



SAFETY INFORMATION & INSTRUCTIONS FOR ATL FUEL CELLS

FITTING & MOUNTING

INSTALLATION - Installation is unique to each vehicle, therefore it is unrealistic to prescribe a set method for every ATL safety fuel cell. However, certain basic safety and function practices must be adhered to for all installations. Be certain your installation meets the specific regulatory requirements of your competition or governing body. When in doubt consult your governing body or ATL for advice.

CONTAINERS - All fuel cell bladders are to be installed inside a container. The container serves to support the bladder, deflect impacts and provide a flame shield. ATL offers ready-made containers if required. Containers for soft rubber bladders (rubberized fabric) should be 0.5% larger in length, width and height. Containers for molded hard rubber bladders must be 3% larger in each dimension to accommodate linear swell.

ABRASION - Many racing products, and especially rubberized fuel cell bladders, are susceptible to chafing or abrasion. Handle these items with care and install them gently without force. Bladders can be heated carefully to no more than 60C to enhance flexibility during installation, direct heat must not be applied. Keep free of stones, sand and other abrasives which can wear rubber and plastic materials. Be certain that the container cavity which holds a fuel cell bladder is thoroughly smooth and continuous on its interior. When fitting a bladder into a container, please use talcum powder and duck tape or similar to protect the bladder from abrasion. If in doubt ask an ATL representative for advice.

STATIC GROUNDING - Electrical charges may build up on components due to fuel agitation, high flow rates, and by induction from other sources. To alleviate sparking and possible fuel ignition, always electrically ground your fuel cell. Note that decorative anodize (applied to most fittings) is not conductive.

VENTING - Proper fuel cell venting is essential to fuel system operation and fire safety. If your fuel cell is to be refueled in a race you should use a closed loop system, or a complete dry break system. Regular-fill fuel cells require a dash 6 vent, rollover valve (TF-AF-004 or TF-AA-350) and vent hose but this will not prevent leakage during dynamic use, this serves as rollover protection only. Be certain the vent hose is firmly attached to the fuel cell and is routed upward then back below the tank level and away from the cell, engine, exhaust and driver compartment. Always use top quality fuel resistant hose and make airtight joints. When rapid refueling or vent line height is limited always use a rollover/float type valve or for FIA competition a suitable three way valve that include a pressure relief function. If in doubt contact the ATL sales team.

MAINTENANCE & USE

FUEL COMPATIBILITY - Most fuel system components are not resistant to all types of fuels. Therefore, it is essential to identify the intended fuel or blend (i.e. petrol, diesel, alcohol etc.) before purchasing equipment. Foam baffling material in particular is adversely affected by alcohol as are certain fuel cell bladders materials and components. Please ask an ATL representative for advice on the correct materials to be used for your application. Where regularly switching between different fuels, the risk of accelerated degradation of all components of the fuel system is heightened. This practice should be avoided wherever possible.





SAFETY FOAM BAFFLING - Fuel cell foam is a “reticulate” or open-cell sponge-like material. When used within a fuel cell bladder, foam helps suppress explosion, control fuel slosh and absorb some impact energy. Foam should never be handled when wet with fuel as surface fire could erupt. ATL’s yellow foam is intended for hydrocarbon fuels, but can withstand reasonable exposure to homogeneous blends of hydrocarbons with 5% to 85% ethanol (ethyl alcohol) oxygenate [E5 to E85]. For methanol, diesel and water ATL suggests the use of its blue foam. Any amount of alcohol constituent in a fuel blend will shorten the life and effectiveness of safety foam baffling. ATL highly recommends inspecting fuel cell foam every 12 months and promptly replacing any softened, flaking, or “gummy” foam observed.

DRAIN AFTER USE - ATL recommend that all fuel systems are drained between periods of use. Phase separation can occur in some fuels, resulting in a high concentration of some substances which can cause damage to the bladder material or components if they are not suitable for the fuel being used. Whilst not infallible, draining the system will minimize this risk. ATL can provide fuel cells for all fuel types; please check with ATL if you plan to use your fuel cell with a different fuel to that which it was designed for use with. Where fuel volume is used as a form of balance of performance, the fuel bladder should be normalized by fuel exposure prior to the event and volume checks must be conducted by the team, particularly where Nylon reinforced fuel cells are utilized (ATL-810-C and ATL-514-D).

TEMPERATURE - Racing fuel cell bladders rely on deformability to ward off impact and puncture. Decreasing temperatures may limit pliability and could thereby reduce the cell’s effectiveness. Most ATL racing type fuel cells are designed for normal competition environments of 0° to 50°C (30°F to 120°F). Use below -30°C (-20°F) may diminish performance. Maximum intermittent bladder exposure temperature is 60°C (160°F).

WATER & MOISTURE - Water vapor and direct sunlight exposure may affect fuel cell bladders and foam baffling. Always install your fuel bladder within a metal or composite enclosure, and keep the system externally and internally free of water and water vapor.

FOAM REMOVAL -All fuel cells must be purged and rendered inert before inspection, disassembly or storage. Please be cautious when removing the foam as it will hold approximately 2% of the fuel capacity within its pores. Once removed the foam baffling should be dried outdoors and the fuel cell wiped dry.

DIFFUSION - Due to the polymeric nature of fuel cell bladders, molded tanks and hoses, a certain amount of fuel permeation or “diffusion” will occur through the walls of fuel cells manufactured from some but not all ATL materials. Always provide generous ventilation around the cell and vehicle so as to preclude the accumulation of hazardous fuel vapors.

STORAGE - When storing a fuel cell, drain the bladder completely, wash with soap & water then dry, close off all ports, and keep it in a dark, warm and dry area.

WEATHERING EFFECTS - Most racing equipment is affected by weathering; that is: sunlight, wind, freeze-thaw cycles, high and low temperatures, rain and airborne contaminants. Ozone, ultraviolet light, water and acids are especially detrimental to many plastic and rubber parts. Protect your fuel cell and refueling equipment from unnecessary weather exposure.





INFLATION - ATL tanks and bladders are not to be inflated or pressurized. However, leak testing can take place at 1.25psi. In most cases the bladder will require restraint to avoid damage and an accurate gauge and a redundant pressure regulator system are essential. It is strongly recommended that ATL are consulted before any pressure tests are undertaken and ATL will reject any warranty claims resulting from over pressurization due to improper testing. Over pressurizing may elongate the cell or bladder and damage its seams without visual evidence.

SPILLAGE - To avoid spillage fill your fuel cell slowly allowing time for vapors to discharge and avoiding “back-surge” or dripping. If your cell is designed for quick-filling, then be certain you have the appropriate dry break valve, roll-over valve, and proper vent. Use a Discriminator Valve, catch tank or overflow can to prevent or collect any liquid fuel discharge from the vent line. Also, check frequently that all fuel lines, pumps, level gauges, dipsticks and fuel return lines are drip free and air-tight. Your fuel cell is only as good as its peripheral equipment and accessories.

FACTORY SAFETY SUPPORT - Racing fuels are highly flammable and subject to sudden ignition and/or explosion. Before every competition event, be certain to carefully inspect all ATL equipment for proper installation, function and freedom from leaks. Should any questions arise please contact ATL for help and advice.

REPAIRS & RECERTIFICATION

LIFE SPAN - The FIA mandates that the certified lifespan of a safety fuel cell is five years from the date of manufacture. It is possible to re-certify a fuel cell for a further two years, up to a maximum of seven years from manufacture. Please see our guidelines on returning your safety fuel cell for recertification if required.

MODIFICATION & ASSEMBLY - Alterations, modifications and repairs to ATL cells and equipment must only be performed by ATL at its facilities. Disassembly for periodic inspection and cleaning purposes is highly recommended and should be performed only by a trained mechanical technician or fuel system engineer. Reassembly must conform to ATL design and a low pressure 1.25psi leak test must be applied to all joints, fittings and surfaces. Certain ATL products, notably Saver Cells and Racells are not repairable if punctured. Patching may provide a seal, but it will not restore lost strength - replace the damaged cell immediately.

If you require your fuel cell to be repaired, modified or re-certified, please follow our return of cell instructions for FIA approved safety fuel cells. Complete the RMA form on the ATL website prior to return and await a response before sending. If the cell is to be re-certified, please expect the process to take around 5 weeks, possibly longer in the busy winter period, and you will need to take into account shipping time on top of this. In some cases ATL can re-certify a fuel cell in a shorter period but this must be discussed with an ATL representative.

Please note that ATL will not know the length of time the fuel cell is required for repair/recertification until it has arrived at ATL and been assessed. Assessments will be undertaken as soon as is reasonably possible.

Fuel cell certification is valid until 5 years from the date of manufacture. It can then be re-certified, as long as it is in good condition and meets the required safety standard, for a further 2 years. The maximum length of time a cell can be certified for is 7 years from the date of manufacture.





RETURN INSTRUCTIONS

1. Please completely drain the fuel cell of all fuel.
2. Remove all top plates and internal foam baffling. Please be cautious when doing so as the internal foam will hold approximately 2% of the fuel capacity within its pores. We advise when removing foam from a fuel cell with a complicated shape that you carefully record how the foam was positioned to make refitting easier. Please do not return the internal foam to ATL - only the external plates for pressure testing purposes. If the external plates were supplied by ATL, Please do not return them.
3. Externally and internally rinse the fuel cell with soapy water (do not use water if the internal foam cannot be fully removed) then degrease the external and internal surfaces. It is imperative that the fuel cells skins are completely dry and free from grease before returning to ATL. Diesel fuel cells in particular will require considerable drying/de-greasing. All returned fuel cells will be vented if necessary to bring the fuel cell to a state at which it can be worked on by a technician. Fuel cells which are returned in a wet or dirty state will delay the start of any work necessary.
4. Please install the fuel cell into a sealed plastic bag and package into a protective cardboard box. Please note that shipping companies will refuse to ship packages if they detect a smell of petrol or diesel.
5. Attach a delivery note with your full contact/invoicing details, your ATL contact name, and the reason you are returning the fuel cell. If a cell is to be returned from outside of the USA, it is imperative that 'repair' is listed as the reason for return to avoid unnecessary import charges. Any import charges levied will be recharged to the customer. Please supply as much information as possible on your delivery note.
6. Please return the fuel cell to ATL Inc. at:
45 Spear Road
Ramsey, NJ 07446
+1-201-825-1400

ATL can only repair or re-certify fuel cells manufactured by ATL.

It is important to note that if fuel cells are returned for recertification in an assembled state, or are excessively dirty, an additional charge will be imposed to cover the cost of dismantling the cell. ATL will not be responsible for the loss or damage of parts where the ATL return instructions have not been followed. In extreme cases ATL will ask that a fuel cell is collected by the customer prior to work commencing. We would then ask that the cell is dismantled and/or cleaned before being return to ATL.

END OF LIFE

REPLACEMENT - When a bladder reaches the end of its serviceable life, through regulation or wear, many components can be reused in its replacement. Please contact your ATL sales representative of distributor to discuss what can be re-cycled or re-used as part of replacing your product.

DISPOSAL - Many components of a retired fuel system can be recycled, aluminum and steel fittings for example, for clarification please contact your ATL sales representative or distributor. Used bladder materials and safety foams cannot be recycled or re-purposed and therefore must be disposed of in a manner in keeping with local regulations. ATL actively encourages end users to donate end of life products to local educational facilities where they can be used to demonstrate the properties our proprietary materials exhibit and how they provide a safety and performance enhancements throughout Motorsport, Automotive, Aerospace, Marine and Defense environments.

