

## CARBONWEIGHT High Pressure Bladder Accumulators

### The **LIGHTEST** tank for the Cost

#### BENEFITS

Our **high pressure composite bladder accumulators** for hydraulic and other energy storage applications have the following benefits:

- **At 1/4 the weight** of standard steel accumulators they are the **LIGHTEST TANK FOR THE PRICE**
- **Energy savings** due to significant weight reduction
- **Increased safety** due to burst testing to a safety factor greater than 3.4 times operating pressure **AND** inherent leak-before- burst fatigue failure mode
- Lighter accumulators are **less expensive to ship and install** since weight and mounting hardware is minimized
- Larger accumulator may be used in place of multiple smaller accumulators, **saving even more space and weight**
- Similar pricing to steel accumulators with the same specifications

#### DESIGN

**Lightning Hybrids** is dedicated to providing enhanced hydraulic system performance and efficiency without compromising safety and reliability. LHI's accumulators consist of a spun **carbon fiber wrapped aluminum tank**, a **nitrogen gas compression bladder** and ports for fluid flow.

Volume	Steel	Carbon
10 gallons	308 lbs	<b>73 lbs</b>
15 gallons	468 lbs	<b>99 lbs</b>
20 gallons	622 lbs	<b>128 lbs</b>
22 gallons	685 lbs	<b>140 lbs</b>
25 gallons	775 lbs	<b>156 lbs</b>
30 gallons	928 lbs	<b>186 lbs</b>

#### CERTIFICATION

- USDOT CPPC (gas transport and fuel tank)
- ANSI/CSA NGV2
- Under evaluation for ASME certification

#### Our carbon accumulators are safer than comparable steel accumulators:

- Full peripheral impact and abuse testing including sidewall region
- Tested to **over 500,000 cycles**
- **Burst-tested** to a safety factor greater than 3.4 times operating pressure
- Inherent **leak-before-burst** fatigue failure
- Safety **shut-off** valve

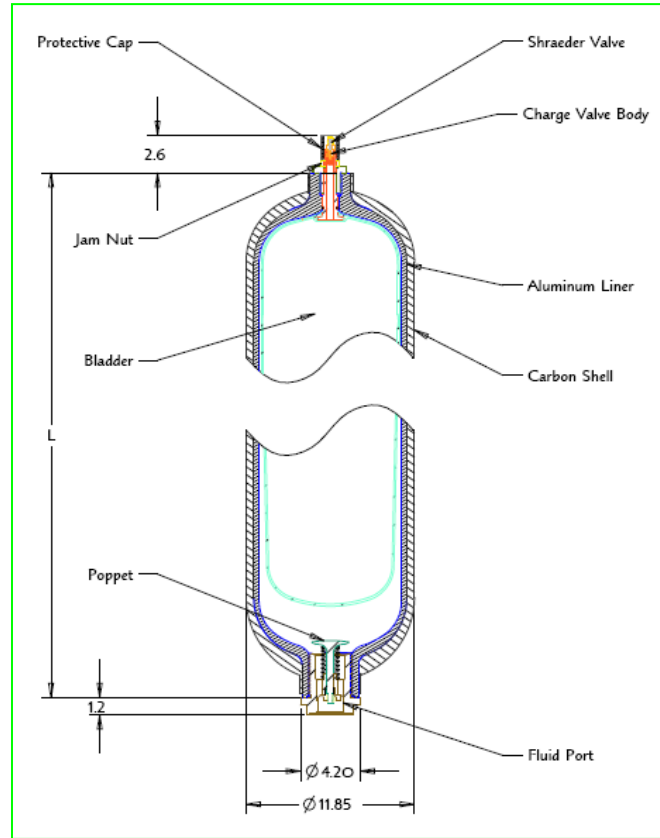


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### GENERAL SPECIFICATIONS

- Type 3 Tank
- 6,000 PSI/414 bar operating pressure
- 500,000 cycles between 2,500 and 5,500 PSI/172 and 379 bar
- 22,500 PSI/1,550 bar burst testing, minimum burst pressure: 18,600 PSI/1,282 bar
- 1-7/8 – 24 SAE Female outlet port (other porting options available)
- Poppet anti-extrusion valve
- Bottom-load bladder: Buna-Nitrile (other materials available), 2,000 PSI/138 bar maximum nitrogen charge
- Liner: 6061-T6 Aluminum
- Shell: Carbon and epoxy
- Failure mode: inherent leak-before- burst fatigue failure
- Optimal temperature range: -120 to 185F (-84 to 85C)



### SMART TANK OPTIONS

- Temperature and cycle sensors bonded to aluminum shell
- Strain gauges for monitoring pressure cycles and spikes
- Communication over CAN/WiFi/Bluetooth/Etc.

Volume (Gal)	Volume (Liters)	Empty Weight (Lbs)	Empty Weight (Kg)	Overall Length* (Inch)	Overall Length* (Cm)	Bladder Diameter (Inch)	Bladder Diameter (Cm)	Price
10	37.85	73	33.18	37	93.98	10.00	25.4	Contact Us
15	56.78	99	44.91	51	129.54	10.00	25.4	Contact Us
20	75.71	128	58.06	66	167.64	10.00	25.4	Contact Us
22	83.28	140	63.50	74	187.96	10.00	25.4	Contact Us
25	94.64	156	70.76	81	205.74	10.00	25.4	Contact Us
30	113.56	186	84.37	96	243.84	10.00	25.4	Contact Us

\* Shell length does not include components.

For more information or to place an order call 1-800-223-0740 x 104 or email [bonnie@lightninghybrids.com](mailto:bonnie@lightninghybrids.com)

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