

User Manual and Installation Guide



Twister Lighting Enclosures

Download

November, 2011

*You can download a copy of this manual at
<http://www.tempestlighting.com/products.html#twister>*

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Declaration of Conformity

This is to certify that the following products

1800.IN Twister 1800 Enclosure

1900.IN Twister 1900 Enclosure

are in Compliance with the following standards or specifications according to the EMC Directive 89/336/EEC:

**EN55015, EN61000-3-4, EN61000-3-5, EN61000-4-2, EN61000-4-3, EN61000-4-4, pr
EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11**

and are in compliance with the following standards or specifications according to the Low Voltage Directive 73/23/EEC.

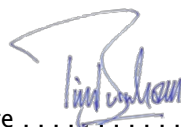
EN60598-1

This declaration is made by the manufacturer

**Tempest Lighting, Inc.
13110 Saticoy Street, Unit C
North Hollywood, CA 91411, USA**

This declaration is based on tests that were conducted on the submitted samples of the above-mentioned products.

Dated: November 26th, 2011


Signature
Tempest Lighting Inc



1 Introduction

Thank you for purchasing the Twister enclosure. It will serve you for many years, protecting your stage spotlights and effects equipments from the elements.

Products Covered By this Manual:

1800.IN	Twister 1800 Enclosure	230V
1800.US	Twister 1800 Enclosure	120V
1900.IN	Twister 1900 Enclosure	230V
1900.US	Twister 1900 Enclosure	120V

Using This Manual

Please read this manual in its entirety before starting work. All the information contained is important, and should be read carefully before proceeding. Heed all warnings and advisories.

Icon Key:

① Valuable information







⚡ Electrical Warning

🚫 Safety Information

2 Installation






2.1 Safety and Warnings

These warnings are for your protection. Failure to comply may result in serious injury or death. Tempest Lighting, Inc. assumes no responsibility for damages or injury incurred by misuse or mishandling of product.



-  **Do not** attempt to install or operate the enclosure before fully reading and understanding this manual
-  **Never** allow anyone who has not read this manual to open the enclosure or perform maintenance on the equipment within.
-  **Never** leave the enclosure unattended when open.
-  **Always** make sure all bolts and latches are tight and safety locks are in place after performing any form of maintenance on the unit.
-  **Do not** open any electrical boxes until power has been shut off to all supply lines to the enclosure (including the one powering the equipment).
-  **Do not** open the enclosure in wet weather.

2.2 Tools and Equipment

To install the enclosure, you will need the following items:

-  Crescent wrench
-  Phillips screwdriver
-  Terminal screwdriver
-  Proper wiring installation equipment (for line power and signal wiring)
-  Any equipment listed in the equipment manufacturer's equipment-specific installation directions

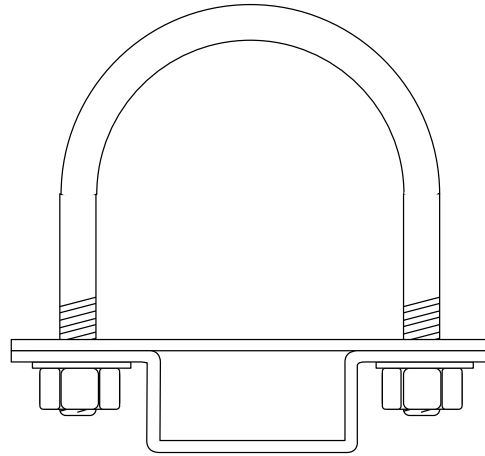
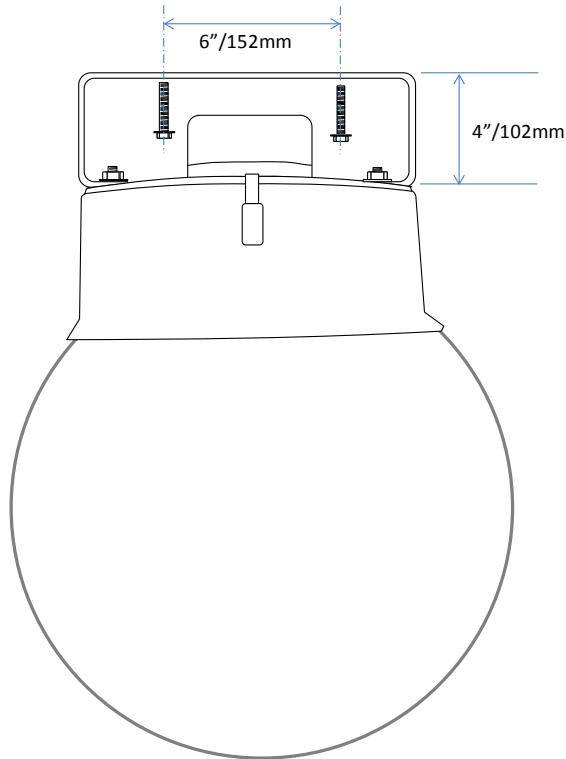
2.3 Mounting the Twister Enclosure

-  The Twister enclosure must be mounted on or under a solid structure rated for the weight of the enclosure, the equipment inside it, and at least one person.
-  Snow - if installed outside in cold regions, the bottom of the Twister enclosure must be at least 2' (60cm) above maximum height of any snowfall or drifting snow, subject to local conditions. If snow is not a consideration, then enclosure may sit on the ground as long as proper drainage is provided.

- ① LEAVE ADEQUATE CLEARANCE BEHIND ENCLOSURE FOR WIRING AND VENTILATION COWLS
- ① *Tempest Lighting recommends the use of stainless steel mounting hardware.*

The Twister enclosure is provided with a mounting bracket and two mounting holes in the base, for either metric M12 or US ½” bolts.

Twister



Mount Twister to a pipe or truss using two Tempest stainless steel U-bolt kits:

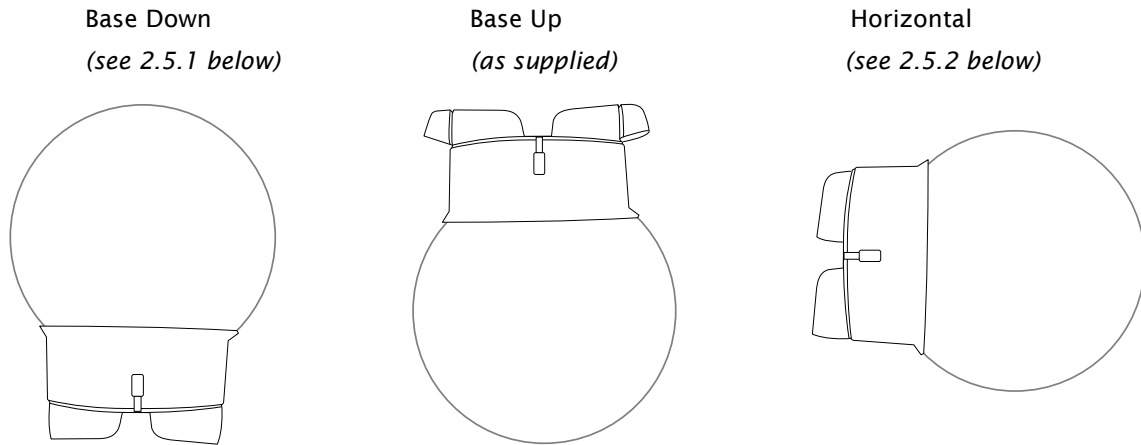
4900.MCT *Stainless Steel Unistrut channel nut, bolt and pipe clamp, for pipes 1.5" (38mm) to 2" (50mm) OD. Two required per enclosure.*

4925.MCT *Stainless Steel Unistrut channel nut, bolt and pipe clamp, for pipes 2" (50mm) to 2.5" (64mm) OD. Two required per enclosure.*

Using the mounting bracket, secure with two bolts to a solid surface or structure (bolts not supplied – max bolt size 3/8”/M10)

2.4 Mounting Orientation

All Twister enclosures are designed to be mounted either base-down, base-up or horizontal, on a solid structure, using the mounting hardware described above.



Note that the air inlet and exhaust cowls are trimmed and oriented differently, dependent on the mounting orientation. See next section for detailed instructions.

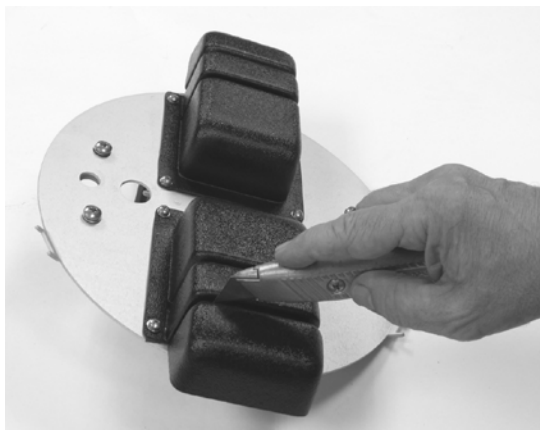
It is the responsibility of the installer to ensure that all mounting points are secure and conform to local safety regulations. Tempest Lighting Inc. accepts no responsibility for damage or injury arising from inappropriate or unsafe installation.

2.5 Air inlet and Exhaust Cowls

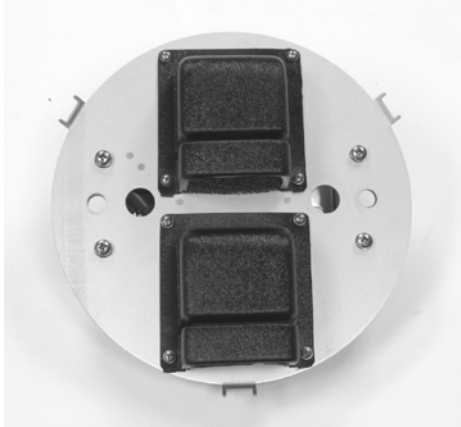
Twister enclosures are supplied ready for Base-up installation (see above). For base-up installation, you may skip this section.

2.5.1 Base-Down Installation

For base-down installation, you will need to trim the outer chambers of the inlet and exhaust cowls, using a sharp knife.



2.5.2 Horizontal Installation



First, trim the outer chambers of the inlet and exhaust cowls, using a sharp knife, as described above for base-down installation.

Decide which side will be UP (it doesn't matter which), and rotate the upper cowl 180°.

- 1) Using a #2 Philips screwdriver, remove the four cowl mounting screws
- 2) Rotate the upper cowl so that its opening will face downwards
- 3) Replace the four mounting screws.

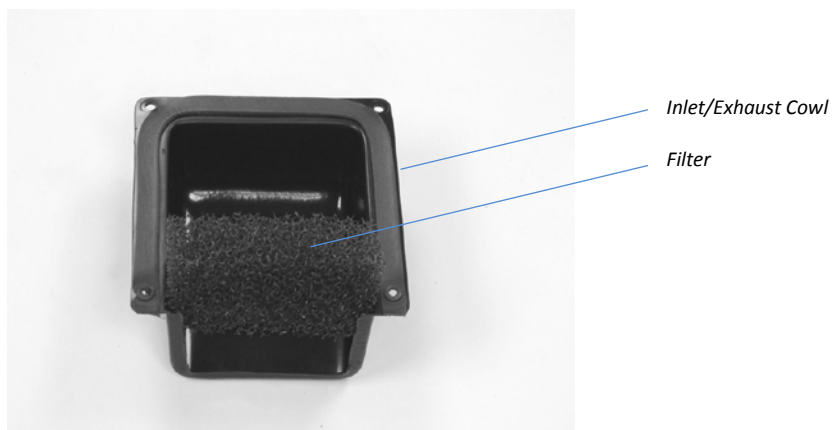
2.6 Air Filters

Note that both cowls are fitted with electrostatic air filters, to prevent ingress of dust and insects.

Both filters must always be in place.

You will need to remove the filters periodically for cleaning. How often will depend on local conditions. We recommend checking every three months and then determining frequency of cleaning depending on what you find.

To clean the filters, simply run them under a tap or water hose. Replace carefully between the ribs in the air cowls. Cowls do not need to be removed – this picture is for illustration only.



3 Wiring

3.1 Electrical Preparation

⚡ **All electrical work must be carried out by a properly licensed electrician. Failure to observe this point will void the factory warranty for the Tempest Enclosure and possibly the equipment/equipment.**

- 1 Before starting work, switch off power to the branch circuit, carefully following lockout and tag-out procedures. Failure to do so could cause serious injury or death.
- 2 Two electrical junction boxes will be required within a short distance of the Twister enclosure for:
 - AC supply wiring
 - DMX control wiring

Your Twister enclosure is supplied fitted with two cable entry points, for Power and DMX signal cables.

The cable entries are suitable for use with standard conduit fittings. US size ½", international 20mm. Tempest recommends the use of flexible, outdoor-rated conduit for the last few feet (1m) to the enclosure.

All junction boxes must be installed in accordance with local electrical codes and should be located near the permanent installation of the enclosure. Each junction box requires a length of flexible conduit, long enough to reach from the junction box to the enclosure conduit fittings. Leave slack for positioning of enclosure, and enough space behind the enclosure for ventilation.

The AC supply must be protected by a fuse or circuit breaker of a rating suitable for the equipment.

The user may connect the fan and the equipment to the same switched supply, or run them separately, according to need. If run separately, it is the user's responsibility to ensure that the fan is always running when the equipment is on.

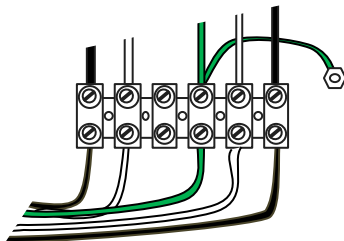
Note that for temporary installation, the conduit fittings may be replaced with outdoor-rated cable entry glands, at the user's discretion.

Remove the Globe Assembly. You will see the fan wires and the fixture PowerCon pigtail already terminated to the connector block next to the fan.



Pass the AC feeder wires through the rear panel and terminate to the connector block, using the wiring diagram below.

Dual Feed Wiring



L	N	G	N	L
FAN		LIGHT		


Dual Feed Wiring – Fan use

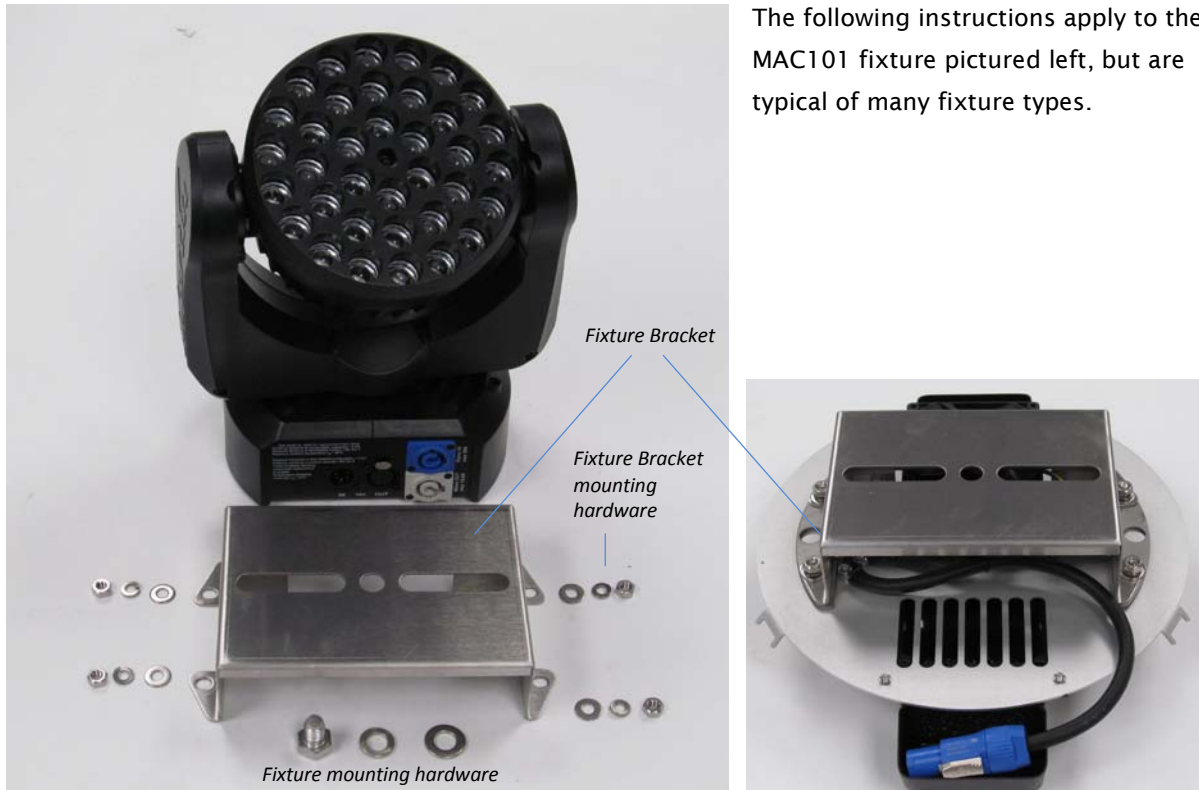
It is the user’s responsibility to ensure that the fan is running any time the luminaire is on. In addition we recommend running the fan for a short period (30 seconds or 1 minute) every 15 minutes, 24/7, to prevent solar overheating and to help reduce condensation risk.

Single Feed Wiring

For single-feed wiring, jump the fan and Light L and N wires together on the terminal block or using wire nuts.

4 Mounting the Luminaire in the Twister Enclosure

-  If the Twister enclosure is suspended from a ceiling or overhang, this must be done by two people.



The following instructions apply to the MAC101 fixture pictured left, but are typical of many fixture types.

1. Remove the Fixture bracket from the enclosure base. Keep the fixture bracket mounting hardware safely for re-use.
2. Check that the open side of the Fixture bracket is facing you.
3. Using the fixture mounting hardware, bolt through the underside of the bracket into the threaded hole in the fixture base.
4. Replace the fixture bracket and the fixture on the Twister base, and tighten down the four fixing nuts.
5. Plug the PowerCon connector into the blue 'power-in' receptacle on the fixture base.
6. Connect DMX control cables, in accordance with luminaire manufacturer's instructions.
7. Power up the equipment, check functions and fan operation
8. Replace the enclosure cover
9. Make sure that all four latches are firmly fastened. The latches are adjustable, and should be checked periodically, since the rubber seal may compress slightly over time.
10. For additional security, use a bolt or padlock to lock one or more of the latches, using the security ring provided.

NOTE: Mounting Luminaires using omega clamps

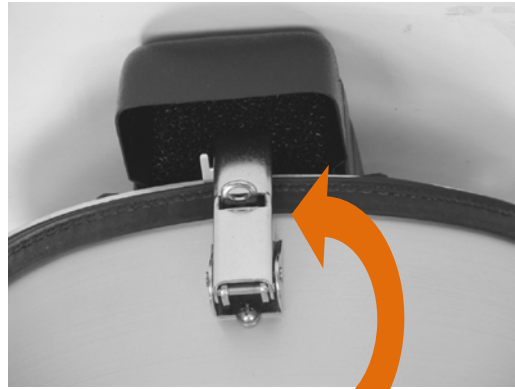
Many light fixtures are supplied with one or more omega clamps for mounting.

Mount the omega clamp(s) to the fixture base, following the manufacturer's instructions, then bolt the omega clamps to the Twister fixture bracket, before re-installing the fixture bracket to the fixture base.

Latch Adjustment and Security



The latch tension is adjusted by turning the screw - clockwise to tension, anti-clockwise to loosen.



Insert a padlock in one or more security rings for additional security.

5 *Operation*

While there are no specific operational actions required for normal use, the following points should be kept in mind.

- ① **IF the fan and equipment have been powered separately, it is the responsibility of the user to ensure that the fan is running at all times when the equipment lamp is on.**
- ① We recommend the fan be run periodically (for example one minute every 15 minutes), to prevent heat buildup under hot sun and to reduce risk of condensation at night.
- ① Unless the enclosure or equipment is undergoing routine maintenance, the enclosure should be closed and securely latched at all times.
- ① Only authorized personnel should open the enclosure (see maintenance warnings in the next chapter).





6 Routine Maintenance

It is very important to perform routine maintenance on both the enclosure and the equipment inside it. Failure to do so may reduce lifetime for both the enclosure and the equipment.

Note

Maintenance schedules depend on location and environment. The intervals given here are general minimum guidelines. It is up to the user to judge whether maintenance should be carried out more frequently. We recommend doing these tasks no less often than mentioned here.

Safety

-  As the enclosure is a powered unit with moving parts, it is necessary to keep safety in mind while performing routine maintenance. Although maintenance can be performed while the enclosure is powered, it is safer to carry it out with the power disconnected with proper lockout and tag out procedures followed.
-  Be aware that once the enclosure has had power applied to it, the fan will start to turn. Make sure that your hands are clear of the fan before applying power to the enclosure.
-  Only authorized personnel should perform maintenance on the enclosure or equipment
-  Do not service the unit in the rain or other adverse weather conditions (snow, sleet, high winds, etc.).

Inspection Checklist: - Every Three (3) Months

- Glass should be clean and free of cracks
- Enclosure should be free of debris both inside and out
- Bolts and tie-down straps should be tight
- Rubber seals should be in good condition. Check seals inside and out for gaps.
- Fan should be functioning and not making excessive noise
- Filters should be clean



Air Filter - Every Three (3) Months

Both air filters should be removed and cleaned on a regular basis. To remove filter, pull it directly out of the intake vent. The filters can be cleaned by running water from a hose and do not require any special solution.

To reinstall, carefully push filter back into the cowl molding. The filter should sit snugly between the cowl ribs.

Case - As Needed

The outside of the case should be cleaned as needed. The case should be cleaned with a wet cloth and mild detergent (if necessary). Do not use a direct spray from a hose to clean the case.

Globe - As Needed

Clean using a proprietary acrylic cleaning solution or a mild detergent, and wipe dry. Use only soft, lint-free cloths for globe cleaning. Never use an abrasive cleaner.

Equipment

Review the manufacturer's instructions for proper maintenance of your Luminaire. Remember, the enclosure simply protects the equipment inside it and is not a substitute for regular maintenance.

7 Troubleshooting

This is a guide to the general symptoms, problems, and solutions that may occur during the usage of your enclosure. However, it is important to remember that problems may occur within the equipment itself and these must also be considered.

Equipment does not have power.

Check power supply wiring and voltage.

Fan is not spinning

Fan cords may have become disconnected. Check connections between fan and cord.

Fan may be obstructed. Shut off power to enclosure and check for obstructions. Turn power back on to see if fan will start spinning. If fan does not turn then enclosure is not receiving power.

Turn off all power and check wiring. If the wiring is correct, contact technical support.

Equipment does not have power.

Check equipment power switch. If switch is on, check wiring and supply switch/circuit breaker.

Equipment turns on and off repeatedly over short span of time.

Check that vent areas and airways are clear. If so, ambient temperature may be too high, or equipment may have internal problem.

Excessive water in enclosure.

Seal leak. Repair with silicone sealant, or replace seal.

8 Limited Warranty

INSPECTION/WARRANTY/RETURNS.

A. Customer, at its sole expense, shall inspect all Goods promptly upon receipt and accept all Goods that conform to the specifications or catalog. All claims for any alleged defect in or failure of the Goods or Seller's performance to conform to the Contract, capable of discovery upon reasonable inspection, must be set forth in a written rejection notice detailing the alleged non-conformity, and be received by Seller within thirty (30) calendar days of Customer's receipt of the Goods. Failure by Customer to notify Seller of the alleged non-conformity within thirty (30) days will be conclusive proof that the Goods have been received by Customer without defects or damage, and in the quantities specified on the bill of lading and shall constitute an irrevocable acceptance of the Goods and a waiver of any such claim in connection with the Goods.

B. Seller warrants to Customer only that the Goods will be free from defects in material and workmanship at the time of delivery and, subject to the exceptions and conditions set forth below, for the following period (the "Warranty Period"): twelve (12) months from the date of shipment by Seller. Seller may provide additional years of warranty coverage beyond 12 month, at the rate of 2.5% of the net sale price per year, up to a total of four additional years' coverage beyond the standard 12 month warranty period. Seller will remedy a defect as set forth in paragraph 7 D, below, (the "Warranty"). The Warranty is subject to each of the following exceptions and conditions:

1. Customer must promptly (and in all events within the Warranty Period) notify Seller of any alleged defect in a written notice (the "Notice") which shall set forth the quantity, catalog number, finish, original purchase order number, Seller's invoice number on which Goods were originally billed and a statement of the alleged defect, along with digital photographs showing such defects where feasible.

2. The Warranty shall not apply: (i) to any claimed defect that was capable of discovery upon reasonable inspection and deemed to be waived under paragraph A, above; (ii) to any Goods that have been subject to misuse, abnormal service or handling, or altered or modified in design or construction; (iii) to any Goods repaired or serviced by any person other than Seller's authorized service personnel or to Goods installed other than according to installation instructions, or (iv) with respect to normal wear and tear.

3. Seller makes no Warranty with respect to parts or components that are not the product of Seller, and specifically makes no warranty whatsoever for equipment housed inside enclosure products manufactured by Seller.

4. The Warranty is Seller's exclusive warranty with respect to the Goods. Seller makes no warranties, guarantees or representations, express or implied, to Customer except as set forth in this section. ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION ANY IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR USE OR FOR A PARTICULAR PURPOSE, ARE HEREBY EXCLUDED AND DISCLAIMED.

C. Seller will accept the return of Goods properly rejected under paragraph A, above, or as to which Notice of an alleged breach of Warranty has been timely given and such Goods may be returned to Seller, freight prepaid, but only upon Customer's receipt of Seller's written return material authorization ("RMA") and shipping instructions. The RMA shall be void if the Goods are not received within 45 days after issuance of the RMA. No deduction or credit in respect of any rejected or returned Goods shall be taken until Customer has received Seller's further written deduction or credit/authorization following Seller's inspection to confirm nonconformity or defect. Seller will charge to Customer any and all costs incurred by Seller in connection with the handling, shipping, inspection and disposition of any returned Goods that are determined by Seller not to have been nonconforming upon Delivery or as to which the warranty hereunder is not applicable.

D. UPON ANY PROPER RETURN PURSUANT TO PARAGRAPH C, ABOVE, WHETHER IN CONNECTION WITH A REJECTION OF GOODS OR AN ALLEGED BREACH OF WARRANTY AND BASED UPON THE CONDITIONS SET FORTH IN THIS PARAGRAPH 7, SELLER AGREES THAT IT WILL, AS THE SOLE AND EXCLUSIVE REMEDY UNDER THE CONTRACT OR OTHERWISE, FOR ANY NONCONFORMITY OR BREACH OF WARRANTY, AND AT SELLER'S SOLE ELECTION: (i) REPAIR SUCH GOODS; OR (ii) REPLACE SUCH GOODS.

Tempest Product Support.

Step 1: First contact your local Dealer for support. Your dealer is best placed to respond quickly to your needs.

Step 2: If your dealer is unable to answer your questions please contact our Sales Office:

Tempest Lighting, Inc.
13110 Saticoy Street, Unit C
North Hollywood, CA 91605, USA
Tel +1 818 787 8984
Fax +1 818 982 5582
support@tempestlighting.com

Visit our web site for current information and specifications:

www.tempestlighting.com

9 *Registration*

Filling out the registration form on the next page and sending it to the Tempest Lighting factory within 30 days of installation entitles you to the warranty cover specified in this manual. It also enables us to notify you in case of important news or post-sale information regarding the Twister Lighting Enclosure.

Twister Enclosure Registration Form

Detach and mail/fax to:

Tempest Lighting, Inc., 13110 Saticoy St., N Hollywood, CA 91605

Fax # +1 818 787 4994

If a Tempest Representative has not inspected the installation, please send photos showing installation.

Model Number:

Serial Number:

Latch Key Number:

Dealer/Sold By

Name:

Location:

Date Purchased:

Contractor/Installed By

Name:

Date Installed:

Location Installed:

Company/Organization

Name:

Street Address:

.....

City, State, ZIP, Country:

.....

Phone:

Fax:

Contact Information

Name:

Phone: Extension:

Fax:

E-mail: