

# Ratchet Retractable Return Frame



**TSGlobal**  
Conveyor & Polyurethane Specialists

Installation, Operation and Maintenance Manual

## Revision History

Rev	Date	Description	Document Owner
01	05/05/2021	Ratchet Retractable Return Frame	Ray Macarthur
02	14/04/2022	Ratchet Retractable Return Frame – 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](http://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](http://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 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

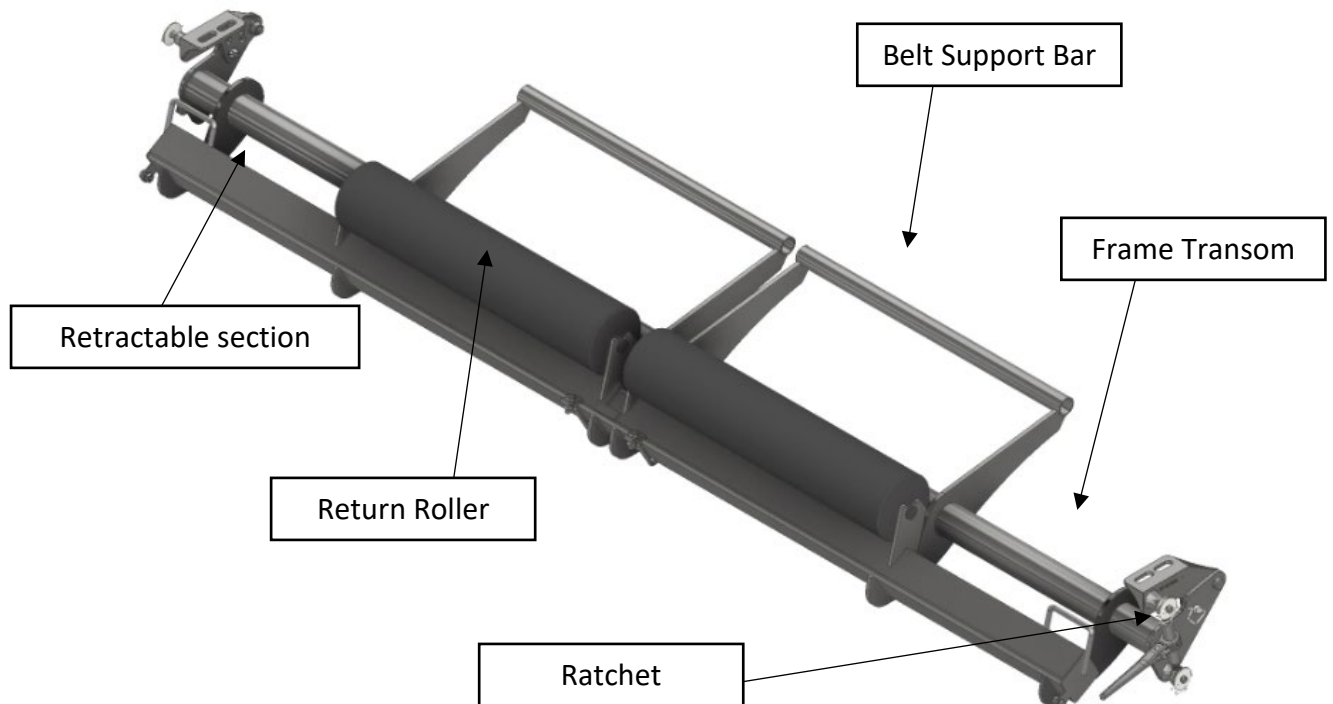
### Checklist

- Check that the product size is correct for the conveyor to be installed on
- Check 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: Is the install on open stringers requiring special mounting brackets?

### Before you begin:

- Familiarise yourself with the main components of this product
- Determine the install location and check for clearances
- 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

**Note:** Note: TS Global Ratchet Retractable Return frames have been designed to be flexible in installation. In the event that the structure needs to be modified for installation, seek engineering approval from your site contact, prior to undertaking modification.



## Suggested Tools Required for Installation

- Tape measure
- Marking Pen
- Level
- 2 x 150mm G Clamps
- 2 x 19mm Spanners
- 2 x 24mm Spanners
- Cutting Torch and or Welder
- Grinder
- Magnet drill
- Broach cutter 18mm

## 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.

## Lift the belt

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

## Install Frame

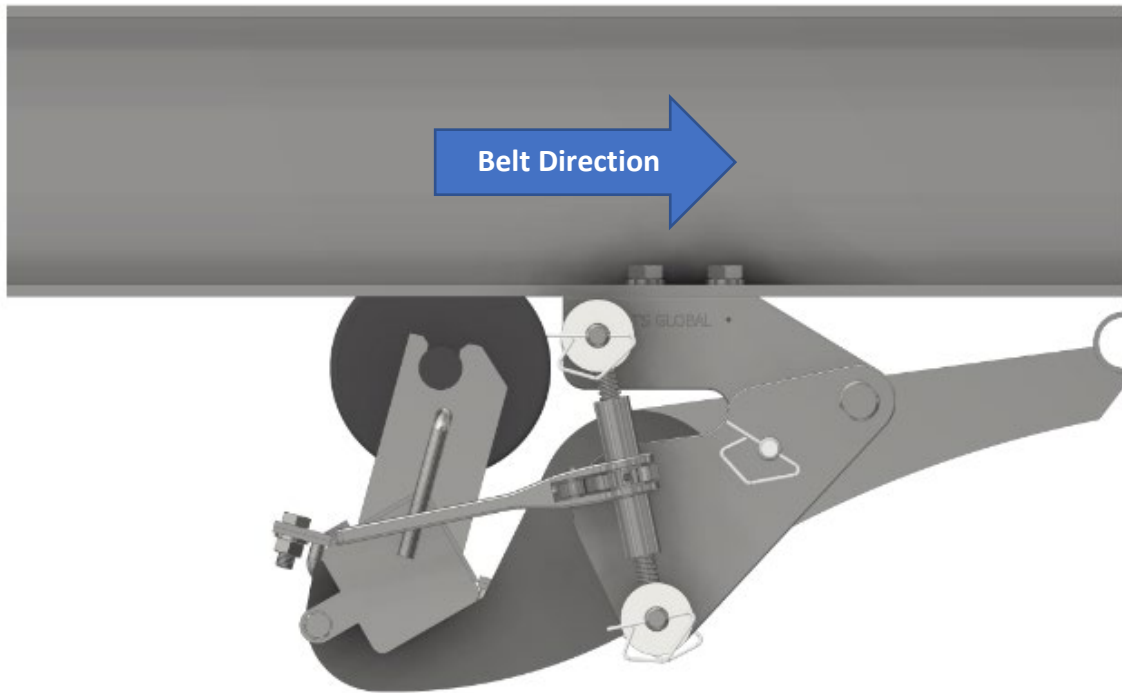
Installation – Check for cross braces to ensure there is sufficient room for the frame to fit in the selected position.

**Note** – no cross braces should be removed or modified without site approval.

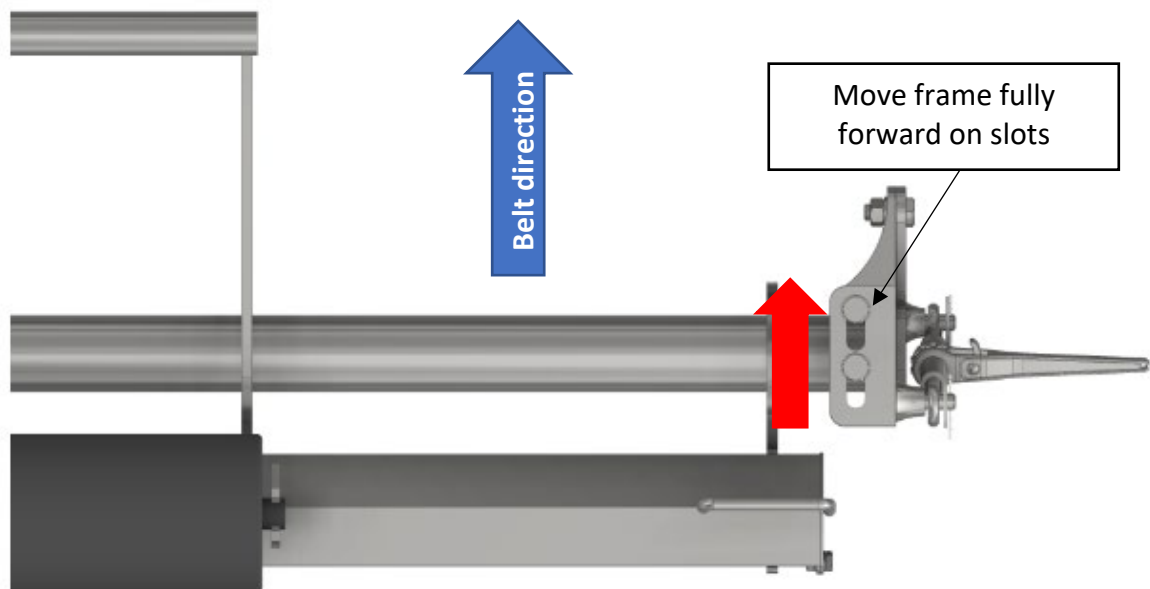
1. Remove the current return frame and/or return bracket
2. The return frame is generally bolted to the bottom of the conveyor stringers and will require lifting into position. This may involve lifting the belt, manual handling, chain blocks or cranes. Ensure all site procedures and permits are strictly adhered to for these tasks. The stringer may need drilling to accommodate the frame mounts. Install rollers.



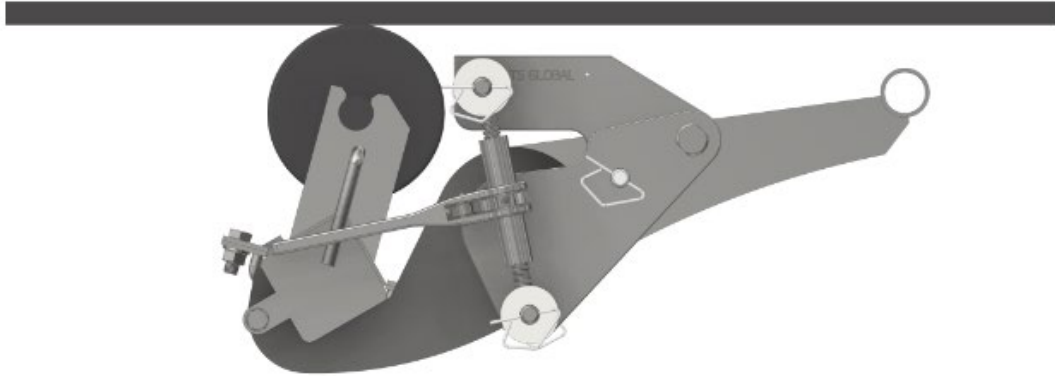
**Note** – Ensure the frame is installed the correct way around as per belt direction shown below.



3. Ensure frame is fully forward on the slots and check that frame is square to structure and belt line



4. Lower belt and ensure that the belt height is consistent with frames in front and behind the installed location.



**Note** – Run the conveyor to ensure tracking has not been affected prior to returning conveyor to service.

## Section 4 – Pre-Operation Checklist and Testing

### Pre-Operation Checklist

- Recheck that all fasteners are tightened properly
- Check there is sufficient belt contact to the installed rollers
- Be sure that all installation materials and tools have been removed from the belt and the conveyor area.
- Check frame is installed in correct direction
- Check frame will be pivoting freely for future serviceability

### 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 adjustment
- 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 refer to section 7.

## 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 Return Frame and belt can determine:

- If idlers are damaged or seized
- If there are damaged or missing components
- If fugitive material is built up on the frame

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

## Section 6 – Ratchet Retractable Return Frame Maintenance Checklist

Site: \_\_\_\_\_ Date: \_\_\_\_\_

Conveyor No./Location: \_\_\_\_\_ Site Contact: \_\_\_\_\_

Completed By: \_\_\_\_\_ (Circle Yes or No Below)

1. Was this a routine  service  inspection  installation? Yes/No

If no, why was the action performed \_\_\_\_\_  
\_\_\_\_\_

2. Was equipment installed to TS Global Specification? Yes/No

If no, why \_\_\_\_\_  
\_\_\_\_\_

3. Will this affect performance? Yes/No

If yes, why \_\_\_\_\_  
\_\_\_\_\_

4. Is equipment fit for commissioning? Yes/No

If no, why \_\_\_\_\_  
\_\_\_\_\_

5. Was a final inspection carried out while plant was running? Yes/No

If no, why \_\_\_\_\_  
\_\_\_\_\_

6. Has anything changed from previous service / inspection / installation? Yes/No

If yes, what \_\_\_\_\_  
\_\_\_\_\_

7. Is equipment performance to Client expectations? Yes/No

If no, why \_\_\_\_\_  
\_\_\_\_\_

Maintainer Signature: \_\_\_\_\_ Client Signature: \_\_\_\_\_

## Section 7 – Troubleshooting

<b>PROBLEM</b>	<b>POSSIBLE CAUSE</b>	<b>POSSIBLE SOLUTION</b>
<b>No contact between belt and installed frame</b>	Incorrect installation height	Lift frame to ensure sufficient contact between belt and rollers
	Frame not pivoting correctly for serviceability	Relocate frame to ensure sufficient room for pivot to operate
	Build up on roller	Clean rollers and frame
	Roller damaged	Replace roller/s
<b>Frame not pivoting for roller replacement</b>	Locking pin still installed	Remove locking pin
	Ratchet seized	Remove ratchet from frame and clean any foreign material
<b>Rollers not rotating</b>	Build up on rollers	Clean rollers and Tracker
	Seized rollers	Replace rollers



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