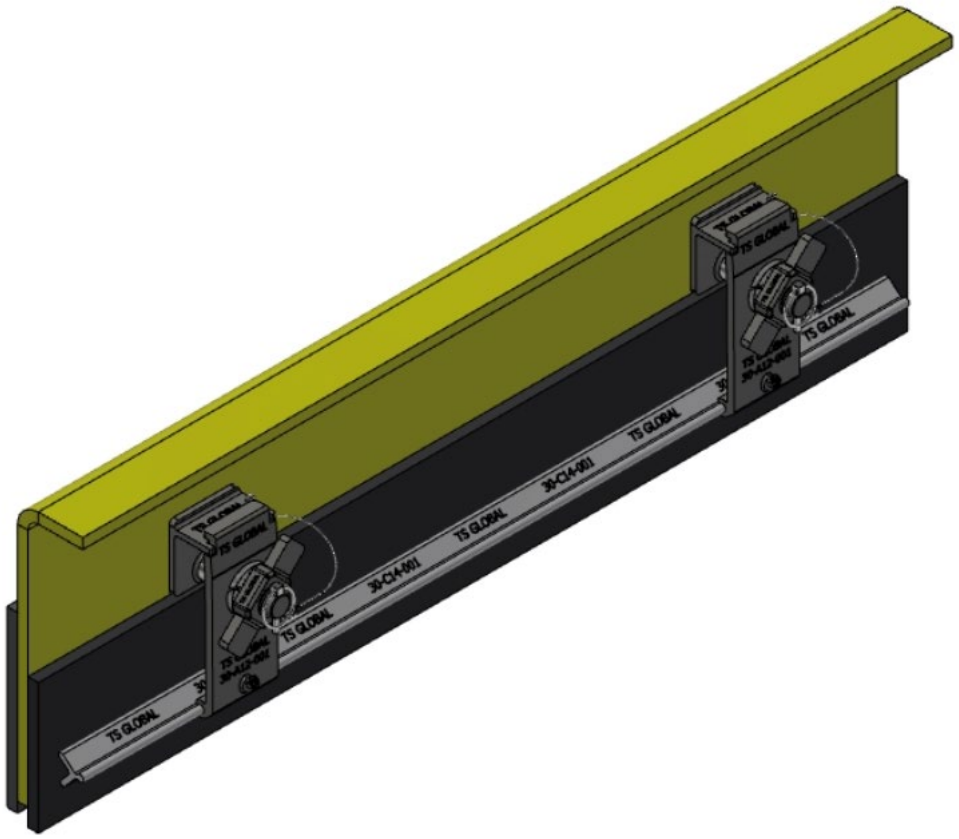
Tuff Clamp

Skirt System



TSGlobal

Conveyor & Polyurethane Specialists

Installation, Operation and Maintenance Manual

Revision History

Rev	Date	Description	Document Owner
01	16/06/2017	Tuff Clamp Skirt System	Scott Slattery
02	14/04/2022	Tuff Clamp Skirt System – 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 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.

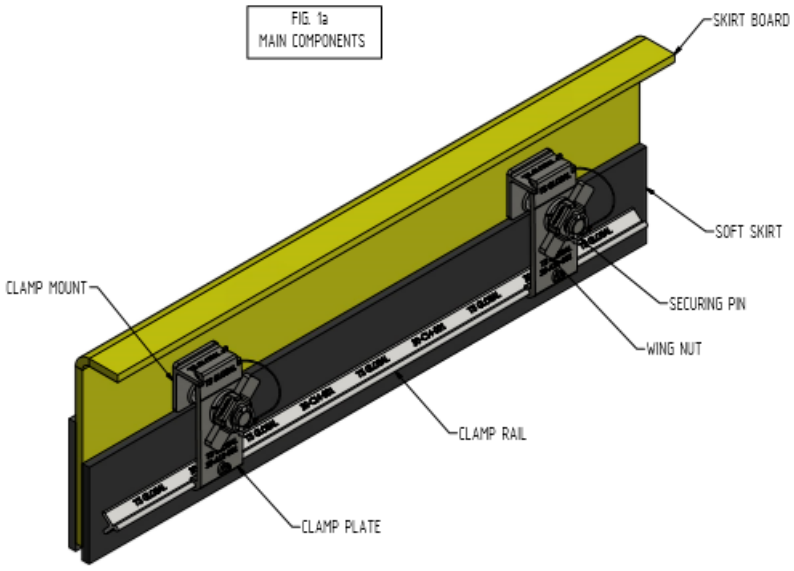
Section 3 – Installation Instructions

Checklist

- Check that the product size is correct for the conveyor to be installed on
- Check if either standard or low-profile clamps have been supplied
- Check to make sure all the parts have been supplied
- Review the “Tools Needed” listed in section 3 (below) of the Installation instructions
- Check the installation location: will the tuff clamps have adequate clearance

Before you begin:

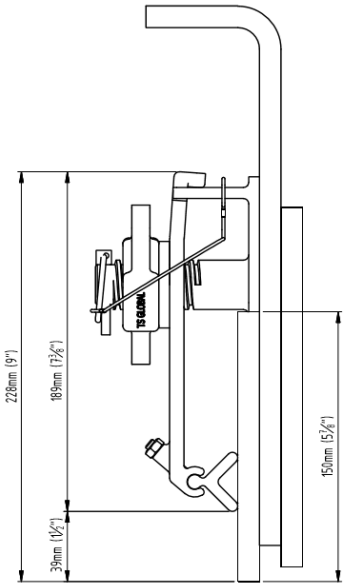
- Familiarise yourself with the main components of this product (Fig. 1a)
- Determine the install location and confirm clearances
- Follow all safety precautions and site hot work procedures when welding.
- When welding, protect all fastener threads and the belt from weld spatter.



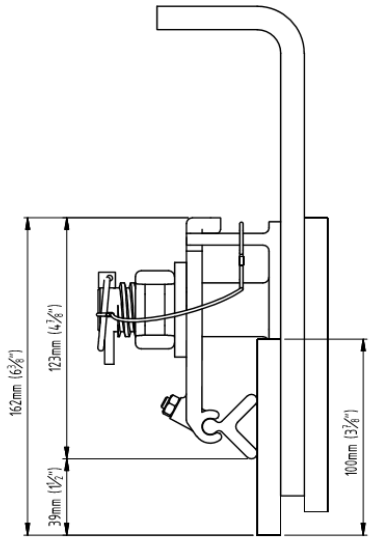
The vertical height of the skirt board will need to be measured to correctly choose a tuff clamp style required. Where clamp board height is less than 210mm (8 1/4”), however greater than 162mm (6 3/8”) TSG low-profile clamp will be needed.

To determine the correct positioning of clamp assembly, the soft skirt width will need to be identified. The following drawings below can be used as a guide

Standard tuff clamp



low profile tuff clamp



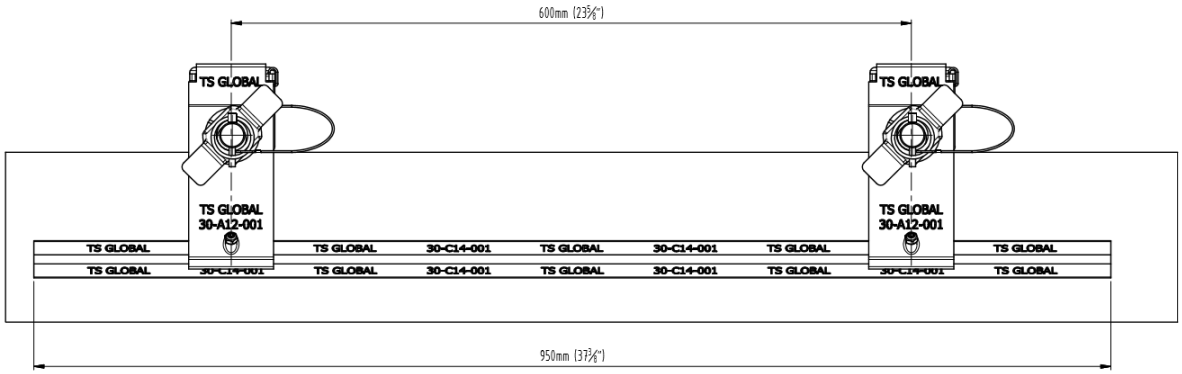
Note: As skirt width increases clamp mounting plate will need to be raised. The distance between the base of the clamp rail and the bottom of the skirt board should not become excessive as it will allow material to push the soft skirt outwards and escape.

Suggested Tools Required

- Tape measure
- Marking Pen
- Level
- Chalk line
- 2 x 150mm G Clamps
- Cutting Torch
- Welder
- Grinder
- Hammer

Mounting Tuff clamps

1. Once the soft skirt size is confirmed, and position of assembly is known, commence installation.
2. Begin at an end of skirt system and measure up vertically on the skirt board the required distance and mark a horizontal line for the top of the clamp assembly.
3. Repeat step number 2 at other end of skirt system.
4. Using a chalk line, join both horizontal lines
5. Mark a vertical line approx. 150mm (6”) from end of skirt system. This is the location of the first clamp assembly. The 150mm (6”) can be adjusted slightly to get around any obstruction on the conveyor skirt plate)
6. Mark a second vertical line approximately 600mm (23 5/8”) along the skirt for the second clamp
7. Weld clamp mounts into position, take care to cover up acme threads
8. Assemble as per below image.

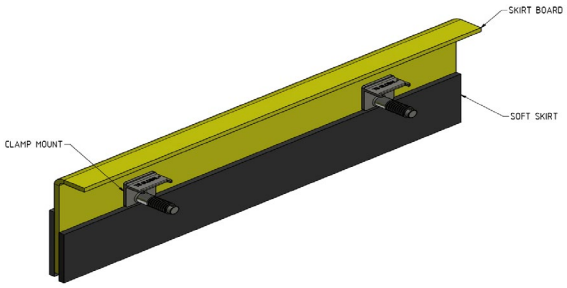


9. Allowing a 25mm (1’’) gaps between clamp rail, determine the location of the next clamping assembly
10. Repeat steps 6-9 until all clamping assemblies are installed.

Note: The clamp rail can be cut down in length, but it is recommended that you maintain two tuff clamps per clamp rail. Additional clamps can be used if extra clamping force is required

Installing Soft Skirt

1. Remove clamping plates and wing nuts from each clamping assembly
2. Measure and cut soft skirt to length
3. Lay soft skirt along conveyor up against skirt board
4. Fit clamping plates and wing nuts
5. Once soft skirt is in desired location, tighten wing nut with hammer or spanner.
6. Check that soft skirt is in full contact with conveyor belt
7. Fit securing pin.
8. Repeat along entire skirting system until all skirt is secure and in contact with the belt.



Section 4 – Pre-Operation Checklist and Testing

Pre-Operation Checklist

- Recheck that all fasteners are tightened properly
- Check soft skirt is in full contact with 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 tension
- Check material is being contained by soft skirt
- 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 5 – 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 skirt and belt can determine:

- If soft skirt is in full contact with belt
- If wing nuts require more tension
- If the skirt is worn or damage and needs to be replaced
- If there is damage to other skirt components
- If fugitive material is built up behind soft skirt

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

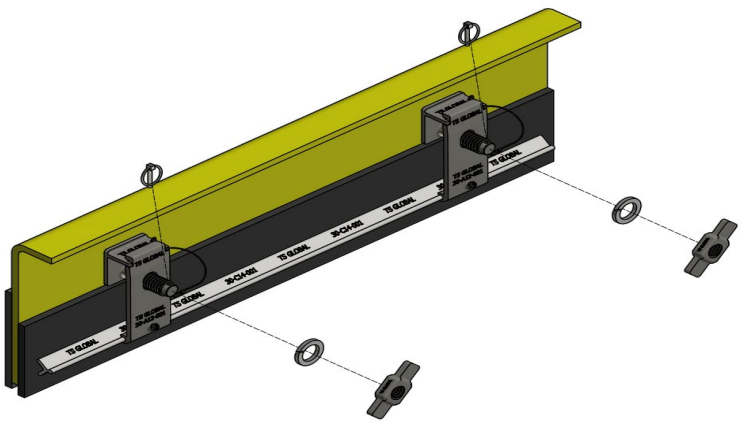
Routine Physical Inspection (Recommended every 3 months)

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 behind soft skirt
- Closely inspect the soft skirt for wear or damage
- Ensure full contact of soft skirt across belt
- Inspect all wingnuts for tightness and wear. Tighten as needed
- Replace any worn or damaged components
- When maintenance tasks are completed, test run the conveyor to ensure the cleaner is performing correctly

Soft Skirt Replacement and Adjustment Service Instructions

1. Prior to soft skirt replacement or adjustment, isolate conveyor as per site regulations.
2. Remove securing pin
3. Loosen wingnuts
4. Remove clamp plate
5. Remove soft skirt
6. Clean or wash down skirt board and clamp mounts
7. Check skirt boards for wear or damage
8. Check clamp mount welds and threads for damage
9. Check all components for wear and replace as required



10. Replace soft skirt
11. Adjust soft skirt as detailed in section 3.
12. Test Run conveyor
    i. Recheck that all fasteners are tightened properly
    ii. Check the soft skirt is in contact with belt
    iii. Be sure that all materials and tools have been removed from the belt and the conveyor area.
    iv. Remove isolation
    v. Run the conveyor for at least 15 minutes and inspect the skirt systems performance
    vi. Check all components for proper positioning
    vii. Make adjustments as necessary. In some cases 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 – Troubleshooting

Problem	Possible cause	Possible solution
Soft skirting smoking	Soft skirt to tight	Loosen clamp and raise soft skirt
Conveyor will not start	Soft skirt to tight	Loosen clamp and raise soft skirt
Soft skirt not in full contact with belt	Soft skirt worn	Adjust soft skirt down to belt
	Soft skirt damaged	Replace soft skirt
	Belt sagging between rollers	Check belt tension
	Roller heights misaligned	Pack up roller heights
Soft skirt loose	Soft skirt thickness insufficient	Ensure soft skirt is a minimum of 12mm (1/2") thick
	Wingnuts loose	Tighten wingnuts
Soft skirt missing	Insufficient clamping force	Additional tuff clamps
Damaged soft skirt	Hard skirts damaged or are set too high	Inspect and adjust hard skirts

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