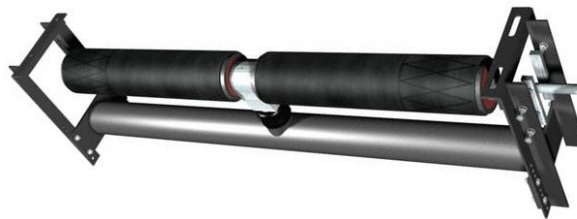


## Installation Instructions - Tru-Trac® Conveyor Belt Tracking System

Product:	Tru-Trac® Conveyor Belt Tracking System
Product category:	Belt Tracking
<b>Overview:</b>	The function of the Tru-Trac ® Conveyor Belt Tracking System is to solve the problems encountered with tracking and aligning of conveyor belts. The range covers self-aligning idlers for tracking both of the return and load-carrying sides on slow moving, reversible, high-speed and high-load belts up to 2500mm.



Flat Return Tracker



Dual Return Tracker



Taper Trough Tracker

### INDEX

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# Installation Instructions - Tru-Trac® Conveyor Belt Tracking System

## Introduction

**PLEASE READ THESE IMPORTANT INSTRUCTIONS BEFORE STARTING INSTALLATION WORK!**

## Safety

Always observe the basic rules of safety when working with any conveyor system. To avoid injury, be sure that all controls to the conveyor are locked out and the power source is disconnected at all times during the installation

## Survey of conveyor

A visual survey of the conveyor system is recommended.

Look for belt contact with return roller brackets, conveyor framing and discharge chute sides.

Check lagging on drive and non-drive pulleys, lagging worn in the centre will make the belt unstable and difficult to train.

Check the type of return idlers, if the rubber donut / rubber disc type check to make sure the discs are not worn out or broken. If they are worn out the belt will be unstable and difficult to train.

Check for build-up on the return rolls and other pulleys.

Check for spillage that is built-up against the belt in the load zone or around the discharge area.

Look for any obvious structural damage to the conveyor.

Conveyor belt edge damage may be prevented by ensuring that the conveyor is centralized at the Drive, Tail/Head Pulley and Take-up units.

Tru-Trac® Trackers are best utilized when placed prior to the conveyor system's terminal points and where misalignment problems occur in intermediate sections of the belt. See Fig. 1.

## Installation Instructions - Tru-Trac® Conveyor Belt Tracking System

### Guidelines For Installation

The Tru-Trac idler need only be installed where misalignment occurs. As a rule of thumb, one tracker is sufficient to control and align 50 meters of belt. On longer belts, or those operating above ground, spacing may be increased up to 100 meters. Always install the Tru-Trac Flat Return or Dual Return before the problem area.

In event of skew loading, install the Tru-Trac Trough Tracker in the place of the third or fourth idler frame after the chute.

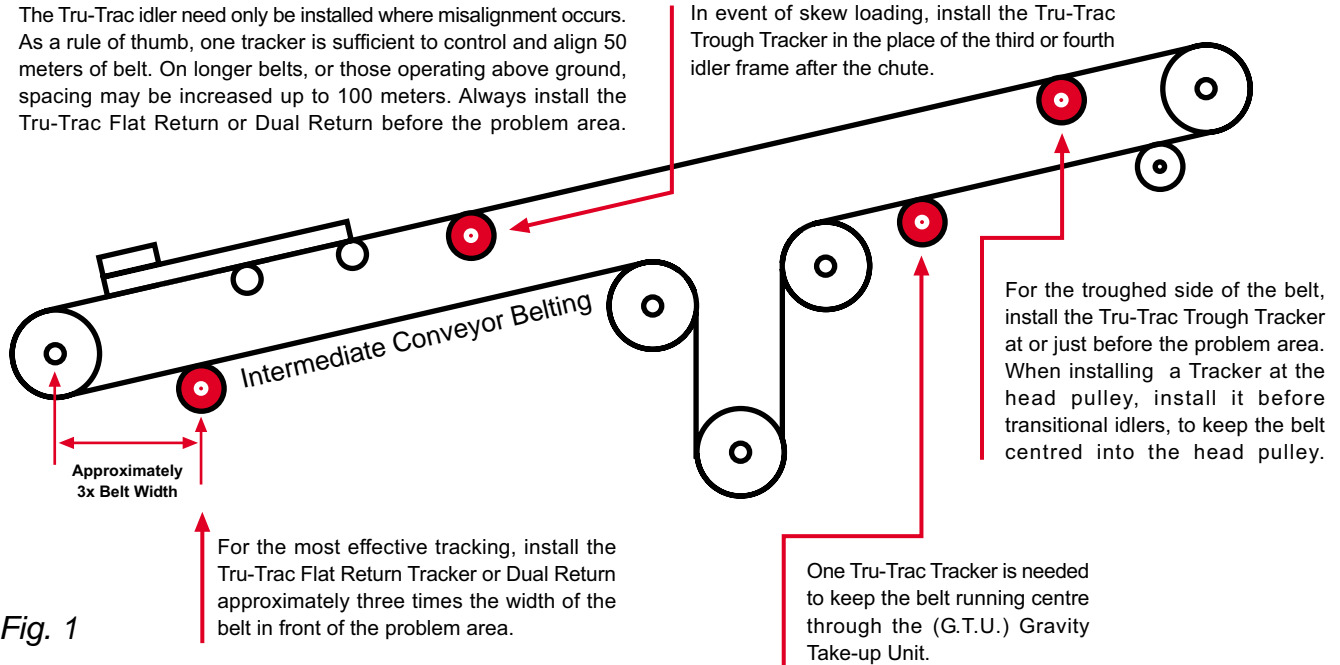


Fig. 1

Intermediate conveyor belting is defined as the belting that runs between the terminal pulleys. Loading chutes can also be considered as terminal points.

As the angle of wrap is only  $1^\circ$  to  $2^\circ$  on intermediate conveyor return rollers there is a lot of sideways float. Tru-Trac® Flat Return Tracker can handle these situations with ease. Install a Tru-Trac® Flat Return Tracker just prior to the problem areas (area where the belt is most misaligned). If the belt is reversing then put the Tru-Trac® Flat Return Tracker at the centre point of the misalignment.

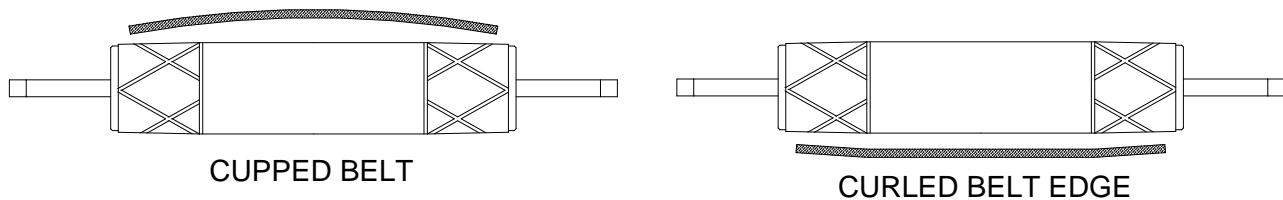
Conveyor belting at the terminal pulleys has less sideways float as the angle of wrap is between  $90^\circ$  and  $220^\circ$ . In order to correct belt misalignment at terminal points, extra tension might be needed.

## Installation Instructions - Tru-Trac® Conveyor Belt Tracking System

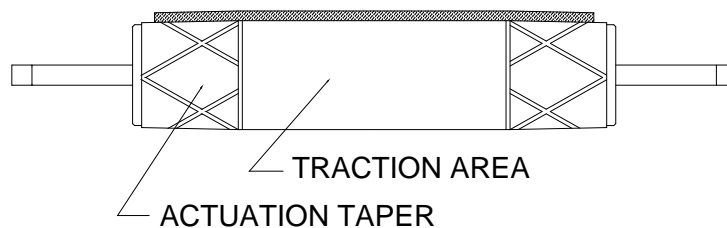
### (TTFR) Tru-Trac® Flat Return Tracker

Check to see if the belt is cupped or if the edges are curled. The edges of a cupped belt will contact the ends of the existing return rollers and is evidenced by shinny ends and dirty or rusty centre portion of the existing return rollers. The edges of a curled belt usually do not contact the return rolls and many times is evidenced by the centre of the return rolls being shiny and the end of the return rolls being dirty or rusty looking.

It is very important to install the Tru-Trac® Flat Return Tracker (TTFR) so that the edges of the belt contact the tapered end portion of the tracker. The tracker should be on the bottom side of the belt for a cupped belt and on the top side of the belt for a curled belt.



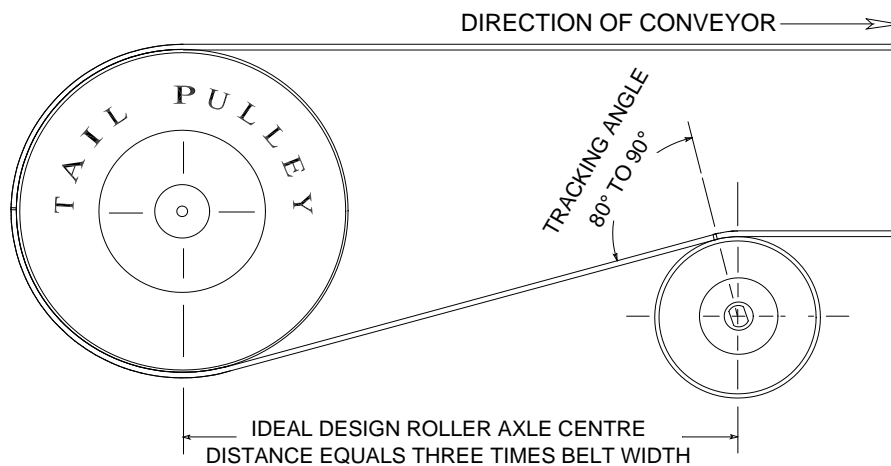
Generally if the Tracker is installed so that the edges contact the belt as shown, then the tension on the Tracker can be adjusted to get good contact on the Tracker in both the actuation area and the traction area as shown below



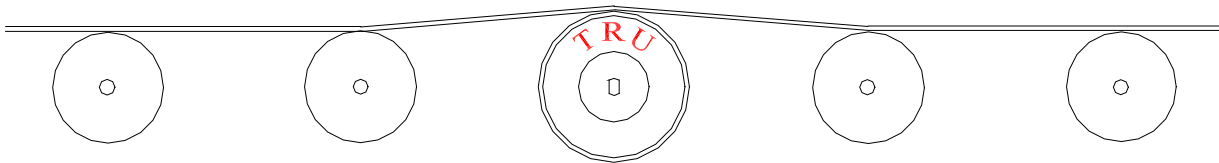
## Installation Instructions - Tru-Trac® Conveyor Belt Tracking System

It is essential, for correct operation, that sufficient conveyor belt tension is evenly distributed across the tracker's entire working surface.

Tru-Trac® Flat Return Tracker should be installed prior to terminal points, at a distance of the 3 times of BELT WIDTH (i.e. for a 600mm belt, the should be installed approximately 1800mm before the pulley)

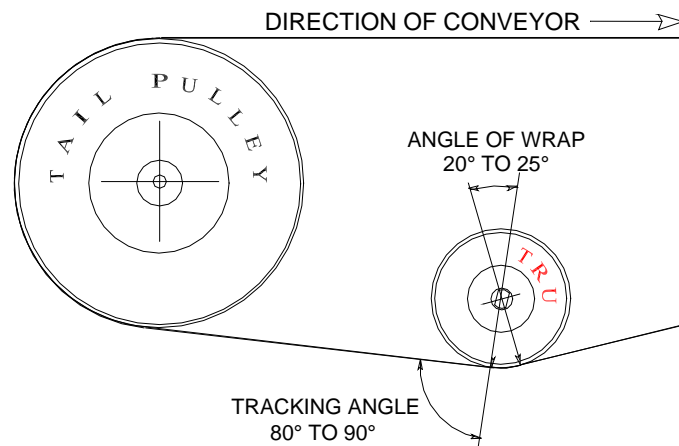


The vertical pivot axle, within the Tru-Trac® Flat Return Tracker, must be positioned 80° to 90° leaning in the direction of belt travel. The vertical axle is in the same plane as the shaft end flats. When installing on a reversing belt the vertical pivot must be 90° to the belt at the midpoint of contact.



## Installation Instructions - Tru-Trac® Conveyor Belt Tracking System

Standard rollers are generally 127mm and 152mm diameter. Tru-Trac® Flat Return Trackers are manufactured to +/- 170 diameters, this assists in increasing the belt tension and the trackers traction.



Internal tracking of conveyor belts with the Tru-Trac® Flat Return Tracker occurs when difficulty is experienced, generally as detailed below.

- Limitations as to space available for the normal Tru-Trac® Flat Return Tracker installation.
- The return side of the conveyor is extremely dirty and difficult to clean.
- Where the tail or head pulley is found to be very small in diameter. For example, food and package handling applications have typically 60mm to 152mm diameter tail and head pulleys.
- Where buckets, cleats, or sidewalls have been attached to the carrying side of the belt.

Remove any other tracking devices or inverters, which are in front of or behind the Tru-Trac® Flat Return Tracker.

In general, a Tru-Trac® Flat Return Tracker is effective for 50m to 75m on intermediate belting.

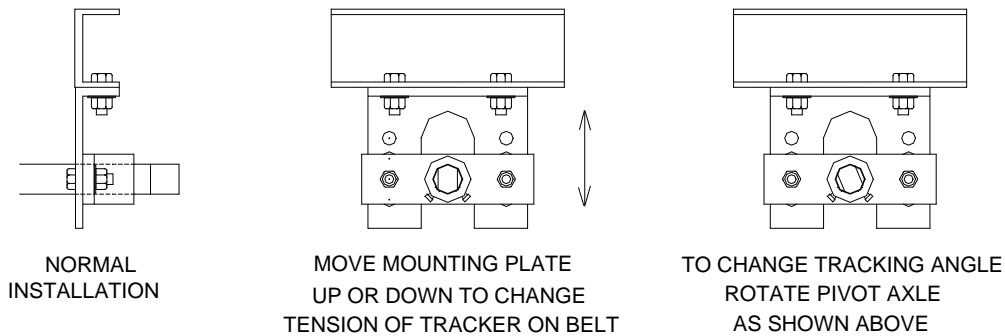
Never install a Tru-Trac® Flat Return Tracker on a system if the belt is wider than the tracker's design width. 25mm to 50mm of tracker must protrude on either end of the tracker to ensure proper operation.

There should be enough tension on the tracker so that it is difficult to pivot the tracker about its axis by hand before start-up of the conveyor.

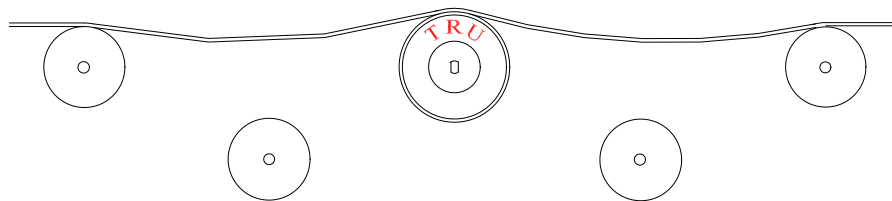
## Installation Instructions - Tru-Trac<sup>®</sup> Conveyor Belt Tracking System

There are several means of increasing tension on the Tracker:

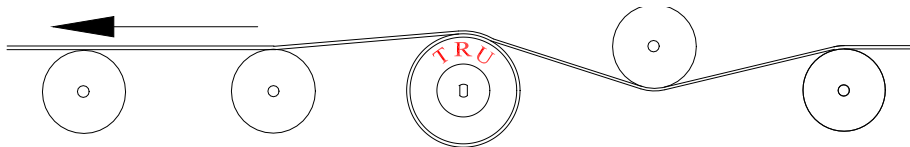
1. Raise the Tracker in the drop bracket.



2. Remove one or more return idlers either before and/or after the Tru-Trac<sup>®</sup> Flat Return Tracker to increase the belt weight on the Tracker.



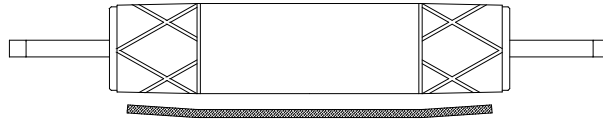
3. Add a pressure roller before the Tru-Trac<sup>®</sup> Tracker to increase tension and wrap angle on the Tracker. Adjusting the in wrap angle may require adjustment of the tracking angle, the vertical axle within the Tru-Trac.



In general increased angles of wrap will improve traction, resulting in improved performance. Increased traction is only needed if the Tru-Trac<sup>®</sup> Tracker is not working correctly.

## Installation Instructions - Tru-Trac® Conveyor Belt Tracking System

### Procedures: (Installation of Tru-Trac® Flat Return Tracker above the belt)



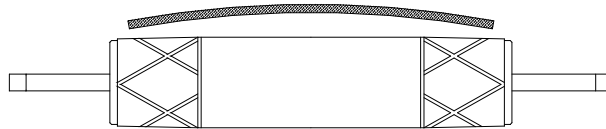
1. Tru-Trac® Flat Return Tracker can be installed on the inside of the conveyor belt because of spillage under the conveyor, space limitations, or the presence of buckets or ribs and to achieve increased rubber life by tracking on the clean side of the conveyor.
2. After identifying the problem area, prepare to install the tracker at approximately three times the width of the belt before the problem area.
3. Remove the existing return idlers and brackets, or V-Return frame.
4. Bolt L-shaped bracket on to structure. Before tightening, make certain both brackets are knocked fully forwards or backward to ensure the L-shaped brackets are perpendicular to the structure and lined up exactly opposite each other. Once completed, tighten all bolts.
5. Push the belt down with the tracker. Slide the Rectangular-shaped bracket on to either end of the shaft, with fixing bolts facing downwards and bolt the Rectangular-shaped bracket on to the L-shaped bracket, ensuring that the corresponding set of holes are used.
6. Set the space between the bracket and tracker evenly. Distance "A" must be the same.
7. Very important: Ensure that the tracker's vertical axle which is indicated by the shaft end flats is positioned at 90 degrees, leaning in the direction of belt travel.
8. Make sure that the tracker has got enough tension, by pushing it backwards and forwards. It should be quite difficult to move.
9. If the tracker moves easily backwards and forwards, there is insufficient tension.
10. Loosen the rectangular-shaped bracket and move it downwards one hole on the L-shaped bracket. Recheck the tension, if it is still insufficient, move down further until you achieve sufficient tension.
11. Re-check that the shaft end flats are set at 90 degrees or slightly forwards in the direction of the belt travel. Finally, tighten the fixing bolts on the Rectangular-shaped bracket on to the shaft.



## Installation Instructions - Tru-Trac<sup>®</sup> Conveyor Belt Tracking System

12. Installation is now complete. Start the conveyor belt to test the tracker.
13. If the tracker detracks the belt, recheck the angle and direction of the shaft end flats. If the Tru-Trac remains kicked in on any one side, increase the amount of tension. If the problem persists, knock existing idler brackets or frames before and after the Tru-Trac<sup>®</sup> Flat Return Tracker, perpendicular and horizontally aligned to the conveyor structure.
14. Remove any other tracking devices or inverters in front of or behind the Tru-Trac<sup>®</sup> Flat Return Tracker before testing the conveyor system, as they will reduce or interfere with the performance of the Tru-Trac<sup>®</sup> Flat Return Tracker.

### Procedures: (Installation of Tru-Trac<sup>®</sup> Flat Return Tracker underneath the belt)



1. After identifying the problem area, prepare to install the tracker at approximately three times the width of the belt before the problem area.
2. Use slings or chain blocks to lift the conveyor belt at the point of installation.
3. Remove the existing return idlers and brackets, or V-Return frame.
4. Bolt L-shaped bracket on to structure. Before tightening, make certain both brackets are knocked fully forwards or backward to ensure the L-shaped brackets are perpendicular to the structure and lined up exactly opposite each other. Once completed, tighten all bolts.
5. Slide the Rectangular-shaped bracket on to either end of the shaft, with fixing bolts facing downwards.
6. Lift up tracker and bolt the Rectangular-shaped bracket on to the L-shaped bracket, ensuring that the corresponding sets of holes are used.
7. Set the space between the bracket and tracker evenly. Distance "A" must be the same.
8. Very important: Ensure that the tracker vertical axle, which is indicated by the shaft

## Installation Instructions - Tru-Trac® Conveyor Belt Tracking System

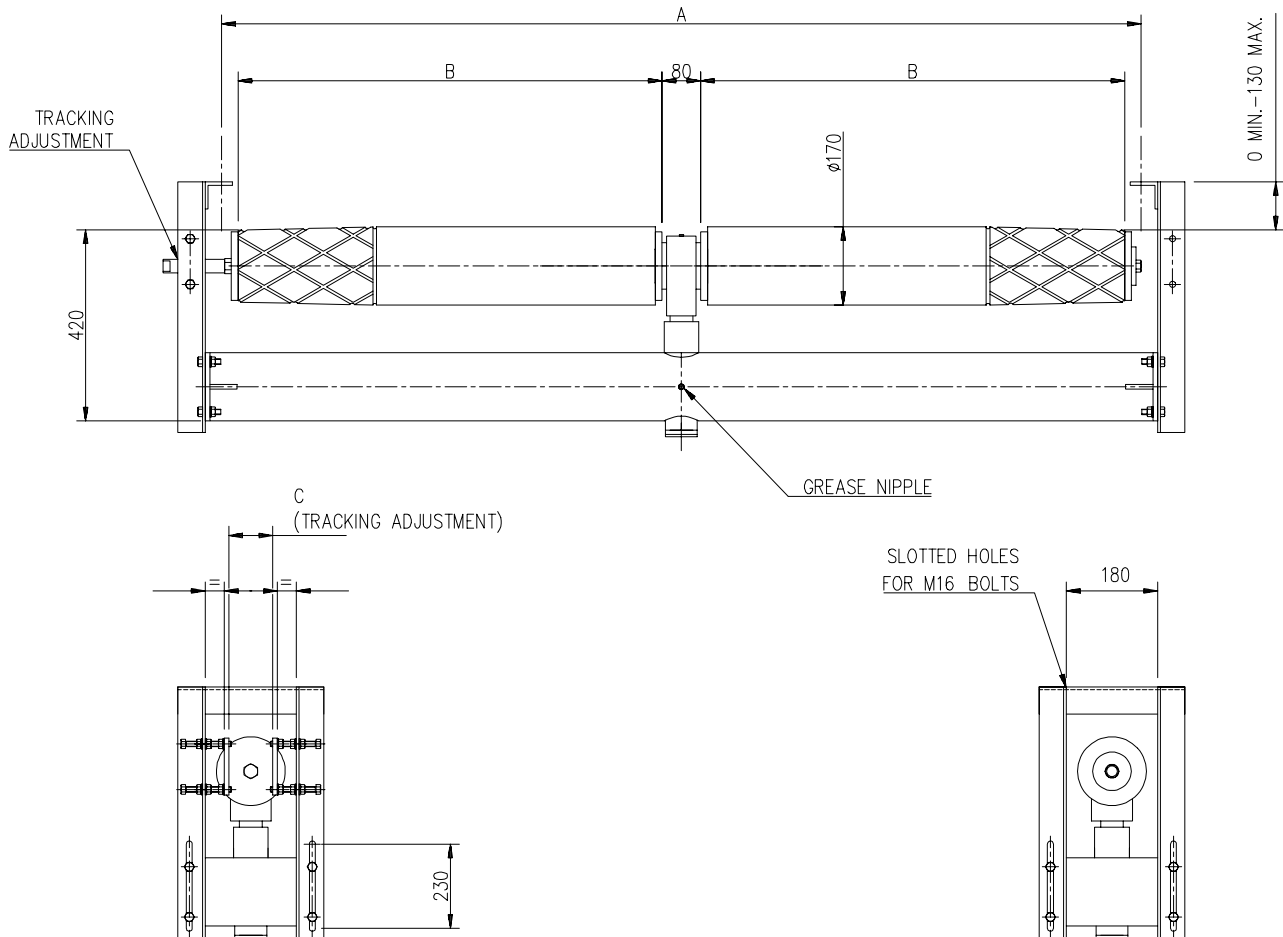
flat, ends, is positioned at 90 degrees, leaning in the direction of belt travel.

9. With the slings or chain blocks, lower the belt on to the Tru-Trac® Flat Return Tracker
10. Make sure that the tracker has got enough tension, by pushing it backwards and forwards. It should be quite difficult to move.
11. If the tracker moves easily backwards and forwards, there is insufficient tension.
12. Loosen the Rectangular-shaped bracket and move it upward one hole on the L-shaped bracket. Recheck the tension. If it is still insufficient, move up another hole until you achieve sufficient tension.
13. Re-check that the shaft end flats are set at 90 degrees or slightly forwards in the direction of the belt travel. Finally, tighten and secure the fixing bolts on the Rectangular-shaped bracket on to the shaft.
14. Installation is now complete. Start the conveyor belt to test the Tru-Trac Flat Return Tracker.
15. If the Tru-Trac® Flat Return Tracker detracks the belt, recheck the angle and direction of the shaft end flats. If the Tru-Trac® Flat Return Tracker remains kicked in on any one side, increase the amount of tension.

If the problem persists, knock existing idler brackets or frames before and after the Tru-Trac, perpendicular and horizontally aligned to the conveyor structure.
16. When you cannot achieve sufficient tension, you may find it necessary to install a tension idler prior to the Tru-Trac® Flat Return Tracker, this removes cupping from the return belt and ensures equal pressure across the entire surface of the Tru-Trac® Flat Return Tracker.
17. Remove any other tracking devices or inverters in front of or behind the Tru-Trac before testing the conveyor system, as they will reduce or interfere with the performance of the Tru-Trac® Flat Return Tracker.
18. When installing the Tru-Trac® Flat Return Tracker on a V- Return belt, it is necessary to install a standard flat return idler prior to the tracker in order to flatten the belt.

## Installation Instructions - Tru-Trac<sup>®</sup> Conveyor Belt Tracking System

### Tru-Trac<sup>®</sup> Dual Return Tracker (TTDR)



1. After identifying the problem area, prepare to install Tru-Trac<sup>®</sup> Dual Return Tracker at approximately three times the width of the belt before the problem area.
2. Before removing the existing idlers and brackets or V-Return frame, ensure that the tracker will be slightly higher than the existing idlers.

## Installation Instructions - Tru-Trac® Conveyor Belt Tracking System

3. Ensure the tracking adjustment pin is facing the catwalk to ensure ease of access once installed.
4. Set the distance between the inside of the plates to the recommended distance "C" as per the table, to obtain the correct tracking angle. Increase the distance "C" if more tracking adjustment is needed. Because the tracker is multi-directional, it doesn't matter which way it is installed.

Belt Width (mm)	C (For ideal included angle = 4,5°) (mm)
1200	90
1350	92
1400	94
1500	98
1600	102
1650	104
1800	110
2000	118
2100	122
2200	126
2300	130
2400	134
2500	138

5. Use slings and chain blocks to lift the tracker into position under the conveyor belt.
6. Bolt the brackets onto the structure. Before tightening, ensure both brackets are knocked fully forwards or backward to ensure the brackets are perpendicular to the structure and lined up exactly opposite each other. Once completed tighten all bolts.
7. With the slings or chain blocks, lower the belt on to the tracker.
8. Move the tracker backwards and forwards with the tracking adjustment pin to check the tension. If the tension is correct, it should be difficult to move the pin backwards or forwards, this will ensure that sufficient conveyor belt tension is evenly distributed across the tracker's entire working surface.
9. If the tracker moves easily backwards and forwards, there is insufficient tension. Loosen the base from the bracket and move it upward using the adjusting bolt. Recheck the tension. If it still insufficient, move up further until you achieve sufficient tension.
10. Installation is now complete. Start the conveyor belt to test the tracker.
11. Test that the tracker tracks the belt from both sides.
12. Manually de-track the belt by moving the tracking adjustment pin in one direction. When you release the pin.
13. The Tru-Trac® Dual Return Tracker should automatically centre the belt.

## Installation Instructions - Tru-Trac<sup>®</sup> Conveyor Belt Tracking System

Repeat this test by moving the tracking adjustment pin in the opposite direction. If installed correctly it should centralise the belt from both sides.

14. If the tracker remains kicked in on any one side or responds too slowly, increase the amount of tension. If the problem persists, knock existing idler brackets or frames before and after the tracker, perpendicular and horizontally aligned to the conveyor structure.

15. Remove any other tracking devices or inverters in front of or behind the tracker before testing the conveyor system, as they will reduce or interfere with the performance of the tracker.

16. When installing the Tru-Trac<sup>®</sup> Flat Return Tracker or Tru-Trac<sup>®</sup> Dual Return Tracker on a V- return belt, it is necessary to install a standard flat return idler prior to the Tru-Trac<sup>®</sup> Tracker in order to flatten the belt and preferably one flat idler after the tracker.

***WARNING: Do not invert the Tru-Trac<sup>®</sup> Dual Return Tracker, without following the procedures below. The T-piece is not secured to the Base and will drop out of the base if inverted.***

### Instructions for Inverting Tru-Trac Dual Return Tracker

This procedure is purely to prevent the T-Piece from falling out in the event of a belt break or during installation.

In order to use a Tru-Trac<sup>®</sup> Dual Return Tracker in an the inverted position

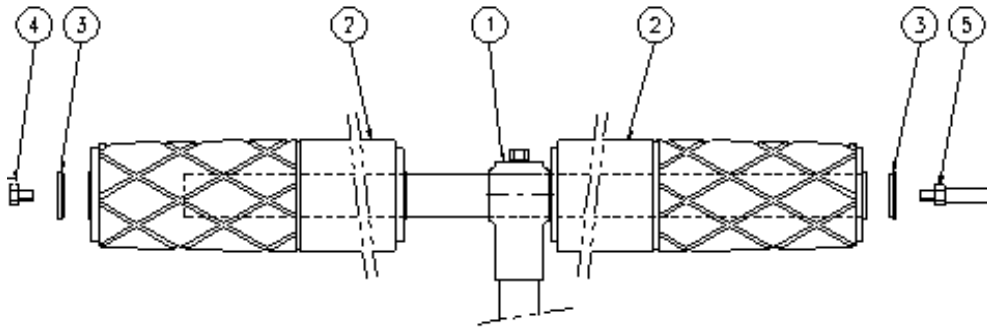
1. Remove the centre pin and roll assembly by lifting it out
2. Drill a Diameter 14 hole in the bottom of the of the centre bush of the dual base

3. Re-assemble the tracker,(drop T-Piece back into the centre bush), and insert M12 shoulder bolt with Loctite, ensuring that when the bolt is fully tightened onto the shoulder that it does not interfere with the free movement of the centre pin

It is advisable to seal the top of the M12 shoulder bolt with a rubber boot or suitable plastic cap to prevent any contamination in the centre bush assembly.

## Installation Instructions - Tru-Trac® Conveyor Belt Tracking System

### REPLACING ROLLER ON THE T-PIECE



#### LIST OF COMPONENTS

1. Centre pivot
2. Roller
3. End cap
4. M20 bolt
5. Tracking Adjustment Pin (TAP)

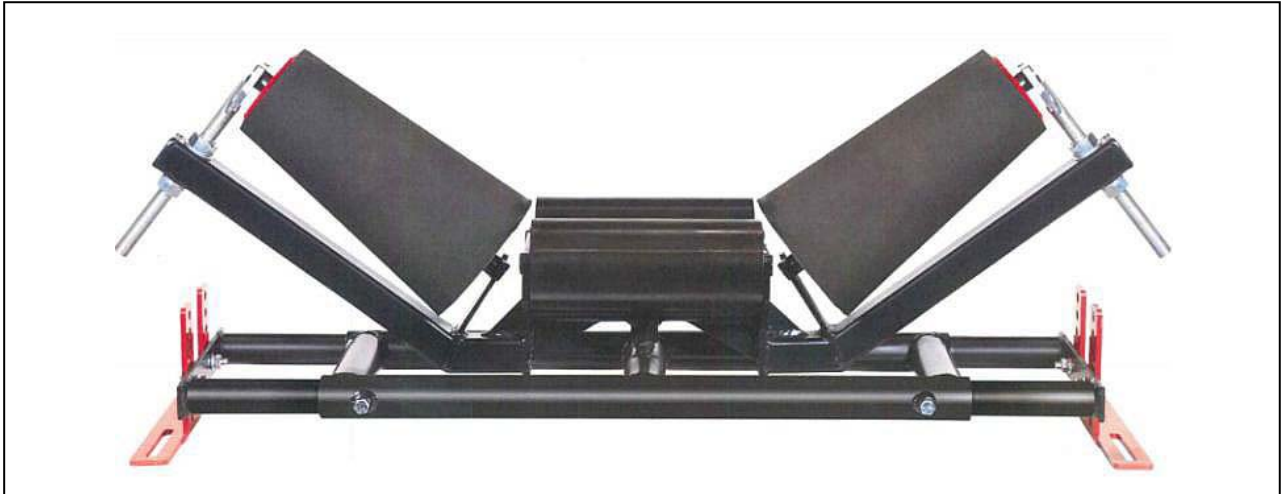
1. When the rubber on the individual rolls wear outs, remove the individual rolls from the TTDR T-Piece and replace with a new set.
2. Loosen M20 bolt [4] and End cap [3] then slide the roll [2] off the centre pivot shaft [1].
3. Loosen TAP [5] and End cap [3] then slide the roll off centre pivot shaft [1].
4. Apply a thin layer of grease to the shaft before proceeding with next step.

Recommended grease: SHELL ALVANIA EP(LF)

5. Slide new roller onto centre pivot shaft.
6. When pressing the end caps back onto the shaft, align the hole in the end cap with the spring pin protruding from the shaft.
7. Then screw the M20 Bolt and Tracking Adjustment Pin (TAP) into the shaft and tighten.

## Installation Instructions - Tru-Trac® Conveyor Belt Tracking System

### Tru-Trac® Taper Trough Tracker



1. After identifying the problem area on the load-carrying side of the belt, prepare to install the Tru-Trac® Taper Trough Tracker at or just before the problem area, ensuring that it is installed before transitional idlers and after loading chutes.
  2. **WARNING:** Before proceeding with the installation, ensure the conveyor power is switched off and locked-out to avoid accidental start-up during the installation.
  3. The Tru-Trac® Taper Trough Tracker can only be installed where there are no decking plates. If the tracker needs to be installed where there are decking plates, organise with customer to have the decking plate cut or removed.
  4. Remove a standard trough idler frame where the Tru-Trac® Taper Trough Tracker is to be installed.
  5. Remove the taper wing rollers from the Tru-Trac® Taper Trough Tracker before installing the tracker frame to the structure.
  6. Lift belt.
  7. Slide tracker under belt and bolt the tracker frame onto the structure and tighten bolts.
  8. Ensure the Tru-Trac® Taper Trough Tracker is centred on the structure, by adjusting it until the distance between the sliding tubes and mounting brackets are equal on both sides, then tighten the retaining bolts.
- 
- a. Adjust the height of the Taper Trough frame in such a way that Centre Rollers are approximately 10mm below the normal trough idlers. (Use 20mm for heavier material or high load conveyors).
  - b. It is vitally important that the centre rollers have minimal tension with the loaded conveyor; too much tension will impede the performance of the tracker.
  - c. The tracking is done by the taper wing rolls.

## Installation Instructions - Tru-Trac® Conveyor Belt Tracking System

9. Reinstall taper wing rollers onto the cradle.
10. Lower belt onto the Tru-Trac® Taper Trough Tracker.
11. Start by adjusting one of the Taper Wing Rollers upwards until you achieve maximum belt contact on the taper wing roller, with minimal tension. If you over tension the taper wing roller this will cause excessive wear on the rubber lagging.
12. Measure the height of the previously adjusted taper wing roller and adjust other Taper wing roller to be exactly the same height.
13. Lock all bolts.
14. Installation is now complete. Remove all tools from the work area and start the conveyor. The Tru-Trac® Taper Trough Tracker should immediately activate and centre the belt.

### Troubleshooting Section – Taper Trough

1. If the Tru-Trac® Taper Trough is not activating and tracking the belt, this can be caused by too much tension on the centre rolls. To solve this problem, lower the height of the Taper Trough frame by at least one hole downwards.
2. If the problem still persists, adjust the existing standard trough idler frames perpendicular to the structure before and after the Tru-Trac® Taper Trough Tracker. Remove any other tracking devices in front of or behind the Tru-Trac® Taper Trough Tracker, as they will reduce or interfere with the performance of the Tru-Trac®.



## Installation Instructions - Tru-Trac® Conveyor Belt Tracking System

### Troubleshooting Section

#### 1. The Tru-Trac® Trackers actuates but the belt does not move into alignment.

There are several situations where this will occur:

First, the edges of a slightly cupped belt are contacting the edges of the Tracker causing it to actuate, but there isn't enough contact with the centre of the Tracker to develop the tracking traction necessary to train the belt.

Second, the Tracker has good solid tracking contact and the belt refuses to move into proper alignment. This condition is caused by a misalignment somewhere in the system that simply overpowers the Tracker.

- Check to see if all other rollers are square.
- Check and remove all other belt alignment devices.
- Check the pulleys for alignment.
- Check the lagging on the pulleys, worn lagging can cause misalignment.
- Check for build-up of material on pulleys and idlers.

Third, a very small number of Trackers seem to perform better if the shaft is rotated 180° in the mounting bracket. This condition is caused by a slight misalignment of the internal pivot from the perpendicular to the centreline of the shaft.

#### 2. The Tru-Trac® Tracker does not actuate but will train the belt when manually actuated.

The belt has a slight cup or curl, which causes the edge of the belt to curve away from the ends of the Tracker. This condition caused the actuation tapers to lose traction with the edges of the belt and lose actuation traction. The best way to solve this problem is to move the tracker to the other side of the belt thereby putting the edges of the belt in direct contact with the tracker.

## Installation Instructions - Tru-Trac® Conveyor Belt Tracking System

3. A Tru-Trac® Trough Tracker will train the belt but only for a short distance. The load on a belt will always try to seek the lowest point due to gravity. If the load is off centre the tracker will move the belt locally but the belt will move off centre shortly after the tracker.

The solution is to centre the load on the belt. Use a Tru-Trac® Flat Return Tracker on the return side to align the belt with the tail pulley and the load zone and install deflectors in the chute to centre the load on the belt.

A Tru-Trac® Trough Tracker installed just before the head or discharge pulley will usually protect the belt by keeping it from contacting the head frame.

4. If the belt is still misaligning to the same side. STOP the belt. Swivel the roller on the misaligned side slightly higher and lower the opposite roll. Tighten the bolts. Restart the belt and re-test.

5. If the belt is now misaligning to the opposite side. STOP the belt. Then swivel the roller on the misaligned side slightly higher. Do not adjust the opposite roller. Tighten the bolts. Restart the belt and re-test.

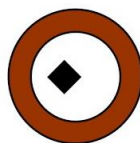
6. If the problem still persists, adjust the existing standard trough idler frames perpendicular to the structure before and after the Tru-Trac® Trough Tracker. Remove any other tracking devices in front of or behind the Tru-Trac® Trough Tracker, as they will reduce or interfere with the performance of the Tru-Trac® Trough Tracker.

7. If you have a 45° troughing angle on the belt, you will also need to adjust the sliding brackets on the flat bar inwards, in order to achieve ideal contact on the wing rollers

### Important for Severely Misaligned Belts

After installation, if the Tru-Trac® Trough Tracker remains kicked in to one side or does not centralise the belt enough move the L-shaped brackets forwards or backwards, depending on direction of misalignment, until the shaft is in the centre of the inner tube, to ensure equal movement to both sides.

**INCORRECT**



**CORRECT**

