DIFFUSER AERATION SYSTEM RETROFIT KITS *(DAS-R)*

USER MANUAL

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INTRODUCTION

Thanks for choosing to upgrade your liquid storage with our Diffuser Aeration System Retrofit Kit.

This manual outlines the correct installation procedures for the **Diffuser Aeration System Retrofit Mixing Kit (TK002180)** and **DAS-R 3" Nipple Conversion Kit (TK004540)**. Engineered for durable performance in demanding industrial and agricultural environments, this system upgrades your existing storage tanks with high-efficiency liquid agitation. Follow the procedures carefully to ensure a safe, watertight, and structurally sound installation.

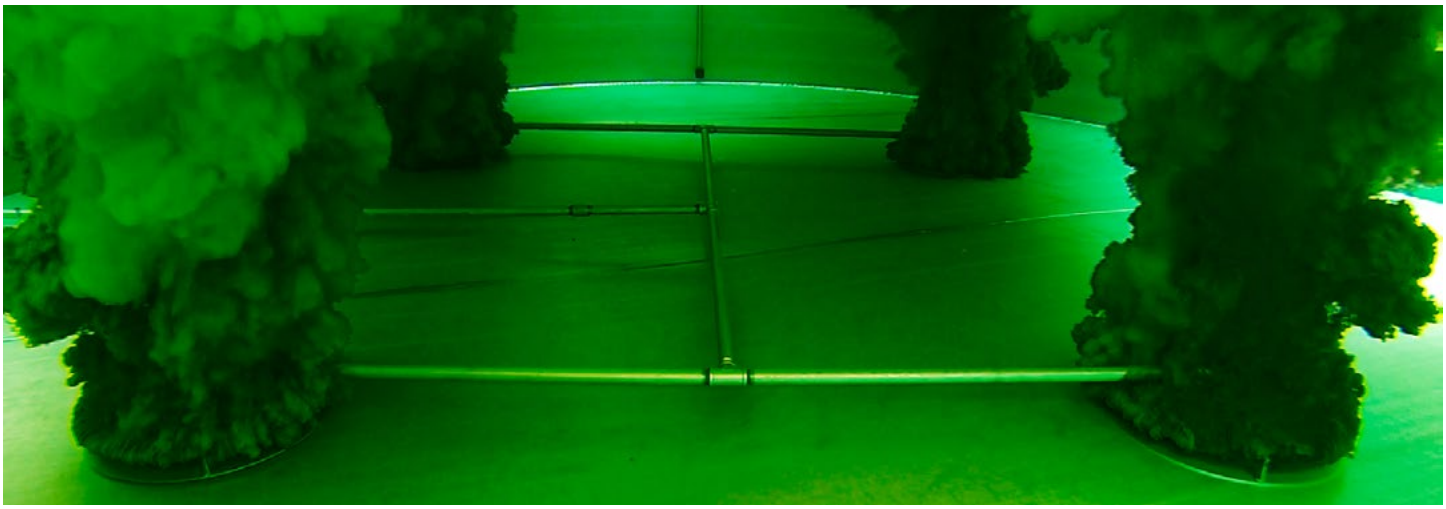
⚠ CAUTION

- *Always follow proper confined space procedures when entering a tank.*
- *After emptying tanks, allow 72 hours with the manyway open for fumes to escape before entering tank.*

NEED ASSISTANCE?

If you have any questions, encounter issues during installation, or require support, we're here to help.
Please reach out before proceeding if you are unsure about any step in this manual.

- **1-877-956-6843**
- **info@novid.ca**



CONTENTS

DAS-R MIXING KIT *(TK002180)*

This is our standard diffuser aeration system for use on any 12'–18' diameter Novid tank with a full 3/4" sight tube coupler.

STEP 1: INSTALL PLUMBING KIT

- Ensure the tank is empty, and has had 72 hours to air out.
- Install the Plumbing Kit *(Fig. 1)* starting with parts closest to the tank. Ensure that the arrow on the check valve is pointing towards the ball valve.

IMPORTANT: *Always use Teflon tape and compound paste on all threads.*

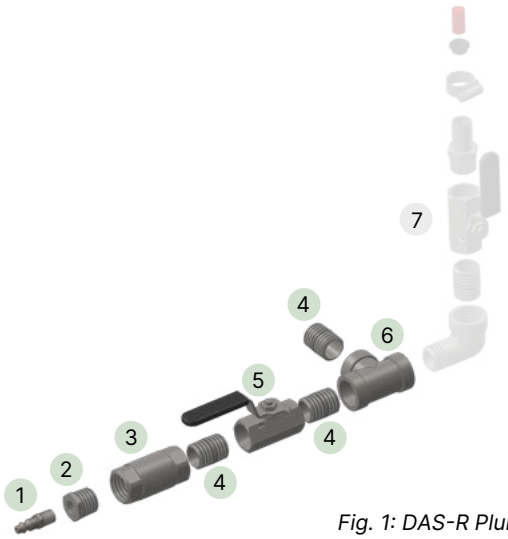


Fig. 1: DAS-R Plumbing Kit

ITEM NO.	DESCRIPTION	QTY.
1	Plug M Style 0.25" NPT Male	1
2	0.75" × 0.25" Reducer Bushing	1
3	0.75" Air Check Valve	1
4	0.75" Close Nipple	4
5	0.75" Ball Valve	1
6	0.75" Threaded Tee	1
7	Sight Tube Assembly (Existing)	1

STEP 2: INSTALL INTERIOR ASSEMBLIES

- Install the interior sub-assemblies:
  - Side assemblies (2) *(Fig. 2)*
  - T-joiner assembly (1) *(Fig. 3)*
  - Center Joiner assembly (1) *(Fig. 4)*
- These sub-assemblies can be assembled outside of the tank. Tighten parts with a pipe wrench.

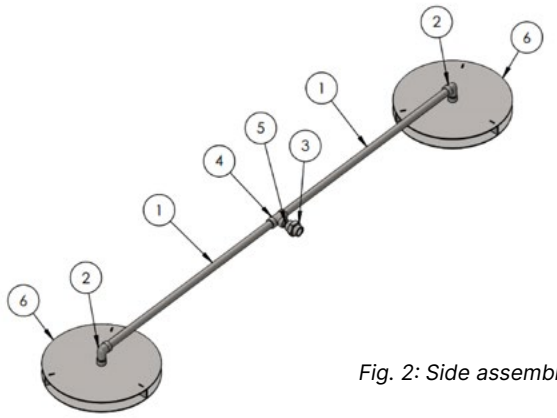


Fig. 2: Side assemblies (2)

ITEM NO.	DESCRIPTION	QTY.
1	0.75"× 34" Threaded Pipe	2
2	0.75" Street Elbow	2
3	0.75" Union	1
4	0.75" Threaded Tee	1
5	0.75" Close Nipple	1
6	Welded DAS-R Plate Assembly	2

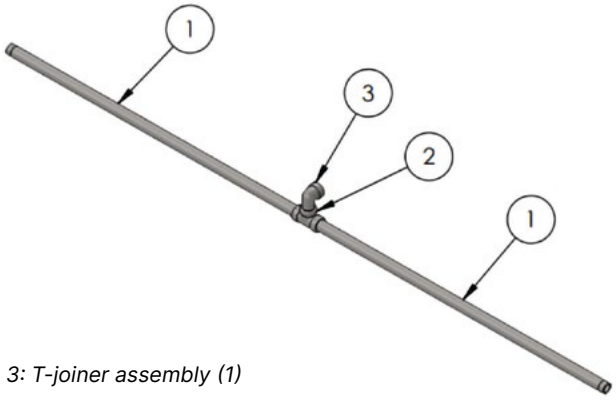


Fig. 3: T-joiner assembly (1)

ITEM NO.	DESCRIPTION	QTY.
1	0.75"× 34" Threaded Pipe	2
2	0.75" Threaded Tee	1
3	0.75" Street Elbow	1

IMPORTANT: *Always use Teflon tape and compound paste on all threads.*

- Chose one of the following Center Joiner assembly configurations based on the diameter of your tank:

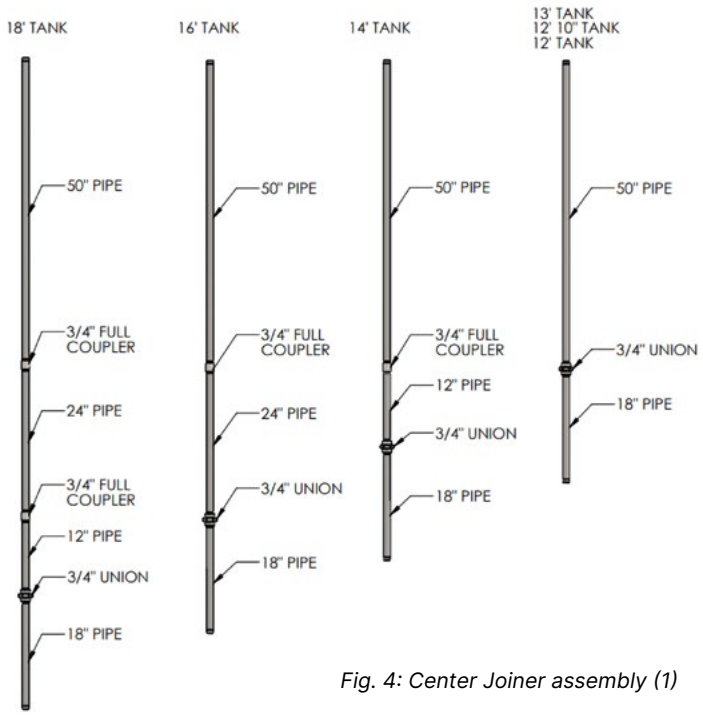
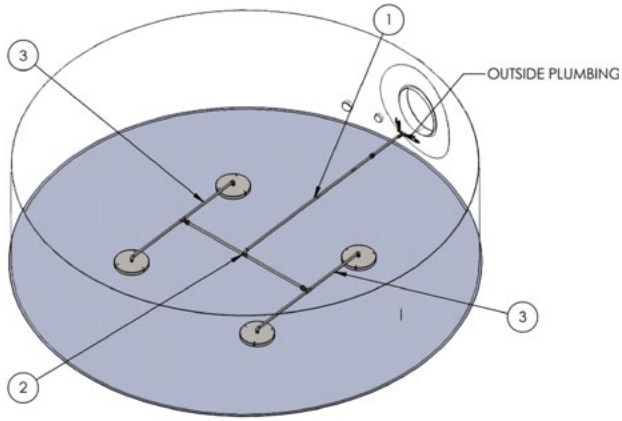


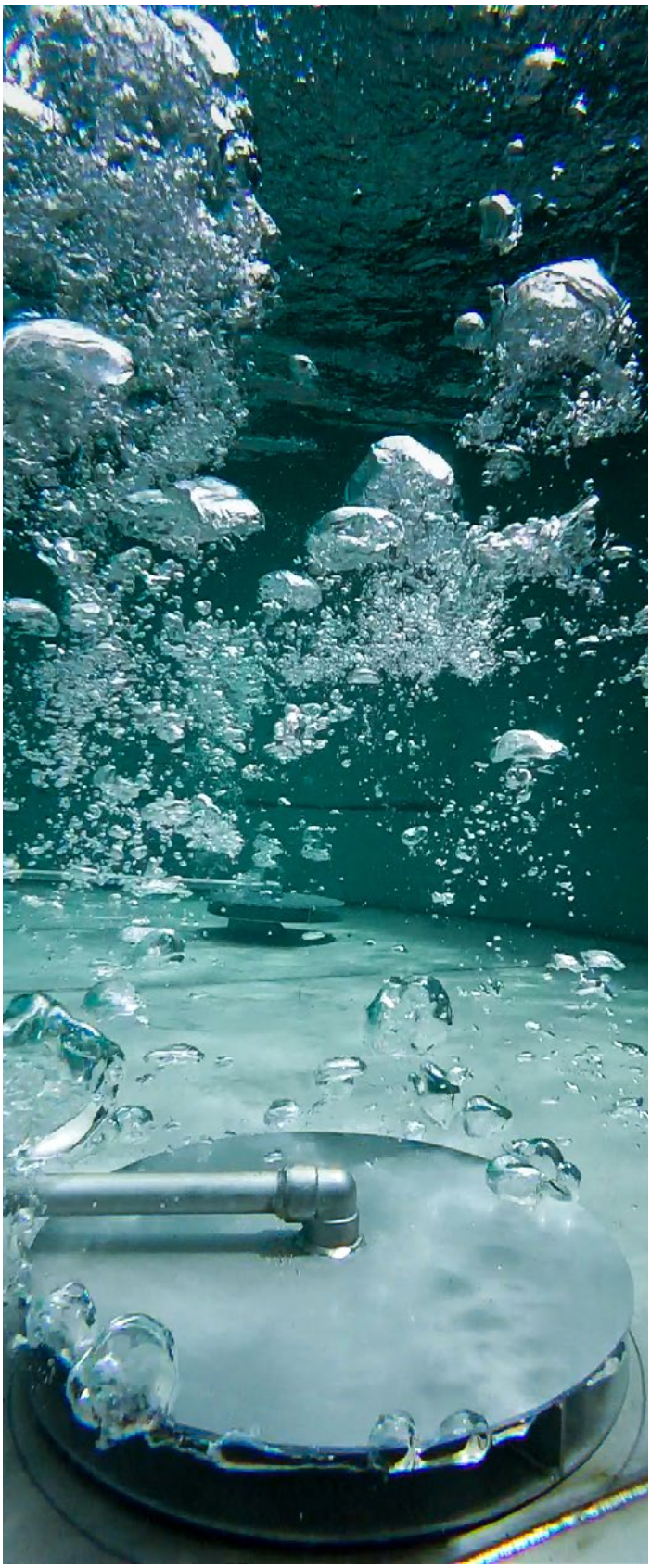
Fig. 4: Center Joiner assembly (1)

STEP 3: INSTALL INTERIOR ASSEMBLIES

- Install the interior sub-assemblies as shown inside the tank, starting with the Center Joiner assembly *(1)*.



ITEM NO.	DESCRIPTION	QTY.
1	Center Joiner	1
2	T-Joiner	1
3	Side Assembly	2



DAS-R 3” NIPPLE CONVERSION KIT *(TK004540)*

Used in conjunction with TK002180 and applies to Novid tanks that do not have a full 3/4” sight tube coupler, or non-Novid tanks.

STEP 1: INSTALL NIPPLE ADAPTOR

- Ensure the tank is empty, and has had 72 hours to air out.
- Remove the manway lid, 3” interior PVC fill plumbing, 3” ball valve *(if applicable)* and close nipple.
- Install Nipple Adaptor *(Fig. 1)* and ensure that the arrow on the check valve is pointing towards the .75” ball valve.

IMPORTANT: *Always use Teflon tape and compound paste on all threads.*

Fig. 1: DAS-R Nipple Adaptor

ITEM NO.	DESCRIPTION	QTY.
1	DAS-R 3” Nipple Adaptor	1
2	Sight Tube Assembly *(Included in TK002180)*	1

STEP 2: INSTALL NIPPLE JOINER ASSEMBLY

- The Nipple Joiner Assembly *(Fig. 2)* can be assembled outside of the tank.
- Use provided Teflon tape and tighten parts with a pipe wrench.

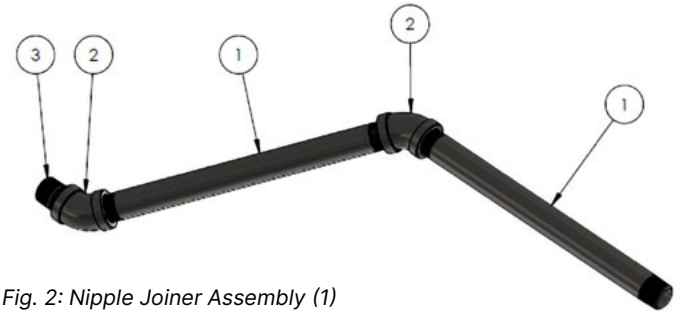


Fig. 2: Nipple Joiner Assembly (1)

ITEM NO.	DESCRIPTION	QTY.
1	0.75”× 34” Threaded Pipe	2
2	0.75” 45 Degree Elbow	2
3	0.75” Close Nipple	1

- Move the Nipple Joiner Assembly inside the tank and connect it to the threaded elbow inside the 3” Nipple Adaptor *(Fig. 3)*.

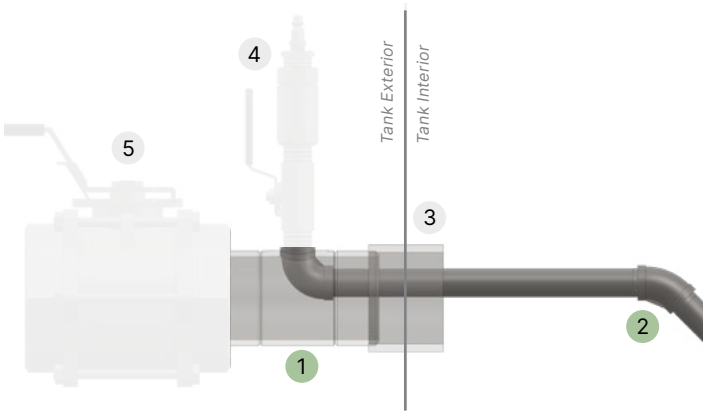


Fig. 3: Nipple Joiner connection

ITEM NO.	DESCRIPTION	QTY.
1	DAS-R 3” Nipple Adaptor	1
2	Nippler Joiner Assembly	1
3	3” Fill Coupler *(Existing)*	1
4	Sight Tube Assembly *(Included in TK002180)*	1
5	3” Ball Valve *(Optional)*	1

STEP 3: INSTALL DAS-R MIXING KIT *(TK002180—SOLD SEPARATELY)*

- Install the interior parts into sub assemblies:
  - Side assemblies (2) *(Fig. 3)*
  - T-joiner assembly (1) *(Fig. 4)*
  - Center Joiner assembly (1) *(Fig. 5)*
- These sub-assemblies can be assembled outside of the tank. Tighten parts with a pipe wrench.

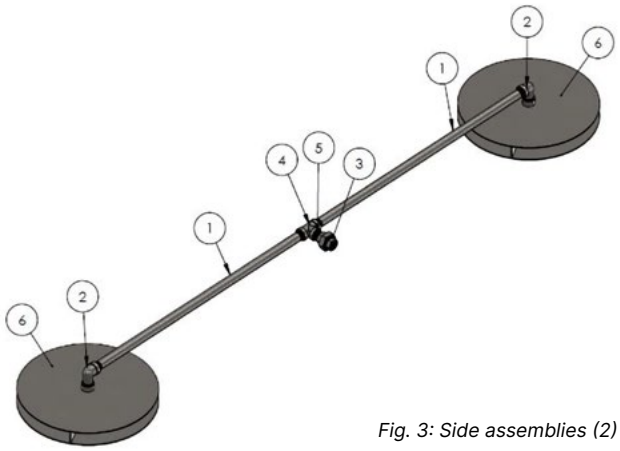


Fig. 3: Side assemblies (2)

ITEM NO.	DESCRIPTION	QTY.
1	0.75”× 34” Threaded Pipe	2
2	0.75” Street Elbow	2
3	0.75” Union	1
4	0.75” Threaded Tee	1
5	0.75” Close Nipple	1
6	Welded Plate Assembly	2

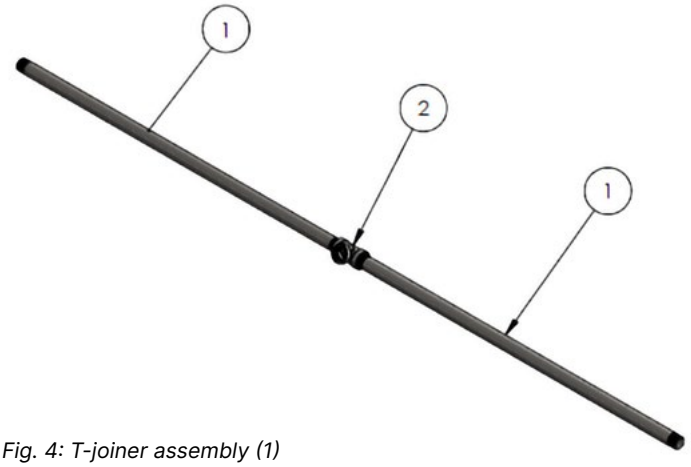


Fig. 4: T-joiner assembly (1)

ITEM NO.	DESCRIPTION	QTY.
1	0.75”× 34” Threaded Pipe	2
2	0.75” Threaded Tee	1

IMPORTANT: *Always use Teflon tape and compound paste on all threads.*

- Chose one of the following center joiner assembly configurations based on the diameter of your tank:

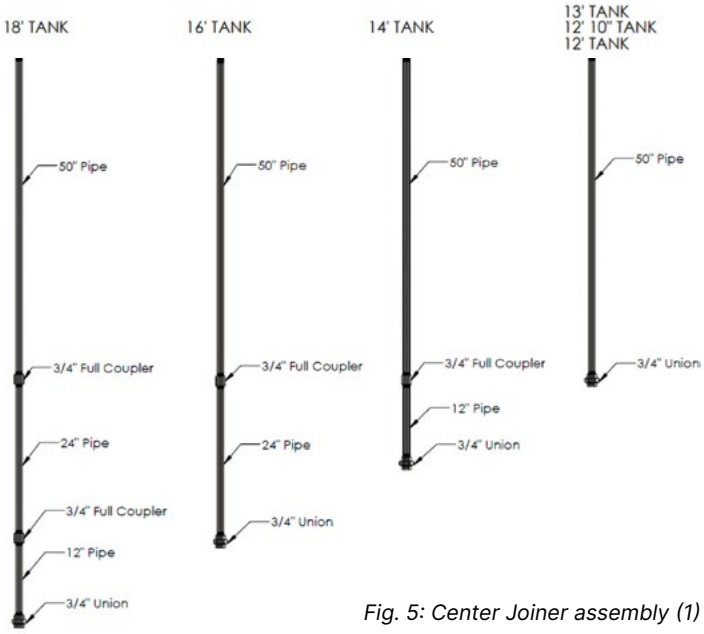
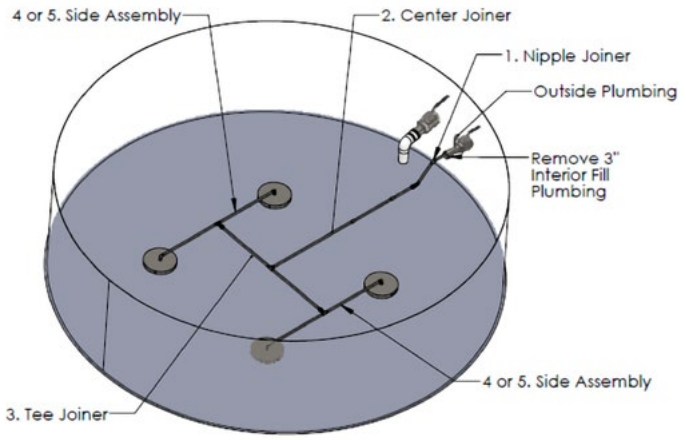


Fig. 5: Center Joiner assembly (1)

STEP 4: INSTALL INTERIOR ASSEMBLIES

- Move the sub-assemblies into the tank.
- Install the sub-assemblies as shown starting with the Nipple Joiner section.
- Continue to use Teflon Tape and compound paste



DAS-C CONTROL BOX *(TK002029)* INSTALLATION, OPERATION, AND MAINTENANCE

Applies to both DAS-R kits *(TK002180 & TK004540)*.

CONTROL BOX INSTALLATION

- Bolt the hanging bracket *(1)* to the control box *(2)* and attach the supplied 6' airline *(3)* to the control box *(Fig. 1)*.
- Hang the box on the manway for convenience.
- Connect the 6' airline to the control box and then connect the other end to the air fitting on the tank.
- Plug in the box *(make sure the box is turned off)*.
- Connect air compressor to the control box. Turn on the air compressor. The air compressor should be able to run 4-8 CFM at 100-120 psi *(Do not run outside these ranges)*.
- Open the ¾" ball valve that is attached to the check valve *(make sure all other valves are closed)*. Turn on the control box. It will pulse 1.5 seconds on, and 1.5 seconds off.
- Adjust the CFM gauge on the control box so that it reads between 4-8 CFM.
- Turn off control box and air compressor, close valves and unplug air lines and power cords.
- Store control box indoors when not in use.

Fig. 1 - Control Box Components

RUNNING THE SYSTEM

- Turn on the pulse box and open the ball valve attached to the check valve. All other valves should be closed.
- Let the system run for 16-24 hours. Do not leave system running unattended.
- Turn the system off and close the ball valve.
- Take a sample of the product and have it tested to ensure it is properly mixed.

YEARLY MAINTENANCE BEFORE USE

- Close all valves.
- Connect airline directly from air compressor to air fitting on tank.
- Allow the air compressor to build up pressure *(120-200 psi)*.
- Open the ¾" ball valve that is connected to the check valve to allow air into the tank.
- Let air flow for 10 seconds then close the valve.
- Repeat this process several times to ensure the air ports are clear.
- Disconnect the air line.
- Open the ¾" ball valve that is connected to the check valve. If liquid leaks out of the air fitting, the check valve may need replacing before use.
- If all is good, close the ball valve and your system is ready to use.

IMPORTANT: *Running compressed air through the DAS-R mixing plates without the use of the DAS-C control box will not properly mix the tank contents and should only be done for yearly maintenance.*

⚠ CAUTION

- *Always follow proper confined space procedures when entering a tank.*
- *Do not exceed 120 psi through the control box.*
- *Always ensure that all ball valves are closed before starting system.*
- *The tank should not be filled into the roof. If product comes out of the roof vent, stop the system and lower the fluid level.*
- *Ensure the roof vent is open and free of debris.*
- *After emptying tanks, allow 72 hours with the manyway open for fumes to escape before entering tank.*
- *Prolonged use of compressed air without running through the control box is not recommended and will void the tank warranty.*

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