

MERIDIAN[®]

STAINLESS STEEL LIQUID TANK



meridianmfg.com/stainless-tanks



OWNER'S MANUAL

SIGN-OFF FORM

Meridian Manufacturing Inc. follows the general Safety Standards specified by the American Society of Agricultural Engineers (ASAE), and the Occupational Safety and Health Administration (OSHA). Anyone who will be using or maintaining the tank must read and clearly understand ALL Safety, Operating and Maintenance Information presented in this manual.

Review this information annually, before the season start-up.

Make these periodic reviews of SAFETY and USAGE a standard practice for all of your equipment.

This form is provided for your record keeping to show that all personnel who will be working with the equipment have read and understand the information in this manual. Copy this page to continue recording.

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PRODUCT REGISTRATION FORM



Attention Dealers:

You can register products online through the Dealer Login: <http://dealers.meridianmfg.com/login/>

It is mandatory to register your product in order to qualify for future warranty claims that may arise. Knowingly falsifying information on this form will result in the voiding of the product warranty.

You may scan/photograph this completed form (must be legible), email it to: register@meridianmfg.com

A copy of this form may also be mailed to Meridian Manufacturing Inc.

Buyer's Name _____ Dealer's Name _____

Address _____ Address _____

City, Prov/State _____ City, Prov/State _____

Postal/Zip Code _____ Postal/Zip Code _____

Phone Number _____ Phone Number _____

Note: Registering a product in multiple entry format is only allowed when the product has the same model number and the same dealer, however each serial number must be legibly listed for each unit. Delivery dates for a multiple entry must be within a one month time frame.

Product Information: _____

Model Number _____ Serial Number _____

Invoice Date _____

Important: Please send this form to the Meridian Manufacturing Inc. location which built this product being registered. If you require further assistance call you're dealer or the Meridian outlet nearest to your location.

We want to thank you for purchasing a Meridian manufactured product. Whether this is your first Meridian purchase or you have been a customer for years, you are now part of the Meridian community of customers and we appreciate your business.

It is important that you now complete the product registration information and this form indicating you have received delivery. This registration and information is necessary to ensure you have access to warranty and product updates in the event it be required in the future.

Registration can be completed by using this form or visiting your dealer who will complete the form online. You will be given access to the Meridian community and become eligible for updates, special offers and prizes.

Again thank you for choosing Meridian.

I have thoroughly instructed the buyer on the above described equipment. The review included the content of this manual, equipment care, adjustments, safe operation and warranty policy.

Date _____ Dealer's Signature _____

The above equipment and this manual have been received by me. I have been thoroughly instructed as to care, adjustments, safe operation and applicable warranty policy.

Date _____ Buyer's Signature _____

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Section 1: INTRODUCTION

Thank you for choosing a Meridian Manufacturing Inc. Stainless Steel Liquid Tank for your specialized storage needs.

This equipment has been designed and manufactured to be the best choice for the storage of food grade liquid or corrosive material.

Safe, efficient and trouble free usage of your liquid tank requires that you and anyone else who will be working around or maintaining the tank, read and understand the Safety, Operation and Maintenance information contained within this manual.

Keep this manual handy for future reference. Call your Meridian® dealer or distributor if you need assistance, information or additional/replacement copies, or a digital copy of this document.

Information provided herein is of a descriptive nature. Meridian Manufacturing Inc. reserves the right to modify the equipment design and specifications and change information contained in this publication without any preliminary notice.

SERIAL NUMBER

The general location of the serial number is shown in Figure 1 and 2. Its location may vary from tank to tank.

Have the serial number available when communicating with the dealer or factory and requesting service or asking for information.

- Use the space provided for easy reference:

Model No: _____

Serial No: _____



Fig 1 - Serial number location on chemical tank



Fig 2 - Serial number location on flat bottom tank



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Section 2: SAFETY

3 Big Reasons why safety is important to you:

- Accidents Disable and Kill
- Accidents Cost
- Accidents Can Be Avoided

The Safety Alert Symbol means:

ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!

The Safety Alert Symbol identifies important safety messages on the tank and in this manual.

The following signal words are used in this manual to express the degree of hazard for areas of personal safety.

When you see the symbol and/or the signal words described below, obey the accompanying message to avoid possible injury or death.



Indicates a hazardous situation that, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations. Typically for machine components which, for functional purposes, cannot be guarded.



Indicates a hazardous situation, if not avoided, could result in death or serious injury. This word identifies hazards that are exposed when guards are removed. It may be used to alert against unsafe practices.



Indicates a hazardous situation, if not avoided, could result in minor or moderate injury. It may be used to alert against unsafe practices.



Indicates practices or situations which may result in the malfunction of, or damage to equipment.



Safety instructions (or equivalent) signs indicate specific safety-related instructions or procedures.

2.1 SAFETY ORIENTATION

YOU are responsible for the SAFE usage and maintenance of your Meridian® Stainless Steel Liquid Tank. Be sure that everyone who will maintain or work around it, is familiar with the safety, maintenance procedures.

This manual will take you step-by-step through your working day. It will alert you to all the safe practices that should be adhered to while using the tank.

Remember, you are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a regular part of your safety program. Be certain that **EVERYONE WHO WILL WORK WITH THIS EQUIPMENT FOLLOWS THESE PROCEDURES.**

Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Tank owners must give instructions to employees before allowing them to use the tank.
 - Procedures must be reviewed annually thereafter, as per OSHA (Occupational Safety and Health Administration) regulation 1928.57.
- Develop a comprehensive safety program for your work area.
- The most important safety device is a SAFE worker. It is their responsibility to understand all safety and usage instructions in this document, and to follow them.
- An untrained worker exposes himself and bystanders to possible serious injury or death.
- Think SAFETY! Work SAFELY!

2.2 GENERAL SAFETY

You are responsible for the safe use and maintenance of this tank. Good safety practices not only protects you, but also those around you. All accidents can be avoided.



- Use this tank for its intended purposes only.
- This liquid tank is not intended for use by children.
- Do not modify the tank in any way without written permission from the manufacturer. Any unauthorized modification of the water tank will void the warranty.

2.3 WORK SAFETY

- Mount signage around structure to indicate that this structure is off limits.
 - No unauthorized persons allowed.
- Drowning can happen in only a few inches of water. Keep manway hatch lids, and barriers locked to prevent unauthorized persons or children from entering the tank.
- Enter the empty tank with extreme caution. Wear protective clothing, and a properly filtered respirator mask to protect against chemical vapour. Connect a safety line to yourself and have a responsible, trained person close at hand to assist in an emergency.
- Wear the appropriate personal protective gear. This list may include but is not limited to:
 - Hard hat
 - Protective shoes with slip resistant soles
 - Eye protection
 - Work gloves
 - Hearing protection
 - Respirator or filter mask
 - Hi-Visibility safety vest



2.4 SAFETY DECALS

- Keep safety decals clean/legible at all times.
- Replace safety decals that are missing or have become illegible.
- All safety decals have a part number in the lower right hand corner. Use this part number when ordering replacements.
- Safety decals are available from your authorized distributor, dealer's parts department or from the factory.

2.4.1 Safety Decal Application:

1. Be sure the application area is clean and dry. Ensure the surrounding temperature is above 10°C (50°F).
 - Remove all dirt, grease, wax from the surface.
 - Clean with a non-ammonia based cleaner.
 - Wipe the clean surface with isopropyl alcohol on paper towel, and allow to dry.
2. Determine the exact position before you remove the backing paper.
3. Peel a small portion of the split backing paper.
4. Align the decal over the specified area. Use a squeegee to carefully press the small portion, with the exposed adhesive backing, into place.
5. Slowly peel back the remaining paper and carefully smooth the rest of the decal into place.
6. Small air pockets can be pierced with a pin and smoothed out using the squeegee, or a piece of sign backing paper.

2.5 SAFETY DECAL LOCATION

Safety decals are attached to the structure in a visible and convenient location for readability. A safe workplace requires that you familiarize yourself with the information on the decals.

Fig 3 - Safety decal



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2.6 MAINTENANCE SAFETY

- Good maintenance is your responsibility.
Poor maintenance is an invitation to trouble.
- Create a Lock-Out Tag-Out program for the auxiliary equipment used to fill and discharge liquid from the tank.
- These stainless steel tanks can store a variety of liquids and each site is different. Develop an applicable maintenance program to suit the work area.
- The end-user is responsible to check, before the tank is filled, if a product is compatible with the grade of stainless steel used in its construction.
- If you enter the tank, have a responsible, trained person close at hand to assist in an emergency.
- Enter the empty tank with extreme caution, it is a confined space.
 - Wear protective clothing, and a properly filtered respirator mask to protect against chemical vapour.
 - Connect a safety line to yourself and have a responsible, trained person close at hand to assist in an emergency.

Section 3: SITE AND INSTALLATION

WARNING

- Read and understand the Operator's Manual.
- Clear the area of bystanders, especially children, before starting.
- Prepare the base carefully to be sure the tank is supported evenly to prevent tipping.
- Use extra care when moving tank. Never move a tank with product in it.
- Use only an approved hoist, crane or other lifting system when positioning tank.

3.1 TANK LOCATION

Unless otherwise specifically provided in writing, Meridian® does not take responsibility for any defects or damages to any property, or injury to any persons, arising from or related to any site or assembly considerations, including but not limited to:

- Water tank location and water tank siting.
- Soil conditions and corresponding foundation requirements.
- Field modifications or equipment additions that affect the tank structure.
- Interconnections with neighbouring structures.
- Compliance with all applicable safety standards, including but not limited to, fall restraint systems (ladders or other systems). Local safety authorities should be contacted as standards vary between jurisdictions.

It is important that you, the customer, plan the work site to minimize or eliminate the need to move the tank(s) once positioned.

- We recommend that you consult a civil engineer regarding the chosen site, the soil load bearing capacity, proper method of construction and type of concrete pad.
- Clear area of bystanders, especially children.
- Use only hoists, jack and/or cranes with sufficient lift capacity and reach for the tank being positioned.
- Do not move or transport tanks when it is windy. Wait for a calmer day.
- Ensure the tank is positioned on a base that has been properly prepared to support the weight and loads of the tank when filled.
- Electrocution can occur without direct contact. Do not place tank within 40 ft of power lines.

3.2 TANK FOUNDATION

The foundations for liquid tanks are based on 4000 psf (192 kPa) soil bearing capacity. All foundation designs use 3625 psi (21 MPa) ultimate compressive strength (after 28 days) for concrete and 43,5000 psi (300 MPa) re-bar.

The foundation specifications included in this manual are suggestions only, and may not be applicable to your local soil conditions.

Meridian Manufacturing Inc. will not assume any liability for results arising from their use.

1. Gravel Base (Temporary Base for Flat Bottom Tanks Only):

Meridian® strongly advises you to consult a civil engineer regarding the site you choose. A professional engineer will check the soil conditions and soil load bearing capacity. They can use the tank's empty and full weights (each product has a different weight) to advise on preparing the proper base.

The tank must be placed on a minimum of ten inches of compacted granular fill. The entire circumference of the tank should rest evenly on this area.

The foundation should be uniform and level. It should not vary by more than 1/4" over a span of four feet.

IMPORTANT:

This should be only a temporary base. It is highly recommended that a good concrete pad be used as a permanent base.

2. Concrete Slab (Permanent Base):
We recommend that you consult a civil engineer regarding the site you choose, the soil conditions, and soil load bearing capacity. A professional engineer can advise on the proper method of construction and type of concrete slab for your needs.

The best type of base, and the one we recommended, is a concrete slab that is located on well drained, level ground that is capable of supporting the concrete slab and a full tank under all environmental conditions.

The design of a concrete slab is based on varied load bearing specifications for the different sized liquid tanks. Meridian® is not responsible for damage caused by an inadequate concrete slab. It is the responsibility of the owner to ensure that good construction practices are followed to obtain the required load carrying capacity for the slab. A concrete slab built to the proper performance specifications will ensure a long, trouble-free life for the storage system.

Meridian® can provide your engineer with the required information, such as tank design and leg reactions (wind and weight load).

The tank must be bolted to the slab so that all the legs or bolt plates sit evenly and are firmly in contact with the concrete. If the concrete is uneven, full "leg base plate" shims can be used.

3.3 TANK DESIGN

The tank, and the grade of stainless steel used, must be designed for the product being stored inside. It is your responsibility to inform Meridian Manufacturing Inc. about what product you are planning to store in the tank, and receive approval to do so.

3.4 CONCRETE SLAB CONSTRUCTION

The following information provides specifications and general guidelines for construction of concrete slabs for supporting tanks.

- Refer to the spec. sheet on the next page.

It is very important that close attention be given to site preparation and soil conditions in order to provide a good base for the concrete slab.

Items to be aware of include but are not limited to the following:

- **Soil Conditions:**
Sod and other organic material must be removed before laying down the gravel fill. Positive drainage must be provided to drain excessive moisture away from the concrete slab.

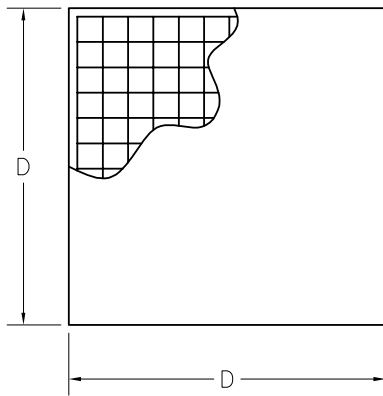
The concrete slab is designed for load stresses on soils with minimum allowable soil bearing capacity of 1500 psf.

The engineer is not responsible for concrete slab performance on soils with lower than specified bearing capacity or soils that are unsuitable for supporting a concrete pad.

Soil conditions should be assessed on the basis of soil tests, or of the performance history of similar structures in your local area.

- **Slab Structures:**
The following specifications must be followed to construct a concrete slab to meet the load and stress carrying requirements:
 - The concrete must have a minimum 28 day strength of 3000 psi (21 MPa).
 - Use sulphate resistant cement where required by soil conditions.
 - Do not pour concrete on frozen ground or in an excavation that contains ice, snow, excessive moisture or when the air temperature is below 4°C (40°F).

PLAN

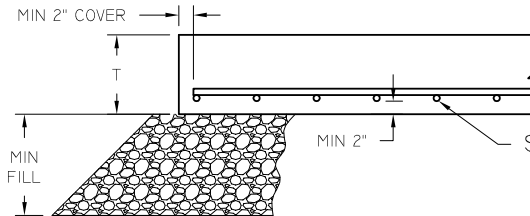


CONCRETE SLAB & FOUNDATION

NOTES:

- REINFORCING STEEL TO BE DEFORMED BARS WITH A MINIMUM YIELD STRENGTH OF 40ksi (300MPa)
- CONCRETE TO HAVE A MINIMUM 28 DAY STRENGTH OF 4000PSI (28MPa)
- FOUNDATIONS TO BE BASED ON FIRM GROUND WITH A MINIMUM BEARING CAPACITY OF 3000PSF (140kPa) & MINIMUM MODULUS OF SUBGRADE REACTION OF 200 PSI/IN (54 MPA/M)
- ALL ORGANICS, TOP SILT, AND SOFT GROUND BENEATH FOUNDATIONS MUST BE REMOVED AND REPLACED WITH COMPACTED GRANULAR FILL, SUITABLE TO THE ABOVE LISTED BEARING CAPACITY OF 3000PSF.
- BASED ON PRODUCT DENSITY OF 90PCF (1440kg/M³)
- DESIGN WIND PRESSURE: 14 PSF (0.67 kPa).
- SEISMIC DESIGN NOT CONSIDERED.

CROSS SECTION



SEE STEEL SCHEDULE BELOW (BOTH WAYS)

SCHEDULE

STANDARD MODELS	D	T	RE-BAR SIZE	RE-BAR SPACING	CONC. (yd ³)	MIN FILL
1840	20'-0"	16"	20M OR #6	12"	19.8	24"
1830	20'-0"	14"	20M OR #6	12"	17.3	20"
1820	20'-0"	12"	20M OR #6	12"	14.8	16"
1640	18'-0"	16"	20M OR #6	12"	16.0	24"
1630	18'-0"	14"	20M OR #6	12"	14.0	20"
1620	18'-0"	12"	20M OR #6	12"	12.0	16"
1440	16'-0"	16"	20M OR #6	12"	12.6	24"
1430	16'-0"	14"	15M OR #6	12"	11.1	20"
1420	16'-0"	12"	15M OR #6	12"	9.5	16"
13.540	15'-6"	16"	15M OR #5	12"	11.9	24"
13.530	15'-6"	14"	15M OR #5	12"	10.4	20"
13.520	15'-6"	12"	15M OR #5	12"	8.9	16"
1240	14'-0"	16"	15M OR #5	12"	9.7	24"
1230	14'-0"	14"	15M OR #5	12"	8.5	20"
1220	14'-0"	12"	15M OR #5	12"	7.3	16"

DISCLAIMER:

MERIDIAN MANUFACTURING GROUP PROVIDES THESE CONCRETE GUIDELINES AS A COURTESY TO OUR CUSTOMERS. IT IS THE RESPONSIBILITY OF THE CUSTOMER TO ATTAIN APPLICABLE PERMITS THROUGH THEIR LOCAL ZONING AND PERMITTING OFFICE IN ADDITION TO CONTACTING A LOCAL CONTRACTOR/ENGINEER FAMILIAR WITH THE AREA SOIL BEARING PRESSURE. ENGINEERED DRAWINGS, IF REQUIRED, ARE THE RESPONSIBILITY OF THE CUSTOMER. MERIDIAN WILL NOT BE HELD LIABLE FOR FAILURE OF A CONCRETE FOUNDATION, INCLUDING (BUT NOT LIMITED TO) SLIDING, SLOPE OR OVERTURNING FAILURE. CONSULTING WITH A LOCAL ENGINEER IS STRONGLY RECOMMENDED.

DATE ORDERED:

DATE APPROVED:

DRAWN BY: AGF

DATE DRAWN: 1/4/13

CHECKED BY: ADD

DATE CHECKED: 1/7/13

MERIDIAN

www.meridianmfg.com

CUSTOMER:

FLAT-BOTTOM TANK FOUNDATION PLANS

MODEL#:

SALES ORDER#:

SERIAL#:

REVISION:

PROJECT NO:

SCALE:

BIN WGT:

NONE

3.5 INSTALLATION

Care must be used when moving, lifting and installing the tank. Installation instructions include but are not limited to:

- Clear the area of bystanders, especially small children.
- Never move a tank that has product in it. Any structural damage occurring during the move, can lead to more problems or damage when the tank is filled at its final position.
- Have at least one other trained and responsible person to assist and who, in case of an emergency or accident, can provide assistance or seek assistance.
- Use only a crane, hoist or lift with sufficient load carrying and reach capacity. It must have the appropriate stability to raise, move, position and lower the tank.
- Always use the lift lugs, welded along the top edge, to lift the tank.
- It is recommended that installing the tank be done on a calm day or one with light winds. A tank is a large, hard-to-handle object that can easily be caught and moved by the wind. Do not take chances with your safety.
- Stay away from power lines when lifting or moving the tank.
 - Electrocution can occur without direct contact.
- After setting up the tank, use the proper sealant for the product being stored. Check with your vendor about what sealant is compatible. Refer to the product's instructions for proper application.
 - Meridian® sends a small tube of Tru-Blu™ sealant with your tank as per our outfitter's feedback and recommendations.
 - It has been recommended to us that for best results, apply the sealant to both the "male and female thread ends". This should provide a better seal by, more evenly, penetrating deeper into the threaded connections.
- Flat Bottom Tank owners:
 - If the AirMix Liquid Fluidizer is included with your tank, you may need to level the four diffusers inside the tank.
 - Call Meridian® Service for instructions; 833-944-2345.



Fig 4 - Unloading tank



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Section 4: OPERATION

WARNING

- Read and understand the Owner's Manual.
- Do not attempt to enter tank through the top hatch (chemical tanks).
- Only enter the flat bottom tank when it is empty.
- Establish a Lock-Out Tag-Out policy for your work site. Always Lock-Out Tag-Out equipment before entering tank or performing any maintenance work.
- Wear appropriate personal protective gear, for the task you are performing.

This Meridian® stainless steel tank must be designed for the product being stored inside. There is a wide variety of auxiliary equipment which can be used for filling and discharging the product.

Many features incorporated into this tank are the result of suggestions made by customers like you.

It is the responsibility of the owner and user to be familiar with the tank(s) and all auxiliary filling/discharging equipment before starting. By following the recommended procedures, a safe working environment is provided for the workers and bystanders in the work site.

Hazard controls and accident prevention are dependent upon the personnel working with and maintaining it. Their awareness, concern, prudence and proper training are crucial.

By following these instructions, in conjunction with a good maintenance program, your tank will provide many years of trouble free storage.

4.1 CHEMICAL TANK COMPONENTS

The location of components and options may change without notice.

Note:

Images show tanks installed at a customer's facility. All piping and auxiliary equipment was installed by the customer.

16 inch Inspection Hatch:

A 16 inch manhole is provided, for inspection of the inside of the tank.

Lift Lugs:

There are lift lugs along the top edge of the tank. Use a crane or hoist to raise and move it.

Two - 2 inch Couplers on Roof:

One coupler is at the peak of the tank, the other is located beside the inspection hatch. Plugs are inserted at the factory. The customer must install an air vent on at least one of the couplers.

Two - 2 inch Couplers on Either Side:

There is a 2 inch coupler on both sides of the tank, 2 feet up the side. Plugs have been inserted to seal them.

2 inch Coupler with Elbow:

A coupler with an elbow is underneath of the tank. The cone bottom facilitates total cleanout.

A bracket is welded to the side in the direction of the elbow, to support the piping which may be connected to the elbow.



Fig 5 - Top of chemical tank

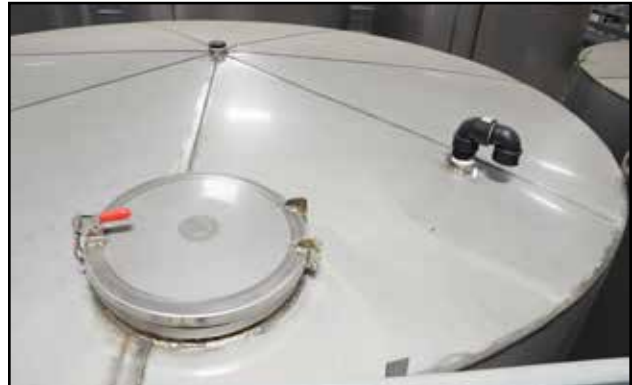


Fig 6 - Components at the top. Vent installed by customer



Fig 7 - Side and bottom couplers



Fig 8 - Bracket to support piping from bottom coupler

4.2 FLAT BOTTOM TANK COMPONENTS

The location of components and options may change without notice.

Roof Air Vent and Lift Lugs:

The air vent includes a 180° PVC fitting. Lift lugs are welded along the top edge of tank.



Fig 9 - Top of tank

24 inch Manway:

The bolt-on manway allows for easy access to the interior of the tank. See bolt tightening procedure in Reference Section.



Fig 10 - Components on tank

Two - 4 inch Fill and Discharge Couplers:

The two side couplers have plugs inserted by the factory. The lower coupler has a 90° fitting attached inside pointing down. This coupler is to be used for emptying the tank and will leave only three inches of liquid on the bottom. The higher coupler has a straight fitting inside, and should be used for filling.



Fig 11 - 4 inch couplers

1 inch Port:

A small port is located near the bottom of the tank. The factory has also plugged this opening. This can be used as an air intake for the optional Airmix Liquid Fluidizer.

3/4 inch Sight Tube with Auto Shut-off Valve:

The sight tube shows the quantity of liquid inside the tank. Measurements are shown in Imperial and US gallons.

Push the spring-loaded valve down to allow liquid into the sight tube to measure the quantity inside the tank. When the valve is released, liquid is restricted from entering the tube.



Fig 12 - Sight tube and valve

4.3 OPTIONAL EQUIPMENT

Airmix Liquid Fluidizer

The Airmix Liquid Fluidizer is an automated system which pulsates air through injection diffusers across the bottom of the tank to agitate and suspend liquid product.

- Refer to Section 4.5, on page 4-7 for more detail.

NOTICE

BALL VALVE USAGE HAZARD

- Keep the air inlet ball valve closed until the airmix system is fully connected and air pressure is applied.
 - The system includes a backflow (check) valve; however, liquid may slowly migrate past the check valve if no air pressure is present.
 - Open the ball valve only after the system is connected and operating.
-
- Airmix Control Box:
The manuals for the individual electronic components are inside the control box.
- Refer to Section 4.5.
 - Air inlet pipe with ball valve:
Air is pushed into the tank through this valve, into the 1 inch port. The valve restricts liquid from exiting through the hose.

IMPORTANT:

Remember to close ball valve prior to connecting or disconnecting the pipe.



Fig 13 - Airmix liquid fluidizer control box



Fig 14 - Air intake pipe with ball valve



Fig 15 - Air injection diffusers

Fill and Discharge Coupler Valve Kits:

There are two valve kits available for the couplers on the flat bottom tank.

- The Kit comes with Installation, Operation and Maintenance Instructions from the Vendor.
- Refer to the Installation Guide in the Reference Section.

- 3 inch Valve Kit
- 4 inch Valve Kit

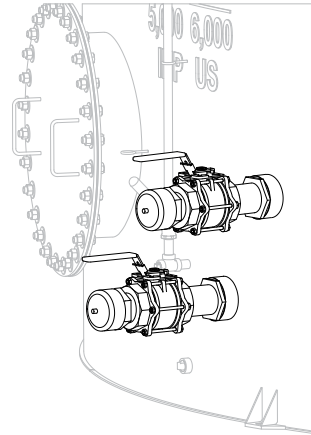


Fig 16 - 3" valve kit

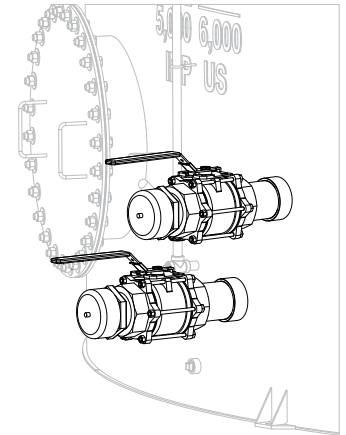


Fig 17 - 4" valve kit

Insulation and Galvalume Cladding:

The tank can be insulated and covered with cladding.



Fig 18 - Insulation and Galvalume Cladding:

Steam Coil:

An external heating source can be added, to keep the contents from freezing.

A millwright with a seal ticket will be needed to install the steam coils.



Fig 19 - Steam Coils

4.4 FILLING AND DISCHARGING

NOTICE

IMPLOSION HAZARD

Check that the air vent is clear and open before emptying tank.

Meridian® tanks are designed to be easy to fill and discharge contents.

One hose or pipe can be installed onto a single tank, or a system can be designed for an entire row.

Use auxiliary equipment as appropriate for your site. Set up a lock-out, tag-out system for your safety.

Chemical Tanks:

The coupler at the bottom of the tank ensures that 100% of the contents is emptied.

Flat Bottom Tanks:

The first, coupler (a) has a straight fitting inside the tank, and should be used for filling.

The second, lower coupler (b) has a 90° fitting, pointing downward, attached on the inside. This coupler is to be used for discharging and will leave only about three inches of liquid on the bottom when emptied fully.

IMPORTANT:

When you receive your flat bottom tank(s), check to be sure the coupler fittings are in place and did not move during transport.



Fig 20 - Fill (a) and discharge (b) couplers



Fig 21 - Permanent fill and discharge system



Fig 22 - Coordinated fill system



Fig 23 - Fill and discharge tubes

4.5 AIRMIX LIQUID FLUIDIZER OPERATION (if equipped)

When the power switch is turned on, the Airmix system is in operation mode.

1. The AirMix system's pressure needs to be set to between 80 - 100 psi as shown on the air regulator dial. See (b) in the image below.
 - Pull up and turn the black knob, to adjust the pressure.
 - Start with a pressure of 90 psi.
2. The system's air volume must be set to between 4 - 8 cfm (cubic feet per minute). See (c) in the image below.
 - Turn the black knob on the outside of the control box to adjust the volume.
 - Start with a volume of 6 cfm.

Note:

For specific questions on pressure or volume, contact your liquid product supplier.



Fig 24 - AirMix control box

The digital timer is preset from the factory, to be 5 seconds ON, and 10 seconds OFF. See (a) in the image to the right.

Note:

The numbers indicated on the screen are referring to seconds.

3. To change the digital timer settings:
 - Press the **MODE** button to switch between SET1 and SET2:
 - SET1 is the air flow "OFF" timer setting.
 - SET2 is the air flow "ON" timer setting.
4. Press the **▼** or **▲** buttons to change the time (in seconds) for SET1 and/or SET2.

IMPORTANT:

For more detailed operation, refer to the manufacturer instructions, provided in the box.

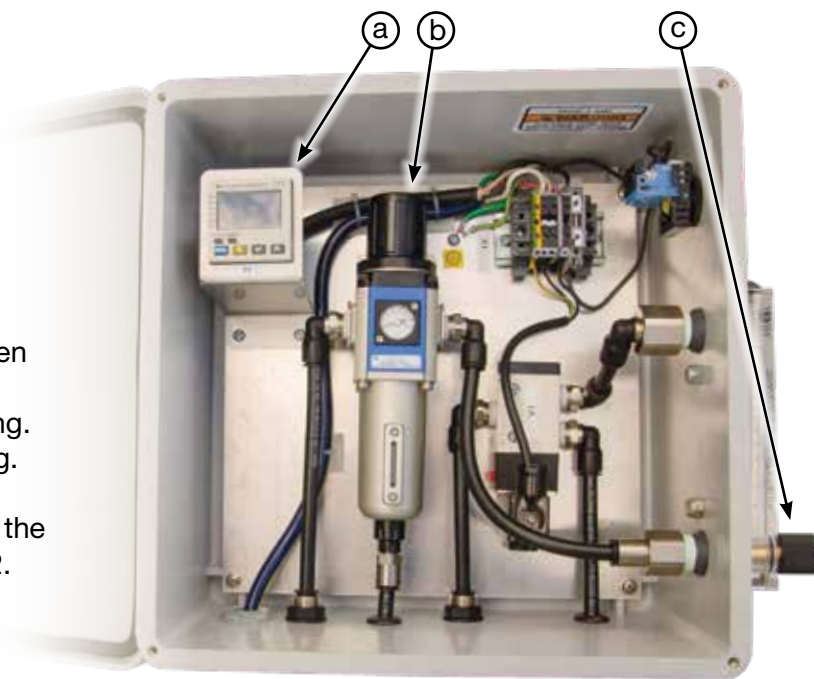


Fig 25 - Inside the control box



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Section 5: SERVICE AND MAINTENANCE

WARNING

- Read and understand the Owner's Manual.
- Do not attempt to enter tank through the top hatch (chemical tanks).
- Only enter the flat bottom tank when it is empty.
- Establish a Lock-Out Tag-Out policy for your work site. Always Lock-Out Tag-Out equipment before entering tank or performing any maintenance work.
- Wear appropriate personal protective gear, for the task you are performing.
- Attach a safety line to an anchor outside before entering.

Each site is different, and may store a variety of liquids. You must develop a service and maintenance program specific to your location and circumstances. You are responsible to ensure that your stainless steel tank(s) are compatible with the product which you wish to store.

By following a careful service and maintenance program for your tank(s), you will enjoy many years of trouble-free storage.

IMPORTANT:

If you enter the tank, make sure that there is no possibility that filling could start up. Lock-out, tag-out the auxiliary equipment. A responsible, trained person must be close at hand for assistance.

WARNING

CONFINED SPACE HAZARD

Wear protective clothing, and a properly filtered respirator mask. Connect a safety line to yourself and have a responsible, trained person outside to assist in an emergency.

5.1 CONCRETE SLAB INSPECTION

Check the foundation conditions regularly. Cracks that are more than 1/8 inch wide in the concrete slab indicate significant movement.

Always consult with a professional engineer when foundation problems arise. If severe cracking exists, slab levels should be taken to determine whether any area of the slab is sinking independently.

Subsoil conditions should be monitored to ensure against bearing capacity losses.

5.2 TANK INSPECTION

1. On all tanks, it is important to check that all air vent(s) are open and clear of any obstructions.

Venting is important to prevent implosion.

2. Inspect welded seams.
3. Inspect and adjust plugs, fittings and valves as required.
4. Use the correct seam sealant around all fittings and valves. Consult your product dealer for their recommendations on what sealant is compatible with the liquid you will be storing.

5.2.1 Chemical Tank:

Use the inspection hatch on the roof of the chemical tanks for observation only. Do not attempt to enter the tank.

5.2.2 Flat Bottom Tank:

Use the manway on the flat bottom tanks only for entry when the tank is empty for inspection and cleaning purposes.

5.3 MANWAY TIGHTENING PROCEDURE

Manway flange joints require proper tightening to avoid leaking. Apply **Loctite® LB 8150**, or equivalent, anti-seize lubricant to the bolt threads.

- Torque each nut to **75 +/- 5 ft-lb**.

This is the procedure for tightening the bolts:

5.3.1 Flange Condition Pre-Check:

- Check conditions of flange faces for scratches, dirt and scale.
- Check for corrosion pitting and tool marks.
- Inspect the gasket seating surfaces.
- Check the areas on the flange where the nuts will seat, it should be flat and free from pitting and excessive wear.



Fig 26 - Manway on flat bottom tank

5.3.2 Flange Alignment:

Visually examine the flange alignment to ensure that it fits well. While aligning the flanges make sure that there are no residual stresses in the joint.

IMPORTANT:

Using heat correction for the alignment of flanges is strictly prohibited.

- Flange faces should be parallel and aligned.
- The flange bolt holes should be in line so that the bolts will pass freely.

5.3.3 Nut and Bolt/Stud Checks:

- Visually examine nuts and bolts/studs before using them to ensure that they are free from defects such as corrosion and damaged threads.

Do not use fasteners with damaged threads.

- Check the length of the bolts to avoid short bolting or excessive threads. Meridian® supplies flange bolts with sufficient length to allow the use of bolt tensioning equipment or spades, spacers, drip rings and wafer valves, and the associated extra gaskets.
- Visually examine nuts and bolts/studs after cleaning to ensure they are free from burrs. They should be cleaned using a wire brush to remove any dirt on the threads.
- The nut and bolt material grades should be correctly identified before they are used.
- Nuts and bolts can only be reused if it is known that they have not been overloaded or exceeded their yield point.
- When threading the nut onto the bolt, the nut identification marking must always point outwards.

5.3.4 Gasket Check:

- Do not use sealing compound, grease or other paste or adhesive on gasket or flange faces.
- Clean gasket seating face using a wire brush.
- Visually examine the gasket, before installation, to assure they are free from defects.
- Make sure the material is as specified, look for any possible defects or damage in the gasket such as folds or creases.
- All Soft material gaskets should be replaced with new ones whenever an opened joint is to be closed again.
- Spiral-wound gaskets should be used only once.
- While inserting the gasket, do not force it into the gasket seat between the mating flange faces. Once the gasket is placed, bring the mating flanges together carefully without knocking the gasket out of place. Install all bolts and hand tighten the nuts.

5.3.5 Manway Flange Bolt Torque Sequence:

ALWAYS TIGHTEN THE NUT, NOT THE BOLT!

Note:

Bolts should only be torqued if they are fitted into clearance holes.

Apply Loctite® LB 8150, or equivalent, anti-seize lubricant to the bolt threads. Then, use a torque wrench to tighten nuts to **75 +/- 5 ft-lb**.

The specified method of bolt tightening is equally applicable to coated, galvanized and ungalvanized bolts.

Torque the nuts or bolts in a “CRISS-CROSS”, then a “CIRCULAR” sequence using two torquing passes as described below:

- Tighten all nuts by hand as far as possible.
- See Figure 27 for torque sequence.
- **PASS 1:** Torque the nuts to **75 +/- 5 ft-lb**. Torque in the correct sequence to a 100% of the final torque value. Check that gasket is getting compressed uniformly.
- **PASS 2:** Repeat torquing the nuts using the final torque value in a “CIRCULAR” manner.

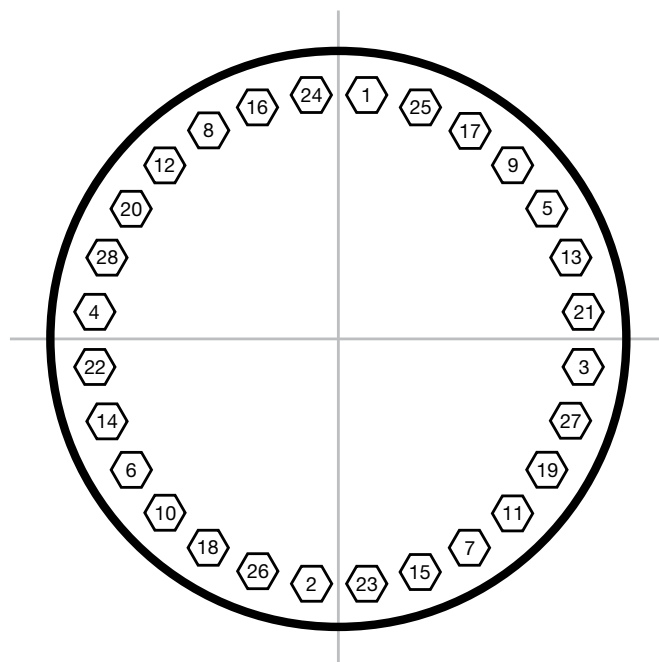


Fig 27 - 28 Bolt torque sequence



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Section 6: REFERENCE

For information not included here, or for a digital copy of this manual, please call your dealer, or Meridian Manufacturing Inc. directly for assistance. Visit our website at: www.meridianmfg.com.

Table 1 - Chemical Tank Specifications

ITEM #	MODEL	CUBIC FEET	LITRES	IMPERIAL (UK) GALLONS	US GALLONS	METRIC TONNES	SHORT (US) TONS	DIA.	HEIGHT
170412B	FRI 412 304 2BSS	152	4,312	948	1,139	6	7	4'	13' 6"
170608B	FRI 608 304 2BSS	231	6,545	1,440	1,729	9	10	6'	9' 10"
170610B	FRI 610 304 2BSS	288	8,146	1,792	2,152	11	12	6'	11' 10"
170612B	FRI 612 304 2BSS	344	9,747	2,144	2,575	13	14	6'	13' 10"
170614B	FRI 614 304 2BSS	401	11,349	2,496	2,998	15	17	6'	15' 10"
170616B	FRI 616 304 2BSS	457	12,950	2,849	3,421	17	19	6'	20' 6"
170804B	FRI 804 304 2BSS	213	6,026	1,326	1,592	8	9	8'	6' 1"
170808B	FRI 808 304 2BSS	414	11,720	2,578	3,096	15	17	8'	10' 1"
170810B	FRI 810 304 2BSS	514	14,566	3,204	3,848	19	21	8'	12' 1"
170812B	FRI 812 304 2BSS	615	17,413	3,830	4,600	23	25	8'	14' 1"
170814B	FRI 814 304 2BSS	715	20,260	4,456	5,352	26	29	8'	16' 1"
170816B	FRI 816 304 2BSS	816	23,106	5,083	6,104	30	33	8'	18' 1"
171010B	FRI 1010 304 2BSS	808	22,890	5,035	6,047	30	33	10'	13' 3"
171012B	FRI 1012 304 2BSS	965	27,338	6,014	7,222	36	40	10'	15' 3"
171014B	FRI 1014 304 2BSS	1,123	31,786	6,992	8,397	41	45	10'	17' 3"
171210B	FRI 1210 304 2BSS	1,213	34,356	7,557	9,076	45	50	12'	14' 2"
171212B	FRI 1212 304 2BSS	1,439	40,761	8,966	10,768	53	58	12'	16' 2"
171214B	FRI 1214 304 2BSS	1,666	47,166	10,375	12,460	61	67	12'	18' 2"
171216B	FRI 1216 304 2BSS	1,910	54,086	11,897	14,288	70	77	12'	20' 2"
171220B	FRI 1220 304 2BSS	2,362	66,896	14,715	17,672	87	96	12'	24' 2"
171224B	FRI 1224 304 2BSS	2,797	79,191	17,420	20,920	103	114	12'	28' 2"

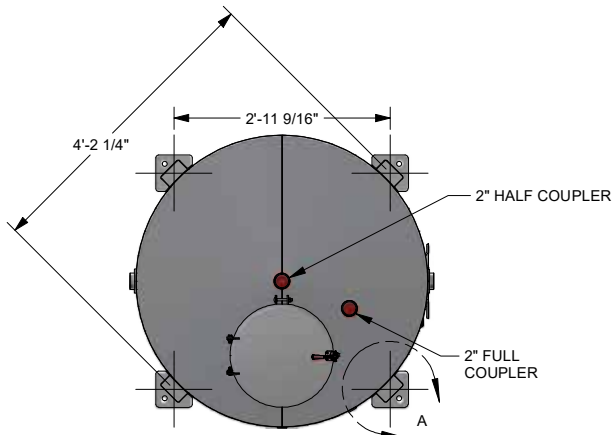
Capacities are based on 62 lb/ft³. Tonnes are based on 13 lb/Imp Gallon. Not all sizes available in all regions. Specifications and measurements are subject to change without notice.

Table 2 - Flat Bottom Tank Specifications

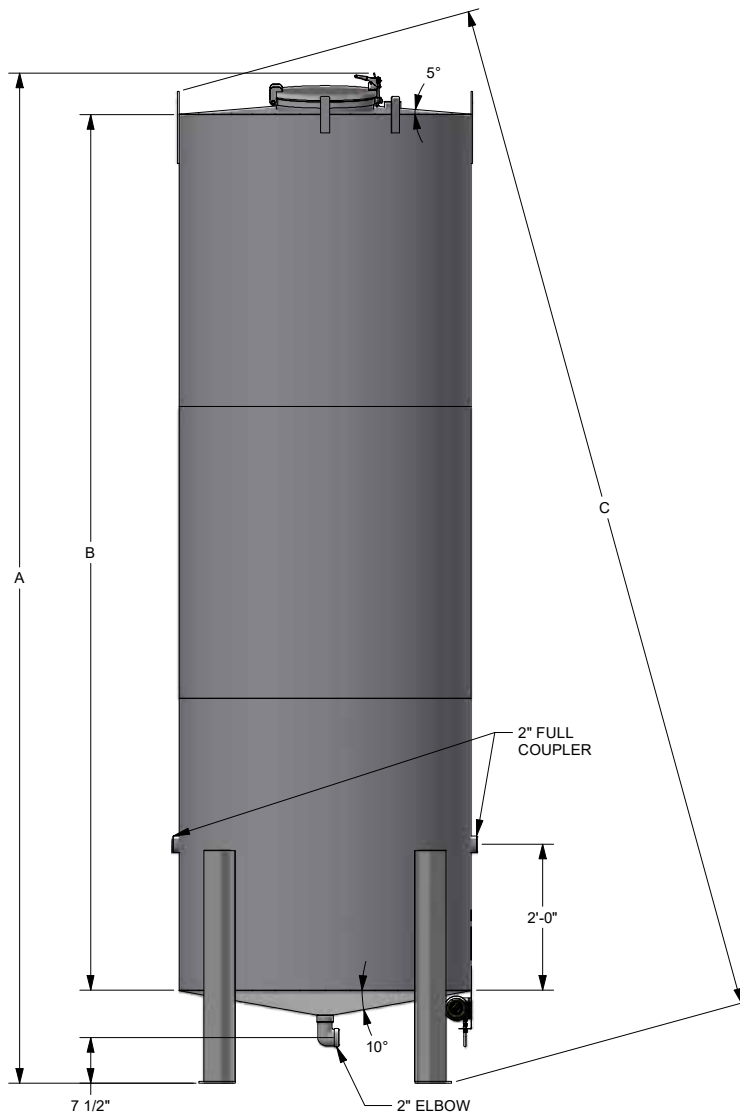
WESTERN CANADA / NORTHERN USA	MODEL	CUBIC FEET	LITRES	IMPERIAL (UK) GALLONS	US GALLONS	METRIC TONNES	SHORT (US) TONS	DIAMETER	HEIGHT
	SS1215	1,680	47,564	10,463	12,565	61	67	11' 11"	17' 3"
	SS1220	2,302	65,173	14,336	17,217	85	94	11' 11"	22' 3"
	SS1225	2,867	81,186	17,858	21,447	105	116	11' 11"	27' 3"
	SS1230	3,433	97,202	21,381	25,678	126	139	11' 11"	32' 3"
	SS1235	3,998	113,214	24,904	29,908	147	162	11' 11"	37' 3"
	SS1240	4,564	129,226	28,426	34,138	168	185	11' 11"	42' 3"
	SS1420	3,142	88,969	19,570	23,503	115	127	14'	22' 5"
	SS1425	3,912	110,765	24,365	29,261	144	159	14'	27' 5"
	SS1430	4,681	132,558	29,159	35,018	172	190	14'	32' 5"
	SS1435	5,451	154,354	33,953	40,776	200	220	14'	37' 5"
	SS1440	6,087	172,365	37,915	45,534	228	251	14'	42' 5"
	SS1620	4,116	116,541	25,636	30,787	151	166	16'	22' 7"
	SS1625	5,121	145,008	31,897	38,307	188	207	16'	27' 7"
	SS1630	6,126	173,474	38,159	45,827	225	248	16'	32' 7"
	SS1635	7,131	201,940	44,421	53,347	262	289	16'	37' 7"
	SS1640	8,137	230,410	50,683	60,868	299	330	16'	42' 7"
	SS1830	7,768	219,978	48,388	58,112	285	314	18'	32' 9"
	SS1835	9,041	256,007	56,314	67,630	332	366	18'	37' 9"
	SS1840	10,313	292,037	64,239	77,148	379	418	18'	42' 9"
	SS1850	12,858	364,092	80,089	96,183	472	520	18'	52' 9"

EASTERN CANADA / USA	MODEL	CUBIC FEET	LITRES	IMPERIAL (UK) GALLONS	US GALLONS	METRIC TONNES	SHORT (US) TONS	HEIGHT
	1215	1,680	47,564	10,463	12,565	63	69	17' 3"
	1220	2,302	65,173	14,336	17,217	85	94	22' 3"
	1225	2,867	81,186	17,858	21,447	105	116	27' 3"
	1230	3,433	97,202	21,381	25,678	126	139	32' 3"
	1235	3,998	113,214	24,904	29,908	147	162	37' 3"
	1240	4,564	129,226	28,426	34,138	168	185	42' 3"
	1315	2,010	56,914	12,519	15,035	73	80	17' 4"
	1320	2,663	75,398	16,585	19,918	97	107	22' 4"
	1325	3,317	93,924	20,660	24,812	121	133	27' 4"
	1330	3,970	112,423	24,730	29,699	145	160	32' 4"
	1335	4,624	130,926	28,800	34,587	169	186	37' 4"
	1340	5,277	149,429	32,870	39,475	193	213	42' 4"
	1345	6,016	170,344	37,470	45,000	221	244	47' 4"
	1350	6,684	189,271	41,634	50,000	245	270	52' 4"

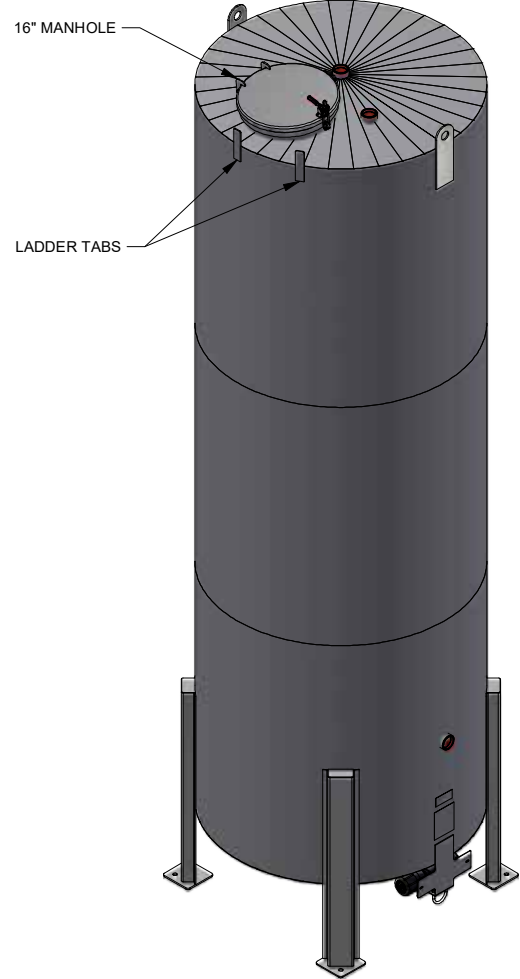
Capacities are based on 62 lb/ft³. Tonnes are based on 13 lb/Imp Gallon. Not all sizes available in all regions.
Specifications and measurements are subject to change without notice.



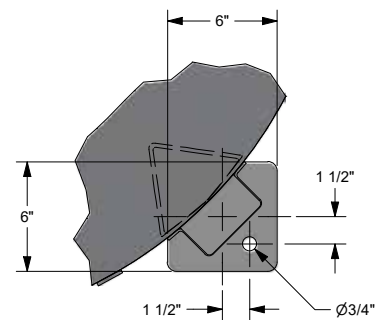
TOP VIEW



FRONT VIEW



ISO VIEW



DETAIL A
BASE PLATE

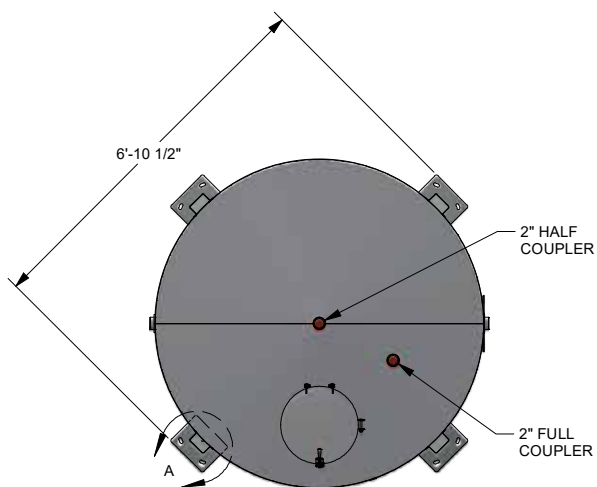
COATING SPECIFICATIONS

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EXTERIOR COATING: NONE
INTERIOR PREP: PASSIVATION PROCESS
INTERIOR COATING: NONE
ACCESSORY COLOUR: XXX

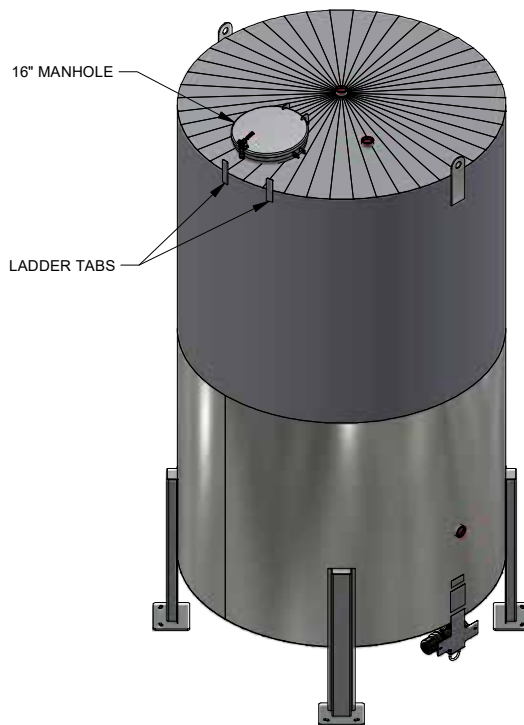
DESIGN NOTES

MAX. PRODUCT DENSITY: 90 p.c.f
(FREE FLOWING MATERIAL ONLY)
DESIGN PRESSURES: +8oz/-0.5oz PRESS/VAC
SEISMIC: Ss = 0.15 (U.S.)
WIND: 105 mph (U.S.)

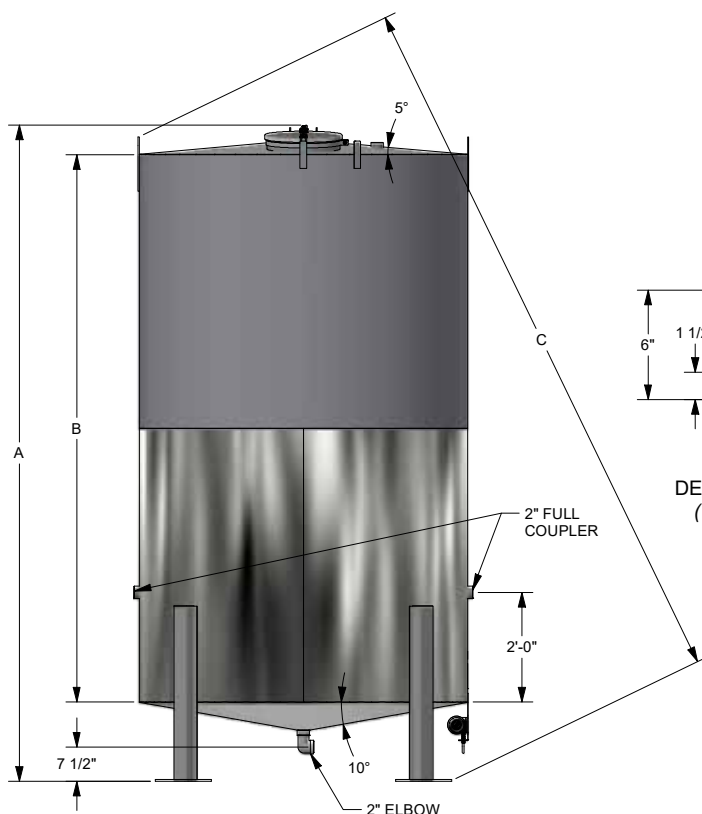
BIN MODEL	ITEM #	MATERIAL	DIMENSION A	DIMENSION B	DIMENSION C	WEIGHT
412 304SS 2B	170412B	304SS	13'-10"	12'-0"	14'-1 3/16"	690 lb



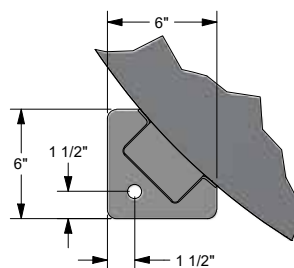
TOP VIEW



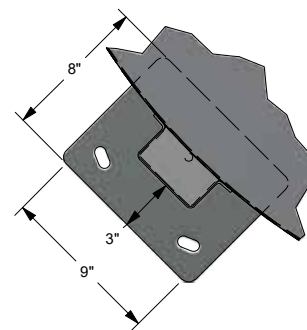
ISO VIEW



FRONT VIEW



DETAIL A - BASE PLATE
(* 608 MODEL ONLY)



DETAIL A - BASE PLATE
(ALL MODELS EXCEPT 608)

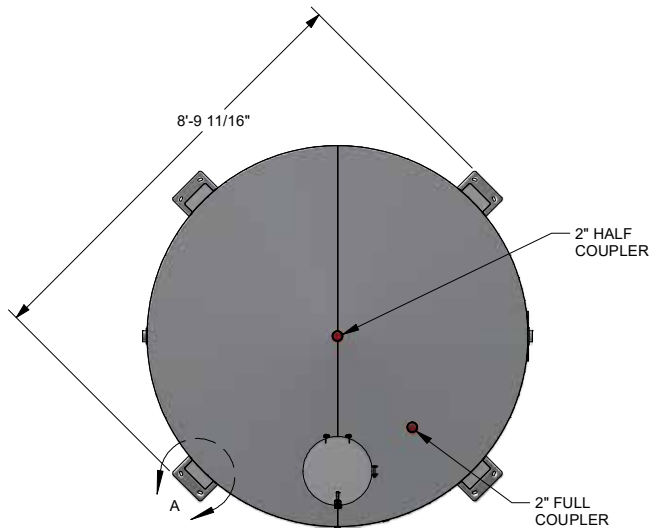
BIN MODEL	ITEM #	MATERIAL	DIMENSION A	DIMENSION B	DIMENSION C	WEIGHT
608 304SS 2B	170608B	304SS	9'-11 11/16"	8'-0"	11'-2 3/16"	909 lb
610 304SS 2B	170610B	304SS	11'-11 13/16"	10'-0"	13'-1 3/16"	1058 lb
612 304SS 2B	170612B	304SS	13'-11 13/16"	12'-0"	14'-11 1/16"	1170 lb
614 304SS 2B	170614B	304SS	15'-11 13/16"	14'-0"	16'-9 7/16"	1325 lb
616 304SS 2B	170616B	304SS	17'-11 3/4"	16'-0"	18'-8 1/16"	1437 lb
608 316SS 2B	190608	316SS	9'-9 5/8"	8'-0"	11'-2 5/16"	911 lb
610 316SS 2B	190610	316SS	11'-11 3/4"	10'-0"	13'-1 1/8"	987 lb
612 316SS 2B	190612	316SS	13'-11 15/16"	12'-0"	14'-11 3/16"	1170 lb
614 316SS 2B	190614	316SS	15'-11 13/16"	14'-0"	16'-9 3/8"	1350 lb
616 316SS 2B	190616	316SS	17'-9 11/16"	16'-0"	18'-8 1/16"	1444 lb

COATING SPECIFICATIONS

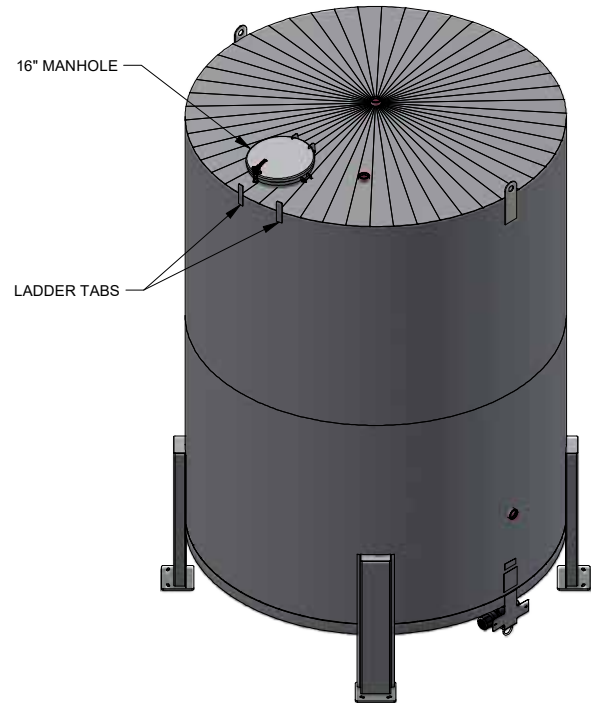
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EXTERIOR COATING: NONE
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INTERIOR COATING: NONE
ACCESSORY COLOUR: XXX

DESIGN NOTES

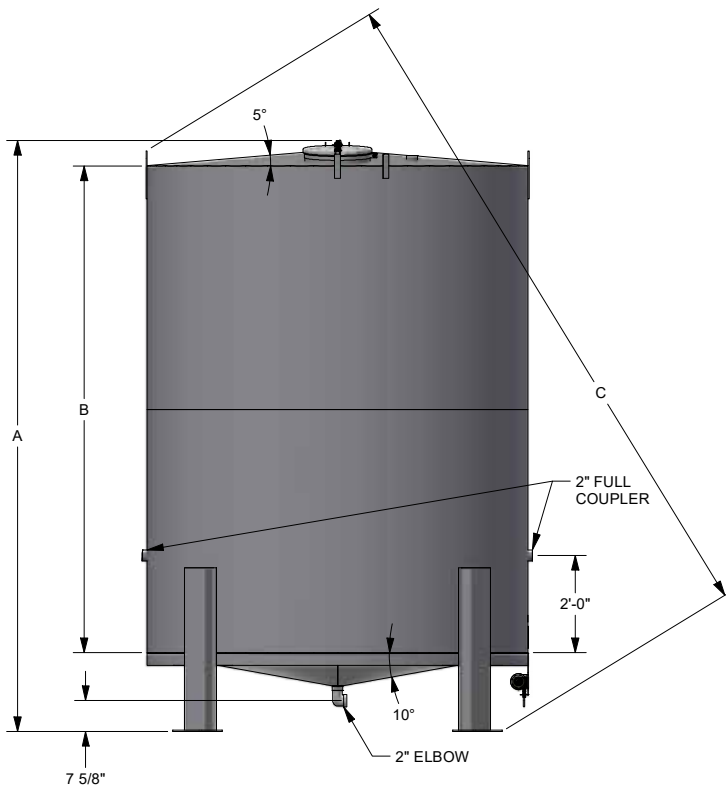
MAX. PRODUCT DENSITY: 90 p.c.f
(FREE FLOWING MATERIAL ONLY)
DESIGN PRESSURES: +8oz/-0.5oz PRESS/VAC
SEISMIC: S_s = 0.15 (U.S.)
WIND: 105 mph (U.S.)



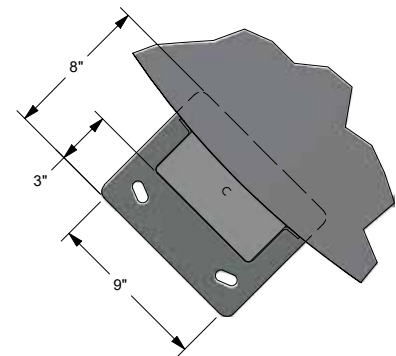
TOP VIEW



ISO VIEW



FRONT VIEW



DETAIL A
BASE PLATE

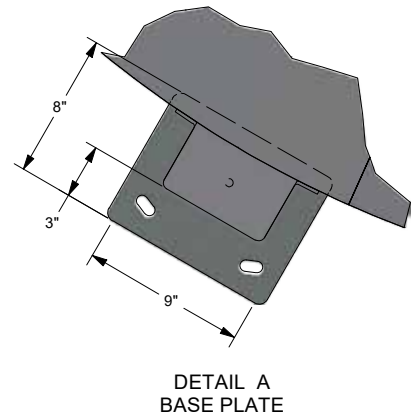
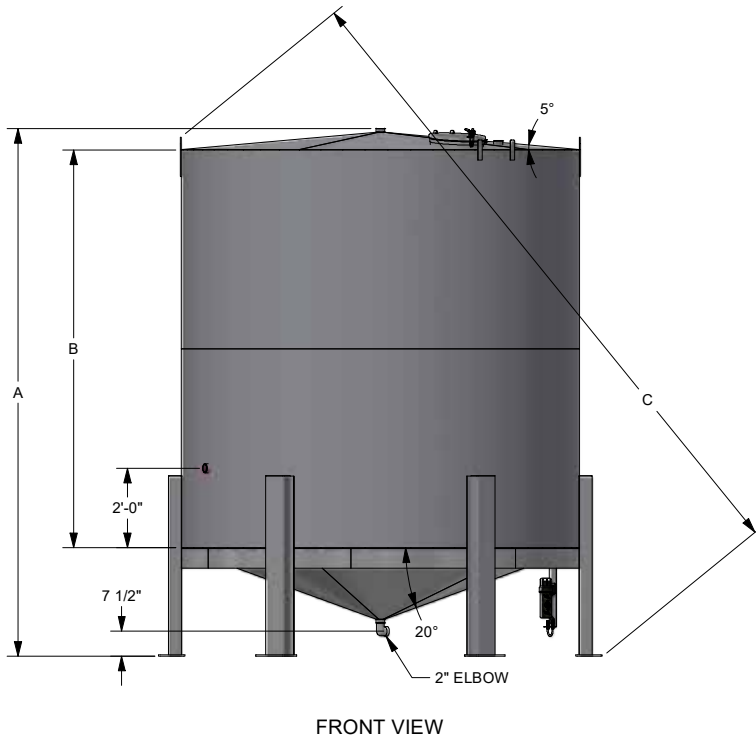
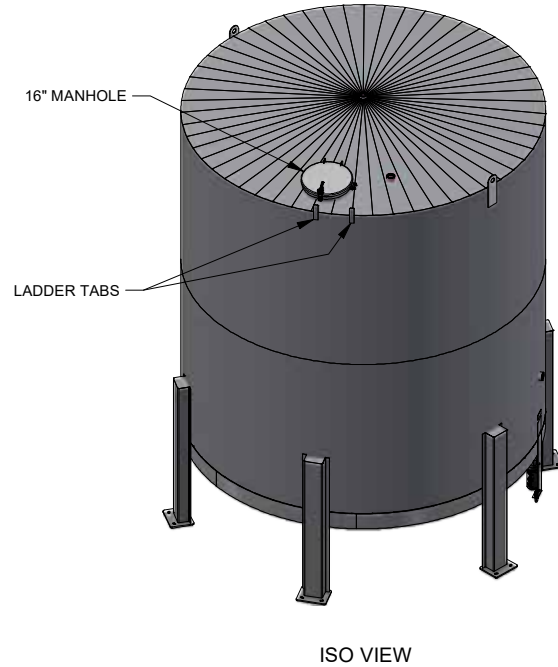
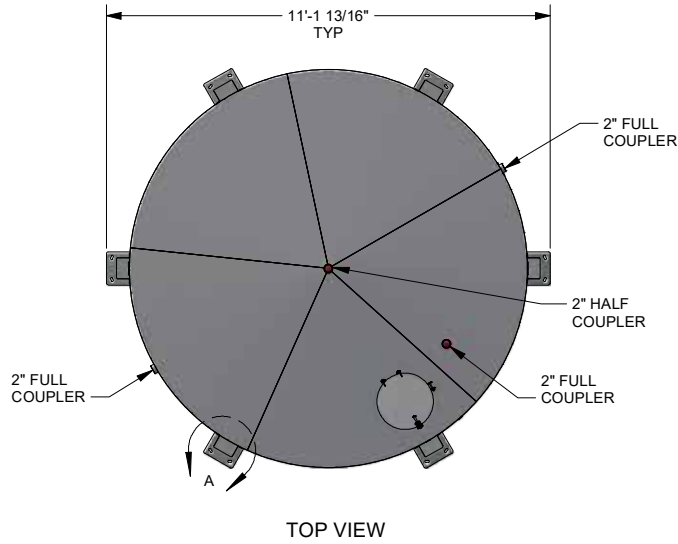
BIN MODEL	ITEM #	MATERIAL	DIMENSION A	DIMENSION B	DIMENSION C	WEIGHT
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808 304SS 2B	170808B	304SS	10'-1 7/8"	8'-0"	12'-4 1/4"	1573 lb
810 304SS 2B	170810B	304SS	12'-1 7/8"	10'-0"	14'-0 3/16"	1615 lb
812 304SS 2B	170812B	304SS	14'-1 7/8"	12'-0"	15'-9 1/16"	1800 lb
814 304SS 2B	170814B	304SS	16'-1 7/8"	14'-0"	17'-6 9/16"	2405 lb
816 304SS 2B	170816B	304SS	18'-1 7/8"	16'-0"	19'-4 5/8"	2645 lb
808 316SS 2B	190808	316SS	10'-1 13/16"	8'-0"	12'-4 3/16"	1577 lb
810 316SS 2B	190810	316SS	12'-1 13/16"	10'-0"	14'-0 1/8"	1623 lb
812 316SS 2B	190812	316SS	14'-1 13/16"	12'-0"	15'-9"	1805 lb
814 316SS 2B	190814	316SS	16'-1 13/16"	14'-0"	17'-6 1/2"	2420 lb
816 316SS 2B	190816	316SS	18'-1 13/16"	16'-0"	19'-4 1/2"	2650 lb

COATING SPECIFICATIONS

EXTERIOR PREP: PASSIVATION PROCESS
EXTERIOR COATING: NONE
INTERIOR PREP: PASSIVATION PROCESS
INTERIOR COATING: NONE
ACCESSORY COLOUR: XXX

DESIGN NOTES

MAX. PRODUCT DENSITY: 90 p.c.f.
(FREE FLOWING MATERIAL ONLY)
DESIGN PRESSURES: +8oz/ -0.5oz PRESS/VAC
SEISMIC: S_s = 0.15 (U.S.)
WIND: 105 mph (U.S.)



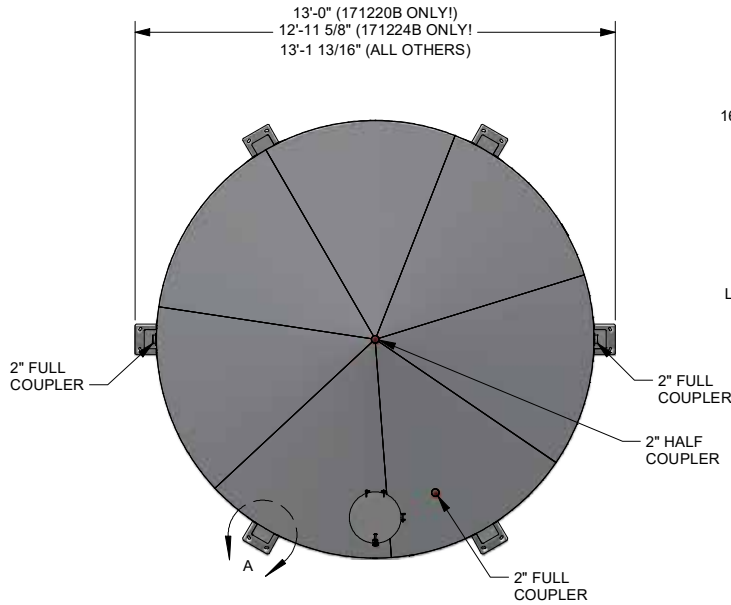
COATING SPECIFICATIONS

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INTERIOR COATING: NONE
ACCESSORY COLOUR: XXX

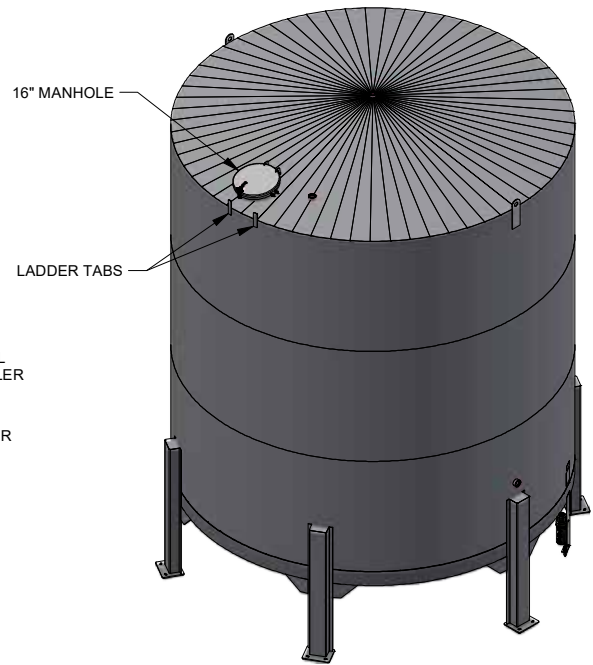
DESIGN NOTES

MAX. PRODUCT DENSITY: 90 p.c.f.
(FREE FLOWING MATERIAL ONLY)
DESIGN PRESSURES: +8oz/-0.5oz PRESS/VAC
SEISMIC: S_s = 0.15 (U.S.)
WIND: 105 mph (U.S.)

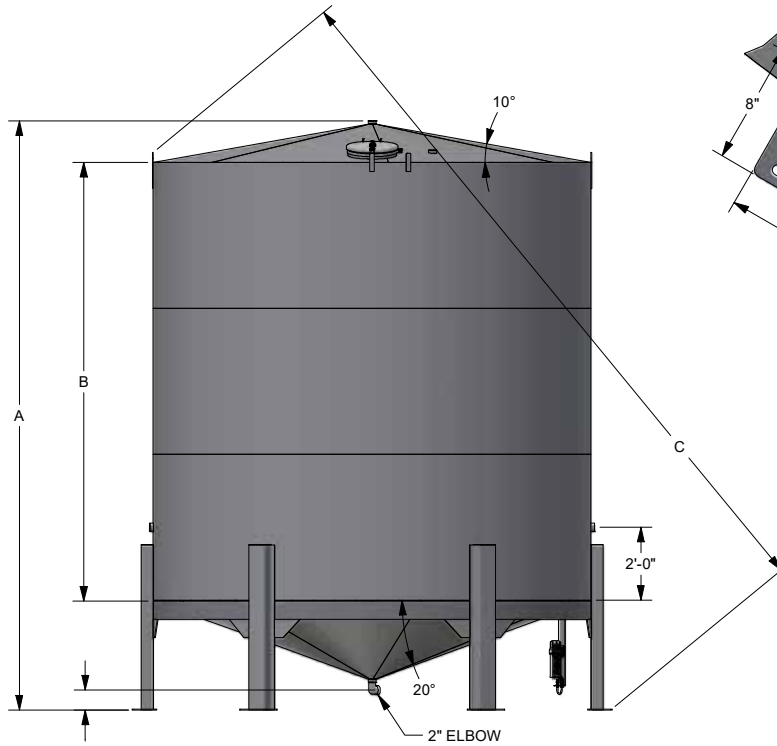
BIN MODEL	ITEM #	MATERIAL	DIMENSION A	DIMENSION B	DIMENSION C	WEIGHT
1010 304SS 2B	171010B	304SS	13'-3"	10'-0"	16'-9 5/8"	2815 lb
1012 304SS 2B	171012B	304SS	15'-3"	12'-0"	18'-4 3/4"	3114 lb
1014 304SS 2B	171014B	304SS	17'-3"	14'-0"	20'-0 3/4"	3600 lb
1014 316SS 2B	191014	316SS	17'-3"	14'-0"	20'-0 3/4"	3590 lb
1016 316SS 2B	191016	316SS	19'-3 1/8"	16'-0"	21'-9 9/16"	4283 lb



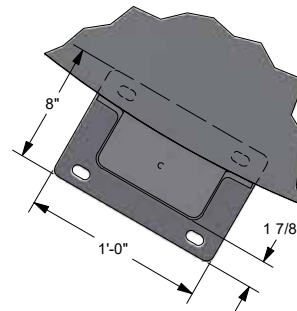
TOP VIEW



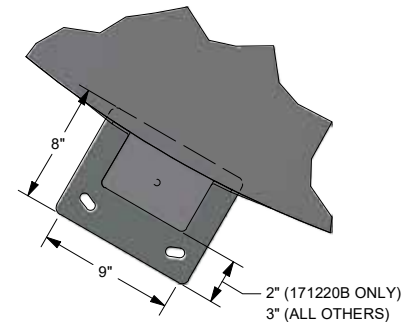
ISO VIEW



FRONT VIEW



DETAIL A
BASE PLATE
(*1224 MODEL ONLY)

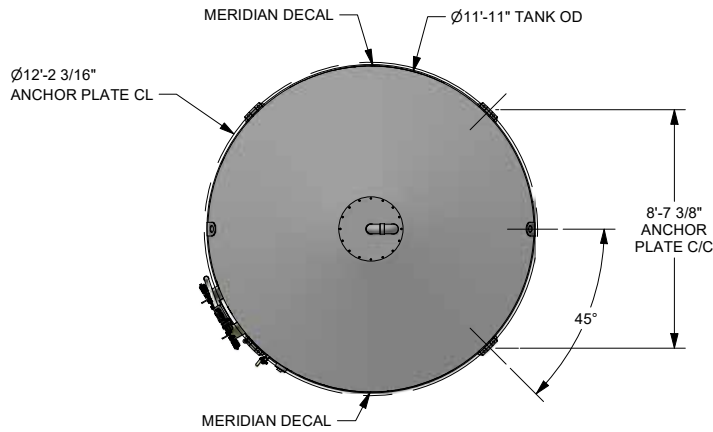


DETAIL A
BASE PLATE

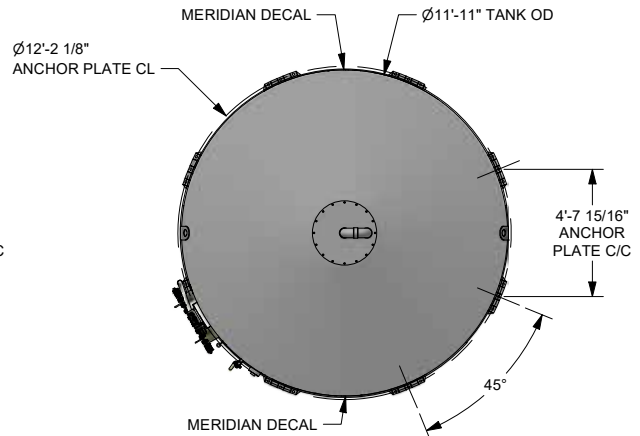
COATING SPECIFICATIONS
EXTERIOR PREP: PASSIVATION PROCESS
EXTERIOR COATING: NONE
INTERIOR PREP: PASSIVATION PROCESS
INTERIOR COATING: NONE
ACCESSORY COLOUR: XXX

DESIGN NOTES
MAX. PRODUCT DENSITY: 90 p.c.f.
(FREE FLOWING MATERIAL ONLY)
DESIGN PRESSURES: +8oz/ -0.5oz PRESS/VAC
SEISMIC: S_s = 0.15 (U.S.)
WIND: 105 mph (U.S.)

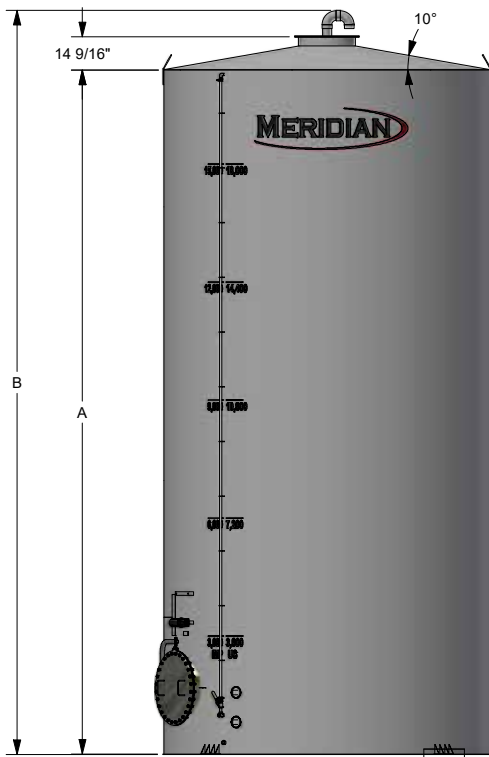
BIN MODEL	ITEM #	MATERIAL	DIMENSION A	DIMENSION B	DIMENSION C	WEIGHT
1210 304SS 2B	171210B	304SS	14'-1 7/8"	10'-0"	18'-4 1/16"	3428 lb
1212 304SS 2B	171212B	304SS	16'-1 7/8"	12'-0"	19'-9 5/8"	3858 lb
1214 304SS 2B	171214B	304SS	18'-1 7/8"	14'-0"	21'-4 5/8"	4496 lb
1216 304SS 2B	171216B	304SS	20'-1 7/8"	16'-0"	23'-0 7/16"	5042 lb
1220 304SS 2B	171220B	304SS	24'-1 7/8"	20'-0"	26'-5 3/8"	6520 lb
1224 304SS 2B	171224B	304SS	28'-2"	24'-0"	30'-2"	8540 lb
1212 316SS 2B	191212	316SS	16'-2 1/8"	12'-0"	19'-9 7/8"	3926 lb



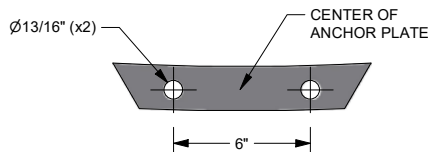
TOP VIEW
(FOR MODELS #67215 - #67235)



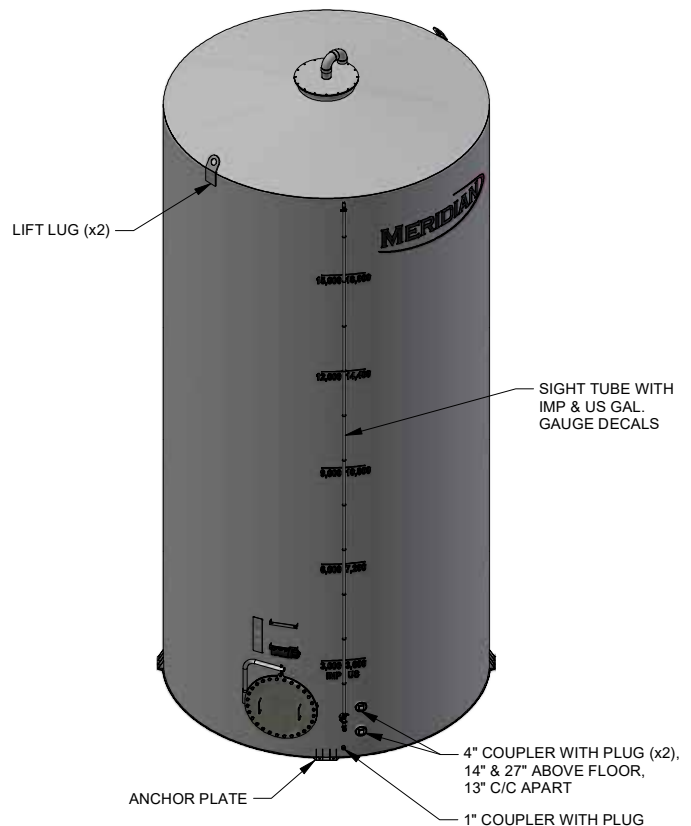
TOP VIEW
(FOR MODEL #67240)



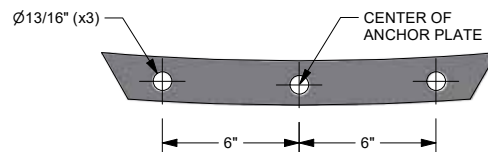
FRONT VIEW



A-A: ANCHOR PLATE
(ON TANKS #67215 - #67230)



ISO VIEW



A-A: ANCHOR PLATE
(ON TANKS #67235 & #67240)

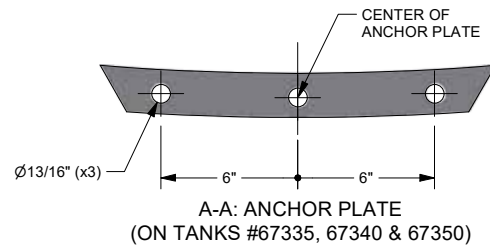
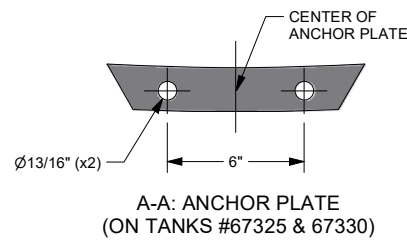
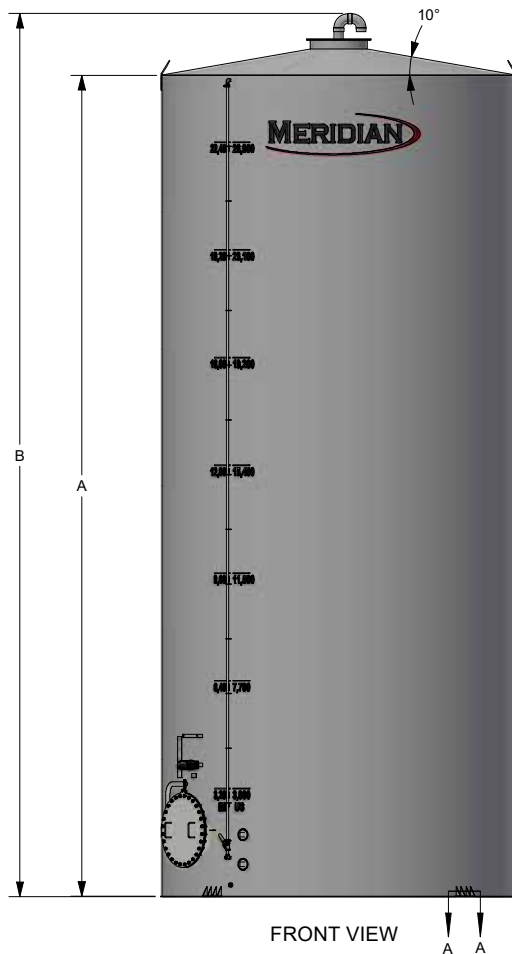
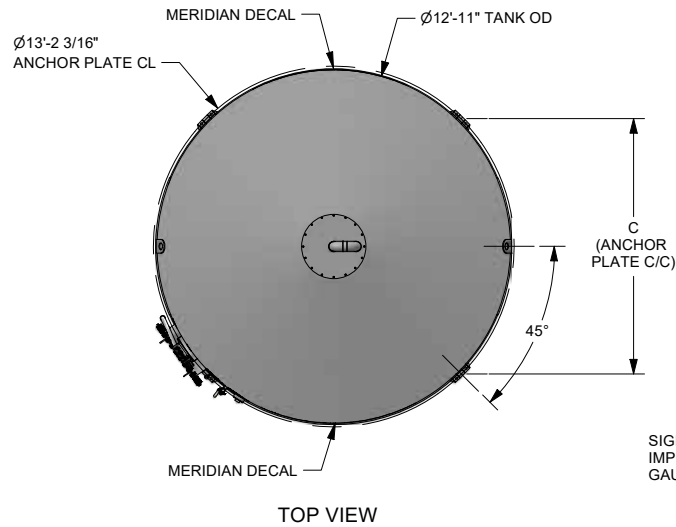
BIN MODEL	ITEM #	DIMENSION A	DIMENSION B	QTY ANCHORS	WEIGHT	VOLUME
SS1215	67215	15'-0"	17'-2 7/16"	4	5260 lb	1665 ft³
SS1220	67220	20'-0"	22'-2 7/16"	4	6115 lb	2220 ft³
SS1225	67225	25'-0"	27'-2 7/16"	4	6966 lb	2775 ft³
SS1230	67230	30'-0"	32'-2 7/16"	4	8092 lb	3330 ft³
SS1235	67235	35'-0"	37'-2 7/16"	4	9194 lb	3885 ft³
SS1240	67240	40'-0"	42'-2 7/16"	8	10 674 lb	4440 ft³

DESIGN NOTES

MAX. PRODUCT DENSITY: 90 p.c.f.
(FREE FLOWING MATERIAL ONLY)
DESIGN PRESSURES: +8oz/-0.5oz PRESS/VAC
SEISMIC: S_s = 0.1 (U.S.), S_a (.2) = 0.12 (CAN)
WIND: 90 mph (U.S.), 0.7 kPa (CAN)

COATING SPECIFICATIONS

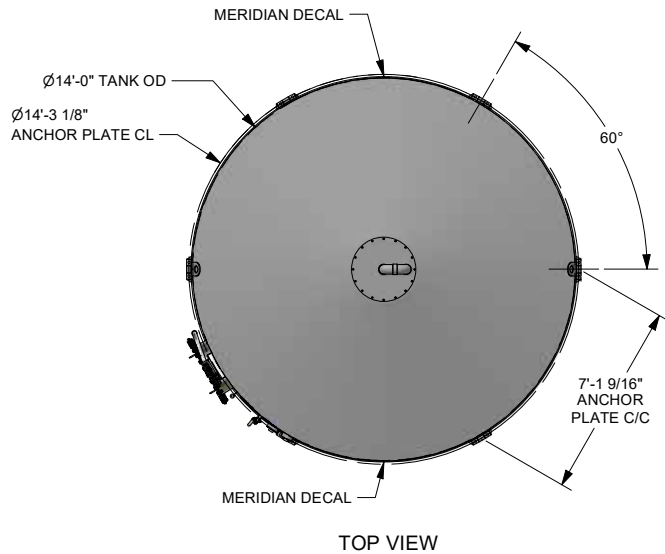
EXTERIOR COATING: NONE
INTERIOR COATING: NONE
ACCESSORY COLOUR: NONE



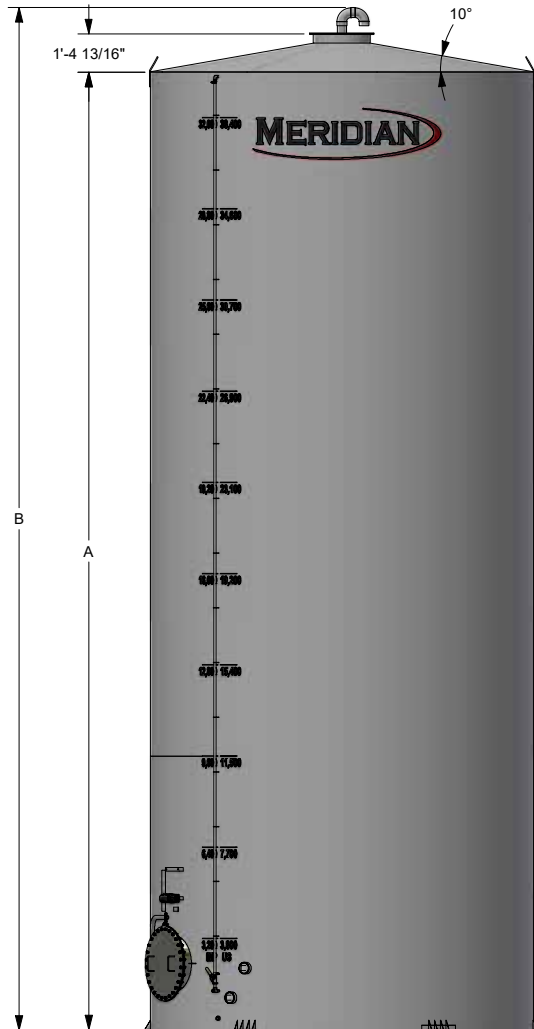
COATING SPECIFICATIONS
 EXTERIOR COATING: NONE
 INTERIOR COATING: NONE
 ACCESSORY COLOUR: NONE

DESIGN NOTES
 MAX. PRODUCT DENSITY: 90 p.c.f.
 (FREE FLOWING MATERIAL ONLY)
 DESIGN PRESSURES: +8oz/ -0.5oz PRESS/VAC
 SEISMIC: S_s = 0.1 (U.S.), S_a (2) = 0.12 (CAN)
 WIND: 90 mph (U.S.), 0.7 kPa (CAN)

BIN MODEL	ITEM #	DIMENSION A	DIMENSION B	DIMENSION C	QTY ANCHORS	WEIGHT	VOLUME
SS1325	67325	25'-0"	27'-3 1/2"	9'-3 13/16"	4	7695 lb	3260 ft³
SS1330	67330	30'-0"	32'-3 1/2"	9'-3 13/16"	4	8920 lb	3915 ft³
SS1335	67335	35'-0"	37'-3 1/2"	9'-3 13/16"	4	10 116 lb	4567 ft³
SS1340	67340	40'-0"	42'-3 1/2"	9'-3 13/16"	4	11 705 lb	5220 ft³
SS1350	67350	50'-0"	52'-3 1/2"	5'-0 1/2"	8	14 945 lb	6525 ft³

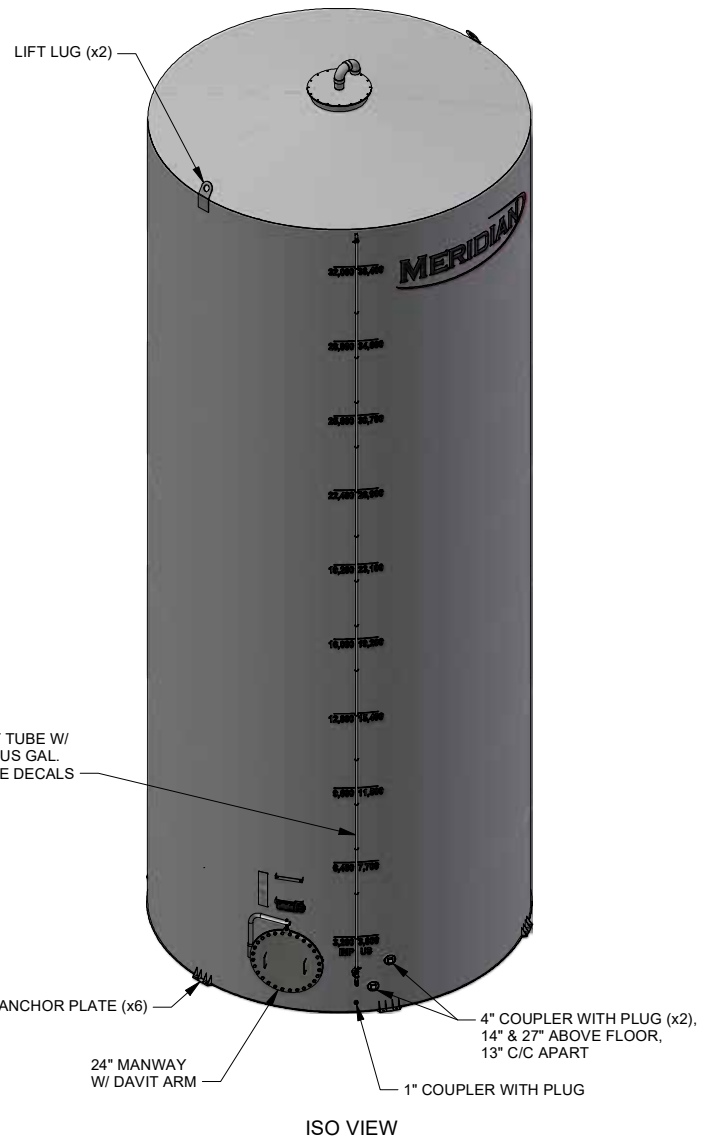


TOP VIEW

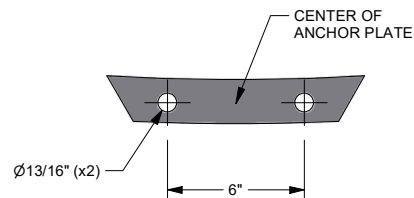


FRONT VIEW

A A



ISO VIEW



A-A: ANCHOR PLATE

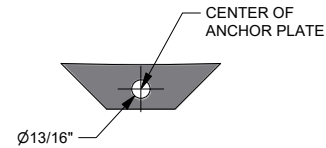
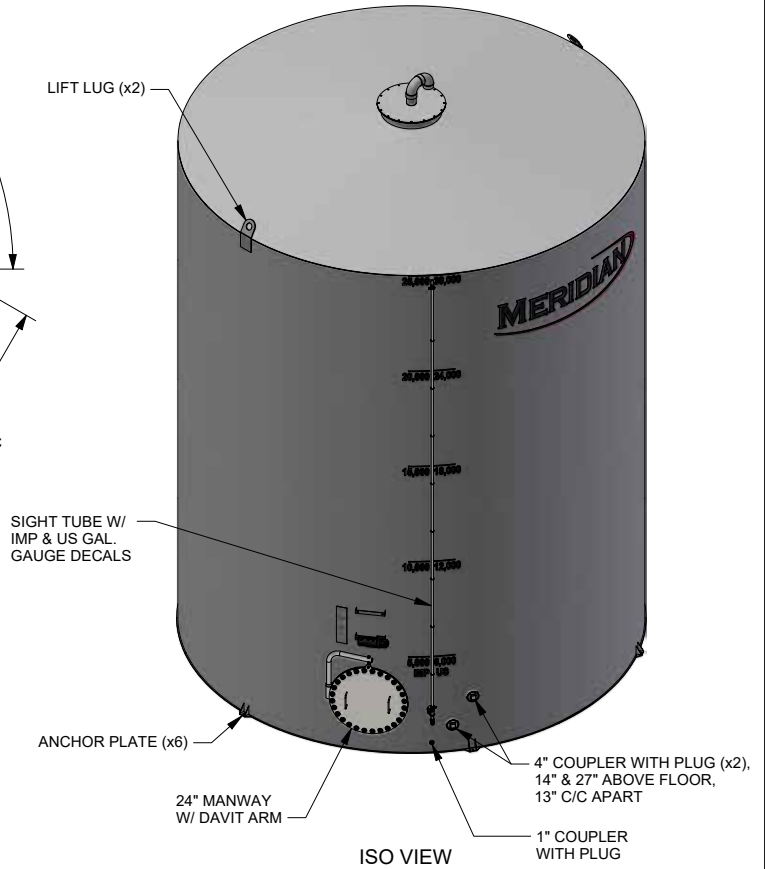
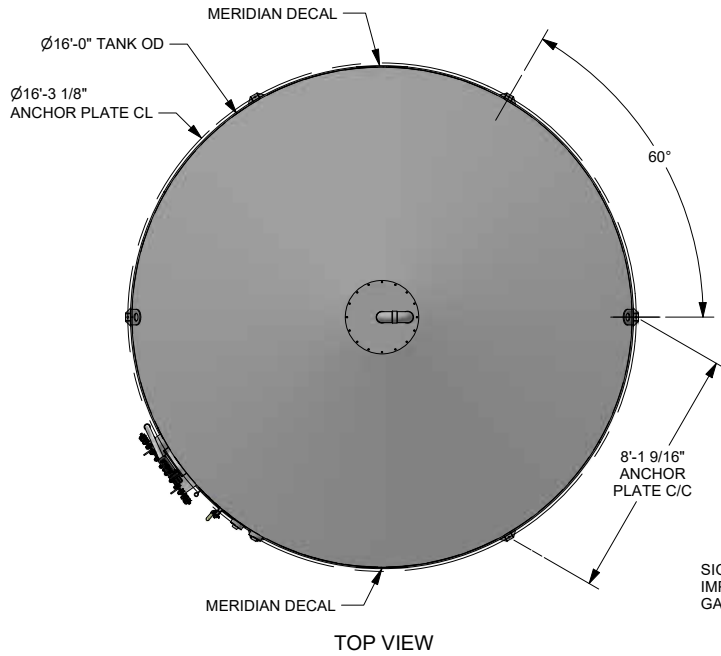
DESIGN NOTES

MAX. PRODUCT DENSITY: 90 p.c.f.
(FREE FLOWING MATERIAL ONLY)
DESIGN PRESSURES: +8oz/-0.5oz PRESS/VAC
SEISMIC: S_s = 0.1 (U.S.), S_a (.2) = 0.12 (CAN)
WIND: 90 mph (U.S.), 0.7 kPa (CAN)

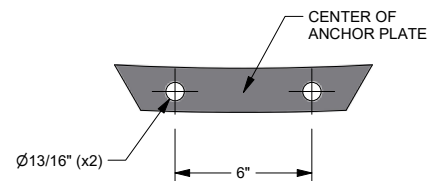
COATING SPECIFICATIONS

EXTERIOR COATING: NONE
INTERIOR COATING: NONE
ACCESSORY COLOUR: NONE

BIN MODEL	ITEM #	DIMENSION A	DIMENSION B	WEIGHT	VOLUME
SS1425	67425	25'-0"	27'-4 5/8"	8 523 lb	3 830 ft ³
SS1435	67435	35'-0"	37'-4 5/8"	11 105 lb	5 360 ft ³



A-A: ANCHOR PLATE
(TANKS #67615, 67620, 67625, 67630)



A-A: ANCHOR PLATE
(TANKS #67635 & 67640)

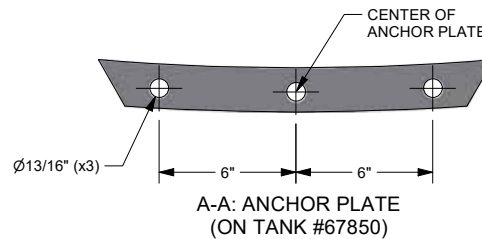
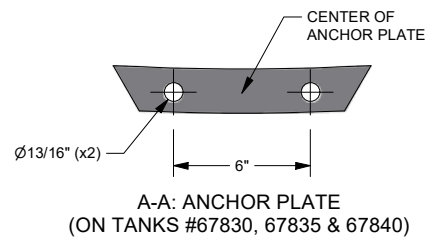
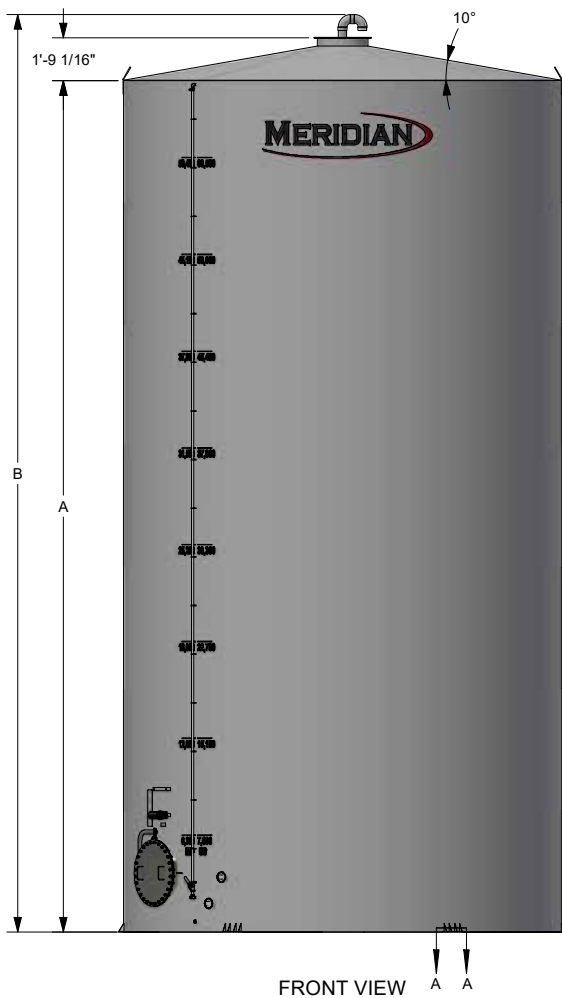
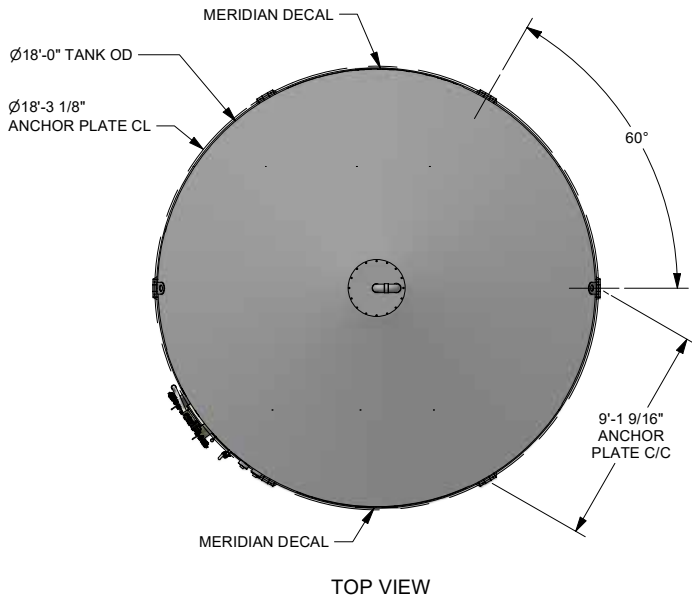
TANK MODEL	ITEM #	DIMENSION A	DIMENSION B	WEIGHT	VOLUME
SS1615	67615	15'-0"	17'-6 5/8"	7692 lb	3010 ft³
SS1620	67620	20'-0"	22'-6 5/8"	8840 lb	4010 ft³
SS1625	67625	25'-0"	27'-6 5/8"	9990 lb	5010 ft³
SS1630	67630	30'-0"	32'-6 1/2"	11 500 lb	6010 ft³
SS1635	67635	35'-0"	37'-6 1/2"	13 475 lb	7015 ft³
SS1640	67640	40'-0"	42'-6 1/2"	15 770 lb	8015 ft³

DESIGN NOTES

MAX. PRODUCT DENSITY: 90 p.c.f
(FREE FLOWING MATERIAL ONLY)
DESIGN PRESSURES: +8oz/-0.5oz PRESS/VAC
SEISMIC: S_s = 0.1 (U.S.), S_a (.2) = 0.12 (CAN)
WIND: 90 mph (U.S.), 0.7 kPa (CAN)

COATING SPECIFICATIONS

EXTERIOR COATING: NONE
INTERIOR COATING: NONE
ACCESSORY COLOUR: NONE



BIN MODEL	ITEM #	DIMENSION A	DIMENSION B	WEIGHT	VOLUME
SS1830	67830	30'-0"	32'-8 13/16"	14 160 lb	7610 ft³
SS1835	67835	35'-0"	37'-8 13/16"	16 375 lb	8880 ft³
SS1840	67840	40'-0"	42'-8 13/16"	18 590 lb	10 150 ft³
SS1850	67850	50'-0"	52'-8 13/16"	23 085 lb	12 680 ft³

DESIGN NOTES
 MAX. PRODUCT DENSITY: 90 p.c.f.
 (FREE FLOWING MATERIAL ONLY)
 DESIGN PRESSURES: +8oz/-0.5oz PRESS/VAC
 SEISMIC: S_s = 0.1 (U.S.), S_a (.2) = 0.12 (CAN)
 WIND: 90 mph (U.S.), 0.7 kPa (CAN)

COATING SPECIFICATIONS
 EXTERIOR COATING: NONE
 INTERIOR COATING: NONE
 ACCESSORY COLOUR: NONE

STAINLESS STEEL LIQUID TANK VALVE KIT INSTALLATION GUIDE, PART #10650

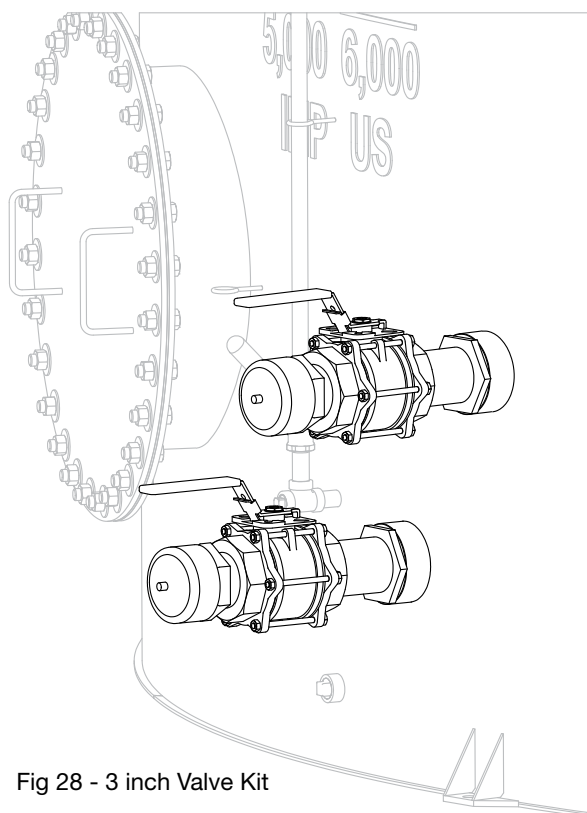


Fig 28 - 3 inch Valve Kit

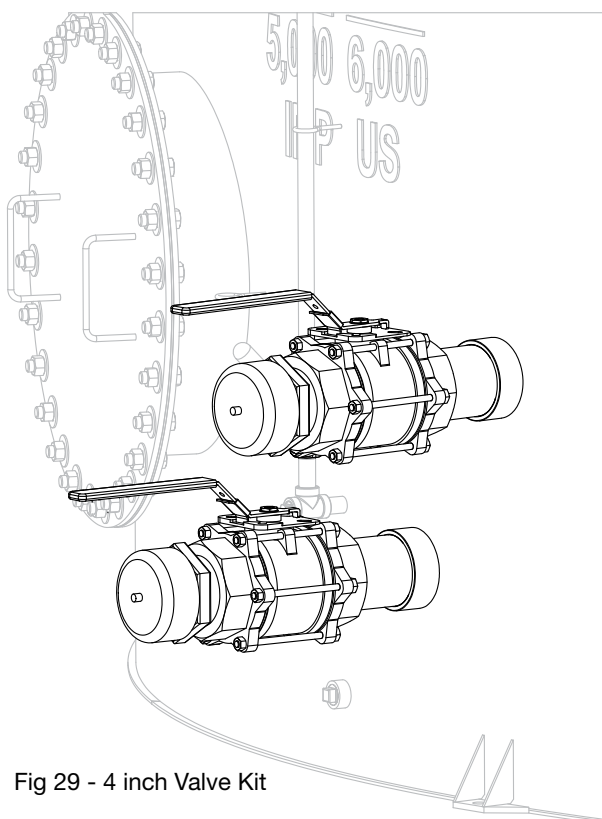


Fig 29 - 4 inch Valve Kit

Refer to the attached “Installation, Operation & Maintenance Instructions” supplied by the vendor (the attachment contains 4 pages).

1. Clean threads to remove dust and debris.
2. Apply the supplied Tru-Blu™ sealant to both male and female threads, for best seal results.
 - **IMPORTANT:** The tank owner must ensure the compatibility of the sealant with the tank and it's contents.

Note: Do not dry fit, as thread may seize!

3. Hand tighten until snug.
4. Then, tighten 2-3 turns with a wrench.
 - **IMPORTANT:** DO NOT Over-tighten.
Over-tightening risks galling and may increase the chance of leaks.

THREE PIECE BALL VALVE

TCI ball valves have been designed and engineered to provide you with long lasting trouble free service when used in accordance with the instructions and specifications mentioned herein.

INSTALLATION

1.TCI three piece ball valves are bi-directional and may be installed for flow in either direction.

During installation it is recommended that the valve ball be in the open position in order to prevent any possible damage.

2.After installation, cycle valve several times before putting into service.

3.Valves can't be used on unstable gases.

4.Max. working pressure: TC-03T/B/S/L & TC-03K/TC-03KC:1000 psi (69bar) ,

5.Max. working temperature is 200 °C(392°F).

Caution for Brazing, Soldering, or Welding

1.If valve is to be brazed, soldered, or welded, the seats and body seals must be removed before installation in the following manner:

(a) Rotate valve ball into open position.

(b) Remove four body bolts.

(c) Rotate valve ball back to closed position and remove seats and ball.

(d) Remove body seals from pipe ends.

(e) Place ball, seats, and body seals in a clean suitable container during installation.

(f) Reassemble pipe ends to body.

2.When brazing, follow standard brazing procedures minimizing a direct flame on the valve body (center section).

3.When welding, it may be desirable to wrap a damp towel around the center section.

4.After brazing or welding allow the valve to cool. Reassemble the seats, seals, and ball with the valve.

5.Carefully tighten the body bolts diagonally across from each other before securing to the following recommended torque:

VALVE SIZE

DN8~DN10 (1/4"~3/8")

DN15~DN25 (1/2"~1")

DN32~DN50 (1-1/4"~2")

Dn65 (2-1/2")

DN80~DN100 (3"~4")

RECOMMENDED BOLT TORQUE

6-8 N-M

11-14 N-M

16-19 N-M

40-45 N-M

74-80 N-M



6. After installation, cycle valve several times before putting into service.

OPERATION

1. A quarter turn of the handle clockwise closes the valve and a quarter turn counterclockwise fully opens the valve. Visual indication of the ball position is determined by the handle position: when the handle is in line with the piping the valve is open, cross line the valve is closed. Also, the stem flats indicate the direction of the ball port.
2. Soft seated ball valves perform best with the ball either fully open or fully closed in accordance with TCI Valve published pressure/temperature chart. Consult the factory regarding characteristics of the media or pressure drop for applications other than fully open or closed.
3. Any media that might solidify, crystallize or polymerize should not be allowed to stand in the ball valve cavities. In the event that this should happen, **DO NOT** Force the valve in either direction; disassemble and clean before resuming service.
4. Force required to break-away (i.e., force which must be exerted to begin motion of ball) will vary depending on the media, pressure and length of time between cycles.

The following data will act as a guide regarding break-away torques:

VALVE SIZE	MAXIMUM BREAK-AWAY TORQUE
DN8 (1/4 ")	3.0 N-M
DN10 (3/8 ")	3.0 N-M
DN15 (1/2 ")	4.5 N-M
DN20 (3/4 ")	8.5 N-M
DN25 (1 ")	11.0 N-M
DN32 (1-1/4 ")	15.0 N-M
DN40 (1-1/2 ")	24.0 N-M
DN50 (2 ")	32.0 N-M
DN65 (2-1/2 ")	45.0 N-M
DN80 (3 ")	65.0 N-M
DN100 (4 ")	100.0 N-M

The above figures were obtained at 25 degrees C., 7 bar after 24 hours.

5. The only mechanism of the valve that is adjustable is the stem packing. If adjustment is required the gland may be taken up on by first loosening the handle nut. Adjustment of the gland should be no more than one quarter turn at a time. Over tightening will produce high torque and a shortened seal life.

MAINTENANCE

A repair kit containing two seats, two body seals, one thrust washer and stem packing is available for rebuilding each size and style valve.

Be sure to specify size, style, seat and seal materials when ordering. Optional components are also available (ball, stem, handle, etc.).

Refer to illustration on last page for part identification and assembly.

REBUILDING

WARNING - Ball Valves Can Trap Fluids in Ball Cavity When Closed

If the valve has been used to control hazardous media, it must be decontaminated before disassembly. It is recommended that the following steps are taken for safe removal and disassembly:

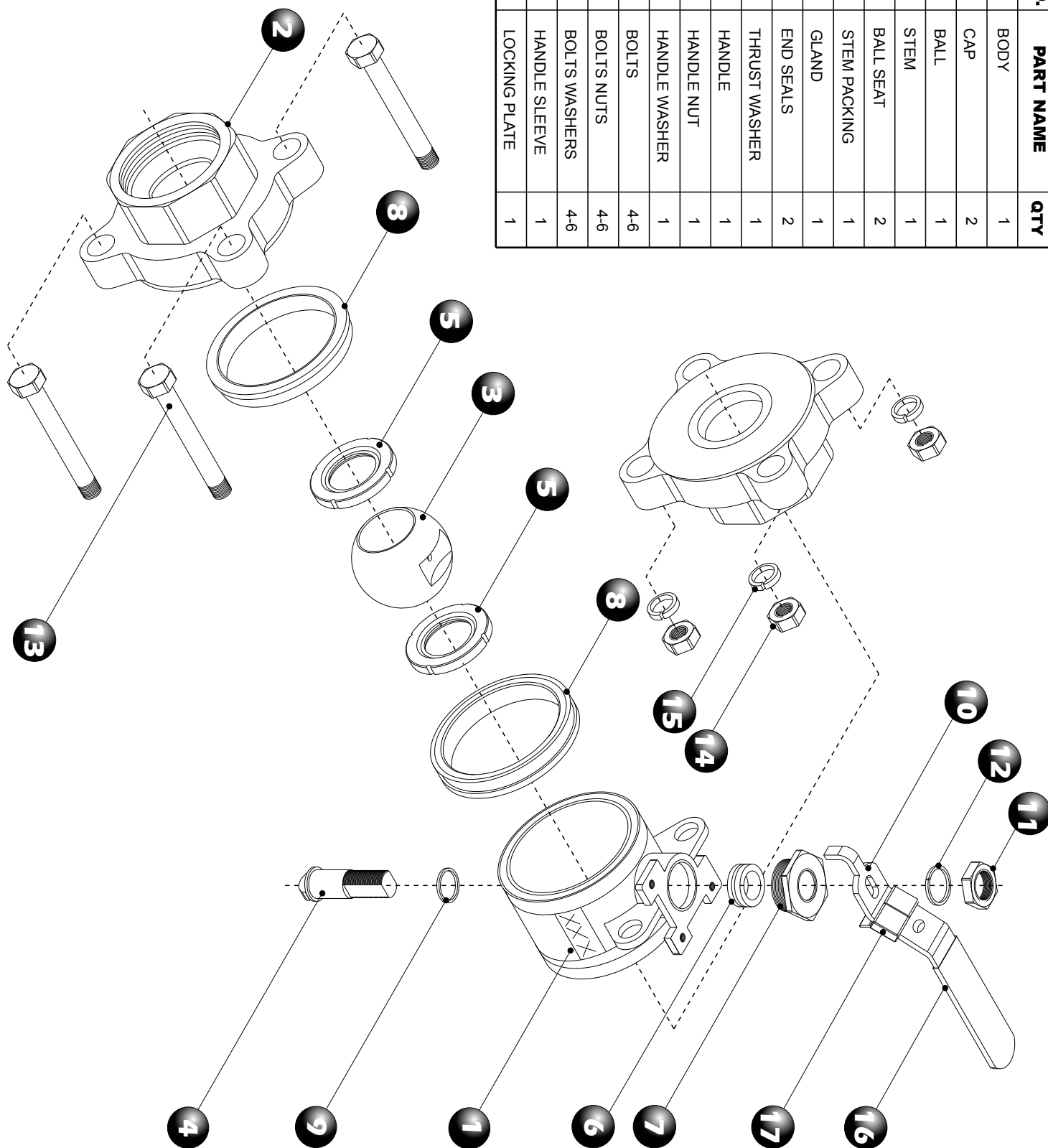
- Relieve the line pressure.
- Place the valve in half-open position and flush the line to remove any hazardous material from valve.
- All persons involved in the removal and disassembly of the valve should wear protective clothing such as face shield, gloves, apron, etc.

CAUTION: Exercise caution that sealing and all surfaces are not damaged during disassembly, cleaning or reassembly.

1. Stem flats should be in line with valve body before valve is removed from line.
2. Remove body bolts and disassemble from line, allowing sufficient pipe end clearance for center section removal.
3. Remove body end seals from pipe ends.
4. With stem flats rotated perpendicular to valve body, remove seats and ball.
5. If it is necessary to replace stem packing, remove handle nut, spring washer, handle and gland. Lower stem into body cavity, Remove stem packing and thrust washer.
6. Clean and inspect all components to be sure they are free from foreign matter and pit marks, paying particular attention to areas that must maintain a seal (the surface against which the seats are installed, finished diameter on stem, ball, stem hole). These areas must be free from scratches and pitting.
7. Light marring from the action of the ball against the seats is normal and will not affect the operation of the valve.
8. Once all components have been cleaned inspected and replaced as necessary, the valve may be rebuilt with the appropriate factory repair kit.
9. Slide new thrust washer over stem and insert assembly through ball cavity and fully up into stem hole recess.
10. Assemble new stem packing and screw the gland. Adjust stem packing to feel firm. **DO NOT over-tighten.**
11. Lightly lubricate ball and seats with a lubricant compatible with the media for which the service is intended.
12. Replace ball into cavity with stem flats in perpendicular position, making sure that portholes are in desired position for operation. Once ball is engaged with stem, rotate to in-line position to prevent ball from falling out during assembly.
13. Insert new seats into body and body end seals on pipe ends.
14. Replace center section back into line, allowing sufficient clearance to avoid pipe end sealing surface damage.
15. Assemble body bolts and nuts to valve.
16. Reinstall into service following the installation procedure.
17. If practical, check leak tightness before reinstalling valve inline.



NO.	PART NAME	QTY
1	BODY	1
2	CAP	2
3	BALL	1
4	STEM	1
5	BALL SEAT	2
6	STEM PACKING	1
7	GLAND	1
8	END SEALS	2
9	THRUST WASHER	1
10	HANDLE	1
11	HANDLE NUT	1
12	HANDLE WASHER	1
13	BOLTS	4-6
14	BOLTS NUTS	4-6
15	BOLTS WASHERS	4-6
16	HANDLE SLEEVE	1
17	LOCKING PLATE	1



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LIMITED WARRANTY

for Stainless Steel Tanks

Meridian Manufacturing Inc., hereinafter referred to as Meridian, guarantees its products against any defects in material or workmanship for a period of two (2) years from the date of purchase. Flat bottom tanks are warrantied to be free from leaks for a period of ten (10) years from date of purchase, provided the said products are set up according to its instructions and recommendations and also that the said products are operated and used in proper conditions and according to its instructions and recommendations.

THIS WARRANTY IS SUBJECT TO THE FOLLOWING LIMITATIONS, PROVISIONS AND CONDITIONS:

1. Stainless steel is not compatible with all types of chemicals. Meridian stainless steel (SS) tanks are designed for the specific purpose of storing standard fertilizer's such as 28-0-0 or a dry fertilizer equivalent. It is the responsibility of the end user to ensure the products stored are compatible with the 304L SS or 316 SS materials used to manufacture.

When submitting a warranty claim, it is the responsibility of the end user to supply Meridian with documentation supporting the type of products that were stored.

This warranty only applies to the original owner of the purchased product.

2. Meridian's responsibility and obligations under this warranty shall be limited to replacement of parts, and shall not extend to equipment or accessories that are component parts built by other manufacturers. Those manufacturers' warranties will apply to such parts, equipment or accessories. Any parts set up by reason of the application of this warranty shall be amenable to the terms of this warranty except that the period of two (2) years applicable to such parts shall be peremptory and that upon termination of the said period, warranty shall be null and void, for any purpose whatsoever with respect to the said parts substituted to it before the termination of the said period of two (2) years.
3. This warranty shall not extend to loss and damage to content of the products, neither to property or loss of revenue. Moreover, it shall not extend to bodily injuries, including death, sustained by any person or animal.
4. The purchaser shall give notice to Meridian, without delay, of any damage or defects to its products that they may ascertain before they are set up, otherwise this warranty will not apply to such damage or defects.
5. Any modification or incorporation whatsoever made to products, except those authorized or recommended by Meridian, shall void this warranty; this warranty shall not apply to damages resulting from improper installation or erection of the products by the purchaser.
6. This warranty is the sole and only warranty in lieu of any other warranty, express or implied, statutory or not.
7. Any claim under this warranty shall be notified in writing to Meridian's head office within thirty (30) days from the failure.

Specifications and descriptions are subject to change without notice.

Register your product at: www.meridianmfg.com

For warranty information send an email to: warranty@meridianmfg.com

WARRANTY REQUEST PROCEDURE

- The product must be registered with Meridian Manufacturing Inc.
- The purchaser must contact the dealer, from where the unit was purchased, immediately upon discovery of any defects.
- A completed Warranty Request (Claim) Form must be submitted by the dealer to Meridian's warranty representative for review and any subsequent course of action.
 - Warranty requests must be completed with ALL required information in order it to be considered for approval.
 - Send photographs of the entire piece of equipment, and of the specific area of concern.
- Warranty repair work will only be performed by Meridian or an approved representative of Meridian. Warranty work completed prior to Meridian's approval will NOT be honoured. Failure to follow this procedure may affect any or all of this warranty.
- All warranty requests will be adjudicated at the sole discretion of Meridian and in accordance with the terms and conditions of the warranty.



Storm Lake, IA: (800) 437-2334
Winkler, MB: (800) 665-7259
www.meridianmfg.com