

INSTRUCTIONS FOR INSTALLATION AND OPERATION OF GEMLINE EXPANSION TANKS

PLEASE, PASS THESE INSTRUCTIONS ON TO THE PERSONNEL IN CHARGE OF INSTALLATION, OPERATION AND SERVICE. ALL INSTRUCTIONS MUST BE CAREFULLY READ AND FULLY UNDERSTOOD BEFORE INSTALLING THIS EXPANSION TANK. AFTER THE INSTALLATION, THESE INSTRUCTIONS MUST BE KEPT IN AN EASILY ACCESSIBLE PLACE FOR FUTURE REFERENCE.



THIS IS A SAFETY SYMBOL AND IS USED FOR WARNINGS. WHEN YOU SEE THIS SYMBOL, PAY PARTICULAR ATTENTION TO THE WARNING DESCRIBING THE DANGER, HOW TO AVOID THE DANGER AND THE CONSEQUENCES OF NOT AVOIDING THE DANGER.



TO ENSURE SAFE USE AND PROPER CARE OF THIS PRODUCT, FOLLOW THE PRODUCT INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS CAREFULLY. FAILURE TO DO SO WILL VOID THE PRODUCT WARRANTY AND MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH AND/OR PROPERTY DAMAGE.



BEFORE THE INSTALLATION, IT IS MANDATORY THAT YOU CALCULATE AND CHOOSE THE CORRECT TYPE OF VESSEL BASED ON SYSTEM DESIGN, SPECIFICATIONS, INSTRUCTIONS AND OPERATION REQUIREMENTS. ONLY QUALIFIED AND LICENSED TECHNICIANS MAY PERFORM THE CALCULATION AND THE CHOICE OF THE VESSEL IN ACCORDANCE WITH CURRENT LOCAL, STATE AND NATIONAL CODES AND STANDARDS. ONLY QUALIFIED AND LICENSED PERSONNEL MAY INSTALL, OPERATE AND SERVICE THIS EQUIPMENT IN ACCORDANCE WITH SYSTEM DESIGN, SPECIFICATIONS AND INSTRUCTIONS, OPERATION REQUIREMENTS AND CURRENT LOCAL, STATE AND NATIONAL EDITIONS OF THERMAL, PLUMBING, AND ELECTRICAL CODES AND STANDARDS. MOREOVER, ALL LOCAL SAFETY, OCCUPATIONAL, HEALTH ENVIRONMENTAL AND ANY OTHER APPLICABLE CODES AND STANDARDS MUST BE FOLLOWED.

1. DESCRIPTIONS AND USE

The GEMLINE pressurized expansion vessels are designed for the following purposes:

Table A

PURPOSE	TYPE OF WATER	TANK TYPE	SYSTEM	TANK MODEL
<ul style="list-style-type: none"> • Water expansion • Pressure control • Storage 	POTABLE WATER	Fixed membrane expansion tanks	Potable water storage and lifting in pump systems.	HYDRO-PLUS drawing 20016 EASY-PRO drawing 20016 INOX-PRO Stainless steel vessels drawing 20018

All the tanks incorporate a flexible synthetic diaphragm to keep the system water or fluid from contacting the sealed-in air cushion in the tank. In model Hydro-Plus 20016 the internal surface in contact with water has a special epoxy coating suitable for use with potable water; in model EASY-PRO 20016 the internal surface in contact with water has a propylene liner suitable for use with potable water.

GEMLINE tanks Hydro-Plus / Easy-Pro 20016 and Inox-Pro 20018 are NSF 61 certified for vessel volumes greater than or equal to 2.11 gal.

GEMLINE tanks comply with low lead plumbing law.



WARNING: FAILURE TO CHOOSE THE CORRECT TANK CAN LEAD TO MALFUNCTION, CONTAMINATION, AND VOIDANCE OF THE WARRANTY.

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2. TECHNICAL CHARACTERISTICS

The technical characteristics of the expansion tank are reported on the identifying label affixed to each product, including product identification, tank volume, maximum working pressure and temperature, pre-charge pressure (factory set or user set), production year, and serial number. The label is firmly affixed to the tank and must not be removed, tampered with, hidden, covered, or changed.

If the label on the GEMLINE tank is missing or the technical characteristics on the GEMLINE label are not legible, DO NOT INSTALL the expansion tank and contact GEMLINE immediately by phone at or by e-mail at



WARNING: The values of the maximum working temperature and the maximum working pressure, shown in the label affixed to the expansion tank and in Table B, must be considered the maximum working parameters for the expansion tanks.

Table B: GENERAL TECHNICAL CHARACTERISTICS OF EXPANSION TANKS

MODEL	CAPACITY (gallons) MAX. WORKING PRESSURE (psi)		MAX. WORKING TEMPERATURE (°F) Diaphragm / System	USE
HYDRO-PLUS 20016	All the models 150 psi		140 °F / 210 °F	SW - P - H
EASY-PRO 20016	All the models 150 psi		140 °F / 210 °F	SW - P - H
INOX-PRO 20018	0.04 gal 220 psi	From 0.13 to 4.8 gal 150 psi	140 °F / 210 °F	SW - P - H

Key "USE": SW = potable (drinking) water, P= water lifting / pumps

Note: For updated technical characteristics, please refer to the label on the tank.

DO NOT INSTALL OR OPERATE THE SYSTEM AT SUSTAINED OR INSTANTANEOUS PRESSURE AND/OR AT TEMPERATURES EXCEEDING THE LIMITS PRESCRIBED IN TABLE B AND IN THE LABEL AFFIXED TO THE EXPANSION TANK.



WARNING: EXCEEDING MAXIMUM PRESSURE AND/OR TEMPERATURE, EITHER SUSTAINED OR DUE TO SUDDEN INCREASES, IS DANGEROUS AND MAY RESULT IN REDUCED TANK LIFE, PROPERTY DAMAGE, SERIOUS SCALDING AND/OR BODILY INJURY OR DEATH.

The tank may be used in systems that have a maximum working system temperature as described in Table B, provided that the tank's own temperature does not exceed the prescribed limits for the diaphragm. This may be achieved by installation of the tank in the coldest part of the system, thermostatic control etc.



Do not expose the expansion tank to temperatures lower than 14 °F. **DO NOT USE ANTIFREEZE** for the production and storage of potable water.

In accordance with local regulations, or following specifications agreed in specific cases between GEMLINE and the purchaser, the maximum working pressure and the maximum working temperature may be lower than those shown in Table B, but may never exceed the same. **Please always refer to the agreed specifications and/or to the local codes, regulations and standards.**



3. WARNINGS

- 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.
- To prevent corrosion due to stray and galvanic currents, the system must be grounded properly in accordance with local electrical and plumbing codes and standards. If needed, the tank may be provided with dielectric joints after careful evaluation of the characteristics of the installation.
- 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).

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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, solvents, petroleum products, acids, bases or any other substance that may be detrimental to the tanks itself, (b) explosive, extremely flammable, flammable, toxic, or oxidizing fluids.
- Only use this tank with not dangerous fluids and having a vapor pressure greater than 7.25 psi above the normal atmosphere 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 substance that may damage the tank (particularly the internal coating) and / or clog its connecting pipes.
- Proper means must be provided in order to prevent air from accumulating in the chamber of the tank (water side) connected to the system.
- The tank and the connected system must be protected against below-freezing temperatures by installing the tank in suitable indoor 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 vessel 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 during times of non use. The local health and safety office must be consulted regarding any measures the personnel in charge of service and maintenance takes 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 BACTERIA 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 the appropriate space on the label that is permanently affixed to the tank.

- 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.

4. GENERAL INSTRUCTIONS FOR INSTALLATION



SHUT OFF THE ELECTRIC POWER AND THE WATER SUPPLY TO THE SYSTEM. MAKE SURE THE SYSTEM IS COOLED AND NOT PRESSURIZED TO AVOID SCALDING AND / OR SERIOUS BODILY INJURY.

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

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heat sources, electric generators and any other element that may damage the tank.

- Depending on the model, the weight of the expansion tank filled with water can be supported by the system piping. To avoid overloading the pipes and possibly breaking or offsetting the pipe connections, it is important that the piping is 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.
- Before using any GEMLINE accessory to hang the expansion vessel on a wall, check that the wall itself can sustain the weight of a full expansion vessel, as it will fill with system liquid. This will add considerable weight to the tank during normal operation.
- Before installing the expansion tank, remove the plastic cap on the air valve of the tank and using a controlled manometer verify that it has the correct factory set pre-charge (with a tolerance of $\pm 20\%$). Adjust the tank pre-charge to the required value (**do not over-pressurize**) and replace and tighten the plastic cap on the air valve.
- Install the tank at the point specified by the system design, specifications and instructions, preferably in a vertical position with the connection in downward direction (please see Installation schemes). Install the tank in the following places:

Installation in systems for the production of sanitary hot water: at a point between the water heater and the back-flow preventer, check valve or pressure reducing valve (see Installation Scheme 1)

Installation in pump systems for storage and lifting of potable water: after the back-flow preventer at the exit of the pump (see installation Scheme 2)

- After the installation of the tank and the re-start of the plant, check for leakage and remove all air from the system. Check to make sure that the system pressure and temperature are within safe operating range. If necessary, remove system water to bring the system pressure within safe limits and/or adjust the temperature control up to the desired ending temperature.
- Do not over-tighten the threaded connection.
- Ensure proper support, restraint and anchoring of the expansion tank to avoid displacement or rupture in the event of vibrations or earthquake.



The above installation instructions are intended as a reference and must be adapted by taking into account the specifications and instructions of the plant at which the tank is installed, the system design, the operation requirements and local codes and standards.

5. 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 $\pm 20\%$.
- 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 GEMLINE 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.

CALIFORNIA PROPOSITION 65 WARNING: This product may contain chemicals known to the State of California to cause [cancer](#) and [birth defects](#) or other reproductive harm. (California Installer / Contractor – California law requires that this notice to be given to consumer / end user of this product.

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INSTALLATION SCHEMES

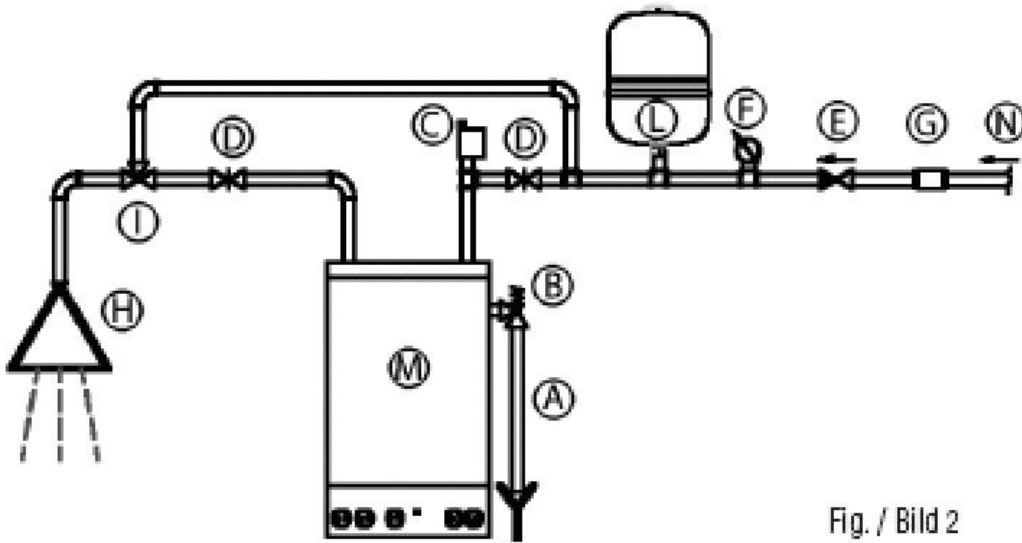


Fig. / Bild 2

Installation scheme 1

Installation position in systems for the production of sanitary hot water, at a point between the water heater and the back-flow preventer, check valve or pressure reducing valve

A = Draining B = Safety valve C = Air bleed valve D = Gate valve E = Backflow preventer F = Manometer G = Shutoff valve H = Utilities I = Mixing valve L = Expansion tank M = Water heater

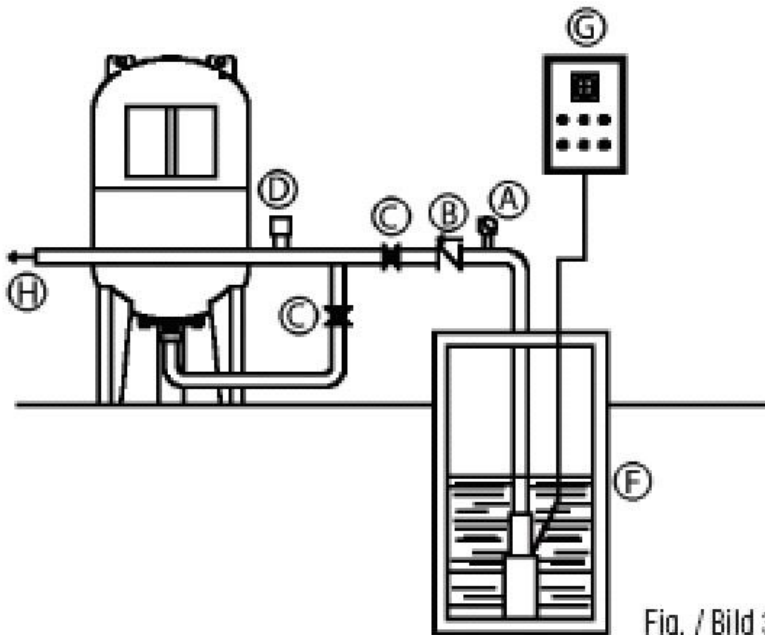


Fig. / Bild 3

Installation scheme 2

Installation position in pump systems for storage and lifting of potable water, after the back-flow preventer at the exit of the pump

A = Manometer B = Backflow preventer C = Globe valve D = Pressure switch E = Safety valve F = Basin with submerged pump/ G = Switch board H = Water system I = Interchangeable membrane pressure tank

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GEMLINE LIMITED PRODUCT WARRANTY

Products Covered: Hydro-Plus / Easy-Pro / Inox-Pro tanks

This warranty cannot be transferred – it is extended only to the original purchaser or first user of the product. By accepting and keeping this product you agree to all of the warranty terms and limitations of liability described below. The warranty is not valid if the purchaser does not follow the terms of payment agreed to with GEMLINE.

IMPORTANT WARNING - READ CAREFULLY THE INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS MANUAL ("MANUAL") to avoid serious personal injury and/or property damage and to ensure the safe use and proper care of this product.

Who Receives GEMLINE's Product Warranty: all purchasers or first user of the new product; the warranty is non-transferable.

What Is Covered By This Warranty: GEMLINE warrants to the purchaser or first user of the new product that, at the time of manufacture, the product is free from defects in material and workmanship. **Any warranty claim must be made within five (5) years, unless another time period is agreed between GEMLINE and the purchaser, measured from the time the product was manufactured.**

What GEMLINE Will Do If You Have A Covered Warranty Claim: in the event of a breach of the foregoing warranty, GEMLINE will, at its option, either make repairs to correct any defect in material or workmanship or supply and ship either new or used replacement parts or products. GEMLINE will not accept any claims for labor, **property damage** or other costs.

What This Warranty Does Not Cover - Exclusions And Limitations: this warranty does not cover any claim unless it was caused by a defect in material or workmanship during the **warranty period**. In addition, this warranty shall not apply:

- if the product is not correctly installed, operated and maintained as described in the manual provided with this warranty;
- to any failure or malfunction resulting from abuse (including freezing); improper or negligent: handling, shipping (by anyone other than GEMLINE), storage, use, operation, accident; or alteration, lightning, flood or any other environmental condition;
- to any failure or problem resulting from the use of the product for any purpose other than those specified in the accompanying manual or alteration of any part of the product;
- this warranty does not cover labor costs, shipping charges, service charges, delivery expenses, administrative fees or any costs incurred in removing or reinstalling the product;
- this warranty does not cover any claims submitted to GEMLINE or a GEMLINE-authorized distributor or retailer more than 15 days after expiration of the applicable warranty time period described in this warranty ;
- this warranty does not cover repair or replacement costs not authorized in advance by GEMLINE;
- this warranty also does not cover corrosion on mild steel flanges (stainless steel flanges must be used).

THESE WARRANTIES ARE GIVEN IN LIEU OF ALL OTHER EXPRESS WARRANTIES. NO GEMLINE REPRESENTATIVE OR ANY OTHER PARTY IS AUTHORIZED TO MAKE ANY WARRANTY OTHER THAN THOSE EXPRESSLY CONTAINED IN THIS WARRANTY AGREEMENT.

Additional Warranty Limitations: ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE SPECIFICALLY DISCLAIMED. Some states do not allow limitations on how long an implied Warranty lasts, so the above limitation may not apply to you.

Limitations Of Remedies: THE REMEDIES CONTAINED IN THIS WARRANTY ARE THE PURCHASER'S / FIRST USER'S EXCLUSIVE REMEDIES. IN NO CIRCUMSTANCES WILL GEMLINE BE LIABLE FOR MORE THAN, AND PURCHASER / FIRST USER'S REMEDIES SHALL NOT EXCEED, THE PRICE PAID FOR THE PRODUCT. IN NO CASE SHALL GEMLINE BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM NON-DELIVERY OR FROM THE USE, MISUSE, OR INABILITY TO USE THE PRODUCT OR FROM DEFECTS IN THE PRODUCT OR FROM GEMLINE'S OWN NEGLIGENCE OR OTHER TORT. This exclusion applies regardless of whether such damages are sought for breach of warranty, breach of contract, negligence, strict liability, in tort or under any other legal theory. Such damages include, but are not limited to, inconvenience, loss or damage to property, mold, loss of profits, loss of savings or revenue, loss of use of the products or any associated equipment, facilities, buildings or services, downtime, and the claims of third parties including customers. **Some states do not allow the limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.**

What To Do If You Have A Problem Covered By This Warranty: any covered warranty service must be authorized by GEMLINE. Contact the person from whom you purchased the product, who must receive a written authorization from a GEMLINE distributor or from GEMLINE. The following documentation must be supplied in order to receive authorization:

- The "Schedule of returns" sheet duly filled by the purchaser / first user;
- Reports, photos etc. describing the problem. If you do not receive a prompt response, call GEMLINE directly at . Notice of a warranty claim should be submitted by the authorized distributor to GEMLINE at the following address:

GEMLINE

311 East Vickery Blvd., Fort Worth, TX 76104
gemline@morsco.com

Before GEMLINE decides to provide any replacement part or product, it may, as a pre-condition to making such a determination, require that the warranty claimant ship the product, postage prepaid, to an authorized GEMLINE distributor, or to GEMLINE, and provide proof of purchase evidenced by the original sales receipt.

Replacement Product Warranty: in case of replacement of a product or any component part, GEMLINE reserves the right to make changes in the design, construction, or material of the substitute components or products, which shall be subject to all of the terms and limitation of this warranty, except that the applicable warranty periods shall be reduced by the amount of time the warranty claimant owned the product prior to submitting notification of the warranty claim.