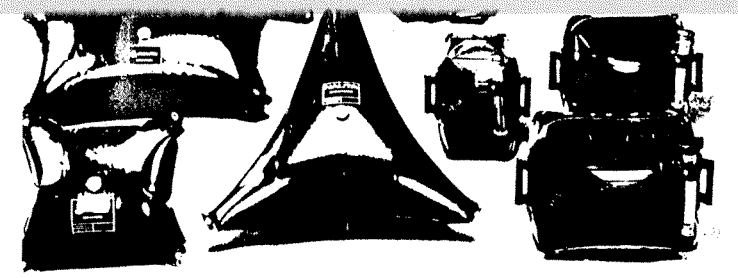
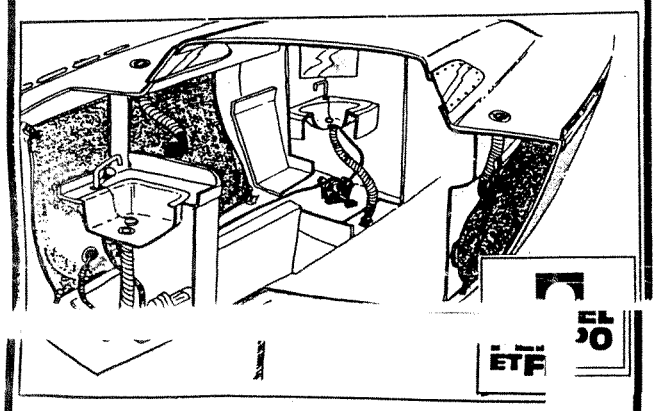
- Light and exceptionally easy to install.
- Flex through small openings into unused or irregular spaces.
- Warranty :
  5 yrs for rubber tanks (water)
  1 yr for PVC.
- 18 sizes from 6 to 530 gallons.



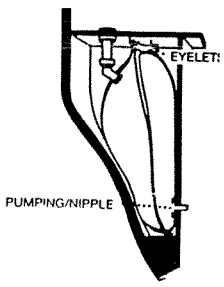
PENNEL ET FLIPO

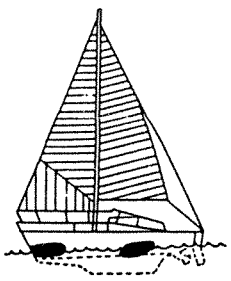
NAUTA FLEXIBLE TANKS

Nauta flexible tanks for various marine uses continue to be an important unit of equipment in outfitting or refitting a yacht. They are exceptionally easy to install. Any empty corner under a seat or in the bows is generally sufficient.
The tanks adapt themselves to the space available so they stay in place without shifting or rolling about, even in rough weather. There is normally no need to use fastenings.
Obviously care must be taken against projecting nails and other sharp objects near or in contact with the tank.
A flexible tank makes life a lot easier for boat-builders : it enables them to devise better tank systems, while requiring less time for installation ; it makes the job simpler thus reducing labour costs.
A flexible tank collapses as it is emptied and retains no air (no vent is needed with the possible exception of fuel tanks and holding tanks). Fluids contained are less likely to slush around as in rigid tanks.
Nauta Tanks are extremely rugged, constructed of heavy 840-denier nylon and coated with a neoprene/nitrile compound. All tanks are autoclave vulcanized to assure leakproof seams and each seam is reinforced on the inside with a "doubler" to provide even greater strength and bonding. This tank fabric is homologated by the French S.E.A. (French Army).
Removable flexible tanks, unlike rigid tanks are easily cleaned and repaired and they rarely require structural work.

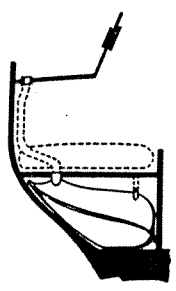


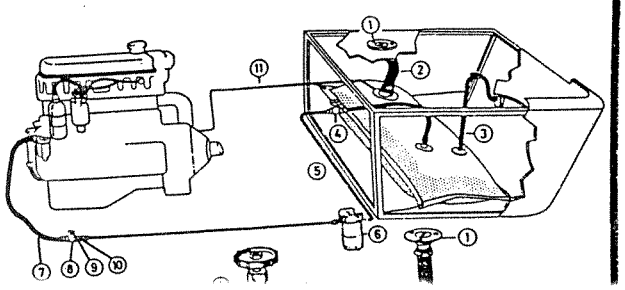
FOR A VERTICAL POSITIONED TANK
(Placed in a high and narrow space). The tank must be maintained empty by its eyelets. Once filled, the tank is held in place by the walls surrounding it, and thus is no longer free. Installation of nipples is done in the same manner as for rigid tanks.





FILLING FROM THE HIGHEST POINT
Allows any air to escape that might have entered during the filling. Pumping should be done just above the lowest point, which is the highest water level.



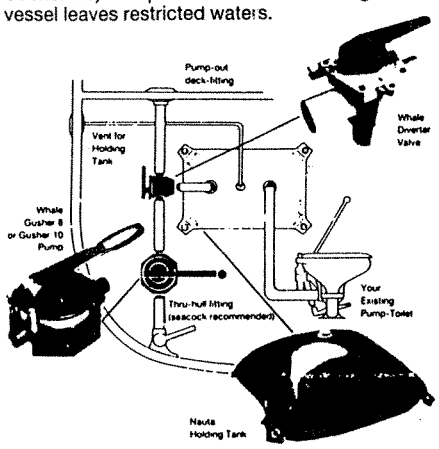


MAINTENANCE

Nauta Flexible Tanks used for drinking water will operate more satisfactorily if the following procedures are observed. Before putting in use for the first time, partly fill the tank with warm water (50° Centigrade) and a 1% solution of mild detergent. After a few minutes rinse with clear water and fill again with water treated with chlorine tablets (follow package instructions for a 5% concentration). Empty after 2 hours and carefully and thoroughly rinse with clear water. These cleaning operations should be performed with the system fully installed so that all the piping undergoes the same treatment.
When using the Nauta Flexible Water Tank, it's best to add chlorine tablets : follow package instructions. Such care should be practiced with any water tank.
When the tank will not be used for a long period (winter layup, for example), keep it partly filled with water and a 10% chlorine solution. Because it is not possible to completely empty the tank, this procedure best prevents the development of micro-organisms which could coat the inside and contribute to a bad taste in the water.
Before returning the tank to service, follow the same procedure as used with a new tank. Even if using your tank constantly, this cleaning operation is recommended at 6-month intervals. Don't forget that the pipes also contribute to the water's taste and should be involved in the regular cleaning process.

FOR HOLDING : A SOLUTION OF POLLUTION

Your marine toilet must now comply with EPA standards. You can easily combine your existing pump-type toilet with a Nauta Flexible Holding Tank for a Type III System, allowed in any waters. Adding a diverter valve and manual pump permits overboard discharge whenever the vessel is outside restricted waters. These solutions are legal and far less costly alternatives than replumbing your vessel with Type I or Type II installations which may require more space and power than you have available.
Meets USCG Requirements for Type III. No discharge pursuant to 33CFR159. 12A no certification required. Sewage is pumped into the Nauta Flexible Holding Tank. A Whale Diverter Valve can direct tank discharge to the deck/pump-out fitting or to a Whale Gusher 8 (or Gusher 10) Pump for overboard discharge when the vessel leaves restricted waters.



FOR DIESEL

Nauta Flexible Tanks used for carrying diesel fuel on deck can extend the operating range of your boat. Fishermen going offshore and yachtsmen on long cruises to remote areas frequently use Nauta Tanks. The normal procedure is to gravity feed your deck storage of diesel fuel into your standard fuel tanks and then roll up and stow your flexible tank. A simple low cost operation.

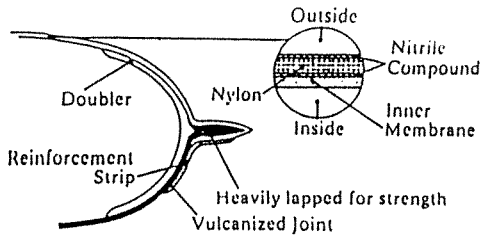
ELASTOMER RUBBER : DIESEL FUEL AND HOLDINGS TANKS				
WARRANTY OF 1 YEAR				
Reference number	Maximum capacity		Dimensions when empty	
	Liters	US Gallons approx.	cm	Inches approx.
915.120	55	14½	69×64	27×25
915.150	95	25	69×87	27×34
915.160	140	37	69×117	27×46
915.180	200	52½	69×160	27×63

HOMOLOGATED BY THE US ARMY

ELASTOMER RUBBER : PORTABLE FUEL TANKS FOR OUTBOARD MOTORS				
WARRANTY OF 1 YEAR				
Reference number	Maximum capacity		Dimensions when empty	
	Liters	US Gallons approx.	cm	Inches approx.
521.100	25	6	42×23×25	16½×9×10
521.101	35	9	42×32×25	16½×12½×10
521.102	50	13	42×45×25	16½×17½×10
521.103	70	18	42×61×25	16½×24×10
521.151T	25	9	72×45×25×17	28½×17½×10

INSTALLATION TIPS

It is advisable to install your Nauta Flexible Tank in a small "berth" which will help to insure its protection against sharp objects. This berth prevents abnormal wearing from abrasion.
Calculate hose lengths with tank empty, and allow sufficient slack.
Use grommets for positioning only, not for supporting a loaded tank. When securing, it is important to remember that tanks expand when loaded ; a loose fit in the deflated state or elastic tie-downs will work best.

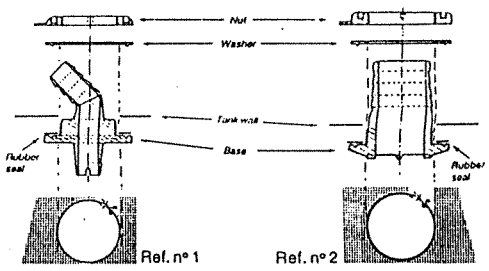


ADDITIONAL FITTINGS

We have designed a comprehensive range of nylon fittings intended to be used only on Nauta tanks. Each type of fitting is composed of 3 parts which ensure together with a rubber seal and the rubber coated fabric a complete tightness. The necessary fitting for filling and drawing are supplied separately for self installation at the most suitable location on the tank wall. Setting fittings on tank is very easy and a matter of minutes. Generally, vent fittings as required on holding or diesel tanks (not required on water), should be positioned at the higher end of tank, while draw fittings are best located at the lower end. Under no condition should fittings be installed on the bottom side of tank. All fittings should be installed in the top half of the tank (not closer than 4" to the edge) and not through a seam doubler.

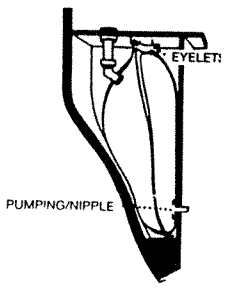
FITTING THE CONNECTION

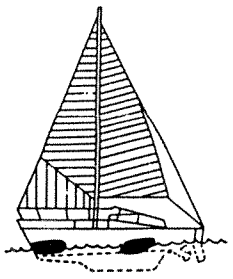
1 - Fitting of the connection is generally made on the same side of the tank.
2 - The position of the nipple will be so that there will be a minimum margin of 100 mm between the connection and the edges of the tank.
3 - Use the washer (see drawing) to mark out the circumference of the hole to be made in the support. Its dimension must be the one of the washer inside.
4 - Then cut with scissors the marked out hole and take care to separate the two walls of the tank in order to avoid to damage the opposite wall when cutting. It is also necessary to take care not to make a hole of a bigger diameter than the one made in (2).
5 - Bring the edges of the hole nearer by pinching the fabric and introduce the base of the nipple as a button in a button-hole.
6 - Place the washer with the edge on fabric side (in order to ensure the imperviousness) and then the screw ring.
7 - Tighten the ring with a wrench.
8 - Check the tightening periodically and in particular some days after the fitting installation.



No.	Description	
210	35 mm (1⅜") Straight Filling Nipple	
1210	38 mm (1½") Straight Filling Nipple	
110	50 mm (2") Straight Filling Nipple	
221	35 mm (1⅜") Bent Filling Nipple	
2221	38 mm (1½") Bent Filling Nipple	
1300	13 mm (½") Drawing Nipple	
300	15 mm (⅝") Drawing Nipple Straight	

FOR A VERTICAL POSITIONED TANK
(Placed in a high and narrow space). The tank must be maintained empty by its eyelets. Once filled, the tank is held in place by the walls surrounding it, and thus is no longer free. Installation of nipples is done in the same manner as for rigid tanks.





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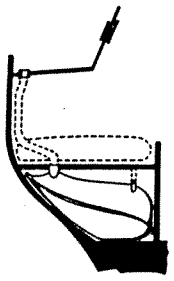
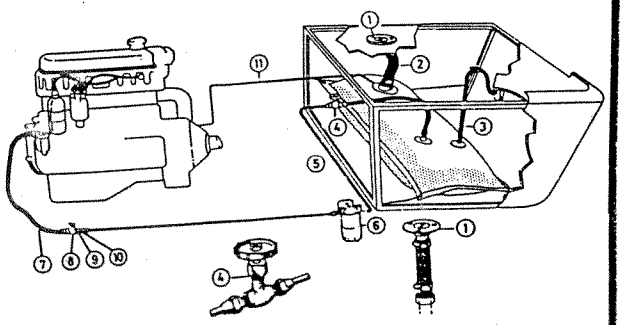
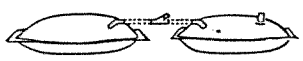




Example of installation for a gasoline engine.

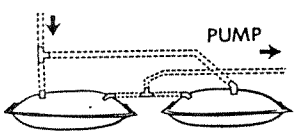
1. Deck plug filler.
2. Filler tube.
3. Vent.
4. Valve.
5. Fuel line.
6. Fuel filter.
7. Flexible fuel line.
8. Fuel line bracket.
9. Fuel line connector.
10. Bolt.
11. Earth.

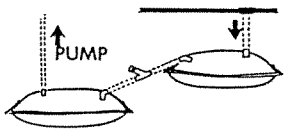
Starboard and Port Tanks
in order to prevent the tanks from emptying into one another, a needle valve is placed at the center point of the pipe connecting the tanks.



Installation of Two or More Tanks at the Same Level.
each tank is connected directly to the pump and the drain with the aid of tees (parallel installation). A series of tanks installed parallel to each other is not possible.

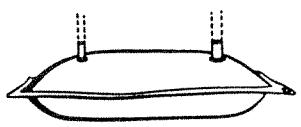
Tanks at Different Levels
the superior tank (complementary) is connected to the principal tank (that feeds the pump) by our needle valve directly on the tank or on the canalized pipe.

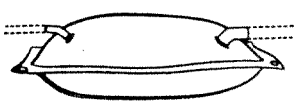


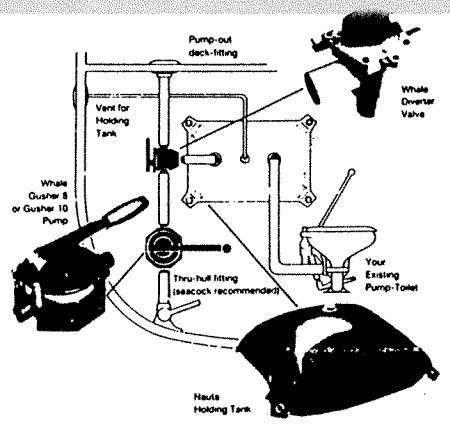


Filling and Pumping from Above the Tank
when the tank is free and flat, pumping is done by suction. There is no air in a flexible tank. Straight nipples are used for flexible pipes arriving vertically.

Filling and Pumping with Bent Nipples (45°)
for flexible pipes arriving horizontally.







FOR DIESEL

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915.150	95	25	69×87	27×34
915.160	140	37	69×117	27×46
915.180	200	52½	69×160	27×63

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521.102	50	13	42×45×25	16½×17½×10
521.103	70	18	42×61×25	16½×24×10
521.151IT	35	9	73×45×35×17	28½×17½×14×6½
521.153IT	70	18	73×45×35×30	28½×17½×14×12

FOR WATER

A most popular application and easy way to increase water capacity. The characteristic of the rubber tanks is that a unique innerliner bonded to the inside Nitrile gives a tasteless and odourless membrane, and is non-permeable to prevent leaking. Water tanks are used by some sailors for ballasting. With water no venting is required, just a simple draw line to your galley pump.

ELASTOMER RUBBER : TANKS FOR FRESH WATER AND DRINKING WATER				
WARRANTY OF 5 YEARS				
Reference number	Maximum capacity		Dimensions when empty	
	Liters	US Gallons approx.	cm	Inches approx.
911.120	55	14½	67×62	26×24
911.150	90	23½	67×85	26×33½
911.160	135	35½	67×115	26×45½
911.170	260	68½	83×139	32½×54½

Our PVC range is manufactured from all blue P.V.C. which prevents the attack of hydrolysis. Each tank can be delivered already supplied with 2 fittings (inlet : 1½ inch - outlet : ½ inch) if requested. Strength : 800 gr/m. Special fabrication process by high frequency welding ; the assembly is done in order to give a resistance of the weld equal to the resistance of the fabric.

PLASTOMER : P.V.C. FRESH WATER AND DRINKING WATER*				
WARRANTY OF 1 YEAR				
Reference number	Maximum capacity		Dimensions when empty	
	Liters	US Gallons approx.	cm	Inches approx.
101.120	50	13	73×57	29×22
101.150	100	26	73×85	29×33
101.160	150	39	73×116	29×45½
101.180	200	52½	73×154	29×61

a minimum margin of 100 mm between the connection and the edges of the tank.

3 - Use the washer (see drawing) to mark out the circumference of the hole to be made in the support. Its dimension must be the one of the washer inside.
4 - Then cut with scissors the marked out hole and take care to separate the two walls of the tank in order to avoid to damage the opposite wall when cutting. It is also necessary to take care not to make a hole of a bigger diameter than the one made in (2).
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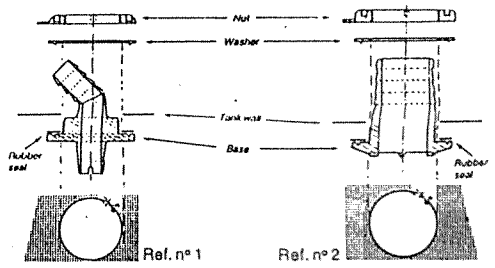
7 - Tighten the ring with a wrench.
8 - Check the tightening periodically and in particular some days after the fitting installation.



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2221	38 mm (1½") Bent Filling Nipple	
1300	13 mm (½") Drawing Nipple	
300	15 mm (⅜") Drawing Nipple Straight	
310	15 mm (⅜") Drawing Nipple Bent	
400	6 mm (¼") Drawing Nipple or diesel return	
E300	15 mm (⅜") Fuel Vent	
1000	20 mm (¾") Vent	
1320	13 mm×13 mm×13 mm (½"×½"×½") Tee Piece	
320	15 mm×15 mm×15 mm (⅝"×⅝"×⅝") Tee Piece	
1230	38 mm×38 mm×38 mm (1½"×1½"×1½") Tee Piece	
130	50 mm×50 mm×50 mm (2"×2"×2") Tee Piece	
240	35 mm×35 mm×15 mm (1⅜"×1⅜"×⅝") Tee Piece	
1240	38 mm×38 mm×13 mm (1½"×1½"×½" Tee Piece	
010	Key for tightening fittings	

Please note that we also manufacture :
— Special tanks on demand.
— Big capacity elastomer tanks for fuel and diesel : from 300 litres (80 US gallons) to 2000 litres (530 US gallons).
— Triangular blue PVC tanks for water : 50 l (13 US gallons) 70 l (18 US gallons) 100 l (26 US gallons)
Don't hesitate to contact us if you wish further information or advice.

PENNEL ET FLIPO 384, rue d'alger - 59052 roubaix cédex 1 FRANCE - téléphone : (33) 20.11.36.00 - télex : 820. 373 - téléfax (33) 20.11.37.41