FRM’s chassis construction and pressurized tubes are both very powerful selling features throughout our product line that should be discussed with each potential customer. FRM chassis construction is unmatched by any other manufacturers and the standard pressurized tubes are unique to the pontoon industry. The description of each of these features follow and should assist you with getting the message across to the buying consumer of how important these two components are when making a decision to purchase a new pontoon.

FRM Chassis Construction Features

FRM Chassis construction is unmatched by other pontoon manufacturers. FRM produces the most dependable pontoon platform available providing extraordinary strength and performance in all conditions.

All FRM chassis are constructed with 16” or less on center cross members throughout the chassis framework. This 16” on center construction is unlike many other builders who continue producing chassis built on 24” center cross members. Examples all Bennington S-Series models & Godfrey Sweetwater models.

Each FRM chassis is constructed on with 16” on center cross member application regardless of the FRM tier of the pontoon. 200, 500, 700 all chassis are constructed in this manner.

The pressurized tubes have welded risers attached to support the 16” on center cross members. The outer tubes one piece continuous riser is welded in place for additional strength. This eliminates the need for a riveted cover piece to hide the segmented risers used by other manufactures giving FRM an extremely well finished exterior appearance as well as adding a very rigid connection point for the floor supports.

The transom area or the last 4 feet of the chassis where the motor is mounted is constructed of welded 2” .125 extruded structural tubing which has 4 vertical walls integrated into its design. This unique transom area design gives unsurpassed strength in the motor mounting area. This 2” .125 extruded tubing eliminates the chance for any deck flexing caused by high HP engine torque. This FRM structural feature using 2”.125 quad tubing is unmatched by other chassis builders.
Most manufacturers continue to use c-channel construction in the transom or motor area of their chassis which gives only one vertical support per c-channel cross member. The 2”.125 extruded triple box tubing used by FRM gives up to 4 vertical supports per cross member—easily more than doubling the vertical strength of the common c-channel application.

The 2”.125 square extrusions is utilized along the chassis where any decking seams occur. When the 7 ply 3/4” Marine Grade XL pressure treated, flooring is attached to the cross members it is always joined at a 2”.125 extruded square box tubing cross member, not attached to a c-channel cross member. Again, a square has 2 vertical supports, and provides a structural part that resists twisting common in c-channel applications.

Before joining the pressure treated decking material to the 2”.125 square box cross members an adhesive glue material is applied to each cross member. This adhesive material assures that the decking material will adhere to the cross member before permanent fixtures are attached. The application of attaching the pressure treated decking to the cross members is by two methods. One being the use of through bolting around the outer radius of the deck in numerous places, and the use of 2” stainless steel screws along both seams of the joining ¾” pressure treated decking. The 2” stainless steel screws are applied every 16” on both sides of the joining seam of the decking material. These screws penetrate the ¾” decking, adhesive glue compound, and securely join into the 2”.125 cross member. The application of using stainless steel screws along with adhesive when decking a floor gives numerous contact points throughout the seam. Other manufactures use a through bolting method that is faster to apply with many less fasteners to make contact with the cross member. The through bolting method increases the distance between contact points on the joining seam, and other manufactures will use a sealant, but not an adhesive based glue, and usually only at the butt seams of the decking. FRM applies adhesive to every cross member during its chassis assembly process. The more contact with cross member created by our fasteners make a stronger floor to chassis application. Stainless steel screw construction along with adhesives has built long haul tractor trailers and numerous airplanes this method is proven over time. These same chassis construction features were used on the FRM South Bay pontoon that holds the World Record of 114 MPH for a pontoon; it can be viewed on You-Tube.
200 Series Chassis constructed on 16” centers or less creating a chassis that is built for durability and performance.

Triple reinforced bow cross members constructed with 2” .125 extruded square box tubing creates a bow area that is extremely well reinforced.

200 Series 3.0 chassis stern motor area that shows the entire area constructed with 2” extruded square box materials creating a transom that can handle the torque of high HP engines.
6" tall vertical welded riser helps to add support strength to each of the cross members and creates an extremely well completed finished appearance.

A view of two cross members that shows 6 vertical supports that will give three times the structural support that two C-Channel cross members would provide.

These two photos show the application of the black glue adhesive that is applied to each and every cross member and not just the decking seam members.
These two photos show the ¾” 7 ply pressure treated marine decking being attached to the 2” square box tubing with 2” long stainless steel screws. Notice that each screw is located directly across the seam from one another. Two sets of screws are applied every 12” along the entire seam with the added adhesive glue creating a permanent bond to the cross member.

The mechanical process of drilling the decking screws into the cross members and the final sanding of the decking joint seam to create a tight no void seam.

A completed seam free floor that has been coated with a vinyl adhesive ready for one of several vinyl flooring choices offered.
Pressurized Tubes

FRM features standard pressurized tubes with Schrader valves and drain plugs. All tubes are pressurized with approximately 4 psi and have drain plugs located at the transom end of each tube.

Selling advantages of the FRM pressurized tube.

1) No other manufacture has this feature on their tubes because of the added cost of materials and labor time.

2) Pressurized tubes assures both the dealership and purchasing consumer that each tube was welded properly and was pressure tested without any leaks before leaving the factory or the showroom.

3) The Schrader valves located in each tube gives the consumer the ability to test the tubes pressure to assure that no leaks have occurred. This should give the owner peace of mind after purchasing to eliminate any concerns about the tubes integrity for years to come. Just press the stem on the Schrader valve to hear or feel the pressurized air.

4) The added internal air pressure of approximately 4 psi to each tube gives additional structural strength by creating a more rigid and stronger tube. An example of this application would be removing the cap off of a two-liter plastic bottle and squeezing the bottle. The unsealed bottle will collapse with very little pressure applied but with the added 4 psi of air inside and the cap on the bottle it becomes a much stronger application.

This added air pressure gives strength to help eliminate any possible tube distortion that could be caused by temperature or barometric changes, but the real advantage is at high speed or quick turns it reduces the chance of tubes buckling or collapsing under huge pressures. The pressurized tube concept also helps to eliminate the possibility of moisture accumulating inside the tube unlike other manufactures.

5) FRM tube construction consists of welded baffles inside of each tube with the number of baffles in each tube determined by tube length. These baffles are welded completely around on the inside of the tube for structural strength except for a small hole at the bottom of each baffle. This small hole allows the entire tube to be pressurized and would also allow any water that accumulated inside the tube to drain towards the drain plug at the tubes end if damaged had occurred. This is unlike other manufactures who weld their baffles completely closed with no drain plugs at the tubes end. This type of construction with completely welded baffles requires venting to the atmosphere in each tube section through a vent plug located on top of
the tube. This vented plug allows moist air to enter into the tube and create water accumulation inside the tube. Creating air chambers with no drain plugs is significantly less reliable if pontoon damage occurs and costlier when welding repairs are made.

Example if a punctured pressurized tube began to take on water, only a small amount of water will distribute evenly along the entire tube bottom before covering the holes in place for draining and pressurizing. The trapped air inside each tube section due to our pontoons being completely sealed on top limits the amount of water entering the tube by creating an internal air pocket in every section. Try turning a cup upside down in a sink of water the air trapped in the cup won’t allow the cup to totally fill with water and go to the bottom. The other manufactures construction methods of sealing these chambered areas everywhere except the very top guarantee water intrusion almost immediately. This water intrusion will happen when the vented plugs located on the top of their tubes open up to allow air out and the water to flow in. These plugs located on top of each chamber must be installed and allowed to (breath) to prevent their tubes from collapsing from temperature and barometric changes. Ask any marine service manager if he would prefer to work on a damaged chambered sealed tube or a completely pressurized tube application. The pressurized tube has a drain plug that can be removed to allow any accumulation of water inside the tube to drain out without drilling or cutting holes in the tube to remove the water before repairs are made. The availability to use the Shrader valves on FRM products makes locating small leaks easy but also assures that all leaks are repaired properly by checking for a constant pressure inside the tube.

Drain plug located at the transom end of each tube. Notice the welded full length keel that is attached to all FRM pontoons.

Pressure testing each tube for possible weld leaks before going to assembly.
Optional rough water wave deflectors. Extremely rigid cone shaped and triple welded.

These longer nose cones give better performance for a smooth entry into any type of rough water delivering a comfortable and safe ride.

FRM’s Standard double welded reinforced wave deflectors.

52” Welded canoe style Nose Cone constructed with .090 materials.
Example of the heavy duty lifting strakes that are used on all of the FRM triple tube chassis. They are engineered to provide each triple tube package with the optimum handling and performance characteristics.

Anode or transducer mounting bracket is a standard feature. The salt water pkg. has brackets included on both outer tubes.

The pictured pressure release plug is the type of plug that is used when pontoon manufacturers build completely welded baffled tubes creating chambers. This is the plug on top of the tube that releases air to let water enter the cavity.
Transom Construction

The final item that should be scrutinized when making the purchase of your new pontoon is the integrity of the engine mounting assembly. FRM combines a wood free assembly with a very heavy .188” transom plates inside and out, with aluminum bars to maintain specified thickness for all outboard engine manufacturers, as well as, pre-drilled for ease of rigging. This completes a transom constructed of .188” aluminum thickness. FRM also integrates our fuel systems into the engine area, creating a better balance, as well as, adding to the interior space of the boat. Top of the line models also include a sealed transom assembly, with welded sleeves inside each motor mount through bolt for trouble and leak free mounting to accommodate the highest horsepower engines available today. Also note that all of FRM’s wiring harnesses are conduit covered throughout with the use of water tight Deutsch connectors.

Each FRM engine transom is pre-drilled at the factory to exact engine manufacturer’s specifications. This process assures that each dealer will have the correct tolerances and easy engine mounting process.

All fuel tanks with the exception of the 3.0+ performance chassis are mounted in the engine area, creating better balance and stability for the pontoon.

The motor pan is constructed with very heavy gauge .188 or 3/16” aluminum, welded inside and out with aluminum bars sandwiched in between. The motor pans are built extra-long in length. This allows for additional through bolting to the chassis cross members creating a stronger application.
This is a view of a 2.75 chassis with the motor pan attached and the fuel tank installed. Notice the 6 through bolted attachments to the cross members with the motor pan. 10 total bolts

FRM wiring harnesses utilize water tight electrical Deutsch connectors assuring that each component is wired properly.

All FRM wiring harnesses are custom matched by length for each pontoon. Each wiring harness is contained inside of a protective conduit casing that protects the wiring from the elements and rodents.
When comparing with Bennington SLX and Sweetwater P

Additional Structural Features offered on the FRM 200 Series Deluxe Model

- Exterior fencing material .040 thicknesses above the industry standard includes adhesive tape strips in the metal to metal contact areas creating a rattle free exterior fencing.
- Pontoon rails extruded .080 thicknesses welded on all 4 sides.
- 25” tubes constructed with .080 materials
- Long 52” Canoe Style Nose Cones constructed with .090 materials, these longer nose cones give better entry into the water along with added performance.
- Full length welded keels are attached to every FRM tube. This feature adds protection to the tube and also gives the pontoon much tighter turning radius.
- Stainless steel rear corner castings and rope cleats.
- Full length stainless steel piano hinge on all gates also includes lift and lock gate features with safety stops.
- Stainless steel heavy duty interior rail supports.
- Stainless steel rimmed cup holders.
- Powder coated seat cushion hinges.
- All Black Out packages use fully Anodized rail material.
- 7 Ply Marine Grade Pressure Treated Decking Material.
- All fiberglass helms / no plastic or roto cast materials used.
- All furniture seat bases constructed with roto cast materials, which have a drainage system incorporated to keep your valuables dry and safe.
- Vinyl Weave Flooring choices are a standard feature.
- Clarion Stereo / Blue Tooth with 4 Kicker speakers
- Tilt Steering
- Raised Exterior Logos
- Stern platform with 4 Step Ladder
- Bimini Tops 10’ Design with trailering struts / Sur Last Material with UV protectant and waterproof treatment
- Play Pen Cover standard / Sur Last Material
- Upholstery NAPA 28 oz. soft touch vinyl matched with high density mildew resistant foams.
- Helm includes woodgrain instrument panel with complete gauge package, 12-volt outlet, and rocker switches.

Available triple tube packages consist of the following:

1) **2.75 Performance Package**: Center sport tube, full aluminum Underdeck Performance Skin, Lifting Strakes on inside of Outer Tubes, Sea star Hydraulic Steering, 27 Gal. Fuel Tank, rated for 200 HP

2) **3.0 Performance Package**: Full Center Tube Lifting Strakes on Both Sides, Full Aluminum Underdeck Performance Skin, Lifting Strakes on Inside of Outer Tubes, Sea star Hydraulic Steering, 37 Gal. Fuel Tank, rated for 250 HP

3) **3.0+ Performance Package**: Full Center Tube, Full Aluminum Underdeck Performance Skin, Large Lifting Strakes on Center Tube & Inside of Outer Tubes, Pad Running Surface, Sea Star Hydraulic Steering W/Power Assist Steering Pump, Sport Ski Tow Bar & 52 Gal. Fuel Tank Power Assist Steering Pump, and Outside Tube Spray Rails, rated for 400 plus HP
When comparing with Bennington SLXP & G – Series Models

These Additional Structural and Standard Features are offered on the FRM’s 500 / STS / S Series Models:

- Large Helm with storage compartment, footrest, and drink holder
- Matte-Finished Mahogany Helm included with flush mount Hummingbird fish finder/depth sounder graph and analog gauges
- Kicker radio with 4-165 watt lighted speakers / MP3 /Bluetooth and USB charging port
- Extended rear platform with 4 step heavy duty stainless steel ladder
- New Generation helm chair aluminum framed low back supports and swing down arms that are powder coated
- Recessed LED docking lights located in the forward fence panels
- Stainless steel cup holders throughout the interior area
- Push button courtesy light located on the helm
- Sur Last 10’ Bimini top with overhead LED light with rail risers and stainless steel quick release hardware
- Standard Sur Last color matched playpen cover with factory installed J Clips
- Radius deck with deck trim, rub rail, and aluminum corner pads
- Tear Drop furniture seating with additional foam package, vinyl wrapped seat bases, and recessed cup holders in the seat backs.
- Entertainment models include 4 - Centric II tall bar chair
- Entertainment models include recessed bar top lighted cup holders
- Entertainment models include a starboard sink cover
- Bi Toon models have underdeck wave shield standard
Bennington Comparisons

The following Bennington comparisons should help to assist when comparing the FRM 200/CTS/C Deluxe series against the Bennington SL / SLX /SLXP models. Most certainly the Bennington chassis and tubes are not up to the strength or standards when compared to FRM’s chassis. When comparing these two featured areas it is much like comparing a 4 ply bias tire to an all-weather radial tire, Bennington just doesn’t measure up to the FRM chassis.

All of the Bennington S series models cross members are constructed on 24” on center vs. 16” or less on center with FRM’s cross members.

Bennington’s 24” on center construction along with their use of c-channel cross members vs. FRM’s abundant use of 2” .125 extruded square box tubing cross members gives FRM a huge structural advantage.

Example of the abundant use of FRM’s use of 2” extruded Square box tubing vs. C-channel construction.

This is an example of a FRM 200 series 3.0 triple toon chassis it is built for durability and performance.
S Series Bennington’s are standard with 3 step boarding ladder.

The 200 Series FRM is standard with 4 step boarding ladder.

FRM’s horns are always located above the floor decking and under the dry helm area.

Many of the S Series Bennington’s mount their horns under the deck exposing them to moisture and creating warranty issues.
The S Series Bennington rail panels are attached with exposed bolt heads showing. When using this method of application the bolt head may be torqued to tight resulting in unsightly craters in the rail frame.

FRM utilizes the hidden T Bolt application on their rail system. This eliminates the possibility of creating any distortion around the bolt head.

When purchasing the option of docking lights from FRM they are always mounted in the forward deck panels. The stainless steel light housing is located away from any possible tripping hazards.

The optional S Series Bennington docking lights are poorly located creating a tripping hazard and they are made out of inexpensive ABS plastic not stainless steel.
Bennington’s bow eyes are welded vertical on the tubes keel creating a no lift bow eye. Don’t lift the pontoon with these bow eyes or the weight of the pontoon may crush the keel.

FRM bow eyes are welded to the tube which creates a bow eye that can handle the lifting of the pontoons weight. Also, notice the welding of each bow eye, the FRM weld certainly looks more substantial and finished.

This Bennington S Series splash guard is very flimsy and with little effort it can be crushed. Notice that it is welded on only one side of the splash guard.

The FRM wake splash guard is much more substantial and is welded on both sides creating a stronger more resilient application.
FRM 200 Deluxe Series model offers the choice of numerous combinations of two tone panel colors creating your favorite exterior look.

This two tone panel look on the Bennington S Series is a $300 option.

The Vinyl Rub Rail on this FRM 200 Series is a standard feature and looks great.

The choice of rub rail on the Bennington S series is available for an additional $200.

FRM has always provided at no charge the Ski Tow Bar feature on any center rear exit pontoon. This standard item is viewed as a valuable safety feature in this type of pontoon.

Bennington offers this same ski tow bar on their rear center exit models, but it is an option at the cost of $350.
The 200 Series Deluxe is standard with Upgraded radius bow furniture. This interior offers soft touch vinyl, your choice of two tone colors, and finished off with vinyl wrapped seat bases. FRM offers large woodgrain oval tables no small kidney tables found in this model.

Bennington offers no vinyl wrapped seat bases and large woodgrain oval tables are options.

Notice in the lower right side of this roto cast seat base the speaker cover with the orange label. These protective speaker covers on the inside of the storage compartment provide each speaker from being damaged by items in that compartment area.

This standard FRM feature is not offered on the Bennington S Series.