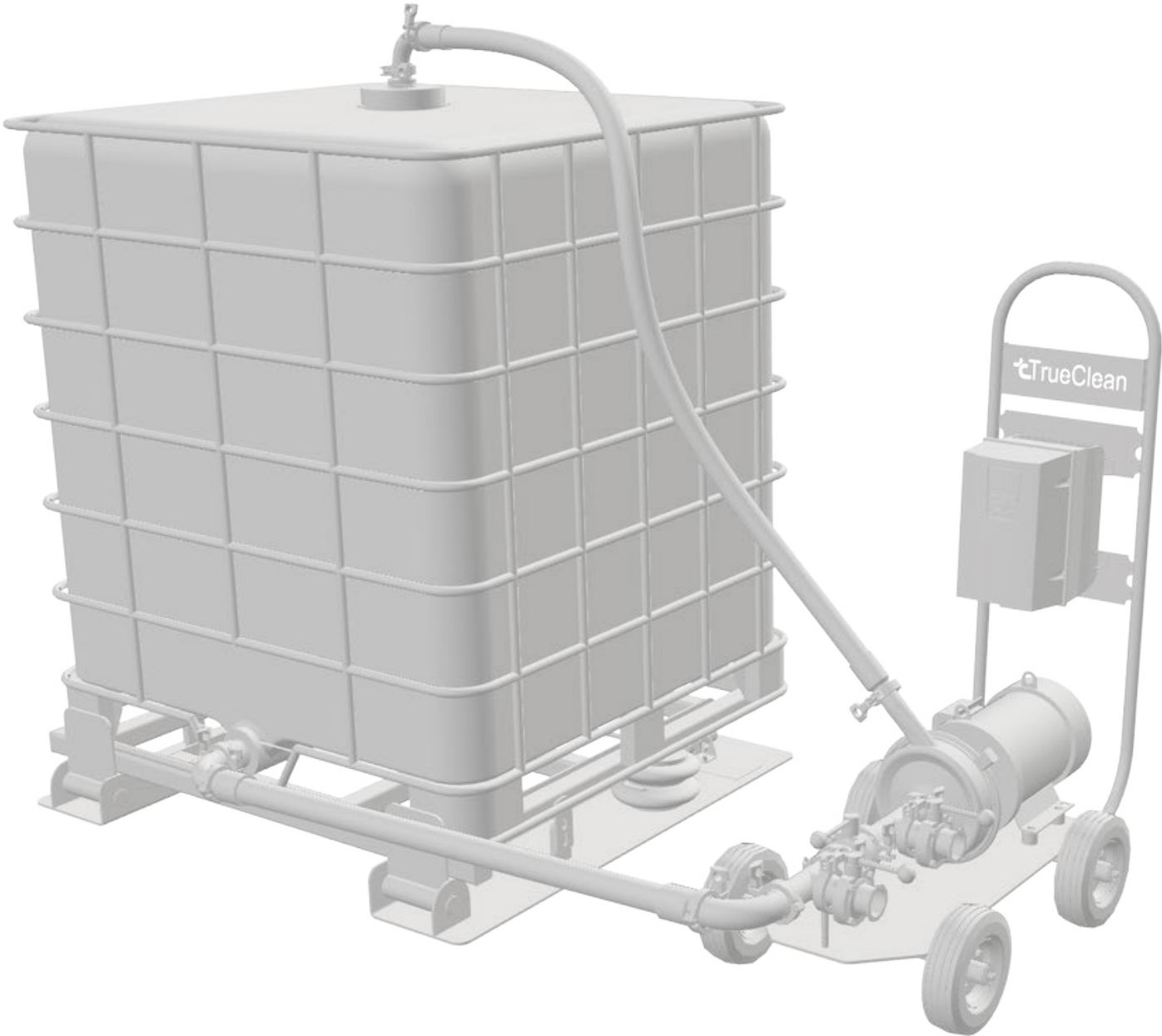


TOTECLEANER™



TrueClean® | INSTALLATION / OPERATION / MAINTENANCE



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Introduction

ABOUT

Thank you for purchasing a TrueClean® product.

This manual contains installation, operation, and maintenance instructions for the TrueClean ToteCleaner™.

TrueClean ToteCleaners are 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.

If, at any point, you have questions or concerns regarding your ToteCleaner, please call 800.654.5635 or 417.831.1411.

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:

 DANGER	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.
 WARNING	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.
CAUTION	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

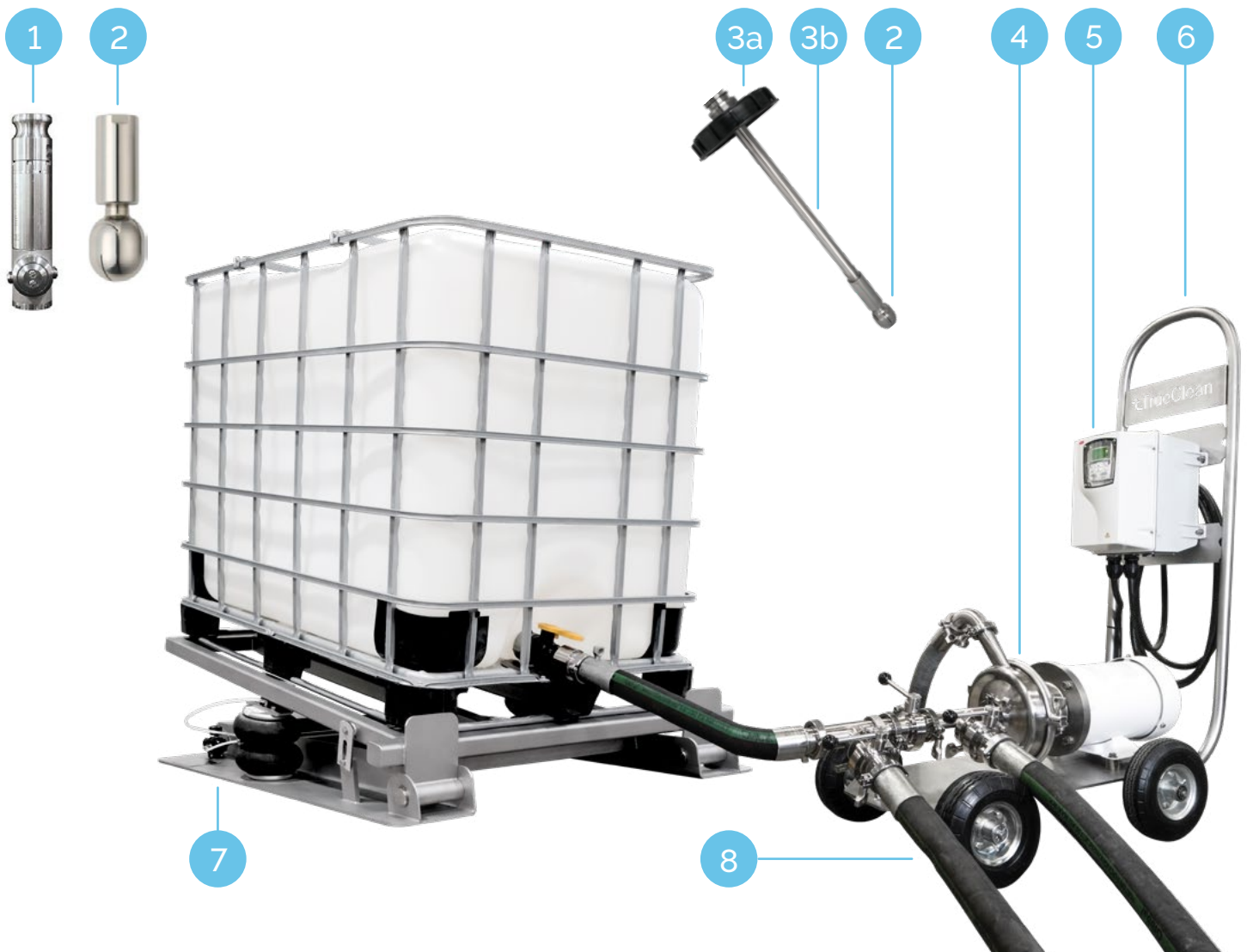
TrueClean does not assume responsibility and expressly disclaims liability for loss, damage, or expenses that arise in any way from the installation, operation, use, or maintenance performed in accordance with this manual. TrueClean assumes no responsibility for any infringement of patents or other rights 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

TOTECLEANER™

- 1 Jet Spray Assembly Device
- 2 Rotary Spray Assembly Device
- 3 Tank Lid (a) with Down Tube (b)
- 4 Pump
- 5 VFD
- 6 Pump Cart
- 7 ToteTilter™ (sold separately)
- 8 Hose Kit (sold separately)



Components

VARIABLE FREQUENCY DRIVE (VFD):

Become familiar with the control panel functions before operating the ToteCleaner. The following glossary defines objects found on the control panel.

- START — turns the pump on once the system is completely installed
- STOP — shuts the pump off
- SPEED UP/DOWN — increases or decreases the motor Hz setpoint for pump speed. During cleaning, operators will target 30psig for the rotary spray device or full speed (60Hz) for the jet device.

DANGER

Failure to power down equipment can lead to personal injury or death. Always make sure that the electrical supply is powered down before connecting or disconnecting power cords.

Note: The entire VFD user manual can be viewed online [here](#).

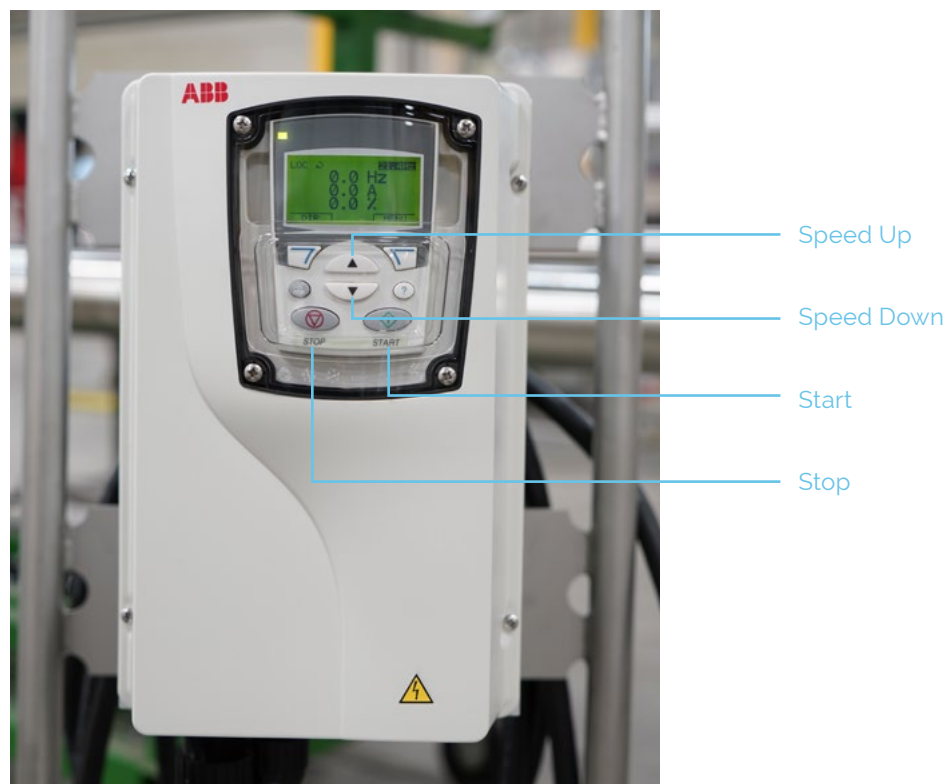


Fig. 1 - VFD

Installation

SPRAY ASSEMBLY INSTRUCTIONS:

1. Apply anti-seize to threads on spray tube.
2. Attach spray tube onto lid by threading it into the center bung. Be careful not to over-tighten, as this could damage the bung.
3. Attach the provided cleaning device by screwing it onto the spray tube. Secure with an open-ended or adjustable wrench.
 - a. Tighten, using the flats nearest the threads. Using the flats on the lower body can cause damage to the device.
 - b. For full assembly, please refer to Figures 2 and 3.



Fig. 2 - Alfa Laval GJ9
4-Nozzle 0.150



Fig. 3 - MultiMidget
360 3/4" NPT

Installation

1. Confirm that the tote is drained of all flowing product.
2. Confirm that the tote to be cleaned is elevated at least seven inches off the floor.
3. Confirm that the ToteCleaner cart is on a structurally sound, flat, and level surface.
4. Screw spray assembly into large opening on the top of the tote.
5. Connect 1.5" elbow to spray assembly with gasket* and clamp*.
6. Connect 1.5" supply hose to elbow with gasket* and clamp*.
7. Connect supply hose to pump outlet with gasket* and clamp*.
8. Attach Camlock by Tri-Clamp® adapter to the tote outlet drain.
9. Connect 2" elbow to the adapter with gasket* and clamp*.
10. Connect 2" elbow to the return port on the cart with gasket* and clamp*.
11. Connect 2" return hose from elbow on the tote outlet to the elbow on the cart.
12. Connect water supply to supply port on cart with gasket* and clamp*.
13. Connect drain hose to drain port with gasket* and clamp*. Run the hose to a safe place to drain.
14. Plug the power cord into appropriate power supply, as labelled on the control panel.
15. If appropriate, switch disconnect on remotely mounted electrical panel to **ON**.

Note: *Included with Optional Hose Kit, sold separately.

Sequence of Operation

The TrueClean ToteCleaner is designed to allow versatility in the washes that can be performed.

If cleaning needs are minimal, a rinse wash may be run by following the **Rinse Wash** sequence of operation.

If the use of chemicals is desired, a caustic or acid wash may be run by following the **Caustic/Acid Wash** sequence of operation. If both a caustic and an acid wash are desired, repeat the sequence of operation outlined under **Caustic/Acid Wash**. The steps for each are identical.

If a sanitizer wash is desired, follow the **Sanitizer Wash** sequence of operation.

Below are examples of common wash recipes.

- **Caustic wash:** Initial rinse • Caustic wash • Post rinse
- **Caustic wash with sanitizer:** Initial rinse • Caustic wash • Post rinse • Sanitizer wash
- **Caustic/acid wash:** Initial rinse • Caustic wash • Post rinse • Acid wash • Post rinse
- **Caustic/acid wash with sanitizer:** Initial rinse • Caustic wash • Post rinse • Acid wash • Post rinse • Sanitizer wash

Sequence of Operation

RINSE WASH

1. Close recirculation valve, and open supply and drain valves.
 - Please refer to Figure 4 for valve configuration.
2. Confirm that there is water flowing to the supply valve.
3. Press **START** button to start the pump.
4. When wash is complete, push **STOP** button.
5. Next, close the supply valve and allow the tote to completely drain.
 - If a rinse wash is the only wash to be run, also open the recirculation valve to allow the pump and supply hose to drain with the tote.
 - Please refer to Figure 5 for valve configuration.

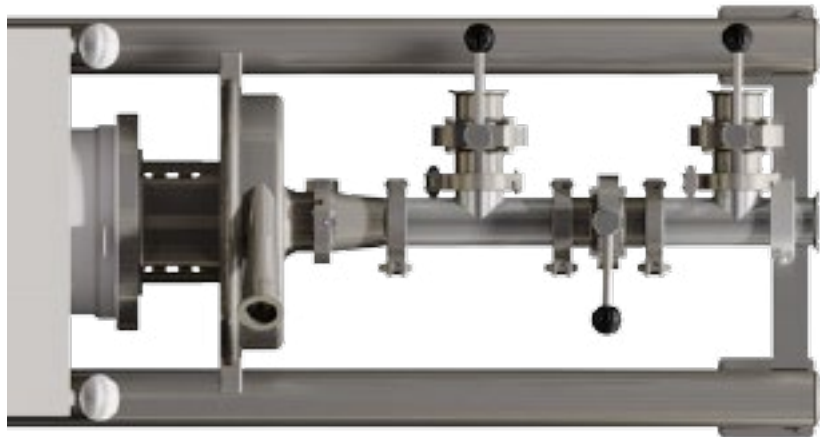


Fig. 4

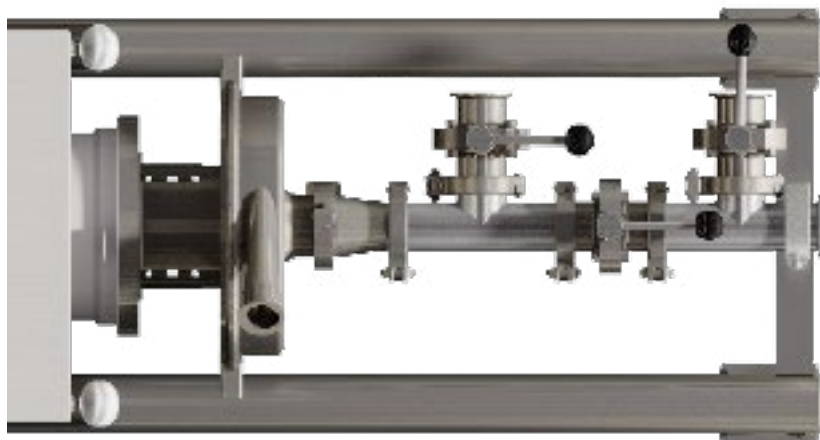


Fig. 5

Sequence of Operation

CAUSTIC/ACID WASH

1. Close drain valve. Open recirculation and supply valves, allowing water to fill the tote.
 - Please refer to Figure 6 for valve configuration.
2. Monitor water level until there are four to six inches of water in the bottom. Close the supply valve, taking care to leave the recirculation valve open.
 - Please refer to Figure 7 for valve configuration.
3. Disconnect the elbow at the spray assembly, unscrew the spray assembly, and dose caustic solution into the tote through the lid connection.
 - **CAUTION:** Personal protective equipment (PPE) should be used when handling hazardous chemicals to protect the operator and/or bystanders from chemical contact.
 - Please refer to Figure 8 as an example of proper dosing procedure.
4. Screw spray assembly back onto lid connection, and reattach elbow.
5. Press **START** button to start the pump.
6. When wash is complete, push **STOP** button.
7. Next, open the drain and recirculation valves. Allow the tote to completely drain.
 - Please refer to Figure 5 for valve configuration.

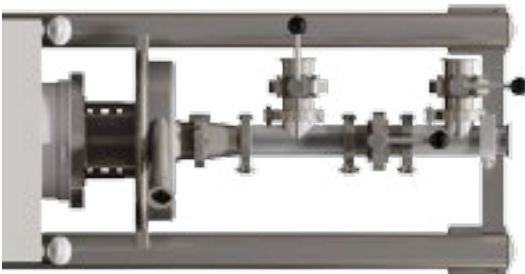


Fig. 6

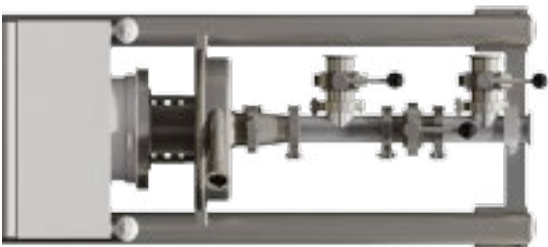


Fig. 7



Fig. 8

Sequence of Operation

SANITIZER WASH

1. Close drain valve. Open recirculation and supply valves, allowing water to begin filling the tote.
 - Please refer to Figure 6 for valve configuration.
2. Monitor water level until there are four to six inches of water in the tote, then close the supply valve, taking care to leave the recirculation valve open.
 - Please refer to Figure 7 for valve configuration.
3. Disconnect the elbow at the spray assembly, unscrew the spray assembly, and dose sanitizer solution into the tote through the lid connection.
 - **CAUTION:** Personal protective equipment (PPE) should be used when handling hazardous chemicals to protect the operator and/or bystanders from chemical contact.
 - Please refer to Figure 8 as an example of proper dosing procedure.
4. Screw spray assembly back onto lid connection, and reattach elbow.
5. Press **START** button to start the pump.
6. When wash is complete, push **STOP** button.
7. Close the supply valve and open the recirculation valve to allow the tote and hoses to completely drain.
 - Please refer to Figure 5 for valve configuration.
8. Upon completion of the final wash power down, close all valves and disconnect all hoses from the tote.

Maintenance

It is advised that preventative maintenance be performed periodically throughout the lifetime of this system to ensure longevity and maintain efficiency. There are four items that are maintainable on this system: pump, butterfly valves, spray device, and all Tri-Clamp gaskets.

Click the links below to view the manuals and maintenance procedures for the pump, butterfly valves, and spray device.

- [VFD Manual](#)
- [Alfa Laval MultiMidget Spray Device Manual](#)
- [Alfa Laval GJ9 Spray Device Manual](#)
- [Alfa Laval Solid C Pump Manual](#)
- [Alfa Laval LKB Butterfly Valve Manual](#)
- [Ace Hose Manual](#)

Centrifugal pump maintenance can be found on pages 14-22 of [Alfa Laval SolidC Pump Manual](#).

The recommended maintenance schedule can be found below in Figure 9.

	SHAFT SEAL	RUBBER SEAL	MOTOR BEARINGS
Preventive maintenance	Replace after 12 months: (one-shift) Complete shaft seal	Replace when replacing the shaft seal	
Maintenance after leakage (leakage normally starts slowly)	Replace at the end of the day: Complete shaft seal	Replace when replacing the shaft seal	
Planned maintenance	<ul style="list-style-type: none"> • Regular inspection for leakage and smooth operation • Keep a record of the pump • Use the statistics for inspection planning Replace after leakage: Complete shaft seal	Replace when replacing the shaft seal	Yearly inspection is recommended <ul style="list-style-type: none"> • Replace complete bearing if worn • Ensure that the bearing is axially locked (See motor instructions)
Lubrication	Before fitting: Lubricate the O-rings with silicone grease or silicone oil	Before fitting: Silicone grease or silicone oil	The bearings are permanently lubricated

Fig. 9 - Pump Maintenance Schedule

Maintenance

Butterfly valve maintenance can be found on pages 17-25 of [Alfa Laval LKB Butterfly Valve Manual](#). The recommended maintenance schedule can be found below in Figure 10.

	VALVE SEAL RINGS	VALVE BUSHES	ACTUATOR RUBBER SEALS	ACTUATOR BEARINGS
Preventive maintenance	Replace after 12 months	Replace when replacing the valve seal rings	Replace after 24 months	
Maintenance after leakage (leakage normally starts slowly)	Replace by the end of the day	Replace when replacing the valve seal rings	Replace when possible	
Planned maintenance	<ul style="list-style-type: none"> Regular inspection for leakage and smooth operation Keep a record of the valve Use the statistics for inspection planning Replace after leakage	Replace when replacing the valve seal rings	<ul style="list-style-type: none"> Regular inspection for leakage and smooth operation Keep a record of the actuator Use the statistics for planning of inspections Replace after air leakage	Replace when they become worn
Lubrication	Before fitting (use USDA-H1 approved) <ul style="list-style-type: none"> Unisilcon L641(°) Paraliq(°) GTE 703 Molycote 111(D) 	None	Before fitting <ul style="list-style-type: none"> Molycote Long term 2 Plus (Δ) Molycote 1132(Δ) (for aggressive environment) 	When replacing actuator rubber seals <ul style="list-style-type: none"> Molycote Long term 2 Plus (Δ) Molycote 1132(Δ) (for aggressive environment)

Fig. 10 - Butterfly Maintenance Schedule

Alfa Laval GJ9 4-Nozzle 0.150 maintenance can be found on pages 18-29 of [GJ9 Manual](#).

MultiMidget 360 3/4" NPT maintenance can be found on pages 11 of [MultiMidget Manual](#).

The Tri-Clamp gaskets should be replaced once every three to six months. If it is found that the gaskets are failing prior to three months, replace gaskets accordingly.

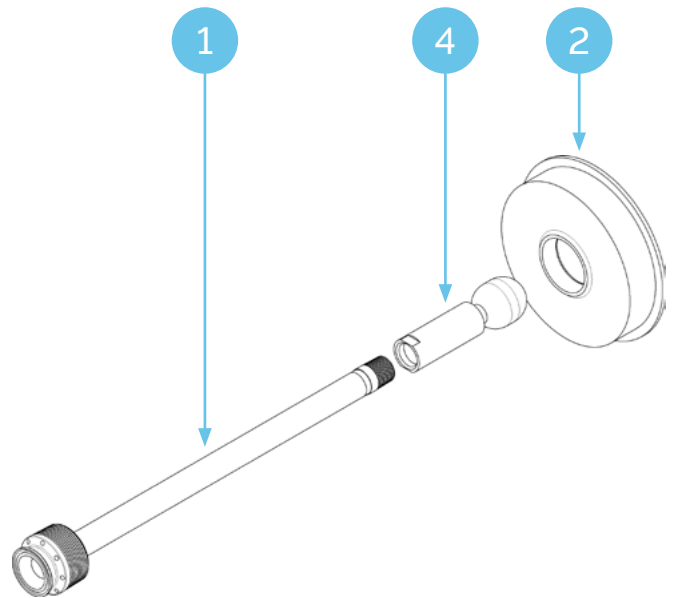
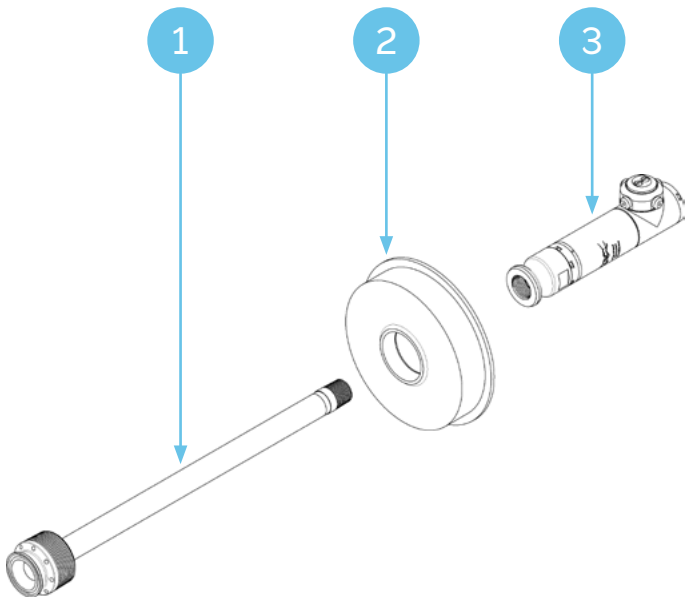
Parts List

SPRAY ASSEMBLY PARTS LIST: TTC-SA-JD

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	CS000193	DOWNTUBE TT 1.5" TC X 0.75" MPT 18.5" OAL 316L ** SHOP USE ONLY
2	1	TTC0004	BANJO 6" IBC TANK LID 2" PLUG W/ EPDM GASKET
3	1	9614799962	GJ 9 4N .150 LV VIT 4-NOZZEL 3/4 NPT 85 PSI AND 15 GPM

SPRAY ASSEMBLY PARTS LIST: TTC-SA-SD

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	CS000193	DOWNTUBE TT 1.5" TC X 0.75" MPT 18.5" OAL 316L ** SHOP USE ONLY
2	1	TTC0004	BANJO 6" IBC TANK LID 2" PLUG W/ EPDM GASKET
4	1	TE10M003	ROTARY SPRAY HEAD MULTIMIDGET 360

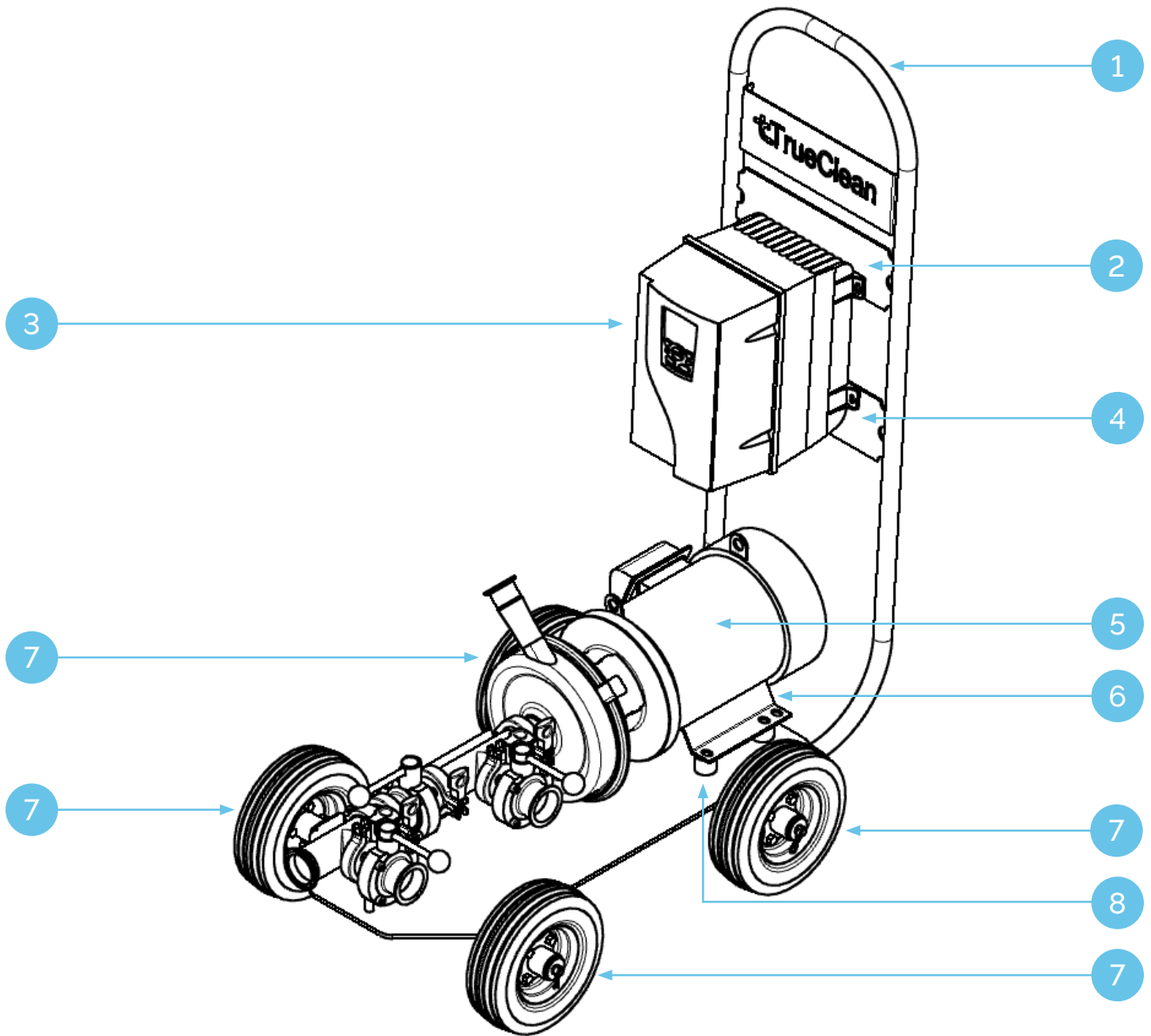


Parts List

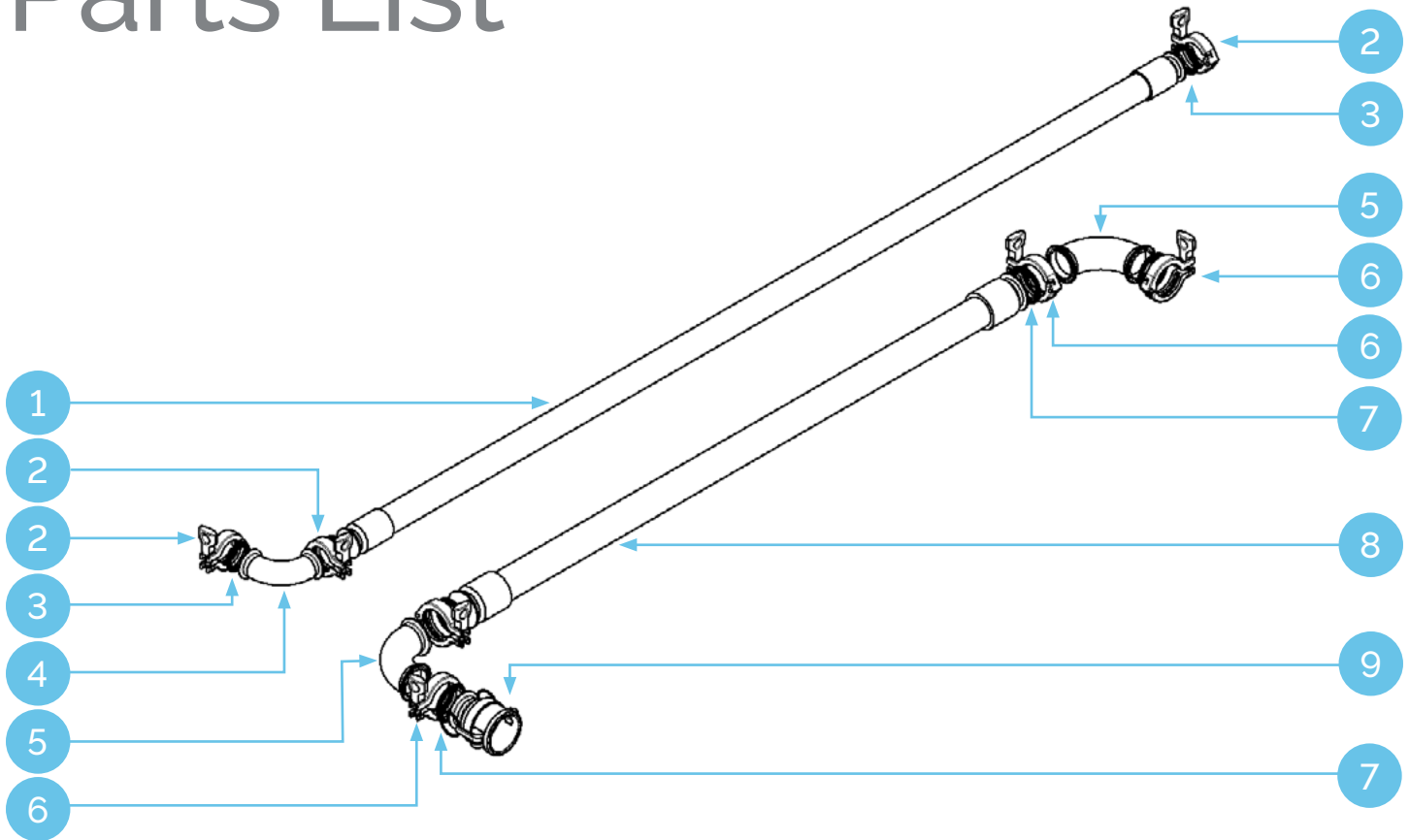
TOTECLEANER PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	TCCPC-003	CENTRIFUGAL MOBILE PUMP CART HANDLE
	4 FT	H0007	ROUND BAR 0.5" OD 304
2	1	TCCPC-002	CENTRIFUGAL PUMP CART VFD MOUNTING PLATE WITH CORD HOOK
3	1	VFD-PC-3HP-480V VFD-PC-3HP-240V VFD-PC-10HP-480V	PUMP CART VFD NEMA 4X 3HP 3P 480V PUMP CART VFD NEMA 4X 3HP 3P 240V PUMP CART VFD NEMA 4X 10HP 3P 480V
4	1	TCCPC-004	CENTRIFUGAL PUMP CART VFD LOWER CROSS BAR 10GA 304 SS
5	1	C-1M140-S2EN18TO-003A36WSP C-2M190-S2ES21TO-010A36WSP	SANITARY CENTRIFUGAL PUMP 20GPM AT 44 PSIG SANITARY CENTRIFUGAL PUMP 20GPM AT 87 PSIG
6	1	TC4PC-001 TC4PC-002	4 WHEEL PUMP PLATE, 30" VERSION 4 WHEEL PUMP PLATE, 35" VERSION
7	4	CS02127	WHEEL 8" FOAM FILLED BLACK TIRE PNEUMATIC
8	4	TTC0006	RISER FOR PUMP CART, 1.25" OD X 1" OAL W/0.5" HOLE
	2	H0072	FLAT CAP 1" TUBE 12GA 304
	1	CHR-200-PS-304-6	HANGER CH 2" TUBE RIGID ANCHOR 6" ROD 304
	2	B7MPS-2-316L-PL	SHORT OUTLET TEE 2" TC 316L 20RA ID 32RA OD SF1 BPE
	3	LKB51A-2-E-316L-NH	BUTTERFLY VALVE 2" TC 316L EPDM SEAT NO HANDLE
	5	A13MHM-2-S	CLAMP HEAVY TWO PIECE 2" TC DN50 SINGLE PIN 304
	5	40MP-E-2	GASKET 2" TC EPDM USP CLASS VI
	3	9612045001	HANDLE 2-POSITION 1" 1.5" 2" 2.5" LKB
	4	92375A300	HAIRPIN COTTER PIN 3/8" TO 1/2" CLEVIS PIN DIAMETER 316 SS 0.078" DIAMETER

Parts List



Parts List



OPTIONAL HOSE KIT PARTS LIST: TTC-HOSEKIT

ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	RSD150TC150TC150-72	HOSE ASSEMBLY RUBBER 1.5" ID 1.5" TC 72" OAL
2	3	A13MHM-1.5-S	CLAMP HEAVY TWO-PIECE 1" 1.5" TC DN25 DN40 SINGLE PIN 304
3	3	40MP-E-1.5	GASKET 1.5" EPDM USP CLASS VI
4	1	B2CMP-1.5-316L-7	90° ELBOW 1.5" TC 316L 32RA ID 32RA OD
5	2	B2CMP-2-316L-7	90° ELBOW 2" TC 316L 32RA ID 32RA OD
6	4	A13MHM-2-S	CLAMP HEAVY TWO-PIECE 2" TC DN50 SINGLE PIN 304
7	4	40MP-E-2	GASKET 2" EPDM USP CLASS VI
8	1	RSD200TC200TC200-48	HOSE ASSEMBLY RUBBER 2" ID 2" TC 48" OAL
9	1	CS00670	ADAPTER 2" FEMALE CAMLOCK X TC 316L 3.65" OAL

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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