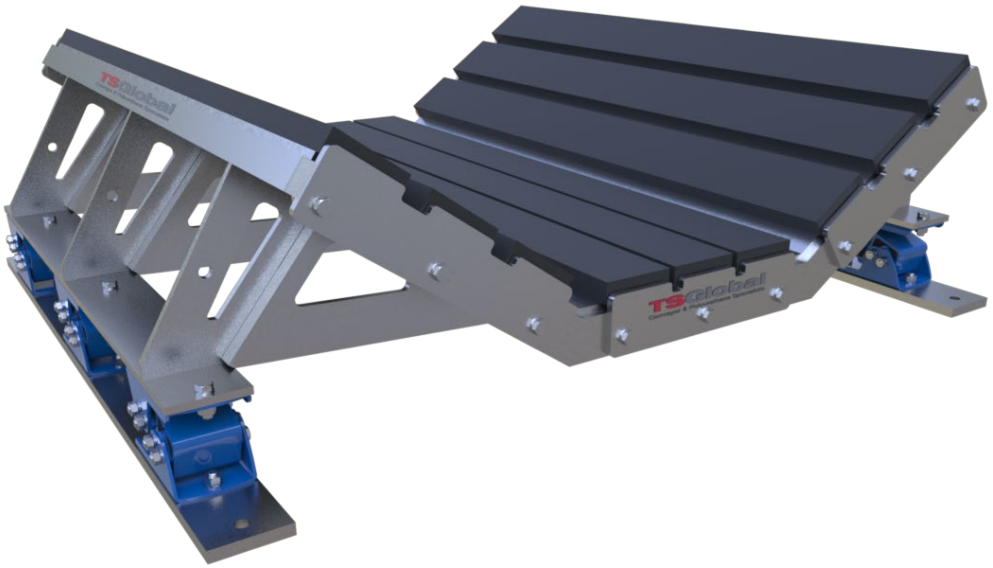
Impact Bed

Standard Type



TSGlobal
Conveyor & Polyurethane Specialists

Installation, Operation and Maintenance Manual

Revision History

Rev	Date	Description	Document Owner
01	7/02/2022	Impact Bed Standard Type	Jamie Whybrow
02	12/7/2023	Parts table updated	Edward Harriden

Contents

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 expose 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 sites 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 – Installation Instructions

Checklist

- All TS Global impact beds are manufactured to suit individual applications. Check that the correct product is being installed on the conveyor. Typically, the conveyor number will be stamped on the rating plate on the side of the unit.
- Check the product and make sure all the parts have been supplied.
- Review the "Tools Needed" listed on page 8 of the Installation instructions.
- Check the installation location: will the cleaner have clearance inside chute.

Before you begin:

- Familiarise yourself with the main components of this product (Fig. 1).
- Determine the install location and check for clearances (Fig. 2).
- Follow all safety precautions and site hot work procedures (as required).
- Protect all fastener threads and the belt from Hot material.

Note: TS Global belt cleaners have been designed to be flexible in installation. If conveyor head chute or structure needs to be modified, seek engineering approval from your site contact, prior to undertaking modification.

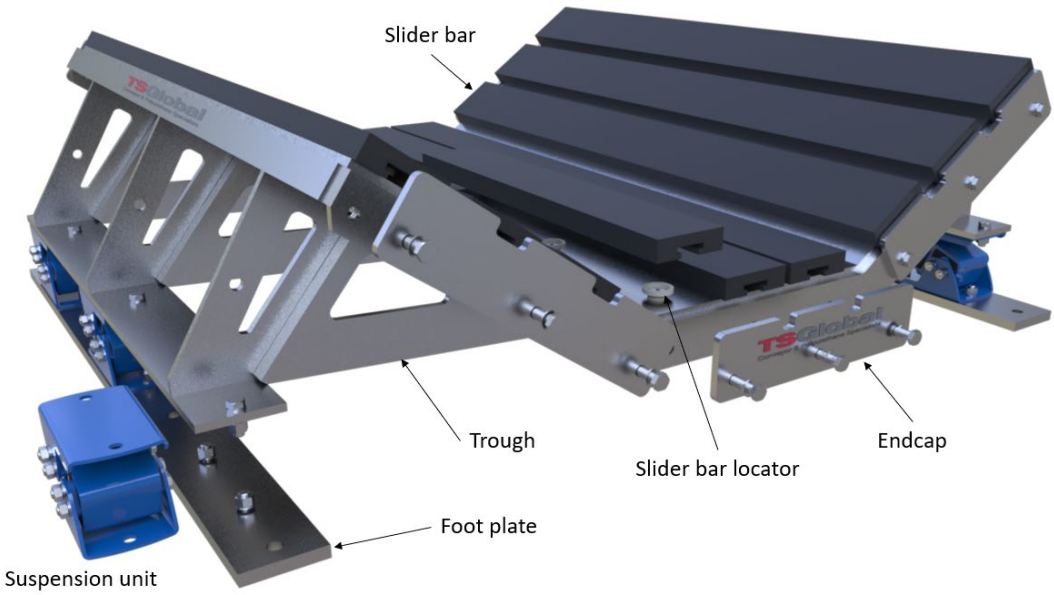


Figure 1: Major components

Lock out and tag out

Before commencing work, ensure that the conveyor being worked on, and any upstream conveyors are properly isolated in compliance with regulatory and site procedures. Ensure that the transfer point, conveyor, and upstream conveyor(s) are cleared of any product.

Conduct a full Job Hazard Analysis (JHA) compliant with site requirements of the work area and prepare a job plan based on the instructions provided here. Note that the installation instructions provided should be regarded as typical recommendations and may not fully reflect site conditions and/or safety requirements.

Remove Guarding and hard skirts

To install the impact bed, the belt must be lifted to provide sufficient clearance. Where required, remove transfer point guards and hard skirts to allow the belt to be lifted. Typically, sufficient clearance to replace a roller frame will be required.

Lift the belt

Using a purpose-built belt lifter and/or chain puller with suitably rated slings, lift the belt away from the idlers.

Remove existing impact rollers and idler frames

Remove all idler frames in the impact area to be covered by the impact bed. Note that when installation is complete, an idler frame will be placed 100mm from each end of the impact bed.

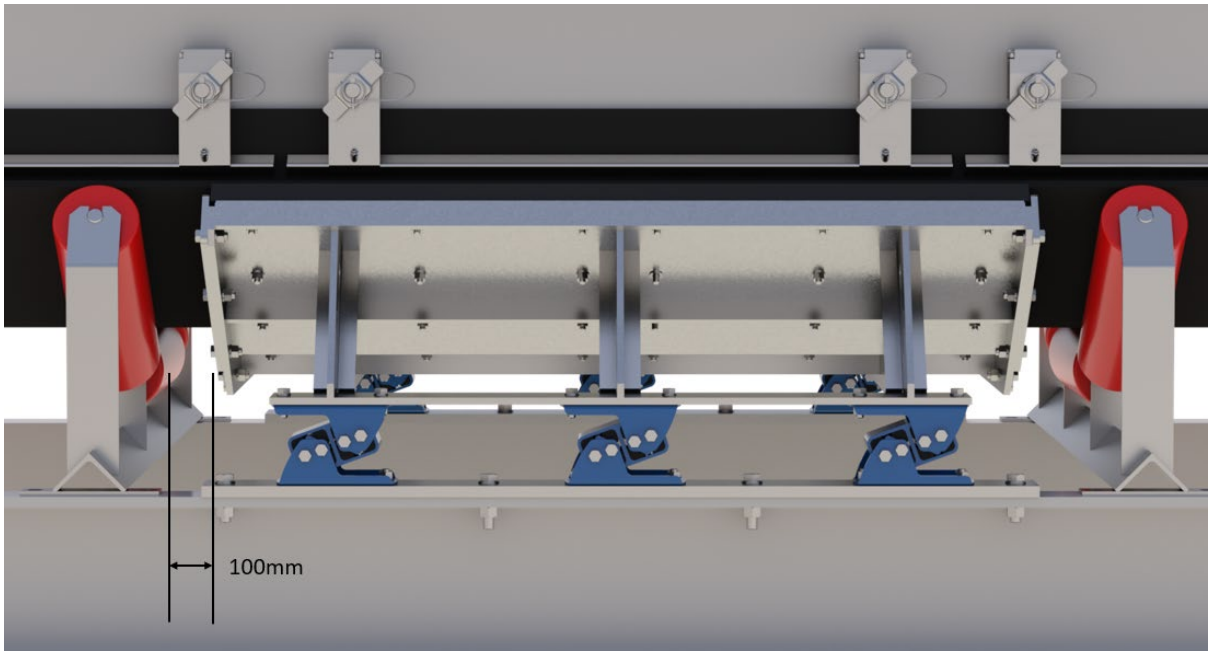


Figure 2: Final installation showing adjacent rollers

Install trough and dynamic spring support assembly.

Bolt down the assembly using the outer bolts only, to snug-tight condition.

Note the orientation of the suspension units relative to the belt direction.

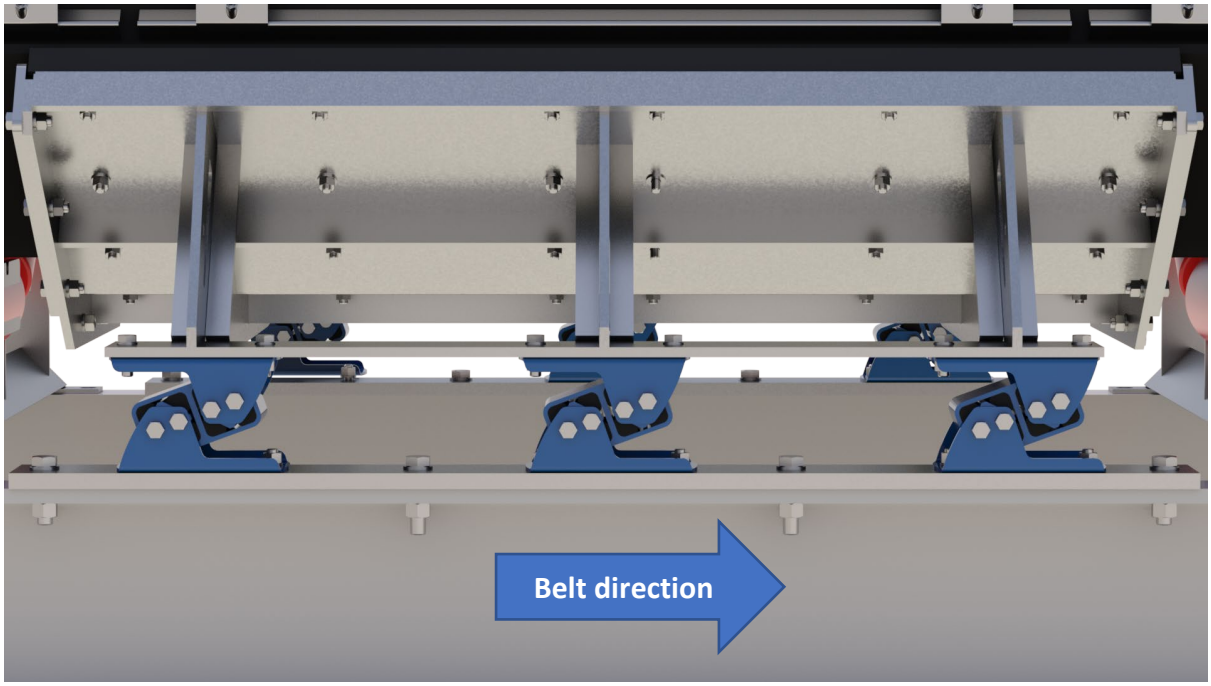


Figure 3: Trough and suspension unit assembly in place.

Install adjacent roller frames (if not done so already)

A roller frame should be placed approximately 100mm from each end of the table. This reduces drag on the impact bed and increases the life of the slider bars

Lower the belt and realign the trough assembly if required

Ensure that the side slider bars are just touching the belt, but not pressing into it.

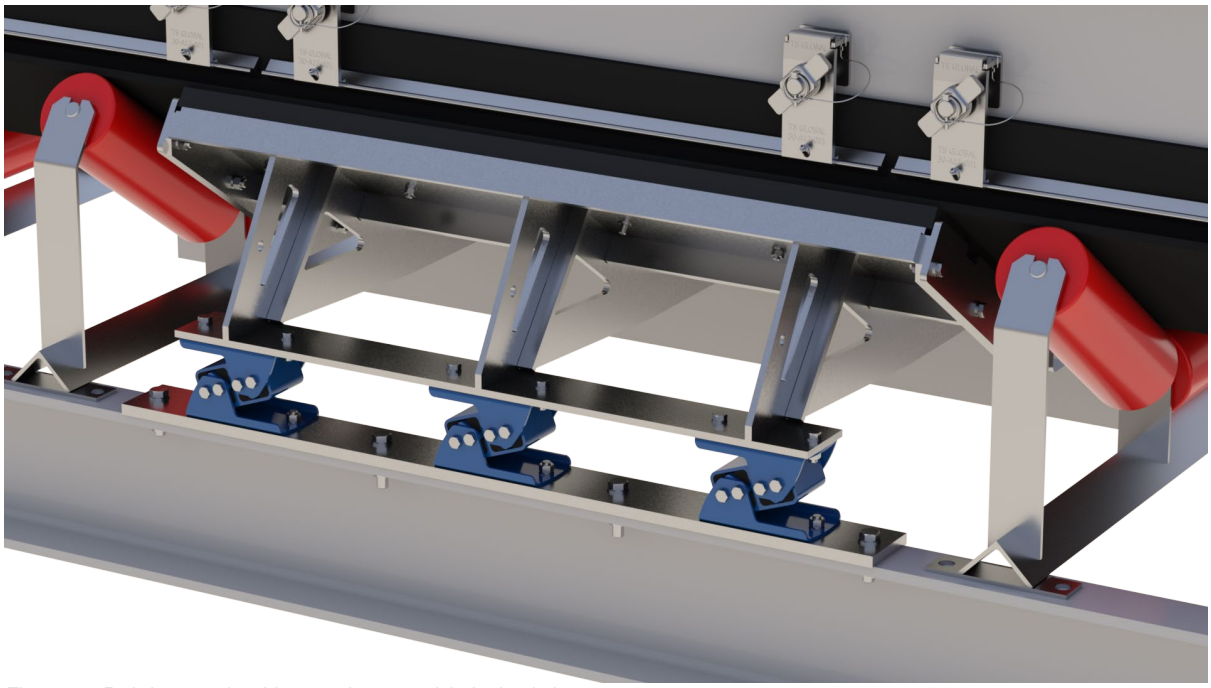


Figure 4: Belt lowered, with trough assembly bolted down

When the trough assembly is in place, match drill any remaining holes and bolt down tightly.

Section 4 – Pre-Operation Checklist and Testing

Pre-Operation Checklist

- Recheck that all fasteners are secured.
- Check that al guarding has been replaced.
- Be sure that all installation materials and tools have been removed from the belt and the conveyor area.

Test Run the Conveyor

- Remove isolation in line with site procedures.
- Run the conveyor for at least 15 minutes and check for any dislodged slider bars or wear to slider bars that may suggest misalignment.
- Introduce feed to the conveyor and observe deflection of suspension units. Under full load, maximum deflection at any time should be around 10-15mm. If the suspension units can be seen to be 'bottoming out', tonnage may be higher than expected and the table design may need to be reviewed. Contact TS Global if this is the case.
- Check for material leakage around the skirt area. Adjust external skirting rubber and/or skirt support location if excessive leakage is noted.
- 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 excessive noise or material leakage is observed, refer to section 6 – troubleshooting.

Section 5 – Maintenance

TS Global products are designed to operate with minimum maintenance, however, to maintain superior performance periodic checks are recommended. When the product is installed, a regular inspection and 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)

- Check for wear on the slider bars. If the level of the slider bar on the ends is flush with the top of the endcaps, replacement may be necessary.

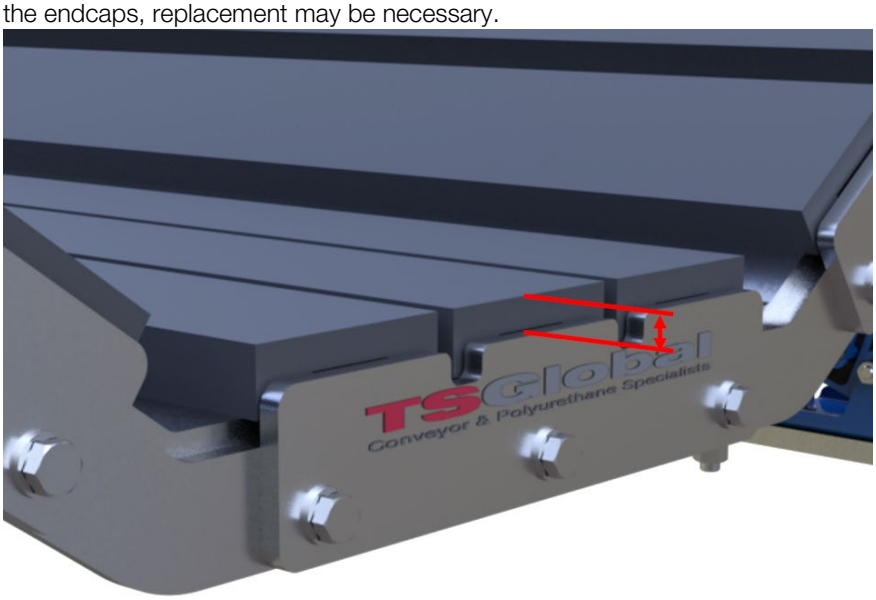


Figure 5: Visual check of slider bar wear

- Check for deformation / cracking on structural components.
- 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:

- Remove one or two end rollers.
- Check for wear on the slider bar endcaps. If the machined slot on the slider bars can be observed with the endcap in place, consider replacement.
- Remove the slider bars and check for wear at the centre.

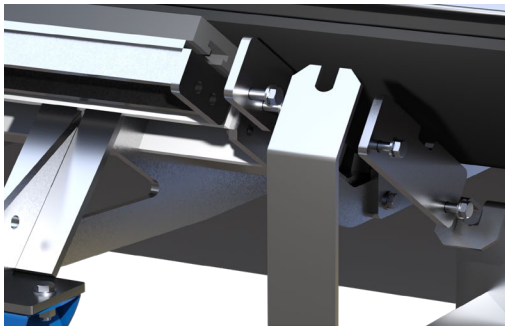


Figure 6: Removing endcaps

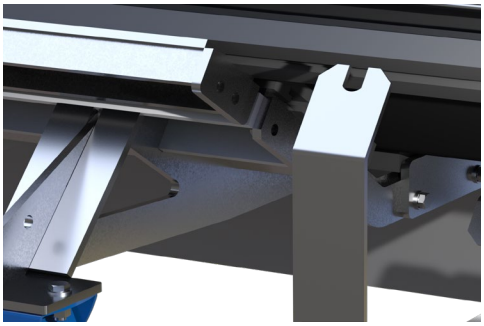


Figure 7: Removing slider bars

If the machined T-track groove on the slider bar is beginning to show through the top surface, the item requires replacement.

- If the slider bar(s) have worn enough o expose the machined T-slot, one or more of the slider bar locators may be damaged. Check condition of slider bar locators and replace as necessary. **Note: that replacement may require lifting the belt.**

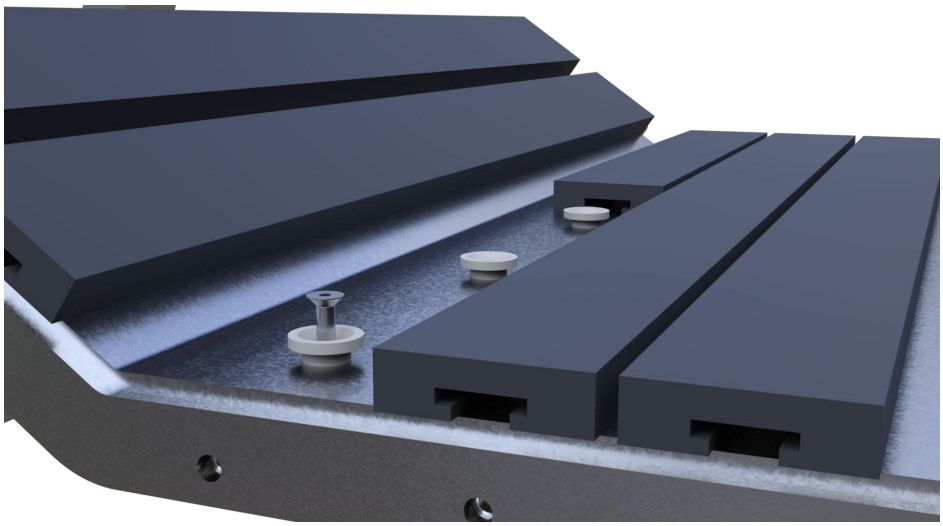


Figure 8: Check slider bar locators for wear

- Check condition of suspension units. Replace if cracking in the external brackets or hollowing-out of the rubber inserts is observed.

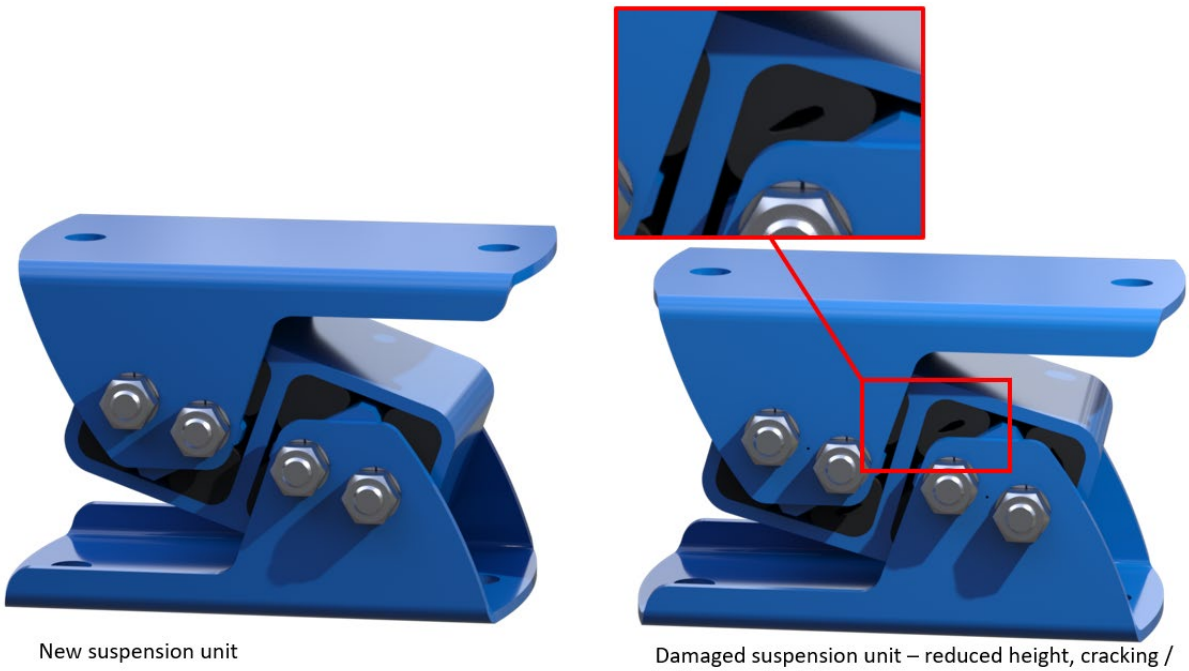


Figure 9: Inspect suspension units

- Inspect all fasteners for tightness and wear. Tighten or replace as needed.
- Replace any other worn or damaged components.
- When maintenance tasks are completed, test run the conveyor to ensure the unit is performing correctly.

Pre-Operation Checklist

- Recheck that all fasteners are secured.
- Check skirt supports are in full contact 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

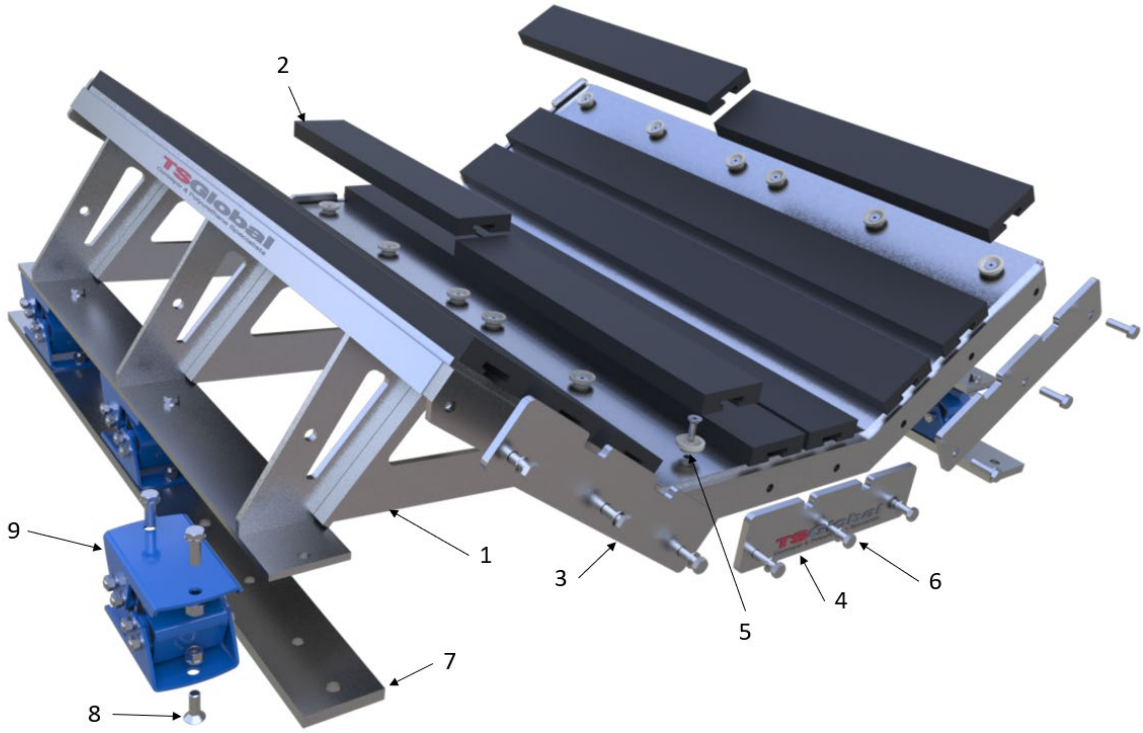
- Remove isolation in line with site procedures.
- Run the conveyor for at least 15 minutes and inspect the product performance.
- Check all components for proper positioning and tensioning.
- Adjust as necessary. In some case this may require isolation of the conveyor.

NOTE: Observing the product when it is running and performing properly will help to detect problems. If excessive noise or material leakage is observed, refer to section 6 - troubleshooting

Section 6 – Troubleshooting

Problem	Possible cause	Possible solution(s)
Excessive noise Suspension unit bottoming out	Slider bars worn	Replace slider bars
	Tonnage higher than design	Reduce tonnage. If not possible, Contact TS Global about upgrading table to heavier unit
	Material impact velocity too high	Check condition of rock-boxes & internal chute components
	Suspension units worn out	Replace suspension unit
Material leakage	Skirt supports not touching belt	Adjust
	Slider bars worn	Replace slider bars
	External skirting rubber worn	Adjust / replace external skirting rubber

Section 7 – Replacement Parts



Item	Description	Part Number
1	Main Assembly	Refer to supplied drawing
2	Slider bar	Refer to supplied drawing
3	Trough side endcap	Refer to supplied drawing
4	Trough base endcap	Refer to supplied drawing
5	Nylon 6-6 slider bar button	Refer to supplied drawing
6	Endcap bolt set	Refer to supplied drawing
7	Foot plate	Refer to supplied drawing
8	Suspension unit bolt set	Refer to supplied drawing
9	Suspension unit-ESL-38-unit	Refer to supplied drawing

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