



Family Owned and Operated since 1890!



Sutphen Monarch Chassis

Sutphen Monarch Extreme Duty Chassis

Since 1968, our experience and focus on the fire service has driven Sutphen to build the industry's most Extreme Duty Chassis. Our chassis is designed and built to withstand the most severe firefighting conditions.

From the moment you see our chassis, you know it's a Sutphen, and it's built to last.



Sutphen Chassis Facilities

Hilliard, OH – Cab shell production facility



Urbana, OH – Cab completion production facility



Types of custom chassis

Single Axle



Tandem Axle



Frame Rails

- Standard 3/8" thick double frame rails
 - Rail packages include:
 - Single, Double, and Domex
- Rails are high strength alloy hot rolled structural steel.
- Frame rails, cross member, and suspension hanger holes are laser cut to ensure maximum accuracy.
- Permanently locking Huck Bolts are used on all frame rail components that do not require service.
- Frame rails come standard with a **lifetime warranty**.



Corrosion Prevention

- Rails and rail components are prepped by being bead blasted.
- Followed by a three step coating process to maximize corrosion protection.
 - First coat: Cathacoat 302H
 - Two component, reinforced inorganic Zinc-rich primer. The Zinc acts as a sacrificial anode.
 - Second coat: Devran 201H
 - Chemically cured, rust inhibitive epoxy primer. This application is excellent for adhesion and corrosion resistance.
 - Third coat: Dupont Imron Elite 6461
 - Two component, high performance topcoat designed for durability.

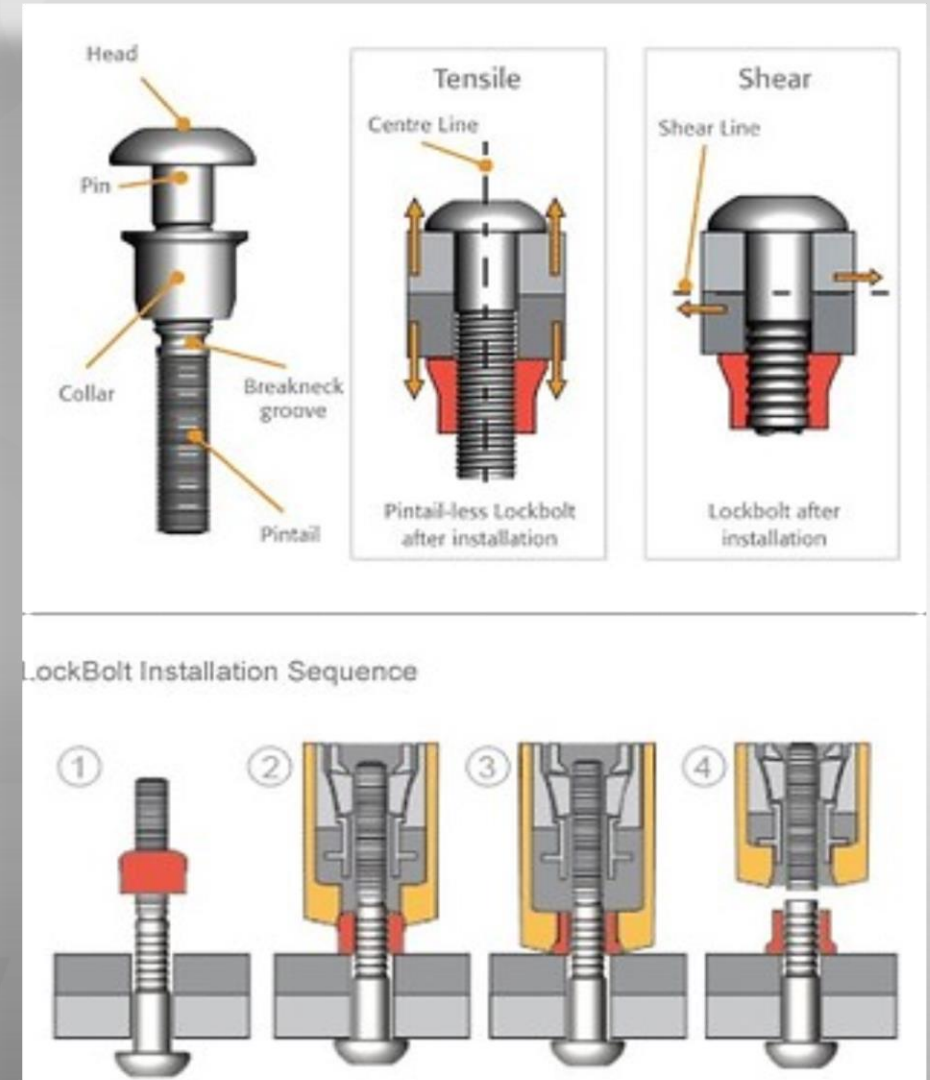
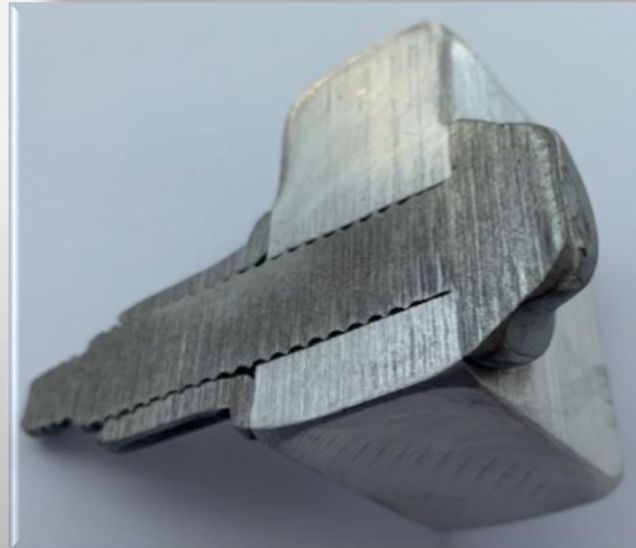


Frame Rail Huck Bolts

- Components that are permanently fastened to the chassis are secured with grade 8 Huck Bolts

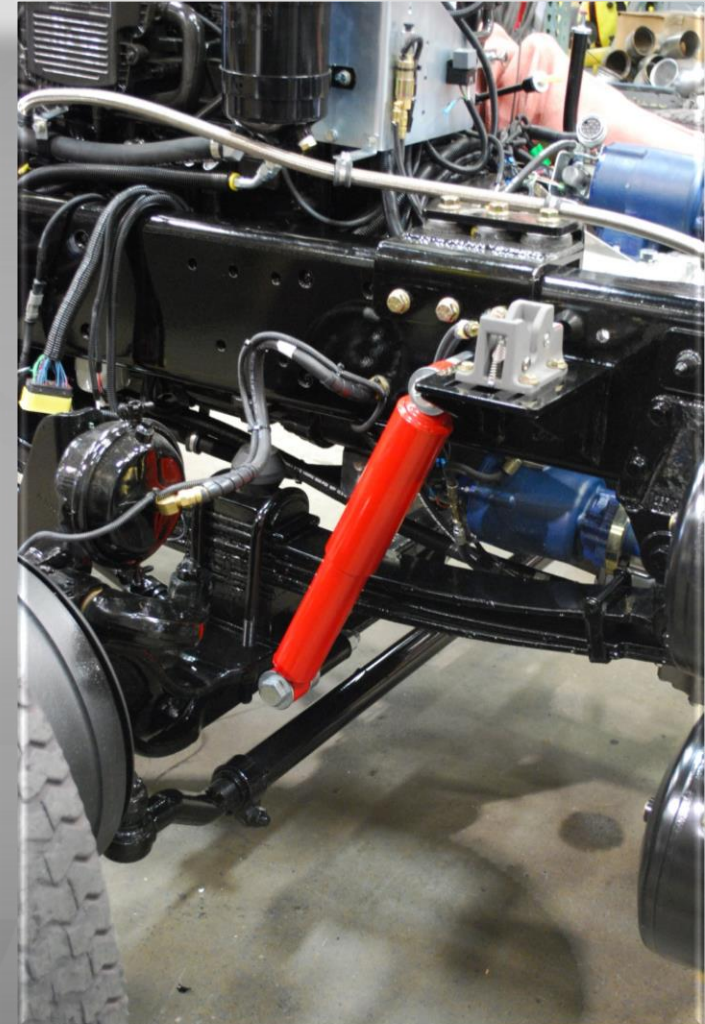
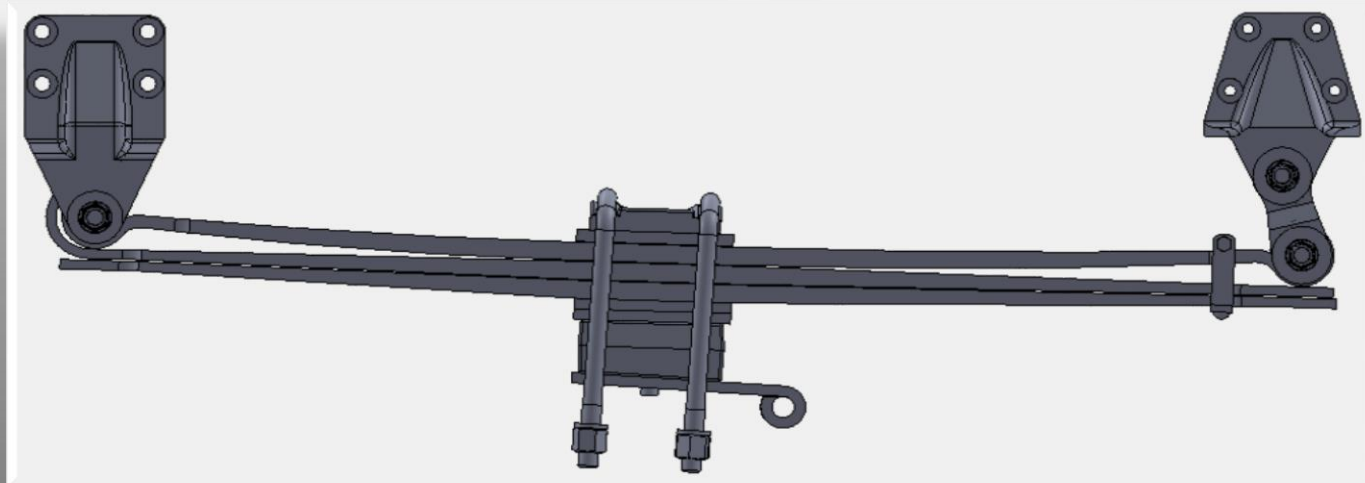
Benefits of Huck bolt fastening:

- One time installation, meaning no need to retighten or torque
- Replaces bolting and welding, meaning consistent accurate application every time
- Vibration resistant



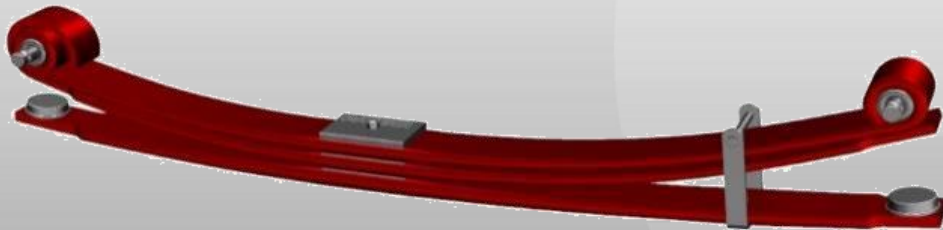
Front Suspension

- Parabolic taper-leaf spring design
- Ride Tech auxiliary spring system with Koni shocks. This allows for a superior ride.
- Long-life maintenance-free bushings and hardware
- Cast steel spring hangers
- Huck Bolt installed
- Meritor system available from 18-23k lbs.



Front Suspension Continued...

- Hendrickson Steertek NXT front suspension has a parabolic taper-leaf spring design
- Improved ride and handling
- Tight turning radius
- Steertek design competes with IFS(Independent Front Suspension)
 - Comparable ride quality
 - Service friendly
 - No ball joints that require inspection
 - No expensive torsion bars springs
 - Better tire wear
 - Better value
- Hendrickson Steertek available from 18-23k lbs.

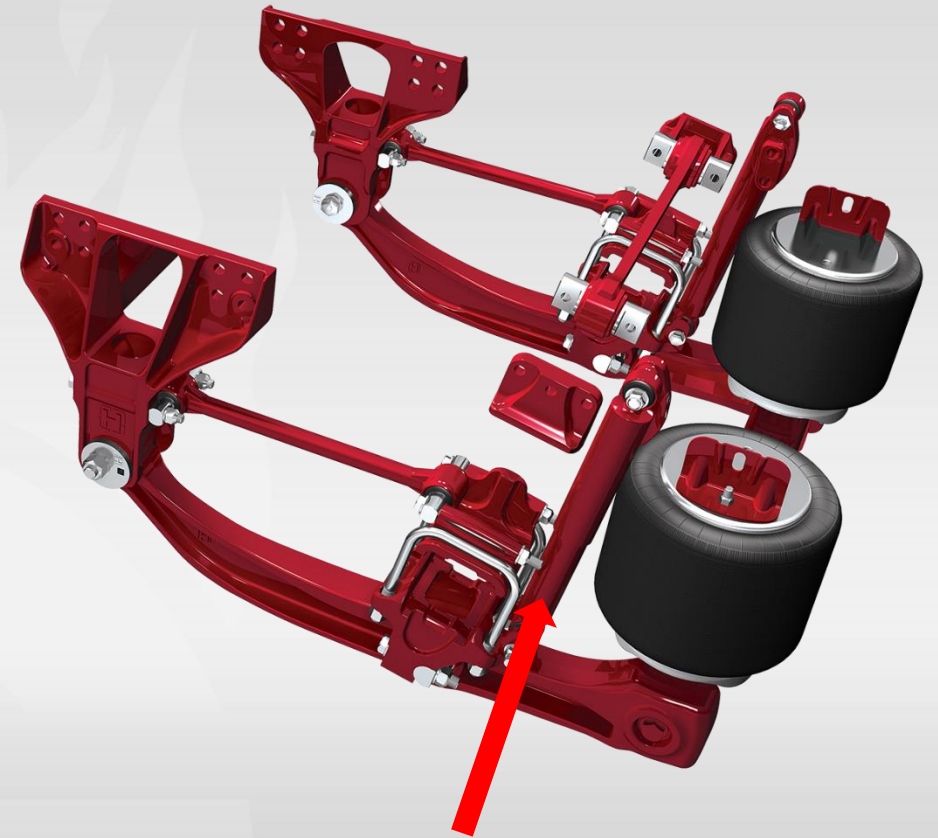
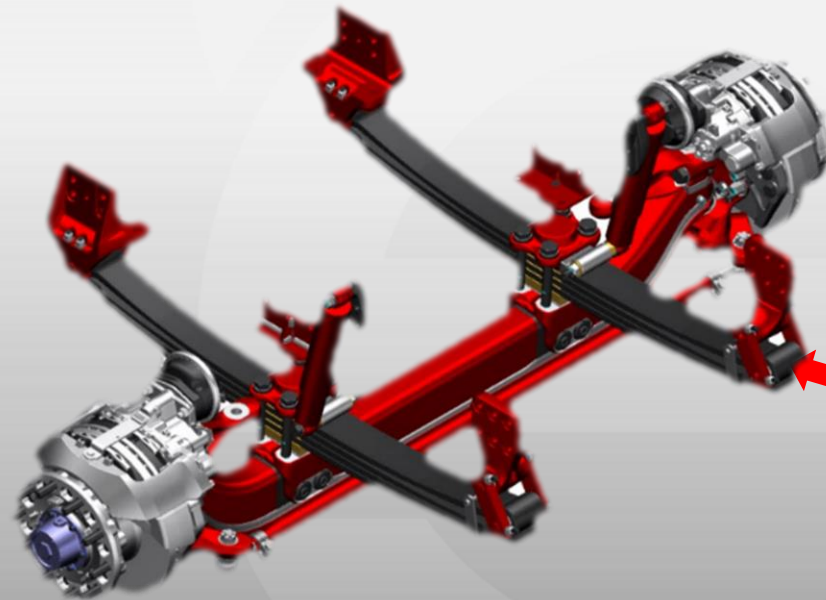


Rear Suspension Options

- Hendrickson Firemaax Leaf
- Reyco Leaf
- Link Air Ride
- Hendrickson Firemaax Air Ride

*Hendrickson Firemaax Leaf suspension offered as standard

*Firemaax rear air ride is recommended when selecting Hendrickson Steertek.



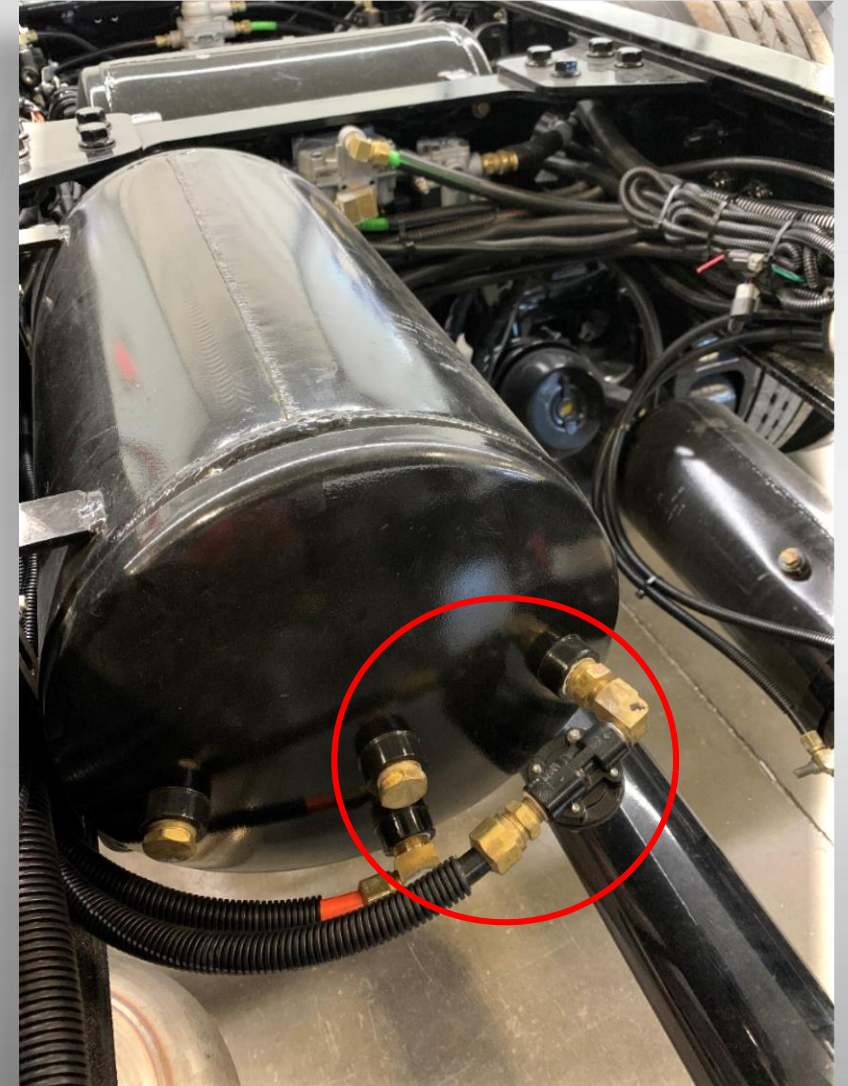
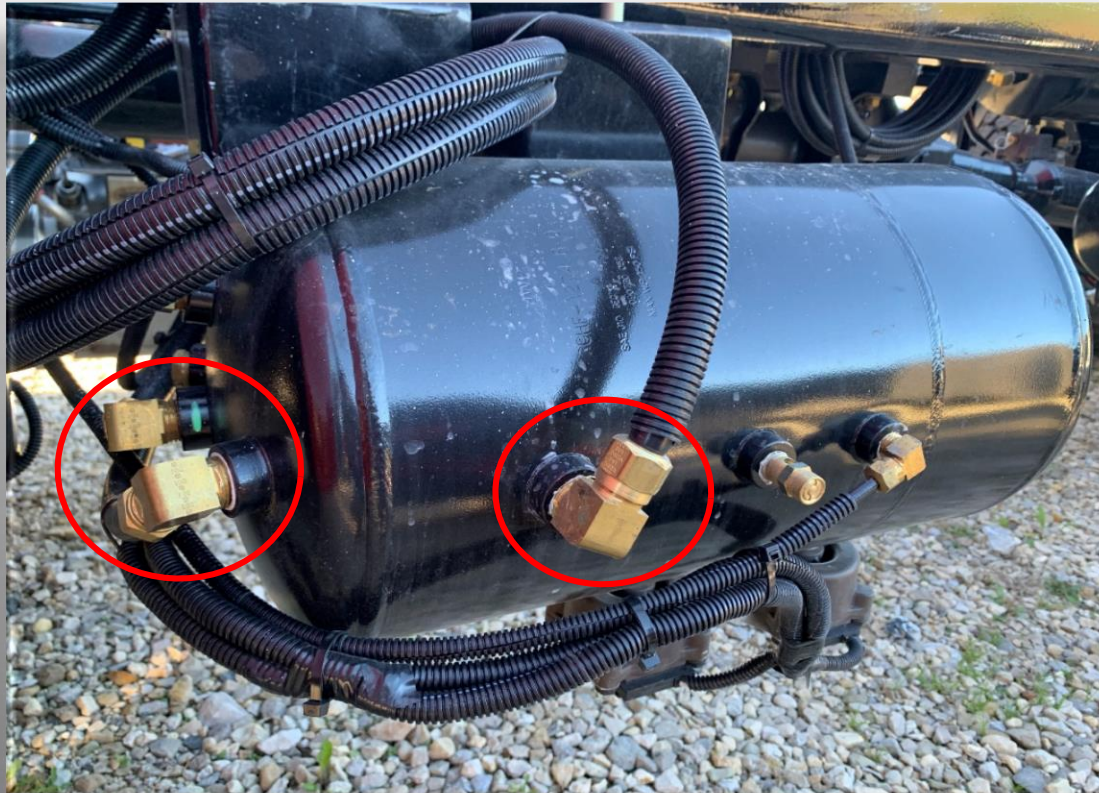
Hendrickson Firemaax Air Ride

Hendrickson Firemaax Leaf



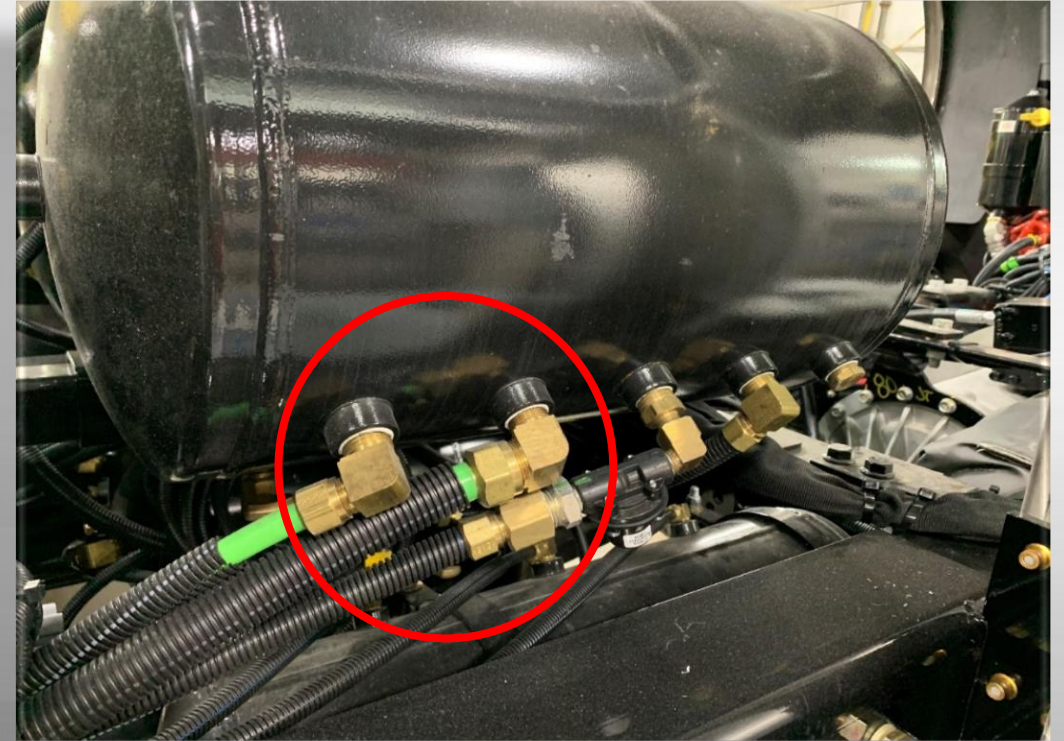
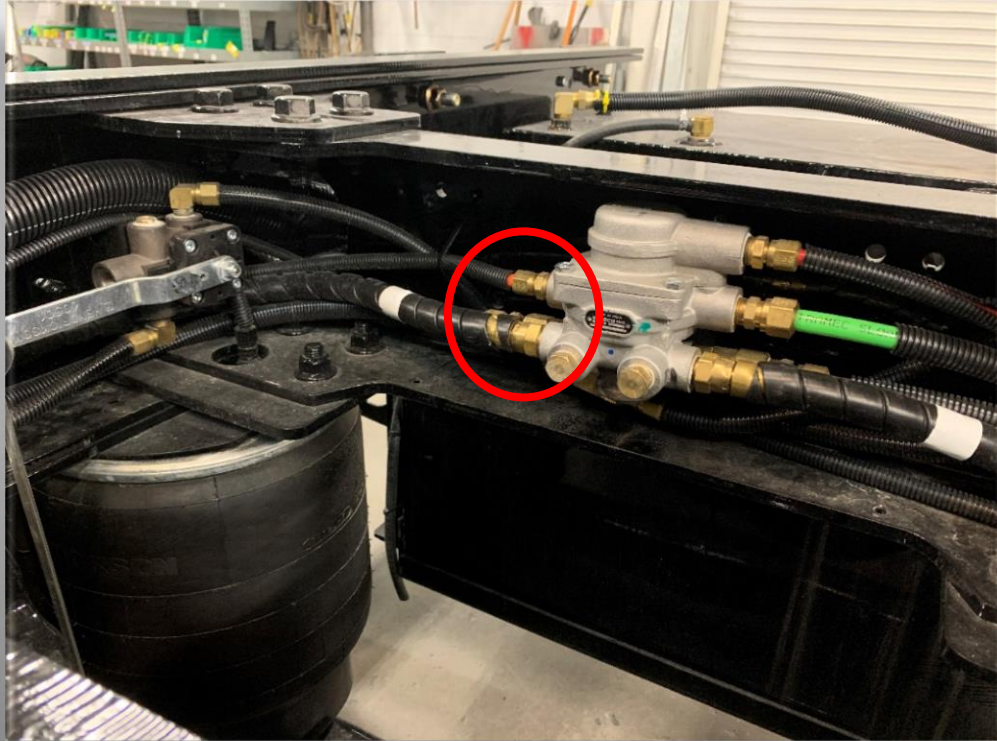
Air Brake System

- Brake options are S-Cam or Disc
- Air brake and accessory harnesses are protected with check valves
- Brake lines are secured every 12"-24" above the frame rail are color coded with loom to protect them from damage.



Air Brake Fittings

- Sutphen utilizes brass compression fittings instead of push style fittings. Compression fittings allow for a greater tolerance to heat, and significantly reduces air leaks.



Engine and Transmission Options

Cummins L9 – 350, 400, 450hp
X12 – 455 & 500hp
X15 – 600hp

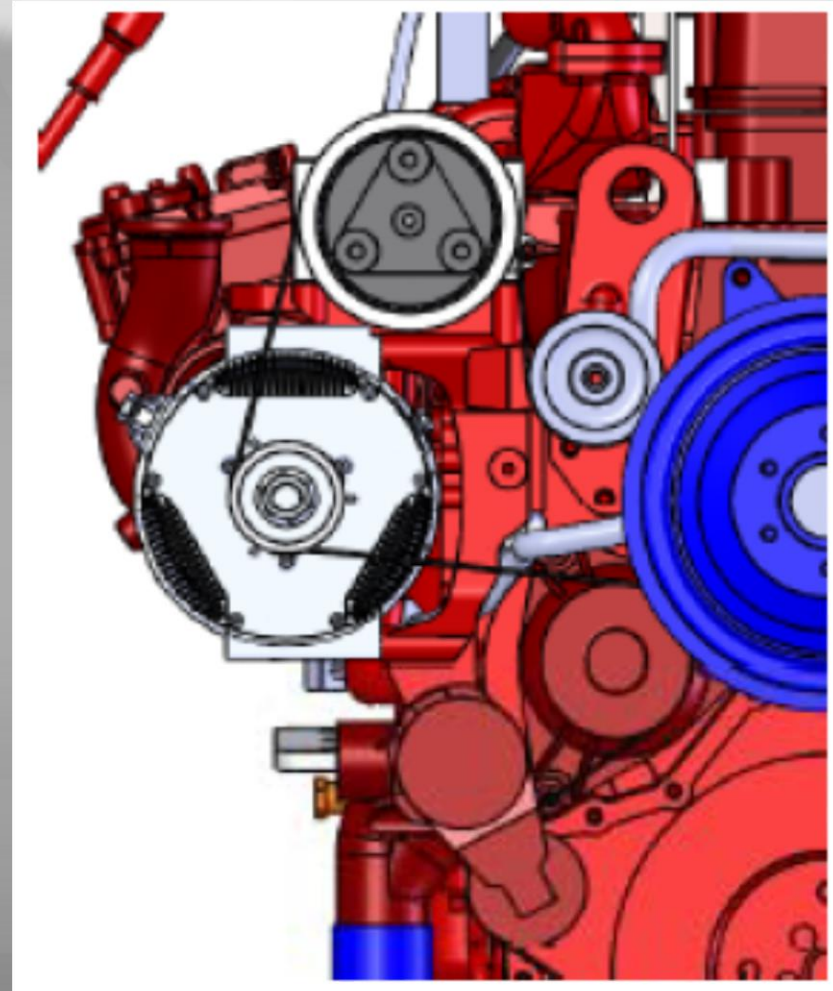


Allison Gen5 EVS3000/3000R
EVS4000/4000R
EVS4500/4500R



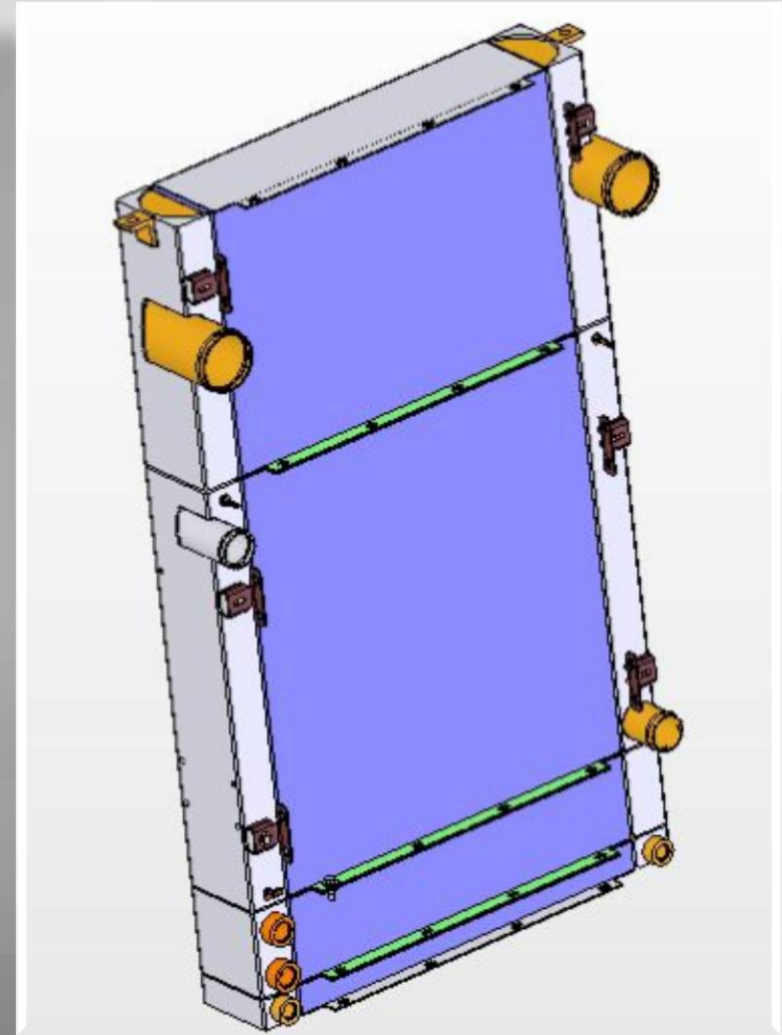
Alternator Options

- All Cummins engines are paired with a Leece Neville, CE Neihoff, or Delco Remy.
- Alternator options range from 270-430amp, as well a 270amp dual offering.
- Sutphen offers a comprehensive range of alternators to service all types of apparatus in the fire service industry.



Radiator

- All extruded aluminum radiator for maximum rigidity
- Modular design allows for individual component replacement
- The (4) sections consist of:
 - Charged air cooler
 - Engine water jacket
 - Transmission cooler
 - Power steering/fuel cooler



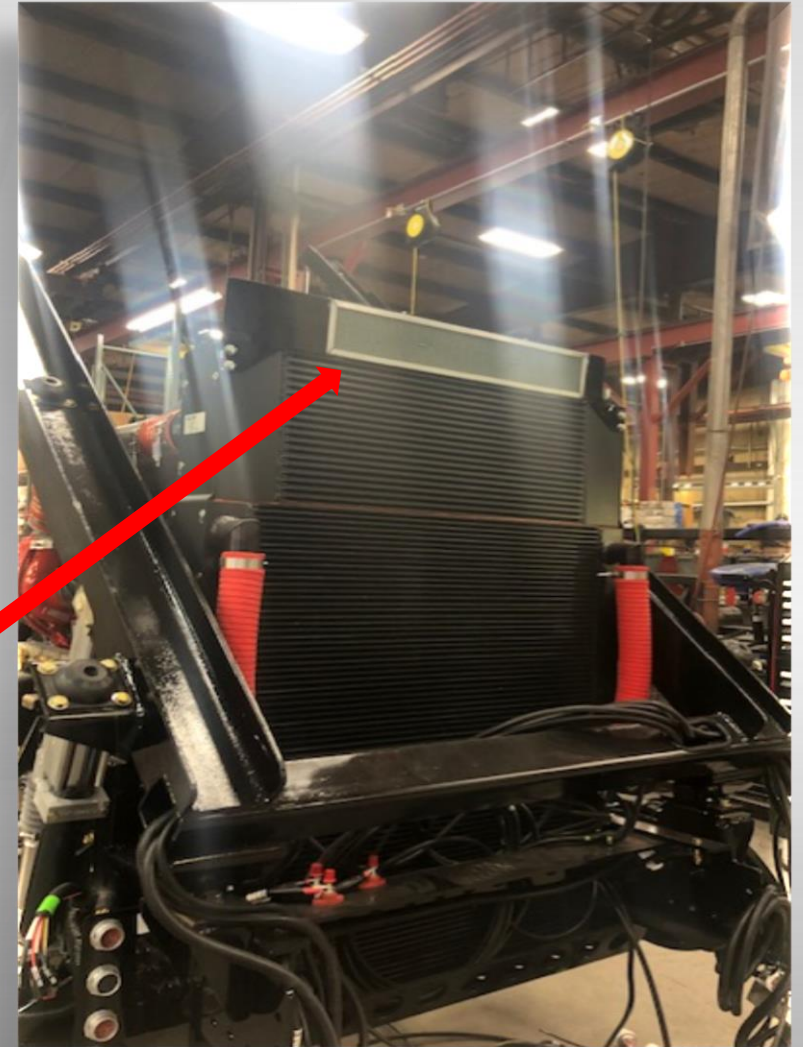
Engine Air Cleaner System/Clutch Fan

- Air is pulled over the cooling package to provide direct flow
- Intake is 48" above ground level to allow forging deep water
- New standard clutch fans to increase efficiency and reduce noise
- 2-speed fan clutch for L9 engines
- Variable speed clutch for X12 & X15 engines



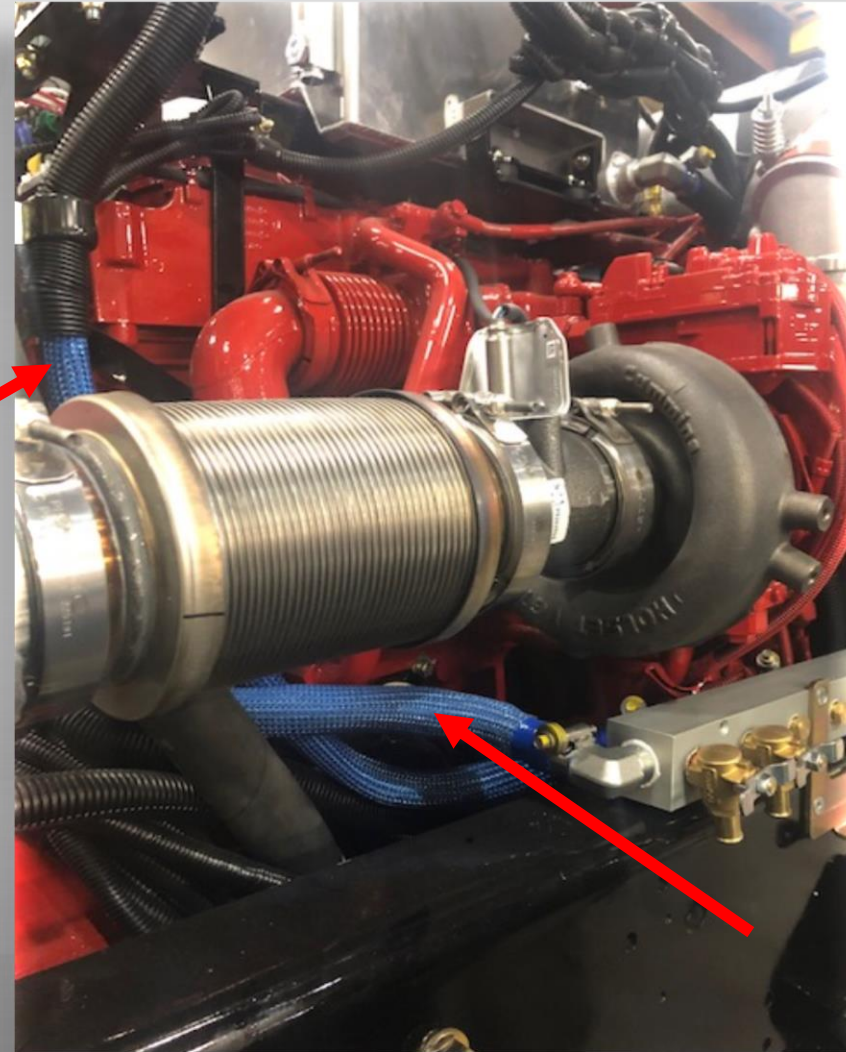
Fan Clutch

Air Intake



Pyrotherm Insulation

- Pyrotherm insulation sleeves for silicone hoses in high temperature areas.
- This allows for operating temperatures from -95 to +1,000 degrees F



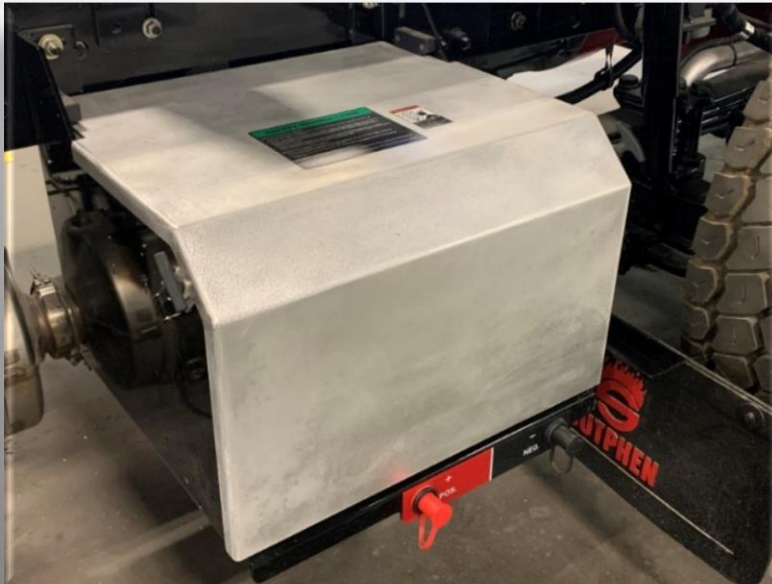
Exhaust System

- Clean exhaust system exceeds ISO 5011 standards for cleanliness and dirt holding capacity.
- Exhaust piping is stainless steel.
- Exhaust comes standard with a fully wrapped heat shield sleeve to reduce heat reduction.



Battery System

- Battery box constructed from 304 stainless steel
- Removable aluminum battery box lid
- Box is light and durable and designed to prevent dirt, debris, and moisture from entering
- New improved design to allow for ease of service, terminals arranged to allow for simple removal



Battery box with point to point electrical system

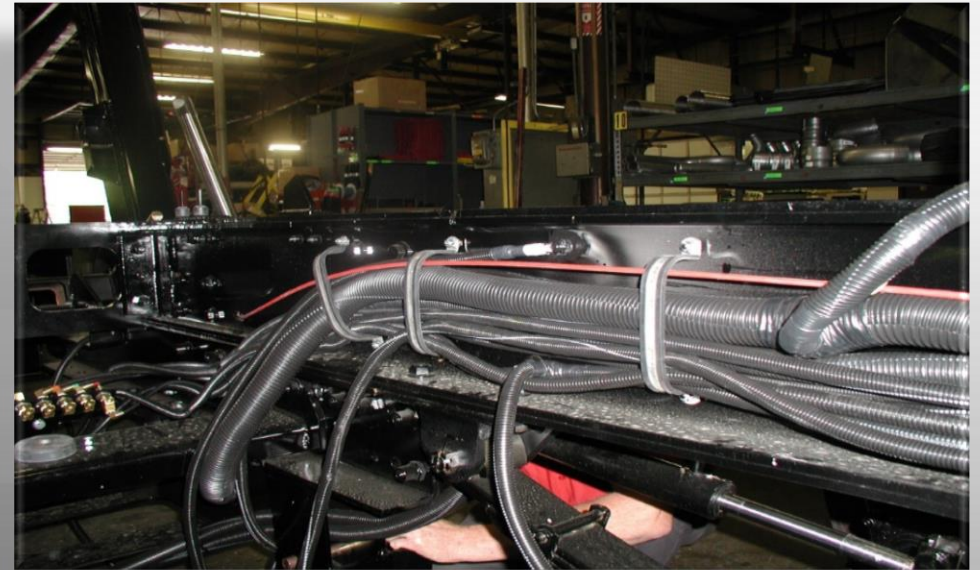
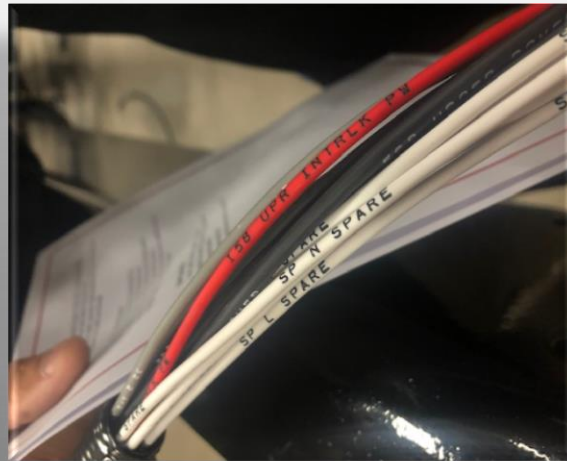
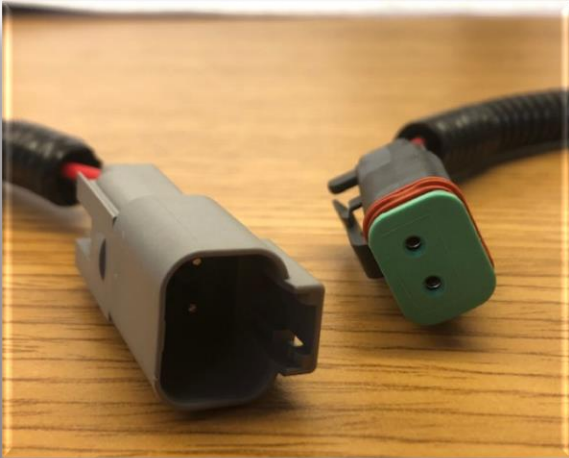


*Newly improved battery set up makes it much easier to replace batteries



Electrical System

- Electrical harnesses are covered in heavy temperature loom, and secured to the frame rail every 12"-24". This protects the harnesses from damage and debris.
- To ensure maximum quality, Deutsch weatherproof connectors are used wherever possible.
- All wiring is coded and labeled every 3" with wire number and function using GXL high heat rated wiring.
- Ground studs are placed throughout the frame, cab, pump module, and body to eliminate electrical issues.



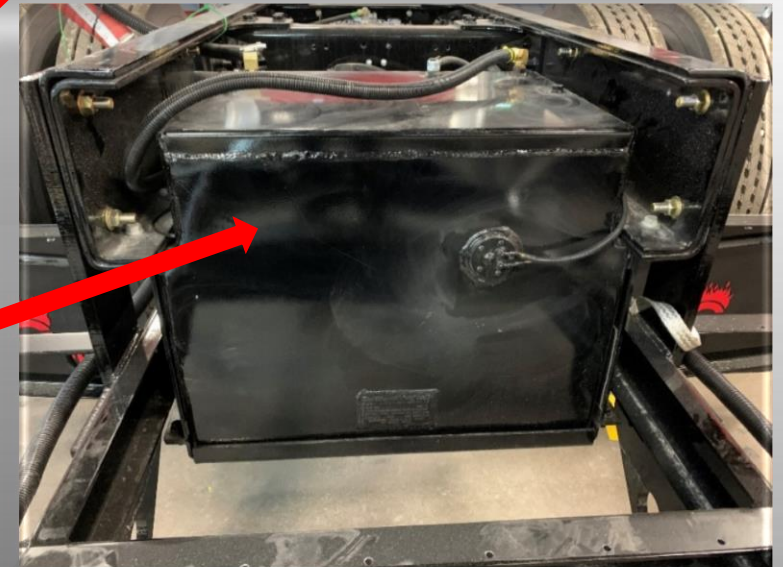
Fuel Tank

- Steel and Stainless Steel fuel tanks available
- Standard steel 65 gallon tank, with optional 100 gallon tank, 100 gallon tanks available on custom pumpers/tankers
- Fuel tank, hoses, and fittings are capable of accommodating Biodiesel fuel up to B20
- All tanks are coated with Corsol Corrosion Solution for extreme coverage protection, then top coated with Axalta paint
- Newly designed easy open fuel cap and ½" vent hose to which improves air flow out of the tank



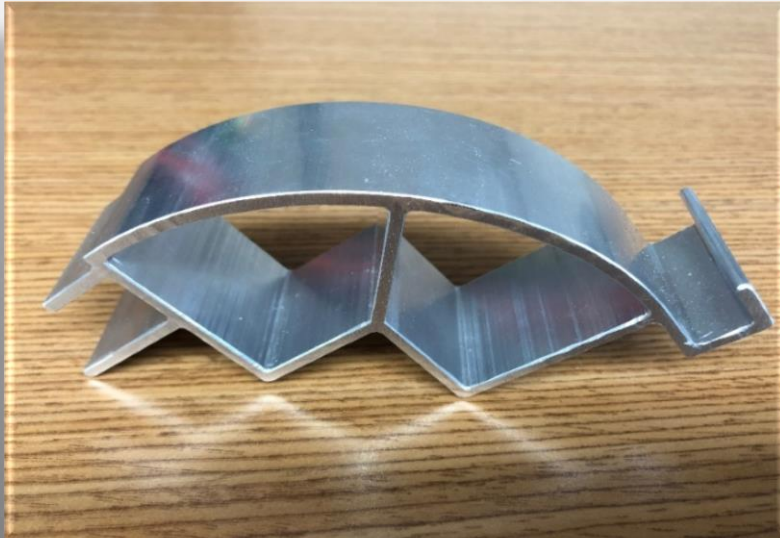
Aerial 65
gallon tank

Pumper 65
gallon tank



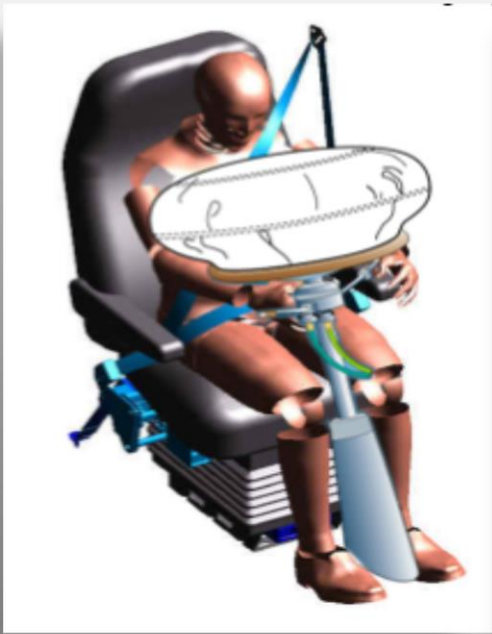
Cab Material and Design

- Heavy wall 6061-T6 Extruded Aluminum
- 5052-H32 Aluminum sheet panels
- Roll cage design for increased safety to occupants
- Double wall front cab for maximum protection
- Bowed roof design to maximize drainage
- Standard integrated drip rail



Cab Crash Testing

- Cabs have past all regulatory cab crash testing
- Meets ASME and ECE requirements
- Rolltek side curtain air bags available
- Frontal air bags available, Includes:
 - Steering wheel air bag
 - Passenger side knee air bag curtain



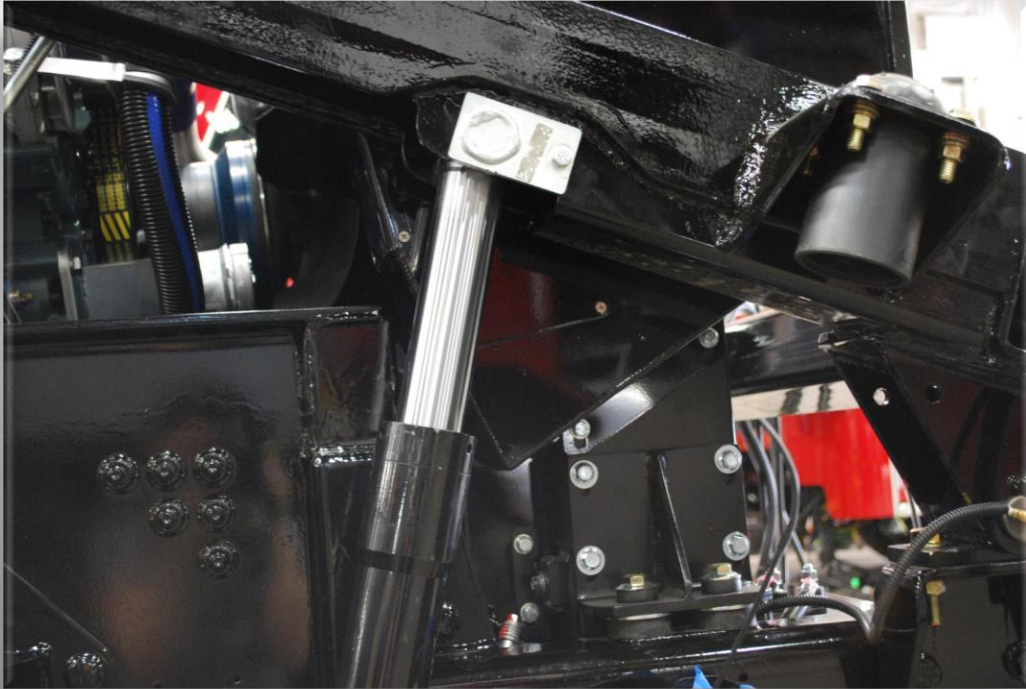
Cab Sub-Frame Lift System

- Structural steel beams joined to a 4" heavy wall square tube.
- Heavy duty cab sub-frame, connecting the hydraulic lifting cylinders, cab pivots, and cab safety lock.
- (6) isolators secure the cab to the tilt sub-frame while providing vibration and shock dampening.
- This unique design prevents the lifting cylinders from directly connecting to the cab.
- The cab sub-frame and the isolators significantly increase the cab stability and reduce the twist/torsion to the cab.



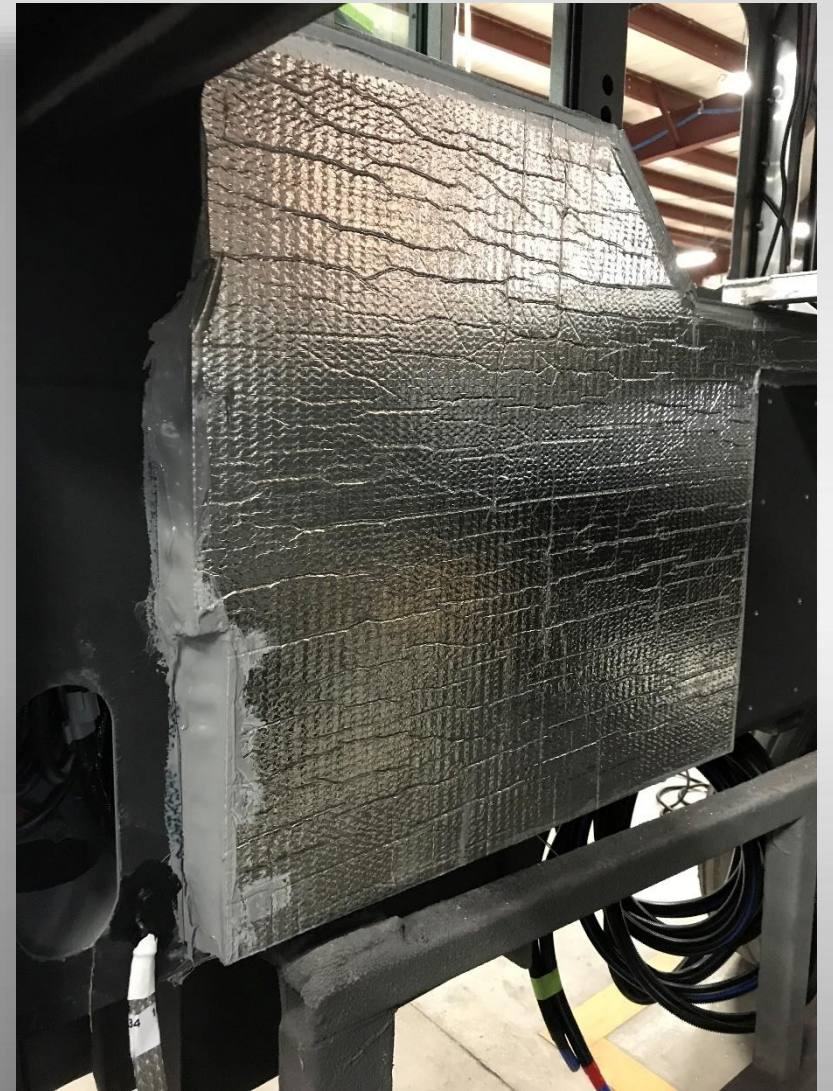
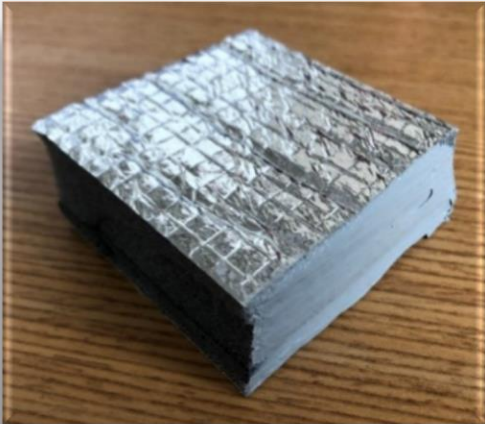
Cab Tilt Features

- Cab has heavy-duty cab lift cylinders. Cylinders are attached to a steel frame and that frame is attached to the truck frame. This allows for maximum stability when the cab is tilted.
- Pressure tested cab tilt/lock hoses.
- Brass toggle style switch w/compression fittings on the cab lock.



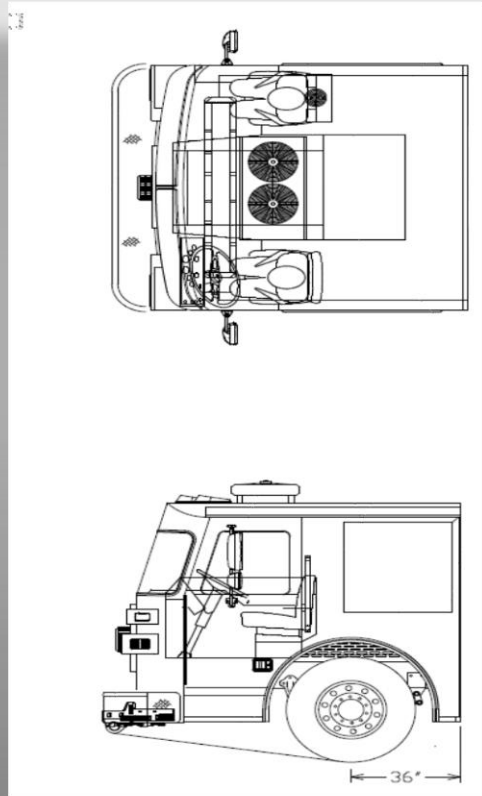
Cab Engine Enclosure Insulation

- Cab underside is installed with a 1' thick layer of insulation, with a 1/8" sound deadening material in the middle.
- Insulation ends includes a waterproof sealant. Most competitors do not use sealant on the ends of their insulation allowing for it to destruct over time.

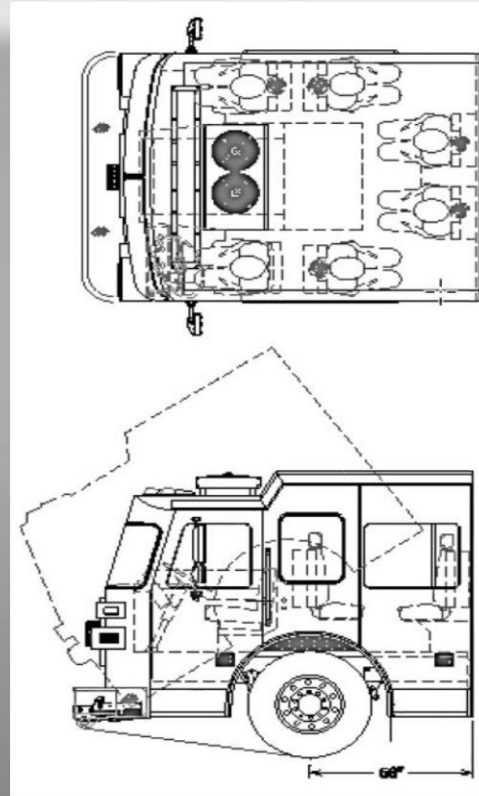


Cab Size Options

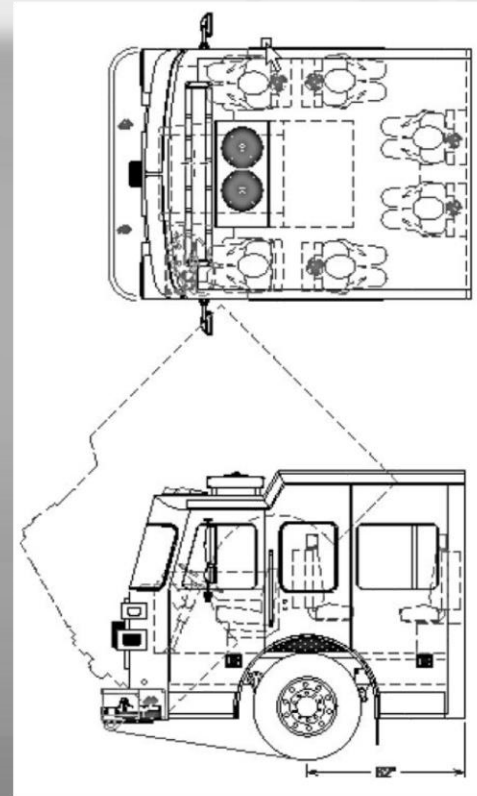
36" Cab



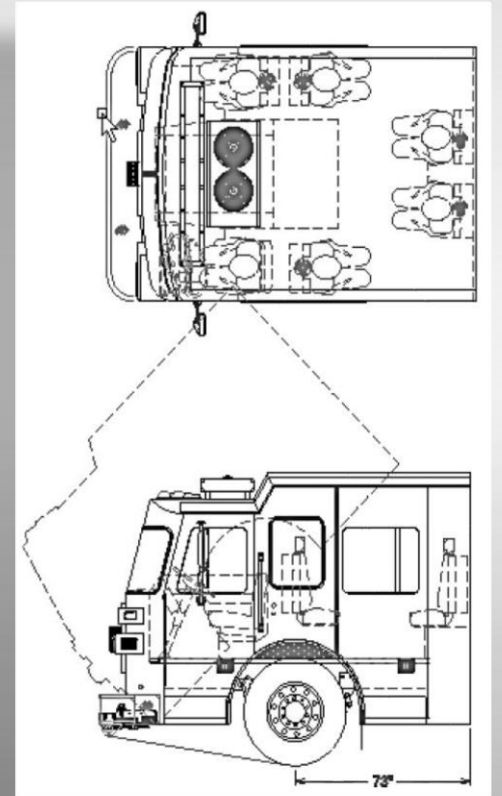
56" Cab



62" Cab



73" Cab



Cab Roof Options

Flat Roof



15" Raised Roof



10" Raised Roof



20" Raised Roof



Cab Defrost System

- The heater/defroster covers the entire width of the cab, Edge to Edge. Which allows for maximum visibility for the driver and officer.



Cab Interior AC

- AC controls conveniently located above the driver seat for easy access.
- New AC to face design that allows for controlled cooling

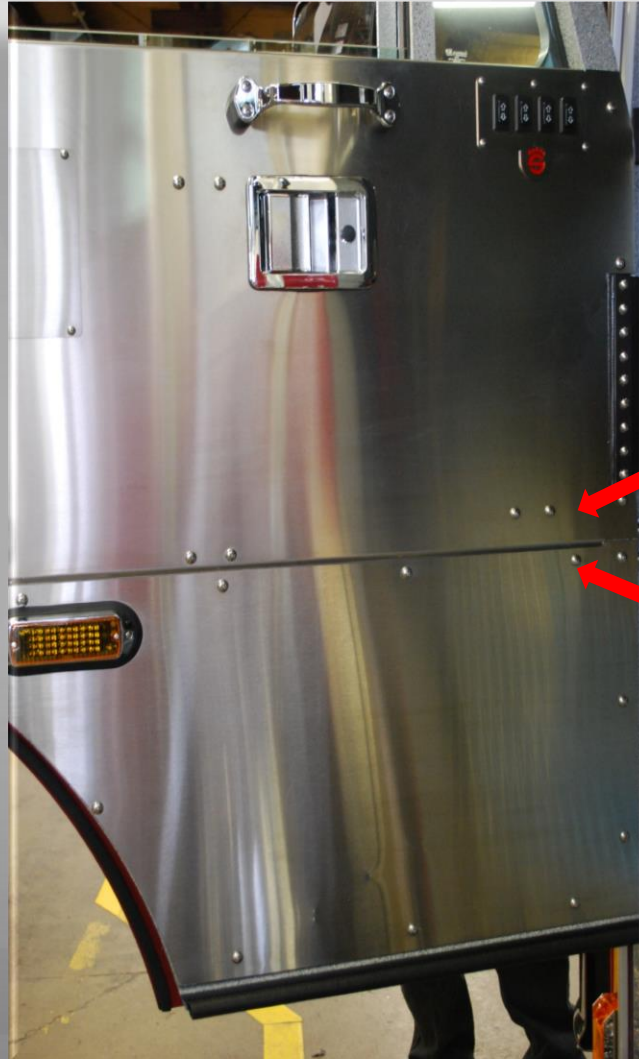


Cab Interior Door

Pre-treated bolts:

- Nylon coated back side
- Threadlocker on the threads

Corrosion Prevention is implemented on every detail of the truck.



Cab Exterior



Standard Material 14GA Stainless Steel
*Note, Most competitors use plastic which
compromises strength and stability



Cab Headlights



Headlights with Dual Headlights



Headlights with Single Headlights



Headlights with Combo Housing



Rear Cab Compartments Options

38" High



60" High



80" High



*Clean Cab Slide Out Options Available with 38" high compartment



Upper Grille Options

L9 Level Style Facade



L9 Tubular Style



X12/X15 Level Style



L9 American Flag Style Style



L9 American Flag Tubular Style



X12/X15 American Flag Level Style



Note, the Q siren in the grille is a Sutphen signature



Lower Grille Options

- Lower grille feature is available with a custom laser engraved design with backlighting.



Laser cut with backlighting

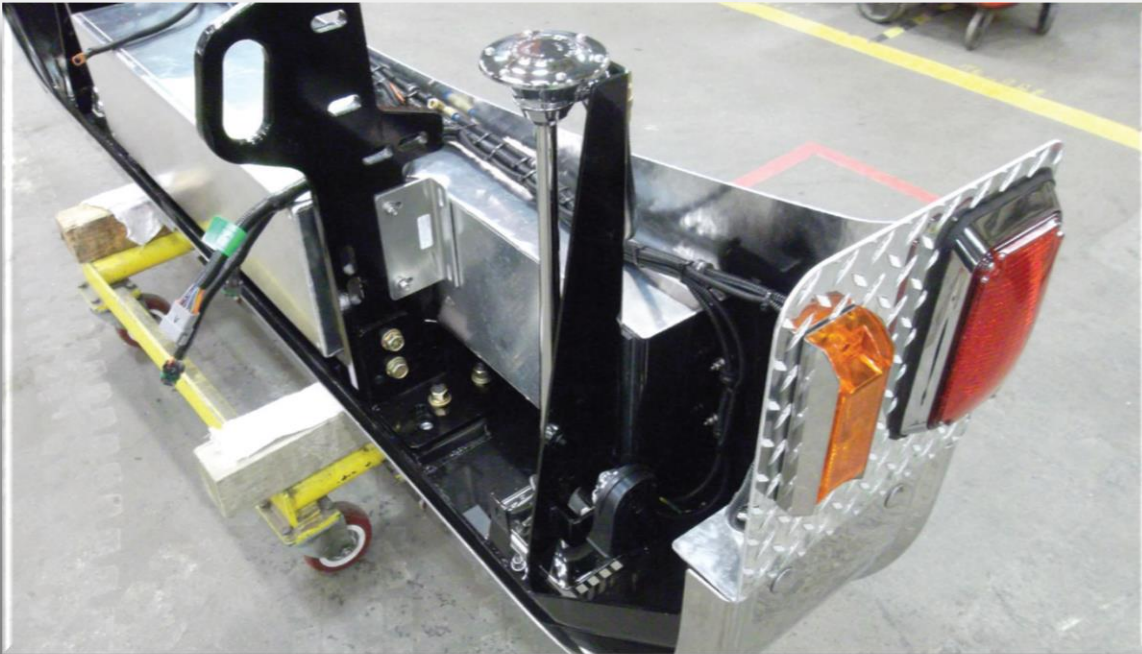


Laser cut without backlighting



Front Bumper Options

- All bumpers are reinforced with a ¼" steel plate for added crash protection
- Heavy duty Stainless steel or ¼" Formed steel
- Lengths – 6", 12", 18", 24", 30" Rescue Style
- Trough lids available in 2", 4", and 6"



Cab Exterior Grab Handles

- Standard innovative single piece stainless steel grab handles that will not corrode.
- Other manufacturers provide three piece grab handles allowing for moisture and debris. This causes them to be more prone to corrosion which leads to grab rail breaking.
- Another feature specifically to Sutphen are integrated coat hooks to the grab handles.



Thank you!!!





SUTPHEN

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