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INSTALLATION INSTRUCTIONS

Z SERIES

PRESSURE TANKS

Please read these instructions carefully. Failure to comply to instructions and designed operation of this system, may void the warranty.

This product has been carefully packaged at the factory to prevent damage during shipping. However, occasional damage may occur due to rough handling. **Carefully inspect your pressure tank** for damages that could cause failures. Report any damage to your carrier or your point of purchase.

Professional installation required

For potable water

«NSF» approved for pumping and heating systems.

Application

- ❑ Designed to be installed with deep well pumps, shallow well jet pumps and convertible jet pumps.
- ❑ Maximum operating pressure 150 PSI.

Features

- ❑ No water to metal contact.
- ❑ Synthetic butyl diaphragm.
- ❑ No need for air volume control.
- ❑ Made from treated steel.

MATERIAL REQUIRED

1" PIPE AND FITTINGS TO CONNECT THE PUMP DISCHARGE TO THE TANK.

TANK T	650667		
PRESSURE GAUGE	750768 750769	1/8" 1/4"	
LOW PRESSURE CUT-OFF SWITCH	150159S 150147S	20/40 30/50	
NIPPLE	52191	1/4X3"	
DRAIN VALVE	650659		
PRESSURE RELIEF VALVE	150162		
BRONZE ADAPTORS	750949 750870	1" Female 3/4"Male	

Should you need more accessories, contact your BURCAM authorized dealer.

The water temperature limit is 140°F (60°C)

Pre - Charged tank operation:

In combination with a pressure switch, this tank will allow an automatic operation of your pump.

The air side of the tank is pre-charged at the factory to approximately 38 PSI.

When your pump turns on, it pushes the water into your plumbing distribution network. When all taps are closed, the pump starts to fill the diaphragm inside the tank. During this filling process, the diaphragm expands in the tank and compresses the air, thereby increasing the pressure in the system. When the pressure in the tank reaches the pressure switch cut-off setting, the pump shuts off.

Then, when a tap is opened, the water in the tank is released, thereby lowering the pressure. When the pressure in the tank drops to the pressure switch cut-in setting, the pump turns on again.

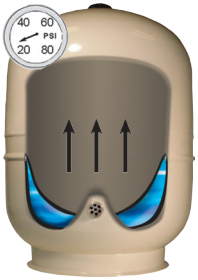
Pre - Charging your tank:

(The tank pressure set-up must be done when the tank is empty of water).

For pump systems operating with the pressure switch setting 20 PSI *(cut-in)* 40 PSI *(cut-out)*, the pre-charged air pressure should be adjusted to 18 PSI. *(Check with tire gauge)*

For pump systems operating with the pressure switch setting 30 PSI *(cut-in)* 50 PSI *(cut-out)*, the pre-charged air pressure should be adjusted to 28 PSI. *(Check with tire gauge)*

At all times, the pre-charged pressure must be set to 2 PSI below the cut-in setting on your pressure switch.

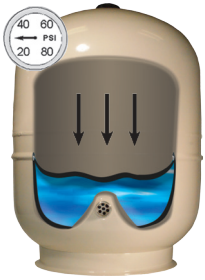


STEP ONE

The pump pushes water inside tank against the diaphragm which builds up air pressure on the other side of the diaphragm.

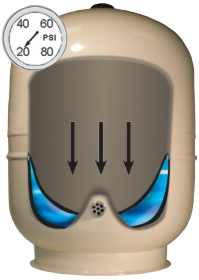
STEP TWO

The pressure switch cut-off setting determines when the pump shuts off (tank is full).



STEP THREE

On demand, water goes into discharge pipe to your plumbing distribution.



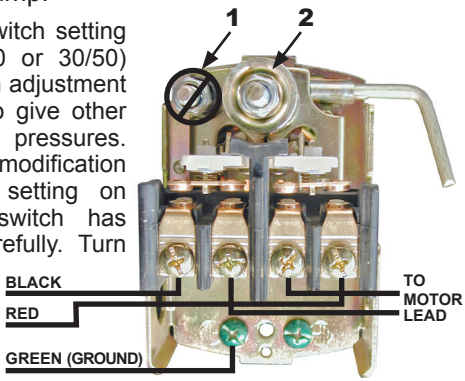
STEP FOUR

The air pressure pushes water out of the tank until there is no more demand and the pressure drops to the cut-in setting

ELECTRICAL INSTALLATION

We recommend that a licensed electrician be employed to do the wiring to the pressure switch. Permanently ground the motor in accordance to the electrical codes for your area. Do not use an extension cord to connect your pump to the power source. From your distribution panel to the pressure switch, we recommend a wire gauge not smaller than 14 gauge, and an adequate gauge for a submersible pump.

The pressure switch setting (start/stop 20/40 or 30/50) is factory set. An adjustment may be done to give other operating pressures. Adjustment or modification of the start/stop setting on the pressure switch has to be done carefully. Turn adjustment nut clockwise 1 half turn at a time to raise the start and stop pressure setting. **Never turn nut 2. This will change the 20 PSI range between the start and stop pressure and may damage your tank's diaphragm or modify the efficiency of your water system.** Check system operation after each adjustment.



ELECTRICAL LINE FROM HOME DISTRIBUTION PANEL.

INSTALLATION INSTRUCTIONS IN-LINE MODELS

FOR JET PUMP ONLY

(See diagram on the following page)

STEP 1 Install your pump in the desired location, leaving ample room to mount your tank to the pump's discharge piping.

STEP 2 Check your pump's discharge connection. A common size for many pumps is 1" NPT. Should the pump's discharge be different, install an adaptor, using teflon tape on the threads.Then run your pipe to the tank and distribution.

STEP 3 "In-line" tanks must be installed vertically.

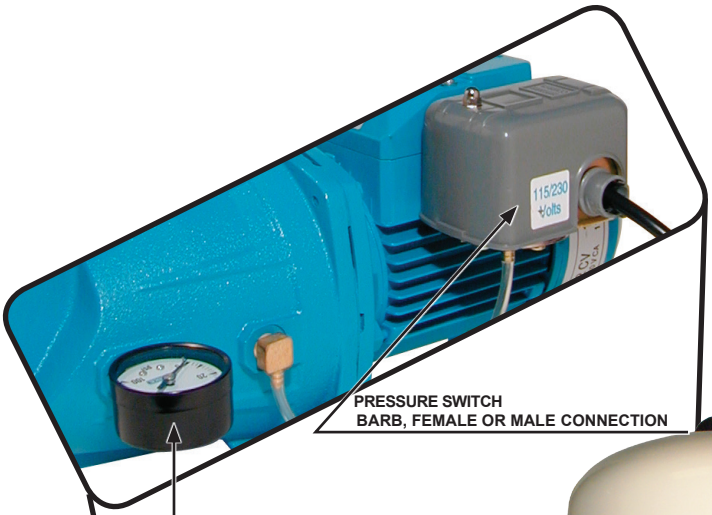
Screw the tank into the top opening of the tee using an ample supply of teflon tape on the threads until tightly secured.

STEP 4 Install a safety relief valve *(150162)*, on the pipe between the pump and the tank.

In the service line leading from the tank T, we recommend that you install a service gate valve to allow you to shut-off your water supply in the case of repairs to the home's water fixtures.

TYPICAL TANK INSTALLATION
IN-LINE MODELS POSITION

The system in which the expansion tank is installed must have a pressure-limiting device (pressure relief valve), sized and installed in accordance with local codes.



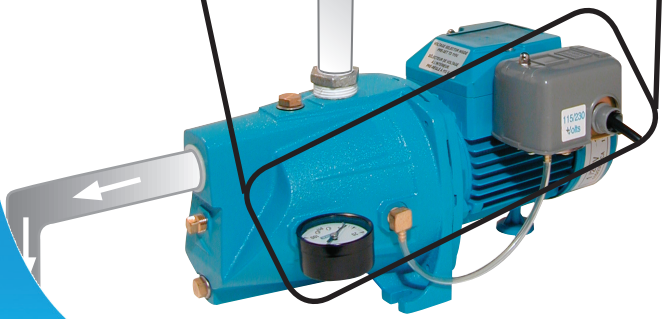
PRESSURE SWITCH
BARB, FEMALE OR MALE CONNECTION

PRESSURE GAUGE
1/4" OR 1/8" CONNECTION

STEP 3

STEP 2

STEP 4



STEP 1

INSTALLATION INSTRUCTIONS
FREE-STANDING MODELS (See diagram on the following page)

STEP 1

"Free-Standing" type tanks have to be installed offset from your pump in the distribution plumbing network after your pump discharge (either a jet or submersible pump).

STEP 2

Determine where to permanently locate your tank. Leave ample room to make your tank connections.

STEP 3

Screw the tank T *(650667)* to the tank connection.

STEP 4

For a submersible pump, install a pressure gauge *(750769)* and a pressure switch *(150147S)* (with a 1/4" X 3" nipple) in the 1/4" openings of the tank T. Then, install a drain valve *(650659)* and a safety relief valve *(150162)* in the 1/2" openings of the tank T *(see diagram on next page).*

STEP 5

For a jet pump, install a 1/4" plug in each 1/4" opening of the tank T. In one of the 1/2" openings, install a drain valve (650659). In the last opening, install a safety relief valve *(150162)*.

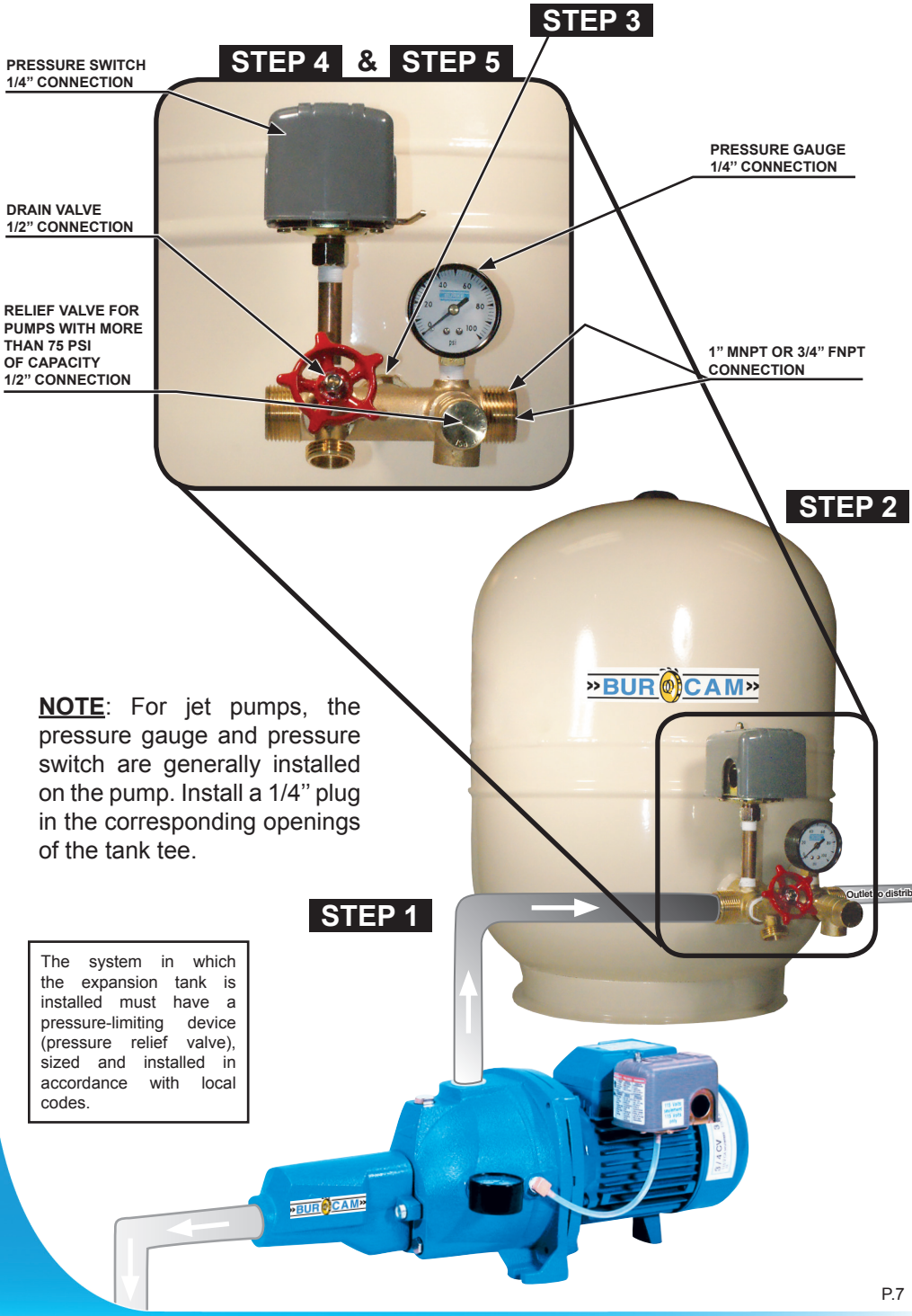
In the service line leading from the tank T, we recommend that you install a service gate valve to allow you to shut-off your water supply in the case of repairs to the home's water fixtures.

NOTES

Use teflon tape on all threads. Use a pipe wrench to tighten each connection adequately to ensure that there are no leaks.

The tank size is very important. Ensure that you select a tank which will meet your requirements. Several tank models are available (larger or smaller).

TYPICAL TANK INSTALLATION
UPRIGHT POSITION



NOTE: For jet pumps, the pressure gauge and pressure switch are generally installed on the pump. Install a 1/4" plug in the corresponding openings of the tank tee.

The system in which the expansion tank is installed must have a pressure-limiting device (pressure relief valve), sized and installed in accordance with local codes.

WARNINGS

Inspect the product for any damage that may have occurred during shipping. If evident damage is detected, notify the freight carrier and reseller immediately, and do not install the tank.

Ensure that access to the installation area is restricted. Do not install where children are present or may be present.

Use caution and always wear protective gloves and safety goggles during installation and maintenance of the expansion tank. Use suitable and appropriate lifting tools when positioning and installing the tank.

Do not install the tank outdoors. The tank may only be installed in enclosed and well aerated areas and must be placed far from heat sources, electric generators and any other element that may damage the tank.

Depending on the model, the weight of the tank, filled with water may be supported by system piping. To avoid overloading the pipes and possibly breaking or offsetting the pipe connections, it is important that the piping be supported by suitable bracing (strapping, hanger, brackets). If the tank does not have a support base, and is installed horizontally, it must be properly supported along the entire length of the tank.

Other possible causes for pin-holing and corrosion phenomena must be evaluated, including the water's chemical, physical and thermal characteristics, the presence of oxygen or melted salts and the use of devices made of different materials (e.g. carbon steel and stainless steel, carbon steel and copper) within the system. All of these factors must be considered by the manufacturer of the complete system and by the personnel in charge of installation and maintenance, taking into account all local plumbing, electrical and safety standards and regulations.

Water quality may affect the lifespan of expansion tanks. Water may require treatment to ensure the correct performance and complete lifespan of the expansion tank. If installed near the sea, damage from salty air may occur.

Do not use this tank with the following fluids: (a) chemicals, solvants, petroleum products, acids, bases or any other substance that may be detrimental to the tank itself, (b) explosive, any flammable, toxic, or oxidizing fluids.

Only use this tank with appropriate fluids having a vapor pressure greater than 7.25 psi above the normal atmospheric pressure (14.7 psi) at the maximum working temperature of the expansion tank.

Do not use this tank with water containing sand, clay, particulates or other solid substances that may damage the tank (particularly the internai coating) and / or clog its connecting pipes.

Appropriate measures must be taken in order to prevent air from accumulating in the water chamber of the tank connected to the system.

The tank and the connected system must be protected against temperatures below-freezing by using proper antifreeze (if for use with non-potable water) or installing the tank indoors in suitable and permanently heated areas.

Do not use this expansion tank for any purpose other than the purpose for which it was intended.

The expansion tank, piping and connections may leak water or other liquids over time. Therefore, the expansion tank must be installed in a suitable technical room capable of supporting the weight of the vesse! filled with water and that must have adequate drainage and protection

such that any leakage will not damage the surrounding area and will not cause scalding injuries. THE MANUFACTURER SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE TO PROPERTY, INJURIES OR SCALDING IN CONNECTION WITH THIS EXPANSION TANK.

THE MANUFACTURER SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES TO PROPERTY AND / OR INJURIES DUE TO IMPROPER TRANSPORT, HANDLING, INSTALLATION, OPERATION OR MAINTENANCE OF THE TANK.

As in all plumbing products, bacteria can grow in the expansion tank, especially when not in use for an extended period of time. The local health and safety office must be consulted regarding any measures the personnel in charge of service and maintenance take to safely disinfect the plumbing system. DO NOT USE ABRASIVE DETERGENTS OR OTHER SUBSTANCES THAT MAY CAUSE DAMAGE TO THE TANK OR CONTAMINATION OF DRINKING WATER. IF BACTERIAL CONTAMINATION IS DETECTED, IT MAY BE ADVISABLE TO REPLACE THE TANK.

DO NOT drill, open, heat with flames or tamper with the tank in any way.

In the event it is necessary to change the factory pre-charge, specialized technicians should calculate and determine the new pre-charge. The calculation must ensure that, for all foreseeable working conditions, the specified limits (particularly the maximum working pressure) are never exceeded and that all local codes and standards are observed.

WARNING - DO NOT OVER-PRESSURIZE- EXPLOSION HAZARD. The pre-charge should never exceed 50% of the maximum working pressure. The new value of the pre-charge pressure (user set) must be written in an appropriate space for future reference.

Make sure that the system layout allows for future maintenance and provides sufficient access and working space around the system to allow for replacement of components whenever necessary.

If vibration is likely to occur in the vicinity, proper means must be provided in order to insulate the expansion tank from vibrations (e.g. installation on a resilient mount).

The tank can only be disposed of at selective waste collection authorized centers, in accordance with local codes and standards.

MAINTENANCE

ONLY QUALIFIED AND LICENSED PERSONNEL MAY PERFORM SERVICE AND MAINTENANCE. DO NOT ACCESS WHILE UNDER PRESSURE. DANGER OF SCALDING, BURSTING OR WATER DAMAGE. BEFORE PERFORMING MAINTENANCE AND CONTROL OPERATIONS, THE SYSTEM (INCLUDING THE TANK) MUST BE SHUT OFF, COOLED AND NOT PRESSURIZED, ALL OF THE ELECTRICAL PARTS MUST BE UNPLUGGED AND THE TANK MUST BE COMPLETELY EMPTY.• Unless otherwise stated, at least once every six months, the expansion tank must be checked to verify that the pre-charge is within the value indicated on the label (factory pre-charge or customer set pre-charge) with a tolerance of ± 20%.• To lengthen the life of the expansion tank's external protection, periodically clean the external portions of the tank using warm water and soap.• The expansion tank includes components which undergo stress. In the event such components deteriorate with time, the tank must be replaced.• Use only original BURCAM spare parts.

Note: To ensure the proper functioning of the system, the expansion tank must be replaced in the event of excessive deterioration and, in any case, no later than 5 years from the installation date.