



**TRIDENT-2600Q**  
**2600mm dia. Ocean Buoy**

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**INSTALLATION & SERVICE MANUAL**



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1.0	Manual Launch	July 2014	S. Turner	
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## Introduction

**Congratulations! By choosing to purchase a Sealite Buoy, you have become the owner of one of the most advanced rotationally-moulded polyethylene marine buoys in the world.**

Sealite Pty Ltd has been manufacturing buoys for over 25 years, and particular care has been taken to ensure your buoy gives years of service.

As a commitment to producing the highest quality products for our customers, Sealite has been independently certified as complying with the requirements of ISO 9001:2015 quality management system.

By taking a few moments to browse through this booklet, you will become familiar with the versatility of your buoy, and be able to maximise its operating function.

## Sealite Buoy Division

Sealite marine buoys are manufactured on-site from rotationally-moulded UV-stabilised polyethylene, and are designed to offer a low-maintenance, high visibility solution to marine navigation.

The Sealite buoy division provides turn-key production of navigation buoys. From tooling development, raw materials selection, and production, to final testing and inspection, Sealite guarantees superior quality and fast turn-around times.

Sealite's buoy products are available in a wide range of configurations and sizes, and can be economically shipped worldwide.

## Why Choose Polyethylene Buoys?

- No painting
- Inhibits growth
- Increased interval between servicing
- Routine maintenance on location
- Easily repaired in the unlikely event of damage
- Lightweight for ease of deployment and maintenance
- Environmentally friendly – no use of toxic antifouling paint

## 4. Mooring Requirements & Regulations

Please contact your local authority for any specific requirements regarding the deployment of buoys. IALA also has guidelines and recommendations that should be followed.

All information given in this manual is advisory only. Please consult with your local authority before deploying your buoy products.

Local conditions that need to be considered include:-

- Water depth
- Maximum currents
- Maximum wind speeds
- Sinker size and weight

# TRIDENT-2600Q Ocean Buoy

The TRIDENT-2600Q is one of the largest rotationally moulded buoys available, with a float diameter of 2.6 meters and lantern focal height of up to 4 meters.

The float section of the TRIDENT-2600Q is built from four (4) roto-moulded quadrants, which fasten together to form an incredibly robust 2.6 meter wide float section standing 1.5m tall. Each quadrant is moulded from UV-stabilised virgin polyethylene, and has an 16mm wall thickness.

Number of Lifting Points = 4

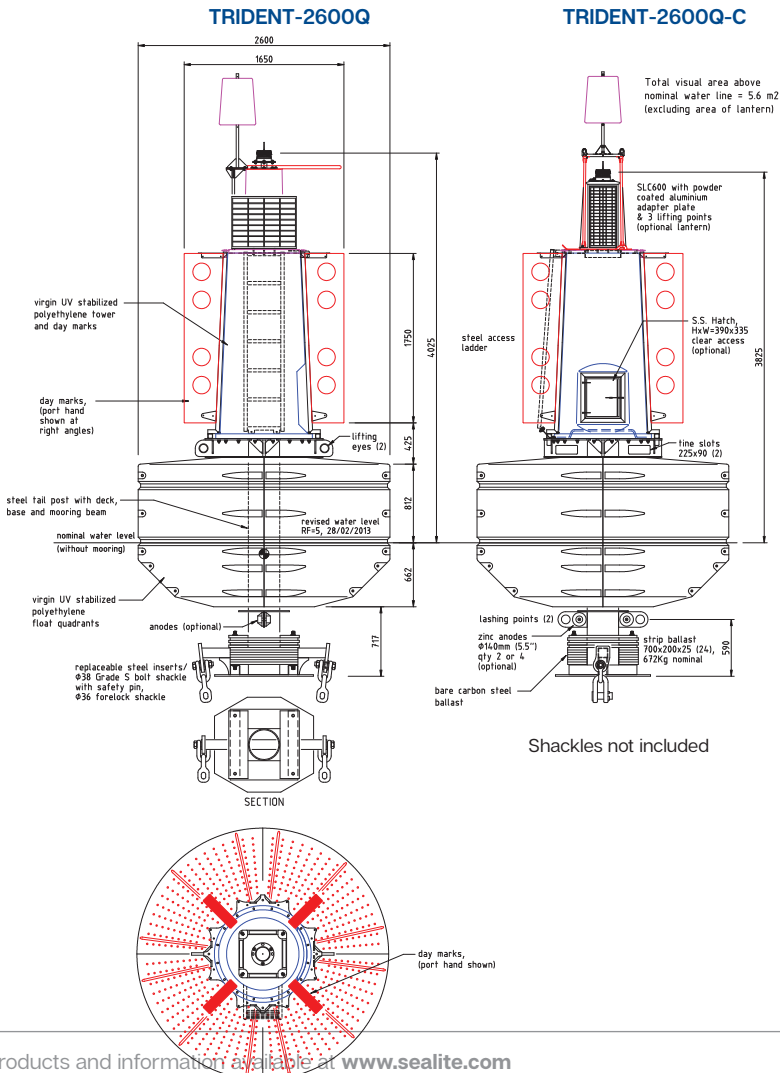
Visual area = 6.0m<sup>2</sup> (with daymark)

Estimated roll period (bare) = 2.2sec

SWL for 2 or more lifting points = 11,000kg (mooring point)

SWL for 1 point lifting = 5500kg (deck and primary structure)

Estimated roll period (moored) = 1.6sec





## SPECIFICATIONS\*

## TRIDENT-2600Q

## TRIDENT-2600Q-C

### Standard Model

### Compact Model

#### General Characteristics

Available Colours

Red, Green, White, Yellow as per IALA Recommendations

Red, Green, White, Yellow as per IALA Recommendations

Focal Plane Height (mm/inches)

4025 / 158 $\frac{1}{2}$

3825 / 150 $\frac{1}{4}$

Total Float Volume (litres/US gallon)

6710 / 1772

6710 / 1772

Nominal Freeboard (mm/inches)

865 / 34

865 / 34

Nominal Draft (mm/inches)

1325 / 52 $\frac{1}{8}$

1325 / 52 $\frac{1}{8}$

Reserve Buoyancy (kgs/lbs)

2000 / 4409

2000 / 4409

Maximum Mooring Load (kgs/lbs)

2000 / 4409

2000 / 4409

Draft, Maximum (mm/inches)

1690 / 66 $\frac{1}{2}$

1690 / 66 $\frac{1}{2}$

Freeboard, Minimum (mm/inches)

500 / 19 $\frac{5}{8}$

500 / 19 $\frac{5}{8}$

Safe Working Load, 1pt (kgs/lbs)

5500 / 12125 (one lifting point)

5500 / 12125 (one lifting point)

Safe Working Load, 2pt (kgs/lbs)

11000 / 24250 (two lifting points)

11000 / 24250 (two lifting points)

Submergence (kg/cm, lb/inches)

54.7 / 306

54.7 / 306

Visual Area (m<sup>2</sup>/ft<sup>2</sup>)

4.7 / 50.6 (without daymark)

4.3 / 46.3 (without daymark)

6.0 / 64.5 (with daymark)

5.6 / 60.2 (with daymark)

Water Area (m<sup>2</sup>/ft<sup>2</sup>)

1.7 / 18.3

1.7 / 18.3

#### Physical Characteristics

Material

Rotationally-moulded UV-stabilised virgin polyethylene float section, tower assembly, top marks and panelling.

Rotationally-moulded UV-stabilised virgin polyethylene float section, tower assembly, top marks and panelling.

316-grade stainless steel fixtures.

316-grade stainless steel fixtures.

Wall Thickness (mm/inches)

16 /  $\frac{5}{8}$

16 /  $\frac{5}{8}$

Ballast (kg/lbs)

672 / 1482 external steel

672 / 1482 external steel

Height (mm/inches)

6240 / 245 $\frac{5}{8}$

6240 / 245 $\frac{5}{8}$

Width (mm/inches)

2600 / 102 $\frac{3}{8}$

2600 / 102 $\frac{3}{8}$

Mass (kg/lbs)

2340 / 5159 (depending on payload)

2340 / 5159 (depending on payload)

Radar Reflector

Echomax EM230

Echomax EM230

Product Life Expectancy

>20 years

>20 years

#### Certifications

IALA

Surface colours compliant to IALA E-108

Surface colours compliant to IALA E-108

Quality Assurance

ISO9001:2015

ISO9001:2015

#### Intellectual Property

Trademarks

SEALITE® is a registered trademark of Sealite Pty Ltd  
5 years

SEALITE® is a registered trademark of Sealite Pty Ltd  
5 years

#### Warranty\*

#### Lantern Options

Sealite SL-C310 Series, SL-C510 Series, SL-C500, SL-C600, SL-125 Series or SL-155 Series

Sealite SL-C310 Series, SL-C510 Series, SL-C500, SL-C600, SL-125 Series or SL-155 Series

#### Options Available

- Mould-in graphics
- Day marks
- Monitoring Systems (AIS, GSM, SATCOM)
- Closed-cell polyurethane foam filled float section
- Name Plate
- Aluminium Tower Assembly
- Galvanised or stainless steel mooring post
- Tail tube mooring post

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\* Specifications subject to change or variation without notice  
Subject to standard terms and conditions

## Assembly: Ballast Section

Components	
	Qty
<b>Metal Centre Core</b>	
Ballast Rings 100kg	7
Duck Foot Plate	1
M20x 40mm Bolts	4
M20 Spring Washers	4

### Check Components

Unpack all components from container. Inspect all components for any damage. Please alert Sealite if any component is missing or damaged.

### Assembly



#### **Step 1**

Lay centre core down, supported so end section is clear of the plates to be installed.



#### **Step 2**

- Duck Plate – take one ring and tack weld in six places, allowing access to the four bolt holes on the underside.
- Slide the balance of the metal ballast rings over the core, leaving the duck plate ring as the last one.
- Slide duck plate over core – ensuring the 4 x bolt holes align with the bolt holes in core of pipe
- Fix M20 bolts in and tighten with torque wrench.

Complete fixed Ballast – should look as follows:





## Assembly: TRIDENT-2600Q

<b>TRIDENT-2600Q Components</b>		
<b>Fixings</b>		<b>Qty</b>
<b>Float Section</b>		
M18x100MM-SS	M18 x 100 Bolts	20
M18FLAT-WASHERS	M18 Flat Washers	40
M18-SS-NYLOC	M18 Nylock Nuts	20
<b>Tower Section</b>		
M10X90MM-SS	M10 x 90 Bolts	16
M10FLATWASHERSSS	M10 Flat Washers	32
M10SPRINGWASHERSSS	M10 Spring washers	16
M10NUTSSS	M10 Nuts	16
<b>DayMark Wings - Top</b>		
M10X35SS	M10 x 35mm Cap Head Screws	8
M10SPRINGWASHERSSS	M10 Spring washers	8
M10NUTSSS	M10 Nuts	8
<b>DayMark Wings - Bottom</b>		
M10X50SS	M10 x 50mm Sets	8
M10FLATWASHERSSS	M10 Flat Washers	16
M10NUTSSS	M10 Nuts	8
M10 Spacers	M10 Spacers x 15mm/19mm	8
<b>DayMark Wings - Middle</b>		
M8X50SS	M8 x 50 Sets	32
M8FLAT-WASHERS	M8 Flat Washers	32
M8-SPRINGWASHERS	M8 Spring Washers	32
M8-NUTS	M8 Nuts	32
<b>Top Plate 3000 to SLB1750</b>		
M10FLATWASHERSSS	M10 Flat washers	14
M10SPRINGWASHERSSS	M10 Spring washers	14
M10NUTSSS	M10 Nuts	14
<b>1750 Tower - Top</b>		
	M10 x 35mm Cap Head Screws	6
M10FLATWASHERSSS	M10 Flat washers	6
M10SPRINGWASHERSSS	M10 Spring washers	6
M8X50SS	M8 x 50mm Sets	4
M8FLAT-WASHERS	M8 Flat Washers	8
M8-SPRINGWASHERS	M8 Spring Washers	4
M8-NUTS	M8 Nuts	4



<b>TRIDENT-2600Q Components</b>		
<b>Fixings</b>		<b>Qty</b>
<b>Radar</b>		
M8-NYLON	M8 Nylon Spacers	4
M8X25SS	M8 x 25 Sets	4
M8-SPRINGWASHERS	M8 Spring washers	4
M8-NUTS	M8 Nuts	4
<b>Retaining Ring</b>		
M6X50SS	M6 x	8
M6FLAT-WASHER	M6 Flast Washers	8
M6SPRINGWASHER	M6 Spring washers	8
M6NUTS	M6 Nuts	8
<b>Base - Core</b>		
M20X40-GALV-SETS	M20 x 40 Galv Sets	4
M20GALVSPRINGWASHERS	M20 Spring Washers	4
M16X110-SS-SETS	M16 x 110 Bolts	2
M16FLATWASHERS	M16 Flat Washers	2
M16FLATWASHERS	M16 Penny washers	2
M16SPRINGWASHERS	M16 Spring washers	2
M16NYLOCK	M16 Nuts	2
M10X35SS	M10 x 35mm Sets	4
M10FLATWASHERSSS	M10 Flat Washers	8
M10SPRINGWASHERSSS	M10 Spring washers	4
M10NUTSSS	M10 Nuts	4
FLOAT	FLOAT SECTIONS/QUADS	4
POST	MOORING POST	1
BALLAST	BALLAST PLATES	7
BASE	DUCK FOOT BASE	1



## **Check Components**

Unpack all components from container. Inspect all components for any damage. Please alert Sealite if any component is missing or damaged.

## **Assembly**

### **Step 1**

Position the Mooring Post upside down on flat level ground.

### **Step 2**

Turn the 4 x Float Sections upside down, to match the mooring post.

Position the 4 x Float Sections around the Mooring Post and start securing 2 x float sections together using M18 Bolts, nuts and washers.

*Please coat each bolt in Anti-Seize or Grease before fitting Nuts.*

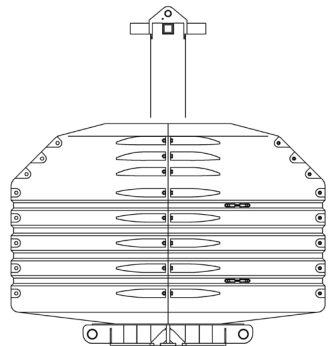
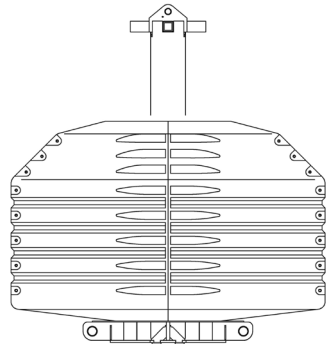
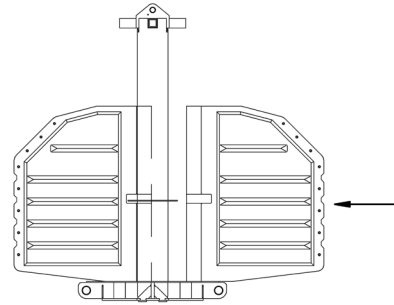
### **Step 3**

Place a flat washer on the bolt before sliding it through the hole in the Float Section, then fit a second flat washer and a Spring washer on to the bolt before securing with a nut.

Hand tighten 2 – 4 bolts per side until all four Float sections are secured around the mooring post.

Secure 8 x bolts down each joint on the Float Sections.

Leave the Mooring post and Float to settle for 4 hours or overnight before tightening each bolt a second time. *Giving the buoy time to relax in the fitted position will create a better joint.*



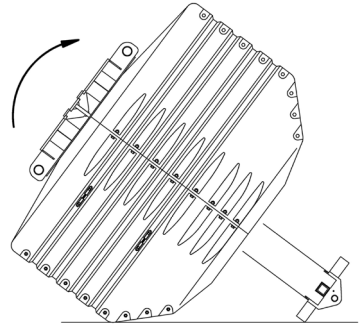
#### Step 4

Use a crane to turn the Float and Mooring Post upright.

*Please Note: The buoy weighs over 2.3 tonnes. Please be careful when rotating the Buoy.*



**The buoy is still unstable even when fitted with the supporting timber and assembly staff must be careful if standing on the Float Sections.**



#### Step 5

Open the door at the base of the Tower Assembly. Position and secure the 55Ah battery in the base of the Tower Assembly using the 2 x Hand Wheels and Battery Clamp.

*Please Note: Push the door inwards and hold while releasing the latch, then open the door.*

#### Step 6

Connect the negative (-) and positive (+) leads to the battery terminals.

*Please Note: Cover the terminals with a protective grease after connection and testing is finalised.*

#### Step 7

Test the Light by covering it with a dark cloth or jacket and wait 1 minute for activation.

*Please refer to the SL125 Manual for more information on setting flash codes, intensity and troubleshooting.*

#### Step 8

*Position and secure the top mark to the Tower Assembly, using 4 x M8 Socket Head Cap Screws, Flat and Spring Washers and Nuts.*

#### Step 9

Lift and secure the Tower Assembly onto the Mooring Post.

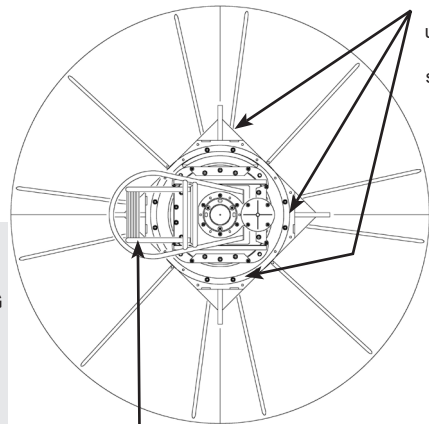
The Tower Assembly **MUST** be positioned with the ladder and Hatch located on a corner of the Mooring Post between the Lifting Eyes.

Secure the Tower to the Mooring Post in 8 x places using M10 x 90mm Long Bolts, Flat and Spring Washers and Nuts.

USE THE Bolt Holes either side of the Lifting Eyes when securing the Tower Assembly.



- DO NOT USE THE GUARD RAIL AS A LIFTING POINT
- DO NOT USE THE TOP MARK AS A LIFTING POINT.
- DO NOT USE THE LADDER AS A LIFTING POINT
- DO NOT USE SOLAR PANELS AS A LIFTING POINT.
- ONLY USE A SLING AROUND THE BODY OF THE TOWER TO MOVE INTO POSITION



Ladder to be positioned as shown.



### Step 10

Slide the Day Marks into position. The top of the Day Mark post fits over the Locating Post on the Day Mark Mounting Bracket, fitted below the corners of the Solar Panels. Secure the base of the Day Mark Post to the base of the Tower Assembly using the M10 Bolts, Nuts, Flat and Spring Washers per post.

*Please Note: The Locating Post on the Day Mark Mounting Bracket may have to be loosened when fitting Day Marks. Please ensure the Location Posts are secured afterward.*

### Step 11

*Fit the ladder to the Tower Assembly.*

*Secure the Ladder Mounting Plate to the base of the ladder using two M10 x 25mm Long Bolts, Nuts, Flat and Spring Washers.*

*Secure the Ladder Mounting Plate to the Mooring Post using 2 x M10 x 45mm Bolts, Nuts, Flat and Spring Washers.*

### Step 12

Finish securing the Tower Assembly to the Mooring Post.

Check that all M10 x 90mm Long Bolts Nuts, Flat and Spring Washers are secured correctly.

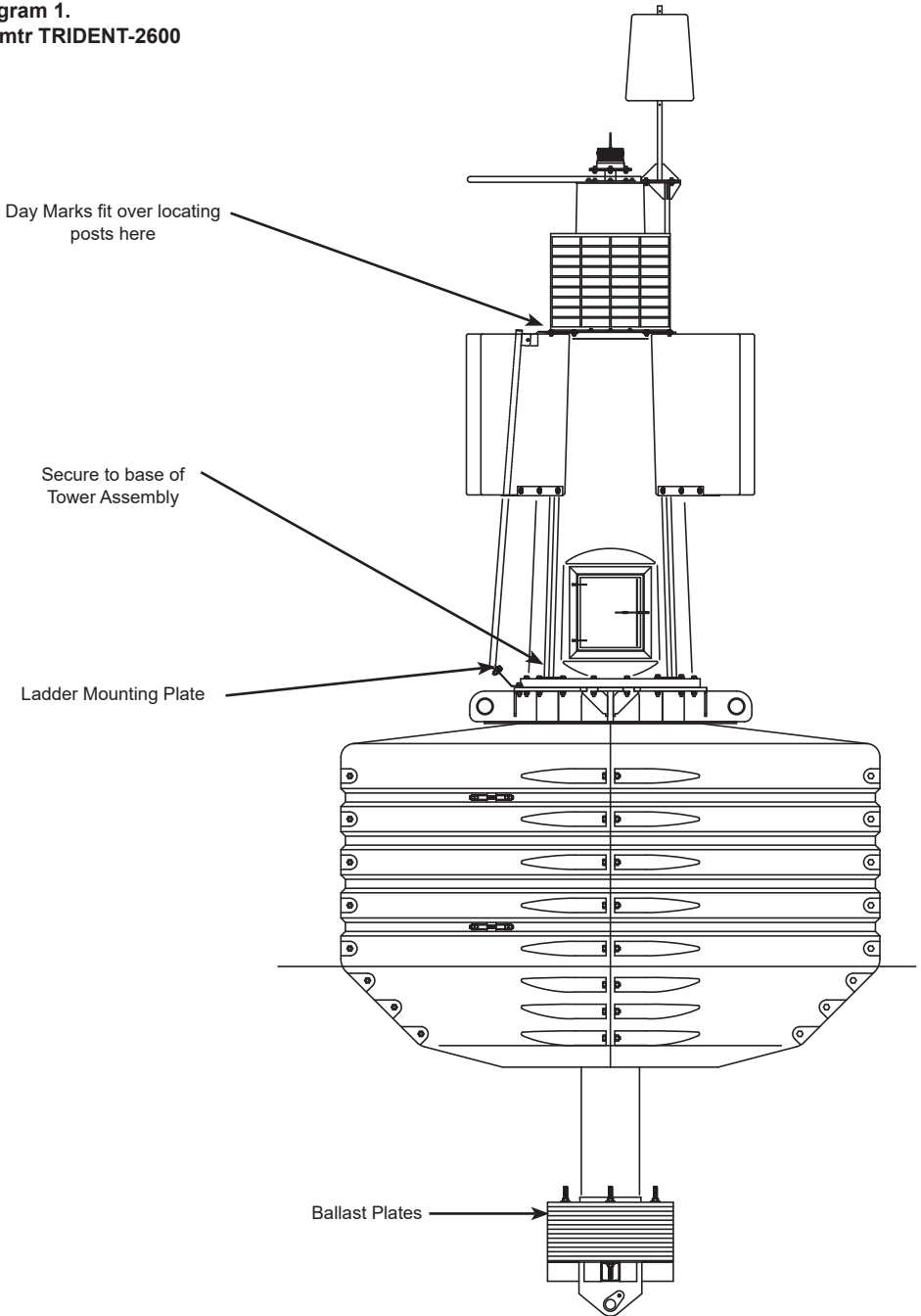
### Step 13

Lift the Buoy, ONLY using the Lifting Eyes on the Mooring Post.



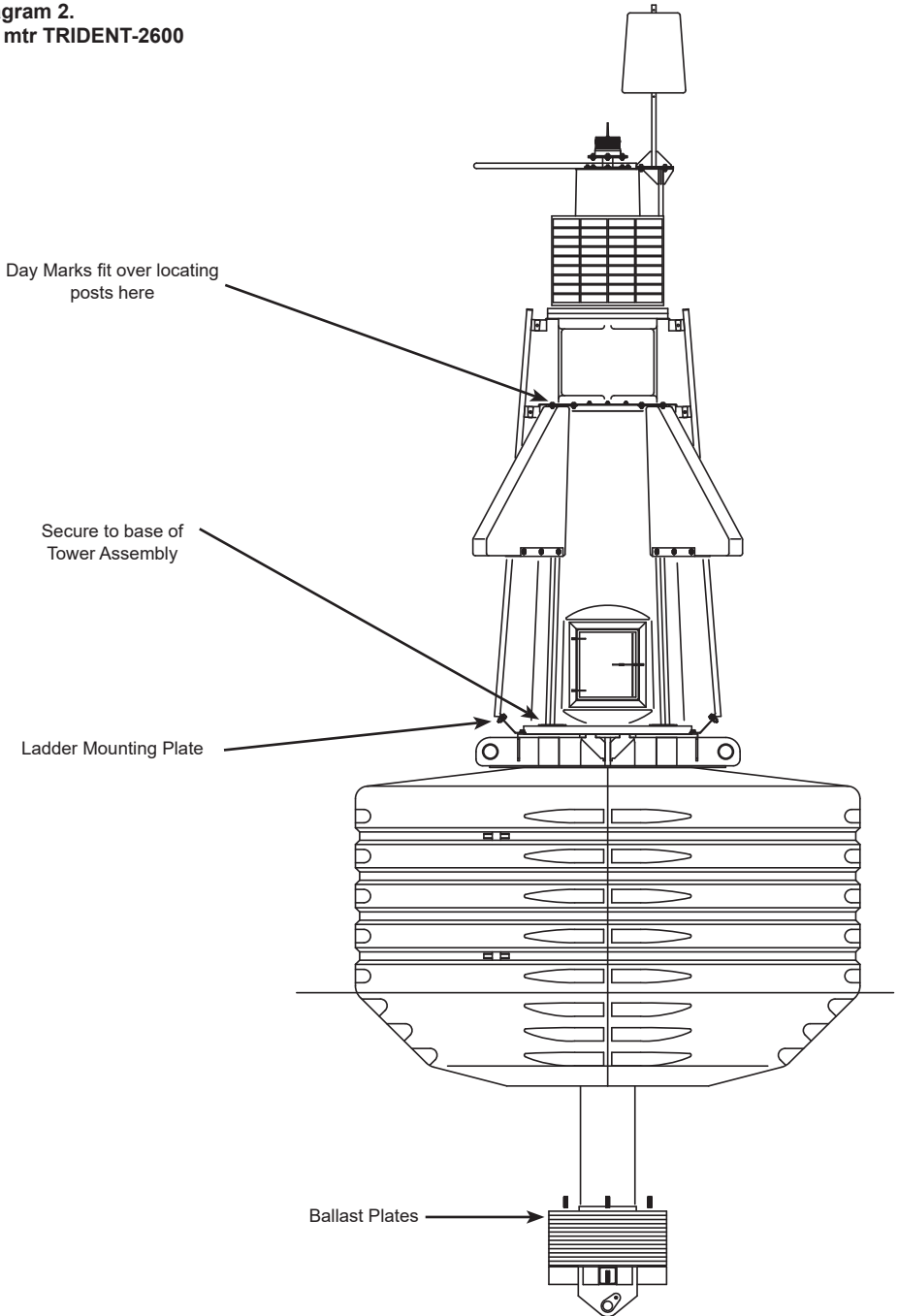
**Please do not leave the Buoy lying on the Float Sections, they may deform while in this position if left of more than 1 hour.**

**Diagram 1.**  
**4.5 mtr TRIDENT-2600**





**Diagram 2.**  
**5.1 mtr TRIDENT-2600**



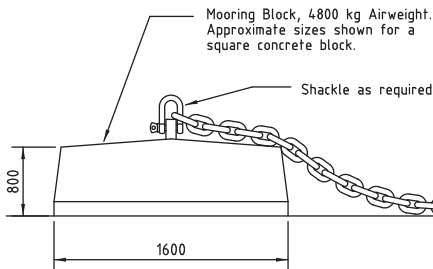
## TRIDENT-2600Q Mooring Diagram

Water Depth		Recommended Chain Size (mm) (from swivel to mooring block)
Metres	ft	
10 to 85	33 to 280	38
85 - 110	280 - 360	32
110 - 150	360 - 492	28

CHAIN SIZE

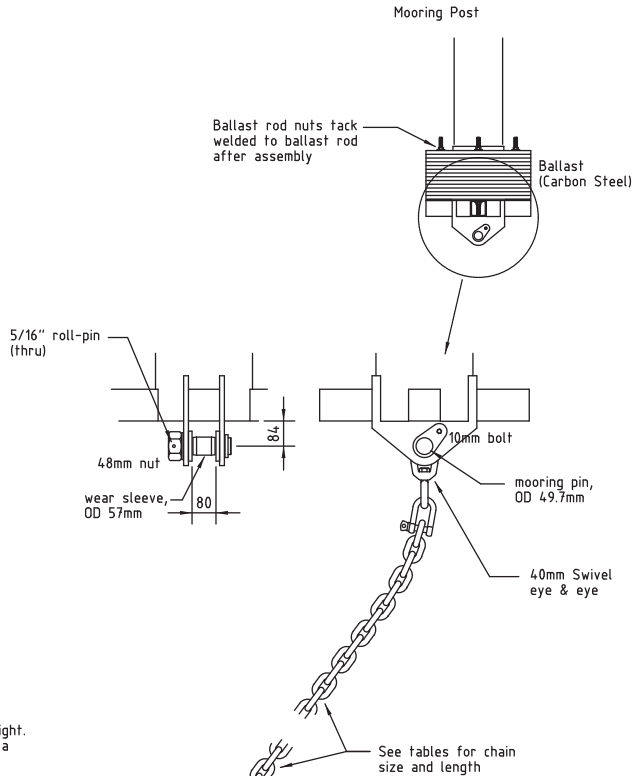
	Recommended Length of Chain	Maximum Water Depth (m)
Best Practice (up to 6kts current)	3 x Water Depth	150
For Reduced Watch Circle (where current is 2 to 4 kts)	2-1/2 x Water Depth	150
For minimum Watch Circle (use only where current < 2kts)	Not less than 2 x Water Depth	150

CHAIN LENGTH



**General Note**

Recommendations given herein are advisory only. As each buoy installation varies, the buoy operator should establish fitness for purpose prior to installation.

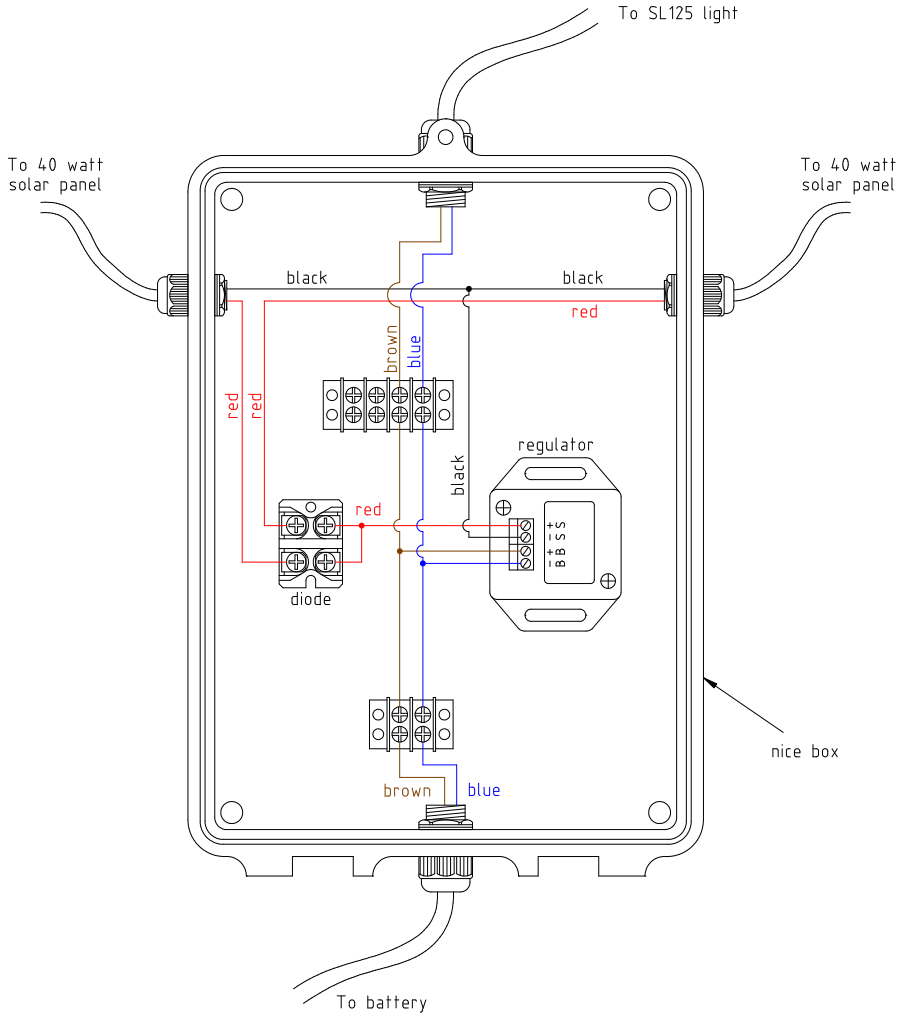


**NOTES:-**

- 1/ Shackles, swivel and chain are load rated products.
- 2/ All shackle pins are to be positively locked, eg using 3mm S.S. wire to lock pin eye, or use shackle pin with nut and split-pin.

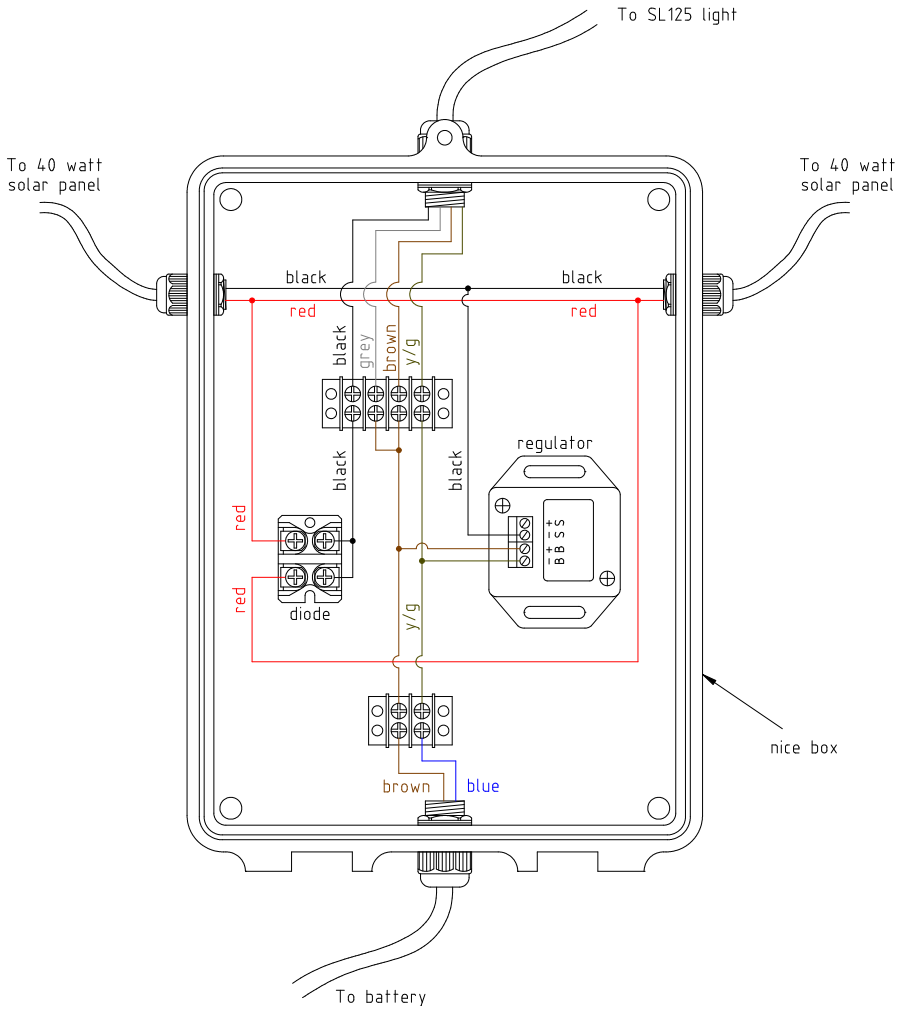


## Standard Wiring Diagram





## GSM Wiring Diagram





## Marine Buoy Maintenance

Sealite Marine Buoys are designed to require very little maintenance. We recommend the buoy be inspected annually. Inspection may need to increase depending on the local conditions and the position of the buoy.

IALA Recommendation AISM E-107 suggests moorings are inspected annually.

### Marine Buoy – Annual Maintenance

- Visually inspect buoy for damage
- Inspect the top mark for any damage. Repair any broken or damaged section.
- Clean buoy of animal debris

### Mooring – Annual Maintenance

- Check and clear the tail and ride chains from shells and algae.
- Check for wear on any swivel and shackle axis and check the tapered pins on the mooring pin. Any worn swivels and shackles must be replaced.
- Check the free movement of each swivel around its head. If any swivel head sticks it must be replaced.
- Check every link of the thrash length of the chain. Check the diameter of the nips and sides and also inspect the welds on every link.
- If depth allows, a worn riding chain may be reversed.
- Change a chain when any link shows excessive wear. Chain must be replaced if any link wears to less than 3/5 of the original diameter.

### Mooring – Biannual Maintenance

- Inspect the ground chain and sinker.

### Lanterns – Maintenance

- Please refer to the Installation Manual for the specific Marine Lantern fitted to the Buoy.

## Sealite Buoy Warranty

Refer to Sealite website:[www.sealite.com](http://www.sealite.com)



We believe technology improves navigation™

[sealite.com](http://sealite.com) [info@sealite.com](mailto:info@sealite.com)

**Sealite Pty Ltd**  
Australia  
+61 (0)3 5977 6128

**Sealite Asia Pte Ltd**  
Singapore  
+65 6908 2917

**Sealite United Kingdom Ltd**  
UK  
+44 (0) 1502 588026

**Sealite USA LLC**  
USA  
+1 (603) 737 1311