

# AIR ELIMINATOR



# TrueClean® Air Eliminator

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# Introduction

## ABOUT

**Thank you for purchasing a TrueClean® product.**

This manual covers the TrueClean Air Eliminator. The Air Eliminator is designed for minimal routine maintenance, but care and attention should be given to the instructions provided in this manual

Do not remove any labeling on any TrueClean product. Immediately replace any label that is missing.

# Safety



## IMPORTANT SAFETY INFORMATION

Read this manual before installing, operating, and maintaining this equipment. Failure to read the manual can result in personal injury and/or equipment damage.

Do not attempt to remove and/or modify any TrueClean products or programming. Doing so can create unsafe conditions for the operator(s) and/or surrounding persons. Any change to TrueClean products or programming will void any and all warranties.

Do not place any TrueClean product in an application where general product service ratings are exceeded. Doing so puts the operator(s) and/or surrounding persons at risk of personal injury and/or result in equipment damage.

The words DANGER, WARNING, and CAUTION and their meanings, as used within these instructions, are listed below:

 <b>DANGER</b>	Indicates an imminently hazardous situation, which if not avoided, has a high likelihood of resulting in death or serious injury. This symbol is used in only the most extreme at-risk cases and warrants immediate action.
 <b>WARNING</b>	Indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury. This symbol is used for moderately at-risk cases and warrants immediate action.
<b>CAUTION</b>	Indicates a potentially hazardous situation, which if not avoided, may result in minor or moderate injury. This symbol may also be used to alert against an unsafe operating or maintenance practice.

If, at any point during operation a Danger, Warning, or Caution indication is present, the operator should immediately take steps to resolve the problem and/or seek assistance from a supervisor.

Do not remove any labeling on any TrueClean product. Immediately replace any label that is missing.

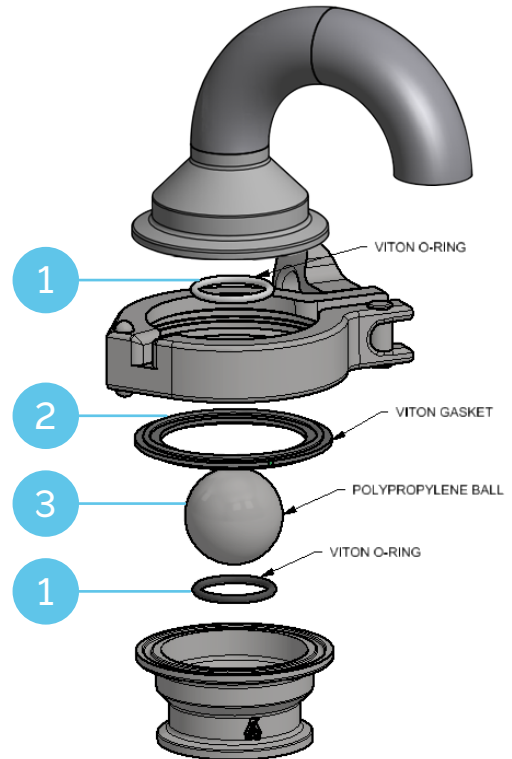
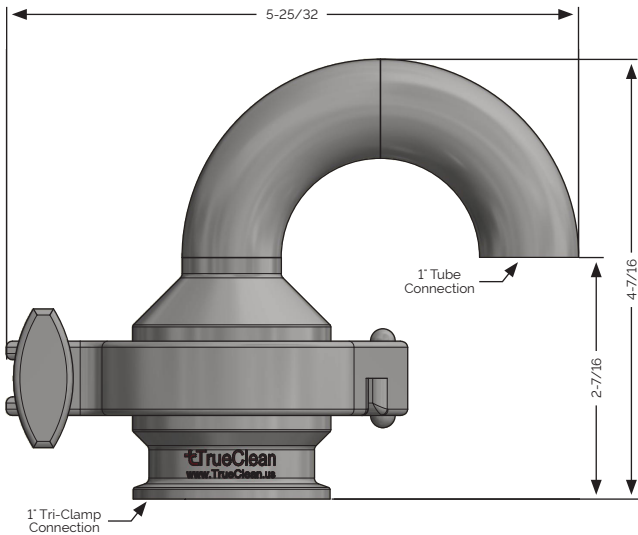
## DISCLAIMER OF LIABILITY

TrueClean does not assume responsibility and expressly disclaims liability for loss, damage, or expenses that arise in any way from the installation, operation, use, or maintenance performed in accordance with this manual. TrueClean assumes no responsibility for any infringement of patents or other rights of third parties that may result from use of the module. No license is granted by implication or otherwise under any patent or patent rights.

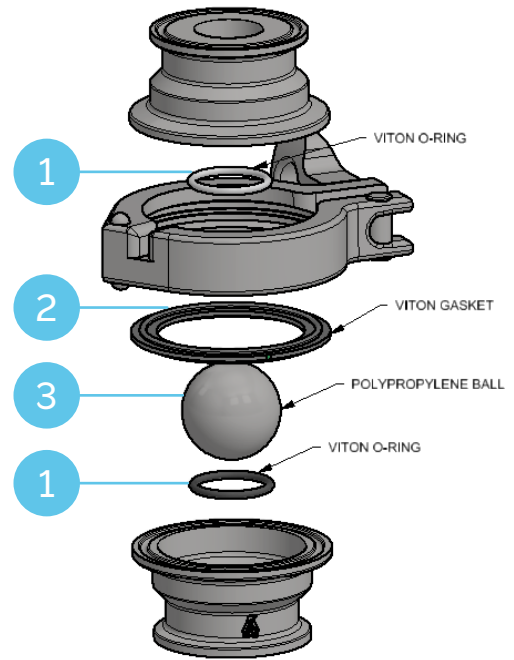
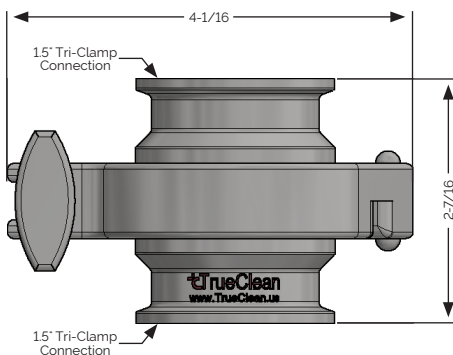
TrueClean reserves the right to make changes to the product, specifications, or this manual without prior notice.

# At a Glance

## GOOSENECK CONNECTION



## TRI-CLAMP® CONNECTION



## AIR ELIMINATOR PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
1a	1	FDA-118-SFY	O-Ring-Viton
1b	1	FDA-118-E	O-Ring-EPDM
2a	1	40MP-SFY-2	Gasket-Viton
2b	1	40MPE-2	Gasket-EPDM
3	1	88117019	Ball-Polypropylene

## ITEM NUMBER CONFIGURATION

**TAE-15M-SFY-316L**

CONNECTION SIZE: 15-1'-1.5" / 20-2"

ELASTOMERS: SFY-VITON / E-EPDM

CONNECTION TYPE: M-TRI-CLAMP® / G-GOOSENECK

MATERIAL: 316L STAINLESS STEEL

# Installation

## TECHNICAL DATA:

Maximum pressure: 145 psig

Maximum temperature: 194°F

Ball material: Polypropylene

Ball Density: 0.033 lbs/in<sup>3</sup>

## INSTALLATION:

CAUTION: Prior to installation, verify that the piping system is not pressurized and that it has been adequately drained.

For proper function of the TrueClean Air Eliminator, the following items should be observed:

1. Verification of the product density is greater than the ball density listed in the technical data.
2. Vertical installation of the TrueClean Air Eliminator valve assembly.
3. Use a Tri-Clamp clamp and gasket to attach the TrueClean valve to the piping system.

Note: It is advised to use a short outlet tee for installation. Although this valve is designed to be Cleaned Out-Of-Place (COP), the tee should be short to ensure proper cleaning during Clean-In-Place (CIP) of the pipeline.

# Process of Operation

## APPLICATION:

The Air Eliminator is a sanitary air relief valve. It allows air out while also preventing product from leaking out. The Air Eliminator may be utilized in various manners, specifically:

**High point vent:** Installed vertically on the top of a pipeline or container. This application can be used to bleed a pipeline of air pockets that have formed on account of new piping installation or other means of air entrainment in the process.

**Check valve:** This occurs when product flows into the valve body, moving the polypropylene ball upwards to form a tight seal with the O-ring.

**Air Eliminator:** To act as an air eliminator, the valve is installed ahead of a pump on top of the inlet pipe. This prohibits the pump from drawing a vacuum because of the spontaneous release of air on the suction side of the pump which prevents cavitation caused by air bubbles that would otherwise be drawn in by the pump.

## WORKING PRINCIPLE:

The Air Eliminator is composed of a vent top clamped to a vent bottom with a freely moving polypropylene ball. The ball seals on the bottom or top seat dependent on process conditions.

In **Figure A**, the ball raises from the lower seat as air burps from the process line.

In **Figure B**, the ball, which is lighter than water, closes against the upper seal when encountering product. This seals product from escaping the vent. Once product pressure is not present, the ball resets to the lower position and seals against the lower o-ring, preventing air from entering the system.

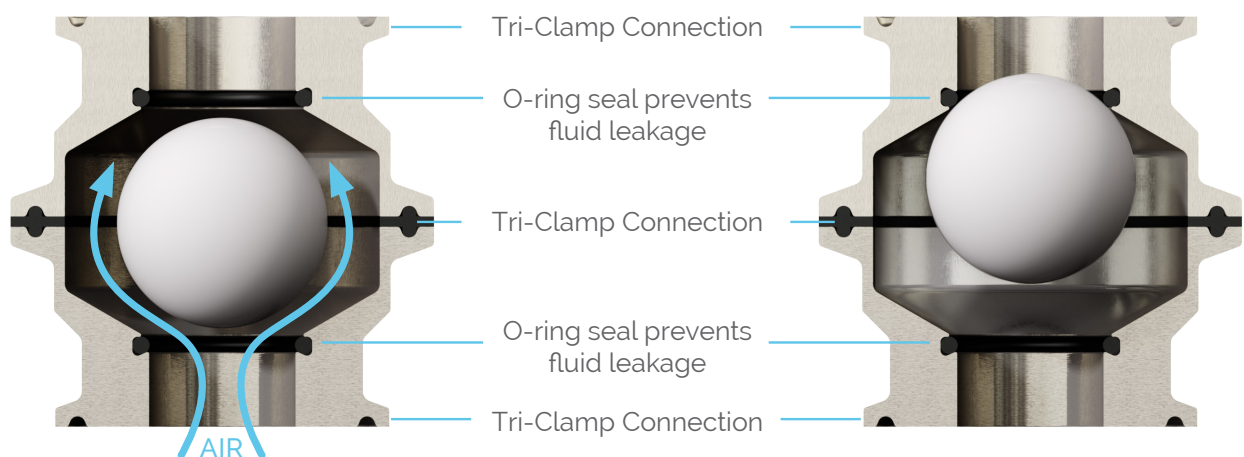


FIGURE A

FIGURE B

# Maintenance

**WARNING:** Prior to any maintenance, depressurize and drain the piping system.

1. Disconnect the TrueClean Air Eliminator from the piping system. To do this remove the process line clamp by turning the line clamp wingnut counterclockwise, and remove the gasket connecting the Air Eliminator to the process tubing.
2. Use a 1" cap and clean gasket to close the process.
3. Before disassembling, visually check the valve for any corrosion or damage.
4. Disassemble the Air Eliminator by removing the valve body clamp. Turn the body clamp wingnut counterclockwise until the clamp can be removed. Then remove the clamp and gasket.
5. Inspect the valve surfaces for damage. If there is damage to the surface, polishing or replacement may be required depending on the severity of damage. If in doubt, contact your TrueClean distributor for assistance.
6. Remove the O-rings from the groove in the vent top and bottom

**CAUTION:** An O-ring pick tool is necessary to safely remove the O-ring without causing damage to the O-ring or the vent top. Failure to do this may void the warranty.

7. Inspect the gasket, O-rings and ball. Replace them if there are any signs of damage.
8. Complete a final inspection, looking for corrosion or damage within the device.
9. Apply a food-grade FDA approved lubricant to the O-rings and install it in the proper O-ring groove inside the vent top and bottom using the O-ring pick tool to assist with install.
10. Reassemble the Air Eliminator.
11. Ensure the process is not operating and the area is safe. Remove the cap installed earlier from the process line.
12. Install the Air Eliminator and line clamp back into the piping system.



# Cleaning

The TrueClean Air Eliminator is designed for COP cleaning only. Therefore, follow all steps outlined in the maintenance section above, paying special attention to the warning and caution. While the valve is disassembled, standard operation procedures at the respective facilities should be followed to clean the valve.

# Chemical Compatibility

To verify Air Eliminator will work with your specific application, reference our Chemical Compatibility Chart at [csidesigns.com/uploads/resources/Chemical-Compatibility-Chart.pdf](https://csidesigns.com/uploads/resources/Chemical-Compatibility-Chart.pdf) to help in the selection of elastomers.

# Spare Parts List

## O-RINGS

- Viton part number: FDA-118-SFY
- EPDM part number: FDA-118-E

## GASKETS

- Viton part number: 40MP-SFY-2
- EPDM part number: 40MPE-2

## BALL

- Polypropylene part number: 88117019

# Warranty

- A. GENERAL PROVISIONS: Central States Industrial Equipment & Service Inc. (the "Company") warrants exclusively to the original purchaser (the "Customer") that equipment or parts thereof manufactured and sold by the Company will be free from defects in material and workmanship only, under normal use and service, for a period of one (1) year from the original shipment date. The Company shall not be liable for any loss of revenue or profit, loss by reason of plant shutdown, non-operation or increased cost of operation, loss of products or materials, or other special or consequential loss or damages resulting from any such warranted defects. This warranty will not apply to any equipment or parts which has been subjected to accident, alteration, abuse, or misuse. This warranty is in lieu of all other warranties. All other warranties, both express or implied (including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose) warranties are hereby excluded and waived. The Company's only obligation and liability shall be to fulfill the warranty specifically stated herein. The Company will neither assume nor authorize any other person to assume for it any other obligation or liability in connection with the equipment or parts. In the event of a claim under this warranty, the Company's sole and exclusive liability for any warranted equipment or parts shall be, at the Company's option, limited to the following (a) the purchase price of the equipment or parts that are defective, (b) replacement of the defective equipment or parts or (c) repair of the defective equipment or parts.
- B. RETURN OF PARTS OR EQUIPMENT TO COMPANY PLANT: In the event the Company elects to inspect the alleged defective equipment or parts for possible repair, Company will notify Customer in writing, and the equipment or parts must be returned with transportation cost prepaid by the Customer. In the event the Company's inspection confirms defective equipment or parts covered by this warranty, the Company shall have the option to select any of the remedies described in Section A above. No transportation for returned or replaced items will be paid by the Company unless written approval for transportation charges is given by the Company.
- C. COMPONENTS NOT MANUFACTURED BY THE COMPANY: Components not manufactured by the Company, but furnished as part of its equipment (for example: valves, controls, gauges, electrical switches or instruments, etc.) will be warranted by the Company only to the extent of the component manufacturer's warranty.
- D. REPAIR OF EQUIPMENT INSTALLED IN THE CONTINENTAL UNITED STATES: In the event the Company elects to repair a covered item and it is, in the judgement of the Company, impractical to return the equipment or parts for repairs, the Company may arrange for the repairs to be made by its personnel or, at its option, sublet such repairs to a qualified company. The Customer will be expected to cooperate by making the equipment or parts available and accessible when the work is scheduled and is expected to provide the necessary utilities. If local labor conditions prohibit such work being done by Company personnel under the conditions and at the rates payable by its contracts with its employees, the Company obligation shall be limited to supervision of the work, replacement of defective parts, and labor costs in an amount equal to the amount which would be payable for a reasonable number of hours required to make the repairs at the rates payable under the terms of Company contracts with its employees. In such event, all labor costs shall be paid by the Customer and the Company will reimburse the Customer to the extent set forth above.
- E. REPAIR OF EQUIPMENT INSTALLED OUTSIDE THE CONTINENTAL UNITED STATES: In the event the Company elects to repair a covered item for a Customer located outside the continental United States and it is, in the judgement of the Company, impractical to return the equipment for repairs, the Company shall have the additional options (in addition to the other options described herein) of either sending a service representative to repair (or supervise the repairs) or paying Customer a reasonable amount to allow the Customer to have the repairs made locally; provided, that in such situation, Company shall have no obligation to repair or replace equipment or parts that are repaired on by third party contractors selected by Customer.





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