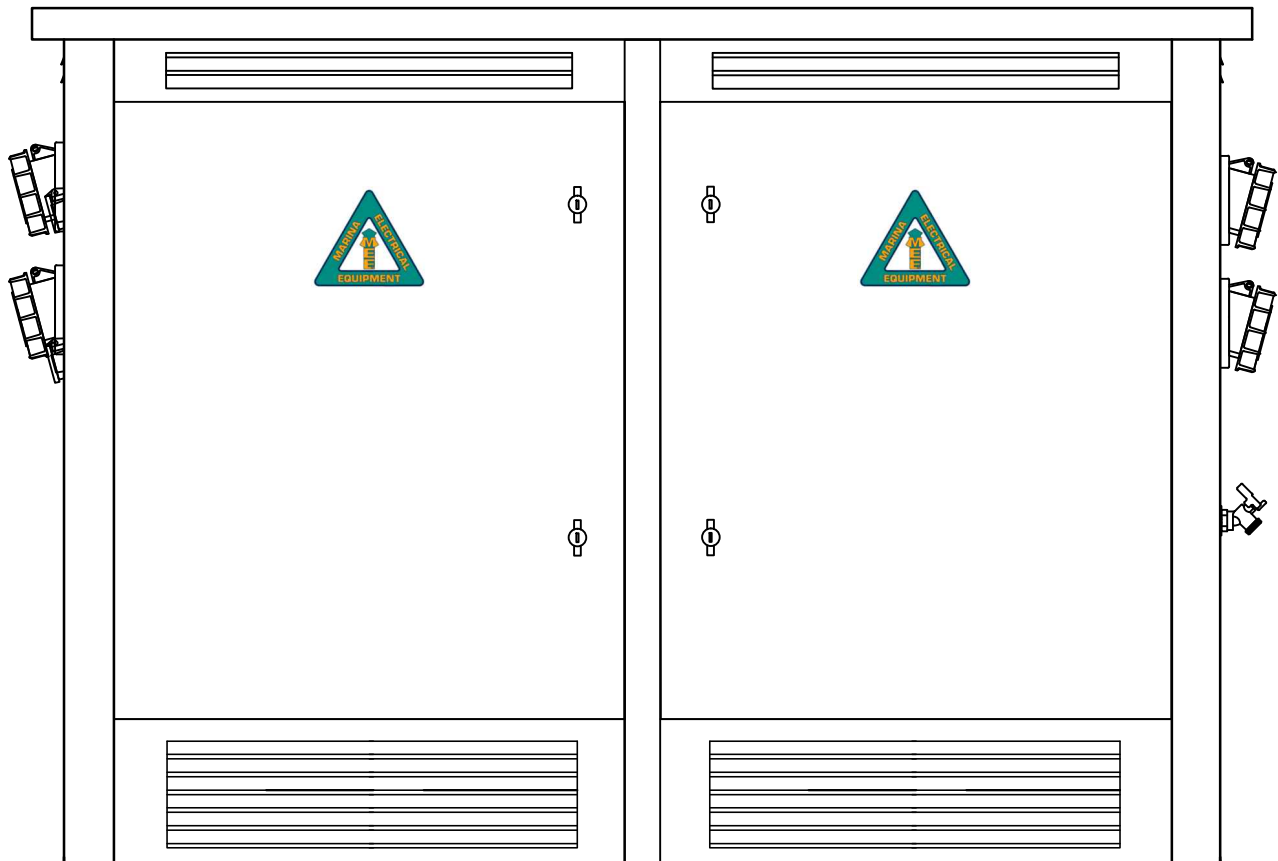




GTX™ SUPER YACHT UNIT SUBSTATION

General Specifications



THE INFORMATION CONTAINED IN THE FOLLOWING DOCUMENT REPRESENTS THE STANDARD CAPABILITIES OF THE GTX™ SUPER YACHT UNIT SUBSTATION. EACH UNIT IS MANUFACTURED TO PROJECT SPECIFICATIONS AND WILL BE MODIFIED ACCORDINGLY.

Marina Electrical Equipment, Inc.
100 Warwick Court
Williamsburg, VA 23185
Toll Free: 1-855-258-3939
Fax: 1-757-258-3988



General Specifications - GTX™ Super Yacht Unit Substation

ALL SUPER YACHT UNITS SHALL MEET THE FOLLOWING SPECIFICATIONS:

SECTION A: ACCEPTABLE MANUFACTURERS:

Marina Electrical Equipment, Inc.
100 Warwick Court
Williamsburg, VA 23185
Toll Free: 1-855-258-3939
Web: www.marinaelectricequipment.com

SECTION B: GENERAL REQUIREMENTS

1. GTX Super Yacht Unit Substations shall be listed and marked, tested and certified to conform to Standard ANSI/UL® 1062 entitled "Unit Substations" and CAN/CSA Standard C22.2 No. 29 entitled "Panelboards and Enclosed Panelboards."
2. Shall be compliant with all sections of the latest edition of NFPA® 303, "Fire Protection Standards for Marinas and Boatyards."
3. Shall be compliant with NEC, and NFPA 70 406.8 (B)(2)(a), which states: "A receptacle installed in a wet location shall be installed in a weatherproof enclosure, the integrity of which is not affected when the attachment plug cap is inserted."
4. Shall be compliant with NEC, and NFPA 70 555.5, which states: "Transformers and enclosures shall be specifically approved for the intended location. The bottom of transformers shall not be located below the electrical datum plane."

SECTION C: CONSTRUCTION REQUIREMENTS

1. All materials and components used in the construction of the power pedestal shall be listed.
2. **Main Housing:** Shall be constructed of 316L stainless steel and shall powdercoated with polyester resin and processed to withstand a saltspray without peeling or separating. The housing be listed as a NEMA® Type 3R weatherproof enclosure.
3. **Access Panels:** Shall be constructed of 316L stainless steel and be flush-mounted with minimal external mounting hardware.
4. **Lighting Lens:** Shall be constructed of 3/16" thick injection-molded listed polycarbonate.
5. **Mounting Base:** Shall be compliant with NEC and NFPA 70 555, and meet the datum plane requirement without the addition of curbing to meet the 12" height requirement. The housing shall also have isolation pads to insure the housing does not have contact with the mounting substrate (concrete or wood).
6. **Top / Lifting:** Shall be constructed with a removable solar shield that conceals four (4) engineered lifting shackles that swivel and are designed / tested to lift four (4) times the static weight of the assembly.
7. **Mounting Requirements:** Mounting bolts (provided by others) for the assembly shall be easy to use and concealed behind removable louvered access panels after mounting.
8. **Doors:** The housing shall have lockable doors.
9. **Fans:** Shall be equipped with thermo-statically controlled axial fans to maintain efficient operating temperature. The fans shall also be controlled by an electromechanical photocell to limit condensation build-up created by temperature variations during evening hours.
10. **Hardware:** Shall be minimal and be 316 stainless steel, Phillips® drive.

SECTION D: LIGHTING

1. Each GTX Super Yacht Unit Substation shall contain four (4) non-metered lighting assemblies.
2. Lighting assemblies shall be readily available, commercial manufactured, optional LEDs that are controlled by an electromechanical photocell.
3. The LEDs shall be controlled by an electromechanical photocell that is internally mounted with no exposed external components.
4. Lighting assemblies shall be protected by a 20 ampere, single pole circuit breaker or fuse.

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SECTION E: TRANSFORMER

1. Transformer shall meet the requirements of NEMA TP.1 as described in the Code of Federal Regulations Section 451.196 Energy Conservation Standards.
2. Construction shall be ganged torodial transformers with copper windings and termo-statically controlled axial fans to maintain efficient operating temperature.
3. The no load core (iron) losses shall not exceed 650 watts or 0.0027%.

SECTION F: PANELBOARD (IF APPLICABLE)

1. The distribution panelboard(s) shall be manufactured by GE®, Square-D®, or equivalent.
2. The distribution panelboard shall contain an (optional) integral surge protection device (SPD) designed to contain a 100kA surge incident.
3. The distribution panelboard shall contain an (optional) ground fault monitor relay to monitor and/or interrupt the main circuit breaker or branch circuit breakers per NEC 555.3 ground fault protection requirements.

SECTION G: RECEPTACLES, CAM-LOCK HARDWARE, & CIRCUIT BREAKERS

1. Receptacles rated for 100 amperes shall be tin or nickel-plated pin-and-sleeve and conform to IEC and CEE standards.
2. IEC/CEE pin-and-sleeve receptacles shall be ABL-Sursum®, Globetron® or equivalent.
3. Ground Fault Circuit Interrupting (GFCI) receptacles shall conform to NEMA® 5-20R requirements.
4. GFCI Receptacles shall be Leviton® SmartLockPro® Weather Resistant, corrosion-resistant stainless steel or equivalent.
5. Receptacles shall be mounted at a minimum height of 30" above the deck surface and at a minimum angle of 35° from horizontal for ship-to-shore power cord strain relief.
6. Each receptacle shall be individually protected by a thermal-magnetic type circuit breaker with minimum 10 kAIC interrupting rating.
7. Circuit breakers be manufactured by GE®, Square-D®, or equivalent.
8. Cam-lock hardware connections shall be equipped with electric safety inter-locking mechanisms to prevent energizing the connections without proper connectivity.

SECTION H: SOLID-STATE ELECTRIC KWH MONITORING

1. Each pedestal shall be equipped with solid-state electric monitors which output kilowatt-hours (kWh) consumption at each slip via an electromechanical counter and internally built wireless remote transmission. Wireless transmission shall be integral to the solid state electric monitor.
2. Each solid-state electric monitor shall be rated for 200 amperes, listed, marked and tested to conform to Standard ANSI-C12.1 and NTEP standards with $\pm 1\%$ accuracy.
3. Each solid-state electric monitor shall be capable of monitoring ground faults at each slip.
4. Each solid-state electric monitor shall measure the analog pulse output of the water meters at each slip and wirelessly transmit the gallon usage via the internally built wireless remote transmission. Wireless transmission via thrid-party vendors is not acceptable.

SECTION I: WIRING & TERMINAL BLOCK

1. Unit substations shall be completely factory pre-wired to the load side of the copper 3/8" stud lug compression terminal block assembly and/or integral panelboard(s) main lugs and/or branch feeder circuits.
2. Electrical wiring shall be high-stranding tin-plated copper THHW/MTW VW-1 Boat Cable rated for 105°C.
3. All electrical components shall be located above the electrical datum plane set forth by the NEC.
4. All exposed metallic parts shall be grounded as part of the integral equipment ground.

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SECTION J: PLUMBING

1. Each pedestal shall be capable of providing single or dual 3/4" IPS ball valve hose bibs.
2. Plumbing connections must be partitioned from all electrical wiring/components by an integral partition box.
3. Each ball valve hose bib shall be metered (optional) (with or without analog display at the pedestal) and have the gallon per slip usage wirelessly transmitted via an internally built wireless remote transmitter that is integral to the monitor. Wireless transmission via third-party vendors is not acceptable.

SECTION K: WARRANTY

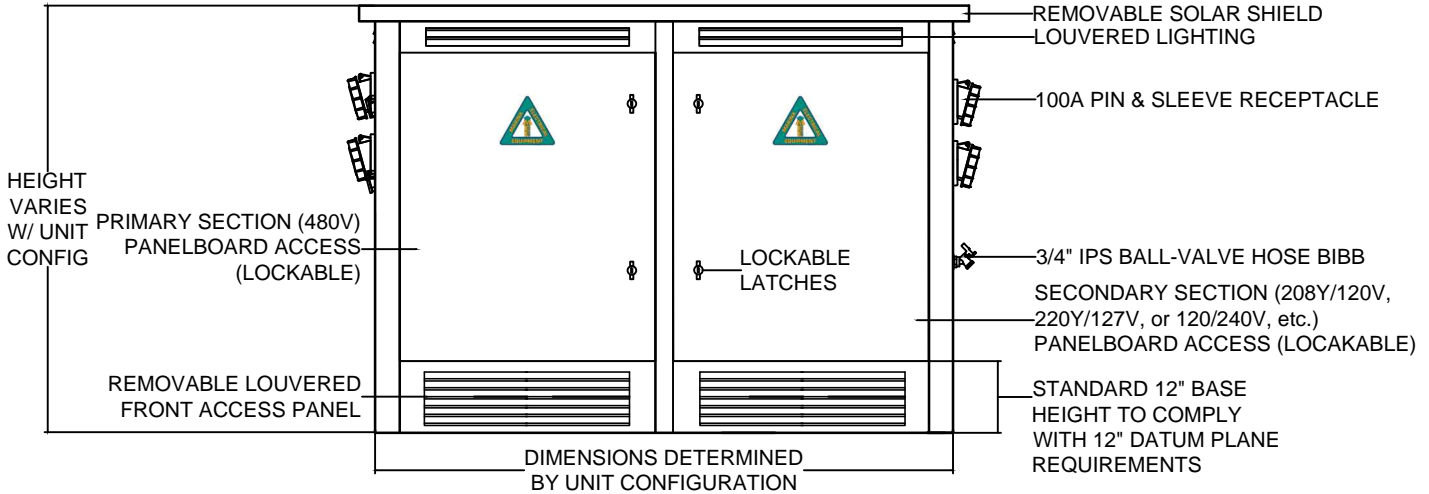
1. The main housing and attached parts (main housing, access panels, solar shield, lenses, doors, receptacle faceplates, and circuit breaker plates) will be free from failure resulting from defects in material and/or workmanship, and are covered by a limited warranty of one (1) year. The warranty is voided if any petroleum-based solvent is used anywhere on or near any of the polycarbonate parts. These parts include: main housing, access panels, solar shield, lenses, doors, receptacle faceplates, and circuit breaker plates.
2. Internal electrical components shall be covered by a limited warranty of one (1) year. Items covered include: torodial transformers, panelboards, fans, receptacles, circuit breakers, photocells, lamp holders, coil transformers, counters and wiring harnesses.
3. The solid-state electric kWh monitors will be free from failure resulting from defects in material and/or workmanship, and are covered for one (1) year. The warranty shall not cover the product against severe over-voltage conditions such as lightning strikes or abnormal utility surges. The warranty is voided if the damage to any or all of the components is the result of abuse, misuse, or Force Majeure. This warranty is voided if the factory seal is broken or manipulated.

Specifications Subject to Change Without Notice

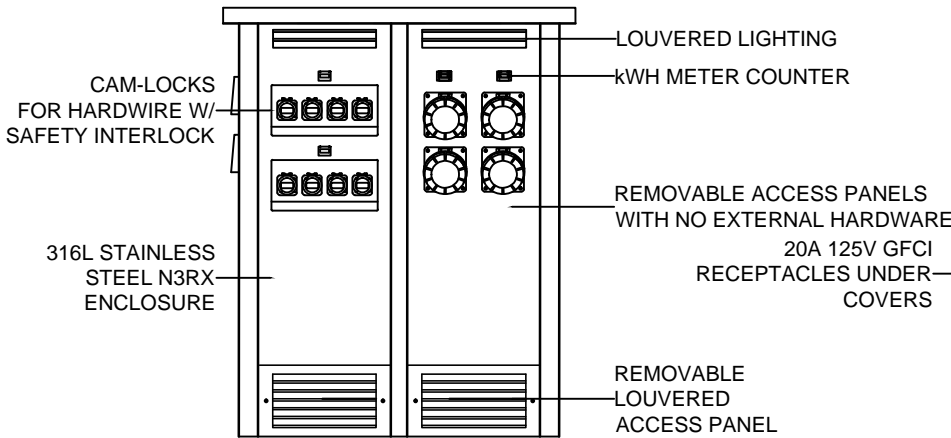
END OF SECTION

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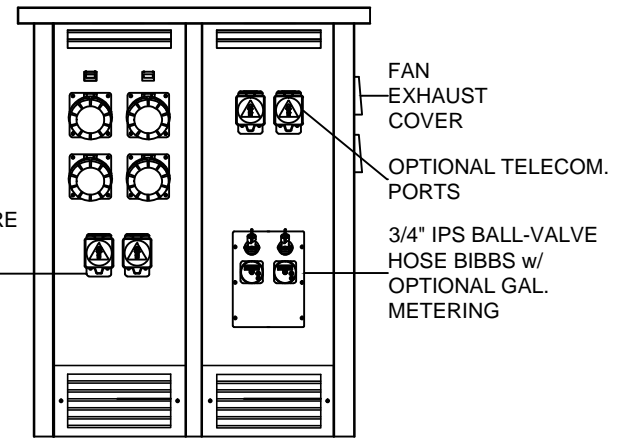
TYPICAL FRONT VIEW
w/ DOORS CLOSED



TYPICAL PRIMARY SECTION
SIDE VIEW

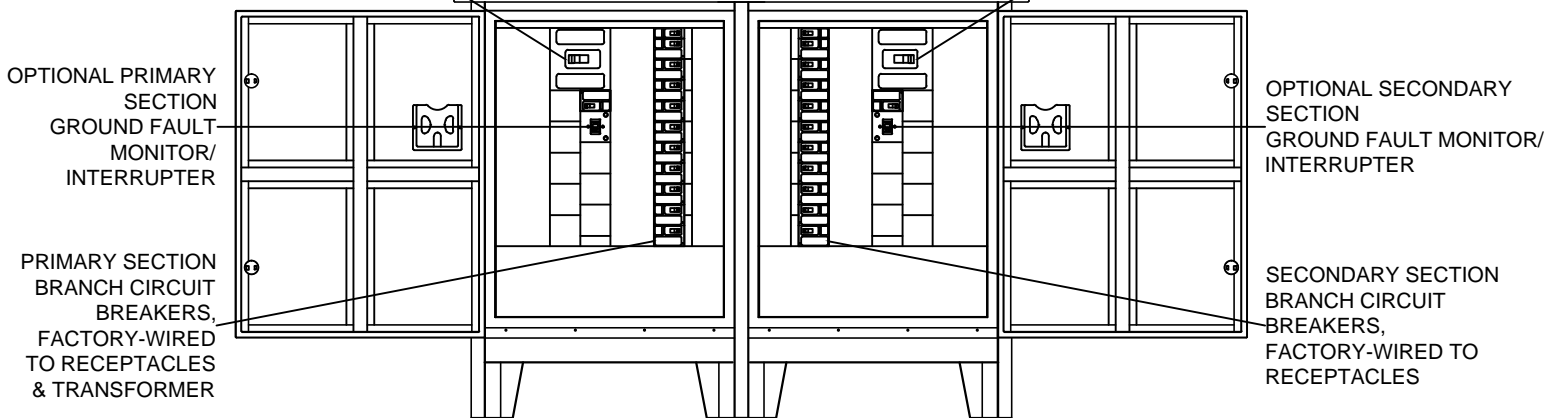


TYPICAL SECONDARY SECTION
SIDE VIEW



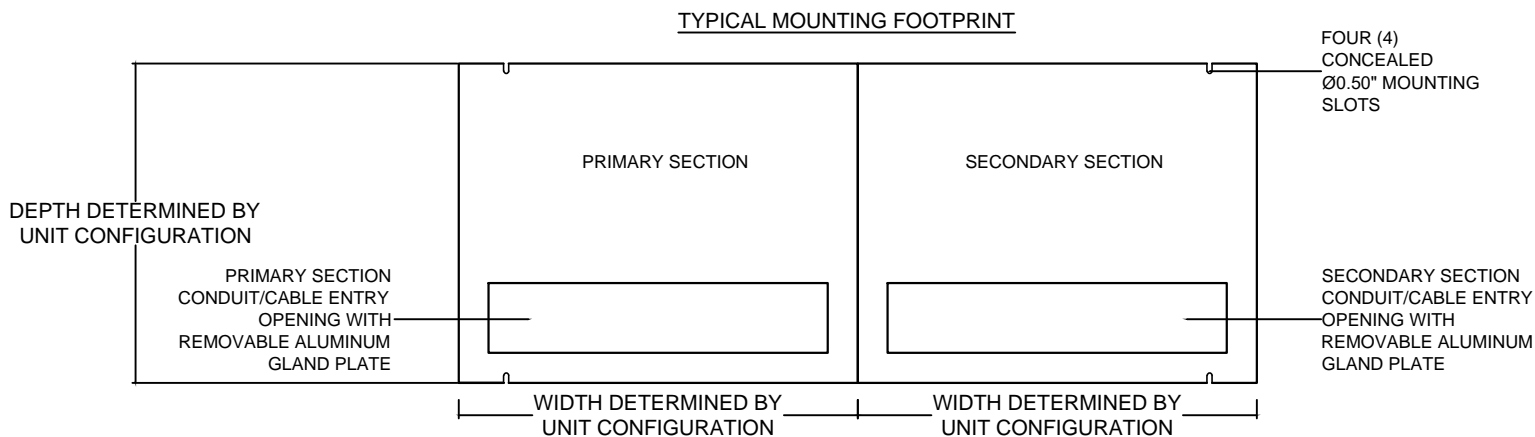
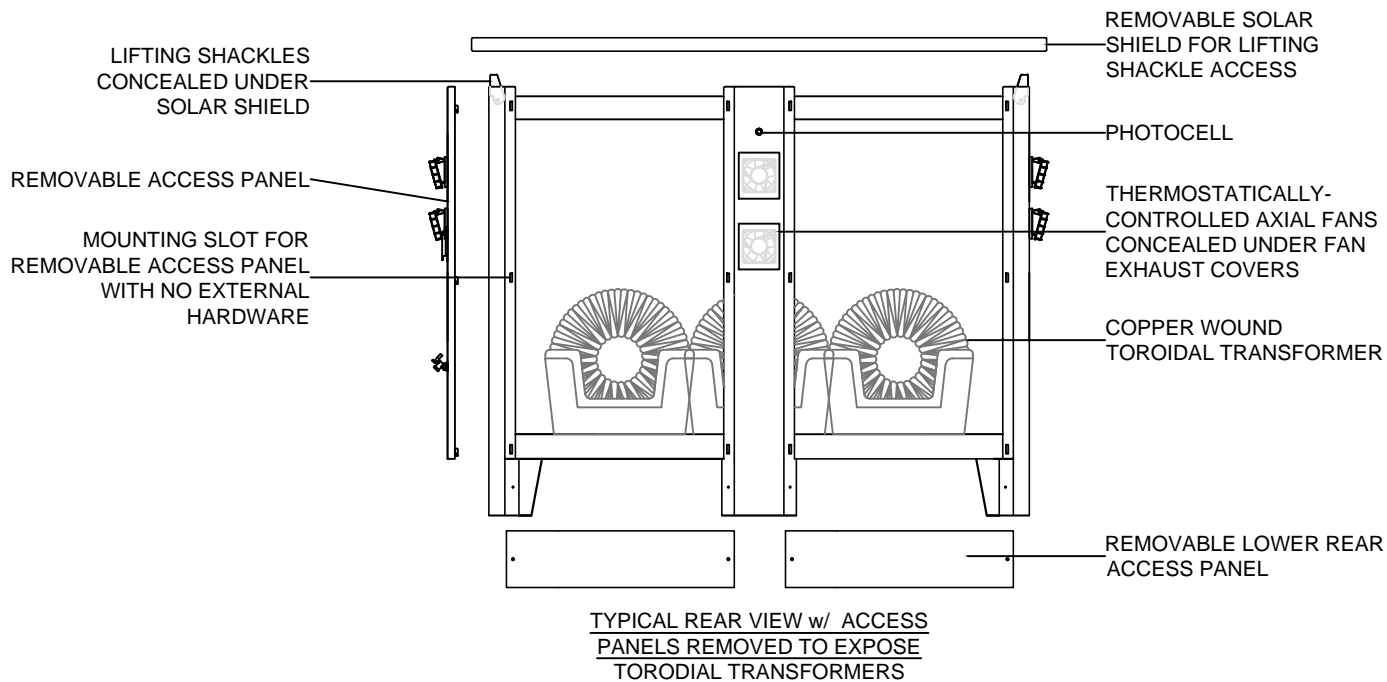
PRIMARY SECTION MAIN (MCB or MLO), FIELD-TERMINATION POINT

SECONDARY SECTION MAIN (MCB or MLO), FACTORY-WIRED TO RECEPTACLES



FRONT VIEW w/ DOORS OPEN
&
FRONT ACCESS PANELS
REMOVED

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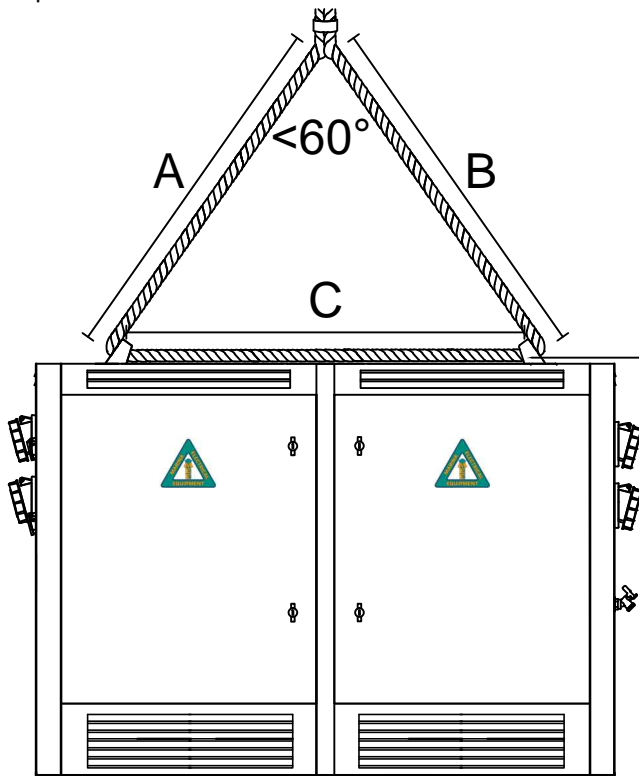
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IMPORTANT: HANDLING / LIFTING

- LIFTING SHACKLE METHOD:** This lifting assembly has been tested at a load of four times the static weight of the GTX Super Yacht Unit Substation. The lifting shackles are located under the solar shield. The solar shield can be removed by removing the screws located around the lower edge of the shield.
- FORKLIFT METHOD:** Lifting slots are provided on each end of the GTX Super Yacht Unit Substation. Remove the lower access panels on front and rear of the unit. Use fork extensions so that the forks are spread to the outside of the slots, making sure that the forks extend past the end of the assembly. Forks that do not completely extend through could damage internal components and/or result in imbalance, unit damage, injury/death. Forklift access can also be accomplished from the left and rear sides of the unit with the removal of the lower access panels.

MOUNTING

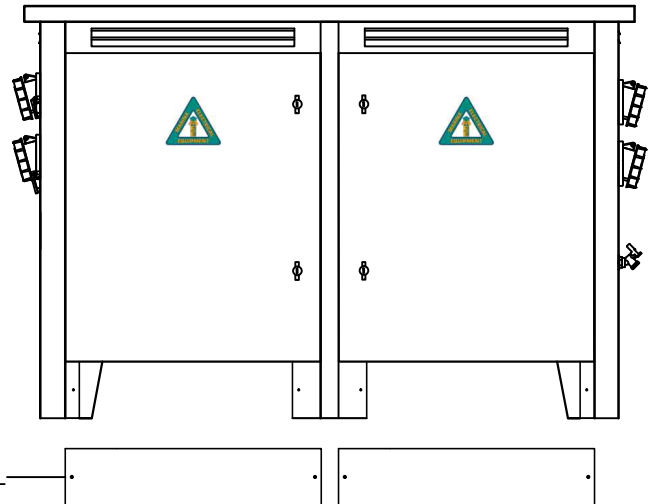
- Remove the front and rear lower access panels on the bottom of the GTX Super Yacht Unit Substation. This will expose the mounting holes at the bottom of the unit. Do not remove the neoprene pad from the bottom of the unit. The neoprene pads provide isolation from the dock surface.



FRONT VIEW w/ SOLAR SHIELD
REMOVED TO EXPOSE LIFTING
SHACKLES

IMPORTANT:
WHEN LIFTING THE GTX SUPER YACHT
UNIT SUBSTATION, THE SPREADER
ANGLE MUST BE LESS THAN 60° (LEGS A
AND B MUST BE LONGER THAN LEG C).

LIFTING SHACKLES
DESIGNED / TESTED TO
LIFT FOUR (4) TIMES
STATIC WEIGHT



REMOVABLE LOWER ACCESS PANEL

FRONT VIEW w/ ACCESS PANELS
REMOVED TO EXPOSE FORKLIFT
LIFTING SLOTS