onga®
pumps

Pressure Storage Tanks

Owner's Manual

Should the installer or owner be unfamiliar with the correct installation or operation of this type of equipment you should contact the distributor/manufacturer for the correct advice before proceeding with the installation or operation of the product.

Relax - you've bought an onga ...

Congratulations on your decision to purchase an onga product. onga is one of the best known companies in its field, with a proud local and international reputation.

In fact, wherever people need to move water from one point to another - whether in industry, horticulture, agriculture or in and around the home - onga is a byword for reliability, value for money and technological innovation. So why does onga lead its field? Here are a few simple reasons ...

1. **Continual Product Improvement**
   onga employ the best engineers both in Australia and around the world to develop new and better ways to pump and handle water.

2. **Dedication to Quality**
   There is only one standard that we at onga set ourselves for both product quality and the quality of our service. That standard is excellence ... to have no-one better than us at what we do ... nothing short of that is acceptable.

3. **A Fair Price**
   onga pumps are neither the cheapest nor the most expensive in their field. Our products do, on the other hand, always represent very good value for money - they always have and they always will.

4. **Our Team of Dealers**
   We believe onga's hand picked authorised dealer network - throughout Australia and worldwide - are second to none. We in vest a huge sum training them and supporting them. They are your link to us, and we value their expertise and trust.

OPERATING INSTRUCTIONS
onga Storage Pressure Tanks

WARNING
This is a pressure vessel and can cause personal injury or property damage if incorrectly used or mishandled.

Pressure Tanks
All tanks are factory pre-charged with air to 22 pounds per square inch (psi), 150 kPa. Prior to installing tank, adjust the air pressure in the tank to the 'Start' pressure applicable to the selected pressure system. To do this either bleed or fill the air from the valve on top of the pressure tank.

Notice: Always set pre-charge with no water in tank.

Check pressure frequently with an accurate tyre pressure gauge until correct pressure has been reached. For correct pre-charge pressure settings see **Table 1**.

Notice: Replace and tighten air valve cap if it is removed for any reason. Failure to replace air cap may allow loss of air pressure and eventually lead to tank water logging and bladder failure.

Pre-charge storage tanks can be connected together to increase the supply of usable water (drawdown). Two tanks of the same size will double the supply and three tanks will triple the supply. See figures 1A and 1B for typical installation.

Pressure Switch Settings		Pre-use Pressure Reading kPa/psi
kPa Start/Stop	psi Start/Stop	
140/280	20/40	126/18
210/350	30/50	190/27
280/420	40/60	250/54
350/560	50/80	315/45
420/630	60/90	378/54
490/700	70/100	440/73
630/840	90/120	190/27
770/1050	110/150	190/27

Figure 1A

Figure 1B

How the pressure tanks works

1. Tank nearly empty, air expands filling area above the bladder/ diaphragm (Fig A)

2. Water begins to enter the tank, air is compressed above the blad der/diaphragm as it fills with water (Fig B)

3. Pump-up cycle completed, air now compressed to cut off setting of bladder (Fig C)

4. Water being drawn from tank, compressed air forces water out of the bladder/diaphragm (Fig D)

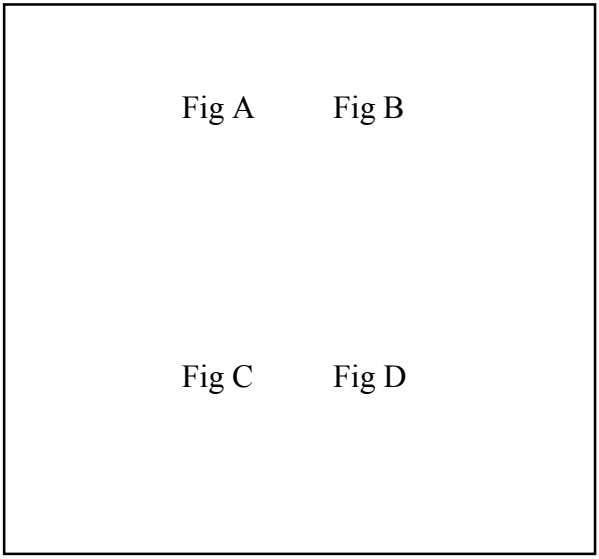
5. Bladder/diaphragm completely empty, new cycle ready to begin (Fig A)

How to check the air charge

This should be checked every six months or when unit cycles (on/off/ on)

If drawdown (amount of water that comes out of the pressure tank per pump cycle) decreases significantly, check as follows:

1. To check air charge in tank, shut off electrical power to pump, shut off water supply to inlet of pump, open taps nearest pressure tank and drain completely.
2. At the air valve, check air pressure with standard tyre gauge. Air pressure should be set at 10% below pump pressure switch cut-in (start) settings.
3. If the air pressure is below the recommended pre-charge system pressure as listed in table 1, add air to the tank, use an air compressor or a portable tyre pump.
4. Use soap or liquid detergent to check for air leaks around valve. This is the same as those used for car tubeless tyres.



How to replace Bladder in Pressure Tanks

Caution - To be sure cover flange cannot blow off the tank, release all air from system before removing nuts from cover flange.

1. Disconnect power to pump.
2. Follow steps 2 to 5 under ‘How to test Pressure Tank Bladder for leaks’,
3. Remove nuts from tank flange. Tap flange cover to break seal and remove cover flange.
4. Bladder does not usually come put in one piece. Hold bladder with pliers and cut wherever convenient with single edge razor blade or sharp knife. Continue holding and cutting until bladder is removed.

5. Clean, dry and inspect the inside of the tank for any surface rust flakes, replace complete Pressure Tank. This is a pressure vessel and can cause personnel or property damage if mishandled.
6. Before the bladder can be inserted into tank, it must be tightly rolled up as follows:

· Place bladder on clean surface with opening to one end and flat ten air out. Pull ends out flat (see Figure 3)

· To get the tightest possible wrap, start on one side (see Figure 4) to force out as much air as possible be sure to roll towards bladder neck opening.

7. To help insert bladder, sprinkle outside of it with talcum powder, with tank on its side, push tightly rolled bladder into tank, hook ing bladder neck ring over edge of tank lip.
8. Insert your arm in bladder and push the sides of the bladder out wards. It's not necessary to remove all wrinkles from bladder.

Notice don't push bladder into tank further than its own length. In a large tank, bladder can slip out of reach if pushed too far.

9. Clean tank lip seal and groove of cover flange.
10. Pull bladder lip ring through tank opening and seat it against tank head.
11. Place cleaned grooved flange cover in place (refer figure 5)
12. Tighten nuts as follows:

· Hand tighten all nuts.

· Tighten one nut snug.

· Tighten opposite nut snug.

· Proceed to tighten opposite pairs of nuts to a snug fit.

· Re-check all nuts, using same diagonal pattern. Be sure all nuts are tight and that you have a good seal.

Notice do not over tighten you may twist studs off tank. If you have a torque wrench, tighten to 378 Nm (85 p.s.i. torque).

13. Recharge tank to proper air pressure according to your pressure switch system.
14. Reinstall pressure tank.
15. Prime pump (see pump owner's manual).

Fig 3

Fig 4

Fig5

How to test the Pressure Tank Bladder for leaks

1. Turn the power off and remove plug from power outlet.
2. Close valve from the water source.
3. Open faucet closest to the tank and drain all water from system.
4. Remove valves cap from air valve and release all pressure possible by depressing valve core. When air stops coming from valve, remove the tyre valve core to release any remaining pressure.
5. Disconnect pressure tank from system.
6. Carefully turn tank upside down or lay it on its side.

Warning: Retained water in tank may cause sudden weight shift when lowering. Support tank so that it cannot fall when being lowered or inverted.

7. If bladder leaks, water will run out of the air valve, if so, replace bladder; refer to installation instructions supplied with product.

Checked Pre-checked Pressure @ .....kPa/psi					
Date	Reading	Date	Reading	Date	

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onga pty ltd - Warranty

1. Your onga unit, when used for its designed purpose, correctly housed and vented against weather, vermin, dirt etc should render trouble free service. You should carefully read the instructions supplied and your unit should be installed and operated in accordance with these, otherwise this warranty will not apply. The warranty does not cover damage, malfunction or failure resulting from, use on incorrect voltages, alteration, accident, misuse, neglect, abuse, faulty or improper installation, misadjustment, mains supply problems, thunderstorms, lightning, infestation by insects or vermin, tampering by unauthorised persons, failure due to non company supplied components or products being substituted as part of the system, or exposure to abnormal corrosive conditions.

2. onga pty ltd (The Company) hereby warrants in accordance with and subject to the provisions herein contained your unit against defects in material and workmanship under normal use and service and when properly installed and connected for a period of (Domestic) 12 months or 2000 hours operation (whichever occurs first) and (commercial) 3 months or 2000 hours (whichever occurs first) from the date of purchase of new equipment to the original owner and used in the original installation. This warranty is limited in time to two years from date of manufacture. In the event of a breakdown or failure of your unit or part there of, within the period of 12 months or 2000 hours which prevents normal working, the Company will, if your unit is returned to one of the addresses listed, repair the breakdown or failure and replace any defective part free of charge. Freight charges to us both ways and risk of loss or damage will be your responsibility. If new or replacement parts are supplied for in field replacement work, any labour or travelling charges will be your responsibility. Spare parts are normally stocked for a period of 5 years and generally stocked for the life of the unit.

Failure of underwater light bulbs will only be warranted if wiring is to approved standards, and an approved transformer incorporating thermistors has been used.

Hydrostatic relief valves supplied separately or incorporated in products are sold with the express understanding that such products offer limited hydrostatic relief and no offer is made or implied as to the suitability of such products for a specific application, as the conditions of use are unknown and beyond the company's control. It is the purchaser's responsibility to ensure that the performance of the valve meets the required application.

3. This warranty does not extend to engines, pressure gauges, or component parts of Units not manufactured by the company but where permissible and possible the Company will make available to you the benefit of any warranty of that manufacturer thereof.

4. The Company will not be liable for costs involved with the taking out and re-installing of equipment that has failed under the warranty period. This includes electrician's time with wiring costs, and plumber's time and materials.

5. This warranty does not extend to or cover your Unit or any part of it which in the reasonable opinion of the Company has worn by fair wear and tear, abraded or corroded by fluid pumped, run in a dry condition, operated at high temperatures or outside the technical specification of the equipment, or has been damaged or rendered defective by accident, wilful act, negligence (other than that of the Company) misuse, alteration, or repair carried out by other than the Company (or by permission with its dealers), usage of other than the Company's parts, operation on voltages or frequencies other than indicated on the rating plate, incorrectly set voltage regulator, electrical fusion, lightning, or by force majeure. This warranty is an exclusive warranty and is in lieu of all other warranties and conditions, expressed or implied, whether statutory or otherwise.

Swimming pools or spa equipment will not be warranted where the Langelier saturation index "pH" range is outside 7.4 to 7.8 and they have not been regularly treated with Chlorine or Bromine based sanitising system. Use of any other chemical treating system voids warranty.

6. Save as foresaid the Company shall not be liable for any loss or damage of any kind whatsoever (including injury or death to persons or animals or loss or damage to property) whether suffered or incurred by you or by some third party where such loss or damage arises in relation to or as a result of the Unit or any part thereof and whether arising wholly or partly as a result of negligence of the Company, its servants or agents or otherwise. Without limitation upon the provisions of the foregoing provisions of this clause the Company shall not be liable for any consequential loss or damage (including financial loss or damage) and in no event and in no circumstances shall the liability of the Company to you or any third party exceed the total purchase price of the Unit or parts thereof in question.

7. Nothing in this warranty limits or restricts, or is intended to derogate from, any right or remedy which the purchaser or ultimate user of the Unit may have pursuant to Australian State and/or Australian Federal Consumer Protection Legislation and where necessary shall be so read and construed.

8. Claims under this warranty must give evidence of date of purchase, model and serial number of the pump or equipment. Also the claimant's name, address and telephone number.

IMPORTANT
Please attach your sales invoice/docket here as proof of purchase should warranty service be required.

Please do not return Warranty - Retain for your records.

Purchased From _____

Purchase Date_____ **Serial No**_____ **Model No**_____