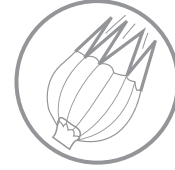
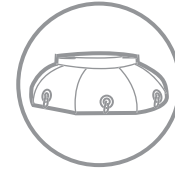


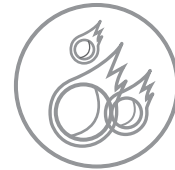
ARCTIC KING OPERATIONS MANUAL



Bambi Bucket



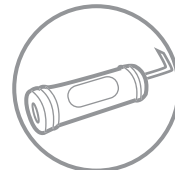
Fireflex



Dragon



Remote Site



Environmental



Emergency Response

ARCTIC KING OPERATIONS MANUAL - Version C

Issue Date: June 2009

PLEASE READ BEFORE USING.

SEI INDUSTRIES LTD.

7400 Wilson Avenue
Delta, B.C. Canada
V4G 1E5

Phone: (604) 946-3131

Fax: (604) 940-9566

E-Mail: seisales@sei-ind.com

Website: www.sei-ind.com

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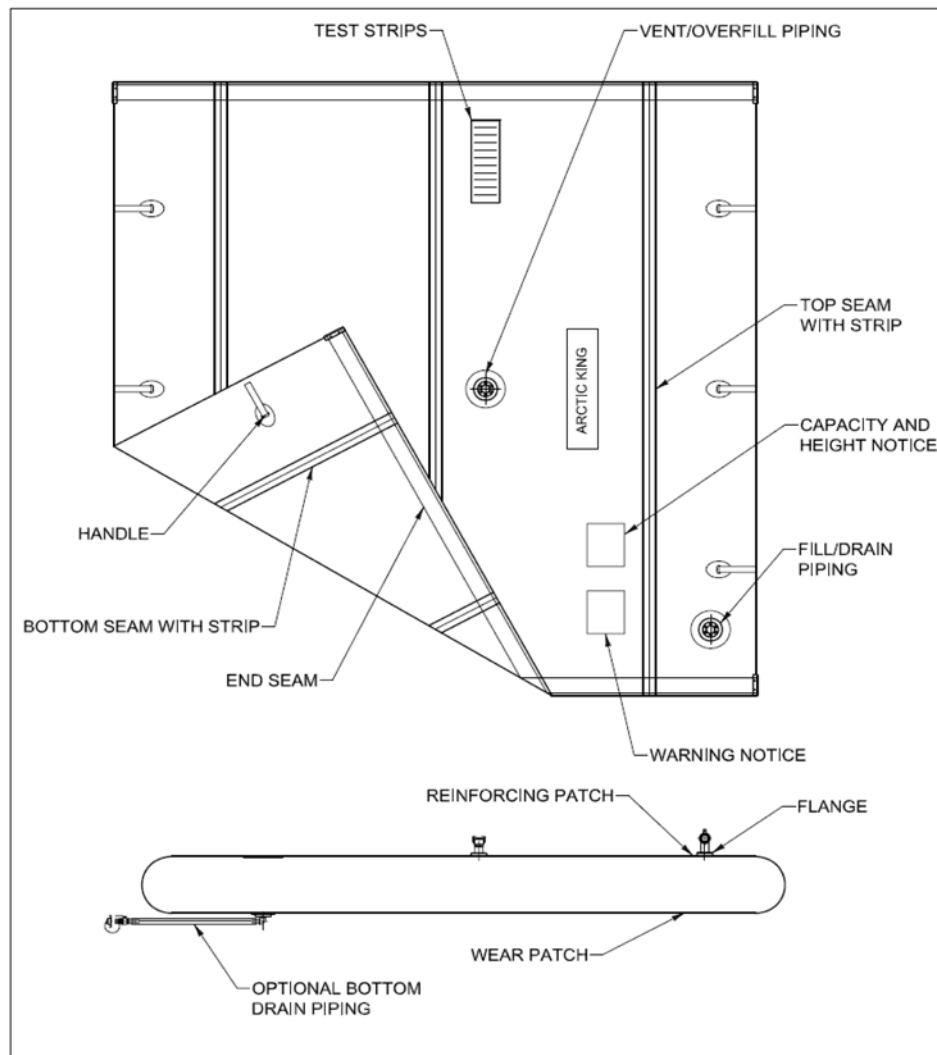
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Section 1: Tank Overview

Arctic King Introduction

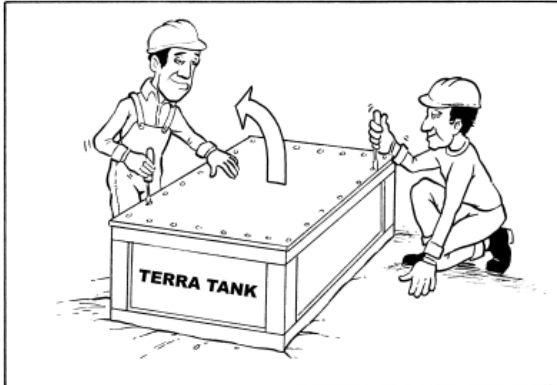
This manual provides the necessary information for the safe installation, operation, maintenance, repacking, and shipping of SEI Industries' Arctic King collapsible fuel tank.



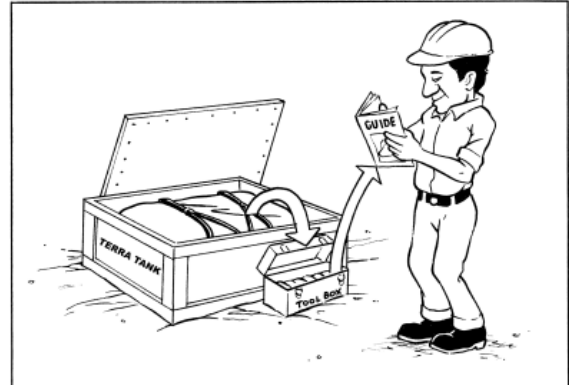
Arctic King main parts.

Section 2: Quick Deployment

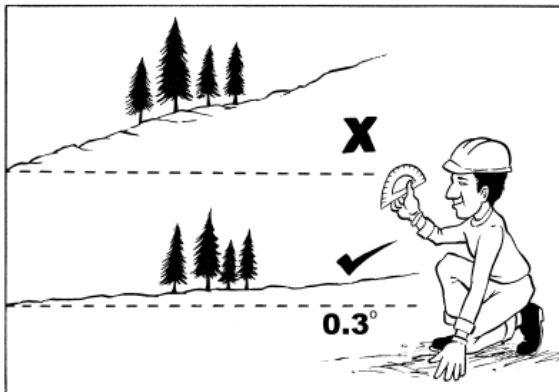
Quick Deployment Guide



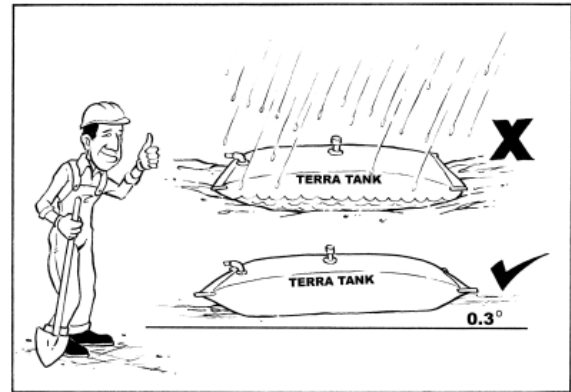
1. Open the crate.



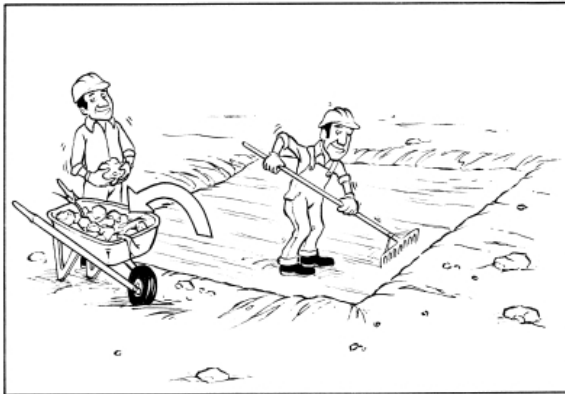
2. Read the operator's manual.



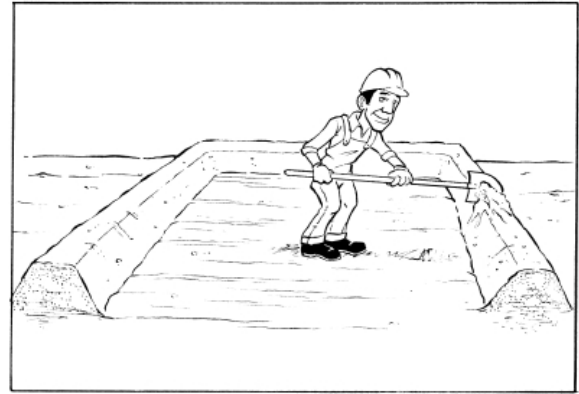
3. Select a site (maximum slope three degrees).



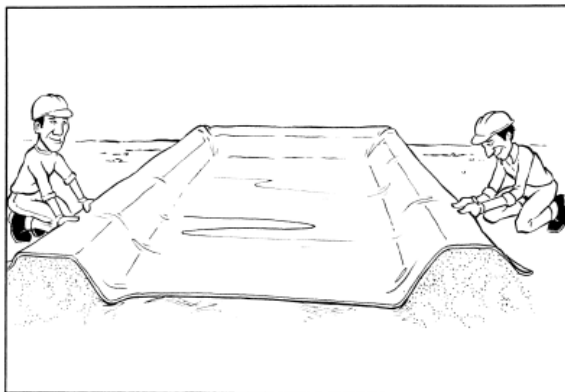
4. Site must not have a low spot that would cause the tank to sit in water.



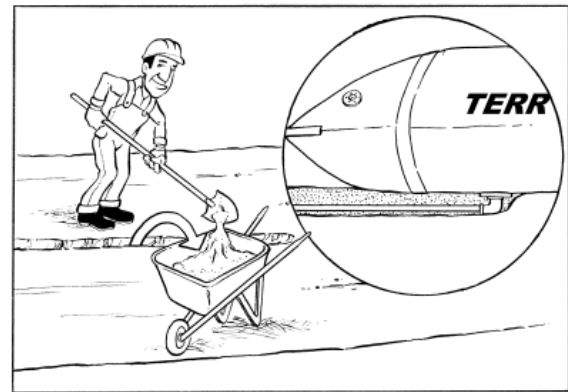
5. Make a smooth site for the tank.



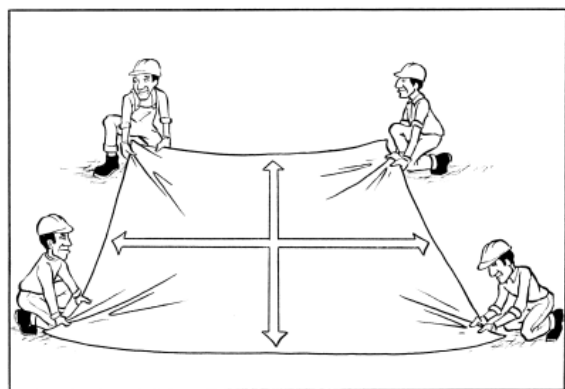
6. Build a berm around the site (if necessary).



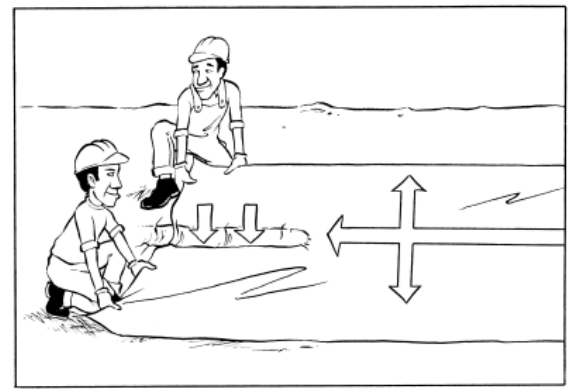
7. Place a liner in the berm (if necessary).



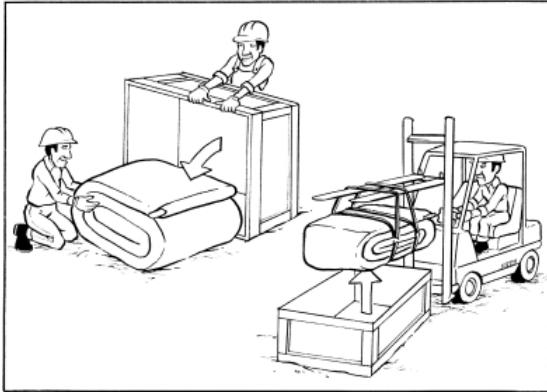
8. Dig a hole for the bottom drain (if necessary).



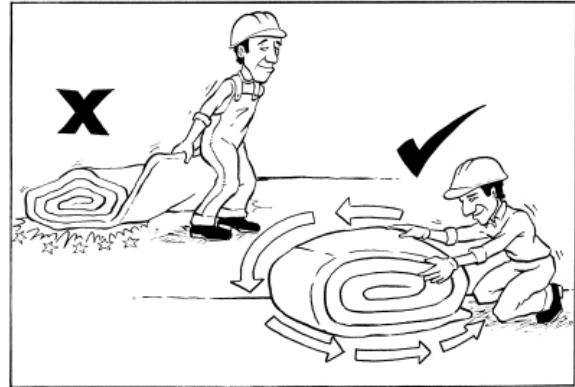
9. Spread out the berm liner and ground sheet (if supplied) before deploying the tank.



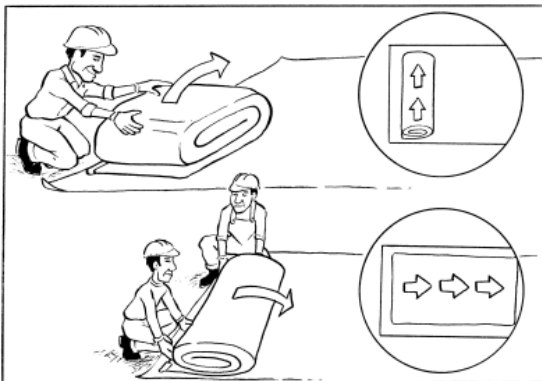
10. Place berm liner into the hole for the bottom drain.



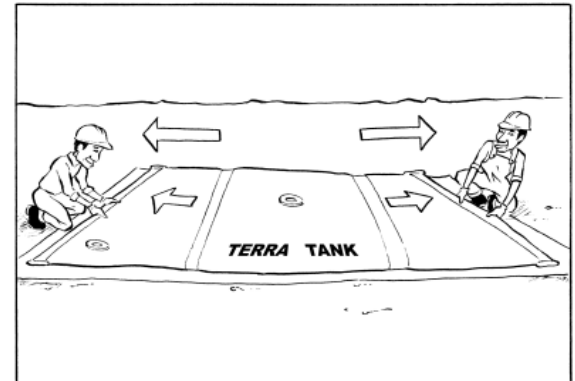
11. Tip crate and roll tank out OR lift tank out with straps.



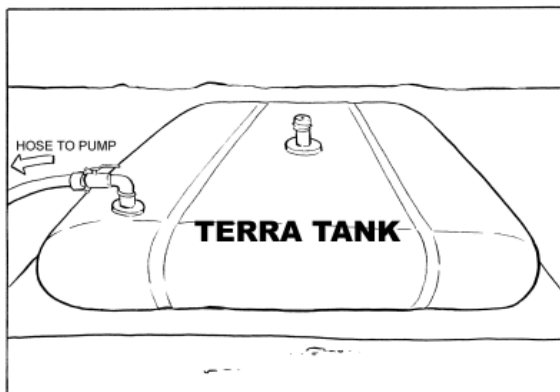
12. Roll the tank to move it. Do not drag.



13. Unfold tank onto berm liner. Unroll tank.



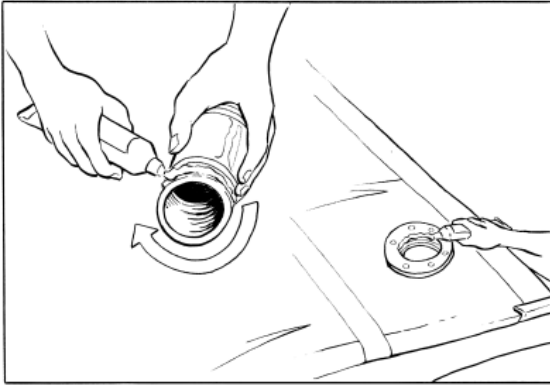
14. Pull tank flat.



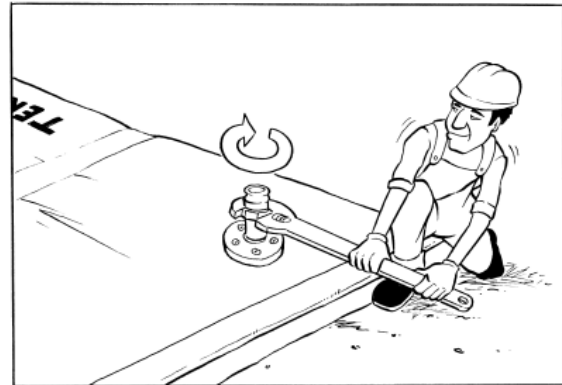
15. Locate outlet at low spot.



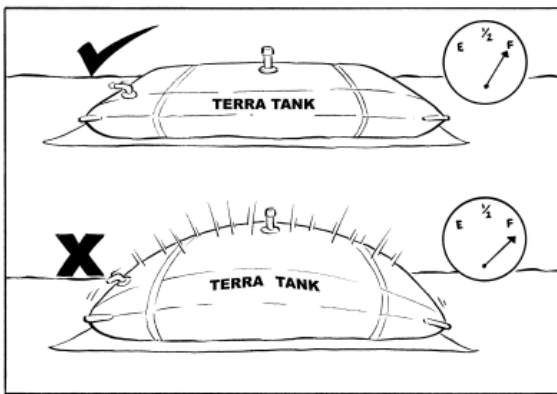
16. If windy, place sand bags around the edges.



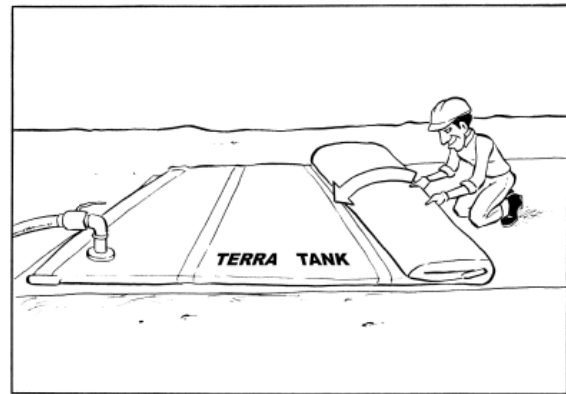
17. Spread pipe joint compound on threads.



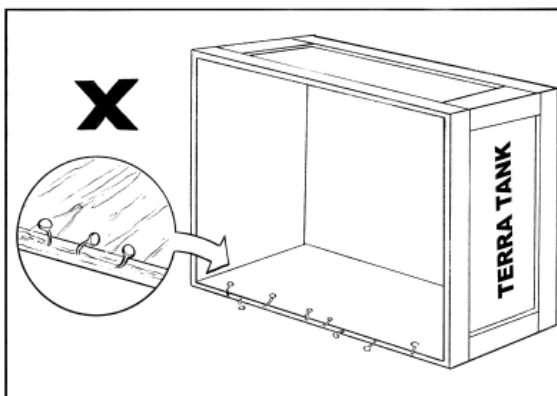
18. Tighten fitting.



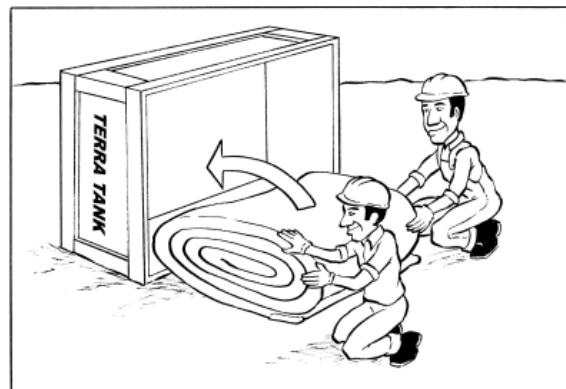
19. Do not overfill.



20. When finished using, drain and roll up towards outlet at low spot.



21. Check crate for damage.



22. Roll tank into crate.

Section 3: Tank Description

The Arctic King container is designed to store fuels. The container unit consists of a collapsible tank complete with a fill/drain assembly and vent assembly (a bottom drain assembly is optional).

When filled, the Arctic King assumes a pillow shape, with the length and width reducing approximately one to three feet (30 - 90 cm) from the empty dimensions and the height expanding up to five feet (160 cm), depending on the size and design of the tank (see Section 4 *Site Preparation*).

Tanks up to a capacity of 50,000 U.S. gal./41,700 imp. gal./189,300 litres are equipped with one fill/drain fitting and one vent fitting. Additional fittings are available.

The Arctic King tank is recommended for use at temperatures between 80 degrees C (176 degrees F) and -50 degrees C (-58 degrees F).

Fabric Description

Arctic King tanks are constructed from tan-colored double-offset urethane-coated nylon that exceeds U.S. military specification MIL-T-52983E. The following fluids are acceptable for containment: Jet A, Jet B, JP-1, JP-4, JP-8, F-34, kerosene, diesel fuels and avgas and regular gasoline with less than 60% aromatic content. Please note that Arctic King tanks are not suitable for water storage.

Caution

The user is responsible for ensuring that the tank is suitable for their specific application. If you have questions, please contact an SEI representative for assistance.

For more information on the use of the Arctic King with specific fluids, please contact a representative from SEI Industries Ltd.



Standard Equipment

The Arctic King tank comes complete with a single 2" female NPT fill/drain fitting plus a second 2" female NPT fitting at the center of the tank for vent/overflow protection (see Section 12 *Fitting Kits* for illustrations, see also *Tank Repair* manual for repair kit information).

A wide range of additional valves, flanges and fittings in various sizes can also be supplied. Available tank options include:

- Berm liners for use as secondary containment
- Insta-Berms for use as quick deployable secondary containment
- RainDrains to provide safe drainage of fuel berms
- Ground sheets for use in protecting the tank from ground abrasion
- SunShades for use in decreasing ultra violet degradation of the tank
- Pumping systems
- Flow meters
- Filtering systems
- Fuel-Easy tanks for use in helicopter transport and storage of fluids

Please contact your SEI representative for further information on these options.

Caution

Please read Section 6 *Tank Operation: Extending Service Life* before installing the tank.

Section 4: Site Preparation

Ground Preparation and Berm Construction

Selecting the Site

Select a site approximately six feet (1.8 m) larger in each direction than the empty tank size. For best operating conditions, the slope of the site selected should not exceed three degrees in any direction. If the tank is located with the fill/drain fitting at the low point, it is easier to drain the tank. The tank should not stand in water. An optional RainDrain will facilitate easy drainage from the secondary containment berm.

Preparing the Site

Clear the selected site of all sticks, stones or other sharp objects that may damage the tank. A ground sheet is recommended to protect the bottom surface of the tank (optional). Berms must be constructed around tanks containing fuel or other hazardous materials. A berm is a low dam or wall that provides secondary containment in case of a spill. These berms should be at least as large as the dimensions in Section 5. To prevent any liquid spilled from the tank seeping into the soil, SEI can supply a complete environmental secondary protection barrier known as a berm liner.

Meeting Environmental Regulations

Federal regulations state that users of petroleum products must comply with specific safeguards to protect the environment. EPA regulations now read that “facilities that drill, produce, gather, store, use, process, refine, transfer, distribute or consume oil and oil products” must comply. Gasoline and diesel are considered “oil products” and are included in this regulation.

To meet these regulations, a spill plan is required. This plan must address all relevant spill prevention, control and countermeasures necessary to minimize the potential for illegal discharge. Of special note is the necessity to provide appropriate primary containment and/or diversionary structures, i.e. dikes, berms or retaining walls. In addition, the plan must also provide a means of secondary containment sufficient to contain the capacity of the largest single storage unit plus any accumulated precipitation.

In the U.S., any operation with above-ground storage capability (not actual liquid on site) of 1,320 gallons (5,000 litres) or more must comply with these regulations regarding spill prevention, control and countermeasures. In Canada, the allowable capacity drops to 1,056 gallons (4,000 litres). To address this requirement, a variety of options that meet or exceed regulations are available through SEI Industries Ltd. including RainDrains, Insta-Berms and berm liners.



Insta-Berm and Frame Berm Reference Chart

TANK CAPACITY	INSTA-BERM			FRAME BERM	
	6"	12"	15"	20"	32"
100 USG	IBLR10106	IBLR101012	IBLR101015		
120 USG	IBLR10106	IBLR101012	IBLR101015		
500 USG	IBLR10156	IBLR101512	IBLR101515		
600 USG	IBLR15156	IBLR101512	IBLR101515		
750 USG	IBLR15156	IBLR151512	IBLR151515		
900 USG	IBLR15206	IBLR151512	IBLR151515		
1000 USG	IBLR15206	IBLR151512	IBLR151515	IBFS202020	
1200 USG		IBLR151512	IBLR151515	IBFS202020	
1500 USG		IBLR151512	IBLR151515	IBFS202020	
1800 USG		IBLR151512	IBLR151515	IBFS202020	
2000 USG		IBLR152012	IBLR152015	IBFS202020	
2400 USG		IBLR152012	IBLR152015	IBFS202020	
2500 USG		IBLR152012	IBLR202015	IBFS202020	
3000 USG		IBLR152012	IBLR202015	IBFS202020	
3600 USG			IBLR203015	IBFS202020	IBFS202032
4000 USG			IBLR203015	IBFS203020	IBFS202032
4800 USG			IBLR203015	IBFS203020	IBFS203032
5000 USG			IBLR303015	IBFS203020	IBFS203032
6000 USG				IBFS303020	IBFS203032
7500 USG				IBFS303020	IBFS303032
9000 USG				IBFS304020	IBFS303032
10000 USG				IBFS304020	IBFS303032
12000 USG				IBFS404020	IBFS303032
15000 USG				IBFS404020	IBFS304032
18000 USG				IBFS405020	IBFS304032
20000 USG				IBFS505020	IBFS404032
24000 USG				IBFS505020	IBFS404032
25000 USG				IBFS606020	IBFS404032
30000 USG				IBFS606020	IBFS405032
48000 USG					
50000 USG					

Berm Construction

Important Note

The following information on berm construction is intended as a guide only. Berms must be solidly constructed so as to withstand the full force of the fluid, in the event of a spill. A professional engineer should be engaged to design the berm for your specific application.

The floor of the berm should slope slightly towards one edge to direct rain water away from the tank. Three types of berm are illustrated below. Most berms can be classified as one of the following:

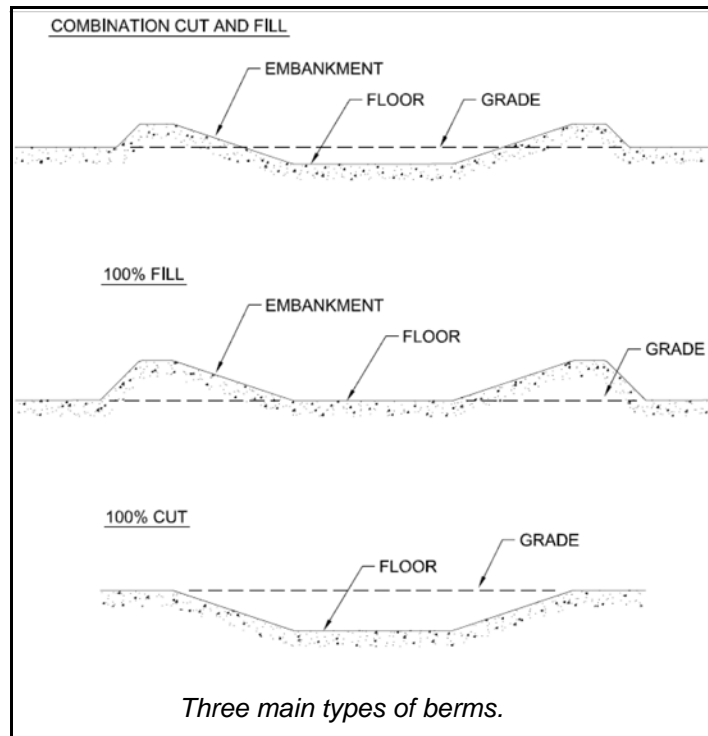
Combination Cut and Fill

This berm is constructed by excavating material, from below the grade, then placing it on top of the grade to build the embankment.

100% Fill

The floor of this berm is at the same elevation as the grade, with the embankments being built using material brought in from another location. This method of construction is generally suited to locations at which the following conditions are present:

- High ground water
- Materials for embankment are not locally available
- Ground at site is difficult to excavate



100% Cut

This berm is constructed by excavating material, from below the grade, then removing it from the site.

Permanent Berms

This berm is usually constructed out of concrete or timber and is less prone to erosion than berms constructed with earth.

Insta-Berm Frame

The Insta-Berm is a portable pipe-framed self-supporting berm used for easy deployment in situations where extra strength and integrity is required.



32" high frame shown.



20" high frame shown.

Insta-Berm L-Rod

The Insta-Berm is an easily-deployed portable self-supporting berm that uses L-shaped rods to provide extra integrity.



Insta-Berm L-Rod support system.

Ground Surface Preparation

The ground supporting the Arctic King tank must be firm enough to prevent the tank from settling after filling, otherwise the berm liner may stretch and rupture (a soils engineer should be consulted). The grade and floor of the berm should be sloped to ensure that the tank does not sit in water.

Surface Finish

The interior surface of the berm should be smooth, firm and free of any sharp objects which could puncture the berm liner. Often the interior of the berm must be prepared by providing several inches of pea gravel covered with several more inches of soil or sand. This also provides some drainage and helps keep water away from the liner.

Sump Pump

Every berm should be equipped with a manually-operated pump or drain fitting, which should be located at the lowest point in the berm, allowing water to be pumped out of the berm. As per local environmental regulations, collected water should pass through an oil/water separator before being discharged to the ground.

Typically an operator may introduce effluent into the environment only if the total extractable hydrocarbon in the effluent does not exceed 10 ppm. Every operator must maintain a separator system or other system to ensure that the effluent discharged complies with this limit (reference B.C. Environmental Management Act, Petroleum Storage and Distribution Facilities Storm Water Regulation). Check the regulations applicable to your area.

Any operation with above-ground storage capability (not actual liquid on site) of 1,320 gallons (5,000 litres) or more must comply with regulations regarding spill prevention, control and countermeasures. In Canada, the allowable capacity drops to 1,056 gallons (4,000 litres). To address this requirement, a variety of options that meet or exceed local regulations are available through SEI Industries Ltd. including RainDrains, Insta-Berms and berm liners.

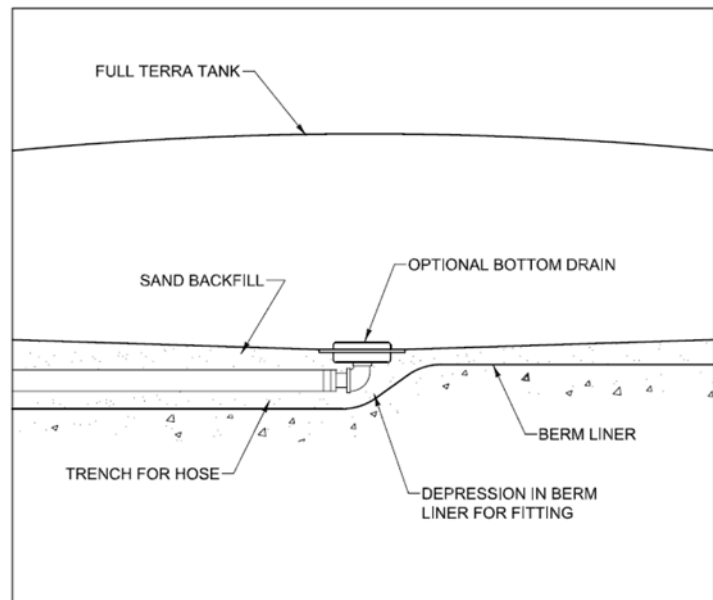
Caution

SEI will not be liable for any loss of fuel or related damage. It may become necessary to periodically remove rain water from inside the berm area. Frequent inspections are advisable. The tank should not stand in water. An optional RainDrain will facilitate easy drainage of the berm.

Installing the Bottom Drain

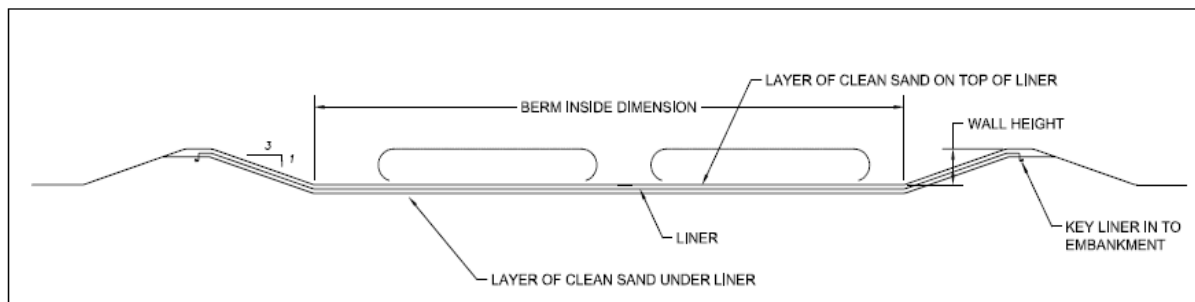
If your tank bottom is fitted with the optional bottom drain fitting, the pad for the tank must be graded so the drain fitting is at the lowest point. The pad **must** have a smoothly rounded sump or depression to accommodate the drain fitting.

This allows the fitting to sit level with the bottom of the tank and ensures that the bottom of the tank sits flat on the ground, avoiding excess strain on the tank fabric.



Installation of tank bottom drain.

If a drain hose is used, it should be placed in a shallow trench and backfilled with sand level with the surface of the pad. Provision should be made for drainage so the tank will not be standing in water.



Typical berm liner design. Slope berm away from the tank towards one corner to facilitate pumping out rain water.

Frame-Supported and L-Rod Berm Sizes to Match Arctic King Tanks

Tank Capacity		Tank Size (approx.)		Frame Berm 20" high		Frame Berm 32" high		L-Rod Berm 15" high	
USG	Liters	Feet	Meters	Feet	Meters	Feet	Meters	Feet	Meters
500	1893	7 x 9	2.1 x 2.7	10 x 10	3.0 x 3.0	n/a	n/a	10 x 10	3.0 x 3.0
1500	5678	9 x 14	2.7 x 4.3	15 x 15	4.6 x 4.6	n/a	n/a	15 x 20	4.6 x 6.1
2500	9463	13 x 14	4.0 x 4.3	15 x 20	4.6 x 6.1	n/a	n/a	20 x 20	6.1 x 6.1
5000	18925	14 x 22	4.3 x 6.7	20 x 30	6.1 x 9.1	15 x 25	4.6 x 7.6	20 x 40	6.1 x 12.2
7500	28388	19 x 21	5.8 x 6.4	30 x 30	9.1 x 9.1	20 x 25	6.1 x 7.6	30 x 40	9.1 x 12.2
10000	37850	19 x 25	5.8 x 7.6	30 x 35	9.1 x 10.7	20 x 30	6.1 x 9.1	30 x 50	9.1 x 15.2
15000	56775	24 x 28	7.3 x 8.5	40 x 40	12.2 x 12.2	30 x 30	9.1 x 9.1	n/a	n/a
24000	90840	28 x 35	8.5 x 10.7	50 x 50	15.2 x 15.2	40 x 40	12.2 x 12.2	n/a	n/a
30000	113550	34 x 35	10.4 x 10.7	55 x 60	16.8 x 18.3	40 x 50	12.2 x 15.2	n/a	n/a

The berm capacity minimum is 110% of the maximum tank capacity.

Berm Precautions

Melted water and/or rain water collected in the secondary containment berm must be contained, treated and disposed of per applicable provincial or territorial regulations (reference: CCME Environmental Code of Practice for Above Ground Storage Tank Systems, Section 3.7).

Important Note

In Canada, only frame supported Insta-Berms are considered as suitable secondary containment for collapsible fuel tanks.

Berm Liner Specifications

The overall size and height of the berm liner for each size of the Arctic King is given below. Berm capacity should be at least 110% of the tank capacity.

Tank Capacity			Berm Dimensions				Wall Height
US Gals.	Imp. Gals.	Litres	Width ft(m)	Length ft(m)	Width ft(m)	Length ft(m)	Height in(cm)
100	85	380	7' (2.1)	6'6" (1.9)	15' (4.6)	14'6" (4.4)	12 (30)
120	100	455	8' (2.4)	6'6" (1.9)	16' (4.9)	14'6" (4.4)	12 (30)
250	208	945	7' (2.1)	11'4" (3.5)	15' (4.6)	19'4" (5.9)	12 (30)
300	250	1135	8' (2.4)	11'4" (3.5)	16' (4.9)	19'4" (5.9)	12 (30)
500	415	1890	9' (2.7)	11'4" (3.5)	17' (5.2)	19'4" (5.9)	12 (30)
600	500	2270	10' (3.0)	11'4" (3.5)	18' (5.5)	19'4" (5.9)	12 (30)
750	625	2835	11'4" (3.5)	17' (5.2)	19'4" (5.9)	25' (7.6)	12 (30)
900	750	3400	11'4" (3.5)	17' (5.2)	19'4" (5.9)	25' (7.6)	12 (30)
1000	835	3785	11'4" (3.5)	17' (5.2)	19'4" (5.9)	25' (7.6)	12 (30)
1200	1000	4540	11'4" (3.5)	17' (5.2)	19'4" (5.9)	25' (7.6)	12 (30)
1500	1250	5670	15' (4.5)	16'2" (4.9)	23' (7.0)	24'2" (7.4)	12 (30)
1800	1500	6805	15' (4.5)	16'2" (4.9)	23' (7.0)	24'2" (7.4)	12 (30)
2000	1670	7570	16'2" (4.9)	20' (6.1)	24'2" (7.4)	28' (8.5)	12 (30)
2400	2000	9080	16'2" (4.9)	21' (6.4)	24'2" (7.4)	28' (8.5)	12 (30)
2500	2085	9450	19'8" (6.0)	20'8" (6.3)	24'2" (7.4)	29' (8.8)	16 (41)
3000	2500	11355	19'8" (6.0)	20'8" (6.3)	29' (8.8)	30' (9.1)	16 (41)
3600	3000	13620	19'8" (6.0)	20'8" (6.3)	29' (8.8)	30' (9.1)	16 (41)
4000	3335	15120	19'8" (6.0)	22'8" (6.9)	29' (8.8)	32' (9.8)	16 (41)
4800	4000	18145	20' (6.1)	23'10" (7.3)	30' (9.2)	33'10" (10.3)	18 (46)
5000	4170	18925	20' (6.1)	23'10" (7.3)	30' (9.2)	33'10" (10.3)	18 (46)
6000	5000	27700	23'2" (7.0)	23'4" (7.1)	33'10" (10.3)	34' (10.4)	20 (51)
7500	6250	28350	23'2" (7.0)	28'4" (8.6)	33'10" (10.3)	39' (11.9)	20 (51)
9000	7500	34020	26'4" (8.0)	28' (8.5)	37' (11.3)	38'8" (11.9)	20 (51)
10000	8335	37855	26'8" (8.1)	28' (8.5)	38'8" (11.8)	40' (12.2)	24 (61)
12000	10000	45400	26'8" (8.1)	32' (9.8)	38'8" (11.8)	44' (13.4)	24 (61)
15000	12500	56700	31'6" (9.6)	34' (10.4)	43'6" (13.3)	46' (14.0)	24 (61)
18000	15000	68040	31'6" (9.6)	38' (11.6)	43'6" (13.3)	50' (15.2)	24 (61)
20000	16665	75710	29'6" (9.0)	40' (12.2)	43'6" (13.3)	54' (16.5)	30 (76)
24000	20000	90800	34'6" (10.5)	40' (12.2)	48'4" (14.7)	54' (16.5)	30 (76)
30000	25000	113560	38'6" (11.7)	40' (12.2)	53'2" (16.2)	54' (16.5)	32 (88)

Section 5: Tank Deployment

Installation Overview

Warning

If deploying the tank in temperatures below -40 degrees C/F, it is necessary to pre-heat the tank to at least 0 degrees C (32 degrees F). Place the tank in a warm shelter and then quickly move the tank to the selected area. Deploy the tank before it cools to the outside temperature.

Important Note

Keep all nails, screws and staples away from the tank. Do not drag the tank.

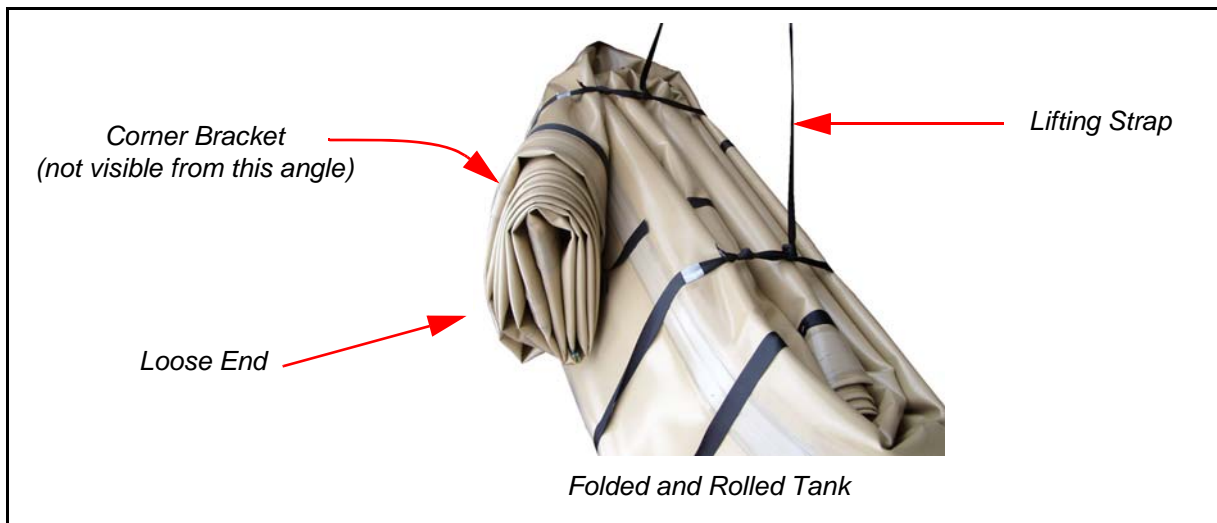
Carefully remove the tank from the shipping container (tip crate and roll tank out), unfold and center on the prepared site. Pull the tank flat, ensuring that there are no wrinkles in the bottom.

The shipping container should be retained for storage or shipping of the tank. Make note of how the tank is folded so it can be refolded and returned to the container in the same manner. Remove all tape from the flange cover at the fitting areas. Visually inspect all fittings to ensure all sealing surfaces are free of contamination.

Use caution to prevent foreign materials from entering the fitting openings. Visually inspect vent and filler covers for cleanliness to ensure proper sealing of gaskets. To ensure leak proof connections, it is recommended that teflon pipe tape or sealer be used on all threaded fittings.

Couple the vent stack to the center flange of tank. Couple the fill/drain kit to the corner flange of the tank. See Section 12 *Fitting Kits* for the piping parts diagram.

Installation Procedures



1. Open each tank crate by removing the crate lid (use a power drill and Phillips bit), then remove the fittings kits. Lift tank from crate using the lifting strap as shown above.
2. Ensure the berm liner surface is clean of contaminants before proceeding. Place the tank on its corresponding berm liner. If it is being lifted by a crane, only one person should help guide the tank; all other personnel must stay clear.
3. Ensure the tank is lying parallel to the sides of the site, so that it will unroll square with the sides.
4. Unroll so that the folded tank forms a long rectangle (be sure not to change the alignment of the tank when unrolling).



5. Use a team of at least six personnel when deploying the large 20,000 gallon tank. Spread out along the unrolled tank.



6. Unroll one fold at a time. To unfold, all personnel should lift and push the folded section at the same time on a verbal signal from the team leader or supervisor.
7. To prevent movement and damage due to wind, place weights on the tank if not filling it immediately. Weights must be non-abrasive with no sharp edges such as sandbags.

Installation of Fittings**Warning**

Do not allow the pipe fitting to cross thread into the flange, this will damage the flange thread. This flange cannot be replaced in the field.

Important Note

Whenever temperature allows above 10 degrees, it is recommended you use pipe sealant to seal all fittings. For lower temperatures, use heavy duty yellow teflon tape.

Once a tank has been placed and unfolded, assemble and install the fitting kits:

1. Use pipe sealant or teflon tape as part of the installation procedures. If the tank is holding aviation fuels, only use sealant that is certified for aviation fuels.
2. Remove plastic caps from the vent and fill/drain ports on the tank; see *Vent Kit Assembly* and *Fill/Drain Kit Assembly* in this section.
3. Install vent kit; see *Vent Kit Installation* in this section.
4. Install fill/drain kit; see *Fill/Drain Kit Installation* in this section.



Vent Kit



Fill/Drain Kit

Vent Kit Assembly

1. Ensure all parts in the vent kit are free of dirt or other contaminants.



Vent Kit

Vent Kit Parts List

- Vent filler cap
- Coupler
- Adapter
- 50 mm nipple
- Dust cap

2. Remove the black cap on the 50 mm nipple and remove the teflon tape from inside the nipple.
3. Set the gaskets in the camlock fasteners. Place the dust cap on the nipple fitting and lock it with the locking arms; then remove the dust cap and do the same with the vent breather cap.

Caution

Teflon tape should not be used when deploying the tank to hold aviation fuels. In these cases, use pipe thread sealant instead.

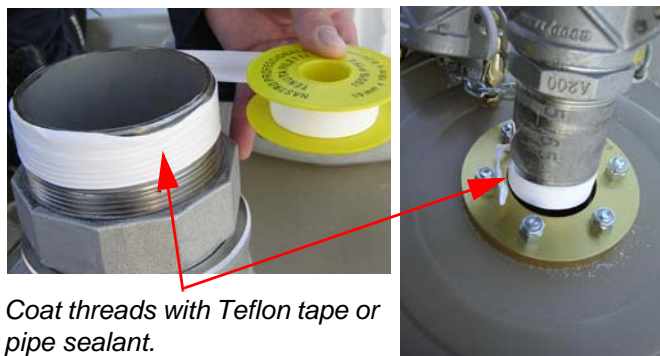


Vent Kit Installation

1. Unscrew and remove the plastic cap on the vent flange. If unable to unscrew, tap gently with a hammer to fracture. **DO NOT LEAVE ANY PIECES IN THE VENT FLANGE.**
2. Apply teflon tape to the threads of the 50mm nipple.
3. Screw the 50 mm nipple fitting into the vent flange on the tank (hand tighten).



Remove vent cap from vent flange.



Coat threads with Teflon tape or pipe sealant.

4. Tighten the fitting in the vent flange with a wrench.
5. If not already done, use the camlock fasteners to attach the vent breather cap to the fitting.



Fill/Drain Kit Assembly

1. Ensure all parts in the fill/drain kit are free of dirt or other contaminants.

*Fill/Drain Kit***Fill/Drain Kit Parts List**

- 75 mm nipple with camlock adaptor and camlock cap
- Valve assembly
- Pipe joint sealant

2. Remove the black cap on the 100 mm nipple and remove the teflon tape.
3. Set the gaskets in camlock fasteners. Place the dust cap on the valve outlet and lock it with the locking arms. Place the valve assembly on the nipple and lock it with the locking arms.

Fill/Drain Kit Installation

1. Remove the plastic cap on the fill/drain flange; if unable, tap gently with a hammer and remove the fractured pieces. **DO NOT LEAVE ANY PIECES IN THE FILL/DRAIN FLANGE.**
2. Remove the nipple from the fill/drain valve.
3. Apply pipe sealant or teflon tape to the nipple threads.
4. Screw the 100 mm nipple into the fill/drain flange (hand tighten).
5. Tighten the nipple into the fill/drain flange with a pipe wrench.
6. Attach the fill/drain valve assembly to the nipple using the camlock fasteners. Ensure the dust cap is on the valve assembly until connected to a hose.



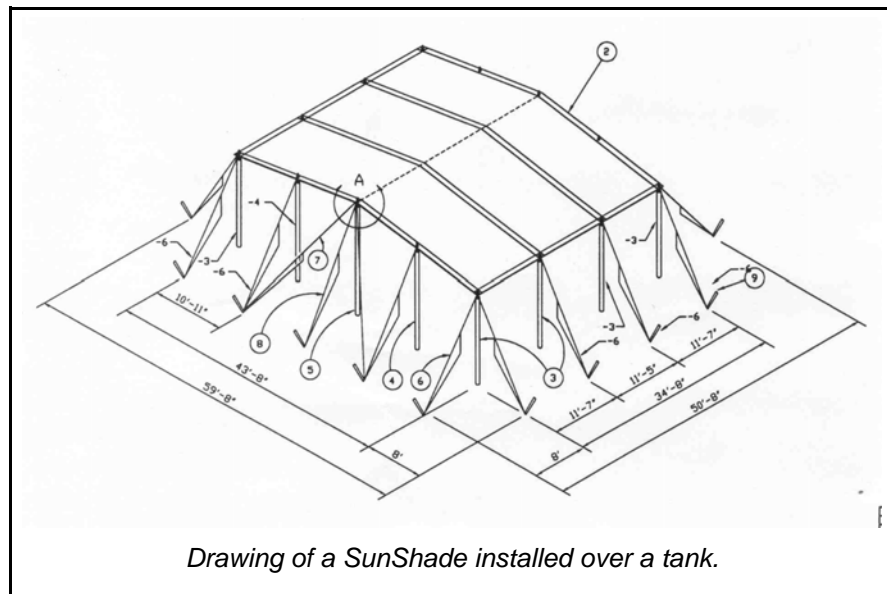
SunShade Assembly Instructions

You will need:

- At least two people
 - SunShade assembly drawing
 - Tape measure
 - A sledgehammer for driving stakes
1. First, check the contents of the crate(s) against the bill of materials on the drawing and ensure that you have all the pieces.
 2. Layout the shade tent pole locations around the tank or berm.
 3. Start with the two longest poles in the center of the SunShade. Place the poles in position, run the top rope between the poles and stake the top rope to the ground.
 4. Drape the SunShade over the top rope and fit the grommets in the center of each edge of the shade over the top of the poles.
 5. Repeat steps 3 and 4 for the next longest poles, either side of the center poles (larger SunShades only).
 6. Install the diagonal guide ropes to the center poles.
 7. Place the shortest poles in position at the ends of the SunShade with the tops of the poles through the grommets. Tie on the guide ropes and stake them to the ground.
 8. Use two guide ropes at the four corners of the SunShade, 90 degrees apart.
 9. Check the tension on all ropes and adjust as necessary to remove any wrinkles or slack from the SunShade fabric.

Installing the SunShade

SunShades can be ordered from SEI Industries as a tank option. These are designed to increase tank life by protecting the tank from ultra violet degradation. The approximate dimensions for SunShades are given in Section 11 *Tank Specifications*.



Section 6: Tank Operation

Operational Procedures

Inspecting the Tanks

Prior to filling, check that all connections are tight and that the proper attachments for all auxiliary equipment have been made. Inspect the vent fitting installation to be sure the cap is not plugged.

Filling the Tank

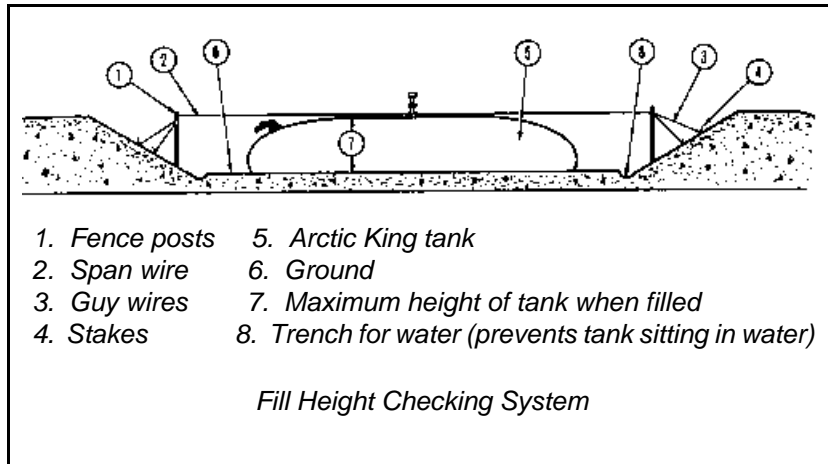
Proceed to fill the tank. Observe tank body, fittings and vent during the filling operation. If any leakage is detected, the filling should be stopped and the cause of the leak determined and corrected.

1. Install hose.
2. Connect grounding cable to pump.
3. Connect pump unit to the tanker truck.
4. Open and close valves as required to fill the tank.
5. Monitor the volume being pumped into the tank; however, also use the height measuring device to ensure the tank is not overfilled.
6. Record filling logs.

Caution

Do not exceed the rated capacity of the tank when filling. Overfilling can damage the tank and will void the warranty.

If a metering gauge is not available at the time of filling, see the recommended maximum filled heights in Section 10 and use the recommended fill height determination procedure pictured on the next page.



Tank Operation

- Monitor the fill height of the tank.
- Keep logs when metering.
- Keep the berm drained of collected water and monitor the drawn water for fuel presence.
- Keep the surface of the tank clean, removing any sand or dirt that has fallen on it.
- Check the vent occasionally for dirt or sand and clean out, if needed.

Purging the Tank

The tank can be purged via the bottom drain, through the vent cap, or through the fill/drain as detailed below:

- If tank is fitted with the optional bottom drain fitting, it can be used for purging contamination.
- If the center of the tank is the low spot, contaminants can be purged through the vent cap. Remove this vent cap and insert a small pipe to the bottom of the tank to pump out contamination.
- If the fill/drain fitting is at the low spot, it can be used for purging with the addition of extra fittings. Fit a tee above the flange. Fit the valve or hose to the horizontal outlet of the tee. Fit the vertical outlet from the tee with a long nipple to get above the fuel level. Fit a cap to the top of the nipple. Remove the top cap and insert a small pipe to the bottom of the tank to pump out contamination without loss of fuel. This assembly should be supported to avoid strain on the tank fabric.

Emptying the Tank

Reverse the sequence of operations for filling as outlined previously. As the tank is drained, it will begin to deflate until it assumes a flat position.

Caution

Do not attempt to lift a full tank by the handles as this may damage the tank. The handles are designed for moving empty tanks and for lifting one end of nearly empty tanks to remove the remaining liquid.

If the tank is to be completely drained, lift the end of the tank opposite the drain fitting when the tank is nearly empty. This will aid in forcing any remaining liquid toward the fitting for removal. Small amounts of remaining liquid may be removed through the drain fitting, if the tank is so equipped.

Extending the Service Life of the Tank

As with any equipment, the service life of flexible tanks can be extended with proper care. The main factors that affect flexible tanks are ultra violet radiation, folding and abrasion, moisture, temperature and the type of liquid stored.

A flexible tank used in shady, dry, cool conditions and not moved frequently will last longer than one moved frequently and used in sunny, hot, wet or humid conditions.

The following practices will help extend tank life:

- When moving the tank it should not be dragged or abraded and folds should be made at different places each time. Be particularly careful with fork-lifts. The tank should be rolled onto the forks rather than sliding the forks under the tank.
- Always clean spilled fuel from the outside of the tank with mild soap and water as this will reduce the effect of UV radiation.
- The tank site should be arranged so that it is not sitting in water. A ditch around the tank will allow water to collect below the tank pad. In hot, sunny areas, shading or a sun shield will keep UV radiation from the tank and keep the tank cooler, extending its life span.
- Fabric tanks are affected more by some liquids than by others. Contact SEI Industries for information on the effect of the liquid you intend to store.

Section 7: Tank Troubleshooting

Fabric Precautions

Hydrolysis

Hydrolysis is a chemical reaction or process in which a chemical compound breaks down in the presence of heat and humidity. This process can be exacerbated by fuel which acts to extract out the hydrolysis inhibitors. Evidence of hydrolysis can be seen by cracks in the fabric.

Warning

Do not let tanks stand in water. Instead, use an SEI RainDrain to minimize hydrolysis.

Ultra Violet Damage

Ultra violet damage is a chemical reaction or process in which polymers break down into shorter chains resulting in cracking, yellowing and erosion of the exposed surface by direct sun light or exposure to ultra violet rays (UV). This process causes the fabric to stiffen and is accelerated by dirt on the surface of the tank. UV damage can be identified by the tank colour which will become darker.

Warning

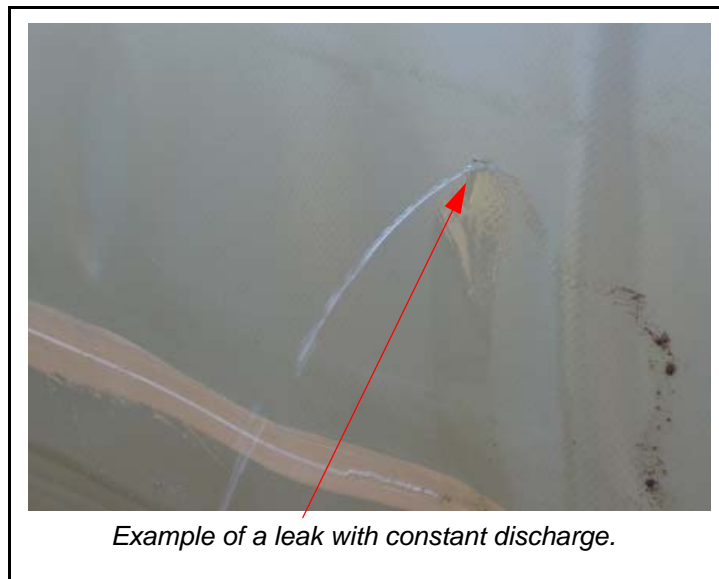
Use an SEI SunShade to minimize UV damage.

Leaking

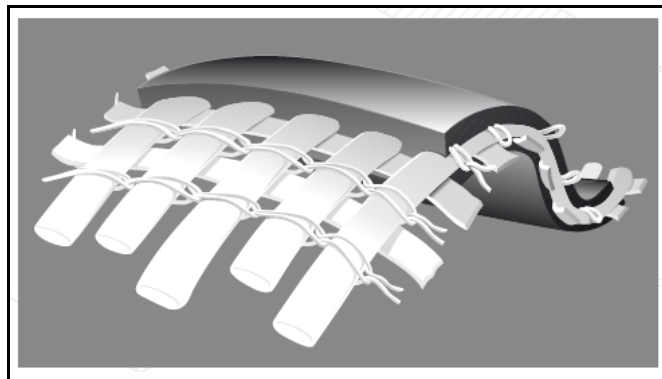
Leaking is any physical discharge of liquid from a tank seen as constant flow or rapid dripping that may be captured. If you have a leaking bladder, please do the following:

- Take a photo of flange with serial number clearly visible.
- Take a photo of the tank so that the complete deployment can be seen.

- Clean the affected area with soap and water.
- Dry the effected area.
- With a marker, circle the affected area and take a photograph.
- Place a vessel to capture the discharge from the affected area over a 24 hour period.
- Once 24 hours has passed, photograph the affected area again.
- Remove the vessel and measure the liquid contents.
- Please forward the 24 hour liquid volume measurement along with the tank serial number and photos to SEI Industries for evaluation.

**Scrim**

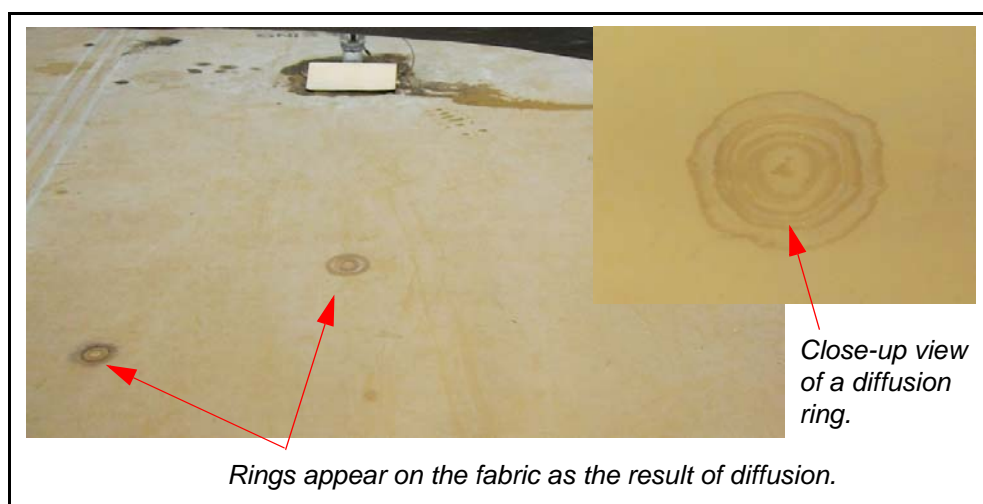
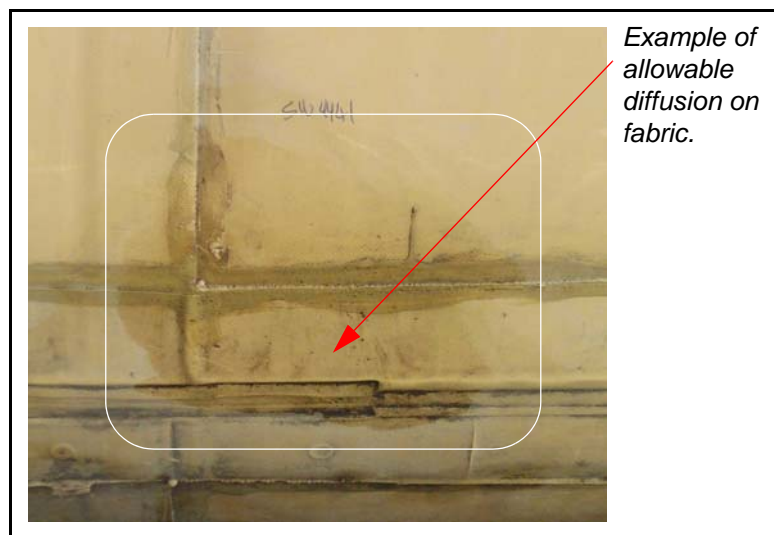
Scrim is woven base fabric that provides structural strength to the fabric.



Sweating and Diffusion

Diffusion is the appearance of damp or wet spots on the top of the tank. Diffusion is the act of sweating or weeping through the fabric as the fuel inside the tank turns into gas vapour and passes through the scrim. Diffusion will take the path of least resistance and may appear along the scrim on the edge of a seam.

Diffusion may become damp to the touch but should not be confused with leaking. There is no measure of time for diffusion to occur as each bladder has different conditions that may reduce or increase the appearance of diffusion including: fuel type, additives and ambient or fabric temperature. Seam diffusion is more likely on Desert King tanks because of the 45 oz double off-set coating on body panels which gives them a lower diffusion rate. Seam panels that make up the cross seam are made from single-coated 32 oz material and have a higher diffusion rate. Below are some examples of normal diffusion and a diffusion rate chart.



Tank Diffusion Chart

Fabric	Maximum Capacity			Arctic King Permeability Rate			U.S. Mil. Spec. Permeability Rate		
	US Gal.	Imp Gal.	Litres	Per Day	Per Month	Per Month	Per Day	Per Month	Per Month
				fl.oz	fl.oz	USG	fl.oz	fl.oz	USG
Arctic King	100	83	379	2.16	64.80	0.51	5.18	155.52	1.22
Arctic King	120	100	454	2.50	74.88	0.59	5.99	179.71	1.40
Arctic King	250	208	946	3.50	105.00	0.82	8.40	252.00	1.97
Arctic King	300	250	1136	4.13	123.90	0.97	9.91	297.36	2.32
Arctic King	500	416	1893	6.30	189.00	1.48	15.12	453.60	3.54
Arctic King	600	500	2271	7.42	222.60	1.74	17.81	534.24	4.17
Arctic King	750	625	2839	7.90	236.88	1.85	18.95	568.51	4.44
Arctic King	900	749	3407	9.02	270.72	2.12	21.66	649.73	5.08
Arctic King	1000	833	3785	9.96	298.92	2.34	23.91	717.41	5.60
Arctic King	1200	999	4542	11.66	349.68	2.73	27.97	839.23	6.56
Arctic King	1500	1249	5678	14.01	420.18	3.28	33.61	1008.43	7.88
Arctic King	1800	1499	6814	14.10	423.00	3.30	33.84	1015.20	7.93
Arctic King	2000	1665	7571	14.84	445.20	3.48	35.62	1068.48	8.35
Arctic King	2400	1998	9085	16.38	491.40	3.84	39.31	1179.36	9.21
Arctic King	2500	2082	9464	17.64	529.20	4.13	42.34	1270.08	9.92
Arctic King	3000	2498	11356	20.44	613.20	4.79	49.06	1471.68	11.50
Arctic King	3600	2998	13627	23.80	714.00	5.58	57.12	1713.60	13.39
Arctic King	4000	3331	15142	25.20	756.00	5.91	60.48	1814.40	14.18
Arctic King	4800	3997	18170	28.00	840.00	6.56	67.20	2016.00	15.75
Arctic King	5000	4164	18927	27.45	823.44	6.43	65.88	1976.26	15.44
Arctic King	6000	4996	22712	30.08	902.40	7.05	72.19	2165.76	16.92
Arctic King	7500	6245	28391	37.41	1122.36	8.77	89.79	2693.66	21.04
Arctic King	9000	7494	34069	43.99	1319.76	10.31	105.58	3167.42	24.75
Arctic King	10000	8327	37854	46.25	1387.44	10.84	111.00	3329.86	26.01
Arctic King	12000	9992	45425	50.54	1516.32	11.85	121.31	3639.17	28.43
Arctic King	15000	12491	56781	62.48	1874.34	14.64	149.95	4498.42	35.14
Arctic King	18000	14989	68137	70.20	2106.00	16.45	168.48	5054.40	39.49
Arctic King	20000	16654	75708	75.91	2277.24	17.79	182.18	5465.38	42.70
Arctic King	24000	19985	90850	92.71	2781.24	21.73	222.50	6674.98	52.15
Arctic King	25000	20818	94635	99.40	2982.00	23.30	238.56	7156.80	55.91
Arctic King	30000	24981	113562	115.60	3468.00	27.09	277.44	8323.20	65.03

Actual permeability rate from the fabric supplier: PR_{actual}

$$PR_{\text{actual}} = 0.0500 \text{ fl oz /sq ft/24 hour}$$

Allowable permeability rate from DND: PR_{allow}

$$PR_{\text{allow}} = 0.1200 \text{ fl oz /sq ft/24 hour}$$



Life Expectancy

US Military Shelf Life

Shelf life only applies to new tanks. Once a tank has had fuel in it, its service life has started (see service life below). As defined by the US military, the shelf life expectancy of a fuel tank is 10 years from the date of manufacture if the tank is stored in depot-like conditions. All tanks that are not stored in depot-like conditions have a shelf life of five years. The US Army defines depot-like conditions as a dry, indoor environment with low humidity with the tanks stored in crates.

SEI Industries Shelf Life

Shelf life only applies to new tanks. Once a tank has had fuel in it, its service life has started (see service life below). SEI expects the shelf life of an Arctic King tank to be a minimum of 10 years from the date of manufacture providing the tanks are stored in depot-like conditions. SEI defines depot-like conditions as a dry, indoor environment with relatively even temperatures between 10°C (50°F) and 43°C (110°F) and low-humidity of 50-70% (the lower the better). Many of SEI's customers have stored fuel tanks in dehumidified conditions while also following all other recommendations listed above and have successfully extended their tank's shelf life to well over 12 years.

US Military Service Life

Once fuel is put into a tank (wetting), the clock starts on its service life. The clock cannot be *stopped* or *reversed* by any special cleaning or preservation techniques. The US military states that the service life is a maximum of three years from the date fuel is put into the tank. Service life may be less than three years depending on climate conditions in which the tank is used and the number of deployments (moves) it has been subjected to.

SEI Industries Service Life

Once fuel is put into a tank (wetting), the clock starts on its service life. The clock cannot be *stopped* or *reversed* by any special cleaning or preservation techniques. SEI expects the service life of an Arctic King tank to be five years. Service life may be more or less depending on climate conditions in which the tank is used and the treatment the tank receives during service. Many SEI customers have extended the service life of their tanks well in excess of 10 years by following the operational instructions in the user manual provided with each tank.



Section 8: Maintenance and Service

Maintenance Procedures

Inspecting Tanks in Service

Frequent inspections of the tank assembly should be made to detect any evidence of leakage. This will permit repairs to be made while the damaged area is small in size. The tank surface should be frequently inspected for any accumulation of debris and spilled liquids.

Cleaning Inside the Tank

Remove all liquid from the tank by rolling the end of the tank toward an open access fitting (or drain, if the tank is so equipped).

Caution

When rolling or folding tank, avoid sharp creases. Avoid kneeling or walking on a folded or rolled tank.

Remove any accumulated sludge from the tank. If petroleum products (particularly leaded gasoline) are stored for any period of time, a heavy sludge residue may accumulate in the bottom of the tank. This sludge may be removed by flushing the tank with a solvent solution.

Warning

The sludge deposited by many liquids may give off toxic as well as explosive vapours and may cause poisoning through inhalation. Persons cleaning tanks must be adequately protected from vapours and possible contact. All electrical equipment, i.e., lights, blowers, etc., must be explosion proof. Any sludge removed from the tank must be disposed of in a manner in compliance with local regulations.

Drying the Tank

Dry the inside of the tank by purging with air as follows:

- With the tank lying flat, tie the tank down by attaching ropes from the handles to tie down stakes. Ropes should be of sufficient length to allow the tank to inflate without the ropes becoming taut. This procedure will prevent the air inflated tank from shifting due to wind conditions.
- Insert the air hose through the filler assembly. Note: ensure water vapour does not enter the tank with the compressed air.
- Place cloth or tape around the air hose at the fitting to prevent air from escaping between the hose and the fitting.
- Blow air into the tank until the tank is partially full. Do not over-inflate. The tank should not be higher than its fill height. Inflating the tank above 1/4 psi (kPa) may cause it to rupture.
- Remove the cap from the vent assembly and allow the vapours and air to circulate and escape until the tank is dry.
- Remove the hose. Allow the tank to deflate and remove tie down ropes.

Warning

Air drying should not be conducted on a tank that might still contain explosive vapours. A static spark could cause an explosion.

Cleaning Outside the Tank

The Arctic King should be cleaned whenever the outside of it has been contaminated with spilled fuel or dirt. This is to prevent the degrading effect sunlight can cause due to the fuel/dirt combination on the fabric. The tank can be cleaned by scrubbing with dish washing detergent in water using a soft brush (such as one used for washing a car). Rinse the tank with clean water after washing. Remove any standing water from the berm when finished.

Caution

It is imperative that any detected debris or spilled liquids be removed immediately. Failure to do so will adversely affect the performance of the tank. Petroleum product residue may be removed from tank exterior by washing with a mild detergent solution.

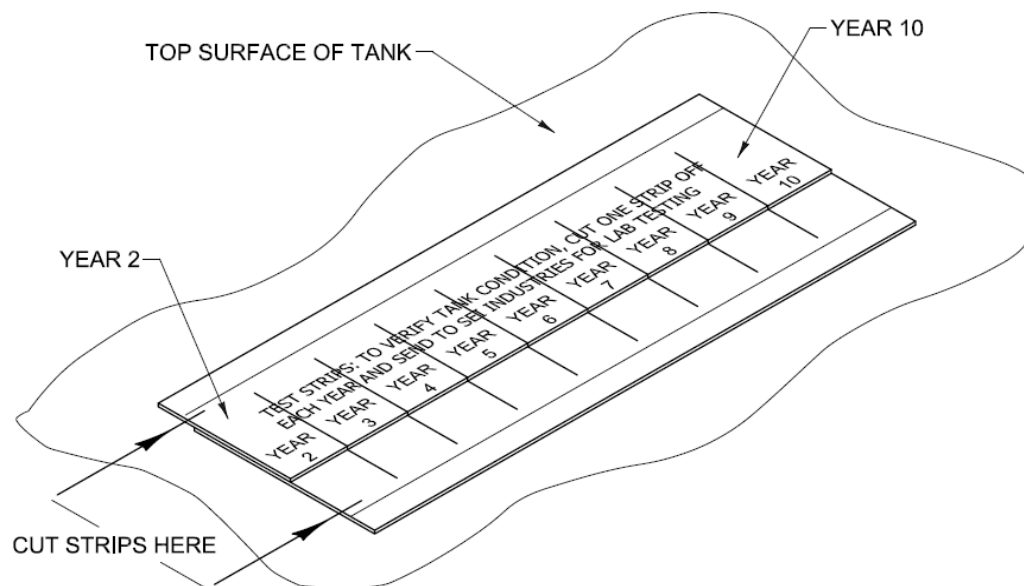


Tank Test Strips

Arctic King containers, for use with fuel, are equipped with outside test strips that can be removed and returned to SEI to verify the condition of the tank.

These strips, each containing a 2" (51 mm) weld, are attached to the top of the tank. One 2 1/2" (64 mm) wide strip should be cut off each year after two years and sent to SEI for testing. There is no charge for testing.

Cut each end of the strip with scissors as close to the tank as possible.



Outside test strips.

Section 9: Repacking for Storage

Storage Procedures

Emptying and Repacking the Tank

The following procedure is usually used to fold a tank:

- Empty all fuel from the tank. If the fill/drain fitting is at a low point, capping the vent and pumping out the fuel will cause the tank to flatten out due to the pump suction, leaving very little fuel remaining in the tank.
- Remove fittings and apply tape over openings to keep dirt out. If it is impossible to remove fittings, they must be very well padded with sacking to prevent chafing when the tank is folded.
- Fold the tank starting from the narrow side at the opposite end to the fill/drain fitting. Fold towards the fill/drain fitting. A three foot (one meter) overlap for the first fold is suitable. Brush off any dirt on the tank.
- Once the tank is folded into a flat sausage-shape, fold over one end to keep the tank from unrolling. Go to the other end of the tank and fold it over and over until you reach the previously folded end.
- Tie the folded tank with a large rope or webbing to keep it secured. The tank should be lifted or rolled, never dragged. Tanks can easily be damaged by forklifts or by dragging them over edges or sharp objects.

Shipping Instructions

Do not attempt to move the tank when it is partially filled. The tank should never be shipped with fuel still inside. To prevent damage, the tank should be shipped in the crate originally supplied or in an equivalent sturdy, well-padded crate.

Storing the Tank

For best storage life, the tank should be stored in depot-conditions in a cool, dry location out of direct sunlight. SEI Industries defines depot-conditions as a dry, indoor environment with relatively even temperatures between 10° C (50° F) and 43° C (110° F) and low humidity of 50-70%. Lower humidity is preferred to help extend the tank's life span.



Section 10: Safety

Safety Procedures

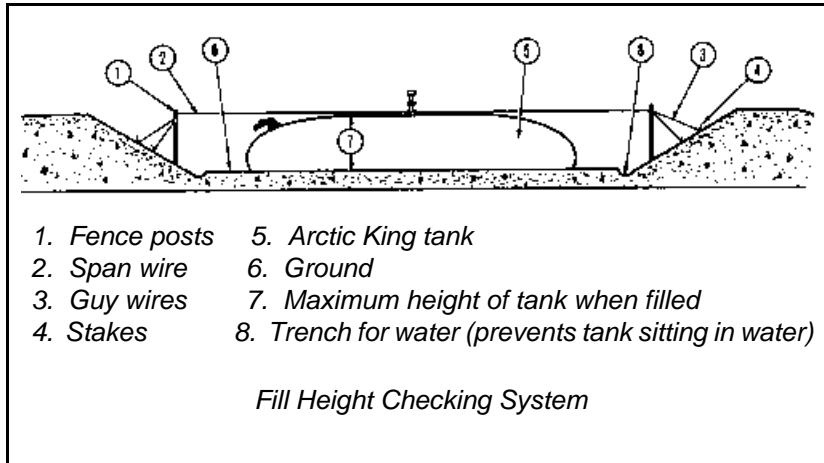
Common Safety Rules

The handling of petroleum fuels is a potentially dangerous operation. The following rules should always be observed:

- Keep fueling site free of debris and flammable material, like dry grass, etc.
- Observe all normal safety practices such as a strict “no smoking” rule.
- Collect all intentional spillage in a container and discard safely.
- Keep all unnecessary personnel off site.
- Use grounding devices where applicable.
- Have a fire extinguisher staffed during refuelling.
- Do not pack and ship containers with fuel residue inside.

Important Note

Accumulated water or snow should be removed from the top of the Arctic King at the earliest possible convenience, especially when the snow is wet. Do not allow dry snow to accumulate more than 76 cm (30") high. Wet snow, slush and ice should be removed immediately; any accumulation of more than 15 cm (6") can potentially force fuel out of the tank vent.

Safe Fill Height Check System

Safe Fill Heights

Tank Capacity			Maximum Height When Filled
US Gallons	Imperial Gallons	Litres	Height in(mm)
100	85	380	12 (305)
120	100	455	12 (305)
250	208	945	13 (330)
300	250	1135	15 (381)
500	415	1890	21 (533)
600	500	2270	21 (533)
750	625	2835	21 (533)
900	750	3400	22 (559)
1000	835	3785	22 (559)
1200	1000	4540	24 (610)
1500	1250	5670	25 (635)
1800	1500	6805	28 (711)
2000	1670	7570	31 (787)
2400	2000	9080	32 (813)
2500	2085	9450	33 (838)
3000	2500	11355	36 (914)
3600	3000	13620	38 (965)
4000	3335	15120	39 (991)
4800	4000	18145	40 (1016)
5000	4170	18925	43 (1092)
6000	5000	27700	45 (1143)
7500	6250	28350	47 (1194)
9000	7500	34020	52 (1321)
10000	8335	37855	60 (1524)
12000	10000	45400	60 (1524)
15000	12500	56700	60 (1524)
18000	15000	68040	60 (1524)
20000	16665	75710	60 (1524)
24000	20000	90800	60 (1524)
30000	25000	113560	60 (1524)

See label on top of tank for fill height. If illegible, contact SEI Industries for proper fill height.

Section 11: Tank Specifications

Tank Dimensions and Capacity

CAPACITY			MAXIMUM DIMENSIONS EMPTY (WXL)	
US Gals.	Imp. Gals.	Litres	Imperial	Metric
100	85	380	5'1" X 4'9"	1.6 X 1.5
120	100	455	5'11" X 4'9"	1.8 X 1.5
250	210	945	4'11" X 9'11"	1.5 X 3.0
300	250	1135	5'11" X 9'11"	1.8 X 3.0
500	415	1890	7'1" X 9'11"	2.2 X 3.0
600	500	2270	7'10" X 9'11"	2.4 X 3.0
750	625	2835	8'10" X 15'1"	2.7 X 4.6
900	750	3400	7'7" X 15'1"	2.3 X 4.6
1000	835	3785	8'0" X 15'1"	2.4 X 4.6
1200	1000	4540	8'9" X 15'1"	2.7 X 4.6
1500	1250	5670	9'11" X 15'1"	3.0 X 4.6
1800	1500	6805	11'1" X 15'1"	3.4 X 4.6
2000	1670	7570	12'9" X 15'1"	3.9 X 4.6
2400	2000	9080	13'0" X 15'1"	3.9 X 4.6
2500	2085	9450	13'6" X 15'1"	4.1 X 4.6
3000	2500	11355	13'9" X 17'10"	4.2 X 5.4
3600	3000	13620	15'5" X 17'10"	4.7 X 5.4
4000	3335	15120	14'2" X 19'10"	4.3 X 6.1
4800	4000	18145	15'9" X 19'10"	4.8 X 6.1
5000	4170	18925	16'1" X 19'10"	4.9 X 6.1
6000	5000	27700	17'7" X 19'10"	5.4 X 6.1
7500	6250	28350	17'3" X 25'0"	5.3 X 7.6
9000	7500	34020	19'2" X 25'0"	5.8 X 7.6
10000	8335	37855	20'3" X 25'0"	6.2 X 7.6
12000	10000	45400	22'2" X 25'0"	6.8 X 7.6
15000	12500	56700	22'7" X 30'2"	6.9 X 9.2
18000	15000	68040	26'1" X 30'2"	8.0 X 9.2
20000	16665	75710	26'2" X 31'10"	8.0 X 9.7
24000	20000	90800	26'2" X 36'6"	8.0 X 11.1
30000	25000	113560	32'8" X 37'4"	10.0 X 11.4

Subject to change without notice.

Shipping Specifications

CAPACITY			APPROX. SHIPPING WEIGHT WITH CRATE INCL.		APPROX. SHIPPING CRATE DIMENSIONS	
US Gals.	Imp. Gals.	Litres	Lbs.	Kg.	Imperial	Metric
100	85	380	100	45	36 x 38 x 17	92 X 97 X 43
120	100	455	100	45	36 X 38 X 17	92 X 97 X 43
250	210	945	130	59	36 X 38 X 17	92 X 97 X 43
300	250	1135	130	59	36 X 38 X 17	92 X 97 X 43
500	415	1890	140	64	36 X 38 X 17	92 X 97 X 43
600	500	2270	140	64	36 X 38 X 17	92 X 97 X 43
750	625	2835	155	70	36 X 38 X 17	92 X 97 X 43
900	750	3400	155	70	36 X 38 X 17	92 X 97 X 43
1000	835	3785	185	84	36 X 38 X 17	92 X 97 X 43
1200	1000	4540	195	89	36 X 38 X 17	92 X 97 X 43
1500	1250	5670	220	100	48 X 48 X 12	122 X 122 X 26
1800	1500	6805	230	105	48 X 48 X 12	122 X 122 X 26
2000	1670	7570	240	109	48 X 48 X 12	122 X 122 X 26
2400	2000	9080	260	118	48 X 48 X 12	122 X 122 X 26
2500	2085	9450	265	120	48 X 48 X 12	122 X 122 X 26
3000	2500	11355	270	123	48 X 48 X 18	122 X 122 X 46
3600	3000	13620	310	141	48 X 48 X 18	122 X 122 X 46
4000	3335	15120	315	143	48 X 48 X 18	122 X 122 X 46
4800	4000	18145	325	148	48 X 48 X 18	122 X 122 X 46
5000	4170	18925	357	162	48 X 48 X 24	122 X 122 X 61
6000	5000	22700	373	170	48 X 48 X 24	122 X 122 X 61
7500	6250	28350	412	187	48 X 48 X 36	122 X 122 X 92
9000	7500	34020	489	222	48 X 48 X 36	122 X 122 X 92
10000	8335	37855	500	227	48 X 48 X 40	122 X 122 X 102
12000	10000	45400	560	255	48 X 48 X 40	122 X 122 X 102
15000	12500	56700	575	261	48 X 48 X 48	122 X 122 X 122
18000	15000	68040	630	286	48 X 48 X 48	122 X 122 X 122
20000	16665	75710	760	345	48 X 48 X 48	122 X 122 X 122
24000	20000	90800	860	391	48 X 48 X 48	122 X 122 X 122
30000	25000	113560	1100	500	48 X 48 X 30	122 X 213 X 76

Subject to change without notice.

Specifications of the SunShade

In regions that have high sunlight exposure, it is critical that the Arctic King tank have a SunShade to decrease ultra violet degradation.

Failure to use a sun shade may decrease the life expectancy of the product significantly.

Berm Size		Sunshade Size		Sunshade Part #
Feet	Meters	Feet	Meters	
10 x 10	3.0 x 3.0	11 x 16	3.3 x 4.9	TTSS01000
15 x 15	4.6 x 4.6	17 x 22	5.2 x 6.7	TTSS03000
15 x 20	4.6 x 6.1	17 x 22	5.2 x 6.7	TTSS03000
15 x 25	4.6 x 7.6	22 x 26	6.7 x 7.9	TTSS04000
20 x 20	6.1 x 6.1	22 x 26	6.7 x 7.9	TTSS04000
20 x 25	6.1 x 7.6	22 x 35	6.7 x 10.7	TTSS05000
20 x 30	6.1 x 9.1	22 x 35	6.7 x 10.7	TTSS05000
20 x 40	6.1 x 12.2	22 x 53	6.7 x 16.1	TTSS06000
30 x 30	9.1 x 9.1	33 x 42	10.0 x 12.8	TTSS07500
30 x 35	9.1 x 10.7	33 x 42	10.0 x 12.8	TTSS07500
30 x 40	9.1 x 12.2	33 x 42	10.0 x 12.8	TTSS07500
30 x 50	9.1 x 15.2	33 x 64	10.0 x 19.5	TTSS15000
40 x 40	12.2 x 12.2	57 x 52	17.4 x 15.9	TTSS24000
40 x 50	12.2 x 15.2	57 x 52	17.4 x 15.9	TTSS24000
50 x 50	15.2 x 15.2	57 x 52	17.4 x 15.9	TTSS24000

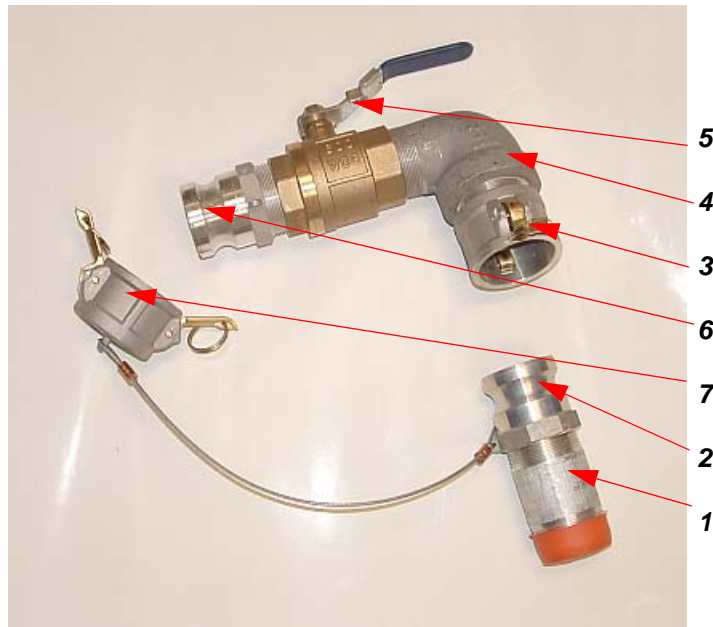
Important Note

Add 16 to 20 ft. (5.0 to 6.0 metres) to sunshield dimensions for the tie-down ropes and stakes.

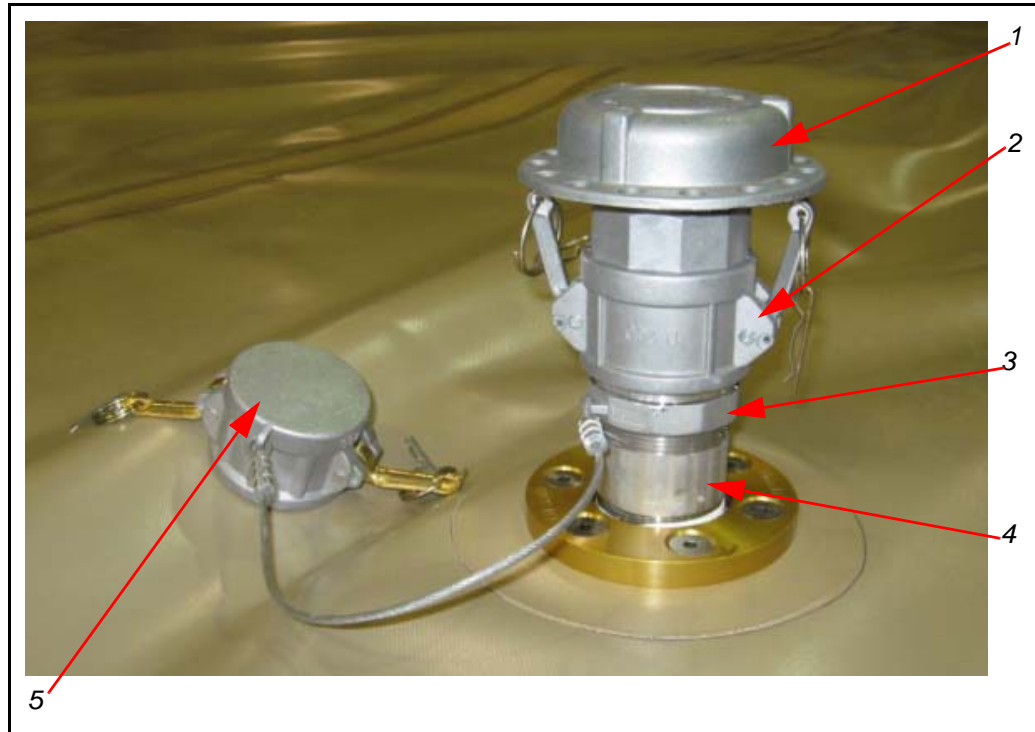
Section 12: Fitting Kits

Fill/Drain Kit 2" PL111KT

*Fill/drain
illustration.*



Item No.	Part No.	Description	Qty.
1	PLSS02040	Nipple S/S 2" NPT X 4" Long	1
2	PLA350	Adapter A 2" Camlock X 2" FNPT Alum	1
3	PLA250	Coupler B 2" Camlock X 2" MNPT Alum	1
4	PLSS1025	Elbow Street 2" NPT 90 Deg S/S	1
5	PLB550	Ball Valve Full Port 2 NPT Brass	1
6	PLA300	Adapter F 2" Camlock X 2" MNPT Alum	1
7	PLA200	Dust Cap 2" Camlock Alum	1
8	PP021	Locktite PST Pipe Sealant	1

Vent Kit PL112KJA

NO.	PART #.	DESCRIPTION	QTY.
1	PLA554	VENTED FILL CAP 2" MNPT ALUM.	1
2	PLA261	COUPLER "D" 2" CAMLOCK FNPT ALUM.	1
3	PLA350	ADAPTER "A" 2" CAMLOCK FNPT ALUM.	1
4	PLSS02030	NIPPLE 2" NPT X 3" STAINLESS STEEL	1
5	PLA200	DUST CAP 2" CAMLOCK ALUM.	1
	PP021	LOCTITE PST PIPE SEALANT	1

Optional 3" Fill/Drain Kit PL119KT

Item No.	Part No.	Description	Qty.
1	PLB553	Valve Ball Full Port 3" Brass	1
2	PLA103	Elbow Street 3" NPT 90 Deg. Alum	1
3	PLA253	Coupler B 3" Camlock X 3" MNPT Alum	1
4	PLA303	Adapter F 3" Camlock X 3" MNPT Alum	2
5	PLA203	Dust Cap 3" Camlock Alum	1
6	PP021	Locktite PST Pipe Sealant	1

Optional Bottom Drain



PART NO.	DESCRIPTION	QTY.
PLSS01020	Nipple 1" X 2" Stainless Steel	1
PLSS462	Plug 1" MNPT Square head Stainless Steel	1
PLA149	Elbow 1" FNPT 90 degrees Aluminum	1

Options

PART NO	DESCRIPTION	QTY.
PLB552	Ball Valve 1" Full Port Brass	1
Hose	1" fuel hose length specified by customer	1

Section 13: Warranty

- a) Warranty is limited to repairing or replacing, at the company's sole discretion, any product approved to be defective.
- b) The company's products are not guaranteed for any specific length of time or measure of service, but are warranted only to be free from defects in workmanship and material for a period of one year to the original purchaser.
- c) To the extent allowable under applicable law, the company's liability for consequential, incidental and environmental damages is expressly disclaimed. **The company's liability in all events is limited to, and shall not exceed, the purchase price paid.**
- d) This warranty is granted to the original purchaser and does not extend to a subsequent purchaser or assignee.
- e) The company must receive notification in writing of any claims of warranty from the original purchaser which must give details of the claimed defect in the product.
- f) Where the original purchaser is claiming under warranty, the product must be returned to the company for inspection with all transportation and duty charges prepaid.
- g) The warranty does not extend to any product that has been accidentally damaged, abraded, altered, punctured, abused, misused or used for a purpose which has not been approved by the company.
- h) This warranty does not apply to any accessories used with the product such as pumps, filters, hoses, etc., that are not supplied by the company, and any warranty on such accessories must be requested from the manufacturer or dealer of the accessories.
- i) In the event the original purchaser does not give notice of a warranty claim within one year of the original purchase of the product, it is understood that the purchaser has waived the claim for warranty and the purchaser and/or any subsequent purchaser must accept the condition of the product as it may be, without warranty.
- j) Any technical information supplied by the company regarding the product is not a condition of warranty but rather is information provided by the company to the best of its knowledge.
- k) There are no implied warranties nor is there any warranty that can be assumed from any representation of any person, except the company itself.

Exclusions

This warranty is void if the product is not assembled, used and/or maintained in accordance with the operator's manual supplied by SEI. Not intended for use with fuels having aromatic content greater than 60%.



Section 14: Tank Log

TANK LOG			
Tank Size _____			
Tank Serial No. _____			
Fuel Type _____			
Date	Fuel In Litres	Fuel Out Litres	Balance Litres