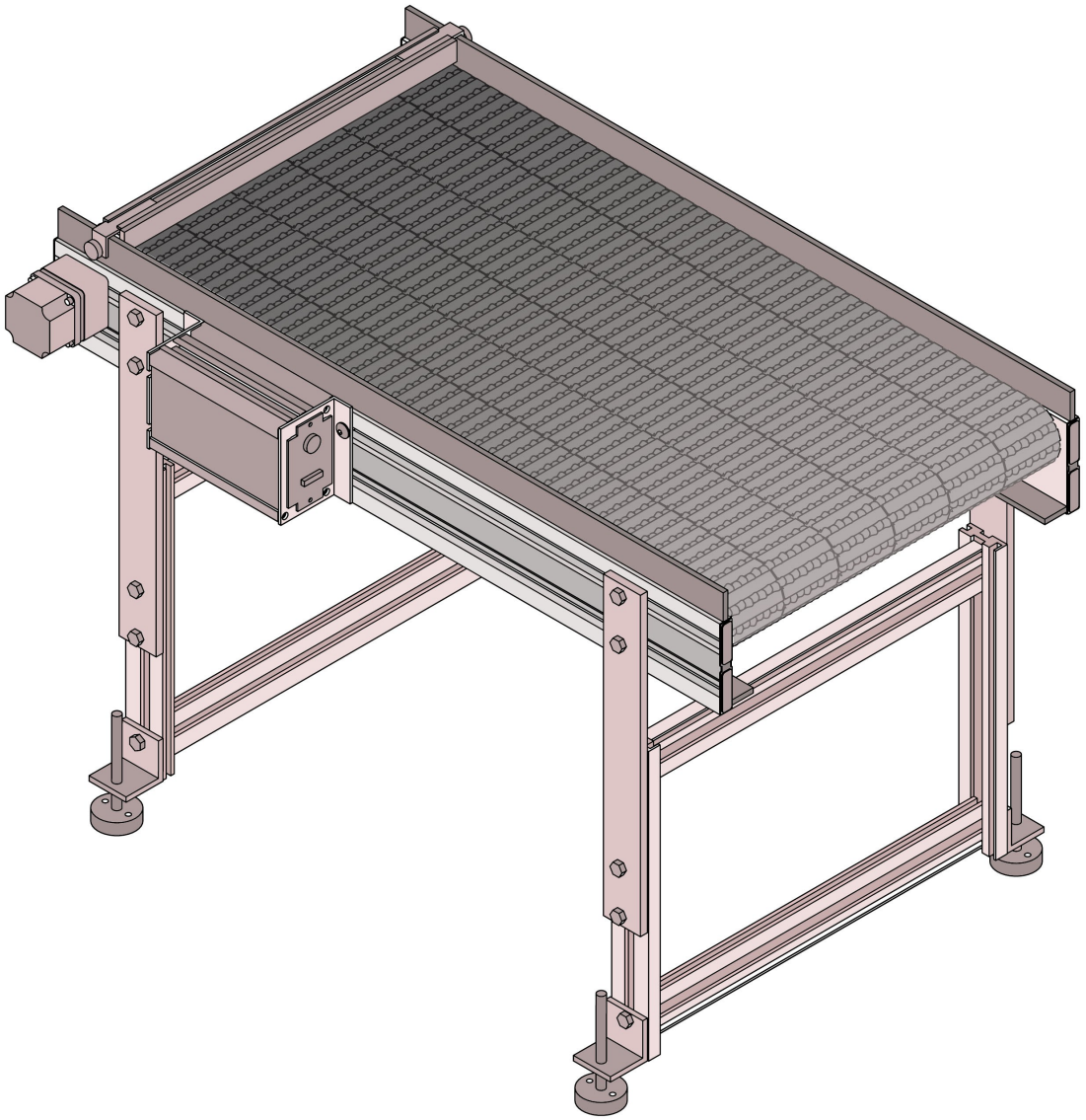
SAFE CONVEYOR, INC.

Owners Manual with Installation and Operating Instructions



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Revision 02 19 15

Table of Contents

Basic Conveyor Features	3
Getting Started	4
Installation & Site Preparation	5
Installing Stands on Conveyor	6
Joining Conveyor Sections	7
Installing Multi-level Systems Installing Optional Adjustable Guide Rails	8-9
Belt Installation and Removal	10
Motor Removal or Relocation	10
Operating, Troubleshooting & Maintenance	11
Warranty and Liability	12

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Conveyor Features

Guard Rail

These 1" high removable guard rails keep products on the conveyor. Can be ordered with Flush guard rails for easy sliding on/off.

End Stop

Stop products anywhere along the conveyor length without needing to stop the conveyor belt.

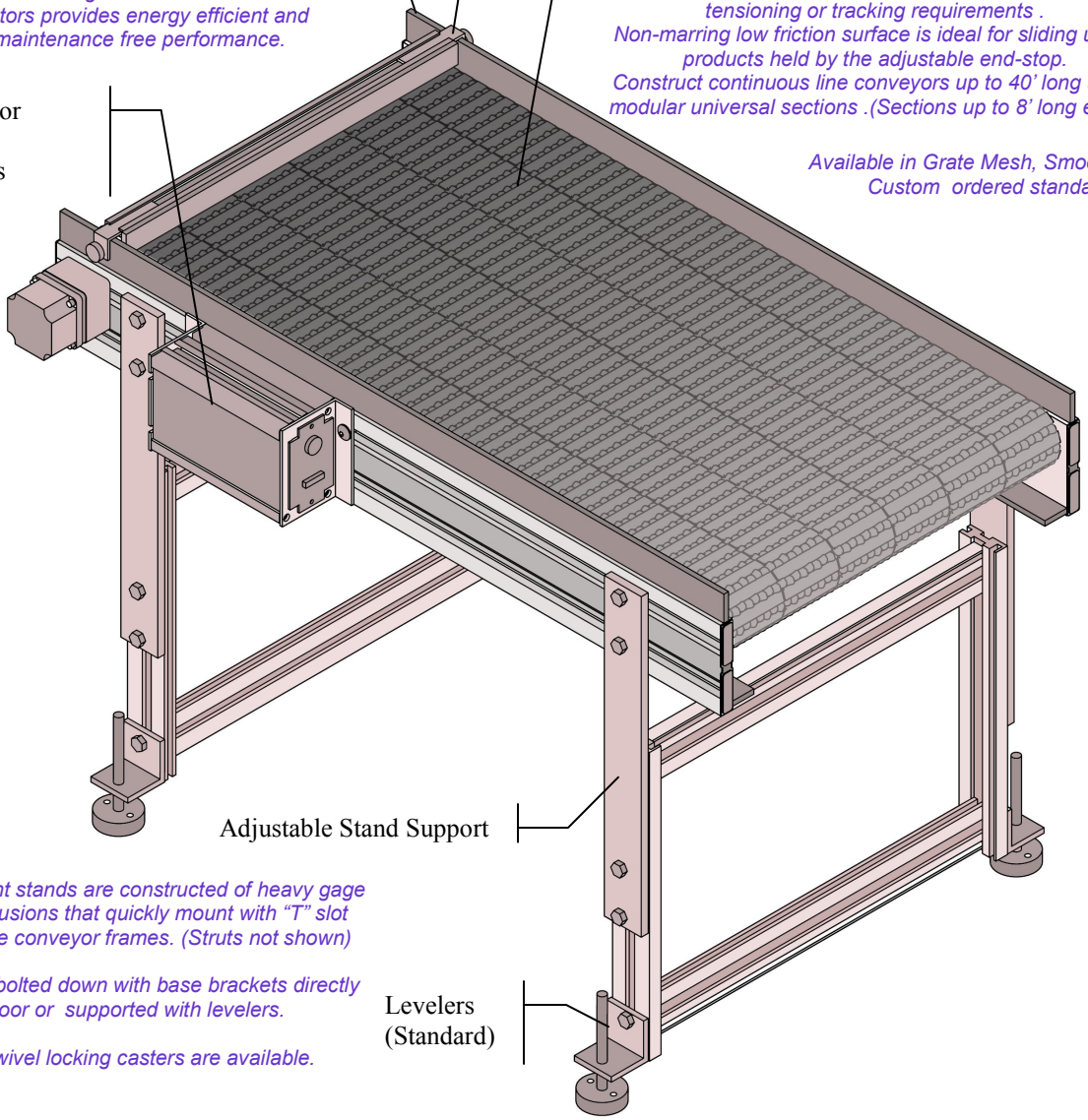
Ball & Bar™ Belting

Safe Conveyor, Inc. proprietary 3/4" pitch releasable belting provides safe & clean operation without any tensioning or tracking requirements . Non-marring low friction surface is ideal for sliding under products held by the adjustable end-stop. Construct continuous line conveyors up to 40' long using modular universal sections .(Sections up to 8' long each.)

Available in Grate Mesh, Smooth Top, ESD or Custom ordered standard belting.

All ball bearing constructed direct drive motors provides energy efficient and maintenance free performance.

DRO Motor & Controls



Adjustable Stand Support

Adjustable height stands are constructed of heavy gage aluminum extrusions that quickly mount with "T" slot hardware to the conveyor frames. (Struts not shown)

Stands can be bolted down with base brackets directly to the floor or supported with levelers.

Optional swivel locking casters are available.

Levelers (Standard)

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Be safe! Read, understand and follow these precautions.

Use the correct power source.
Safe Conveyors have a three prong plug and must be plugged into a grounded three-hole outlet. The voltage source should be within 10% of what is printed on the control panel.

Do not operate the conveyor in an explosive or wet environment.
Safe Conveyors are designed for indoor operation only.

Remove power before servicing.
Safe Conveyors come with a removable power cord. Lock-out the power by removing the cord before servicing.

Replace damaged components before operating.
If the conveyor becomes damaged, do not operate until the damage is repaired. Continued operation with damage could lead to injuries and/or permanent damage to other conveyor components.

Do not stand or sit on the conveyor.
Standing or sitting on the conveyor is dangerous, especially if it is moving or suddenly starts. To avoid injuries from tipping over the conveyor, bolt the stands leveler mounts to the floor through the holes provided.

Keep hands away from the moving belt or other pinch points.
Safe Conveyor motors are the smallest and safest in the industry, but can still cause injury when hands come in contact with moving parts. The motor, if stalled, will continue to operate for approximately 10 seconds before the safety circuitry shuts it off.
To avoid pinch points, keep transfer plates and belt guard rails installed when operating.

Do not overload the conveyor.
Safe Conveyor are rated to hold up to 200 lbs static load between stand supports. Do not exceed this amount.

Inspect your system regularly.
Screws and fasteners can become loose during operation. Regularly inspect and repair any loose or missing fasteners.

Conveyors manufactured by Safe Conveyor Inc. are shipped with this owners manual.

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Installation Tools

Conveyor with single section installation

1. Adjustable or 9/16" wrench. (Socket wrench optional.)
   (Note: Using pliers or vise grips on bolts can damage the anti-corrosive plating.)
2. Level & Tape measure
3. 1/16, 5/64 & 3/32 Hex key wrench
4. Floor anchoring tools for 1/4" diameter bolts. (Anchors not included.)

Conveyor with joined sections installation

1. Adjustable or 9/16" wrench. (Socket wrench optional.)
2. #2 Phillips screw driver. (Power screw gun optional.)
3. Level & Tape measure
4. 1/16, 5/64 & 3/32 Hex key wrench
5. Floor anchoring tools for 1/4" diameter bolts. (Anchors not included.)

Site preparation

When preparing to assemble or set-up Safe Conveyors, please take into consideration the following:

1. **Location of the power source.** Locate the conveyor drive motor within 10' of the power outlet. Avoid having cables in pathways where someone could trip over the cord.
2. **Belt height settings.** It is easier to set the stands to the correct height before installing them on the conveyor. The stands will measure 1" lower than the conveyor's Top of Belt height when installed. Set one stand and then duplicate the setting on all the other stands to achieve equal conveyor belt heights. (See stand settings.)
3. The conveyor location **should not block emergency or fire exits**. Do not install conveyors on stairways or in stairwells as these may block traffic in an emergency.
4. Although the conveyor belt and framing can handle higher temperatures and humidity, the drive motor should be operated between 32-122 °F and in ambient humidity 85% or less (non-condensing.) Please read the motor owners manual supplied with the conveyor for other motor precautions. (Motor manuals can also be found online at safeconveyor.com)

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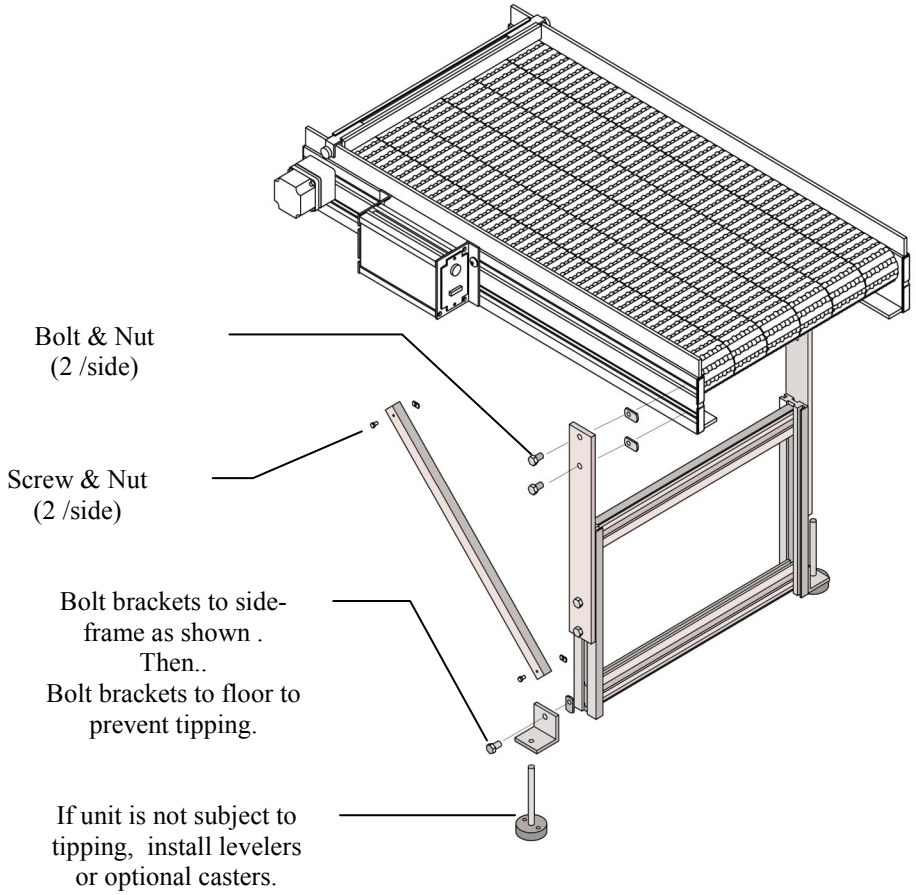
Installing Stands on Conveyor

1. Install Base Brackets to stand positioning the "T" nut with the thread at the top and in the "T" slot between the two existing bolts of the lower stand cross bar. (See figure below.)
2. Locate stands approximately 6" from the end of the section or between the motor and the motor controls. Note: Always locate a stand near the joint of two joined sections for support.
3. Belt height settings. It is easier to set the stands to the correct height before installing them on the conveyor. The stands will measure approximately 1" lower than the conveyor's Top of Belt height when installed. Set one stand height and then duplicate the setting on all the other stands to achieve equal conveyor belt heights.
4. Install 2 "T" nuts into the conveyor sideframe, one above the other, where you want to install the stand. Note: The "T" nuts can be slide from the end or installed directly into the slot by "tipping" them on their sides. Make sure the "T" nuts are correctly seated in the slot so the bolts can be threaded into them.
5. Position the holes in the stand uprights over the "T" nuts inside the frames and install the bolts. Install all 4 bolts of the stand before securing the stand to the sideframe. Insure that the stands are vertical and set to equal heights by using a level on the conveyor belt. Use levelers to adjust for uneven flooring.
6. Install Stand Struts, if supplied, between lower stand body and lower "T" slot of the conveyor with screws and "T" nuts supplies. (2 per stand.)
7. Use 1/4" diameter anchor bolts to secure the stands to the floor through the leveler bases or omit the levelers and bolt the base brackets directly to the floor. (Bolts not included.)
8. Repeat procedure as required to install other stands.



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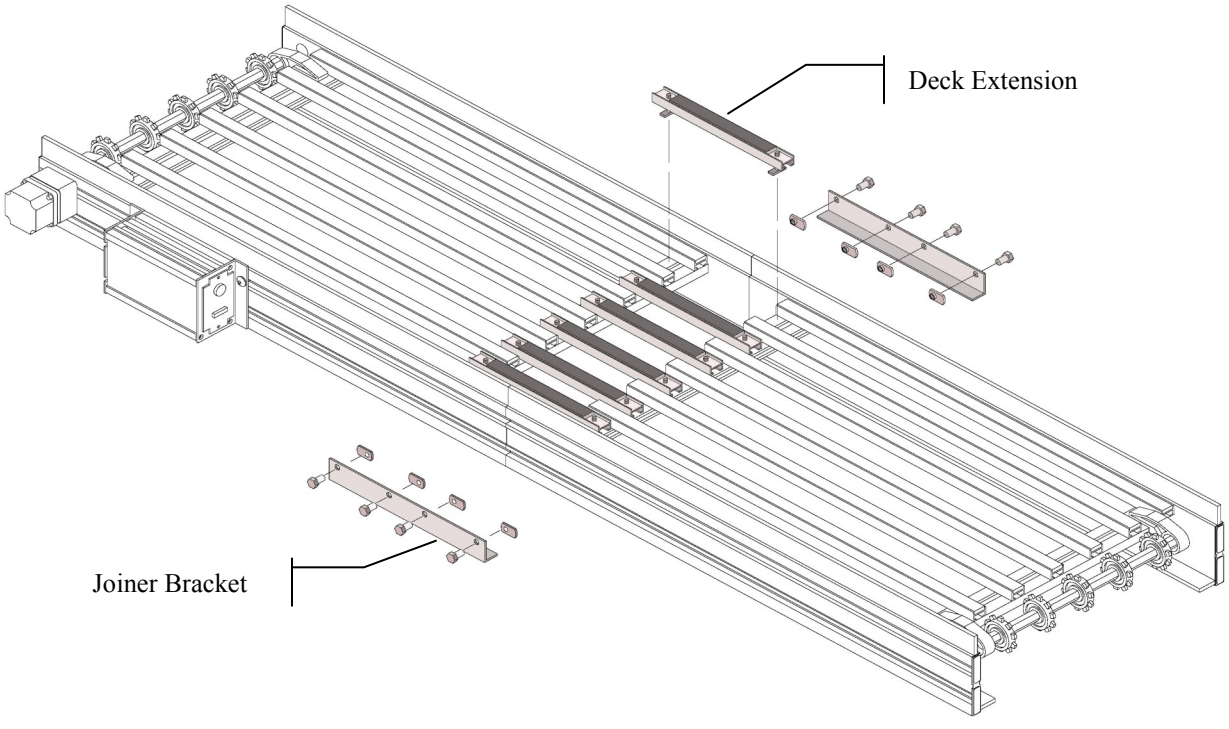
Joining Conveyor Sections

1. To join sections, start with the first section sitting on 2 stands. Place the stands at the joint at least 6 inches away from the end. (See Installing Stands on page 6)
2. Remove the protective end caps at the joints if they are installed.
3. Slide the joiner brackets halfway into one of the sections ends and lightly tighten.
4. Install a stand on the opposite end of the section to be joined. (If you are going to be adding additional sections, leave the stand back at least 6" from the end.
5. Slide the ends together until they butt flush to each other making sure the "T" nut hardware of the joiner bracket is correctly fitting into the "T" slots of the frames. With the frames flush and butted to each other, tighten the joiner brackets on both sides. (When correctly joined, the frames will look like one continuous frame.)
6. Now you can install the "Deck Extensions." Install one deck extension between each of the sections decks as shown in the figure below. The "T" nuts will automatically rotate and tighten against the "T" slot in the frame cross bar as you tighten the screws. If the nut does not "Catch" and lock, loosen it and pull upward on the deck extension as you tighten to keep the "T" nut caught in the slot.
7. With the sections now joined and the Deck Extensions installed, you are ready to install the belting. See page 9.



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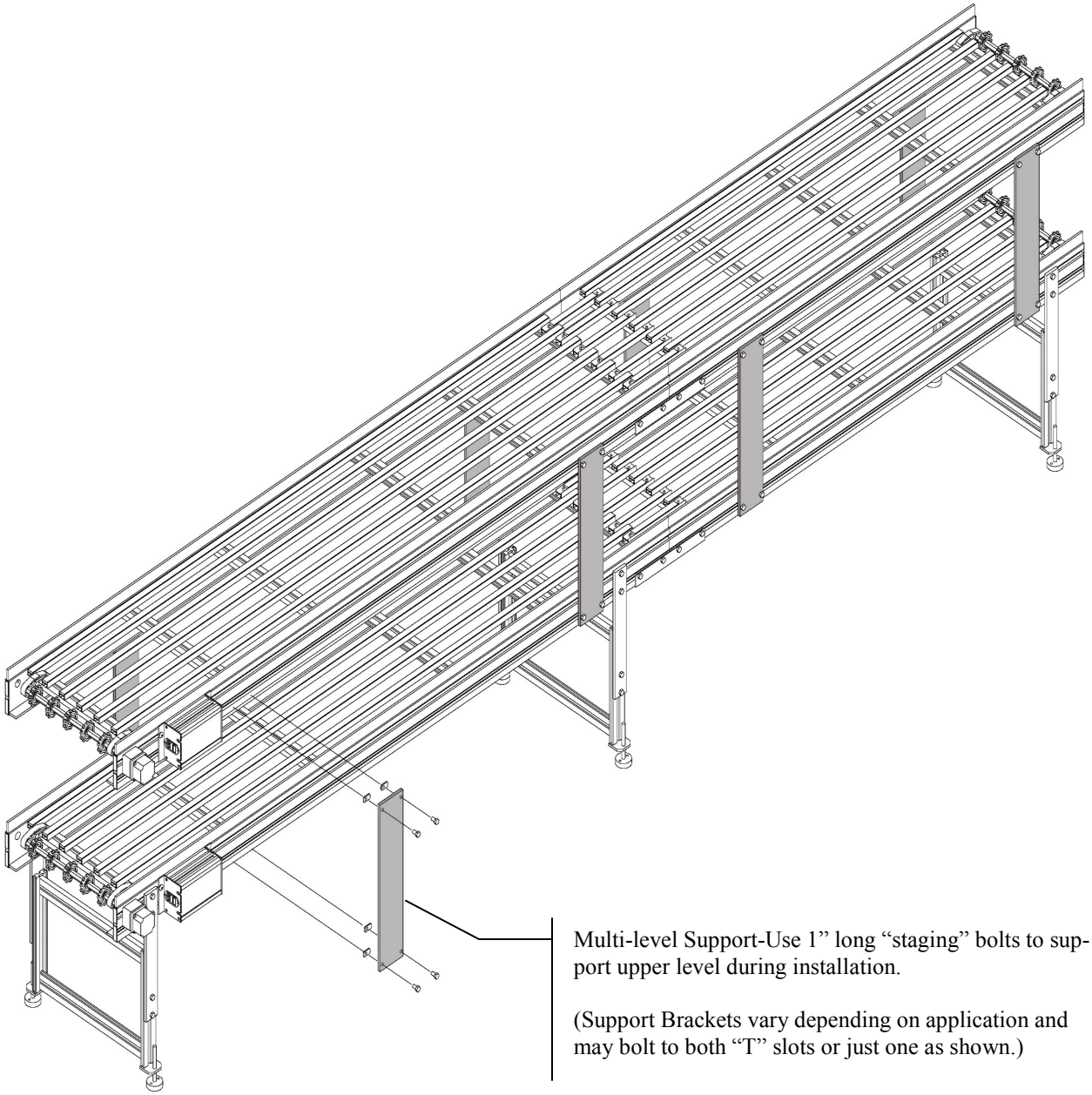
Installing Multi-level Systems

1. First assemble the lower level system with stands and joiner kits. (See Stands and Joining.)
2. Install the multi-level supports on the lower level by installing "T" nuts in the frame and then bolting the upright supports to the frame. Use 2 pair of supports per section and leave slightly loose until all bolts are installed. (See drawing below and note approximate location of the support plates.
3. With the supports installed, you can place a 1" "staging Bolt" in each upright to support the upper sections on the supports, then secure with bolts and "T" nuts supplied. Connect upper sections with joiner kits if required.
4. After all sections and supports are installed and tightened, install the belt. See page 9.



Multi-level Support-Use 1" long "staging" bolts to support upper level during installation.

(Support Brackets vary depending on application and may bolt to both "T" slots or just one as shown.)

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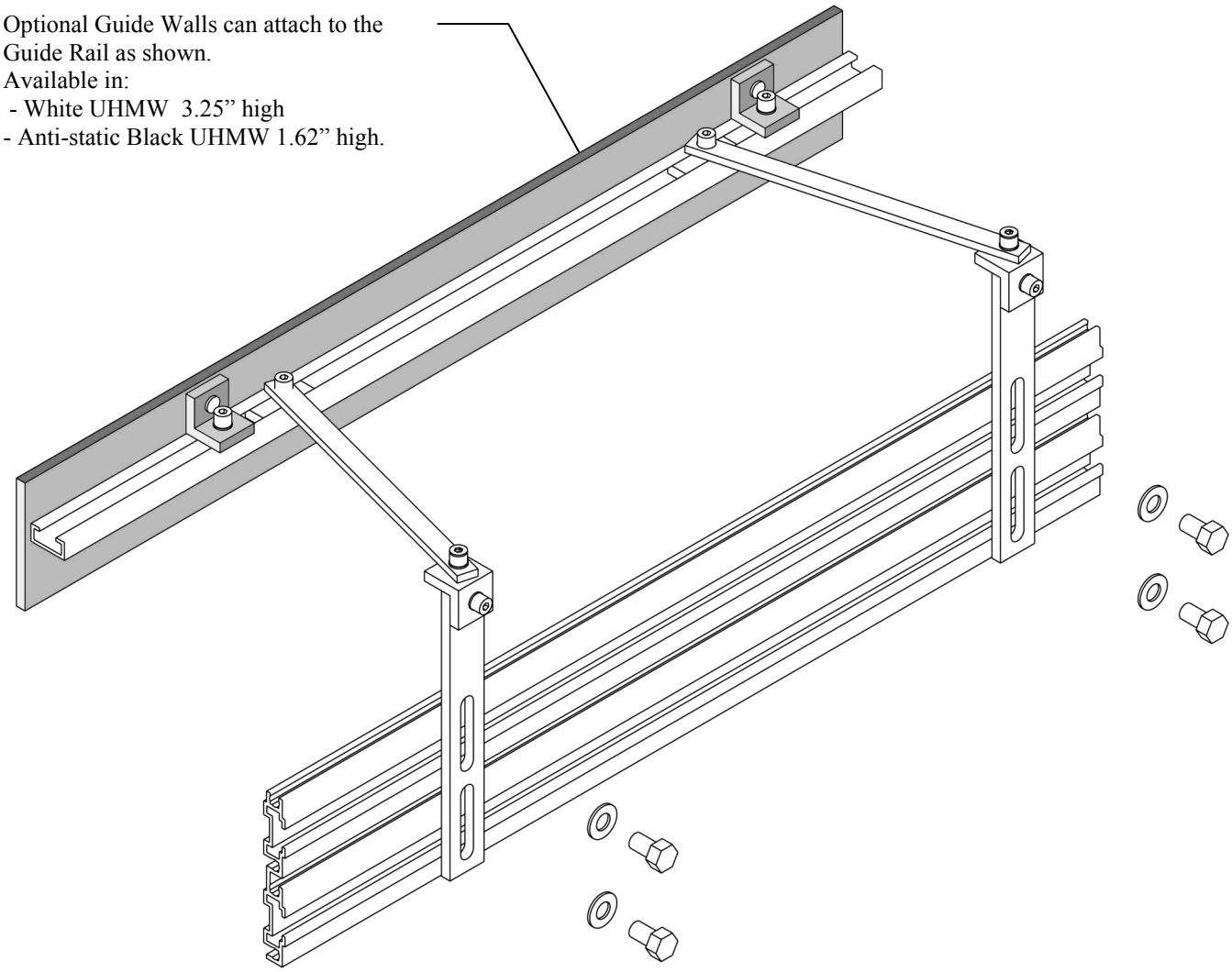
Installing Optional Adjustable Guide Rails

1. First assemble the conveyor and stands before installing Guide Rails.
2. Install "T" nuts into the sideframe slots at desired locations. (2 per upright)
3. Install bolts and washers at each location.
4. Loosen socket head screws to set the location of the guide rails.

Optional Guide Walls can attach to the Guide Rail as shown.
Available in:
- White UHMW 3.25" high
- Anti-static Black UHMW 1.62" high.



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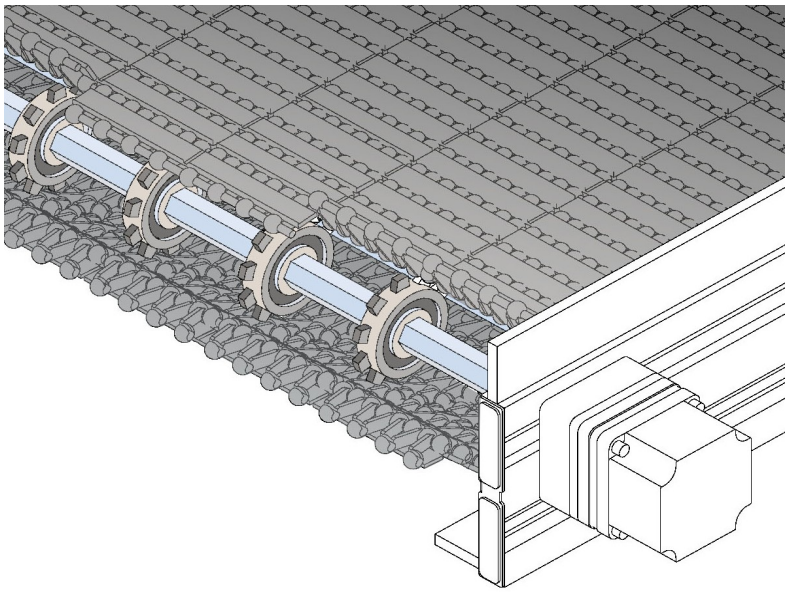
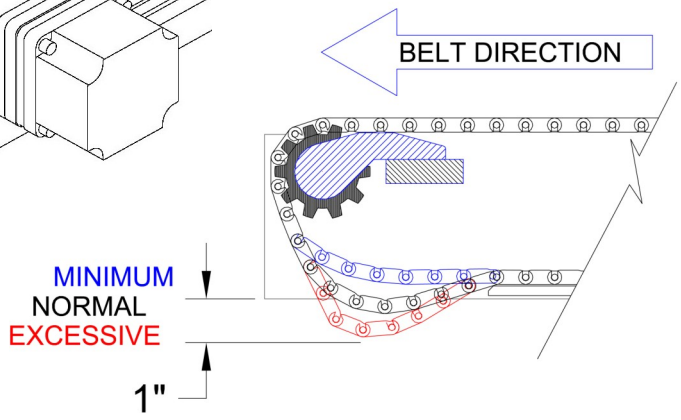
Belt Installation and Removal

Conveyors 8' and smaller are shipped with the belt installed. Multi-section conveyors are shipped with the belt rolled separately. To install or remove belt from the conveyor, please follow these instructions.

1. Orientate the belt to drive with the "Bar" ends first and the "Ball" hook ends trailing like shown in the figure below. Although the belt will run in either direction, it is less likely to be "peeled" open when run as shown.
2. Start at the idler end and thread the belt under the conveyor upside down resting on the lower guide rails.
3. Feed the belt over the top of the conveyor until the bottom and top come together at the drive end.
4. Bring the ends together. The ends should just reach each other without excessive tension. If the belt is very loose, remove rows of belt until the belt is just snug on the conveyor. See below
5. One sprocket is locked for belt location. Adjust the remaining sprocket so they are evenly spaced apart from each other and will engage the underside of the belt as shown. Don't place the sprockets at the joints between belt links. (Use a 1/6 Hex key wrench to adjust the locked sprocket if the belt is not centered on frame after assembly.)
6. Snap the hooks over the bars making sure they are fully engaged with each other. It may help to move the joined connection to the flat part of the conveyor to complete the joining of the hooks.

To remove the belt, pull upward on the leading row as you hold down on the row behind it. The belt will "unzip" as the hooks slip off the bar.





To adjust tension: Add or remove 2 rows at a time when adjusting belt sag.

Do not over tighten belt as it will cause the belt to skip under load. Belt sag is required for proper sprocket engagement.

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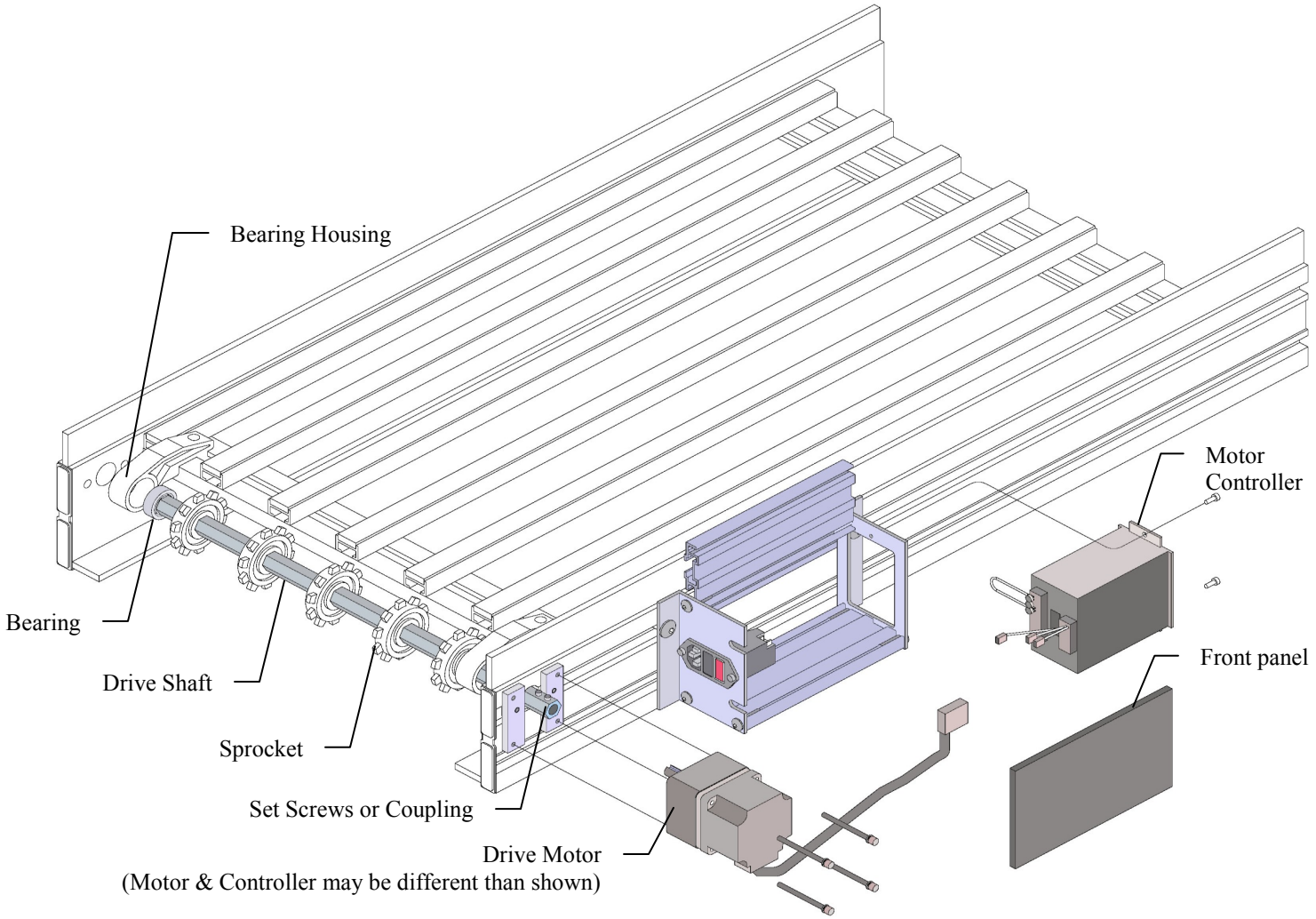
Motor Removal or Relocation

Should you need to remove the motor or switch the location, please follow these instructions.

1. Remove the power cord from the switched outlet on the motor control box.
2. Separate the belt by unsnapping the interlocking connections of hooks and bars.
3. Remove the motor by loosening the 4 screws holding the motor to the frame. Loosen the 2 set screws holding the drive shaft to the motor and slide the motor off the frame. Set on top of the conveyor until the control box is removed.
4. Remove the two bolts holding the motor control box from the frame.
5. Once motor and control box are removed, they can be replaced in the reverse order.
6. To relocate motor to opposite side, remove the drive shaft assembly and flip 180 degrees.
7. Reinstall on the tie bar.
8. Remove and reinstall the motor mounting plates to the opposite side.
9. Reassemble the motor and control box.
10. Change motor direction switch located on front panel.

Note: You can access the inside of the control box by removing the 2 front screws on the top cover at each side and then rotating top cover to remove the front panel. See view below.



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Operating Instructions.

Once you have completed the assembly of any stands or joined sections and you have installed the belt, it is a good time to test your system to insure that it is working correctly.

Plug in the power cord and activate the power switch located by the power cord.

With the power on, push the slide switch on the controller to the run position and adjust the speed dial to the desired speed. Press the speed dial once to set the speed selected. *(Read Motor Operators Manual for more control functions of the Digital Read Out Controller.)*

The motor should run and the belt should move smoothly. If there are any noticeable jerking or erratic motion of the belt, make sure the belt is properly installed, running toward the motor and that there are no objects obstructing the belt motion inside the conveyor. The sprockets are self-tracking and there is no need for any tensioning adjustments.

To insure safe operation, make sure the power cord is not in harms way.

To prevent tip overs, remove the levelers and bolt the conveyor stand brackets to the floor.

Trouble Shooting.

Should the conveyor not operate, please perform the following tests before contacting the factory.

1. **Verify that the power source is active**. The display should light when on.
   If the display will not go on, remove the power cord to gain access to the fuse holder. Remove the fuse holder with a small flat blade screw driver. The fuse holder contains a replacement fuse. If the fuse is blown, replace it with the spare fuse. Reinstall and turn on the power. If the fuse blows a second time, the motor and controller should be replaced. Warrantee information is on page 12.
2. **Check the drive shaft set screws**. If the motor is rotating, but the belt is not being driven by the drive shaft, check the set screws on the drive shaft coupling for tightness. If missing or loose, tighten or replace with same size screws.
3. **Check the alarm code if displayed.** If an alarm code is present on the display, please refer to the motor owners manual for identification of problem. (Codes pages 33 & 34)
4. Note: The factory disables the alarm code **"AL-46".** If you have replaced the motor direct from Oriental Motor, refer to page 26 to set the "power-on alarm" function "oPAL" to "OFF".
5. Please contact the factory for replacement of any broken or damaged components.

Maintenance

- There are no user serviceable components. (Sealed motors and bearing.)
- Periodically clean the inside and outside of the conveyor with standard household cleaners recommended for kitchen counter application. Remove the belt and shake out any loose debris. Remove any material accumulated or "wound-up" on the drive as part of the interior cleaning.
- Check for loose or missing hardware and tighten or replace as required.

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Warranty and Liability

Safe Conveyor, Inc. (the Company) warrants to the first end user Buyer that the Products and Parts thereof, when shipped, will be free from defects in materials comprising the same and in the Company's workmanship for a period of 2 years from date of shipment. If any such defects exist or later appear, the Company shall undertake, at its sole expense, prompt remedial action as stated herein to correct the same; provided however, that the Company shall have no obligation or liability under this Warranty unless it shall have received written notice specifying such defect no later than two (2) years from the date of shipment. Remedial action under this Warranty shall require only that the Company, at its option, repair or modify the Products or Parts thereof, replace the same F.O.B. Swansea, MA, or accept the return of the Products or Parts thereof by Buyer and refund the purchase price.

Products, or Parts thereof, manufactured by others are warranted hereunder only to the extent of such manufacturer's warranty to the Company.

Since after shipment, the Products and Parts thereof are under the sole control of Buyer, this Warranty is subject to, and shall be applicable only if, the following conditions are met:

A. The Company's instructions as to installation, operation and maintenance have been followed;
B. The Products and Parts thereof have been used under normal operating conditions or under such conditions as hereinbefore specified by the Company, or specified by the Buyer and agreed to in writing by the Company;
C. The Products and Parts thereof have been properly erected, installed, operated and maintained and have not been affected by misuse, neglect or accident;
D. The Buyer has not attempted or performed corrective work or change on the Products and/or Parts thereof without the Company's prior written consent as to the nature and expense thereof;
E. The company shall have received notice of any defect no later than thirty (30) days after the Buyer first had knowledge of the same; and
F. Within the Warranty period and after prior authorization from the Company, the Products and/or Parts are shipped freight prepaid to the Company at 1658 GAR Hwy Ste 2, Swansea, MA 02777.

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LIMITATION OF LIABILITY

THE COMPANY SHALL HAVE NO LIABILITY WHATSOEVER IN ANY EVENT FOR PAYMENT OF ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING, WITHOUT LIMITATION, DAMAGES FOR INJURY TO ANY PERSON OR PROPERTY. BY ACCEPTING THE PRODUCTS AND/ OR PARTS THEREOF, THE FIRST END USER BUYER OR SUBSEQUENT USER AGREES THAT THE COMPANY SHALL NOT BE LIABLE FOR INDEMNIFICATION OR CONTRIBUTION (IN WHOLE OR IN PART) EITHER EXPRESSLY OR BY IMPLICATION.

IF FOR ANY REASON ANY OF THE FOREGOING PROVISIONS SHALL BE INEFFECTIVE, THE COMPANY'S LIABILITY FOR DAMAGES ARISING OUT OF ITS MANUFACTURE OR SALE OF ITS PRODUCTS OR PARTS, OR USE THEREOF, WHETHER SUCH LIABILITY IS BASED ON WARRANTY, CONTRACT, NEGLIGENCE, STRICT LIABILITY IN TORT OR OTHERWISE, SHALL NOT IN ANY EVENT EXCEED THE FULL PURCHASE PRICE OF SUCH PRODUCTS AND PARTS THEREOF.

Any action against the Company based upon any liability or obligation arising hereunder or under any law applicable to the sale or its Products or Parts thereof, or the use thereof, must be commenced within one (1) year after the cause of such action arises.

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