

Manua1



Service

VL3015LT Spot Luminaire

02.9698.0010



PHILIPS

VARI***LITE**

All other brand or product names which may be mentioned in this manual are trademarks or registered trademarks of their respective companies or organizations.

Philips Vari-Lite
A Philips Group Company
10911 Petal Street
Dallas, Texas 75238 USA

This manual is for informational use only and is subject to change without notice. Philips Vari-Lite assumes no responsibility or liability for any claims resulting from errors or inaccuracies that may appear in this manual.

Version as of: **04 June 2013**

Part number: **02.9698.0010 0**

VL3015LT Spot Luminaires Service Manual

©2013, Vari-Lite, a Philips group company. All Rights Reserved.

How To Obtain Warranty Service

A copy of the Vari-Lite Limited Warranty was included in the shipping package for this VARI*LITE product.

To obtain warranty service, please contact customer service at 1-877-VARI-LITE (1-877-827-4548), +1-214-647-7880, or entertainment.service@philips.com and request a Return Material Authorization (RMA) for warranty service. You will need to provide the model and serial number of the item being returned, a description of the problem or failure and the name of the registered user or organization. If available, you should have your sales invoice to establish the date of sale as the beginning of the warranty period.

Once you obtain the RMA, pack the unit in a secure shipping container or in its original packing box. Fill out the RMA form included at the end of this manual and place in shipping container along with a copy of your invoice (if available). Write the RMA number legibly on or near the shipping address label and return the unit, freight prepaid to:

Philips Vari-Lite
10911 Petal Street
Dallas, Texas 75238 USA
Attention: Warranty Service (RMA# _____)

As stated in the warranty, it is required that the shipment be insured and FOB our service center*.



Note: *When returning products to Philips Vari-Lite for repairs (warranty or out-of-warranty) from a country other than the USA, “Philips Lighting Controls Division”, must appear in the address block as the Importer of Record (IOR) on all shipping documentation, Commercial Invoices, etc. This must be done in order to clear customs in a timely manner and prevent returns.

Compliance Notice

FCC This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when this equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with Vari-Lite system, service, and safety guidelines, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his/her own expense.



Declaration of Conformity

We, Philips Lighting B.V. 10911 Petal Street, Dallas, Texas 75238 USA, declare under our responsibility for the products:

Product Range	Professional Stage Luminaire
Product Code	VL3015LT Spot

The designated products are in conformity with the essential requirements of the following European Directives and harmonized standards:

Low Voltage Directive (LVD), 2006/95/EC

EN 60589-2-17:1984+A1:1987+A2:1990 used in conjunction with 60598-1:2008/A11:2009

Electromagnetic Compatibility Directive (EMC), 2004/108/EC

EN 55022:2010, EN55024:2010

Safety Notice

It is extremely important to read ALL safety information and instructions provided in this manual and any accompanying documentation before installing and operating the products described herein. Heed all cautions and warnings during installation and use of this product.

Safety symbols used throughout this manual are as follows:



CAUTION advising of potential damage to product.



WARNING advising of potential injury or death to persons.

GENERAL INFORMATION PERTAINING TO PROTECTION AGAINST ELECTRICAL SHOCK, FIRE, EXPOSURE TO EXCESSIVE UV RADIATION, AND INJURY TO PERSONS CAN BE FOUND BELOW.

WARNING:

INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST FIRE

1. VARI*LITE luminaires have been designed for use with specific lamp types. VL3015LT Spot Luminaires is supplied with an Osram HTI 1500 D7/60 metal halide lamp or other lamps as approved by Vari-Lite. Installing another type of lamp not approved by Vari-Lite may be hazardous.
2. Luminaires may be mounted on any type of surface as long as mounting instructions are followed. See instructions detailed in this manual.
3. Note distance requirement from combustible materials or illuminated objects for VARI*LITE luminaires.

WARNING:

INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST ELECTRICAL SHOCK

1. VARI*LITE luminaires are designed for dry locations only. Exposure to rain or moisture may damage luminaire.
2. Disconnect power before servicing any VARI*LITE equipment.
3. Servicing to be performed by qualified personnel only.

WARNING:

INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST EXCESSIVE EXPOSURE TO UV RADIATION

1. Many VARI*LITE luminaires use a lamp that produces UV radiation. DO NOT look directly at lamp.
2. It is hazardous to operate luminaires without lens or shield. Shields, lenses, or ultraviolet screens shall be changed if they have become visibly damaged to such an extent that their effectiveness is impaired. For example, by cracks or deep scratches.

WARNING:

INSTRUCTIONS FOR PROTECTION AGAINST INJURY TO PERSONS

1. Exterior surfaces of the luminaire will be hot during operation. Use appropriate safety equipment (gloves, eye protection, etc.) when handling and adjusting hot equipment and components.
2. Luminaires will have a hot lamp when operating. Disconnect power and allow lamp to cool before replacing.
3. Arc lamps emit ultraviolet radiation which can cause serious skin burn and eye inflammation. Additionally, arc lamps operate under high pressure at very high temperatures. Should the lamp break, there can exist a danger of personal injury and/or fire from broken lamp particles being discharged.
4. Wear eye protection when relamping.
5. Appropriate safety equipment (gloves, eye protection) should be used when handling damaged lamps.
6. If lamp is touched with bare hands, clean lamp with denatured alcohol and wipe with lint-free cloth before installing or powering up the luminaire.
7. The lamp shall be changed if it has become damaged or thermally deformed.

WARNING:

RF INTERFERENCE

1. This is a Class A product. In a domestic environment this product may cause radio interference, in which case, the user may be required to take adequate measures.

ARC LAMP CHARACTERISTIC CONSIDERATIONS

1. Arc lamps require a period of time to relight after a power interruption or a severe voltage dip. In some cases, the lamp will automatically relight after it has cooled depending on Lamp Power-Up State configuration setting.
2. Burning position is universal.

Sicherheitshinweise

Es ist äußerst wichtig, ALLE Sicherheitsinformationen und -hinweise in diesem Handbuch und dem beiliegenden Informationsmaterial zu lesen, bevor Sie die hierin beschriebenen Produkte installieren bzw. bedienen. Halten Sie bei der Installation und dem Einsatz dieses Produkts alle Warnhinweise und Vorsichtsmaßnahmen ein.

Folgende Sicherheitssymbole werden in diesem Handbuch verwendet:



VORSICHT - weist auf möglichen Produktschaden hin.



WARNUNG - weist auf mögliche Körperverletzung und Lebensbedrohung hin.

NACHSTEHEND FINDEN SIE ALLGEMEINE HINWEISE ÜBER SICHERHEITSVORKEHRUNGEN GEGEN ELEKTROSCHOCK, FEUER, ÜBERHÖHTE UV-STRAHLUNG UND KÖRPERVERLETZUNGEN.

WARNUNG:

HINWEISE ZUM FEUERSCHUTZ

1. VARI*LITE -Scheinwerfer sind ausschließlich für den Einsatz mit bestimmten Lampentyps. Achten Sie auf den Lampentyp (Osram HTI 1500 D7/60 metal halide lamp), bevor Sie die jeweiligen Lampen ersetzen. Die Installation eines anderen Lampentyps kann gefährlich sein.
2. Scheinwerfer können auf jeder beliebigen Oberfläche montiert werden, solange Sie die Montageanweisungen befolgen. Detaillierte Hinweise finden Sie in diesem Handbuch.
3. Beachten Sie die Einhaltung des erforderlichen Sicherheitsabstandes der VARI*LITE -Scheinwerfer von brennbarem Material oder beleuchteten Objekten.

WARNUNG:

HINWEISE ZUM SCHUTZ GEGEN ELEKTROSCHOCK

1. VARI*LITE -Scheinwerfer eignen sich ausschließlich für trockene Standorte. Regen oder Feuchtigkeit können die Scheinwerfer beschädigen.
2. Unterbrechen Sie die Stromzufuhr, bevor Sie mit der Arbeit an VARI*LITE -Geräten beginnen.
3. Die Geräte sollten nur von qualifiziertem Personal gewartet werden.

WARNUNG:

HINWEISE ZUM SCHUTZ GEGEN ÜBERHÖHTE UV-STRAHLUNG

1. Viele VARI*LITE -Scheinwerfer verwenden die Lampentyp, der UV-Strahlen abgibt. **SCHAUEN SIE NICHT** direkt in die Lampe.
2. Es ist gefährlich, Leuchten ohne Linsen oder Blenden zu bedienen. Blenden, Linsen oder Ultraviolettshielder müssen ausgetauscht werden, sofern deren Schutzwirkung durch sichtbare Beschädigung (z. B. Sprünge oder Schrammen) eingeschränkt ist.

WARNUNG:

HINWEISE ZUM SCHUTZ GEGEN KÖRPERVERLETZUNGEN

1. Bei Betrieb sind die Außenflächen der Scheinwerfer heiß. Verwenden Sie bei der Bedienung von aufgeheizter Apparatur die jeweils geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz etc.).
2. Bei Betrieb der Scheinwerfer ist die Lampe heiß. Unterbrechen Sie die Stromzufuhr und lassen Sie die Lampe abkühlen, wenn Sie diese austauschen.
3. Bogenlampen senden ultraviolette Strahlen aus, die Hautverbrennungen und Augenentzündungen verursachen können. Der Betrieb von Bogenlampen erfolgt unter Hochdruck und bei hohen Temperaturen. Sollte die Lampe zerbrechen, besteht die Gefahr von Körperverletzung bzw. von Feuer, das von Lampenteilen ausgelöst werden kann.
4. Tragen Sie beim Austausch der Lampen einen Augenschutz.
5. Die geeignete Sicherheitsausrüstung (Handschuhe, Augenschutz) sollte beim Umgang mit beschädigten Lampen verwendet werden.
6. Wenn die Lampe mit bloßen Händen berührt wird, reinigen Sie sie mit denaturiertem Alkohol und einem fusenfreien Tuch, bevor Sie die Scheinwerfer installieren oder in Betrieb nehmen.
7. Wenn die Lampe beschädigt oder durch Hitzeeinwirkung deformiert ist, muß diese ausgetauscht werden.

WARNUNG:

HF-INTERFERENZ

1. Es handelt sich um ein Produkt der Klasse A. In einer Wohnumgebung kann das Produkt Hochfrequenzstörungen verursachen. In diesem Fall müssen eventuell geeignete Maßnahmen getroffen werden.

BESONDERHEITEN VON BOGENLAMPEN

1. Bogenlampen benötigen eine gewisse Zeitdauer, um nach einem Stromausfall oder einem Spannungsgefälle wieder aufzuleuchten. In einigen Fällen wird die Lampe nach Abkühlung automatisch wieder aufleuchten, je nach der Systemkonfigurationseinstellung des Lampeneinschaltungsstatus.
2. Die Brennposition ist Universal.

Notes de sécurité

Avant de procéder à l'installation des produits décrits dans ce guide et de les mettre en marche, il est extrêmement important de lire TOUS les renseignements et TOUTES les directives de sécurité contenues dans ce guide ainsi que toute documentation jointe. Tenir compte de tous les avertissements et suivre toutes les précautions pendant l'installation et l'utilisation de cet appareil.

Les symboles de sécurité utilisés dans ce guide sont les suivants :



ATTENTION Ce symbole annonce que l'appareil risque d'être endommagé.



AVERTISSEMENT Ce symbole annonce qu'il y a risque d'accident grave ou même fatal.

CETTE SECTION CONTIENT DES INFORMATIONS GÉNÉRALES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES, LES INCENDIES, L'EXPOSITION EXCESSIVE AUX RAYONS UV ET TOUT AUTRE ACCIDENT POUVANT ENTRAÎNER DES BLESSURES.

AVERTISSEMENT:

DIRECTIVES POUR SE PROTÉGER CONTRE LES INCENDIES

1. Les luminaires VARI*LITE ont été conçus pour être utilisés uniquement avec certaines type de lampes. Vérifier le type de lampe (Osram HTI 1500 D7/60 metal halide lamp) avant de remplacer les lampes. L'installation d'un autre type de lampe peut poser un danger.
2. Les luminaires peuvent être fixés sur tout type de surface tant que les directives de montage sont respectées. Voir les explications détaillées dans ce guide.
3. Vérifier la distance à respecter entre les matériaux combustibles ou les objets illuminés et les luminaires VARI*LITE .

AVERTISSEMENT:

DIRECTIVES POUR SE PROTÉGER CONTRE LES DÉCHARGES ÉLECTRIQUES

1. Les luminaires VARI*LITE sont conçus pour une utilisation au sec uniquement. Une exposition à la pluie et à l'humidité risque d'endommager le luminaire.
2. Débrancher l'appareil avant de procéder à la révision de tout matériel VARI*LITE .
3. Les révisions doivent être effectuées uniquement par des personnes qualifiées.

AVERTISSEMENT:

DIRECTIVES POUR SE PROTÉGER CONTRE UNE EXPOSITION EXCESSIVE AUX RAYONS UV

1. Plusieurs luminaires VARI*LITE utilisent une lampe qui produit des rayons UV. NE PAS fixer son regard sur la lampe.
2. L'utilisation des luminaires sans lentille ou blindage pose des risques. Tous blindages, lentilles ou écrans ultraviolet visiblement endommagés au point que leur efficacité en est affectée doivent être remplacés, par exemple s'il y a des fissures ou de profondes rayures.

AVERTISSEMENT:

DIRECTIVES POUR SE PROTÉGER CONTRE LES ACCIDENTS POUVANT ENTRAÎNER DES BLESSURES

1. Les surfaces externes du luminaire deviennent brûlantes quand l'appareil est en marche. Pour manœuvrer ou ajuster des appareils brûlants et leurs composants, se protéger suffisamment (gants, protection pour les yeux, etc.).
2. La lampe du luminaire est brûlante lorsqu'il est en marche. Débrancher le courant et attendre que la lampe ait refroidi avant de la remplacer.
3. Les lampes à arc émettent des rayons ultraviolets pouvant causer de graves brûlures sur la peau et une inflammation des yeux. De plus, les lampes à arc fonctionnent sous haute tension à de très hautes températures. Si la lampe se casse, les particules de la lampe cassée peuvent causer blessures et/ou incendie en s'éparpillant.
4. Se protéger les yeux pour remplacer la lampe.
5. Utiliser des appareils de protection appropriés (gants, protection des yeux) pour manier des lampes endommagées.
6. Si la lampe a été touchée avec des mains nues, la nettoyer avec de l'alcool dénaturé et l'essuyer avec un chiffon non-pelucheux avant d'installer ou de brancher le luminaire.
7. Si la lampe a été endommagée ou a reçu une déformation thermique, elle doit être remplacée.

AVERTISSEMENT:

INTERFÉRENCE RF

1. Cet appareil est de Classe A. Dans un environnement domestique, cet appareil peut causer des interférences radio, et si c'est le cas, l'utilisateur peut avoir à prendre des mesures adéquates.

CONSIDÉRATIONS DES CARACTÉRISTIQUES DE LAMPES À ARC

1. Après une interruption de courant ou une baisse importante de voltage, les lampes à arc mettent du temps avant de se rallumer. Dans certains cas, la lampe se rallumera automatiquement après s'être refroidie. Cela dépend de la manière dont le système est réglé pour le statut de mise en marche de la lampe.
2. La position Brûler est Universelle.

Aviso sobre Seguridad

Es muy importante leer TODA la información e instrucciones sobre seguridad que se indica en este manual así como en los documentos adjuntos antes de instalar y operar los productos descritos. Se debe prestar atención a todos los avisos y advertencias durante la instalación y uso de este producto.

Los símbolos de seguridad usados en este manual son los siguientes:



CUIDADO, indica posibles daños al producto.



ADVERTENCIA, indica posibles lesiones o muerte a las personas.

LA INFORMACIÓN GENERAL RELACIONADA A LA PROTECCIÓN CONTRAGOLPES DE CORRIENTE ELÉCTRICA, INCENDIO, EXPOSICIÓN EXCESIVA A RADIACIÓN ULTRA VIOLETA Y LESIONES A LAS PERSONAS SE PUEDE ENCONTRAR SEGUIDAMENTE:

ADVERTENCIA:

INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA INCENDIO

1. Las luminarias VARI*LITE han sido diseñadas para ser usadas solamente con algunas lámparas. Tome nota del tipo de lámpara (Osram HTI 1500 D7/60 metal halide lamp) antes de reemplazarla. Instalación de otro tipo de lámpara puede ser peligroso.
2. Las luminarias se pueden instalar en cualquier tipo de superficie siempre que se sigan las instrucciones de instalación. Vea las instrucciones detalladas en este manual.
3. Tome nota de los requerimientos de distancia de materiales combustibles u objetos iluminados para las luminarias VARI*LITE .

ADVERTENCIA:

INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA CHOQUE ELÉCTRICO

1. Las luminarias VARI*LITE están diseñadas solamente para lugares secos. La exposición a la lluvia o humedad pueden dañar la luminaria.
2. Desconecte la energía antes de dar servicio a cualquier equipo de VARI*LITE .
3. El servicio debe ser realizado solamente por personal calificado.

ADVERTENCIA:

INSTRUCCIONES PARA PROTECCIÓN CONTINUA CONTRA LA EXPOSICIÓN EXCESIVA DE RADIACIÓN ULTRA VIOLETA

1. Muchas luminarias VARI*LITE usan un tipo de lámpara que produce radiación UV. NO mire directamente a la lámpara.
2. Es peligroso operar luminarias sin lentes o protectores. Debe cambiar los protectores, lentes o pantallas ultravioletas si se aprecia que han sido dañadas, y que su efectividad pudiera estar deteriorada. Por ejemplo, si tuvieran rajaduras o raspaduras profundas.

ADVERTENCIA:

INSTRUCCIONES PARA PROTECCIÓN CONTRA LESIONES DE PERSONAS

1. Las superficies exteriores de las luminarias están calientes durante su operación. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando haga ajustes en el equipo y componentes que están calientes.
2. Cuando las luminarias están en operación la lámpara estará muy caliente. Desconecte la energía y deje que la lámpara se enfríe antes de reemplazarla.
3. Las lámparas de arco emiten radiaciones ultravioletas que pueden ocasionar serias quemaduras a la piel e inflamación a los ojos. Además, las lámparas de arco operan a alta presión y muy alta temperatura. Si la lámpara se rompe, puede existir el peligro de lesiones al personal o un incendio ocasionado por las partículas de la lámpara rota que se caen.
4. Use protección para los ojos cuando vuelve a colocar una lámpara nueva.
5. Use un equipo de seguridad apropiado (guantes, protección para los ojos, etc.) cuando trabaje con lámparas dañadas.
6. Si toca la lámpara con las manos, limpie la lámpara con alcohol desnaturalizado y con tela sin pelusas antes de instalar o volver a conectar la luminaria.
7. Cambie la lámpara si está dañada o deformada termicamente.

ADVERTENCIA:

INTERFERENCIA RF

1. Este es un producto de Clase A. En el ambiente de la casa este producto puede ocasionar radiointerferencia, en cuyo caso, el usuario debe tomar las medidas adecuadas.

CONSIDERACIONES SOBRE LAS CARACTERÍSTICAS DE LA LÁMPARA DE ARCO

1. Las lámparas de arco requieren un período de tiempo para volver a iluminarse después de una interrupción de energía o de una severa caída de voltaje. En algunos casos, la lámpara se volverá a iluminar en forma automática después que se ha enfriado dependiendo de la configuración del sistema de energía de la lámpara.
2. La posición de encendido es universal.

安全性に関する注意事項

ここに記載されている製品を取り扱う場合は、まず本マニュアルおよび付属のマニュアルの安全性に関する情報と説明をすべてお読みください。また、実際に本製品を取り付けたり使用する際には、すべての注意事項および警告に留意して作業してください。

本マニュアルでは、以下の安全マークを使用しています。



注意：製品に損傷を与える危険性があります。



警告：人身事故につながる危険性があります。

感電、火災、UV放射に対する過度の露出、および人身事故を防ぐための一般的な情報については、以下の説明をお読みください。

警告：

火災の発生を防ぐためのヒント

1. VARI*LITE® 照明器具は、ランプを使用するように設計されています。ランプを交換する際は、ランプの種類（など）を確認するようにしてください。他の種類のランプを取り付けると危険です。
2. 照明器具は、本マニュアルの指示に従って操作するかぎり、どのようなタイプの表面にでも取り付けることができます。詳細については、本マニュアルを参照してください。
3. ヒューズを交換する場合は、同じヒューズ（同じ種類、同じクラス）を使用してください。
4. VARI*LITE® 照明器具は、可燃性物質または他の光源から必要な距離だけ離して配置してください。

警告：

感電を防ぐためのヒント

1. VARI*LITE® 照明器具は、乾燥した環境で使用するよう設計されています。雨で濡れる場所や湿気の多い場所に取り付けると、照明器具が傷むことがあります。
2. VARI*LITE® 照明器具を修理点検する場合は、必ず先に電源を切ってください。
3. 照明器具の修理点検は、資格を持つ技師のみが行うようにしてください。

警告：

過度の UV 放射にさらされないためのヒント

1. VARI*LITE® 照明器具の多くは、UV 放射を生ずる HID タイプのランプを使用しています。ランプを直視することは避けてください。
2. レンズまたはシールドを使わずに照明器具を点灯すると危険です。レンズ、シールド、紫外線画面は、ひび割れや深い引っかき傷などにより、その効力が損なわれるようになったら取り替えるようにします。

警告：

人身事故を防ぐためのヒント

1. 照明器具が点灯しているときは、その外側が熱くなります。熱くなった器具やコンポーネントを取り扱う際には、適切な防具（手袋や保護用眼鏡）を使用してください。
2. 照明器具が点灯しているときは、そのランプが熱くなります。ランプを交換する場合は、照明器具の電源を切り、ランプの温度が下がるまで待ってください。ランプの裏ぶたをあけると、遮断スイッチが働いて、ランプの電源が切れる場合があります。
3. アーク灯は紫外線を放射します。この紫外線によって、ひどい火傷を負ったり、目の炎症を起こすことがあります。さらに、アーク灯は、高圧高温の状態です。そのため、万一アーク灯が破損すると、飛び散った破片で人身事故や火災が発生する危険性があります。
4. 再点灯するときには、保護用眼鏡を着用してください。
5. 損傷したランプを取り扱う場合は、適切な防具（手袋や保護用眼鏡）を着用してください。
6. 手袋を着用せずに直接手でランプを触った場合は、変性アルコールを使ってランプをきれいにし、糸くずの出ない布で拭いてから照明器具を取り付け、電源を入れるようにします。
7. 傷がついたランプや熱によって変形したランプは取り替えてください。

警告：

RF 干渉

1. 本製品は Class A に分類されます。本製品は、家庭環境において無線干渉を起こす可能性があります。その場合、使用者は適切な処置を取らなければならないことがあります。

アーク灯の特性

1. 停電後または大きな電圧ディップ後にアーク灯を再点灯する場合は、しばらく時間をおくようにしてください。Lamp Power-Up State) システム設定によっては、温度が下がったときに自動的に再点灯される場合もあります。
2. アーク灯は点光源です。

Table of Contents

Introduction

About This Manual	1
Additional Documentation.....	1
Customer Service	2
Technical Bulletins and Notices.....	2

Chapter 1. Description

Features

Product Features.....	4
Technical Specifications	4

Components

External Luminaire Components	5
Head and Yoke Components	6
Enclosure Components	7

Principles of Operation

Functional Block Diagram.....	8
-------------------------------	---

Chapter 2. Maintenance

Testing

Luminaire Self-Tests	10
Calibration Sequence - VL3015LT Spot Luminaire	10
Auto Recalibration	11
Partial Recalibration.....	11
Sensor Testing.....	11

Troubleshooting

Error Messages.....	13
Troubleshooting Guide.....	14

Maintenance Procedures

Lamp Replacement	16
Align Lamp	17
Gobo Replacement - Gobo Wheels 1, 2, and 3	18
Fixed Color Filter Replacement.....	21
Ballast Assembly Replacement.....	23
Color/Dimmer/Strobe Assembly Replacement.....	25
Gobo/Iris Assembly Replacement	26
Reflector / UV Glass Assembly Replacement	27
Main Control Board (MCB) Replacement.....	29
Ignitor Board Replacement	30
Fan Regulator Board Replacement	31
Interconnect PCB Assembly Replacement	32

Zoom Optics Assembly Replacement.....	33
Frost / Prism Assembly Replacement.....	34
Zoom Optics / Frost / Prism - Cable Routing Reference.....	35
Zoom Optics - Zoom (Actuator) Motor Replacement.....	38
Tilt Motor Assembly and Tilt Belt Replacement.....	40
Tilt Encoder PCB Replacement.....	42
Tilt EOT Sensor Replacement.....	43
Tilt Lock Replacement.....	44
Pan Motor Assembly/Pan Belt Replacement.....	45
Pan Encoder PCB Replacement.....	47
Power Supply (LVS) Replacement.....	48
Display PCB Assembly Replacement.....	49
PowerCon AC Input Connector Assembly Replacement.....	50
DMX PCB Assembly Replacement.....	51
Upper Enclosure Fan Assembly Replacement.....	52
Fan Regulator Board (Upper Enclosure) Replacement.....	53
Pan Lock Replacement.....	54
Gobo Timing Adjustments.....	56
Gobo Gear Planet Alignment.....	58
Gobo Gear Planet Alignment (continued).....	59

Chapter 3. Illustrated Parts Breakdown

Drawing Trees

VL3015LT Spot Luminaire.....	62
------------------------------	----

Top Assembly

Included Items Kit, VL3015LT Spot.....	65
VL3015LT Spot Luminaire.....	67
Generic Luminaire Assembly.....	70
Head Cover Assembly.....	73
Gobo Clamp (with Cover Support) Assembly.....	74
Gobo Clamp Assembly.....	75
Color Clamp Assembly.....	76

Head Assembly

Head Structure Assembly.....	77
Reflector Mount Assembly.....	79
VL3015LT Optic Assembly.....	80
Frost / Prism Bulkhead Assembly.....	83
Prism Assembly.....	85
Backend Assembly.....	87
Hot Box Assembly.....	90
80MM DC Fan Assembly.....	92
Color / Gobo Access Fan Assembly.....	93
Gobo Module Assembly.....	95
Rotating Gobo Wheel Assembly.....	98
Iris Sub-Assembly.....	99
Color/Strobe Module Assembly.....	101

Strobe System Assembly	104
Top Strobe Blade Assembly	106
Bottom Strobe Blade Assembly	107
Fixed Color Wheel 2 Assembly	108
Fixed Color Wheel 1 Assembly	110
Yoke Assembly	
Yoke Assembly	113
Tilt Motor Assembly	115
Yoke Fan Assembly	117
Enclosure Assembly	
Upper Enclosure Assembly	119
Stabilizer Assembly	125
Pan Motor Assembly	126
Ventilation Cover Assembly	128
Input Panel Assembly	129
Machined Pan Tube Assembly	130
High Flow Exhaust Fan Assembly	131
Fan Regulator Board Assembly	132



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Cable Assemblies

LVS Chassis Ground Cable Assembly	133
Chassis To Yoke Ground Cable Assembly	134
Head to Back Cap Ground Cable Assembly	135
Ignitor to Relay Cable Assembly	136
Yoke Fan Cable Assembly	137
Data I/O Link Cable Assembly	138
Ballast to Controller Cable Assembly	139
Lamp Supply to Relay Cable Assembly	140
Display Cable Assembly	141
AC Input Connector/Cable Assembly	142
Iris Fan Cable Assembly	143
36V Interconnect Cable Assembly	144
36V Yoke Reg PCB Cable Assembly	145
24V Relay to Interconnect Cable Assembly	146
Optics (MCB to Interconnect) Cable Assembly	147
Gobo (MCB to Interconnect) Cable Assembly	148
Interconnect to Gobo Cable Assembly	149
Color (MCB to Interconnect) Cable Assembly	150
Interconnect to Color Cable Assembly	151
OT Switch to Backcap Interlok Cable Assembly	152
Transfer Fan to Interconnect Cable Assembly	153
Lamp and Bulkhead Fans Cable Assembly	154
Yoke Fan to Volt Reg PCB Cable Assembly	155
Pan / Tilt Cable Assembly	156
Fan Exhaust Cable Assembly	157

VARI*LITE - VL3015LT SPOT LUMINAIRE SERVICE MANUAL

Ballast Power Cable Assembly	158
36V Supply Cable Assembly	159
Optics Bulkhead Cable Assembly.....	160
Ignitor to Lamp Socket Cable Assembly	161
LVS Chassis Ground Cable Assembly.....	162

Appendix A. Technical Notices & Bulletins

VL3015LT Spot Luminaires	163
Technical Notices	163
Technical Bulletins.....	163

Introduction

About This Manual

This manual provides descriptions, repair procedures, and illustrated parts breakdowns for all configurations of the VL3015LT Spot Luminaires. The manual is intended for use by Vari-Lite personnel and Authorized VARI*LITE Service Centers and technicians only.



WARNING: It is important to read ALL accompanying safety and installation instructions to avoid damage to the product and potential injury to yourself or others.

This manual covers the following models:

Model	Part Number	Source
VL3015LT Spot Luminaire	20.9698.0001	1500 Watt Arc



Note: Performing maintenance procedures may void the product warranty. Refer to the Vari-Lite Limited Warranty card included in the product shipping package for more information.

Additional Documentation

For complete installation and operation instructions, refer to the VL3015LT Spot Luminaire User's Manual. This manual is only available in electronic (PDF) format:

- VL3015LT Spot Luminaire User's Manual (02.9698.0002)

Note: The user's manual is available on the Philips Vari-Lite web site at www.vari-lite.com in the Product Downloads Section.

For more information regarding DMX512 systems, refer to the DMX512/1990 & AMX 192 Standards publication available from United States Institute for Theatre Technology, Inc. (USITT).

USITT Inc.
315 South Crouse Avenue Suite 200
Syracuse, NY 13210
Tel: 800-938-7488 or +1-315-463-6463
Fax: 866-398-7488 or +1-315-463-6525
www.usitt.org

Customer Service

Our Goal

At Vari-Lite, we are committed to providing you the highest quality in customer service. Our comprehensive resources are available to help your business succeed and ensure you get the full benefit of being a Vari-Lite customer. Whether your needs are telephone troubleshooting assistance, product training or technical service, our full-time staff of experienced professionals are on-hand to provide support.

How to Reach Us

For assistance in your area, call the dealer from which your product(s) was purchased.

or

Contact an Authorized Service Center.

or

Contact the Vari-Lite Customer Service Department, 9am - 6pm CST Monday through Friday, at the following:

phone: 1-877-VARI-LITE (1-877-827-4548)

e-mail: entertainment.service@philips.com

Additional Resources

For additional resources and documentation, please visit our website at www.vari-lite.com and follow the Support link.

Technical Bulletins and Notices

Technical bulletins concerning the latest changes to VARI*LITE equipment are issued from the Dallas, Texas USA office. They are documentation supplements that contain procedures for equipment upgrades, retrofits, and repairs not found in the existing manuals. Operator technical bulletins are also issued to document changes in control software. Technical bulletins are integrated into the appropriate equipment manuals as those manuals are revised. Bulletins are categorized by assembly or subassembly, and identified by a number such as S3K-001 (Series 3000 Luminaires Technical Bulletin number 1).

Technical notices are also issued from the Dallas, Texas USA office. They are non-procedural documents that contain information regarding product support issues, current equipment problems, software bugs, and documentation corrections. All technical notices begin with the prefix TN and are numbered sequentially, such as TN-138 (Tech Notice number 138).

CHAPTER 1.

Description

This chapter contains descriptions of luminaire features and components.

- **Features**
- **Components**
- **Principles of Operation**



Features

Product Features

All VL3015LT Spot Luminaires have the following standard features:

- **Color System:** Six color control wheels total. A three filter CYM cross fading system, two fixed color wheels with five interchangeable color filters each capable of continuous wheel rotation for additional effects, and a variable CTO color temperature correction wheel.
- **Zoom Optics:** A 13-element 10:1 zoom optics system, covering a range from 6° to 60°.
- **Beam Size Control:** A mechanical iris provides continuous beam size control for rapid and smooth timed beam angle changes.
- **Intensity Control:** Full field dimming designed for smooth timed fades as well as quick dimming effects.
- **Strobe:** High-performance dual blade strobe system capable of ultra-fast operation.
- **Rotating Gobo Wheels:** Three gobo/effects wheels combine to each offer four rotatable, indexable gobo positions and one open position.
- **Edge and Pattern Focus:** Variable beam focus to soften edges of gobos or spots. Remarkable depth of field capability allows morphing effects between all pattern and effects wheels.
- **Frost & Prism Capability:** Independent rotating and indexing 3-facet prism as well as an independent variable frost glass.
- **Pan and Tilt:** Smooth, time-controlled continuous motion by way of three-phase stepper motor systems.
- **Range:** Pan - 540°, Tilt - 270°.
- **Accuracy:** 0.3° resolution.
- **Source:** Triple wattage, double-ended lamp. The lamp is capable of operation at 900W, 1200W or 1650W - mode selectable from fixture or console. / Color Temperature: 6000K at 1650W and 6300K at 900W and 1200W

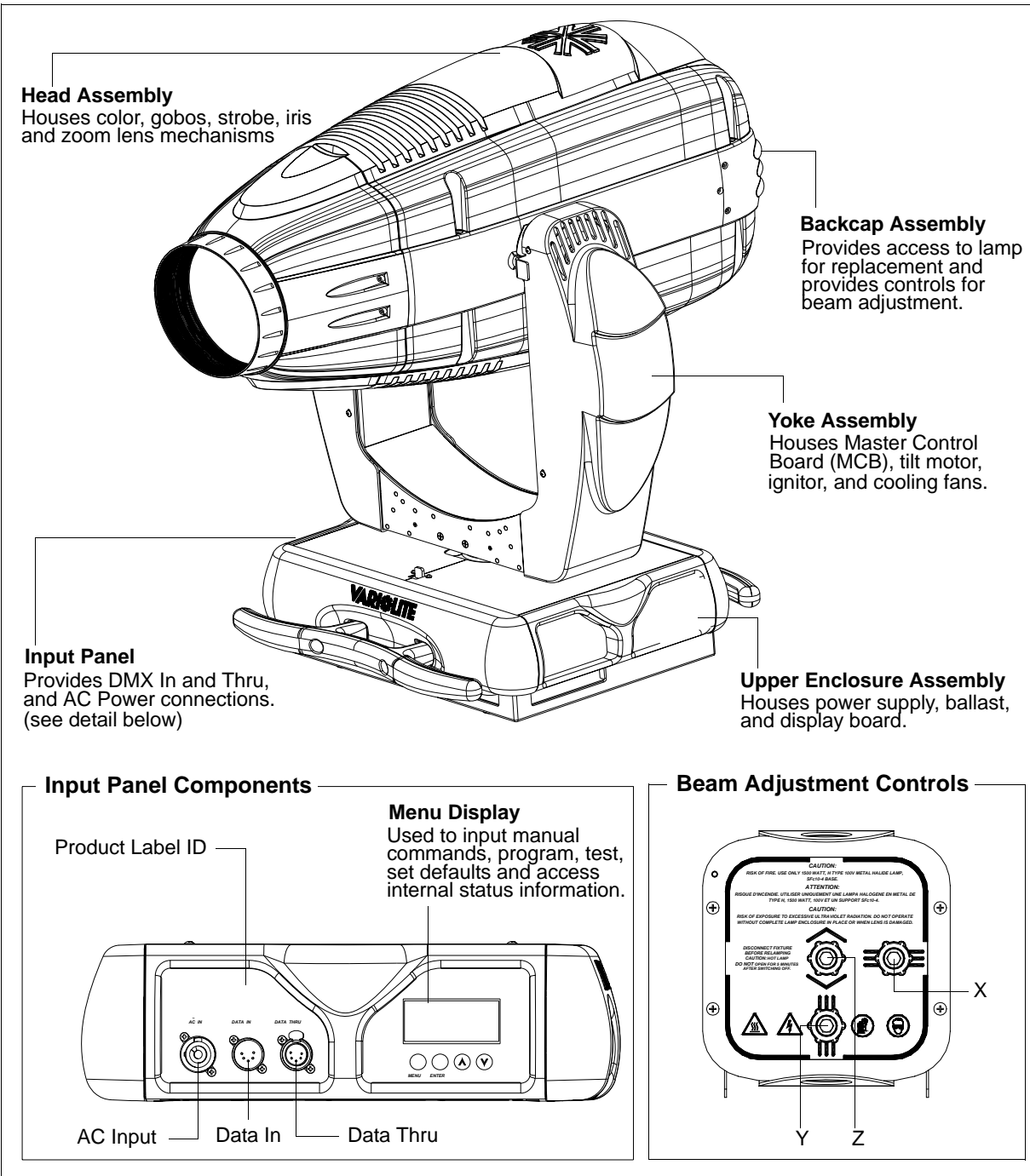
Technical Specifications

For additional technical specifications and information, please refer to VL3015LT Spot Luminaire User's Manual (02.9698.0002) and the product specification sheet. These documents can be found in the product downloads section of the Vari-Lite web site at www.vari-lite.com.

Components

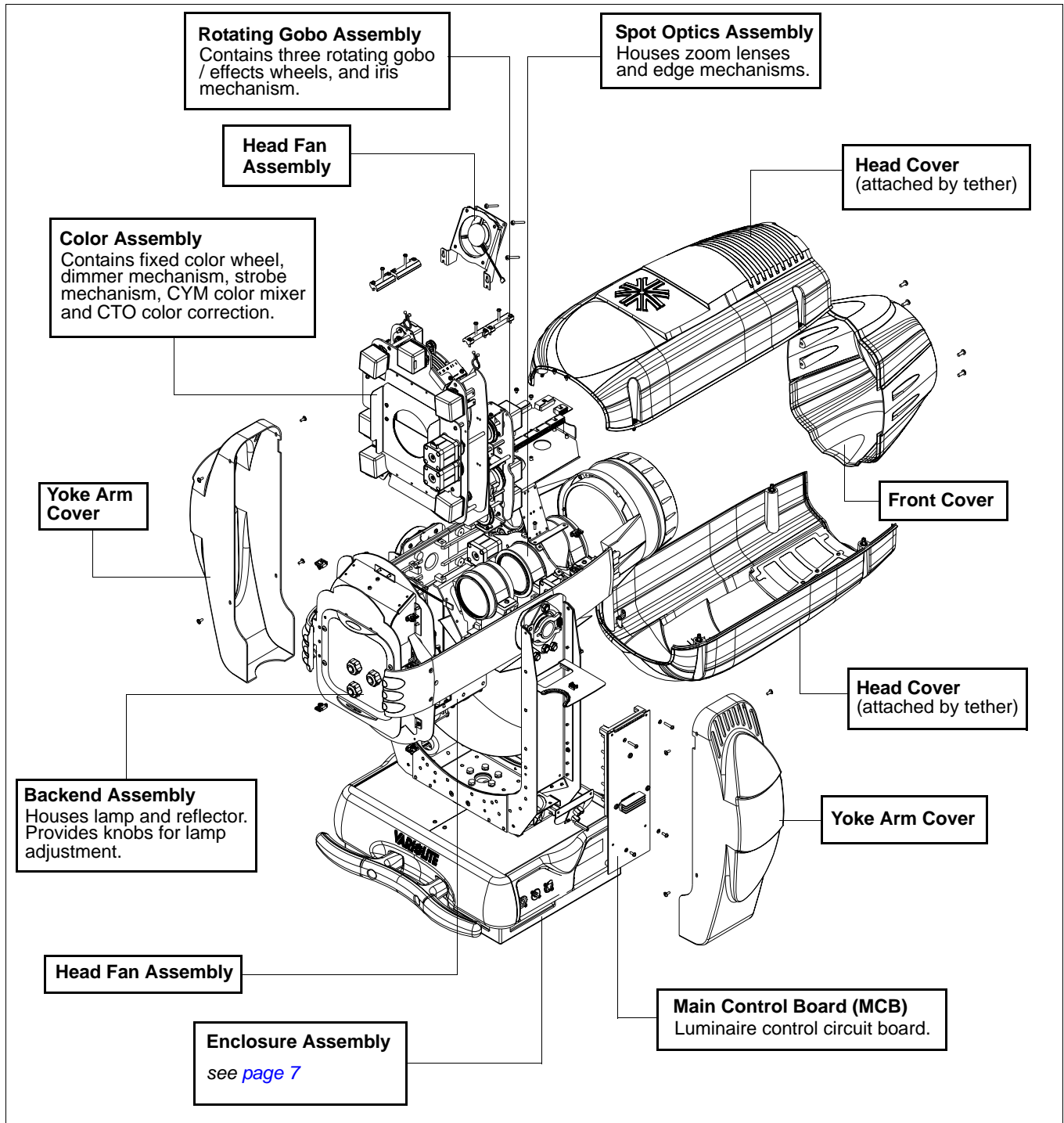
External Luminaire Components

The following illustration shows the external luminaire components and controls.



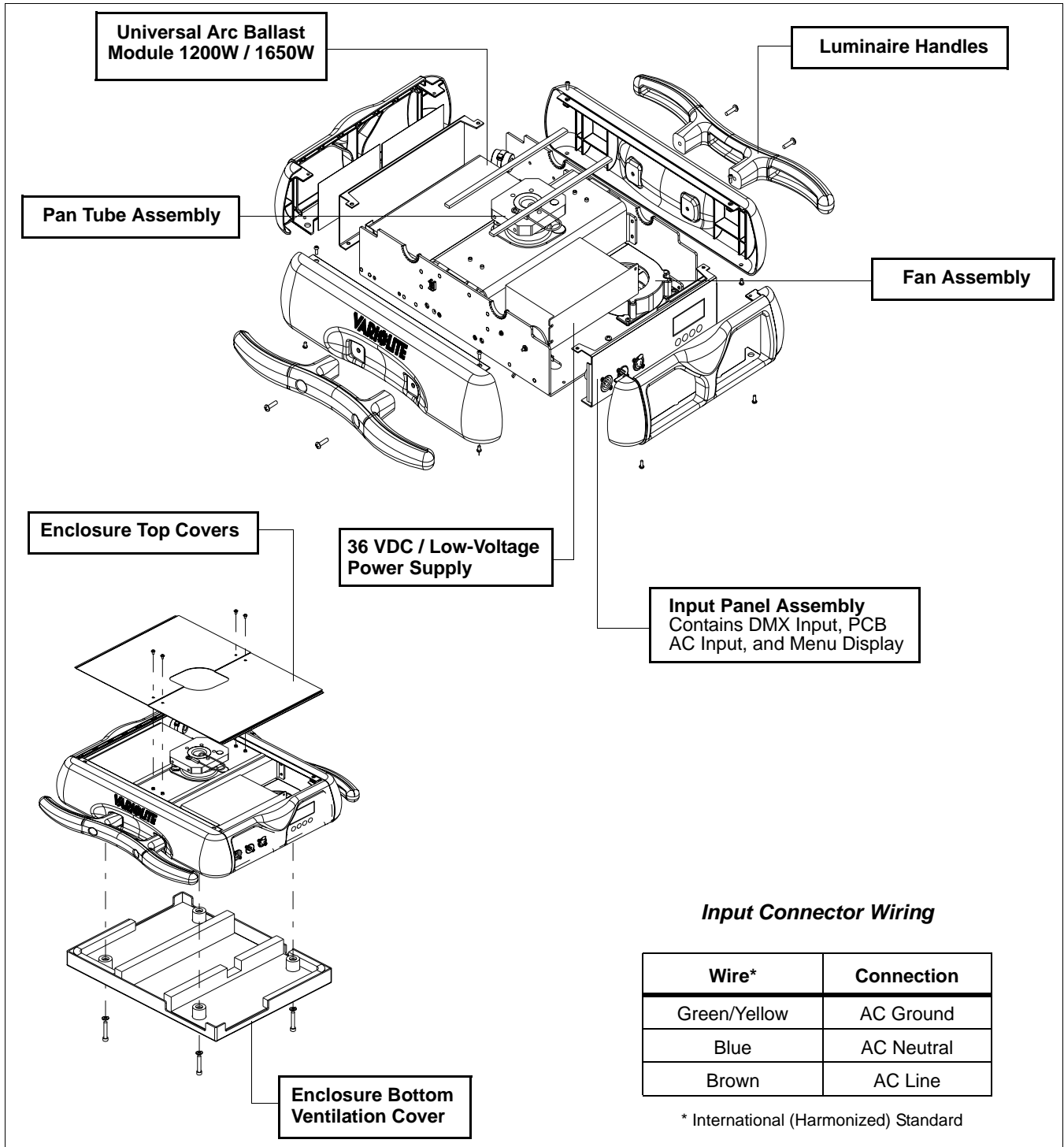
Head and Yoke Components

The following illustration shows the major sub-assemblies which are located in the luminaire head and yoke assemblies.



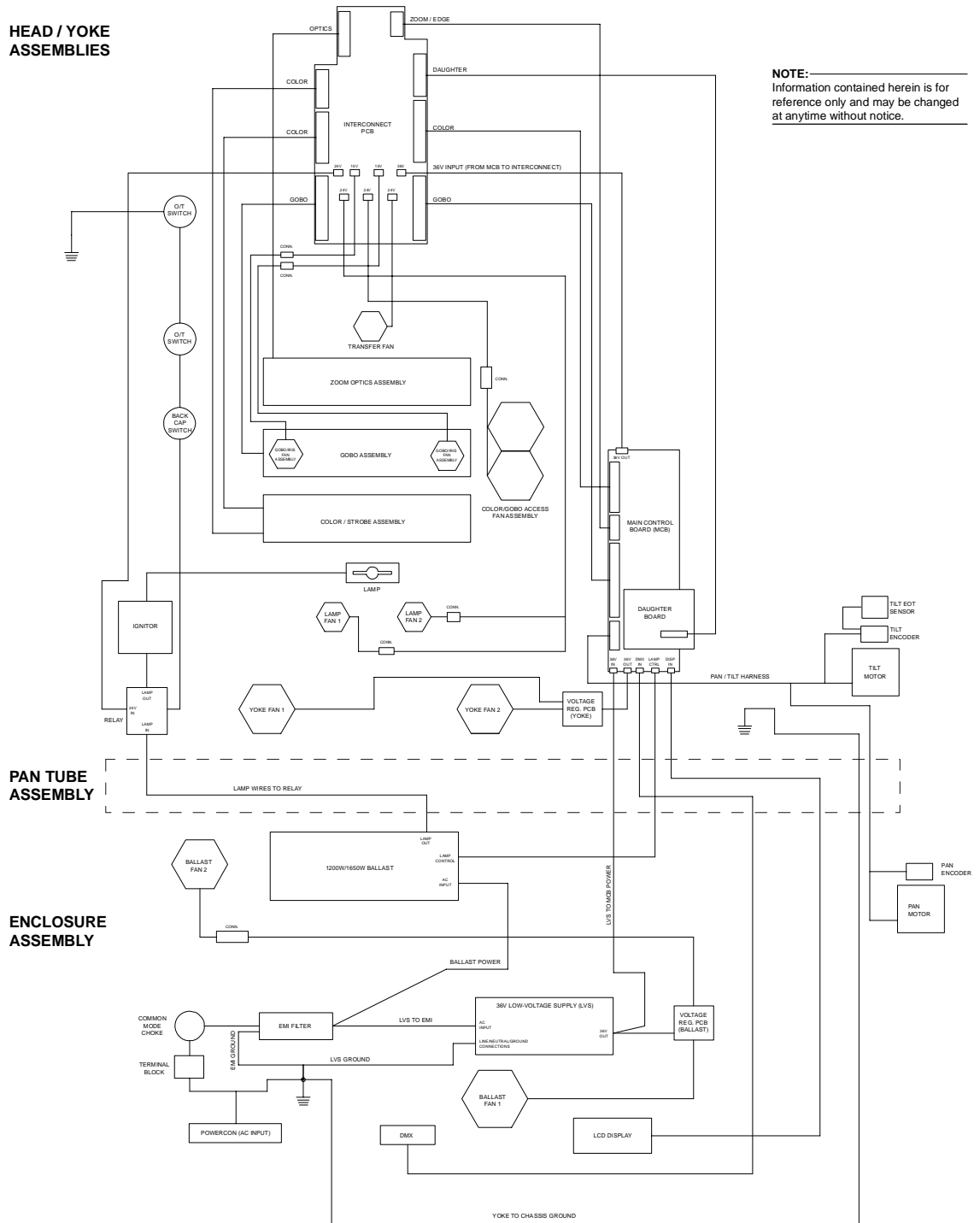
Enclosure Components

The following illustration shows the major sub-assemblies which are located in the luminaire enclosure assembly. (Yoke and head assemblies not shown for clarity.)



Principles of Operation

Functional Block Diagram



CHAPTER 2.

Maintenance

This chapter contains test, service, and standard maintenance procedures.

- **Testing**
- **Troubleshooting**
- **Maintenance Procedures**



WARNING: All maintenance procedures are to be performed with power removed from the luminaire. Never remove cover or backcap while lamp is in operation.



WARNING: Maintenance, repairs, and adjustments should only be performed by a qualified, factory-trained service technician at an Authorized VARI*LITE Service Center.



SERVICE

Testing

Luminaire Self-Tests

The luminaire is capable of running self tests by using the TEST menu functions. For detailed instructions regarding the luminaire's self-test function, refer to the VL3015LT Spot Luminaire User's Manual (02.9698.0002). This manual is available on the Vari-Lite web site, in the product download section, at www.vari-lite.com.

Calibration Sequence - VL3015LT Spot Luminaire

The following is an outline of the luminaire's standard calibration sequence:

Phase 1

- Tilt
- Strobe
- Color Wheel 1
- Color Wheel 2
- Iris
- Dimmer

Phase 2

- Pan
- CTO
- Cyan
- Yellow
- Magenta

Phase 3

- Move Tilt
- Gobo1
- Gobo2
- Gobo3
- Prism
- Gobo1 Index
- Gobo2 Index
- Gobo3 Index

Phase 4

- Lens A
- Lens B
- Lens C
- Prism
- Prism Index
- Frost

Auto Recalibration

Most mechanisms with sensors will check their sensor when at a zero position, if the sensor is not detected within 3 seconds, the mechanism will recalibrate. This applies to all except pan and tilt, and zoom and edge. Pan and tilt are corrected continuously if required by encoders fitted to the motor shaft.



Note: Colors (CTO and CYM) will only auto recalibrate when the dimmer has been closed for 3 seconds.

Partial Recalibration

It is possible to recalibrate sections of the luminaire from a console. This allows greater flexibility and speed by only forcing a recalibration on specific mechanisms. Partial recalibration values (on the control channel) are as follows:

- Hold DMX value 102 for 3 seconds then 0 recal color: Color wheel, CYM, CTO, Dimmer
- Hold DMX value 114 for 3 seconds then 0 recal gobos: Gobo wheels and Index
- Hold DMX value 128 for 3 seconds then 0 recal lenses: Edge, Zoom, and Shutter
- Hold DMX value 140 for 3 seconds then 0 recal Dimmer and Strobe

Sensor Testing

Most mechanisms within the VL3015LT Spot Luminaires are equipped with either optical or magnetic sensors. The VL3015LT Spot Luminaire master control board (MCB) has labeled test points for reading DC voltages at each sensor. Testing is best performed with a digital voltmeter for sensor readings or an Oscilloscope for pan/tilt encoder readings. The values can be used to determine whether a circuit is opening correctly or needs further troubleshooting.

Guidelines:

- The values will change depending on whether the sensor reading is Open or Closed.
- The values will be different depending on the type of sensor: optical or magnetic.
- As a general rule, if a change occurs from 5v to 0v or visa versa, then it is working.
- An Open reading occurs when the sensor is not aligned - tab not at sensor (typically a non-zero DMX value).
- A Closed reading occurs when the sensor is aligned -tab in or at sensor (typically a zero DMX value).
- Optical sensors read High when the sensor is Closed.
- Magnetic sensors read Low when the sensor is Closed.
- High value - 5 volts (typically 4.9 volts).

- Low value - 0 volts, or up to approximately 0.2 volts.

Notes regarding specific mechanisms:

- The four color mixers will read high when the tab is in the optical sensor.
- The fixed color wheel will read low when the magnet is at the sensor and high at other times.
- The optical sensor will read high when the sensor is closed, or the tab is in the sensor.
- The gobo wheel reads low when the magnet is at the sensor.
- The gobo index/rotation reads low when the slot is in the sensor.
- Tilt sensor will read high when the tab is in the sensor. The mechanism calibrates to the edge and its tab covers 50% of travel. Pan and tilt encoders are best read with a scope to read the encoder ticks.

Notes regarding lamp control:

- The douse command applies a PWM signal to the out line (which can be metered with a simple DC voltage multi meter and will read approx. 4vdc). When the lamp on command is given, this will change depending on which lamp level is selected within the menu or from the console (refer to the VL3015LT Spot Luminaire User's Manual). On at full power will be one-half (1/2) PWM (which will meter at approximately 2vdc). On at Medium Power (1200W) will be no PWM signal (0vdc). On at Standby power will be one-quarter (1/4) PWM (which will meter at approximately 1vdc). When the douse command is given the reading should change back to the full PWM (which again will meter at approximately 4vdc). Likewise, the standby circuit goes to standby when approximately 3vdc is received on the standby line. Equally, if approximately 3vdc is applied to the standby line, the lamp will go into standby mode, and if the full PWM is applied to the out line, the lamp will douse.

Troubleshooting

Error Messages

If a problem occurs during luminaire calibration, at the end of the calibration sequence the Menu Display will cycle through any applicable error message(s) until the end of the list is reached. To review the error messages again, it will be necessary to access them using the **Status** function.

To access error messages:

- Step 1. Press [Menu].
- Step 2. Press [Up] / [Down] arrows until **Fixture** appears. Press [Enter].
- Step 3. Press [Up]/ [Down] arrows to access **Status**. Press [Enter]. (Display will now scroll through any error messages or display OK if no errors.)

Table 2-1: Error Messages

Display	Message
OK	No Errors Found
Pan/Encoder/Fail	Pan encoder failure.
Tilt/No Sens	Tilt sensor not found.
Tilt/Encoder/Fail	Tilt encoder failure.
Index1/No Sens	Gobo 1 Index sensor not found.
RotGobo1/No Sens	Rotating Gobo wheel 1 sensor not found.
Index2/No Sens	Gobo 2 Index sensor not found.
RotGobo2/No Sens	Rotating Gobo wheel 2 sensor not found.
Index3/No Sens	Gobo 3 Index sensor not found.
RotGobo3/No Sens	Rotating Gobo wheel 3 sensor not found.
Dimmer/No Sens	Dimmer sensor not found.
Cyan/No Sens	Cyan sensor not found.
Yellow/No Sens	Yellow sensor not found.
Magenta/No Sens	Magenta sensor not found.
ColWheel1/No Sens	Color wheel 1 sensor not found.
ColWheel2/No Sens	Color wheel 2 sensor not found.
CTO/No Sens	CTO sensor not found.
Frost/No Sens	Frost sensor not found.
Prism/No Sens	Prism sensor not found.



WARNING: As with any repairs or maintenance to VARI*LITE luminaires, service should only be performed by a trained and qualified service technician or at an Authorized VARI*LITE Service facility.

Troubleshooting Guide

If a problem is suspected, try recalibrating the luminaire to prompt an error message. Refer to “[Error Messages](#)” on page 13 for more information. The chart below provides possible causes and remedies for each message.

Table 2-2: Troubleshooting Guide

Message	Symptom	Description	Possible Cause and Remedy
n/a	No response to DMX data	DMX Failure	MCB connector disconnected... - check MCB DATA IN connection.
n/a	Lamp douses frequently	Lamp Douse	Fan failure... - check fans for proper connection and operation.
n/a	Lamp will not strike	Lamp Strike Failure	Lamp cutout switch disengaged... - check lamp cutout switch at lamp box. Bad lamp... - replace lamp. Low input voltage... - check input power (<i>must be 200 to 264 VAC</i>)
No Sens	No control, continuous recalibration, and/or mechanism at wrong position	Mechanism failed to find sensor (reported for Blue, Amber, Magenta, Col-Wheel, CTO, Gobo1, Index1, and Gobo2)	Motor power not connected... - connect motor power. Sensor not connected... - connect sensor. Interconnect board not connected securely... - check connection, inspect for bent pins. Movement restricted or impeded... - remove obstruction, check cable routing, and/or check voltage at MCB test point.
n/a	Luminaire does not power-up	No power	Not plugged in... - ensure A/C cable is connected to power source. - ensure A/C cable properly constructed.
Pan/ Encoder/ Fail	Luminaire will not pan	Pan Encoder Failure	MCB pan/tilt connector disconnected... - connect MCB pan/tilt connector (J8). Pan motor disconnected - connect pan motor power. Encoder faulty... - replace pan end-of-travel/encoder sensor assembly.
Tilt/ Encoder/ Fail	Luminaire will not tilt	Tilt Encoder Failure	MCB pan/tilt connector disconnected... - connect MCB pan/tilt connector (J8). Tilt motor disconnected - connect tilt motor power. Encoder faulty... - replace tilt end-of-travel/encoder sensor assembly.

Table 2-2: Troubleshooting Guide (Continued)

Message	Symptom	Description	Possible Cause and Remedy
Tilt No Sens	Luminaire will not tilt	Tilt Sensor Not Found	EOT flag attached to large pulley is not engaging the EOT sensor... <ul style="list-style-type: none"> - ensure flag is attached to the large pulley. - ensure that flag passes through the sensor at a depth sufficient to engage the sensor beam. Tilt belt disconnected, extremely loose or not installed properly... <ul style="list-style-type: none"> - properly install belt between tilt motor and large pulley.
n/a	Color, dimmer or strobe mechanisms will not move	Color, Dimmer, or Strobe Failure	MCB connector disconnected... <ul style="list-style-type: none"> - check MCB connector at J11. Check Interconnect board.
n/a	Zoom/Edge or beam spreader mechanisms will not move	Zoom/Edge or Beam Spreader Failure	MCB connector disconnected... <ul style="list-style-type: none"> - check MCB connector at J10. Check Interconnect board.
n/a	Gobo or iris mechanisms will not move	Gobos or Iris Failure	MCB connector disconnected... <ul style="list-style-type: none"> - check MCB connector at J9. Check Interconnect board.
n/a	Self tests will not run or software download does not work.	DMX Data Input	Detecting DMX data... <ul style="list-style-type: none"> - disconnect DMX input cable.
n/a	Erratic control of luminaire	DMX Termination	No DMX termination or termination not correct... <ul style="list-style-type: none"> - check DMX terminator.

Maintenance Procedures



WARNING: As with any repairs or maintenance to VARI*LITE luminaires, service should only be performed by a trained and qualified service technician or at an Authorized VARI*LITE Service facility.

Lamp Replacement

Vari-Lite Part No: 71.9686.1502



WARNING: Ensure that power is removed from luminaire when installing lamp.



CAUTION: Wear cotton gloves or other covering while installing lamp. Touching lamp glass with bare fingers will leave oil and may cause the lamp to explode or reduce lamp life. If touched, use alcohol and cotton cloth to thoroughly clean glass portion of lamp.

To remove and replace lamp:

- Step 1. Ensure power is removed from luminaire.
- Step 2. At rear of luminaire head, loosen four 1/4-turn screws and slide lamp box back and out (it is hinged).
- Step 3. One side at a time, using a small flat-blade screwdriver, carefully pry lamp from socket and remove current lamp.
- Step 4. Position new lamp with dimple side down. One side at a time, press lamp lock lever forward and insert lamp connector. Ensure lamp is seated fully in place.

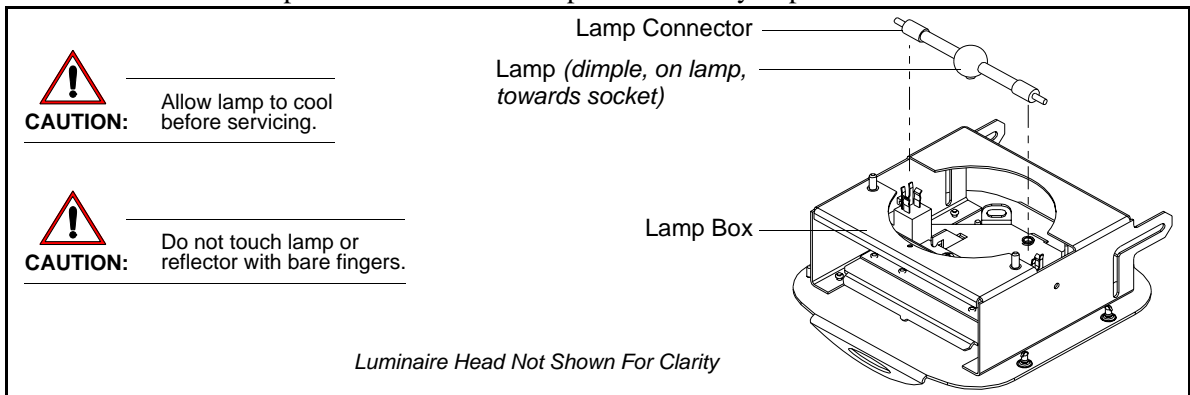


Figure 2-1: Removing and Installing Lamp

- Step 5. Close lamp box and re-tighten 1/4-turn screws.
- Step 6. Align lamp as detailed in [“Align Lamp” on page 17.](#)
- Step 7. Reset lamp hours counter via menu system. Refer to user’s manual for menu system operation.

Align Lamp

The design of the VL3015LT Spot Luminaire optical system allows for a flat or peaked field. A flat field is one where there is no detectable hot spot and a peaked field is one where the intensity of the beam is greater at the center of the beam than at the perimeter.

After a new lamp is installed, it will be necessary to align the lamp to optimize the beam. Knobs located at the luminaire's backcap will allow adjustment.



WARNING: Backcap and adjustment knobs will be HOT during lamp operation. Wear gloves to prevent burns.

To align / optimize lamp:

- Step 1. Power-up luminaire.
- Step 2. At Menu Display, select Lamp from Config menu (refer to user's manual for menu operation). (If using console, set intensity to 100%, open beam size iris and focus for hard edge.)
- Step 3. Position beam on a white wall at a distance of 10 to 20 feet.
- Step 4. At backcap, using X, Y and Z adjustment knobs, adjust beam as required.

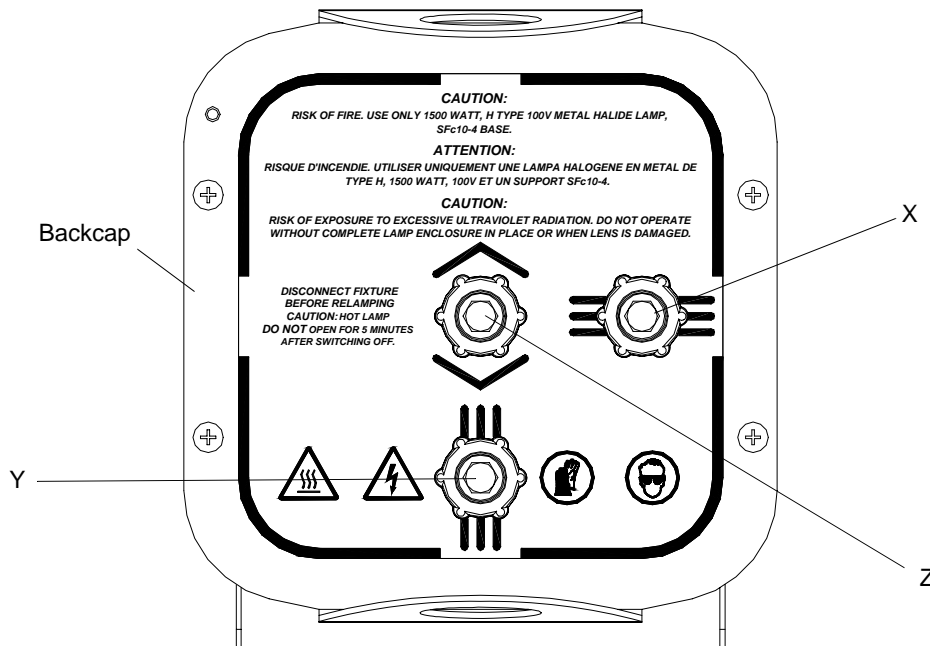


Figure 2-2: Aligning Lamp - Lamp Alignment Knobs

Gobo Replacement - Gobo Wheels 1, 2, and 3

Tools:

#2 Phillips Screwdriver and Lint Free Cotton Gloves



WARNING: Remove power from luminaire before performing maintenance. Gobos may be HOT after operation. Allow to cool before replacing.



WARNING: Users of VARI*LITE luminaires should not install or use metal gobos. The use of metal gobos in any VARI*LITE product may damage the luminaire and could void the luminaire's warranty.

Overview of Gobos and Gags used in VL3015LT Spot Luminaire

Due to the immense energy and light produced by VL3015LT spot luminaires, Vari-Lite recommends to users and owners of this fixture follow the guidelines outlined below when loading gobos or gags in any of the three rotating gobo wheels.

Gobo / Gag Use and Positioning

Vari-Lite has purposely selected a set of standard gobos and gags for this fixture and positioned them within the fixture to offer optimum versatility / performance. The gobos supplied - in the standard factory configuration - have been tested in their respective original positions to protect their service life (including when morphed between wheels 1 and 3).

Note: For standard factory gobo / gag loads and position, please refer to “[VL3015LT Spot Gobo/ Effects Control](#)” on page 30 of this manual.

Users can load their own patterns (gobos or gags). When using custom gobos or gags, Vari-Lite recommends the following guidelines:

- When morphing gobos, gobos should be morphed between wheels 1 and 3 only, never in wheel 2.
- Rotating gobo wheel 2 has been designated the gag (effects) wheel. Wheel 2 should only house clear type gags or gobos that permit minimum unabated light transmission.
- Under no circumstances should owners or users use or install metal gobos. Using metal gobos in the VL3015LT spot luminaire will void the fixture's warranty.



Note: Vari-Lite cannot guarantee the service life of any custom gobos or gags when used in conjunction with this fixture. Owners and users employing custom gobos and gags do so at their own risk.

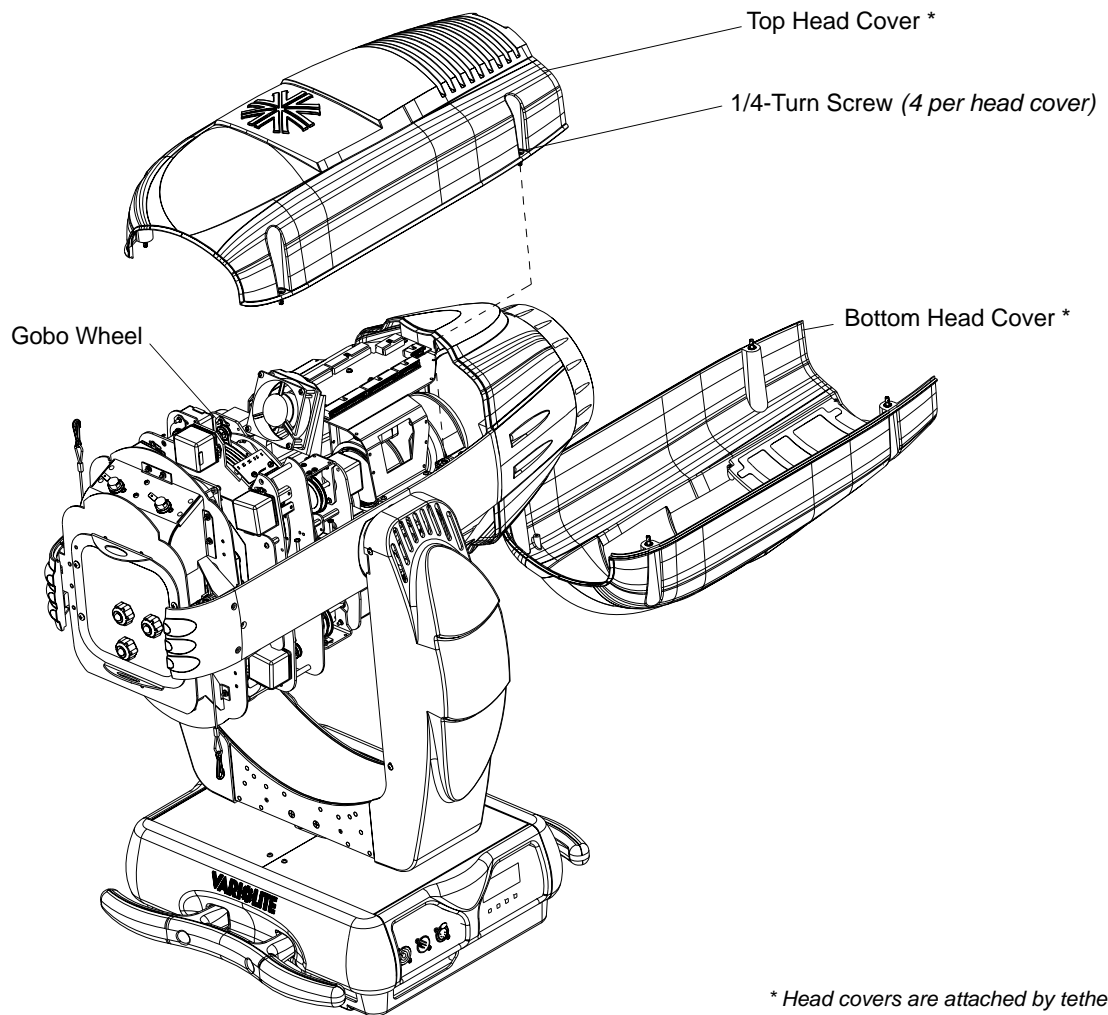
To Install or Replace Gobos



WARNING: Remove power from luminaire before performing maintenance. Gobos may be HOT after operation. Allow to cool before replacing.

To replace a rotating gobo:

- Step 1. Remove power from luminaire.
- Step 2. As illustrated in [Figure 2-3](#), remove top and/or bottom head cover by loosening four 1/4-turn screws to access the three gobos wheels.
 - a. To access Wheel 1 and 3, remove bottom cover as shown in [Figure 2-3](#).
 - b. To access Wheel 2, remove top cover as shown in [Figure 2-3](#).



* Head covers are attached by tethers.

Figure 2-3: Head Covers - Removal

Step 3. If removing gobos via bottom of head assembly, undo fan tray assembly with thumb screw to access.

Step 4. Rotate desired gobo wheel until required gobo position is accessible.



CAUTION: Do not push on gobo glass. Press on gobo carrier only.



CAUTION: Do not touch gobos with bare fingers. Wear cotton gloves or other covering while replacing. To clean, refer to the cleaning instructions contained in the product user's manual.

Step 5. Remove current gobo by carefully pressing on edges of gobo carrier with fingers, pressing gobo toward front end of luminaire (toward lens), and out of wheel.



CAUTION: Do not touch glass with bare fingers. Press on gobo carrier only.

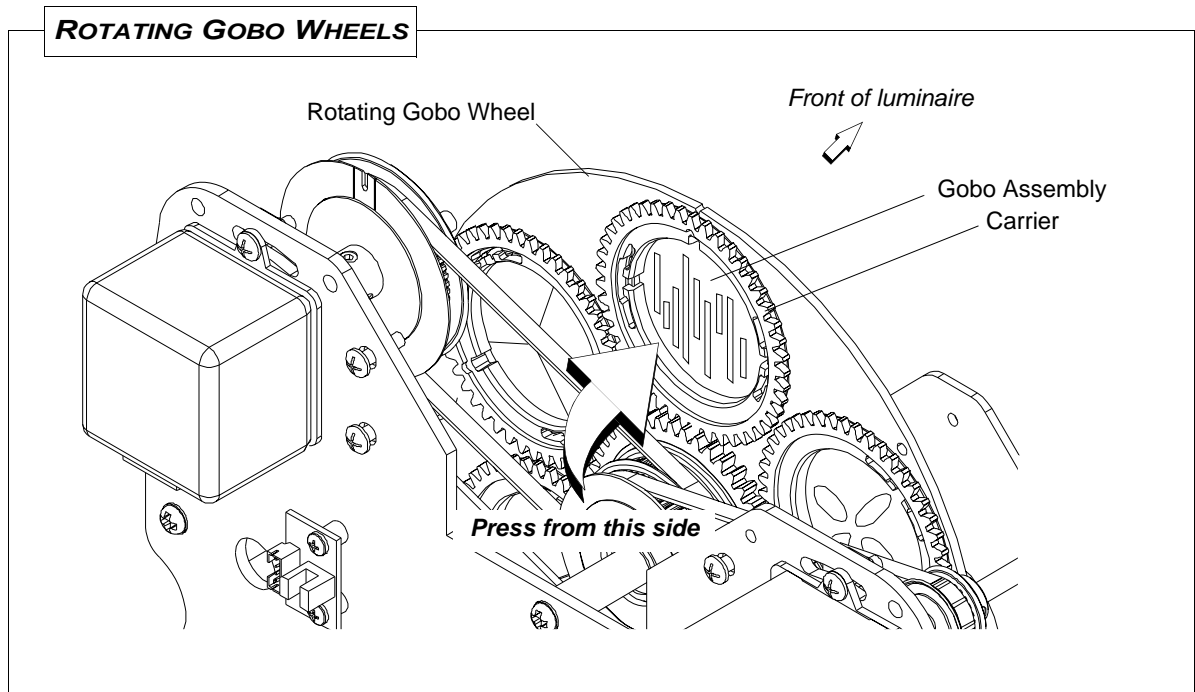


Figure 2-4: Replacing Gobos

Step 6. Install new gobo as follows:

- a. Align three tabs on gobo carrier with three notches in wheel (gobo can only be oriented in one direction).
- b. Insert gobo carrier into wheel, ensuring that carrier snaps into place.

Step 7. Replace cover(s).

Fixed Color Filter Replacement

Tools:

#2 Phillips Screwdriver and Lint Free Cotton Gloves



WARNING: Remove power from luminaire before performing maintenance. Filters may be HOT after operation. Allow to cool before replacing.

To replace a fixed color filter on Color Wheel 1 (closest to the lamp):

- Step 1. Remove power from luminaire.
- Step 2. Remove bottom (relative to backcap label) head cover by loosening the four 1/4-turn screws.
- Step 3. Undo fan tray assembly with thumb screw to access filters.
-



CAUTION: Do not touch filters with bare fingers. Wear cotton gloves or other covering while replacing filters. To clean filters, use isopropyl alcohol and soft cloth. Strong cleaning solutions can damage coating. Fingerprints or other grease deposits on filters can cause the glass to break.

- Step 4. As shown in [Figure 2-5](#), rotate Color Wheel 1 until the filter you are changing is accessible.
- Step 5. To improve access to the filter, rotate the mixed color wheels to position the cut-outs next to the filter you are changing.
- Step 6. Gently press the color filter toward the lamp until it is free of the lock pins. Remove filter.
- Step 7. Orienting coated side of filter towards lamp, slide new filter under the spring clip until it is securely retained by the lock pins.
- Step 8. Replace the head cover.

To replace a fixed color filter on Color Wheel 2 (closest to the lens assembly):

- Step 1. Remove power from luminaire.
- Step 2. Remove top (relative to backcap label) head cover by loosening the four 1/4-turn screws.
-



CAUTION: Do not touch filters with bare fingers. Wear cotton gloves or other covering while replacing filters. To clean filters, use isopropyl alcohol and soft cloth. Strong cleaning solutions can damage coating. Fingerprints or other grease deposits on filters can cause the glass to break.

- Step 3. Rotate Color Wheel 2 until the filter you are changing is accessible.
- Step 4. To improve access to the filter, rotate the mixed color wheels to position the cut-outs next to the filter you are changing.
- Step 5. As shown in [Figure 2-5](#), gently press the color filter toward the lens until it is free of the lock pins. Remove the filter.

Fixed Color Filter Replacement (continued)

- Step 6. Orienting coated side of filter towards lamp, slide new filter under the spring clip until it is securely retained by the lock pins.
- Step 7. Replace the head cover.

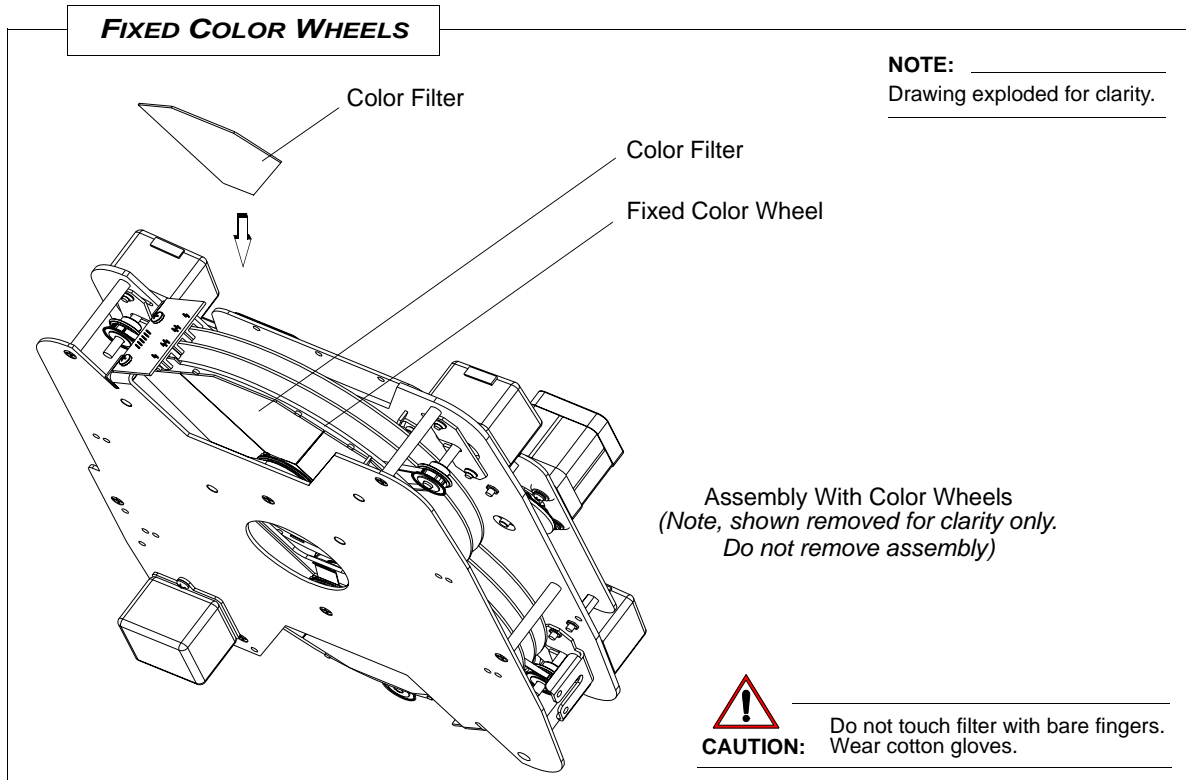
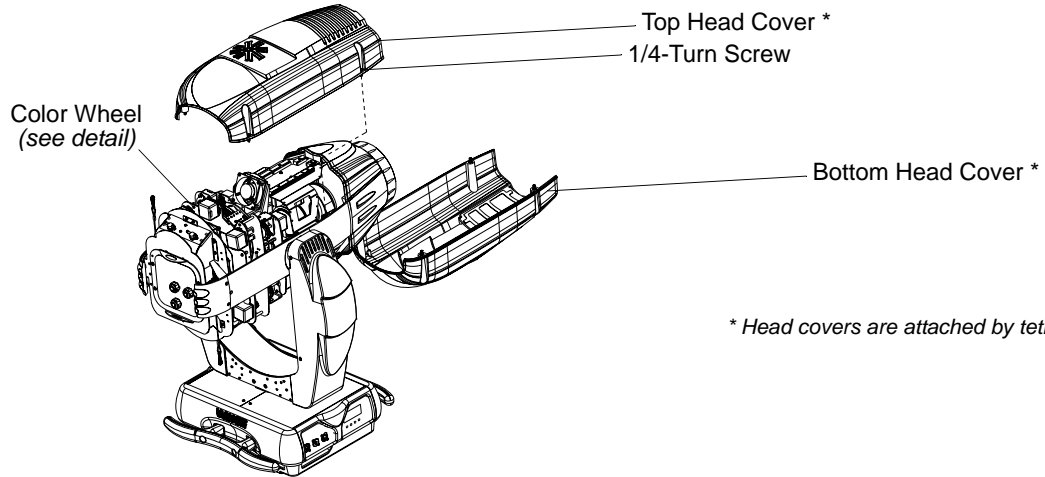


Figure 2-5: Replacing a Color Filter

Ballast Assembly Replacement

Vari-Lite Part No: 69.9679.1216

To remove and replace ballast assembly:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. At each top enclosure cover, remove two 6-32 x 1/4" PPB screws and remove cover.

Step 3. In each corner from top, remove four 6-32 x 3/8" PPZ screws.



CAUTION: Be careful not to damage lens during next step.

Step 4. Carefully lay luminaire on its side, ensuring that lens does not come into contact with any surface.

Step 5. At bottom of enclosure, remove four 1/4-20 x 3/4" socket screws and 1/4" split lock washers and remove ventilation cover.

NOTE: _____
Drawing exploded for clarity.

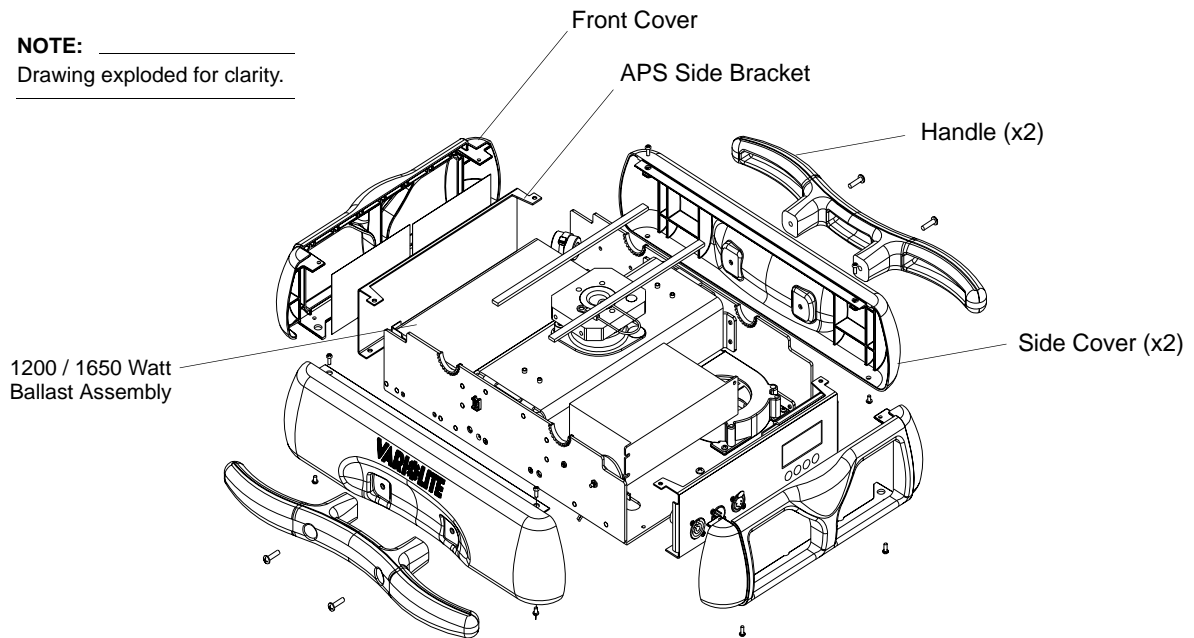


Figure 2-6: Ballast Cover / Handle Removal

Step 6. Remove both handles by removing two 10-32 x 3/4" SCB screws at each.

Step 7. At enclosure bottom, remove four 6-32 x 1/4" PPB screws and both side covers.

Step 8. At enclosure bottom, remove two 6-32 x 3/8" PPB screws, APS side bracket and front cover from ballast side.

- Step 9. At bottom of enclosure, disconnect exhaust fan cable.
- Step 10. At exhaust fan, remove four 8/32 x 3/8" screws. Remove exhaust fan from enclosure assembly.
- Step 11. At ballast, disconnect following cable assemblies:
 - a. Lamp wires
 - b. AC input
 - c. Control wiring
- Step 12. Pull lamp wires through ferrite core.
- Step 13. At bottom of enclosure, remove three 8-32x3/8" PFZ screws and four 8/32x3/8" PPZ screws which secure ballast module to enclosure.
- Step 14. Remove ballast module.
- Step 15. Install replacement assembly by performing previous steps in reverse order.

NOTE: _____
Some components not shown for clarity.

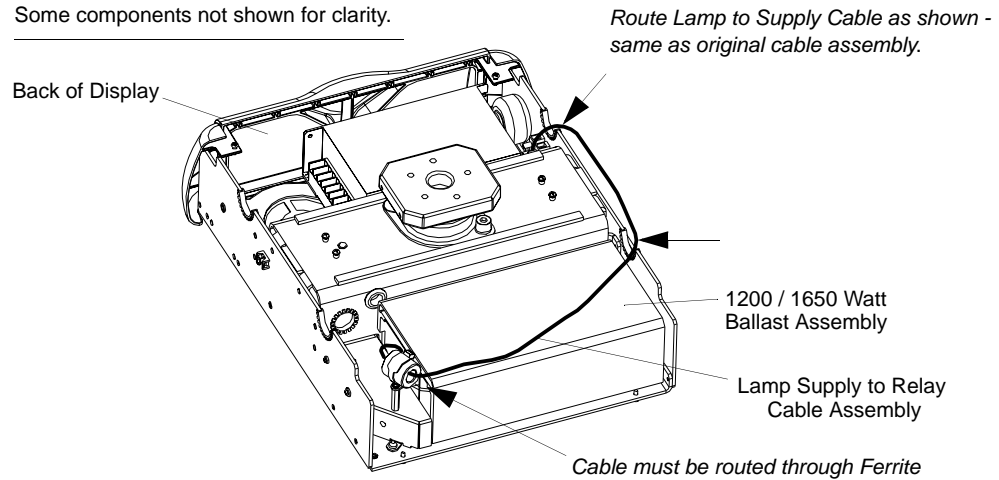


Figure 2-7: Ballast Replacement

Color/Dimmer/Strobe Assembly Replacement

Vari-Lite Part No: 21.9698.0400

To remove and replace color/dimmer/strobe assembly:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. Remove top head cover by loosening four 1/4 turn captive stud connectors.

Note: The top cover is easily identified as follows - maneuver head so the printing on the label on the rear of the head assembly is oriented correctly.

Step 3. At interconnect board, note positions and disconnect the following wiring:

- a. Fan wiring J13 and J16
- b. Wiring at J6 and J7

Step 4. Loosen four captive screws (two per clamp) and remove clamps. (Note: Do NOT remove long phillips head screw, it serves as a handle.)

Step 5. Pull assembly straight up and out of luminaire.

Step 6. Replace assembly by performing previous steps in reverse order.

Note: Always tighten MCB-side clamps FIRST when installing.

NOTE: _____
Drawing exploded for clarity.

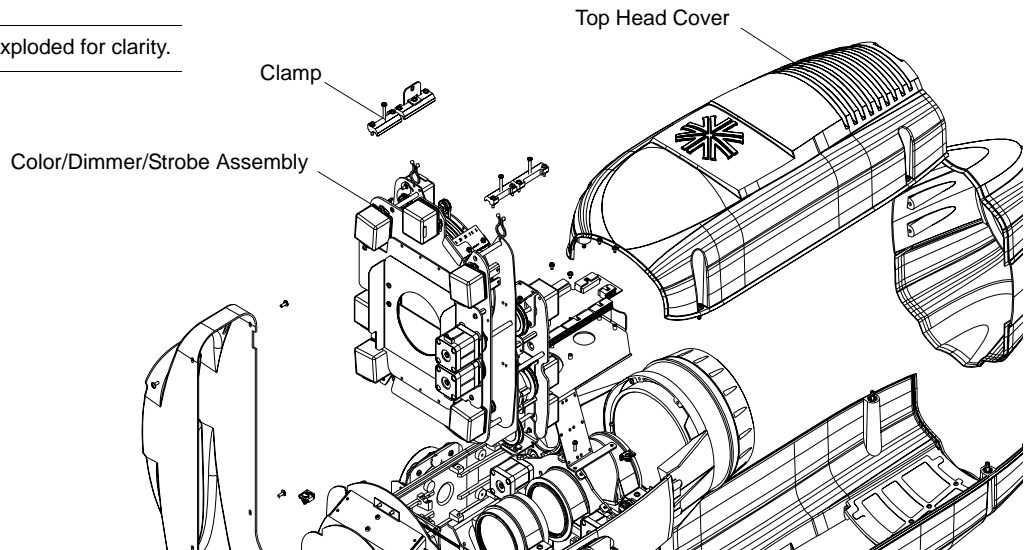


Figure 2-8: Color/Dimmer/Strobe Assembly Replacement

Gobo/Iris Assembly Replacement

Vari-Lite Part No: 21.9698.0200

To remove and replace gobo/iris assembly:

- Step 1. Run Zoom to full forward position (DMX 255).
Step 2. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

- Step 3. Remove top head cover by loosening four quarter-turn captive locking screws. Top cover is identifiable as the cover on top when back label is such that words are displayed correct side up.

Note: Before disconnecting any wiring/cables, make note of all wire/cable routing.

- Step 4. Remove Color/Dimmer/Strobe Assembly as described in [“Color/Dimmer/Strobe Assembly Replacement” on page 25](#).
Step 5. Disconnect head cable from Color Assembly Interconnect PCB, remove wiring from Transfer Fan clips.
Step 6. At interconnect board, disconnect the wiring at J10, J11, J3, and J12.
Step 7. At Gobo / Iris Assembly clamps, loosen four 6-32 captive screws (two per clamp) and remove clamp. (Note: the large Phillips screw in the middle is used as a handle, DO NOT try to loosen that screw).
Step 8. Pull Gobo / Iris Assembly straight out of fixture.

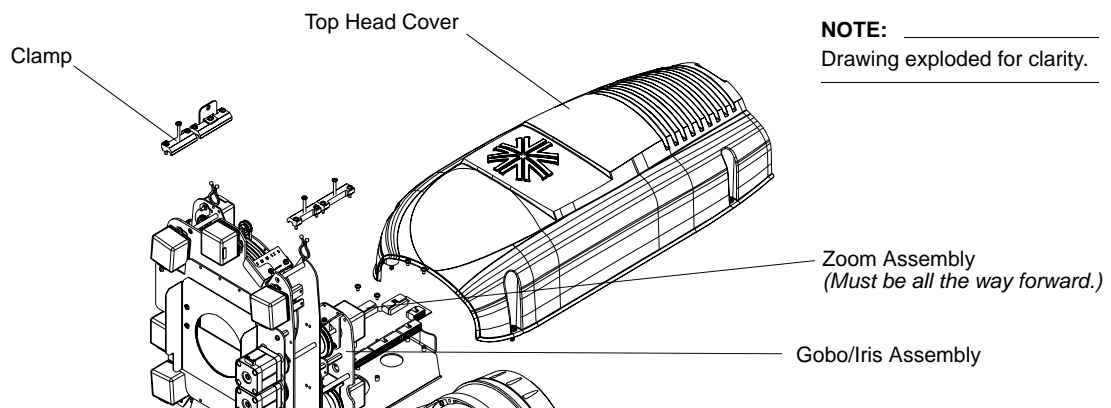


Figure 2-9: Gobo/Iris Assembly Replacement

- Step 9. Replace by performing previous steps in reverse order.

Note: Always tighten MCB-side clamps FIRST when installing.

Reflector / UV Glass Assembly Replacement

Vari-Lite Part No: 42.9686.0120 (Reflector)

Vari-Lite Part No: 21.9686.0606 (Assy, UV Glass)

To remove and replace reflector / UV glass assembly:

Step 1. Disconnect luminaire AC input cable from power source.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. Remove both Color/Dimmer/Strobe and Gobo/Iris Assemblies. See “[Color/Dimmer/Strobe Assembly Replacement](#)” on page 25 and “[Gobo/Iris Assembly Replacement](#)” on page 26 for removal instructions.

Step 3. Open dual fan assembly.

Step 4. Remove two 3-62 x 1/4" PPZ screws securing air diverter. Remove air diverter and set aside.

Step 5. As shown in [Figure 2-10](#), remove four 4-40 x 1 3/8" PPZ screws.

Step 6. Carefully remove UV/Reflector assembly.

Step 7. Remove the springs from the reflector clamp and remove the reflector.

Step 8. Replace the reflector and UV/Reflector assembly in reverse order.

Note: Make sure the mark on the reflector lines up with the mark on the top-left reflector support; see "Reflector Alignment" illustration in [Figure 2-10](#).

Reflector Replacement (continued)

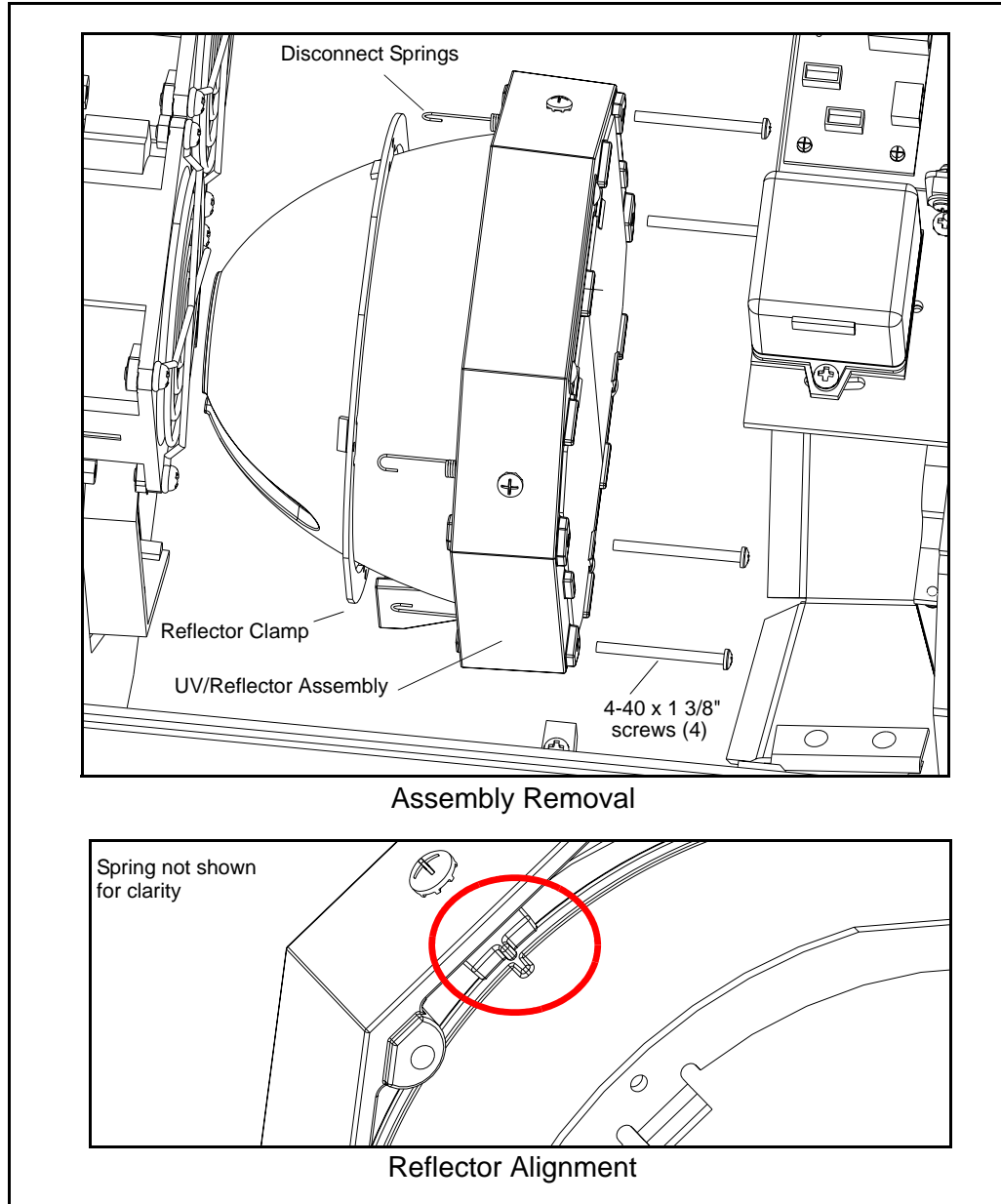


Figure 2-10: Reflector / UV Glass Assembly Removal

Main Control Board (MCB) Replacement

Vari-Lite Part No: 24.9698.0700

To remove and replace main control board (MCB):

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.



Note: To determine which yoke leg is which without having to remove the covers, rotate yoke counterclockwise until it stops, then look at the luminaire while facing the input panel. The tilt-side leg is the leg to the left; the board-side leg is the leg to the right.

Step 2. At board-side leg, remove yoke leg cover by removing four 6-32x3/8" PTB screws.



CAUTION: Always use anti-static precautions when working with PCBs.

Step 3. Disconnect wiring harness connectors J2 (on daughter board) J8, J9, J10, J11 and J12.

Step 4. Remove two 6-32 x 3/8" PPZ screws and remove daughter board.

Step 5. Remove two 6-32 x 1/4" standoffs, two 6-32 x 3/4" PPZ screws, and gently tilt MCB away from yoke assembly

Step 6. Disconnect wiring harness connectors J1, J2, J3, J4, and J5 at back of MCB.

Step 7. Install replacement assembly by performing previous steps in reverse order.

Step 8. Configure using menu functions as necessary.

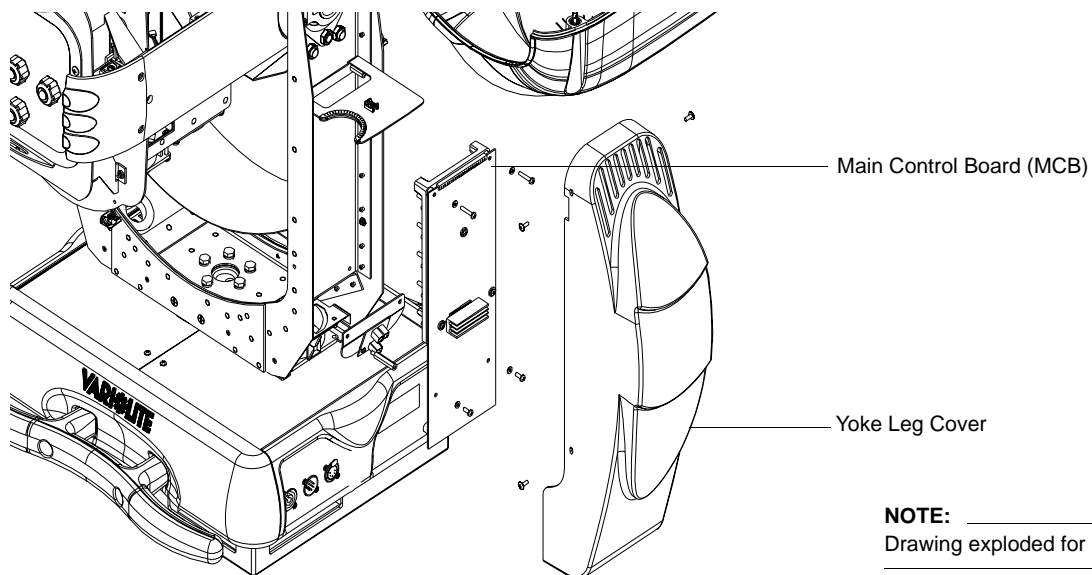


Figure 2-11: Main Control Board (MCB) Replacement

Ignitor Board Replacement

Vari-Lite Part No: 24.9661.3126

To remove and replace ignitor board assembly:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. At tilt-side leg, remove yoke leg cover by removing four 6-32x3/8" PTB screws.



CAUTION: Always use anti-static precautions when working with PCBs.

Step 3. Disconnect ignitor PCB wires by removing four screws which secure wire ring terminals to PCB and remove ignitor PCB.

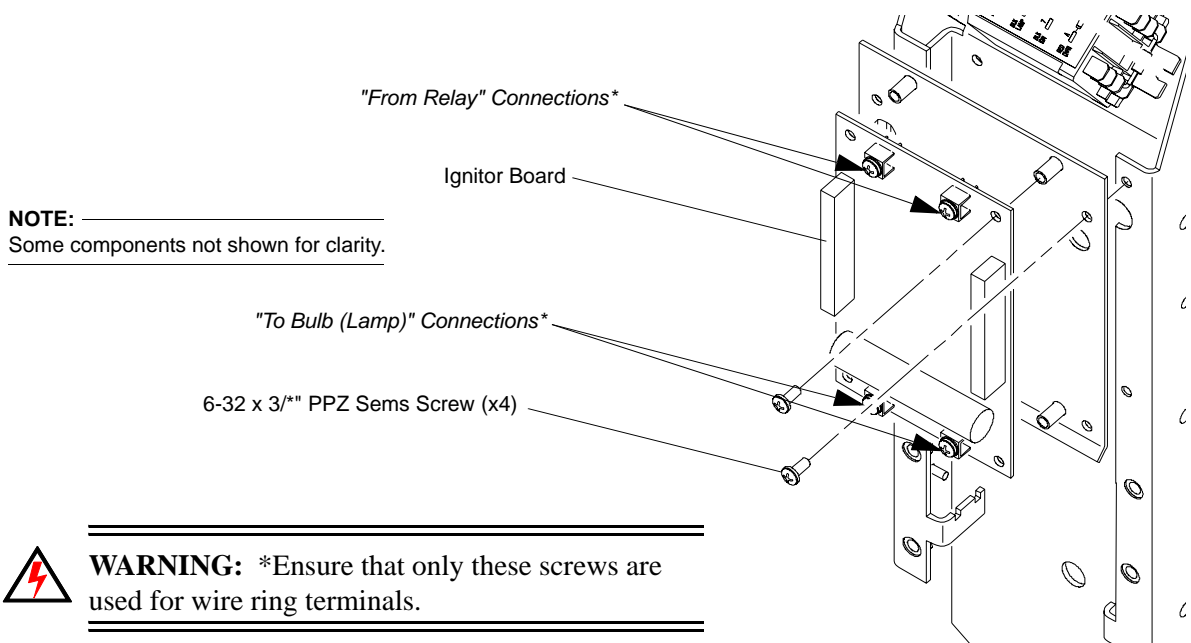


WARNING: Ensure that only these screws are used for wire ring terminals (removed in Step 3). DO NOT USE SUBSTITUTES!

Step 4. Remove four 6-32 x 3/8" LG PPZ SEMS screws and remove ignitor PCB.

Step 5. Replace by performing previous steps in reverse.

Note: Make sure and orient ignitor properly (as shown in [Figure 2-12](#)).



WARNING: *Ensure that only these screws are used for wire ring terminals.

Figure 2-12: Ignitor Board Replacement

Fan Regulator Board Replacement

Vari-Lite Part No: 24.9698.1690

To remove and replace fan regulator board:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.



Note: To determine which yoke leg is which without having to remove the covers, rotate yoke counterclockwise until it stops, then look at the luminaire while facing the input panel. The tilt-side leg is the leg to the left; the board-side leg is the leg to the right.

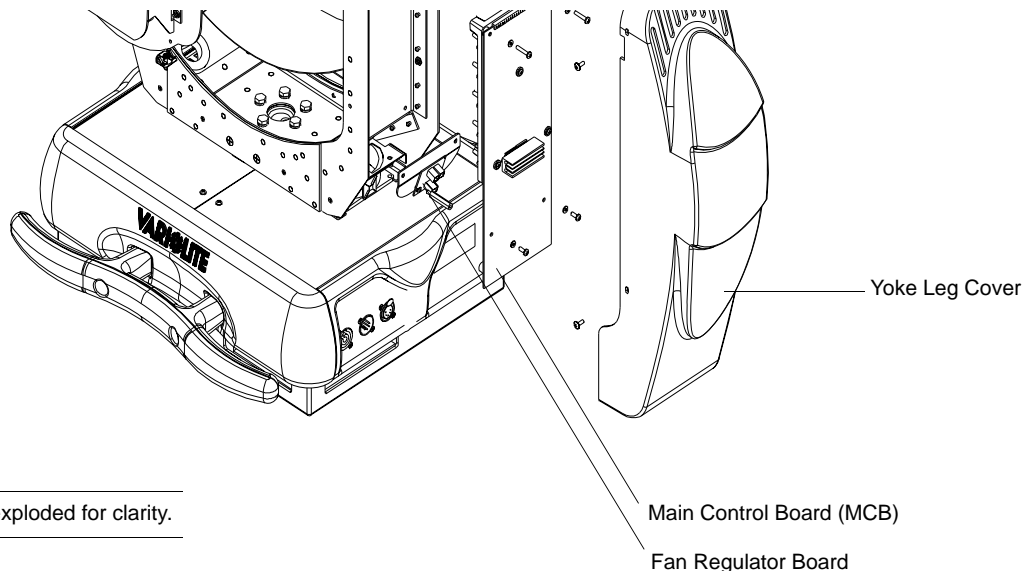
Step 2. At board-side leg, remove yoke leg cover by removing four 6-32x3/8" PTB screws.



CAUTION: Always use anti-static precautions when working with PCBs.

Step 3. Remove MCB by following removal instructions "[Main Control Board \(MCB\) Replacement](#)" on page 29.

Step 4. Disconnect wiring from Fan Regulator Board.



NOTE: _____
Drawing exploded for clarity.

Figure 2-13: Fan Regulator Board Replacement

Step 5. Remove two 4-40x1/4" PPSS screws and remove board.

Step 6. Replace in reverse order.

Interconnect PCB Assembly Replacement

Vari-Lite Part No: 24.9698.2680

To remove and replace interconnect PCB assembly board:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. Remove top head cover by loosening four quarter-turn captive locking screws. Top cover is identifiable as the cover on top when back label is such that words are displayed correct side up.

Note: Before disconnecting any wiring/cables, make note of all wire/cable routing.

Step 3. Disconnect all wiring from interconnect PCB assembly.

Step 4. Remove six 6-32 x 1/4" PPZ SEMS screws and remove interconnect PCB assembly.

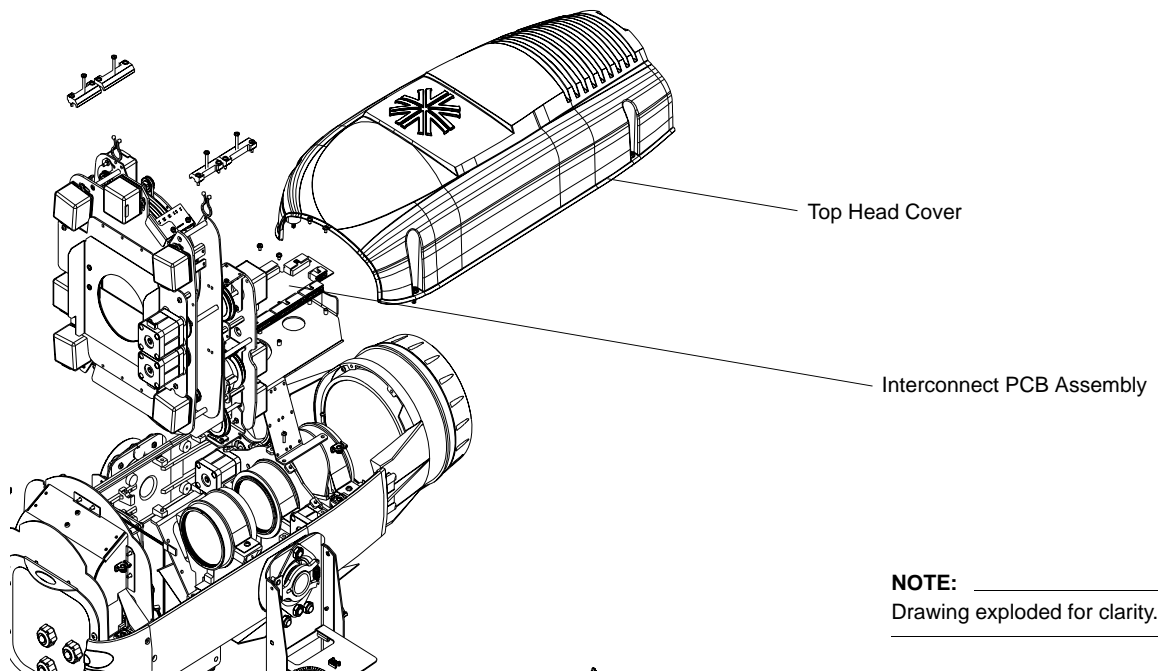


Figure 2-14: Interconnect PCB Assembly Replacement

Step 5. Replace in reverse order.

Zoom Optics Assembly Replacement

Vari-Lite Part No: 21.9698.0100

To remove and replace zoom optics assembly:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. Remove both head covers by loosening four quarter-turn captive locking screws on each cover.

Step 3. Remove both Color/Dimmer/Strobe and Gobo/Iris Assemblies. See [“Color/Dimmer/Strobe Assembly Replacement” on page 25](#) and [“Gobo/Iris Assembly Replacement” on page 26](#) for removal instructions.

Step 4. Remove front cover by removing four 10-32 x 1/2" PPB screws.

Step 5. At interconnect PCB assembly, disconnect optics wiring harness from J1. Noting placement, cut cable ties holding optics wiring harness to interconnect board mount.

Step 6. Open dual fan assembly

Step 7. At bottom of optics, remove four 6-32 x 1/2" PPZ SEMS screws.



CAUTION: Make sure to support optics from this point on!

Step 8. At front, remove four 10-32 x 1/2" PPB screws and carefully remove optics assembly from luminaire head.

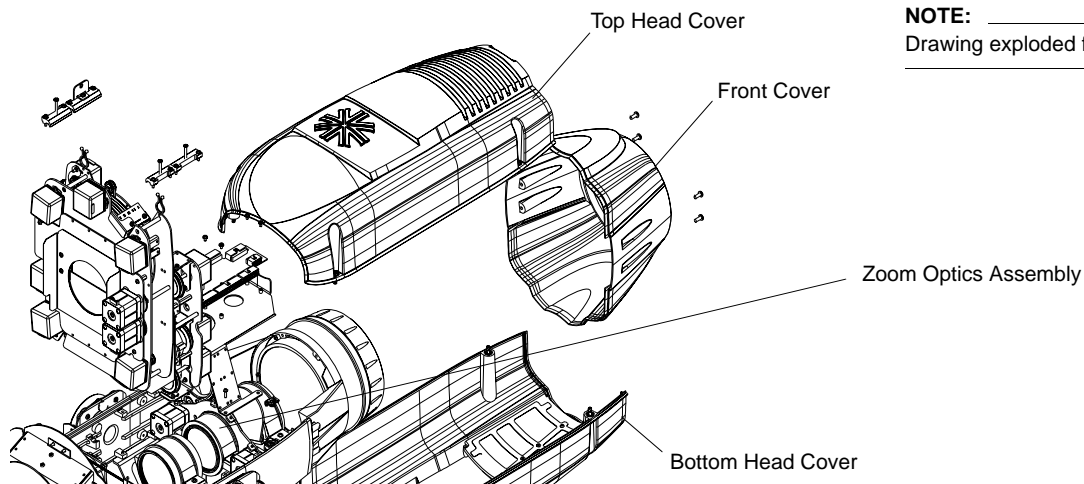


Figure 2-15: Zoom Optics Assembly Replacement

Step 9. Replace in reverse order. For cable wiring, refer to photos and descriptions contained in [“Zoom Optics / Frost / Prism - Cable Routing Reference” on page 35](#).

Frost / Prism Assembly Replacement

Vari-Lite Part No: 21.9698.1351

To remove and replace frost / prism assembly:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. Remove both head covers by loosening four quarter-turn captive locking screws on each cover.

Step 3. At Frost/Prism assembly, disconnect all wiring and cut all cable ties. Make note of placement (refer to photos and descriptions contained in [“Zoom Optics / Frost / Prism - Cable Routing Reference”](#) on page 35 for additional information).

Step 4. Remove four 6-32 x 3/8" PFZ screws and remove assembly from lens carrier.

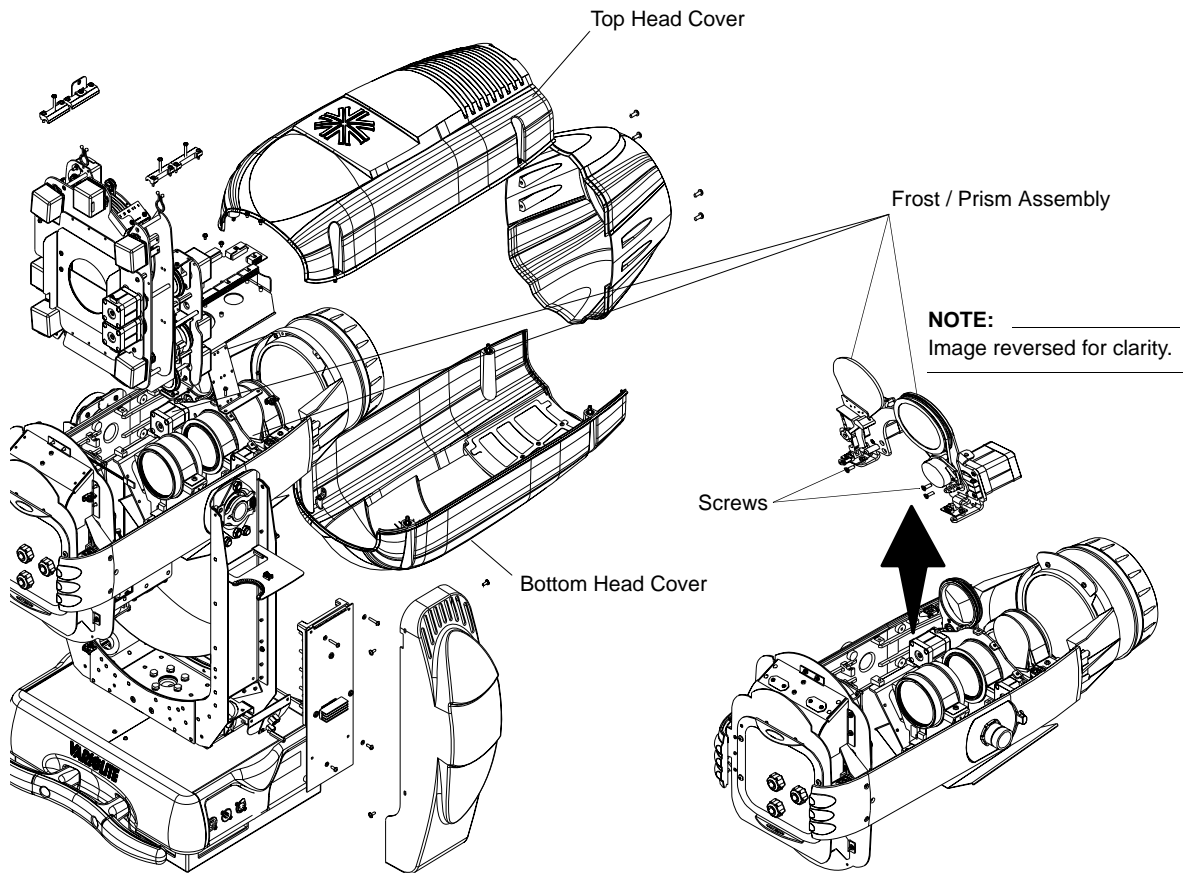


Figure 2-16: Frost / Prism Assembly Replacement

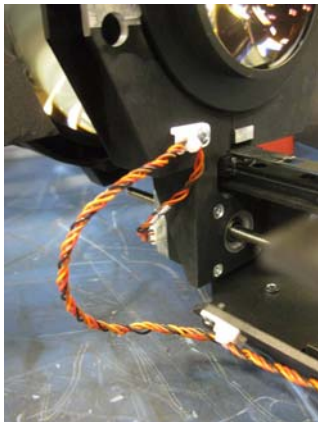
Step 5. Replace in reverse order.

Zoom Optics / Frost / Prism - Cable Routing Reference

The photos and descriptions below show cable routing in and around the zoom optics, frost, and prism assemblies. For additional information or assistance, please contact Vari-Lite Technical support.

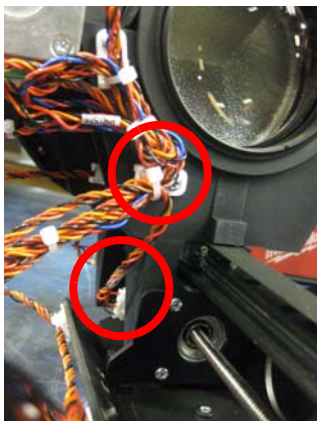
This section contains information for:

- “[Lens Group C Motor Cable](#)” on page 35 (below)
- “[Lens Group B Motor Cable](#)” on page 35 (below)
- “[Lens Group A Motor Cable](#)” on page 36
- “[Lens Group Motor Cables](#)” on page 36
- “[Frost Motor and Sensor Cables](#)” on page 36
- “[Prism Sensor Cable](#)” on page 37
- “[Frost Sensor Cable](#)” on page 37



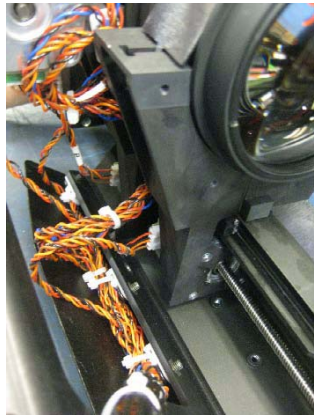
Lens Group C Motor Cable

Lens group C motor cable should run wire through cable tie saddle installed low on carrier. It should be secured so cable goes out and away from lens and cannot be caught during movement. It should run to farthest forward cable tie saddle on mount. There should be slack to allow free mechanism movement.



Lens Group B Motor Cable

The lens group B motor cable should have enough slack when group is pushed all the way forward. It should be bundled with other wires and mounted on carrier as shown.



Lens Group A Motor Cable

The motor cable for lens group A should be tied directly off onto the mount. There should be slack.

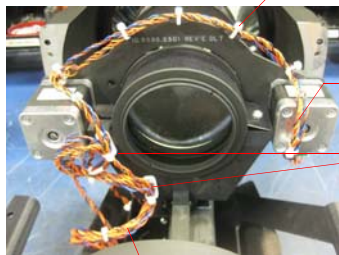


Lens Group Motor Cables

Tie off along mount as shown. When all lenses are pushed back, a little slack should still exist in cables to allow free mechanism movement. If cables are pulled tight, the lenses may not calibrate correctly.



The cable harness should be neatly tied along the inside of the mount. Tie down tightly so harness cannot be snagged by lens groups.



Tied tightly to bulkhead

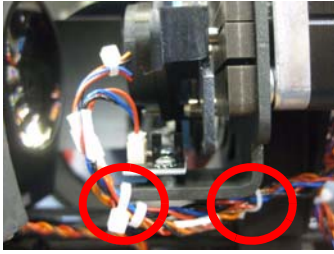
Cables routed to back of lens group

Cables secured using both cable saddles

Slack for free lens movement

Frost Motor and Sensor Cables

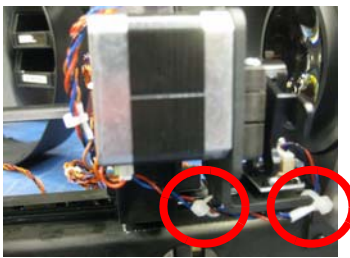
All cables should be routed to the back of the lens group. Frost motor and sensor cables should be neatly routed over the lens using the wire tie holes on the plate. Both cable tie saddles should be used to secure cables on lens carrier. Cables should be tight along lens group so they do not fall into the beam. Slack should be left at bottom so lens group can travel freely.



Prism Sensor Cable

Prism sensor cable should be secured next to motor connection and under motor as shown.

After securing cables, insure prism assembly moves freely (in and out) without coming into contact with cables.



Frost Sensor Cable

Frost sensor cable should be secured next to motor connection and under motor as shown.

After securing cables, insure frost assembly moves freely (in and out) without coming into contact with cables.



Zoom Optics - Zoom (Actuator) Motor Replacement

Vari-Lite Part No: 44.9698.0147 (Motor Assembly)

Vari-Lite Part No: 10.9698.0146 (Shaft)

To remove and replace a zoom actuator motor:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. Remove optics from fixture following procedure described in “[Zoom Optics Assembly Replacement](#)” on page 33.

Step 3. Remove zoom tray light baffle by removing two 8-32 x 3/8" PPB SEMS screws.

Note: In next step, do not disconnect wiring, just move mount to side.

Step 4. Remove zoom mount by removing three 8-32 x 3/8" PPB SEMS screws. Move aside.

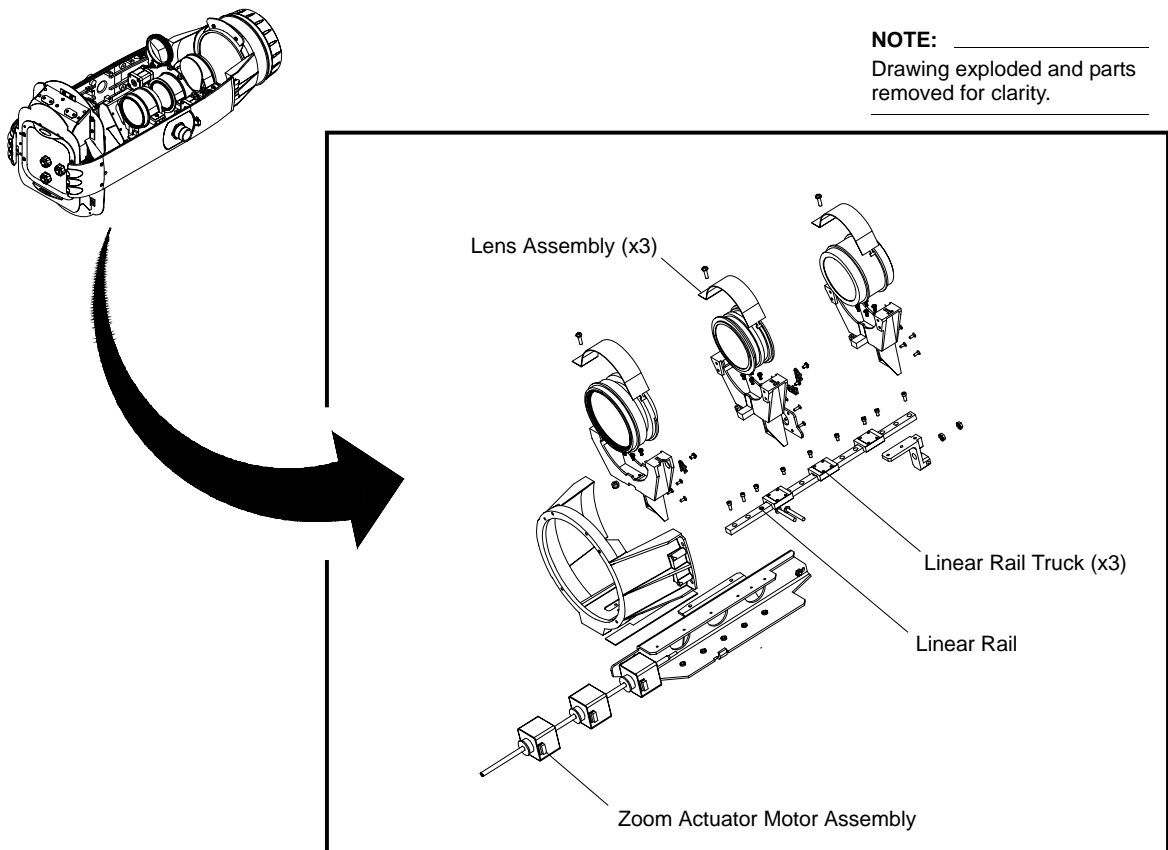


Figure 2-17: Zoom Optics - Zoom (Actuator) Motor Replacement

- Step 5. Using slotted screwdriver to hold lead screw at front (**DO NOT USE PLIERS ON LEAD SCREW OR YOU MAY DAMAGE IT!**) remove two 8-32 KEPS nuts.
- Step 6. Carefully thread lead screw out of motor to be replaced. *Note, you may have to thread out of other motors first, depending on which you are replacing.*
- Step 7. At motor to be replaced, disconnect wiring.
- Step 8. Remove lens from mount at motor to be replaced by:
- Removing one 8-32 x 5/8" PPZ SEMS screw and nut.
 - Noting orientation of lens, lift lens strap and remove lens.
 - Remove lens mount from rail truck by removing four M3 x 8mm PPZ SEMS screws.
 - Carefully remove lens mount, with motor attached from linear rail.
- Step 9. At motor, remove four M3 x 0.5 x 8mm LG, PFZ screws and remove motor.
- Step 10. Replace following the steps in reverse order.



Note: When installing lens mount to rail truck (as removed in step 8), start all four screws but do not tighten. Slide lens mount against the lens next to it to ensure the trucks line up square to each other, and then tighten the four screws.

Tilt Motor Assembly and Tilt Belt Replacement

Vari-Lite Part No: 21.9698.0765 (Tilt Motor)

Vari-Lite Part No: 54.9698.0224 (Tilt Belt)

To remove and replace tilt motor:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. At tilt-side leg, remove yoke leg cover by removing four 6-32 x 3/8" PTB screws.

Step 3. Referring to [Figure 2-18](#) on page 41, remove two 10-32 x 1/2" PPZ screws and remove tilt sensor bracket. Disconnect wiring from encoder.

Step 4. Disconnect wiring and remove tilt assembly.

Step 5. Remove four 10-32 x 1/2" PPZ screws. Be mindful of tensioning springs.

Step 6. Remove belt from tilt pulley.

Step 7. Replace by performing previous steps in reverse order.



Note: Make sure wiring is not pinched during installation. When tightening four 10-32 x 1/2" PPZ screws that mount Pan Motor Assembly, you must tighten in a CLOCKWISE pattern starting with screw in lower left-hand side from spring.

To remove and replace tilt motor belt:

Step 1. Follow instructions outlined in, "To remove and replace tilt motor:" above.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. At tilt-side leg, remove yoke leg cover by removing four 6-32x3/8" PTB screws.

Step 3. Disconnect the following wiring and remove tilt assembly:

- a. Disconnect lamp wire from ignitor.
- b. Disconnect black and red wires from relay.
- c. Remove ignitor assembly mounting bracket (leave ignitor attached to bracket) by removing three 6-32x3/8" PPZ screws and 1/4" standoff.
- d. Disconnect ground wire from stud using 3/8" nut driver.

Step 4. Referring to [Figure 2-18](#) on page 41, remove tilt belt.

Step 5. Replace by performing previous steps in reverse order.



WARNING: Make sure wiring is not pinched during installation. When tightening four 10-32 x 1/2" PPZ screws that mount Pan Motor Assembly, you must tighten in a CLOCKWISE pattern starting with screw in lower left-hand side from spring.

NOTE: _____
Head not shown for clarity.

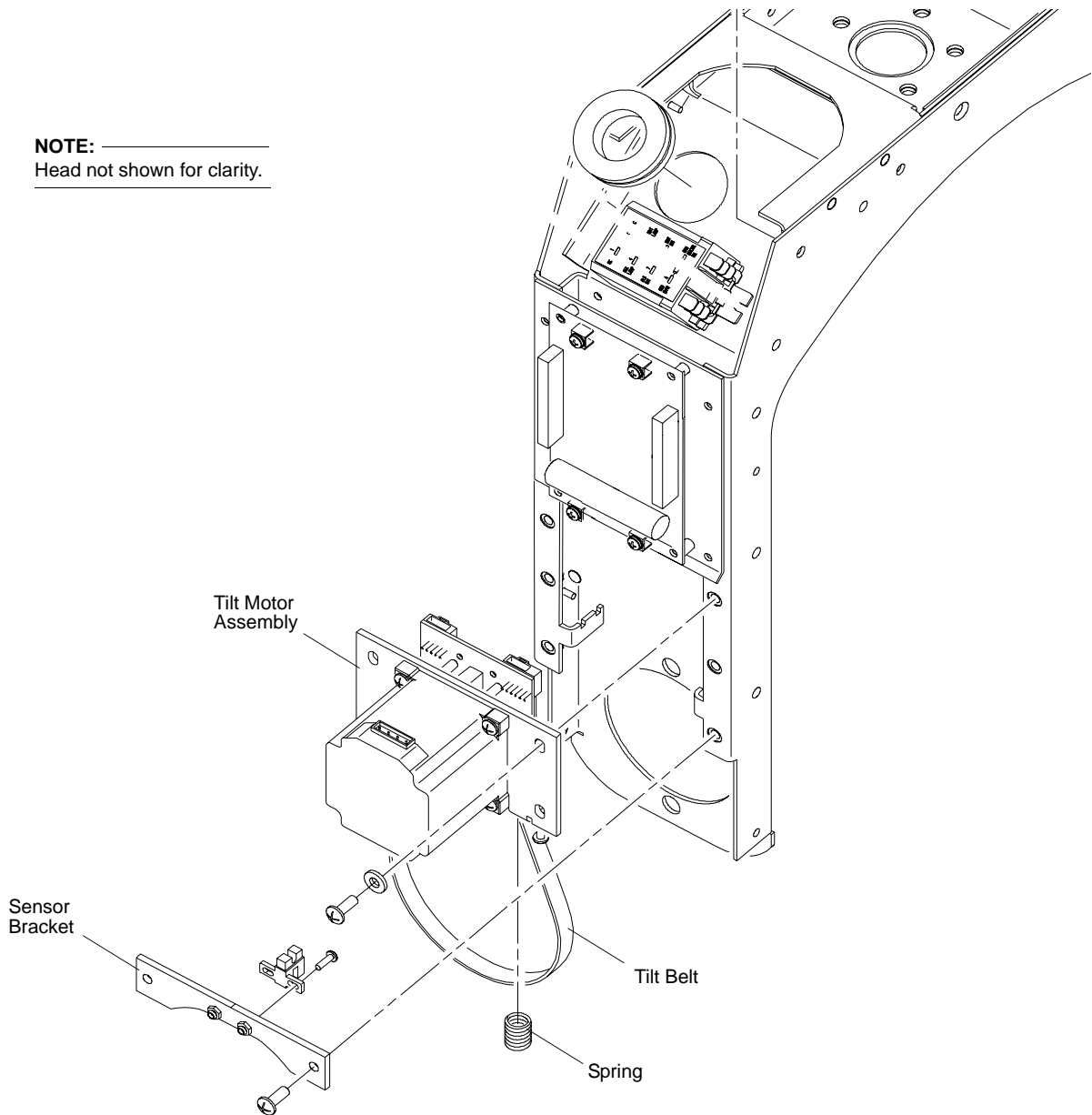


Figure 2-18: Tilt Motor Assembly Replacement

Tilt Encoder PCB Replacement

Vari-Lite Part No: 24.9661.5000

To remove and replace tilt encoder PCB:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. At tilt-side leg, remove yoke leg cover by removing four 6-32x3/8" PTB screws.

Step 3. At tilt motor assembly, loosen four 10-32x1/2" PPZ screws.

Step 4. Remove belt from tilt pulley.

Step 5. Remove four 10-32x1/2" PPZ screws. Be mindful of tensioning springs.

Step 6. Disconnect wiring and remove tilt assembly.

Step 7. On tilt assembly, remove two 4-40x1/4" LG PPZ screws and remove encoder PCB.

Step 8. Replace by performing steps 2 through 7 in reverse order.



Note: Make sure encoder disk passes through sensor when installing encoder PCB and wiring is not pinched during installation. When tightening four 10-32x1/2" PPZ screws that mount Pan Motor Assembly, you must tighten in a CLOCKWISE pattern starting with screw in lower left-hand side from spring.

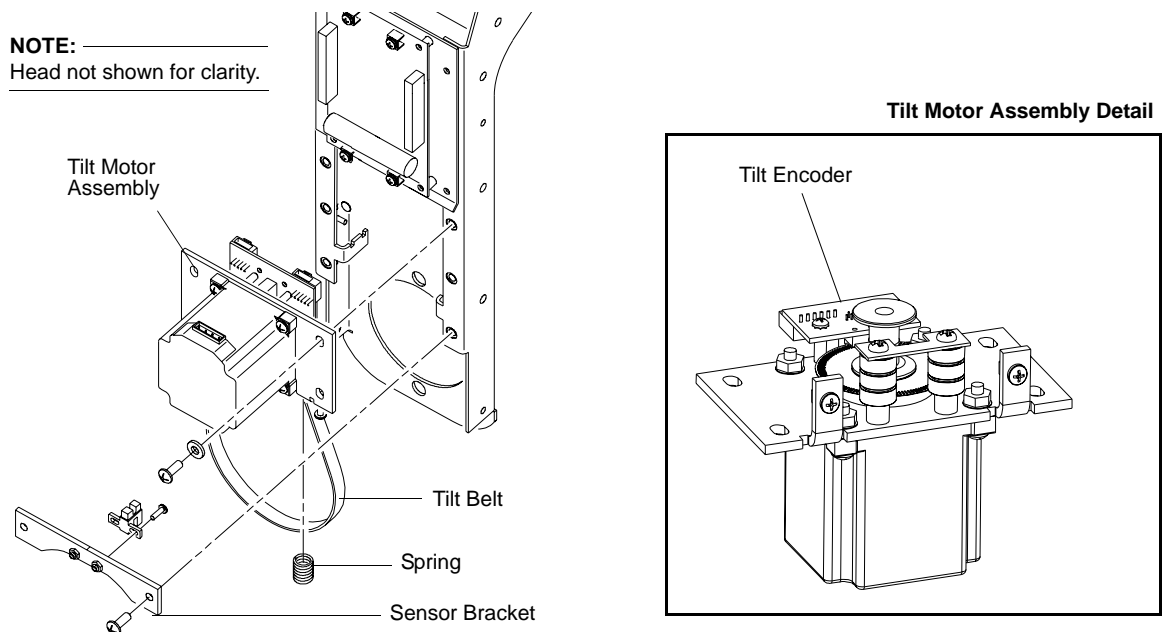


Figure 2-19: Tilt Encoder PCB Replacement

Tilt EOT Sensor Replacement

Vari-Lite Part No: 23.9661.1253

To remove and replace tilt EOT sensor:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. At tilt-side leg, remove yoke leg cover by removing four 6-32 x 3/8" PTB screws.

Step 3. At sensor bracket, remove two 10-32 x 1/2" PPZ screws and remove bracket.

Step 4. Disconnect wiring from Tilt Encoder PCB.

Step 5. At sensor, remove two 6-32 x 3/8" PPZ screws and remove sensor from bracket.

Step 6. Replace by performing previous steps in reverse order.

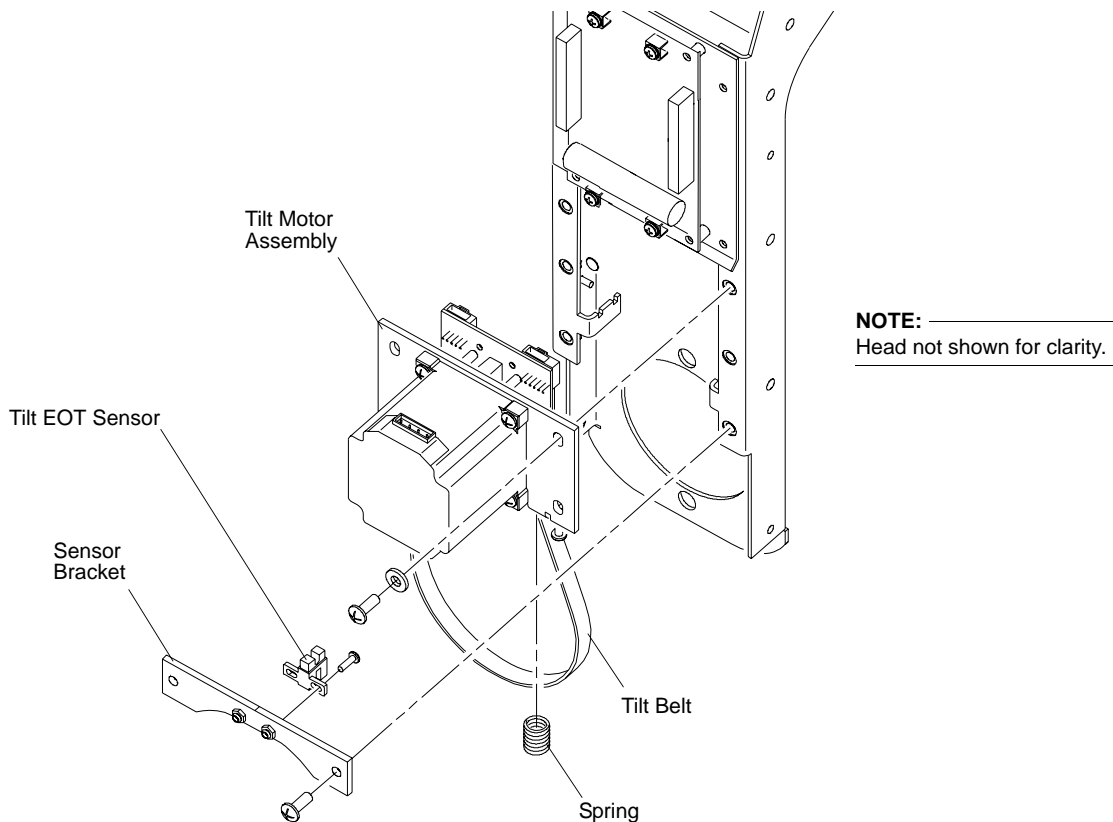


Figure 2-20: Tilt EOT Sensor Replacement

Tilt Lock Replacement

Vari-Lite Part No: 10.9698.1765

To remove and replace tilt lock:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

- Step 2. Remove Tilt Motor and Belt following instructions outlined in [“Tilt Motor Assembly and Tilt Belt Replacement”](#) on page 40.
- Step 3. Remove Pan Tube Wire Protection Bushing.
- Step 4. Using a 2.5 mm Allen Wrench, remove Tilt Pulley by removing three M5 x 10MM STL CUP PT screws.
- Step 5. At Tilt Lock, remove four 6-32x3/16" PPZ screws and washers. Noting orientation remove tilt lock plate.
- Step 6. Replace in reverse order.

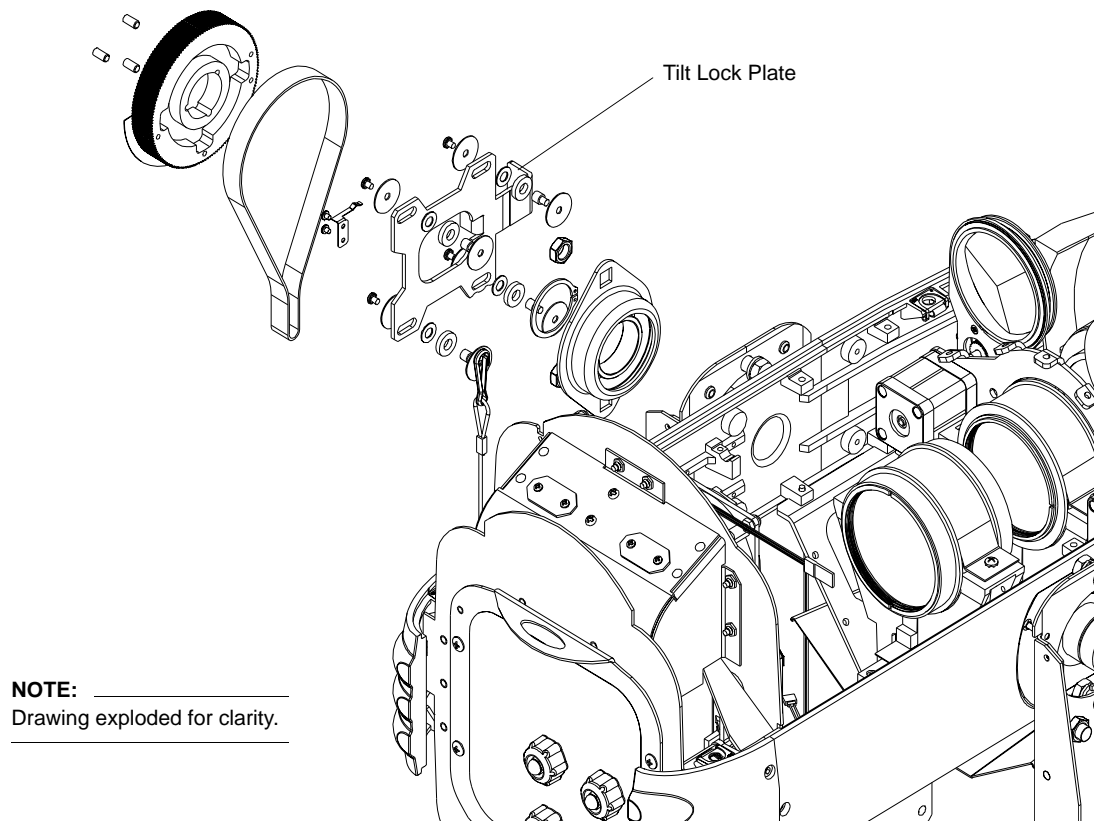


Figure 2-21: Tilt Lock Replacement

Pan Motor Assembly/Pan Belt Replacement

Vari-Lite Part No: 21.9698.0864 (Pan Motor)

Vari-Lite Part No: 54.9698.0224 (Pan Belt)

To remove and replace pan motor assembly:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. At each top enclosure cover, remove two 6-32 x 1/4" PPB screws and remove cover.

Step 3. In each corner from top, remove four 6-32 x 3/8" PPZ screws.



CAUTION: Be careful not to damage lens during next step.

Step 4. Carefully lay luminaire on its side, ensuring that lens does not come into contact with any surface.

Step 5. At bottom of enclosure, remove four 1/4-20 x 3/4" socket screws and 1/4" split lock washers and remove ventilation cover.

Step 6. Remove pan motor side handle by removing two 10-32 x 3/4" SCB screws.

Step 7. At enclosure bottom, remove two 6-32 x 1/4" PPB screws and pan motor side cover.

Step 8. At side of enclosure, remove two 6-32 x 3/8" PFZ screws and two 6-32 KEPS nuts that hold two cable saddles. Pull wiring out of way of pan motor.

Step 9. Disconnect wiring from pan encoder PCB.

Step 10. At pan encoder PCB, remove two 4-40 x 1/4" screws and remove pan encoder PCB.

Step 11. Loosen (but do not remove) four 10-32 x 3/4" SCB Cap screws.

Step 12. Move pan motor assembly toward pan pulley and remove belt from pan pulley.

Step 13. Carefully remove pan belt from around encoder wheel and pass it through tension rollers.

Step 14. Remove four 10-32 x 3/4" SCB Cap screws.

Step 15. Pull assembly out (be mindful of tension springs).

Step 16. Disconnect wiring.

Step 17. Replace by performing previous steps in reverse order.



Note: Make sure wiring is not pinched during installation. When tightening four 10-32 x 3/4" SCB Cap screws that mount Pan Motor Assembly, you must tighten in a CLOCKWISE pattern starting with screw in lower left-hand side from spring.

To remove and replace pan belt:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. At each top enclosure cover, remove two 6-32x1/4" PPB screws and remove cover.

Step 3. Disconnect the following cable assemblies:

- a. Disconnect lamp wire from J202 and J203 at ballast.
- b. Disconnect DC wire from LVS and fan DC regulator board.
- c. Disconnect DMX wire from DMX PCB.
- d. Disconnect Display wire from Display.
- e. Remove ground wire from chassis.

Step 4. Remove pan motor assembly. See "To remove and replace pan motor assembly:" on page 45.

Step 5. Pass wire through routing hole in chassis

Step 6. Remove belt.

Step 7. Replace by performing previous steps in reverse.



Note: Make sure wiring is not pinched during installation. When tightening four 10-32 x 3/4" SCB Cap screws that mount Pan Motor Assembly, you must tighten in a CLOCKWISE pattern starting with screw in lower left-hand side from spring.

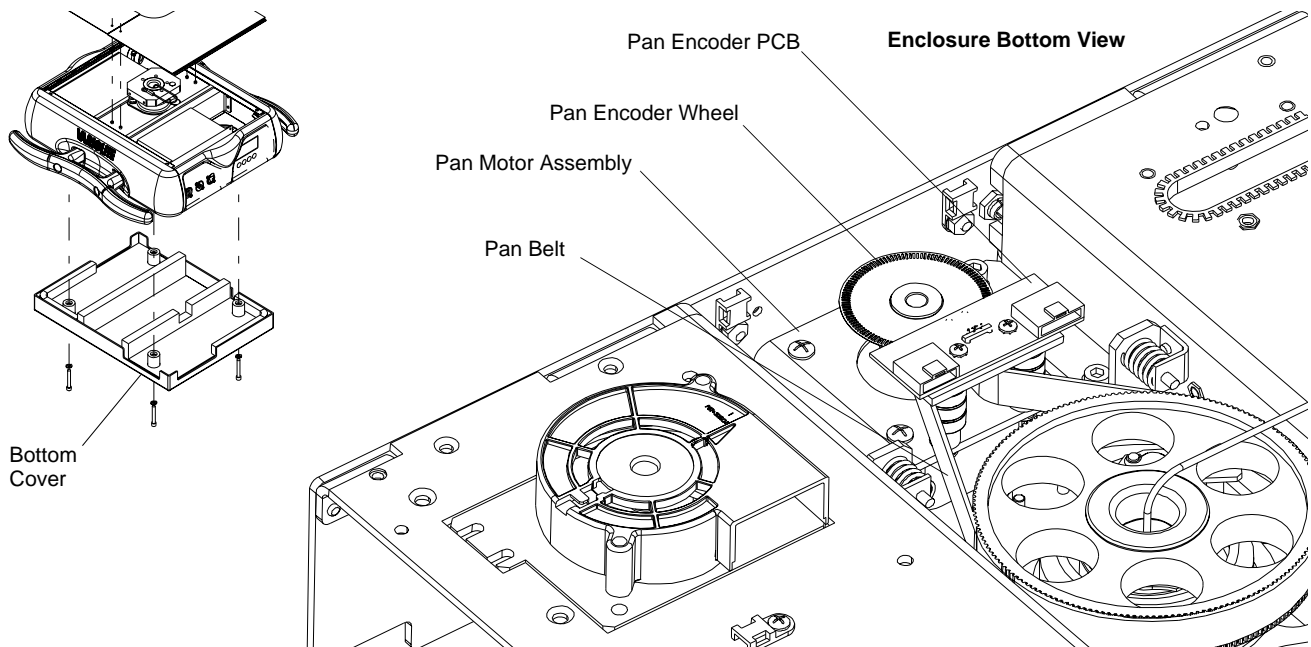


Figure 2-22: Pan Motor Assembly Replacement

Pan Encoder PCB Replacement

Vari-Lite Part No: 24.9678.5000

To remove and replace pan encoder PCB:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.



CAUTION: Be careful not to damage lens during next step.

Step 2. Carefully lay luminaire on its side, ensuring that lens does not come into contact with any surface.

Step 3. At bottom of enclosure, remove four 1/4-20 x 3/4" socket screws and 1/4" split lock washers and remove ventilation cover.

Step 4. At encoder PCB, remove two 4-40 x 1/4" PPZ screws.

Step 5. Disconnect wiring from encoder board.

Step 6. Replace by performing previous steps in reverse order.



Note: Make sure the encoder disk passes through the optical sensor.

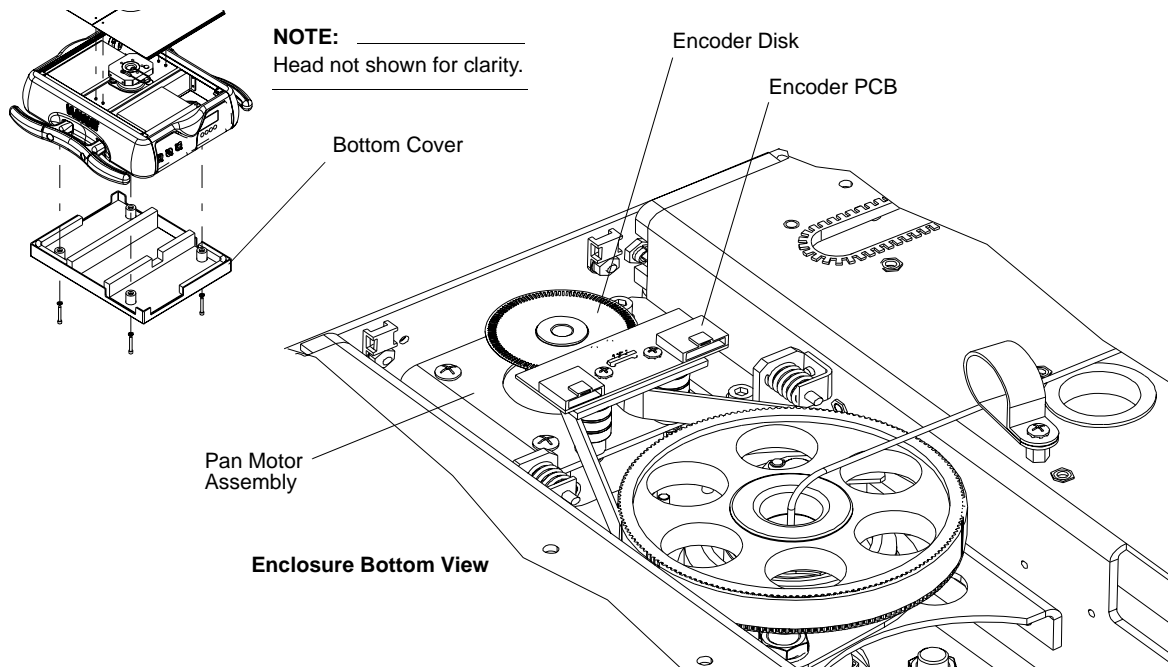


Figure 2-23: Pan Encoder PCB Replacement

Power Supply (LVS) Replacement

Vari-Lite Part No: 69.9698.0036

To remove and replace LVS:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. At enclosure, remove two 6-32 x 1/4" LG PPB screws from display side cover and remove cover.

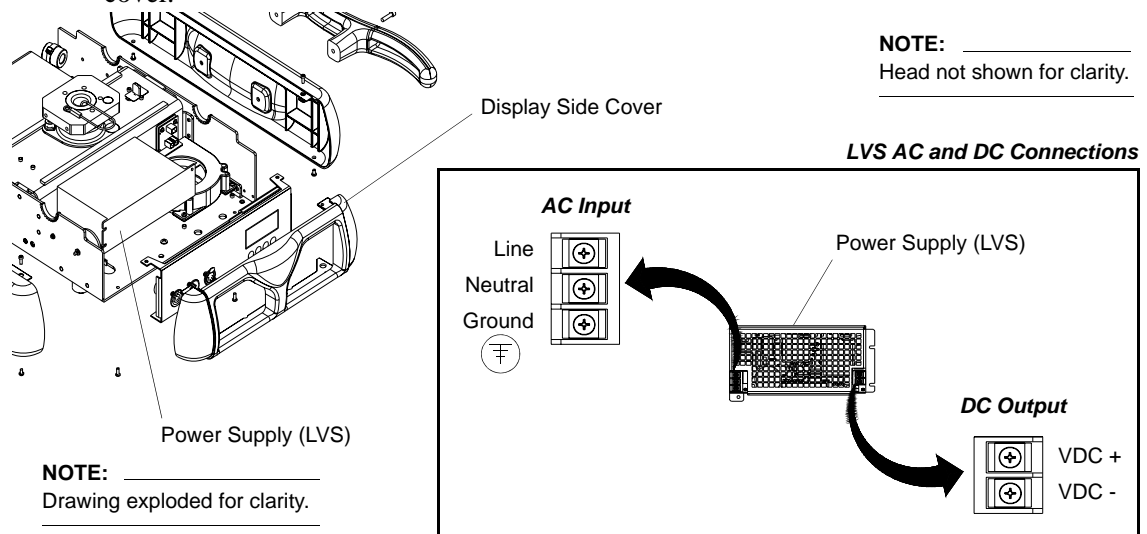


Figure 2-24: Power Supply (LVS) Replacement

Step 3. At power supply, disconnect wiring (Including ground wire - ground wire, green/yellow AC ground wire, is a ring terminal. You remove the screw to remove ground wire):

Location	Connector
N	White AC Wires
L	Black AC Wires
V +	Orange DC Wires*
V -	Black DC Wires*

*Ring terminal connection. Must remove screw completely to remove wire.

Step 4. Remove one 6-32 x 3/8" LG PPZ screw. Note, this is the same screw mounting FAN DC regulator board.

Step 5. Loosen two 6-32 x 3/8" LG PPZ screws and slide LVS towards upper enclosure fan to remove.

Step 6. Replace by performing previous steps in reverse order.

Display PCB Assembly Replacement

VL Part No: 24.9678.3825

To remove and replace display PCB assembly:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. Remove LVS following instructions in “Power Supply (LVS) Replacement” on page 48.

Step 3. At Display PCB, remove two 6-32 x 3/8" PPZ screws, remove Display stiffener bracket and lift PCB out of slot on bottom of chassis.

Step 4. Carefully disconnect wiring from PCB.

Note: When installing, check that all four menu buttons press in before tightening two 6-32 x 3/8" PPZ screws.

Step 5. Replace by performing steps in reverse order.

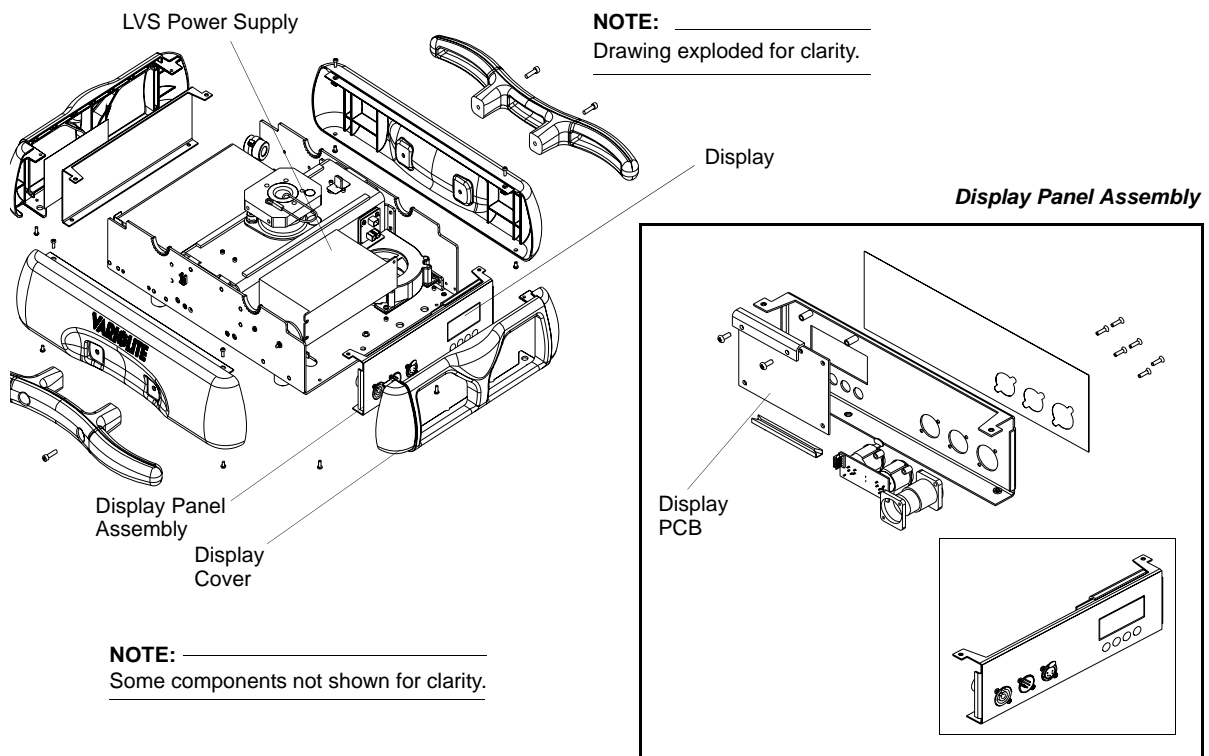


Figure 2-25: Display PCB Assembly Replacement

PowerCon AC Input Connector Assembly Replacement

VL Part No: 25.9679.0001

To remove and replace PowerCon AC input connector assembly:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. Remove LVS following instructions in “Power Supply (LVS) Replacement” on page 48.

Step 3. Disconnect wiring from PowerCon connector.

Step 4. At front panel, remove two 4-40 x 3/8" PFB screws

Step 5. Pull Connector to inside of enclosure. Remove connector from Neutrik backing plate. Plate will be used for new connector

Step 6. Replace in reverse order

Note: Brown wire is Line, Blue wire is Neutral and Green/Yellow wire is Earth (Ground).

Step 7. Replace by performing steps in reverse order.

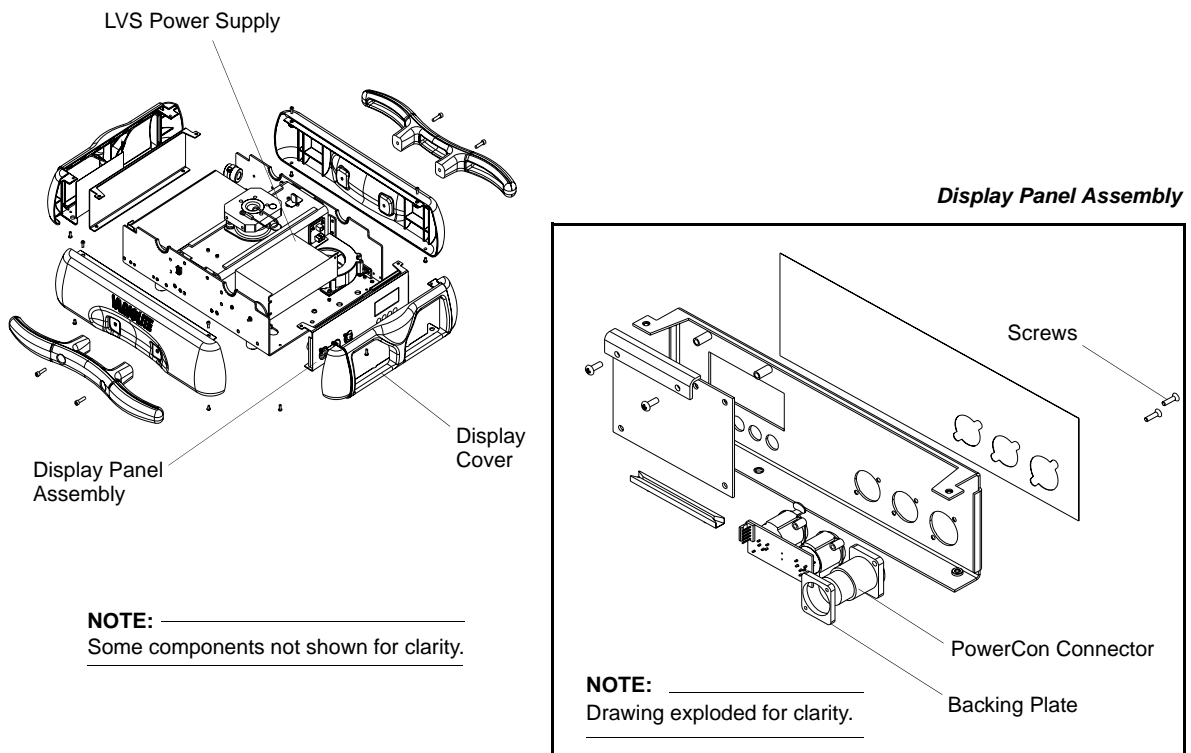


Figure 2-26: PowerCon AC Input Connector Assembly Replacement

DMX PCB Assembly Replacement

VL Part No: 24.9664.4895

To remove and replace DMX PCB assembly:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. Remove LVS following instructions in “Power Supply (LVS) Replacement” on page 48.

Step 3. At DMX PCB assembly, disconnect wiring from PCB.

Step 4. At front panel, remove four 4-40 x 3/8" PFB screws

Step 5. Remove PCB to inside of enclosure.

Note: When installing, always ensure the release for the female XLR is on the outside of the panel and moves freely when pushed.

Step 6. Replace by performing steps in reverse order.

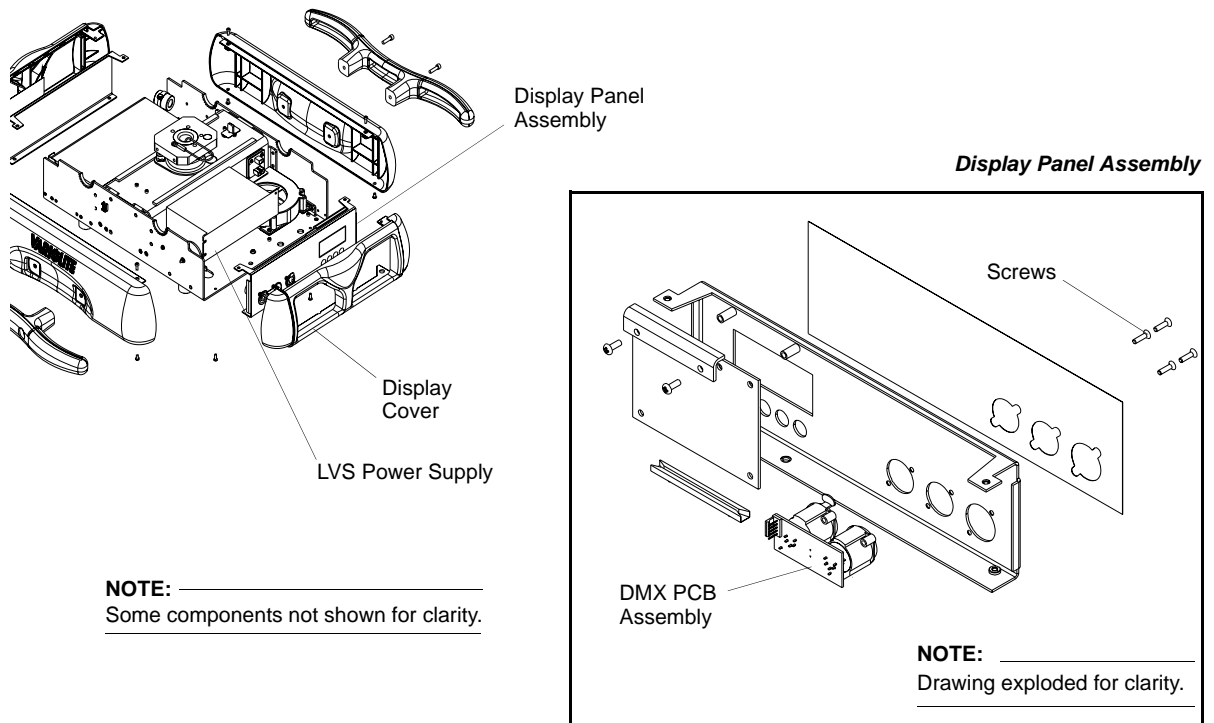


Figure 2-27: DMX PCB Assembly Replacement

Upper Enclosure Fan Assembly Replacement

VL Part No: 23.9698.0686

To remove and replace upper enclosure fan assembly:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

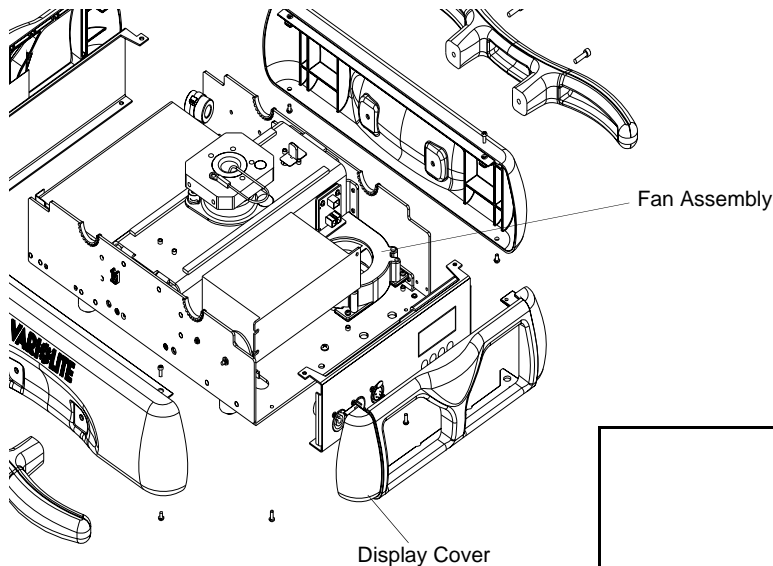
Step 2. Remove LVS following instructions in [“Power Supply \(LVS\) Replacement”](#) on page 48.

Step 3. Disconnect fan wiring from voltage regulator board.

Step 4. Note placement of and cut cable ties as required. Also note wire routing.

Step 5. At fan, remove three 6-32 x 3/8" PPZ screws and remove fan.

Step 6. Replace by performing steps in reverse order.



NOTE: _____
Drawing exploded for clarity.

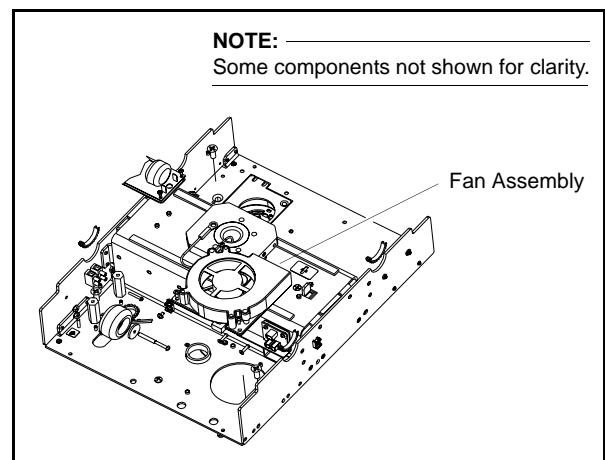


Figure 2-28: Upper Enclosure Fan Assembly Replacement

Fan Regulator Board (Upper Enclosure) Replacement

VL Part No: 24.9698.1690

To remove and replace fan regulator board in the upper enclosure:

Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. At enclosure, remove two 6-32x1/4" PPB SEMS screws from display side cover and remove cover.

Step 3. At Fan Regulator Board Assembly (22.9698.0690), remove one 6-32 x 3/8" PPZ SEMS screw securing assembly to LVS.

Step 4. Disconnect wiring from Fan Regulator Board.

Step 5. Remove two 4-40x1/4" PPSS screws and remove Regulator Board from mounting plate

Step 6. Replace by performing steps in reverse order.

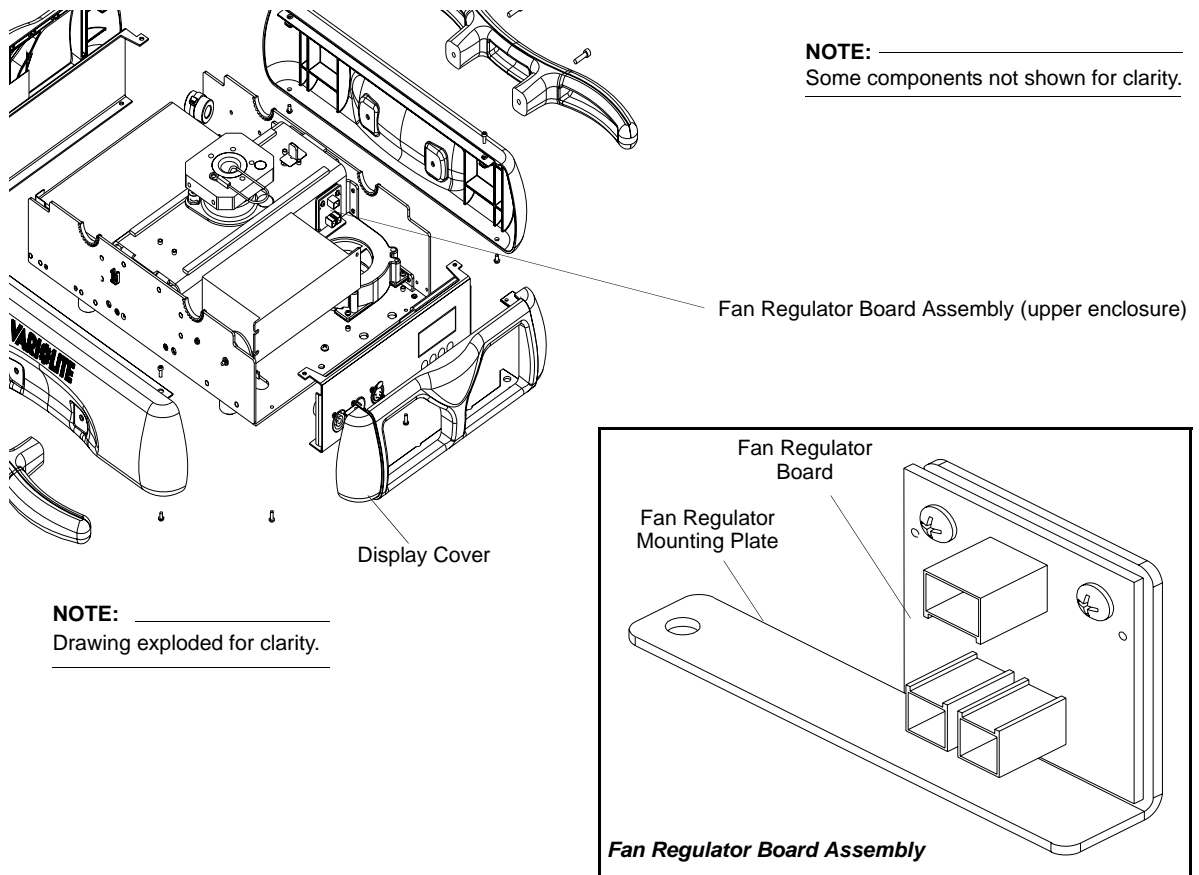


Figure 2-29: Fan Regulator Board (Upper Enclosure) Replacement

Pan Lock Replacement

VL Part No: 10.9698.0820

To remove and replace pan lock:

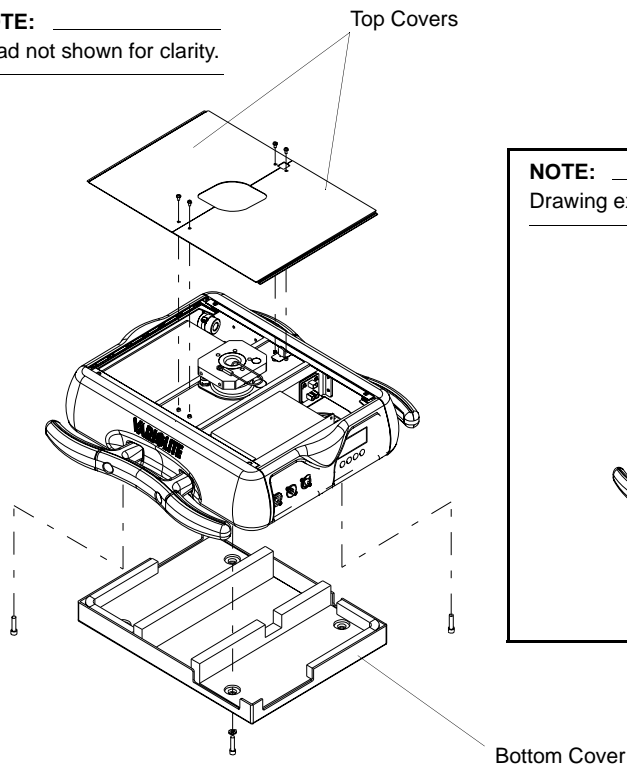
Step 1. Remove power from luminaire.



WARNING: You must remove all power from luminaire before performing maintenance. Fixture may be very HOT after operation. Allow it to cool completely before performing any maintenance.

Step 2. At each top enclosure cover, remove two 6-32 x 1/4" PPB screws and remove cover.

NOTE: _____
Head not shown for clarity.



NOTE: _____
Drawing exploded for clarity.

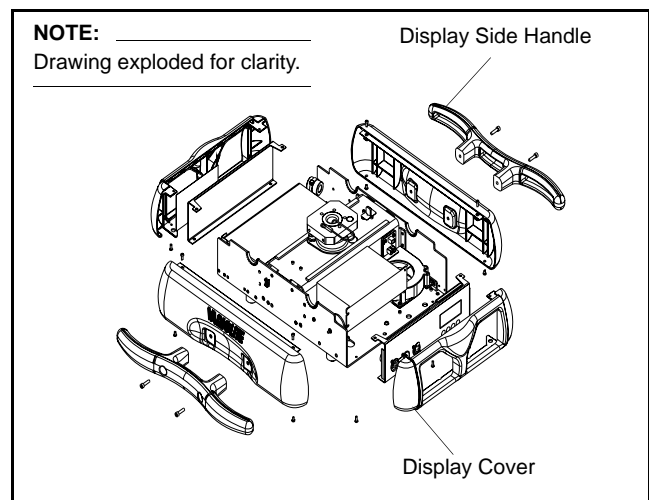


Figure 2-30: Enclosure Covers Removal

Step 3. At display side front cover, remove two 6-32 x 3/8" PPZ screws from each corner.



CAUTION: Be careful not to damage lens in the next step.

Step 4. Carefully lay luminaire on its side, ensuring that lens does not come into contact with any surface.

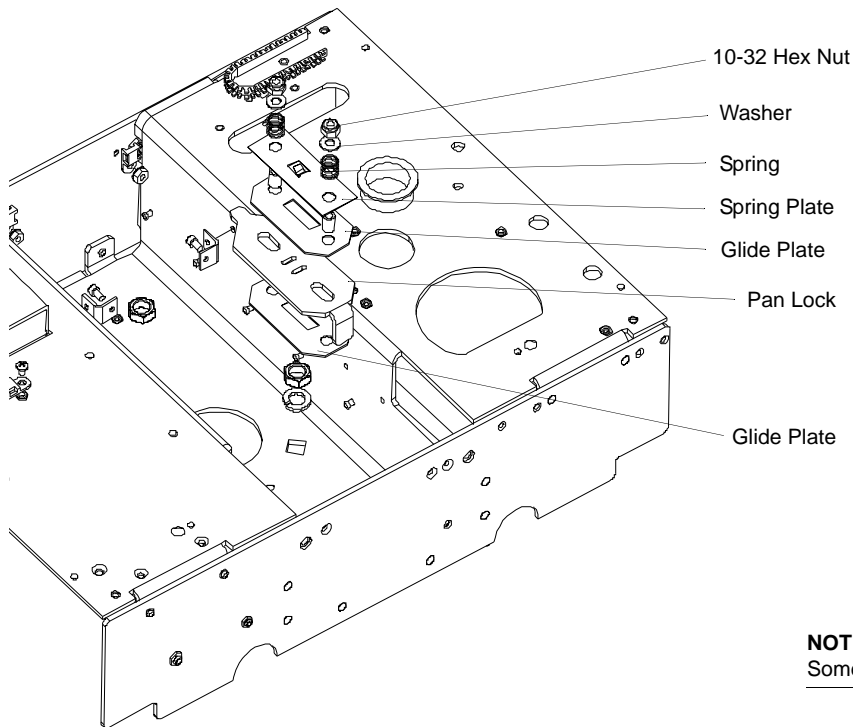
Step 5. At bottom of enclosure, remove four 1/4-20 x 3/4" socket screws and 1/4" split lock washers and remove ventilation cover.

Step 6. Remove handle on display side front cover by removing two 10-32 x 3/4" SCB screws.

- Step 7. At enclosure bottom, remove two 6-32 x 1/4" PPB screws and remove cover without handle.
- Step 8. Remove two 6-32 x 3/8" PFZ screws from enclosure side and remove Upper Enclosure Air Duct.
- Step 9. Remove two 10-32 Hex nuts holding pan lock in place.

Note: When removing, note placement of springs, flat washers, glides, pan lock spring (especially note orientation) and pan lock cover.

- Step 10. Replace in reverse order.



NOTE: _____
 Some components not shown for clarity.

Figure 2-31: Pan Lock Removal and Replacement

Gobo Timing Adjustments

The index timing belt must be aligned so that the mechanism "clocks" properly. This belt is installed around the index gear (top gear) of the gobo wheel. The wheel position belt is installed around the wheel position gear (bottom gear) of the gobo wheel, and does not require alignment. Each belt is also routed around one motor pulley.

For the following steps, refer to [Figure 2-33](#) and [Figure 2-34](#).

To time gobo wheels:

- Step 1. Align all holes in wheels as shown below.
- Step 2. Insert a 3" long #4 or M3 screw (or 0.125" diameter pin) completely through aligned holes in wheel and bulkhead plates as shown. This will lock the wheels in the "open" position.

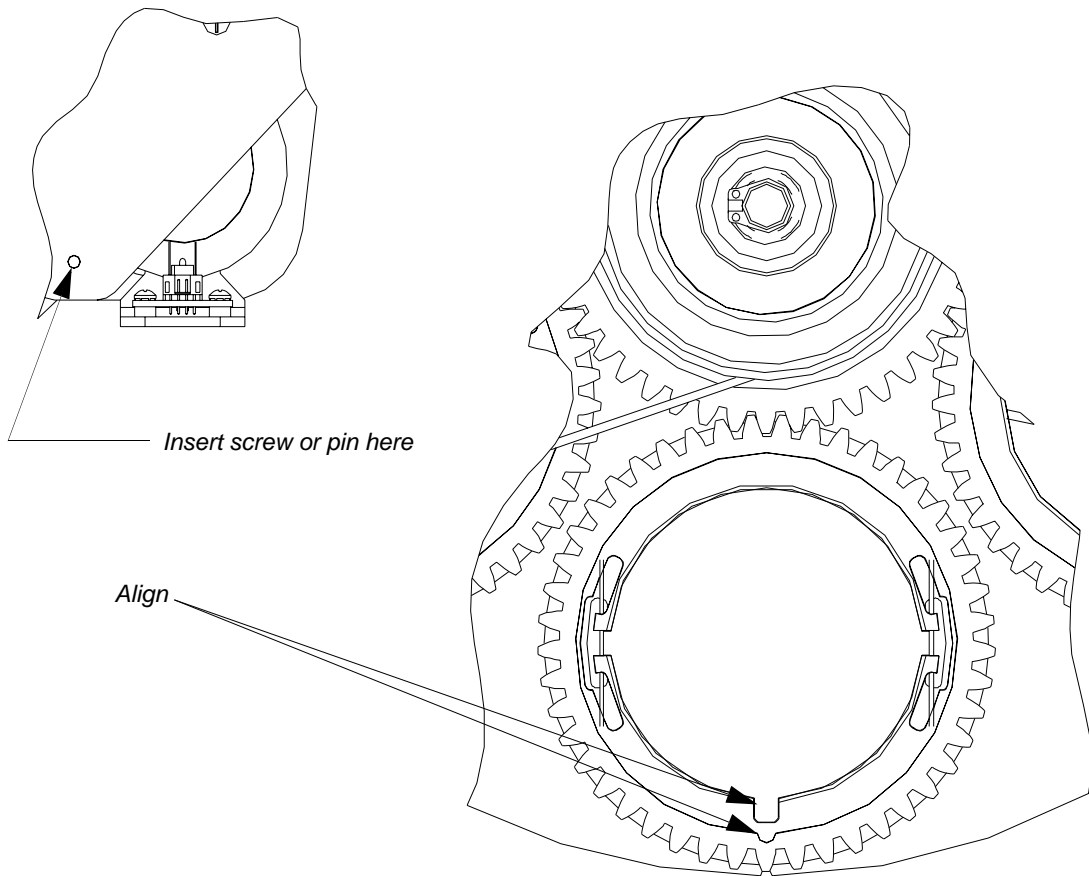


Figure 2-32: Gobo Wheel - Timing Adjustments

- Step 3. To time each gobo wheel, first align planet gear timing mark with hole in wheel. Loosen index belt just enough to slip teeth and rotate index pulley to center slot in optical sensor as shown. Reset tension on belt and verify that pulley slot is still centered in sensor and sensor is centered between two guide marks on pulley flange.

Gobo Timing Adjustments (continued)

- 1) Position index pulley so large flange is centered in optical sensor
- 2) Insert a 3" long #4 or M3 screw (or 0.125" diameter pin) completely through aligned holes in wheels and both bulkheads as shown. This will lock the wheels in the "open" position.
- 3) Adjust individual wheels as follows...

First align planet gear timing mark with hole in wheel. Loosen index belt just enough to slip teeth and rotate index pulley to center slot in optical sensor. Reset tension on belt and verify that pulley slot is still centered in sensor and sensor is centered between two guide marks on pulley flange.

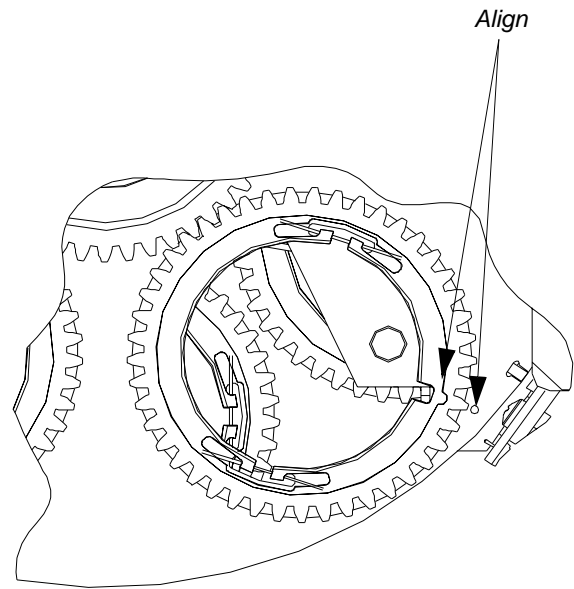
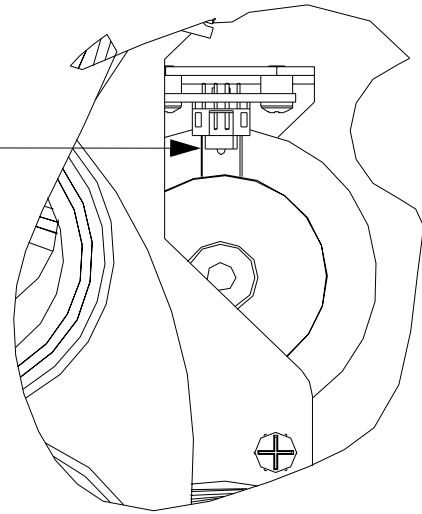


Figure 2-33: Gobo Timing Adjustments

Gobo Gear Planet Alignment

Each gear of the gobo wheel assembly must be aligned so that the gobos will index correctly. Use the following procedure to re-align the gears in the event the gobo wheel is disassembled.

To re-align gobo gears:

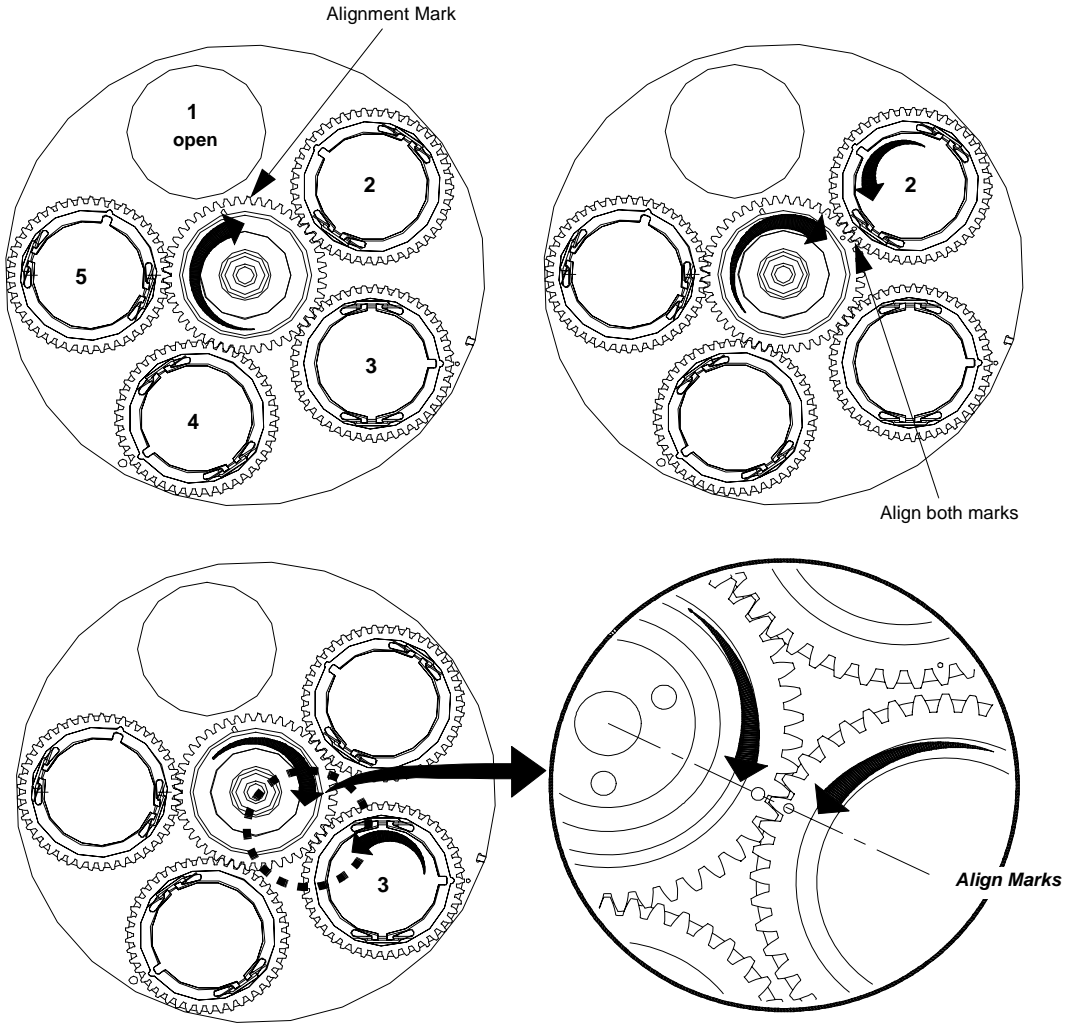
- Step 1. Place center (sun) gear at starting point so that timing mark is directly facing Position 1 (open) as shown in [Figure 2-34](#).
- Step 2. Set Position 6 planet gear as follows:
- Step 3. Rotate center gear clockwise until timing mark is directly facing Position 6.
- Step 4. Lift edge of center gear slightly (so that it will not turn), while at same time rotating Position 6 gear until timing mark is directly across from center gear timing mark. Lower center gear into place and verify alignment.
- Step 5. Set remaining planet gears by following same procedure. When all gears are aligned, rotate center gear in full rotation to verify alignments and to verify that assembly spins freely. When rotating, marks should align perfectly at each gear as they pass. Adjust as necessary and recheck. There should be no drag in the movement.

- See next page for further instructions -

Gobo Gear Planet Alignment (continued)

1) Start with center gear timing mark facing Position 1 (open).

2) Rotate center gear clockwise until timing mark is directly across from Position 2. Rotate Position 2 gear until timing marks align.



3) Align remaining gobo gears using the same method.

4) Verify alignment of all marks and adjust as necessary.

Figure 2-34: Aligning Gobo Planet Gears

Notes

CHAPTER 3.

Illustrated Parts Breakdown

This chapter contains illustrated parts breakdowns for all VL3015LT Spot Luminaire assemblies.

- **Drawing Trees**
- **Top Assembly**
- **Head Assembly**
- **Yoke Assembly**
- **Enclosure Assembly**
- **Cable Assemblies**



Drawing Trees

VL3015LT Spot Luminaire

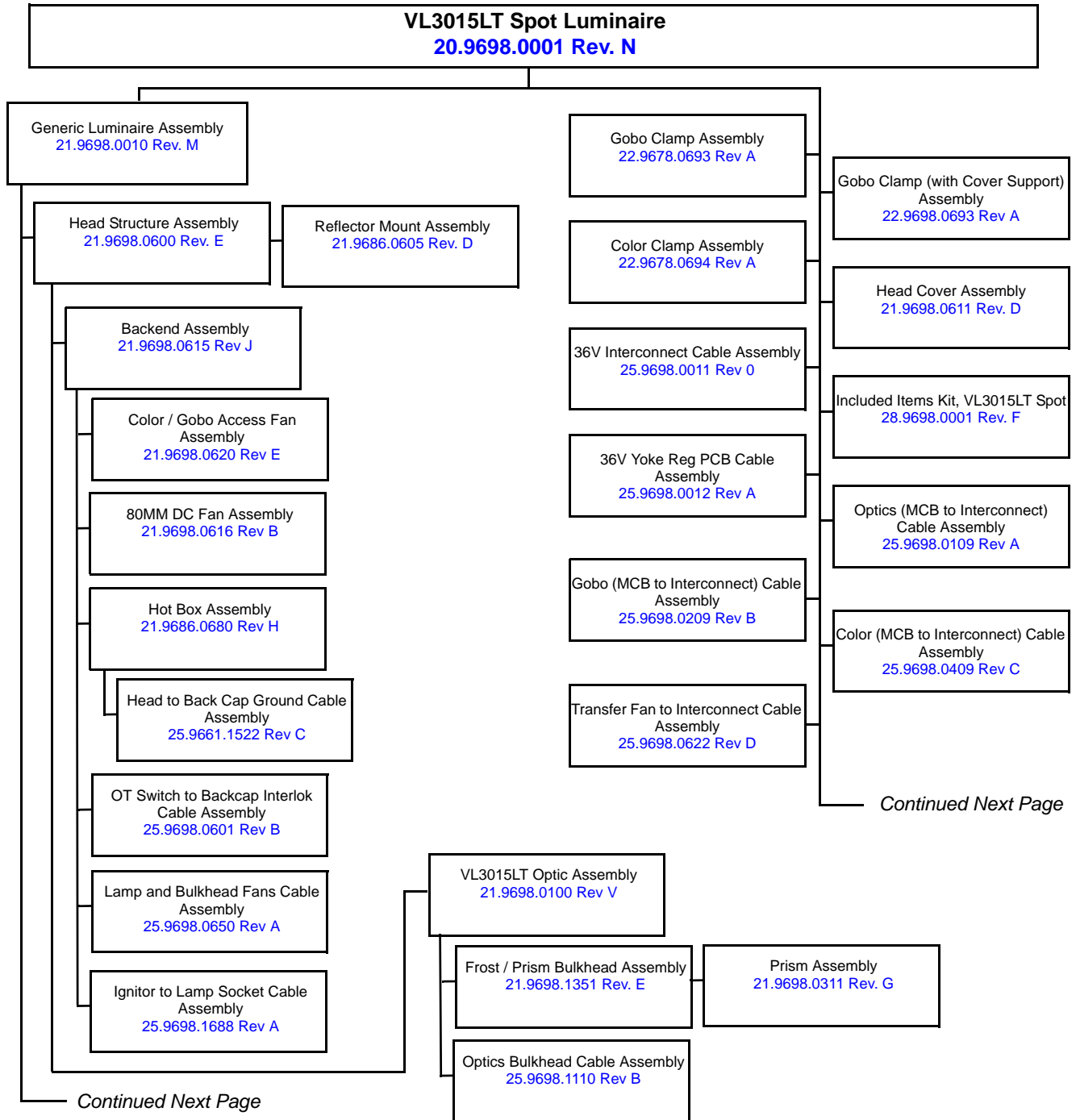
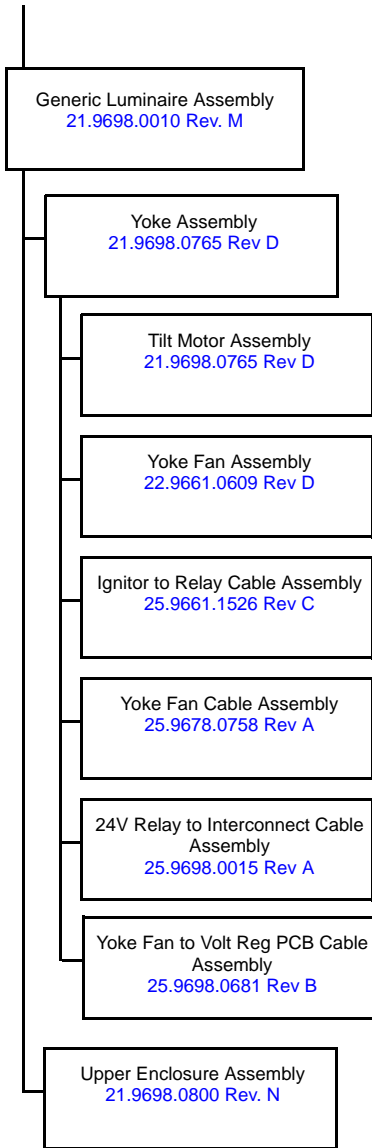


Figure 3-1: VL3015LT Spot Luminaire Subassembly Drawing Tree Part 1

VL3015LT Spot Luminaire (continued)

Continued From Previous Page



Continued Next Page

Continued From Previous Page

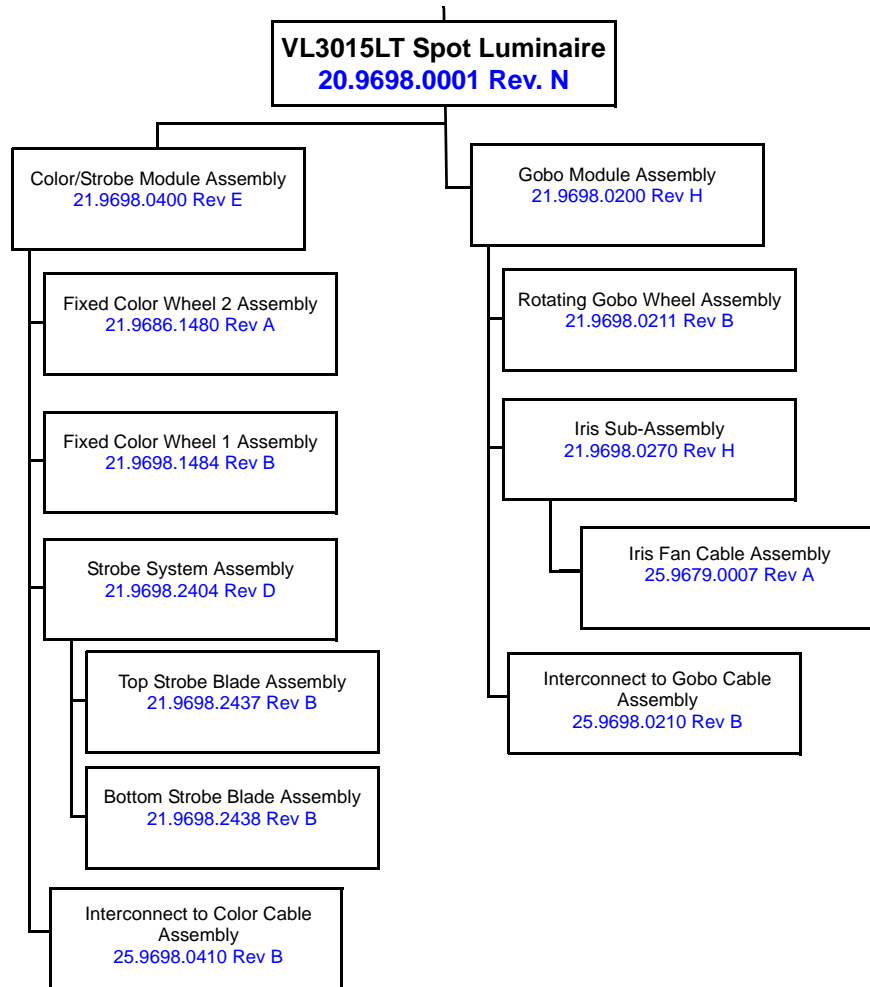


Figure 3-2: VL3015LT Spot Luminaire Subassembly Drawing Tree Part 2

VL3015LT Spot Luminaire (continued)

Continued From Previous Page

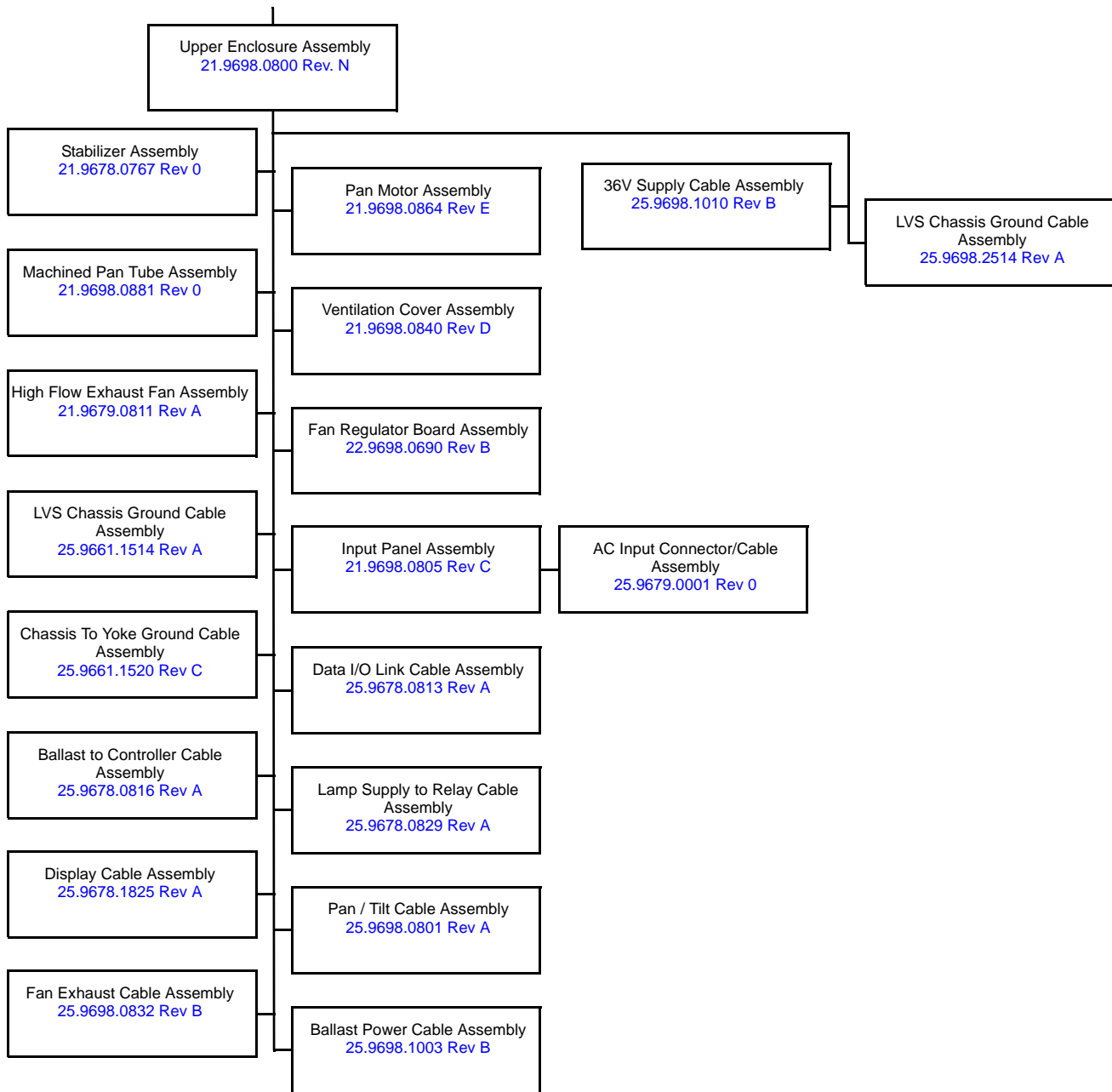


Figure 3-3: VL3015LT Spot Luminaire Subassembly Drawing Tree Part 3

Top Assembly

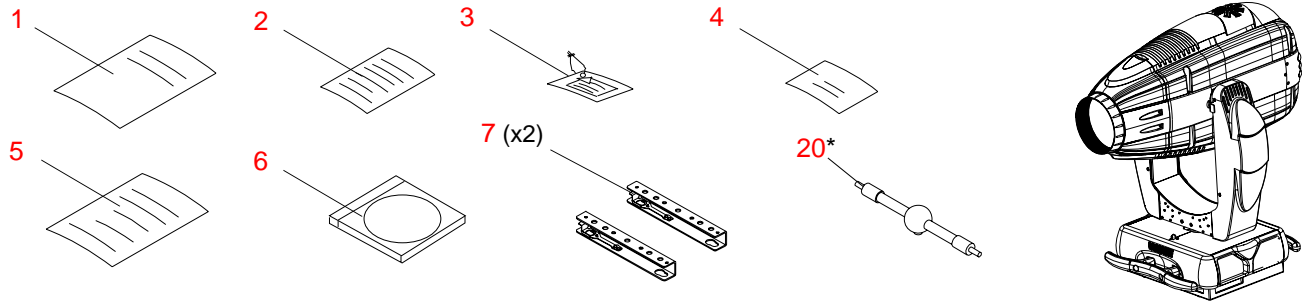
Included Items Kit, VL3015LT Spot

28.9698.0001 Rev. F

Refer to [Figure 3-4](#).

No.	Item	Qty.	UM.	Description
1	02.8001.0002	1	EA	VARI-LITE QUALITY ASSURANCE CERT.
2	02.8052.0001	1	EA	CARD, LIMITED WARRANTY
3	02.8406.0001	1	EA	TAG, LAMP NOTICE
4	02.8700.0001	1	EA	CARD, PRODUCT REGISTRATION
5	02.9698.0001	1	EA	UNPACK/QUICK START SHEET, VL3015LT
-	04.4037.0001	5	EA	LABEL, 2.5 X .5 BARCODE (not shown)
-	07.9686.0001	1	EA	CARDBOARD SHIPPING BOX (not shown)
6	08.3015.1001	1	EA	CD-ROM, VL3015LT PRODUCT DOCUMENTATION, USER
7	22.9661.1636	2	EA	FAB ASSY, BRACKET TRUSS HOOK
8	41.6098.7029	1	EA	GOBO ASSY, ALPHA RAYS (POS 1-2)
9	41.6098.5011	1	EA	GOBO ASSY, NIGHT SKY (POS 1-3)
10	41.6098.4003	1	EA	GOBO ASSY, RAY (POS 1-4)
11	41.6098.7015	1	EA	GOBO ASSY, BLOCK BREAKUP (POS 1-5)
12	41.6098.8513	1	EA	GAG ASSY, PLOWED (POS 2-2)
13	41.6098.8506.	1	EA	GAG ASSY, DROPLETS (POS 2-3)
14	41.6098.8511	1	EA	GAG ASSY, ON THE ROCKS (POS 2-4)
15	41.6098.8512	1	EA	GAG ASSY, PANGEA (POS 2-5)
16	41.6098.6011	1	EA	GOBO ASSY, CIRCLE OF OVALS (POS 3-2)
17	41.6098.8801	1	EA	GOBO ASSY, MULTI-COLOR CIRCLES (POS 3-3)
18	41.6098.7002	1	EA	GOBO ASSY, PEBBLES (POS 3-4)
19	41.6098.4211	1	EA	GOBO ASSY, UNEVEN BARS (POS 3-5)
20	71.9686.1502	1	EA	LAMP, 1500 WATT SHORT ARC, DOUBLE-ENDED, HTI 1500 D7/60

Included Items Kit, VL3015LT Spot (continued)



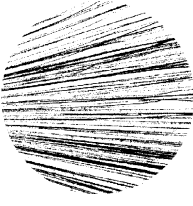
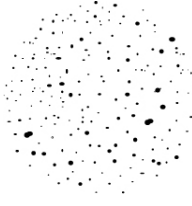







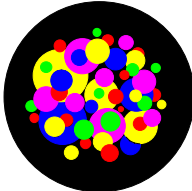
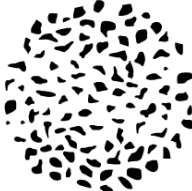

8  <i>Alpha Rays</i>	9  <i>Night Sky</i>	10  <i>Ray</i>	11  <i>Block Breakup</i>
12  <i>Plowed Gag</i>	13  <i>Droplets Gag</i>	14  <i>On the Rocks Gag</i>	15  <i>Pangea Gag</i>
16  <i>Circle of Ovals</i>	17  <i>Multi-Color Circles</i>	18  <i>Pebbles</i>	19  <i>Uneven Bars</i>

Figure 3-4: Included Items Kit, VL3015LT Spot



Note: * = Do not handle lamp with bare hands. When handling, it is best to wear clean cotton gloves in order to keep the lamp's glass as dirt and grease free as possible.

VL3015LT Spot Luminaire

20.9698.0001 Rev. N

Refer to [Figure 3-5](#)

No.	Item	Qty.	UM.	Description
-	04.9698.0061	1	EA	LABEL, AC INPUT RATING VL3015LT (not shown)
1	10.9686.0617	1	EA	YOKE CROSS MEMBER, HEAT SHIELD
2	10.9698.1679	1	EA	MOUNT, TRANSFER FAN, LT
3	10.9698.2125	1	EA	MOUNT, INTERCONNECT BOARD
4	12.9698.0614	1	EA	PAINTED FRONT COVER, VL3015LT
5	12.9698.0732	2	EA	PAINTED YOKE ARM COVER
6	21.9698.0010	1	EA	ASSY, GENERIC LUMINAIRE, VL3015LT
7	21.9698.0200	1	EA	ASSY, GOBO MODULE
8	21.9698.0400	1	EA	ASSY, COLOR / STROBE MODULE
9	21.9698.0611	2	EA	ASSY, HEAD COVER, VL3015LT
10	22.9698.0693	2	EA	ASSY, GOBO CLAMP W/ COVER SUPPORT
11	22.9678.0694	2	EA	ASSY, COLOR CLAMP
12	22.9698.1690	1	EA	LT FAN VOLTAGE REGULATOR ASSY, YOKE ARM
13	24.9698.0700	1	EA	MCB ASSY, MAIN CONTROLLER, VL3015LT
14	24.9698.2680	1	EA	ASSY, INTERCONNECT PCB
-	25.9698.0011	1	EA	CABLE ASSY, 36V INTERCONNECT (not shown)
-	25.9698.0012	1	EA	CABLE ASSY, YOKE VOLTAGE REG BOARD (not shown)
-	25.9698.0109	1	EA	CABLE ASSY, OPTICS, MCB TO INTERCONNECT (not shown)
-	25.9698.0209	1	EA	CABLE ASSY, GOBO, MCB TO INTERCONNECT (not shown)
-	25.9698.0409	1	EA	CABLE ASSY, COLOR, MCB TO INTERCONNECT (not shown)
-	25.9698.0622	1	EA	CABLE ASSY, TRANSFER FAN TO INTERCONNECT (not shown)
-	28.9698.0001	1	EA	INCLUDED ITEM KIT, VL3015 SPOT (not shown)
15	40.7113.0012	1	EA	FAN, TUBAXIAL, 80 MM, 24VDC, HIGH SPEED
16	53.6523.0013	8	EA	SCREW, 6-32 X 3/8" PTB
17	53.6558.0007	8	EA	SCREW, 6-32 X 1/4" PPZ SEMS
18	53.6558.0009	2	EA	SCREW, 6-32 X 3/8" PPZ SEMS
19	53.6558.0016	2	EA	SCREW, 6-32 X 3/4" PPZ SEMS
20	53.6571.0002	4	EA	SCREW, 6-32 X 1-1/4" PPB
21	53.6613.0008	4	EA	SCREW, 6-32 X 1/2" PPZ SEMS
22	53.6625.0001	4	EA	SCREW, 10-32 X 1/2" PPB
23	55.2150.0002	2	EA	STANDOFF, 1/4" HEX 6-32 X 1.187" MF

VARI*LITE - VL3015LT SPOT LUMINAIRE SERVICE MANUAL

No.	Item	Qty.	UM.	Description
24	55.2233.2001	8	EA	DZUS RAPIER MINI CLIP-ON RETAINER
25	55.6677.0033	4	EA	WASHER, 0.281" OD, 0.125" ID, 0.032" THK
26	22.9678.0693	1	EA	ASSY, GOBO CLAMP

VL3015LT Spot Luminaire (continued)

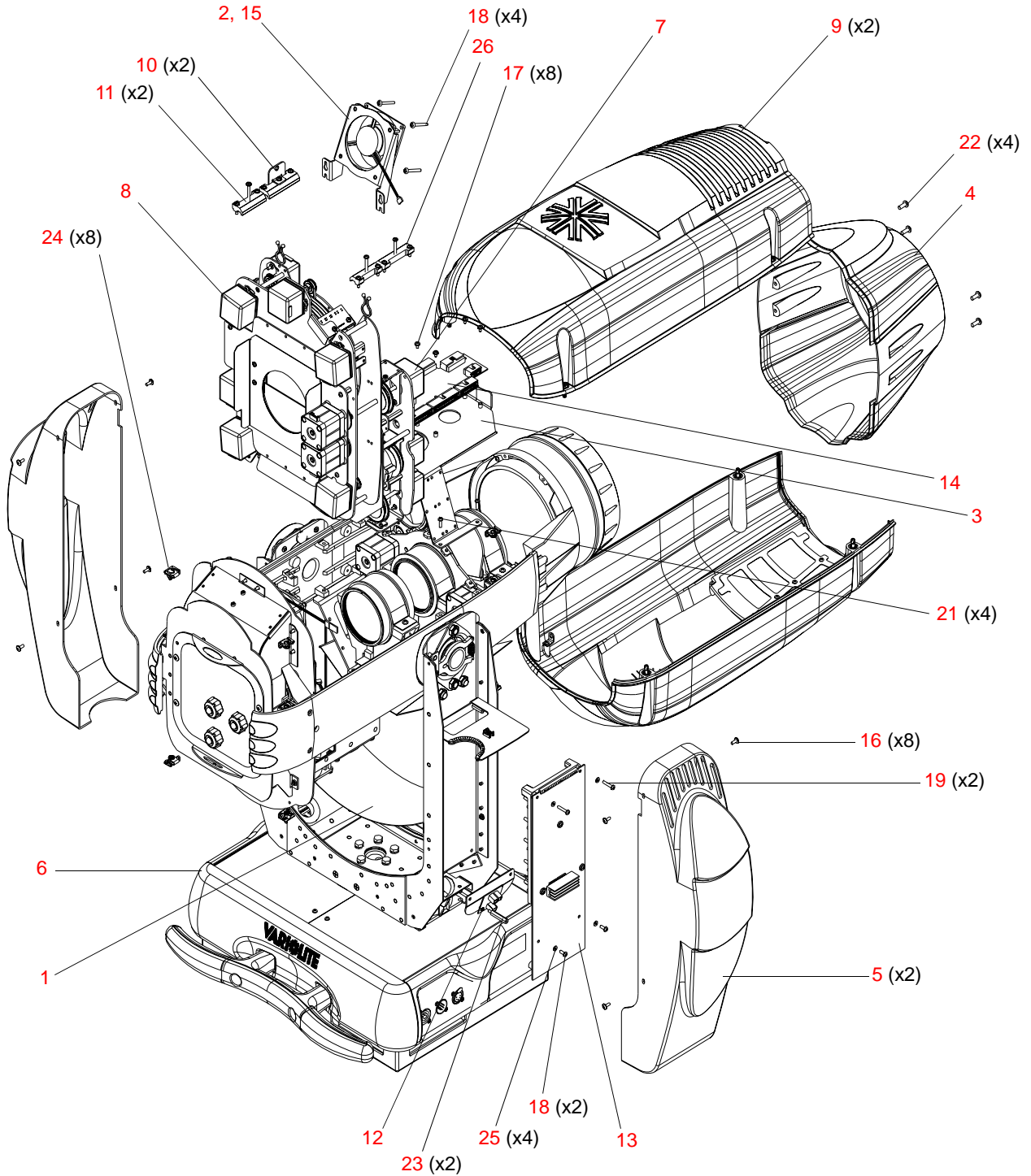


Figure 3-5: VL3015LT Spot Luminaire

Generic Luminaire Assembly

21.9698.0010 Rev. M

Refer to [Figure 3-6](#)

No.	Item	Qty.	UM.	Description
1	10.9698.0002	2	EA	GROMMET, PROTECT, 2.9 INCHES
2	10.9698.0701	1	EA	YOKE ARM AIR PLENUM, MCB COOLING
3	10.9698.0768	4	EA	FOAM SPRING, TILT LOCK
4	10.9698.0769	4	EA	STANDOFF, TILT LOCK
5	10.9698.1766	1	EA	SPRING, TILT LOCK
6	10.9698.2765	1	EA	PLATE, TILT LOCK, FOUR SLOTS, W/ TAB
7	21.9678.0767	1	EA	ASSY, STABILIZER
7a	- 10.9678.0757	1	EA	STABILIZER, 1.377 DIA
7b	- 10.9678.0762	1	EA	BRACKET, STABILIZER
7c	- 53.6610.0003	1	EA	SCREW, 6-32 X 7/16" PPZ
7d	- 55.6568.0075	1	EA	SPRING, EXTSN 0.375" OD 1.00" LG 0.041" WIRE DIA
8	21.9698.0600	1	EA	ASSY, HEAD/OPTICS
9	21.9698.0700	1	EA	ASSY, YOKE
10	21.9698.0707	1	EA	ASSY, DRIVEN PULLEY
11	21.9698.0800	1	EA	UPPER ENCLOSURE
12	53.2019.0004	4	EA	NUT, 3/8-16 X 7/32" THK HEX JAM G
13	53.5565.0250	1	EA	SCREW, #6-32 X 1/4" PFB UNDERCUT
14	53.6505.0020	5	EA	BOLT, 1/4-28 X 3/4" HEX HD GRD 8
15	53.6505.0026	4	EA	BOLT, 1/4-20 X 1/2" HEX HD
16	53.6513.0044	3	EA	SCREW, M5 X 10MM STL CUP PT
17	53.6539.0001	4	EA	WASHER, 3/8" SPLIT LOCK
18	53.6553.0010	4	EA	SCREW, 10-32 X 5/8" PFB
19	53.6558.0007	1	EA	SCREW, 6-32 X 1/4" PPZ SEMS
20	53.6587.0001	2	EA	SCREW, 4-40 X 1/8" PPZ
21	53.6683.0015	4	EA	SCREW, 6-32 X 3/16" PPZ SEMS
22	54.1206.0014	2	EA	RING, RETAINING, 1.375" SHAFT
23	54.1255.0001	2	EA	BEARING/HOUSING ASSY
24	54.9698.0224	1	EA	BELT, TIMING, S2M 210GRV 15MM WIDE URTH/KVLR
25	55.2179.0001	1	EA	CABLE ANCHOR MOUNT, #6 SCREW MTG
26	55.6549.0001	5	EA	WASHER, 1/4" SPLIT LOCK
27	55.6677.0035	8	EA	WASHER, PROTECTIVE

No.	Item	Qty.	UM.	Description
28	55.6677.0045	4	EA	WASHER, 0.260"ID, 0.500"OD, 0.030" THK
29	55.6799.0001	2	EA	SHIM, 1-3/8" ID 1-7/8"OD, 0.010" THK, SS
30	55.6799.0002	2	EA	SHIM, 1-3/8" ID 1-7/8"OD, 0.005" THK, SS

Generic Luminaire Assembly (continued)

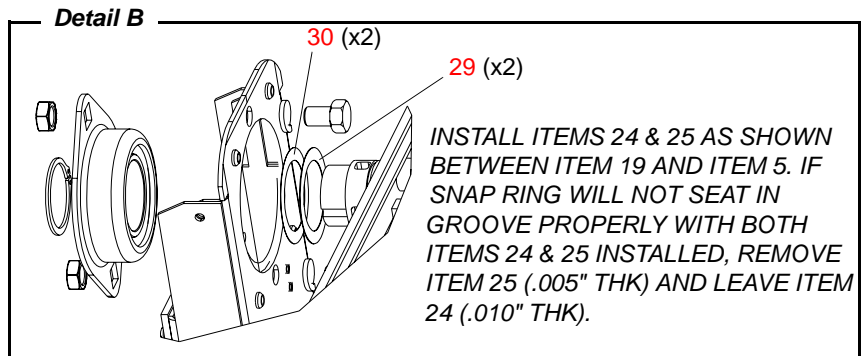
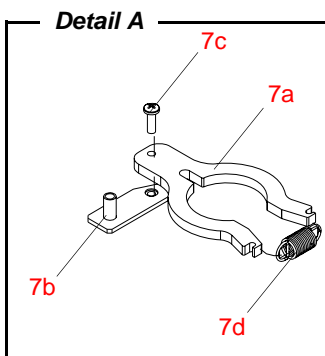
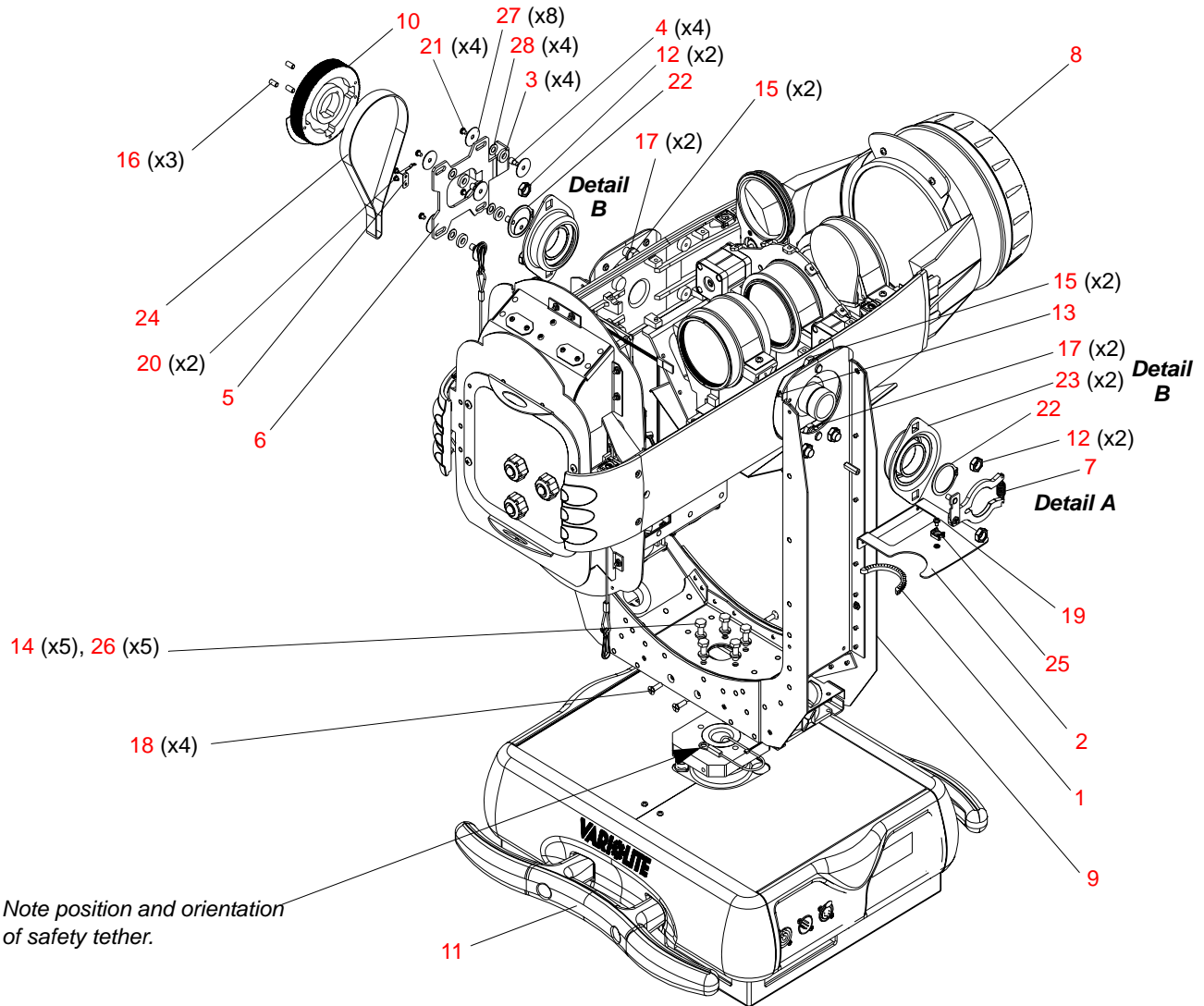


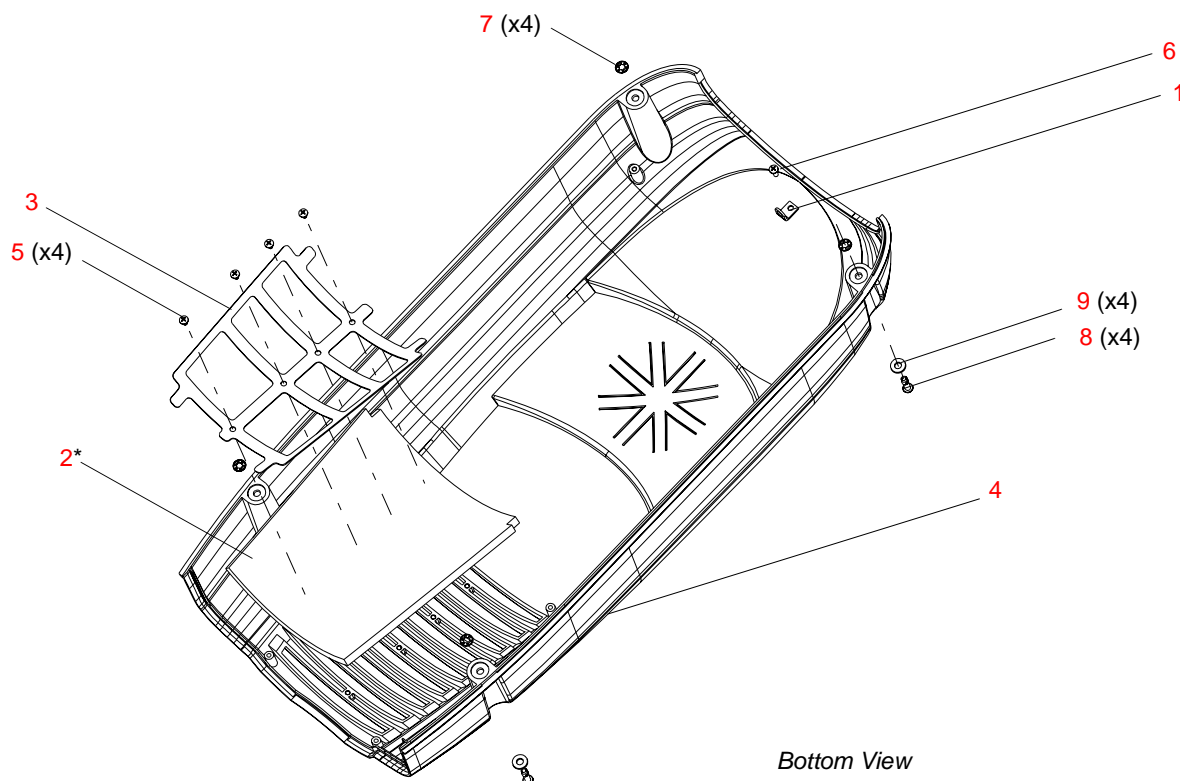
Figure 3-6: Generic Luminaire Assembly

Head Cover Assembly

21.9698.0611 Rev. D

Refer to [Figure 3-7](#)

No.	Item	Qty.	UM.	Description
1	10.9678.0674	1	EA	BRACKET, COVER TETHER
2	10.9698.0612	1	EA	FOAM BAFFLE, HEAD COVER
3	10.9698.0696	1	EA	FOAM FRAME, HEAD COVER
4	12.9698.0610	1	EA	PAINTED HEAD COVER, VL3015LT
5	53.5655.0250	4	EA	SCREW, #6 X 1/4" PPZ PLASTIC THD
6	53.6558.0003	1	EA	SCREW, 6-32 X 3/8" PPZ PLASTIC THD
7	55.2233.2003	4	EA	DZUS RAPIER 1/4-TURN STUD RETAINER, 5 MM
8	55.2233.2008	4	EA	DZUS RAPIER 1/4-TURN STUD, 5 MM, 14MM
9	55.6599.0001	4	EA	WASHER, FLAT BLACK, #10



*Note, secure foam by driving four screws (item 5) through frame into foam to cover.

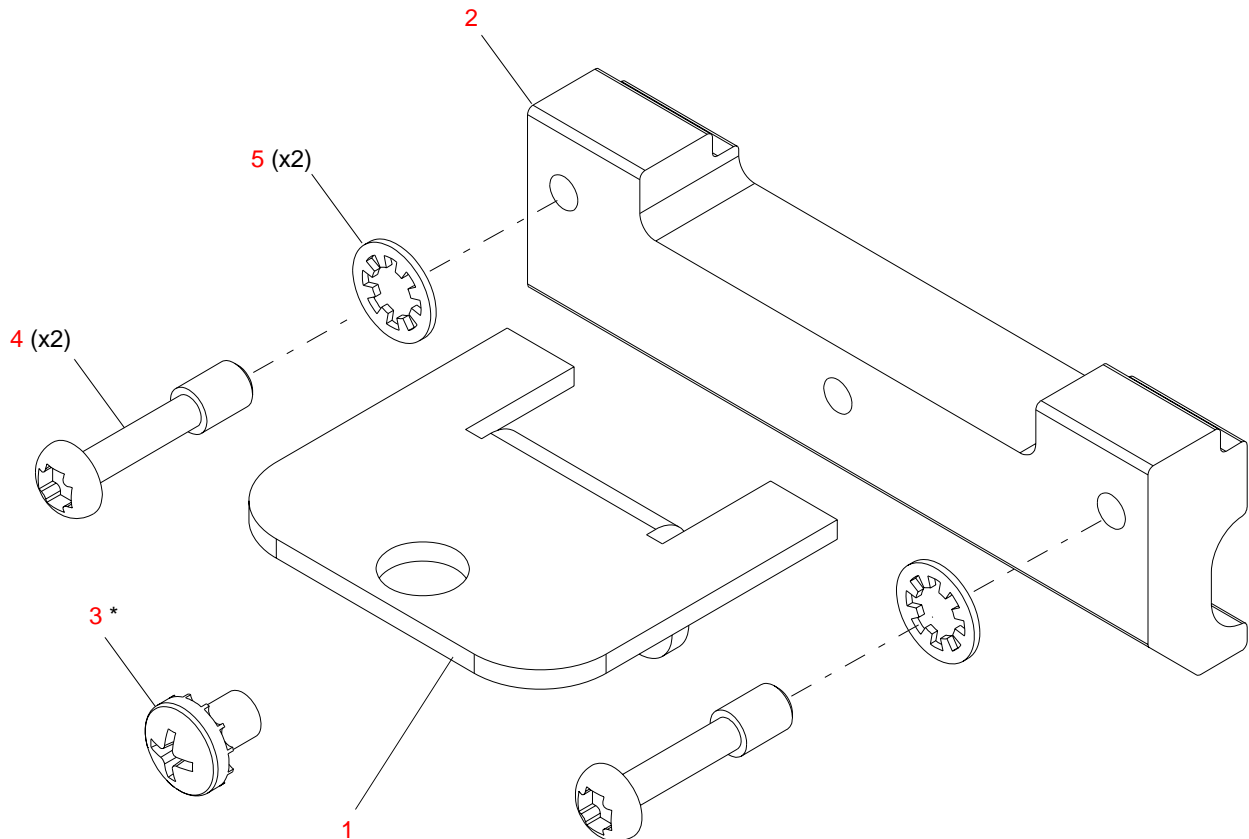
Figure 3-7: Head Cover Assembly

Gobo Clamp (with Cover Support) Assembly

22.9698.0693 Rev A

Refer to [Figure 3-8](#)

No.	Item	Qty.	UM.	Description
1	10.9698.0626	1	EA	COVER SUPPORT, CLAMP
2	12.9678.0691	1	EA	GOBO CLAMP
3	53.6525.0188	1	EA	SCREW, 6-32 X 3/16" LG PPZ SEMS
4	53.6685.0625	2	EA	SCREW, CAPTIVE PANEL, 6-32 X 0.625" LG PPS ZINC PLATED
5	55.6538.0001	2	EA	WASHER, #6 LOCK INTERNAL TOOTH



* Note: Install item 3 with Loctite 242 (Blue) thread locker.

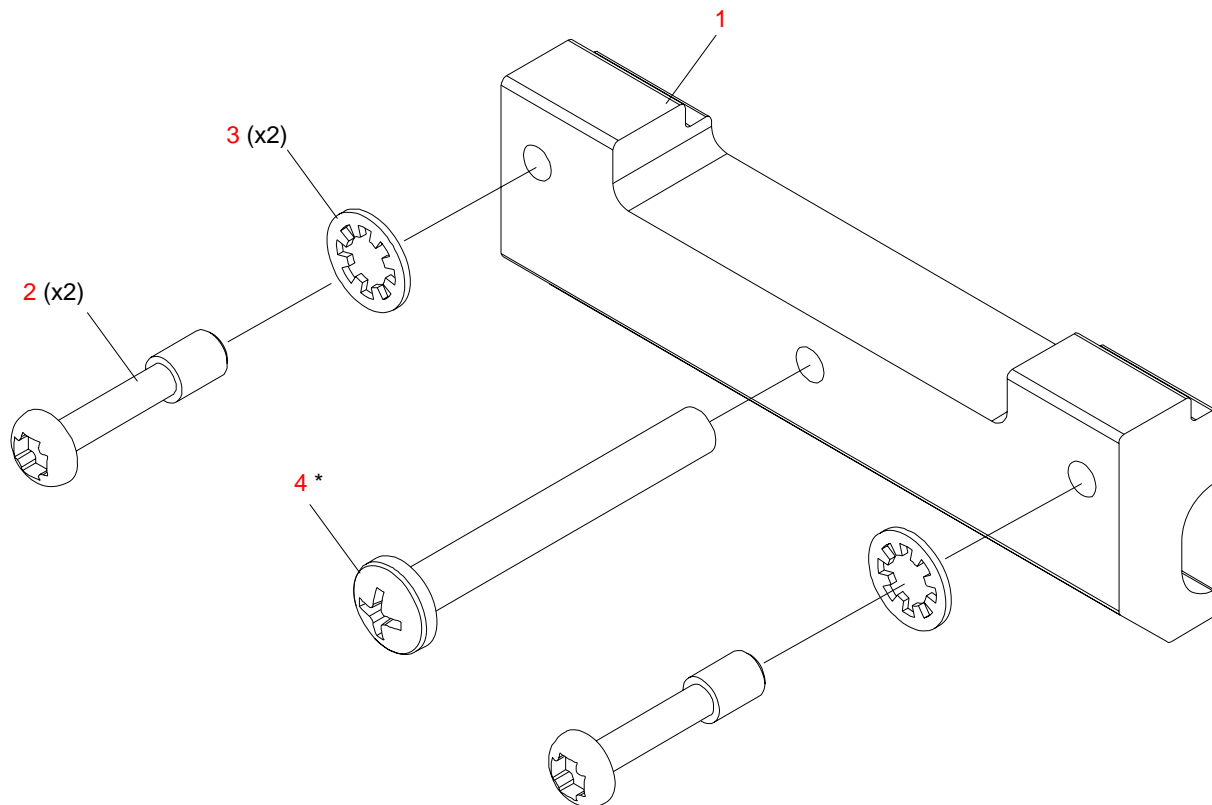
Figure 3-8: Gobo Clamp (with Cover Support) Assembly

Gobo Clamp Assembly

22.9678.0693 Rev A

Refer to [Figure 3-9](#)

No.	Item	Qty.	UM.	Description
1	12.9678.0691	1	EA	GOBO CLAMP
2	53.6685.0625	2	EA	SCREW, CAPTIVE PANEL, 6-32 X 0.625"LG PPS ZINC PLATED
3	55.6538.0001	2	EA	WASHER, #6 LOCK INTERNAL TOOTH
4	53.6613.1126	1	EA	SCREW, 6-32 X 1.125 LG PPZ



* Note: Install item 4 with Loctite 242.

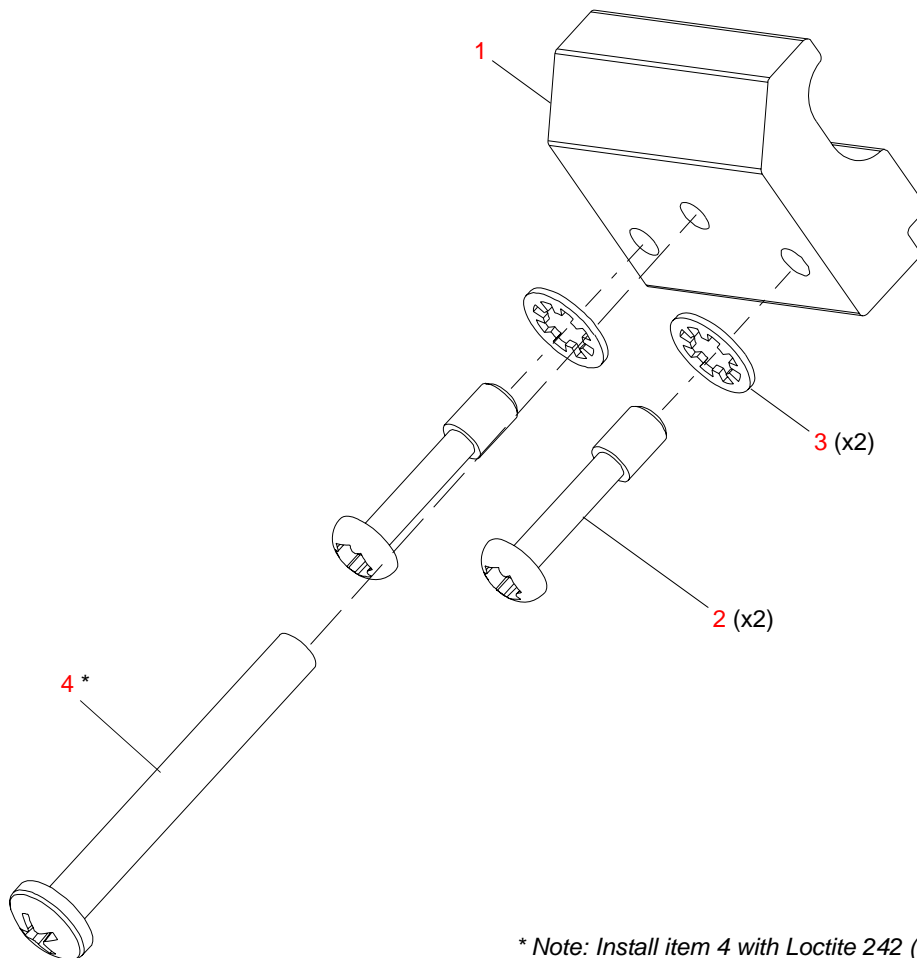
Figure 3-9: Gobo Clamp Assembly

Color Clamp Assembly

22.9678.0694 Rev A

Refer to [Figure 3-10](#)

No.	Item	Qty.	UM.	Description
1	12.9678.0692	1	EA	COLOR CLAMP
2	53.6685.0625	2	EA	SCREW, CAPTIVE PANEL, 6-32 X.625" LG PPS ZINC PLATED
3	55.6538.0001	2	EA	WASHER, #6 LOCK INTERNAL TOOTH
4	53.6613.1126	1	EA	SCREW, 6-32 X 1.125" LG PPZ



* Note: Install item 4 with Loctite 242 (Blue) thread locker.

Figure 3-10: Color Clamp Assembly

Head Assembly

Head Structure Assembly

21.9698.0600 Rev. E

Refer to [Figure 3-11](#)

No.	Item	Qty.	UM.	Description
1	10.9698.0627	1	EA	COVER SUPPORT, SIDE RAIL
2	12.9698.0623	1	EA	SIDE RAIL, MACHINED
3	12.9698.0625	1	EA	SIDE RAIL, MACHINED
4	21.9686.0605	1	EA	ASSY, REFLECTOR MOUNT
5	21.9698.0100	1	EA	ASSY, LT OPTICS
6	21.9698.0615	1	EA	ASSY, BACK END
7	53.6515.0001	6	EA	SCREW, 10-32 X 3/4, SCB
8	53.6581.0001	4	EA	SCREW, 4-40 X 1-3/8" PPZ
9	53.6613.0008	4	EA	SCREW, 6-32 X 1/2" PPZ SEMS
10	55.6682.0037	4	EA	SCREW, 10-32 X 1/2" PPZ SEMS
11	55.2203.0001	2	EA	SCREW, 4-40 X 1/4" PPZ
12	55.2233.2007	8	EA	DZUS RAPIER MINI CLIP-ON RETAINER, BLK

Head Structure Assembly (continued)

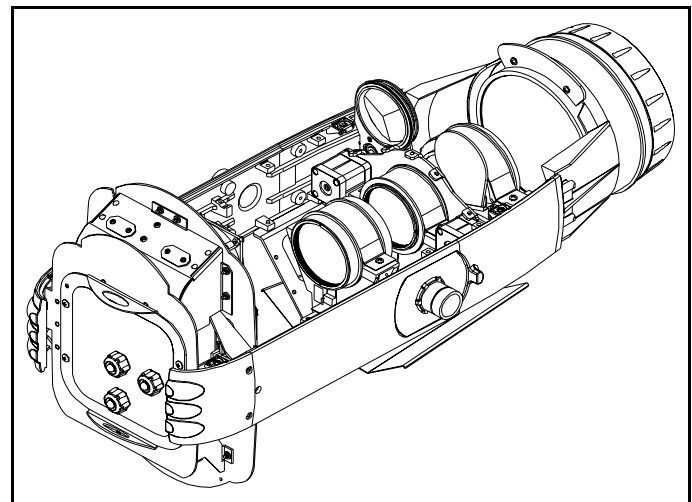
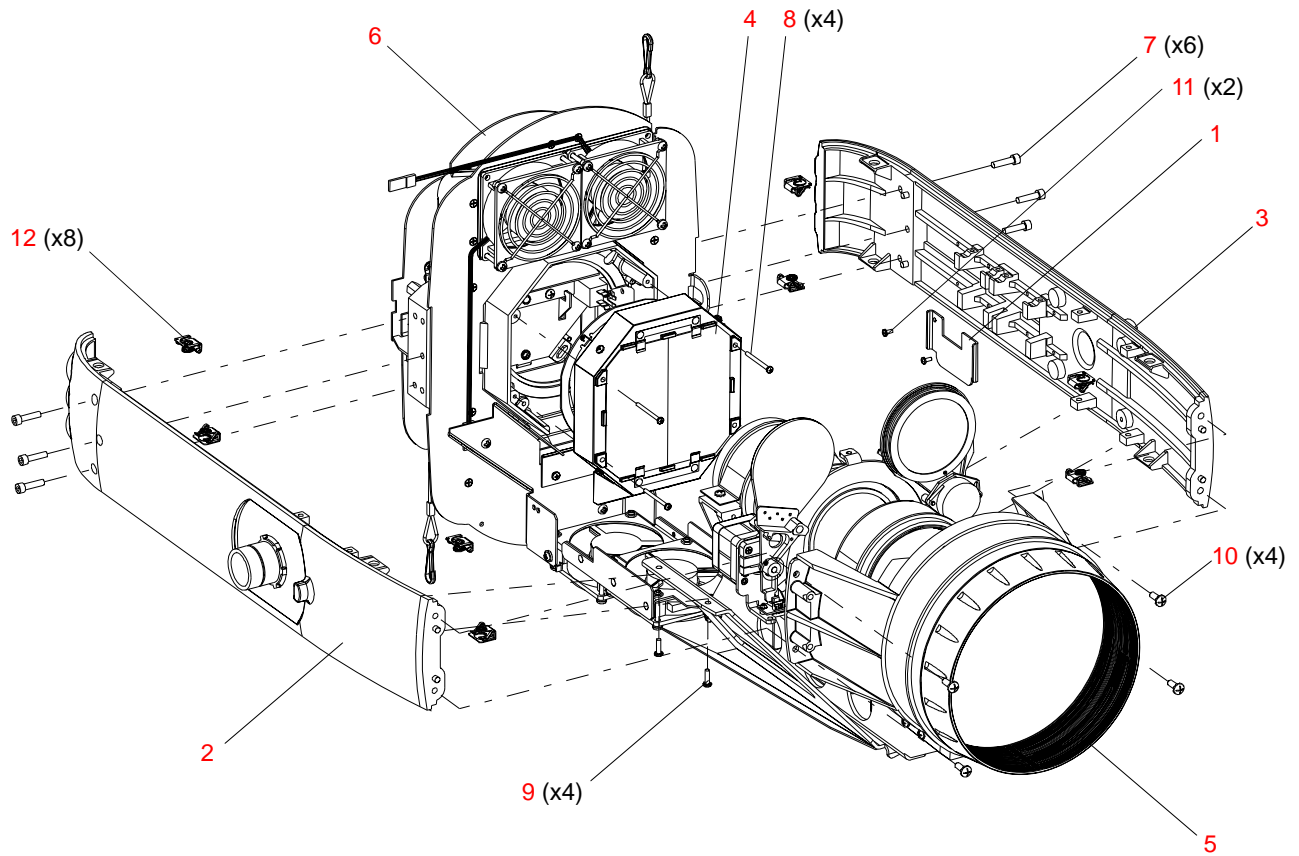


Figure 3-11: Head Structure Assembly

Reflector Mount Assembly

21.9686.0605 Rev. D

Refer to [Figure 3-12](#)

No.	Item	Qty.	UM.	Description
1	10.9686.0632	1	EA	REFLECTOR CLAMP
2	10.9686.0644	4	EA	SPRING, REFLECTOR MOUNT
3	21.9686.0606	1	EA	ASSY, UV GLASS
4	42.9686.0120	1	EA	REFLECTOR, ELLIPTICAL
5	53.6683.0015	4	EA	SCREW, 6-32 X 5/8" PPB SEMS

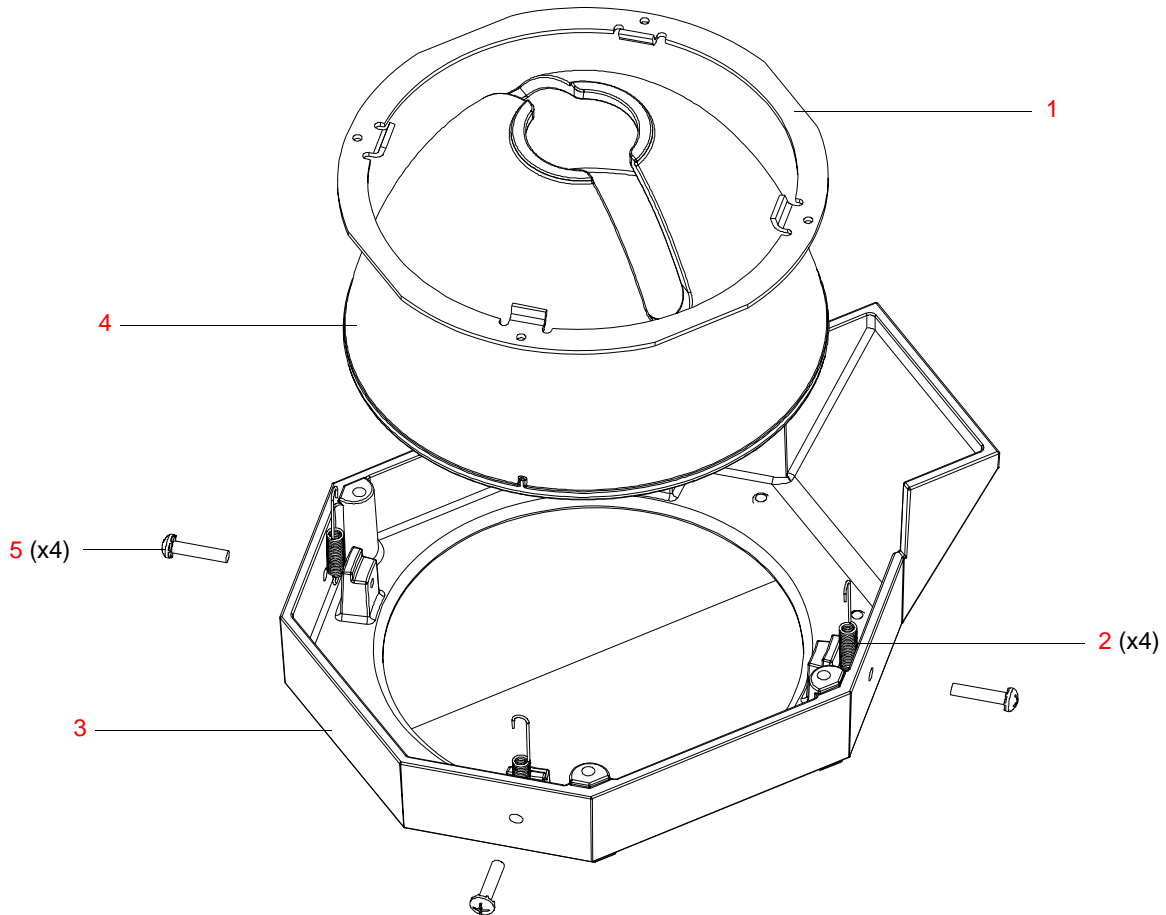


Figure 3-12: Reflector Mount Assembly

VL3015LT Optic Assembly

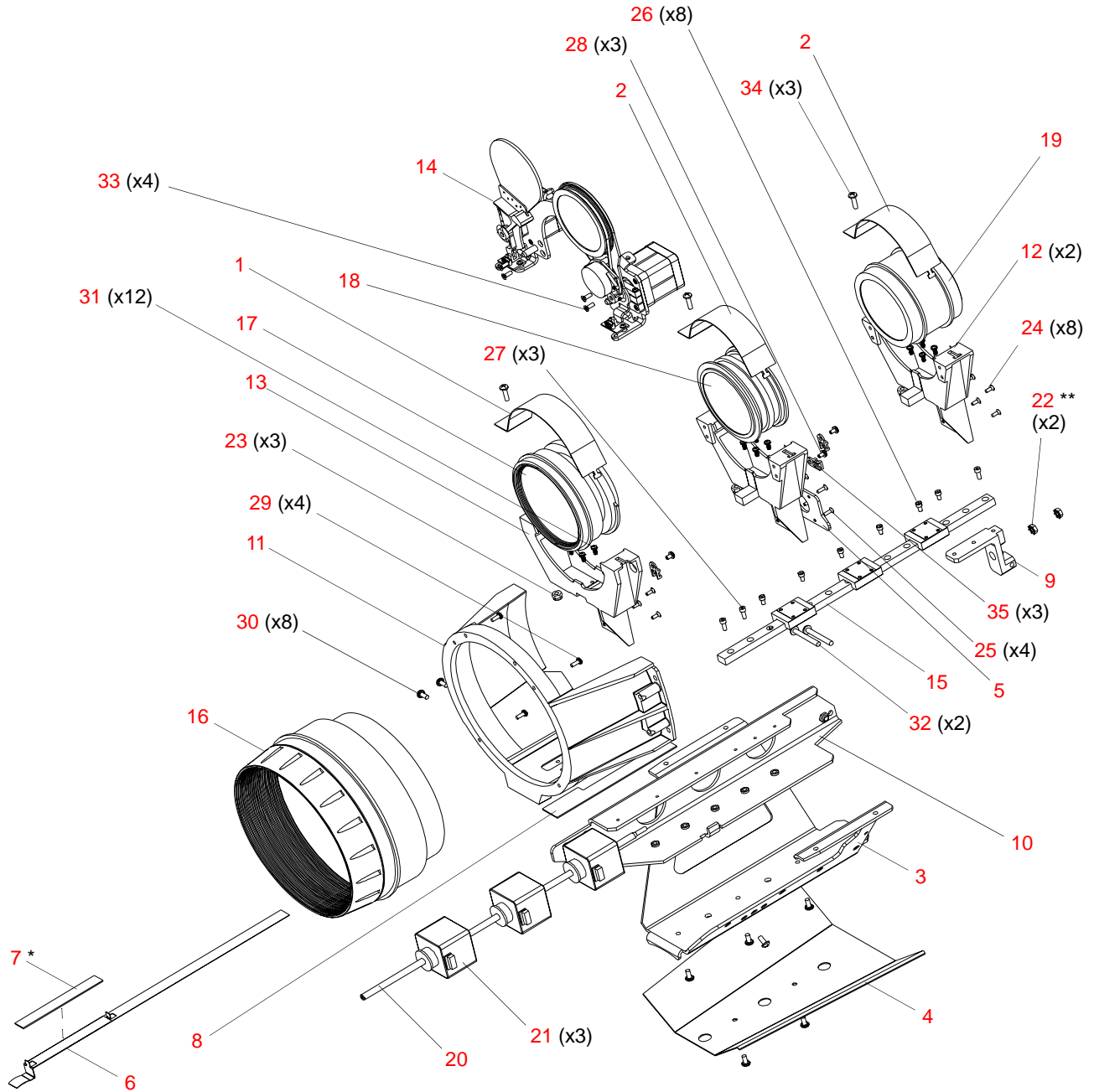
21.9698.0100 Rev V

Refer to [Figure 3-13](#)

No.	Item	Qty.	UM.	Description
1	10.9689.0175	1	EA	STRAP, GROUP 2
2	10.9689.0176	2	EA	STRAP, GROUP 3/4
3	10.9698.0120	1	EA	ZOOM MOUNT, BSL OPTICS
4	10.9698.0123	1	EA	LIGHT BAFFLE, ZOOM TRAY
5	10.9698.0126	1	EA	STOP PLATE, GROUP 2
6	10.9698.0143	1	EA	RAIL COVER, ZOOM
7	10.9698.0144	1	EA	FLOCKING PIECE, RAIL COVER
8	10.9698.0145	1	EA	FLOCKING PIECE, ZOOM SUPPORT
9	10.9698.1121	1	EA	MOUNT, LEAD SCREW, ZOOM
10	10.9698.2119	1	EA	SUPPORT, FRONT RAIL, SHORT
11	12.9698.0116	1	EA	MOUNT, FRONT LENS GROUP
12	12.9698.0131	2	EA	MOUNT, EDGE/COMP LENS GROUPS, MACHINED
13	12.9698.1133	1	EA	MOUNT, ZOOM LENS GROUP, MACHINED
14	21.9698.1351	1	EA	ASSY, FROST/PRISM BULKHEAD
15	22.9698.0120	1	EA	LINEAR RAIL, 344 MM, 3 CARRIAGE
16	22.9698.0151	1	EA	LENS ASSY, GROUP 1
17	22.9698.0152	1	EA	LENS ASSY, GROUP 2
18	22.9698.0153	1	EA	LENS ASSY, GROUP 3
19	22.9698.0154	1	EA	LENS ASSY, GROUP 4
20	10.9698.0146	1	EA	SHAFT, ZOOM MOTOR ASSY, VL3015LT
21	44.9698.0147	3	EA	MOTOR ASSY, ZOOM ACTUATOR
-	25.9698.1110	1	EA	CABLE ASSY, OPTICS BULKHEAD (not shown)
22	53.2004.0002	2	EA	NUT, 8-32 KEPS ZINC PLATED
23	53.2202.0008	3	EA	NUT, 8-32 HEX SS NYLON INSERT
24	53.6513.0023	8	EA	SCREW, M3 0.5 X 8 MM LG, PFZ, METRIC
25	53.6513.0034	4	EA	SCREW, M3 0.5 X 10 MM LG, PFZ, METRIC
26	53.6522.0004	8	EA	SCREW, #6-32 X 1/4" SOC HD
27	53.6523.0001	3	EA	SCREW, 6-32 X 3/8" SCB
28	53.6558.0007	3	EA	SCREW, 6-32 X 1/4" PPZ SEMS
29	53.6558.0009	4	EA	SCREW, 6-32 X 3/8" PPZ SEMS
30	53.6575.0009	8	EA	SCREW, 8-32 X 3/8" PPB SEMS

No.	Item	Qty.	UM.	Description
31	53.6576.0038	12	EA	SCREW, M3 X 8 MM PPZ SEMS
32	53.6594.0003	2	EA	SCREW, 10-32 X 1.50" PPZ
33	53.6609.0001	4	EA	SCREW, 6-32 X 3/8" PFZ
34	53.6682.0025	3	EA	SCREW, 8-32 X 5/8" PPZ SEMS
35	55.2178.0001	3	EA	CABLE ANCHOR MOUNT, #8 SCREW

VL3015LT Optic Assembly (continued)



*Apply UV Curing RTV to front and back of edge of flocking piece to secure it to rail cover in position. Cure with one pass through UV oven.

**Use Loctite 242 on both nuts. Ensure shaft is tight and held when tightening first nut. Tighten second nut against first as jam nut.

Figure 3-13: VL3015LT Optic Assembly

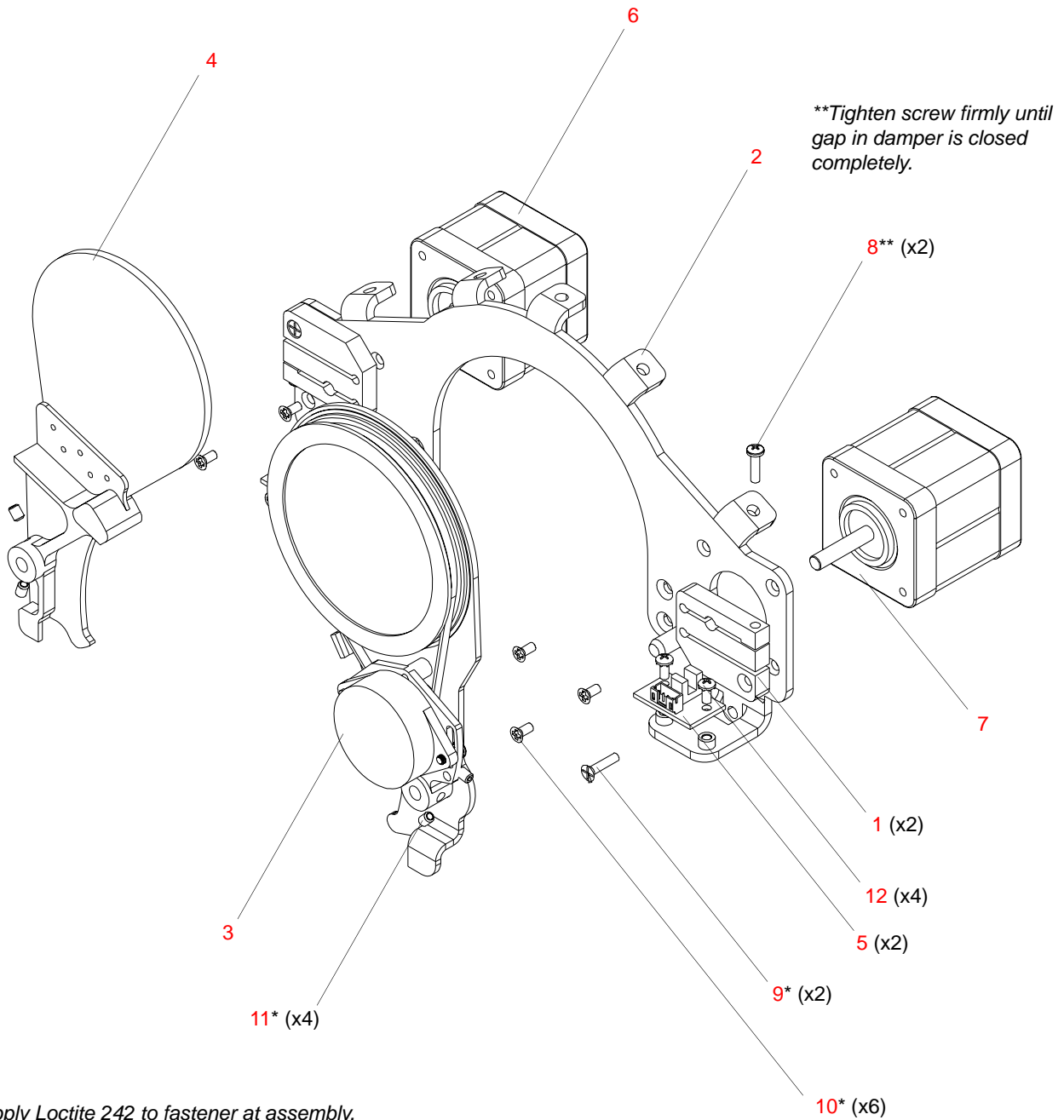
Frost / Prism Bulkhead Assembly

21.9698.1351 Rev. E

Refer to [Figure 3-14](#)

No.	Item	Qty.	UM.	Description
1	10.9698.0335	2	EA	DAMPER, MOTOR SHAFT, 5 MM
2	10.9698.2301	1	EA	FROST/PRISM DUAL MOUNT, LENS GROUP B
3	21.9698.0311	1	EA	ASSY, PRISM
4	21.9698.0321	1	EA	ASSY, FROST
5	24.9698.1231	2	EA	PCB ASSY, SENSOR
6	44.9676.0117	1	EA	MOTOR, GOBO ROTATE/INDEX
7	44.9698.1215	1	EA	MOTOR, SIZE-17, ZOOM
8	53.6520.0002	2	EA	SCREW, 4-40 X 7/16" PPZ
9	53.6536.0001	2	EA	SCREW, 4-40 X 1/2" PFZ
10	53.6559.0001	6	EA	SCREW, 4-40 X 1/4" PFZ
11	53.6578.0002	4	EA	SCREW, 6-32 X 3/16", SET CUP PNT
12	53.6682.0002	4	EA	SCREW, 4-40 X 1/4" PPZ SEMS

Frost / Prism Bulkhead Assembly (continued)



*Apply Loctite 242 to fastener at assembly.

Figure 3-14: Frost / Prism Bulkhead Assembly

Prism Assembly

21.9698.0311 Rev. G

Refer to [Figure 3-15](#)

No.	Item	Qty.	UM.	Description
1	10.9698.0331	2	EA	SPACER, TEFLON, PRISM
2	10.9698.0332	1	EA	BEARING, BORE, TEFLON
3	10.9698.0334	1	EA	RETAINING RING, PRISM
4	10.9698.1468	1	EA	PULLEY, MOTOR, PRISM DRIVE
5	10.9698.2173	1	EA	MOUNT, PRISM, MACHINED
6	10.9698.2312	1	EA	ARM, PRISM
7	22.9698.0318	1	EA	ASSY, PRISM ROTATOR
8	44.9687.1218	1	EA	MOTOR, SIZE-14, LO-PRFL, 0.9 DEG
9	53.6559.0001	3	EA	SCREW, 4-40 X 1/4" PFZ
10	53.6576.0038	1	EA	SCREW, M3 X 8 MM PPZ SEMS
11	53.6576.0047	1	EA	SCREW, M3 X 16 MM LG PPZ, METRIC
12	54.9698.0005	1	EA	BELT, TIMING, MXL PITCH, 140 GRV, SIL/KEV

Prism Assembly (continued)

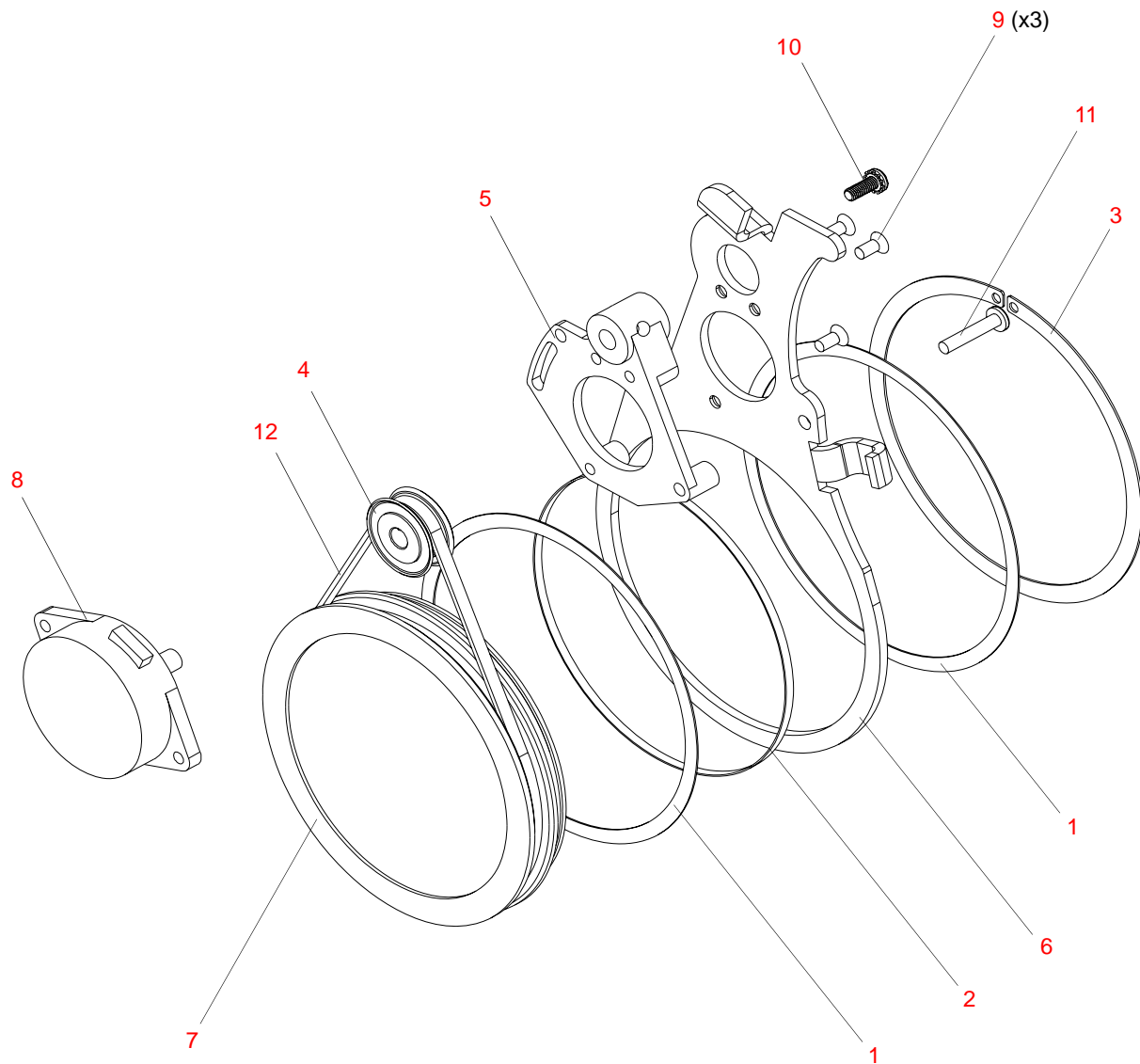


Figure 3-15: Prism Assembly

Backend Assembly

21.9698.0615 Rev J

Refer to [Figure 3-16](#)

No.	Item	Qty.	UM.	Description
1	10.9678.0653	1	EA	LIGHT Baffle, EXHAUST
2	10.9678.1649	2	EA	FAN SHIELD, LAMP COOLING, DC
3	10.9686.0659	1	EA	FAN INSULATOR, THIN
4	10.9698.0637	1	EA	REFLECTOR ACCESS, AIR DIVERter
5	10.9698.0638	1	EA	AIR DIVERter, STROBE MOTOR
6	10.9698.0639	4	EA	0.312" X 0.750" X 0.125" TEFLON SPACER
7	10.9698.0645	1	EA	BULKHEAD, EXHAUST
8	10.9698.0671	1	EA	BULKHEAD, SEPARATION
9	12.9678.0627	1	EA	REAR-CASTING, MACHINED
10	21.9678.0673	2	EA	TETHER ASSY, COVER
11	21.9686.0680	1	EA	ASSY, HOT BOX
12	21.9698.0616	2	EA	ASSY, 80 MM DC FAN WITH GRILL
13	21.9698.0620	1	EA	FAN ASSY, COLOR / GOBO ACCESS
14	22.9698.0674	1	EA	ASSY, DUAL FAN DUCT
-	25.9698.0601	1	EA	CABLE ASSY, OT SWITCH TO BACKCAP INTERLOK (not shown)
-	25.9698.0650	1	EA	CABLE ASSY, LAMP AND BULKHEAD FANS (not shown)
-	25.9698.1688	1	EA	CABLE ASSY, IGNITOR TO LAMP SOCKET (not shown)
15	53.2004.0002	4	EA	NUT, 8-32 KEPS ZINC PLATE
16	53.6519.0001	2	EA	SCREW, 4-40 X 5/8" PPZ
17	53.6522.0001	2	EA	SCREW, 6-32 X 1/4" PPZ
18	53.6545.0009	4	EA	SCREW, 8-32 X 1-3/8" PFZ
19	53.6558.0001	2	EA	SCREW, 6-32 X 3/8" PPZ
20	53.6558.0007	2	EA	SCREW, 6-32 X 1/4" PPZ SEMS
21	53.6571.0002	8	EA	SCREW, 6-32 X 1-1/4" PPB
22	53.6609.0001	10	EA	SCREW, 6-32 X 3/8" PFZ
23	53.6613.0001	2	EA	SCREW, 6-32 X 1/2" PPZ
24	53.6614.0003	4	EA	SCREW, 6-32 X 5/8" PFZ
25	55.2125.0003	4	EA	STANDOFF, HEX, 4-40 THD
26	55.6506.0024	2	EA	SPACER, 0.188" OD X 0.140" ID X 0.188" THK ALUM
27	55.6528.0001	2	EA	WASHER, #6 FLAT ZINC
28	55.6538.0002	4	EA	WASHER, #6 NYLON, NATURAL
29	55.6538.0004	4	EA	0.312" X 0.750" X 0.125" TEFLON WASHER

VARI*LITE - VL3015LT SPOT LUMINAIRE SERVICE MANUAL

No.	Item	Qty.	UM.	Description
30	55.6541.0008	1	EA	GROMMET, 1/2"ID 7/8"OD 11/32"T
31	55.6677.0042	2	EA	0.50" OD TEFLON WASHER
32	55.6706.0001	1	EA	GROMMET, 9/32" ID, 9/16" OD, 1/4" THK SI
33	74.1099.0001	1	EA	SWITCH, MINIATURE, 150-DEG, 5 AMP

Backend Assembly (continued)

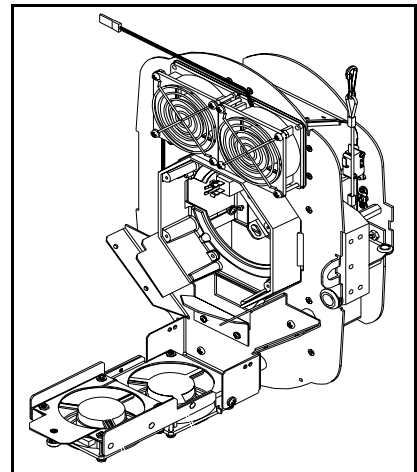
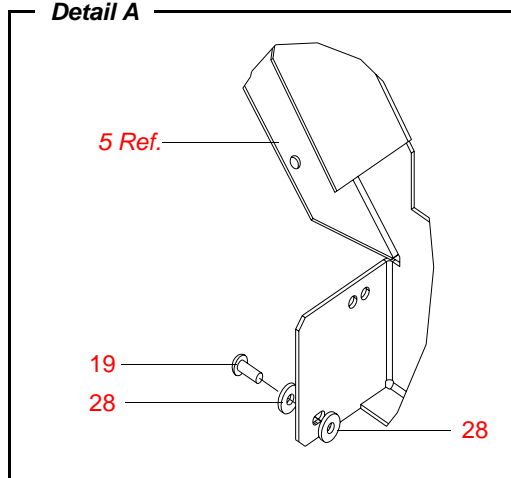
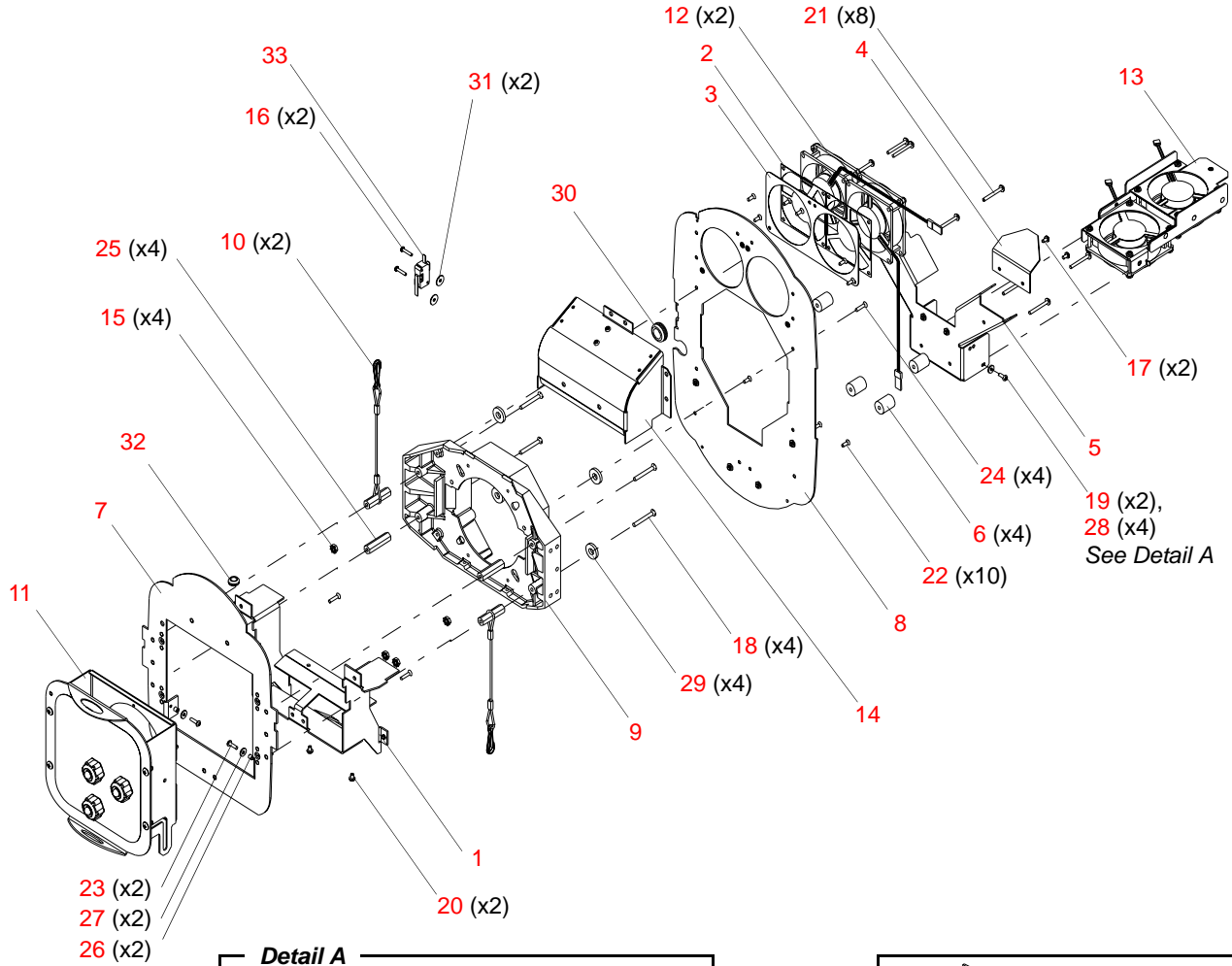


Figure 3-16: Backend Assembly

Hot Box Assembly

21.9686.0680 Rev H

Refer to [Figure 3-17](#)

No.	Item	Qty.	UM.	Description
1	10.9678.0043.04	1	EA	LABEL PLATE, VL3500 WASH BACKCAP, BLACK
2	10.9686.0642	1	EA	BACKCAP PLATE
3	10.9678.0643	1	EA	LAMP ADJUST STOP
4	10.9678.0645	3	EA	KNOB, LAMP ADJ MOLDED
5	10.9686.0681	1	EA	HOT BOX
6	22.9686.0649	1	EA	ASSEMBLY, TILT PLATE, LONG VANE
-	25.9661.1522	1	EA	CABLE ASSY, HEAD TO BACKCAP GND (not shown)
7	53.2030.0001	3	EA	NUT, ACORN 10-32THD 3/8 WIDE
8	53.5508.0375	2	EA	SCREW, 8-32 X 3/8" PPSS
9	53.6530.0013	8	EA	RIVET, 1/8"OD .063" - .125"GL CSK HD ALUM
10	55.2233.0003	4	EA	RETAINER, PUSH-ON TYPE
11	55.2233.0007	4	EA	STUD, 1/4 TURN OPR .455L STEEL
12	55.6546.0004	3	EA	WASHER, TEFLON, .201ID X .438OD X .04 THK
13	55.6568.0035	3	EA	SPRING, CPRSN .300"OD .875"LG .035"WIRE DIA SS
14	71.2561.0002	1	EA	LAMPHOLDER, SFC10-4 WITH PREFOCUS SHARX

Hot Box Assembly (continued)

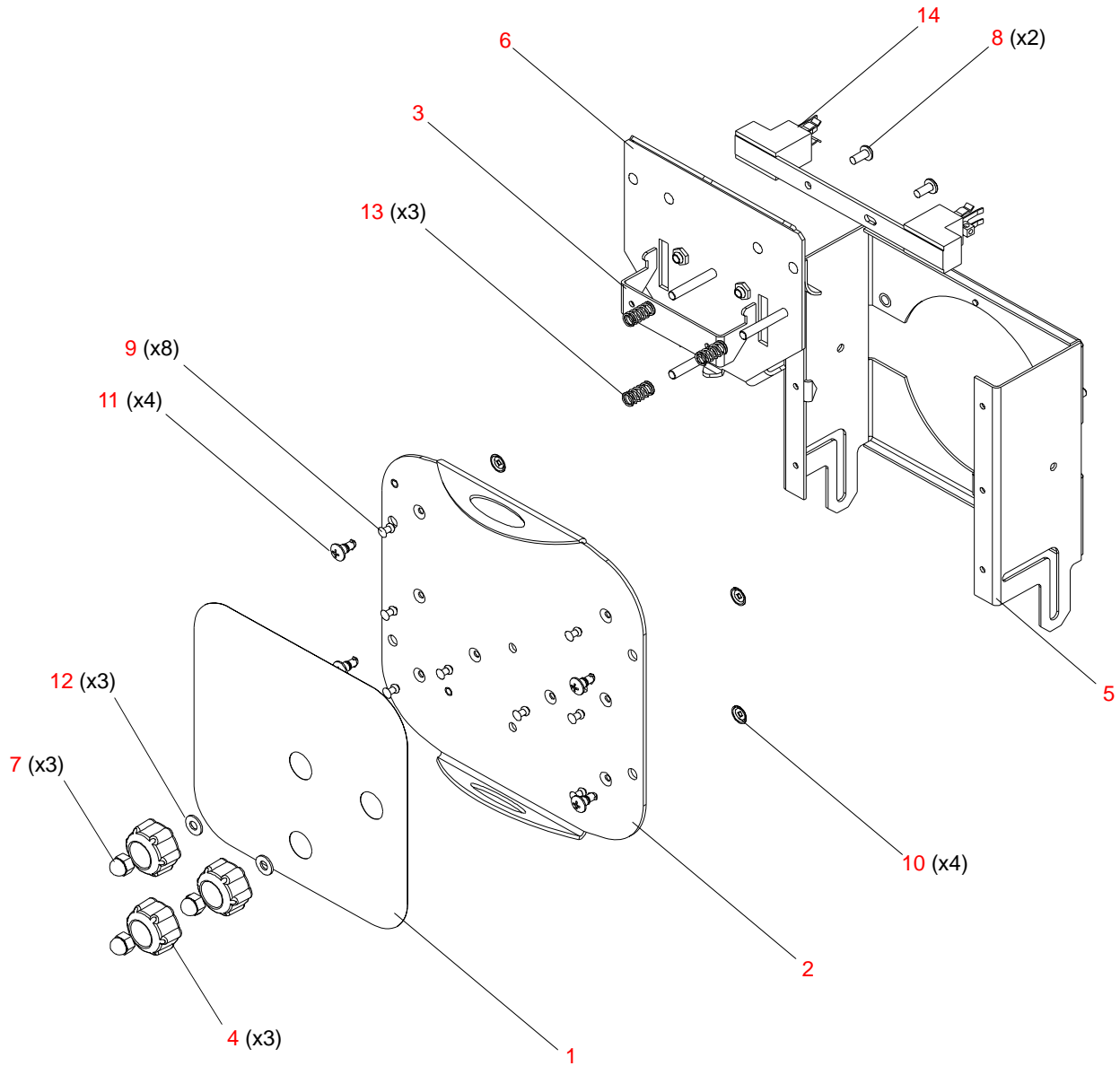


Figure 3-17: Hot Box Assembly

80MM DC Fan Assembly

21.9698.0616 Rev B

Refer to [Figure 3-18](#)

No.	Item	Qty.	UM.	Description
1	40.7113.1010	1	EA	FAN, TUBAXIAL, 80MM, 24VDC, LONG LIFE WITH TACH
2	53.2002.0001	2	EA	NUT, 6-32, KEPS ZINC
3	53.6558.0001	2	EA	SCREW, 6-32 X 3/8" LG PPZ
4	55.7016.0001	1	EA	GUARD, FAN, 80MM, CHROME

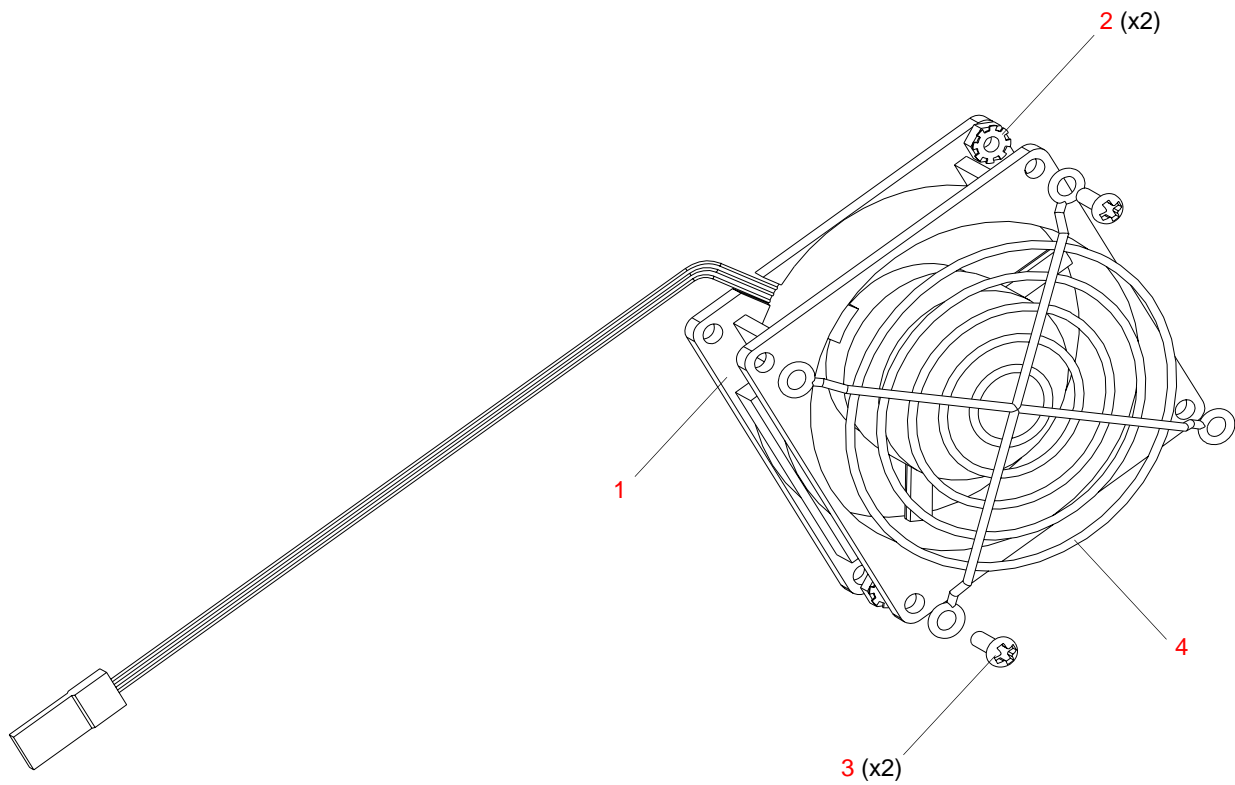


Figure 3-18: 80MM DC Fan Assembly

Color / Gobo Access Fan Assembly

21.9698.0620 Rev E

Refer to [Figure 3-19](#)

No.	Item	Qty.	UM.	Description
1	10.9678.1649	1	EA	FAN SHIELD, LAMP COOLING, DC
2	10.9698.0665	1	EA	FAN TRAY, COLOR/GOBO COOLING
3	10.9698.0666	2	EA	STIFFENER PLATE, FAN TRAY
4	23.9679.0016	2	EA	FAN, TUBAZIAL, 80MM, 24VDC, LAMP COOLING, LONG LIFE
5	53.6530.0011	6	EA	RIVET, POP, 1/8" OD X 0.031 - 0.062" GR
6	53.6571.0002	8	EA	SCREW, 6-32 X 1-1/4" LG PPB
7	55.7016.0001	2	EA	GUARD, FAN, 80MM, CHROME

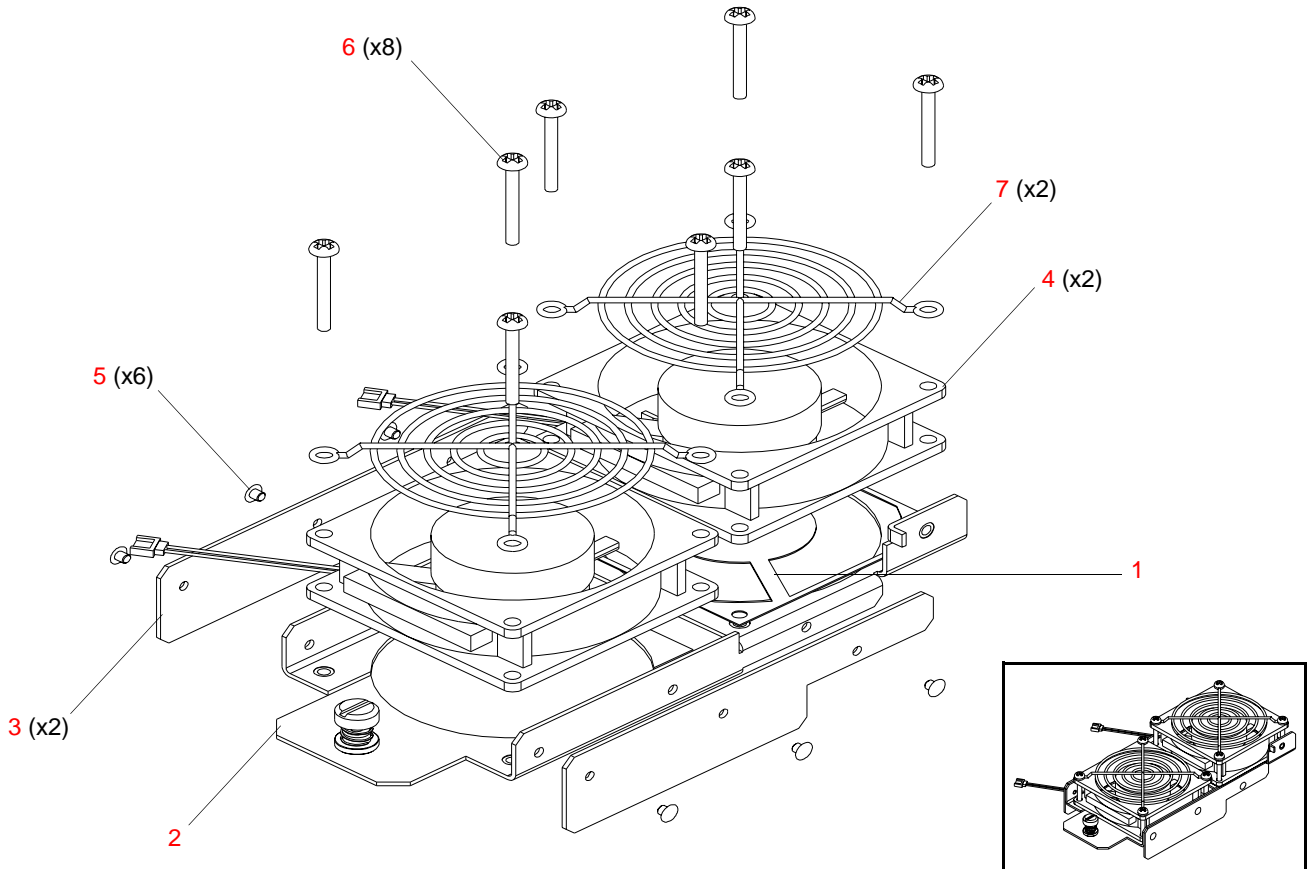


Figure 3-19: Color/Gobo Access Fan Assembly

Notes

Gobo Module Assembly

21.9698.0200 Rev H

Refer to [Figure 3-20](#)

No.	Item	Qty.	UM.	Description
1	10.9678.0225	4	EA	SHAFT, GOBO WHEEL
2	10.9678.0231	3	EA	MOTOR PULLEY W/ FLANGES
3	10.9678.0232	3	EA	PULLEY, GOBO DRIVE
4	10.9678.0244	1	EA	MOUNT, INDEX SENSOR, LONG
5	10.9678.0245	1	EA	MOUNT, INDEX SENSOR, SHORT
6	10.9678.0246	3	EA	MOTOR ADJUST PLATE
7	10.9678.0277	1	EA	SPACER, WHEEL/IRIS
8	10.9678.0457.02	2	EA	SPACER, COLOR WHEEL
9	10.9678.0457.04	1	EA	SPACER, COLOR WHEEL
10	10.9698.0214	1	EA	STOP, ZOOM CALIBRATION
11	10.9698.0216	1	EA	BULKHEAD, GOBO MODULE, REAR
12	10.9698.0221	1	EA	APERTURE, GOBO WHEEL 3
13	10.9698.0244	1	EA	MOUNT, INDEX SENSOR, MEDIUM LENGTH
14	10.9698.1215	1	EA	BULKHEAD, GOBO MODULE, FRONT
15	21.9678.0243	2	EA	MOTOR ASSY, LONG SHAFT
16	21.9698.0211	3	EA	WHEEL ASSY, ROTATING GOBO, HI-TEMP
17	21.9698.0270	1	EA	SUB-ASSY, IRIS
18	24.9663.1231	4	EA	PCB ASSY, INDEX SENSOR
19	24.9678.3240	3	EA	PCB ASSY, WHEEL POSITION SENSOR
20	25.9698.0210	1	EA	CABLE ASSY, INTERCONNECT TO GOBO (not shown)
21	44.9663.1202	2	EA	MOTOR, 17 2.42" SHAFT, 11.8 MH
22	44.9663.1766	2	EA	MOTOR, ZOOM/DIMMER
23	53.5558.0125	12	EA	SCREW, 8-32 X 0.125" SET SS
24	53.5638.0252	8	EA	SCREW, 6-32 X 1/4" L PFS UNDERCUT HD
25	53.6520.0001	6	EA	SCREW, 4-40 X 3/8" PPZ
26	53.6558.0009	4	EA	SCREW, 6-32 X 3/8" PPZ SEMS
27	53.6609.0001	10	EA	SCREW, 6-32 X 3/8" PFZ
28	53.6613.0001	16	EA	SCREW, 6-32 X 1/2" PPZ
29	53.6682.0002	6	EA	SCREW, 4-40 X 1/4" PPZ SEMS
30	54.2057.0001	3	EA	BELT, TIMING, MXL 0.080" PITCH 14
31	54.2058.0001	3	EA	BELT, TIMING, MXL 0.080" PITCH 16

VARI*LITE - VL3015LT SPOT LUMINAIRE SERVICE MANUAL

No.	Item	Qty.	UM.	Description
32	55.2110.0002	1	EA	WASHER, 0.400" OD 0.260" ID 0.010" THK
33	55.2150.0002	4	EA	STANDOFF, 1/4" HEX 6-32 X 1.187" MF
34	55.2150.0003	4	EA	STANDOFF, 1/4" HEX 6-32 1.125" L
35	55.2178.0001	4	EA	CABLE ANCHOR MOUNT, #8 SCREW MOUNTING
36	55.6506.0025	1	EA	SPACER, 3/8" RND 1/8" LG 0.257"
37	55.6506.0026	1	EA	SPACER, 3/8" RND 31/32" LG 0.257"
38	55.6506.0030	1	EA	SPACER, 3/8" RND 3/8" LG 0.257"
39	55.6520.0001	2	EA	WASHER, WAVE SPRING, 0.265" ID, 0.367"

Gobo Module Assembly (continued)

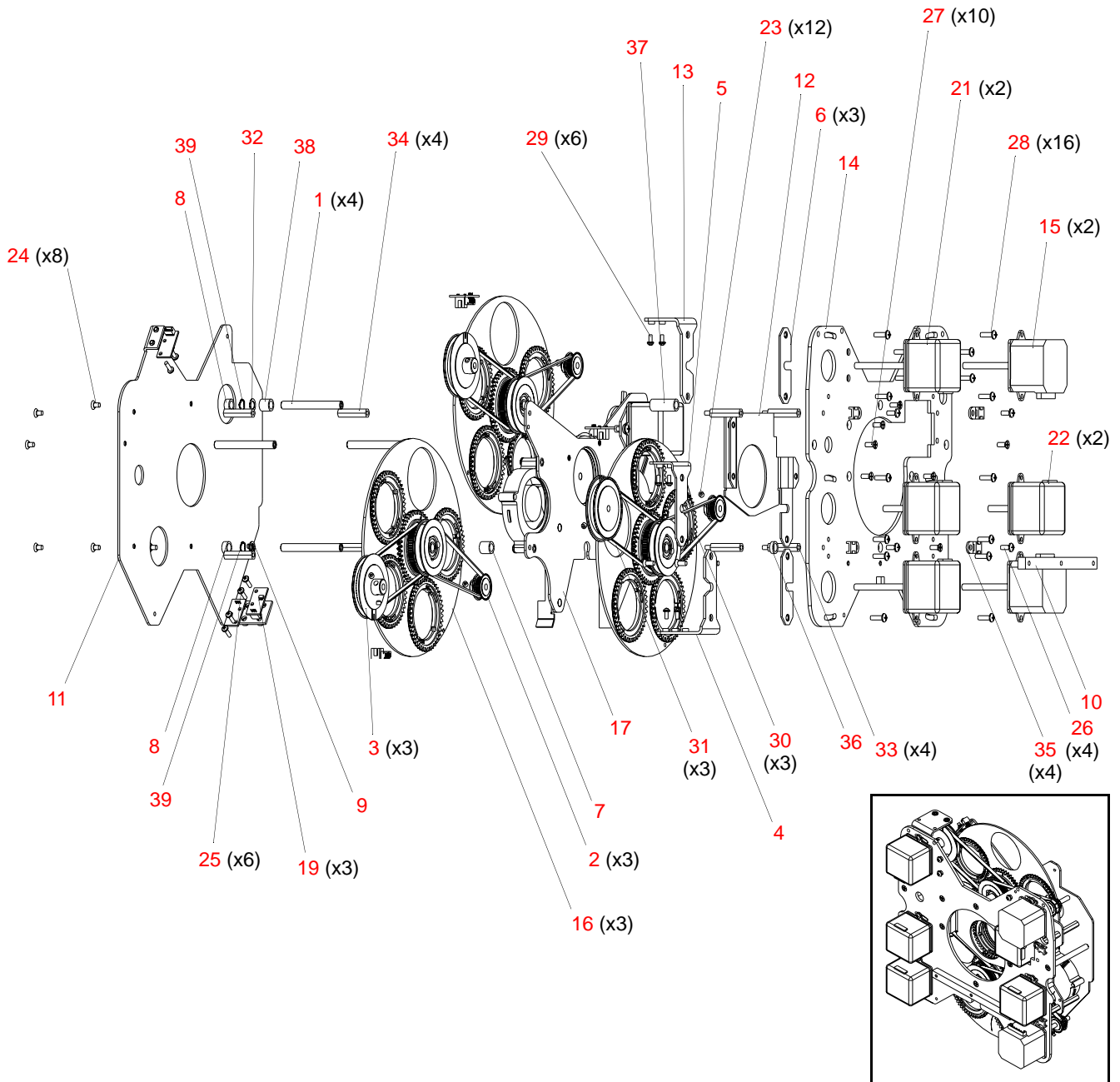


Figure 3-20: Gobo Module Assembly

Rotating Gobo Wheel Assembly

21.9698.0211 Rev B

Refer to [Figure 3-21](#)

No.	Item	Qty.	UM.	Description
1	10.9663.1211	8	EA	SPACER, TEFLON, GOBO GEAR
2	10.9663.1240	4	EA	BEARING, GOBO WHEEL BORE
3	10.9678.0221	1	EA	PLATE, ROTATING EFFECTS WHEEL
4	10.9678.0224	4	EA	RETAINING RING, PLANET
5	10.9678.0250	1	EA	MAGNET TAPE
6	22.9698.0231	4	EA	ASSY, PLANET GEAR
7	22.9698.0232	1	EA	ASSY, SUN GEAR/HUB, BEARING
8	53.6659.0002	3	EA	SCREW, 2-56 X 1/4" PPZ
9	55.2256.0001	1	EA	MAGNET, 2:17 SMCO 2MM X 2MM X 3MM

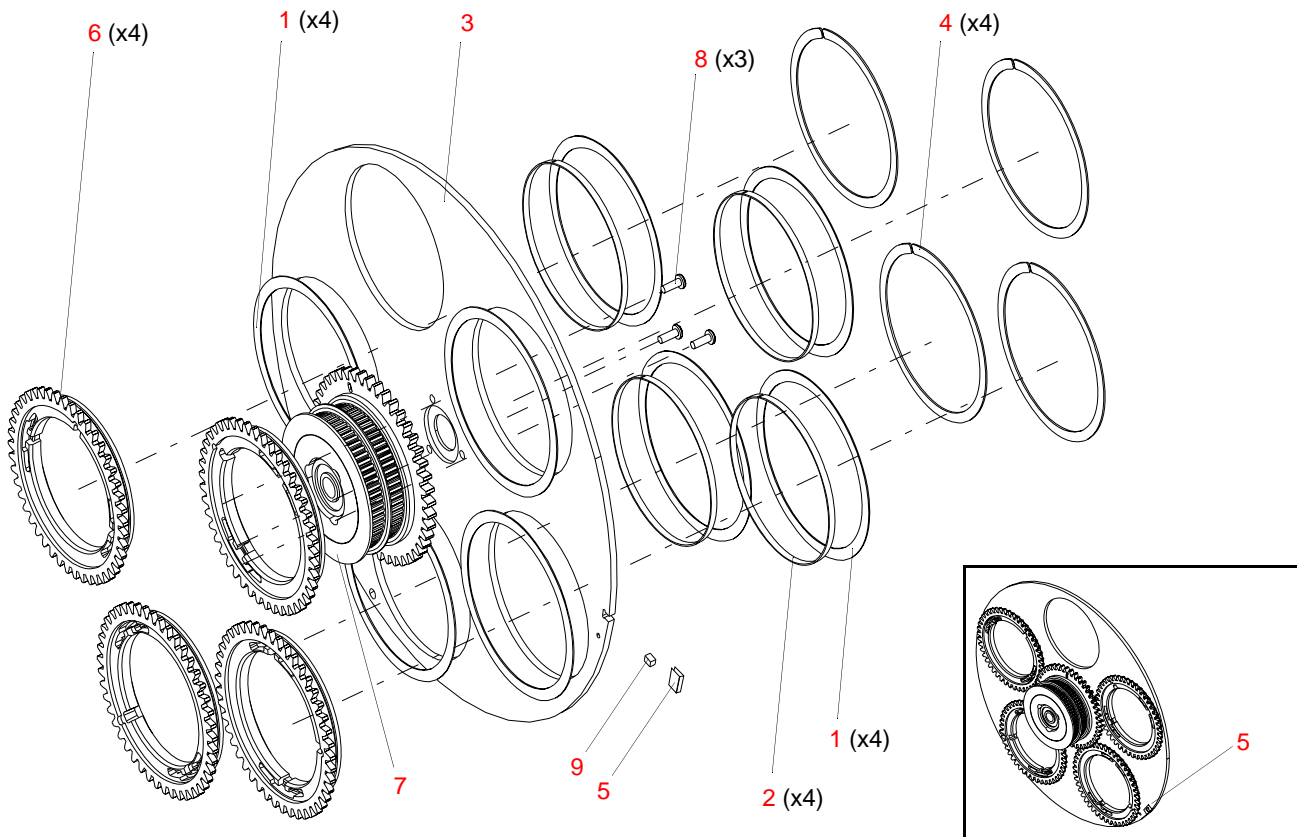


Figure 3-21: Rotating Gobo Wheel Assembly

Iris Sub-Assembly

21.9698.0270 Rev H

Refer to [Figure 3-22](#)

No.	Item	Qty.	UM.	Description
1	10.9678.0273	1	EA	MOTOR MOUNT, IRIS
2	10.9698.0272	1	EA	BULKHEAD, IRIS
3	10.9698.0278	1	EA	AIR DIVERTER, GOBO
4	10.9698.0279	1	EA	DIVERTER, GOBO AIR
5	10.9698.0280	1	EA	ADJUSTABLE IRIS STOP
6	10.9698.1276	1	EA	CRANK, IRIS, LT
7	22.9698.0271	1	EA	LINK ASSY, IRIS
7a	- 53.6605.0004	1	EA	STUD, 2-56 X 1.0" FULL THD, SST
7b	- 54.1217.0005	2	EA	QUICK LINK, 2-56 SPRING STEEL
8	22.9698.1230	1	EA	IRIS, 44 MM APERTURE, HIGH TEMP
9	23.9698.0271	2	EA	ASSY, 60 X 60 X 15, BLOWER, 12V, 5.2 CFM
-	25.9679.0007	2	EA	CABLE ASSY, IRIS FAN, VL3015 (not shown)
10	44.9678.0278	1	EA	MOTOR, 17, LUG ORIENTED CONN, 0.94 SHAFT
11	53.5560.0250	2	EA	SCREW, SET, 8-32 X 1/4" L
12	53.6530.0013	4	EA	RIVET, 1/8" CSK, 0.25 GRP
13	53.6558.0009	2	EA	SCREW, 6-32 X 3/8" PPZ SEMS
14	53.6558.0014	4	EA	SCREW, 6-32 X 3/4" PPZ
15	53.6609.0500	3	EA	SCREW, 6-32 X 1/2" PFZ
16	53.6659.0008	3	EA	SCREW, 2-56 X 3/16" PFZ
17	55.2211.0002	1	EA	STANDOFF, 1/4" RND, 6-32, 0.188" LG FF
18	55.6538.0005	4	EA	WASHER, 0.25" OD, 0.65" ID, 0.015" THK TEFLON

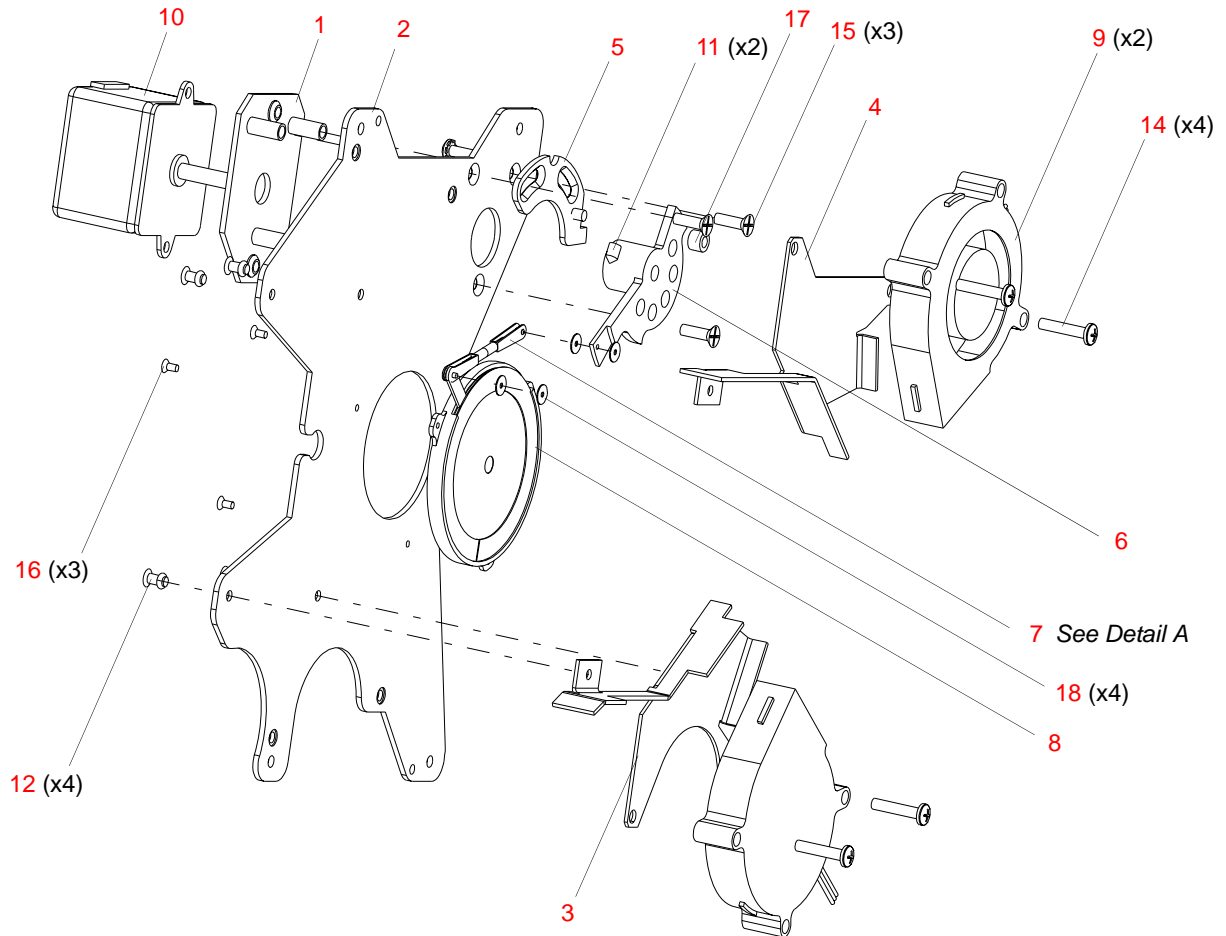


Note: When installing the Adjustable Iris Stop (item 5), it is required to set the iris size limit for the closed position. The internal diameter of the iris when CLOSED (*the smallest iris size*) should be 0.219" (7/32") or 5.6 mm.

To set iris size limit:

- Step 1. Insert either (*a*) a caliper set to 0.219" (5.6 mm) or (*b*) a 7/32" drill bit into the iris.
- Step 2. Close iris leaves until touching tool.
- Step 3. Set Adjustable Iris Stop (item 5) to limit the travel of the Iris Crank (item 6) in this direction.
- Step 4. Tighten screws mounting stop.

Iris Sub-Assembly (continued)



Detail A

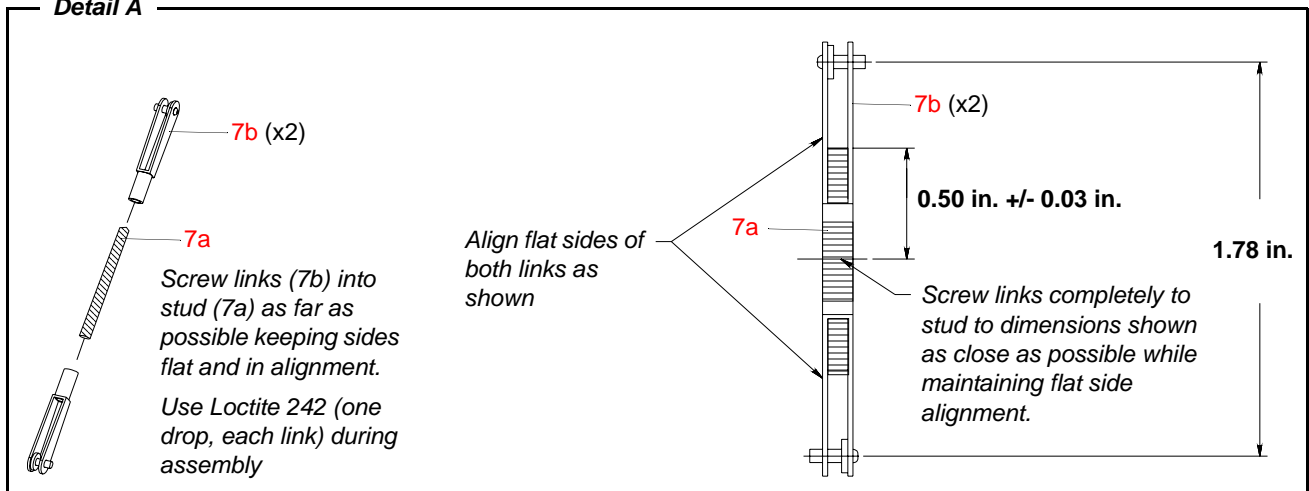


Figure 3-22: Iris Sub-Assembly

Color/Strobe Module Assembly

21.9698.0400 Rev E

Refer to [Figure 3-20](#)

No.	Item	Qty.	UM.	Description
1	10.9678.0246	4	EA	MOTOR ADJUST PLATE
2	10.9686.0446	2	EA	ADJUST PLATE, MOTOR
3	10.9686.1468	7	EA	MOTOR PULLEY WITH FLANGES
4	10.9686.2457.02	1	EA	SPACER, COLOR WHEEL
5	10.9686.2457.04	3	EA	SPACER, COLOR WHEEL
6	10.9686.2457.07	1	EA	SPACER, COLOR WHEEL
7	10.9698.0246	1	EA	ADJUST PLATE, CURVED, MOTOR
8	10.9698.0420	1	EA	BULKHEAD, COLOR SYSTEM, FRONT
9	10.9698.0422	1	EA	LIGHT SHIELD, OPTICAL SENSOR
10	10.9698.0433	8	EA	SPACER, COLOR SYSTEM HALVES
11	10.9698.0443	1	EA	AIR DIVERTER, DIMMER, BELT SIDE
12	10.9698.0444	1	EA	AIR DIVERTER, DIMMER
13	10.9698.0445	1	EA	AIR DIVERTER, FIXED COLOR 2, BELT SIDE
14	10.9698.0446	1	EA	AIR DIVERTER, FIXED COLOR 2
15	10.9698.0457.01	1	EA	SPACER, COLOR WHEEL
16	10.9698.0457.03	1	EA	SPACER, COLOR WHEEL
17	10.9698.0457.04	1	EA	SPACER, COLOR WHEEL
18	10.9698.0457.05	1	EA	SPACER, COLOR WHEEL, 0.297" LG
19	10.9698.2421	1	EA	BULKHEAD, COLOR SYSTEM, REAR
20	10.9698.2422	1	EA	AIR DIVERTER, DIMMER WHEEL
21	21.9686.1480	1	EA	ASSY, FIXED COLOR WHEEL 2
22	21.9698.1484	1	EA	ASSY, FIXED COLOR WHEEL 1
23	21.9698.2404	1	EA	ASSY, STROBE SYSTEM
24	22.9686.1410	1	EA	ASSY, COLOR WHEEL, CYAN
25	22.9698.0411	1	EA	ASSY, COLOR WHEEL, YELLOW
26	22.9698.0412	1	EA	ASSY, COLOR WHEEL, MAGENTA
27	22.9698.0413	1	EA	ASSY, COLOR WHEEL, CTO
28	22.9698.0414	1	EA	ASSY, DIMMER WHEEL
29	24.9698.0427	1	EA	PCB, COLOR WHEEL SENSOR, TRIPLE
30	24.9698.0428	1	EA	PCB, COLOR WHEEL SENSOR, QUAD
-	25.9698.0410	1	EA	CABLE ASSY, COLOR, INTERCONNECT TO COLOR (not shown)

VARI*LITE - VL3015LT SPOT LUMINAIRE SERVICE MANUAL

No.	Item	Qty.	UM.	Description
31	44.9663.1766	6	EA	ZOOM/DIMMER MOTOR
32	44.9698.1203	1	EA	MOTOR, 17, 2.42" SHAFT 11.8 MH
33	53.6525.0188	4	EA	SCREW, 6-32 X 3/16" LG PPZ SEMS
34	53.6530.0013	8	EA	RIVET, 1/8" CSK, 0.25 GRP
35	53.6558.0009	18	EA	SCREW, 6-32 X 3/8" PPZ SEMS
36	53.6609.0001	14	EA	SCREW, 6-32 X 3/8" PFZ
37	53.6613.0001	2	EA	SCREW, 6-32 X 1/2" PPZ
38	54.9698.0001	5	EA	BELT, TIMING MXL 145 GRV 0.125" WD URETHANE/KEVLAR
39	54.9698.0002	1	EA	BELT, TIMING MXL 150 GRV 0.125" WD URETHANE/KEVLAR
40	54.9698.0005	1	EA	BELT, TIMING MXL 140 GRV 0.125" WD SILICONE/KEVLAR
41	55.6520.0001	6	EA	WASHER, WAVE SPRING, 0.265" ID, 0.367"
42	55.6669.0014	4	EA	STANDOFF, 5/16" HEX 6-32 X 5/8"
43	55.6769.0004	2	EA	TWIST LOK, 0.55" ID, NON WHITE

Color Module Assembly (continued)

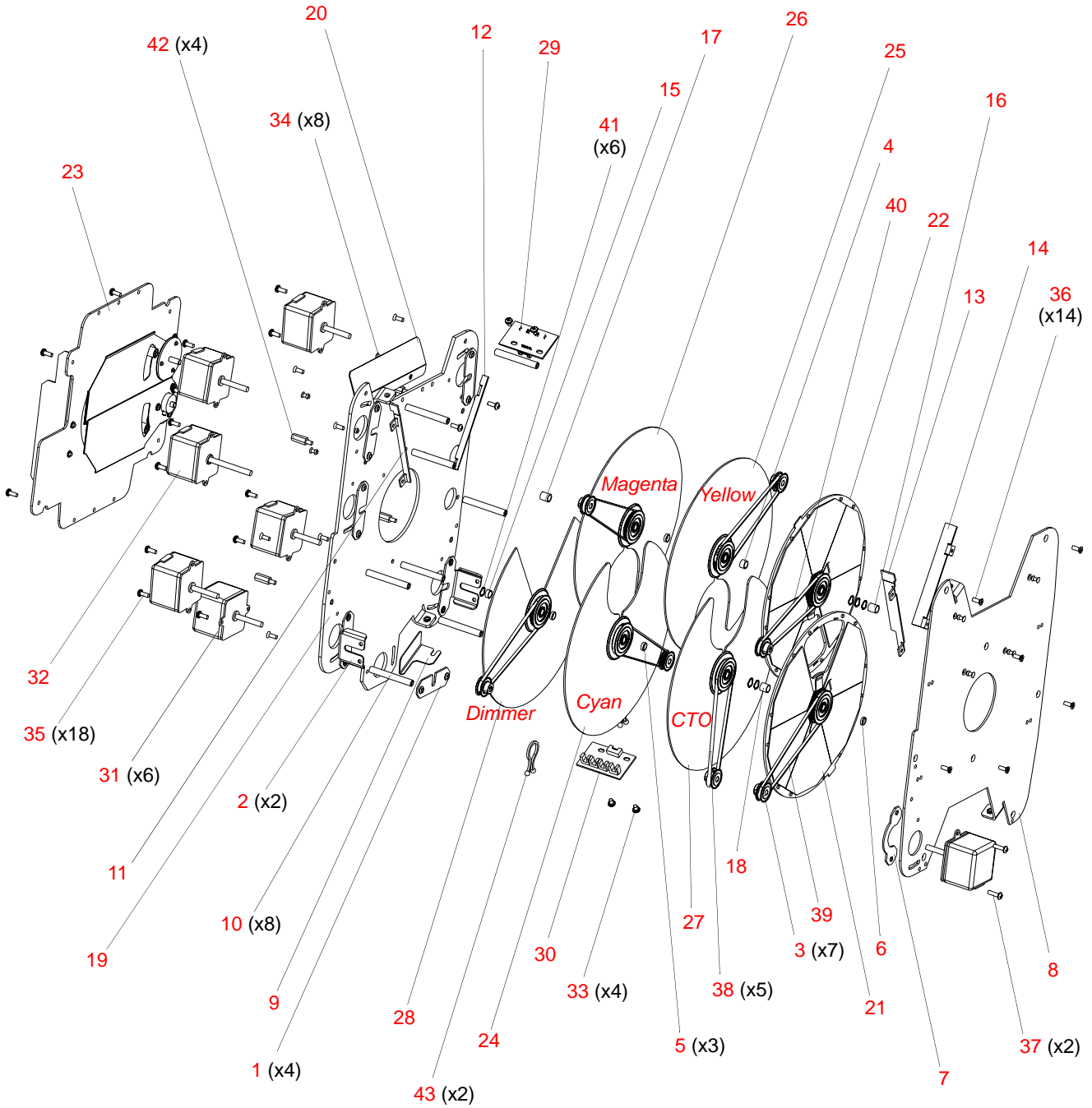


Figure 3-23: Color Module Assembly

Strobe System Assembly

21.9698.2404 Rev D

Refer to [Figure 3-24](#)

No.	Item	Qty.	UM.	Description
1	10.9678.0491	2	EA	BUMPER STOP, STROBE BLADE, TEFLON
2	10.9698.1450	1	EA	REFLECTOR, STROBE BULKHEAD
3	10.9698.2435	1	EA	BULKHEAD, STROBE, SINGLE SIDED
4	21.9698.2437	1	EA	ASSY, STROBE BLADE, TOP
5	21.9698.2438	1	EA	ASSY, STROBE BLADE, BOTTOM
6	44.9698.1215	2	EA	MOTOR, SIZE 17, ZOOM, 0.95" SHAFT
7	53.6513.0026	8	EA	SCREW, M3 X .5 X 12MM LG, PPSS, METRIC
8	53.6608.0003	4	EA	SCREW, 6-32 X 3/16" LG PPZ
9	53.6609.0500	2	EA	SCREW, 6-32 X 1/2" PFZ
10	55.3303.0004	8	EA	WASHER, #4 LOCK INT TOOTH SS
11	55.3303.0006	8	EA	WASHER, FLAT, 0.375" OD, 0.149" ID, 0.025" T
12	55.6659.0001	8	EA	SPACER, 1/4" RND 4 CL HOLE THRU 3/16" LG
13	55.6706.0001	8	EA	GROMMET, 9/32" ID 9/16" OD 1/4T SI

Strobe System Assembly (continued)

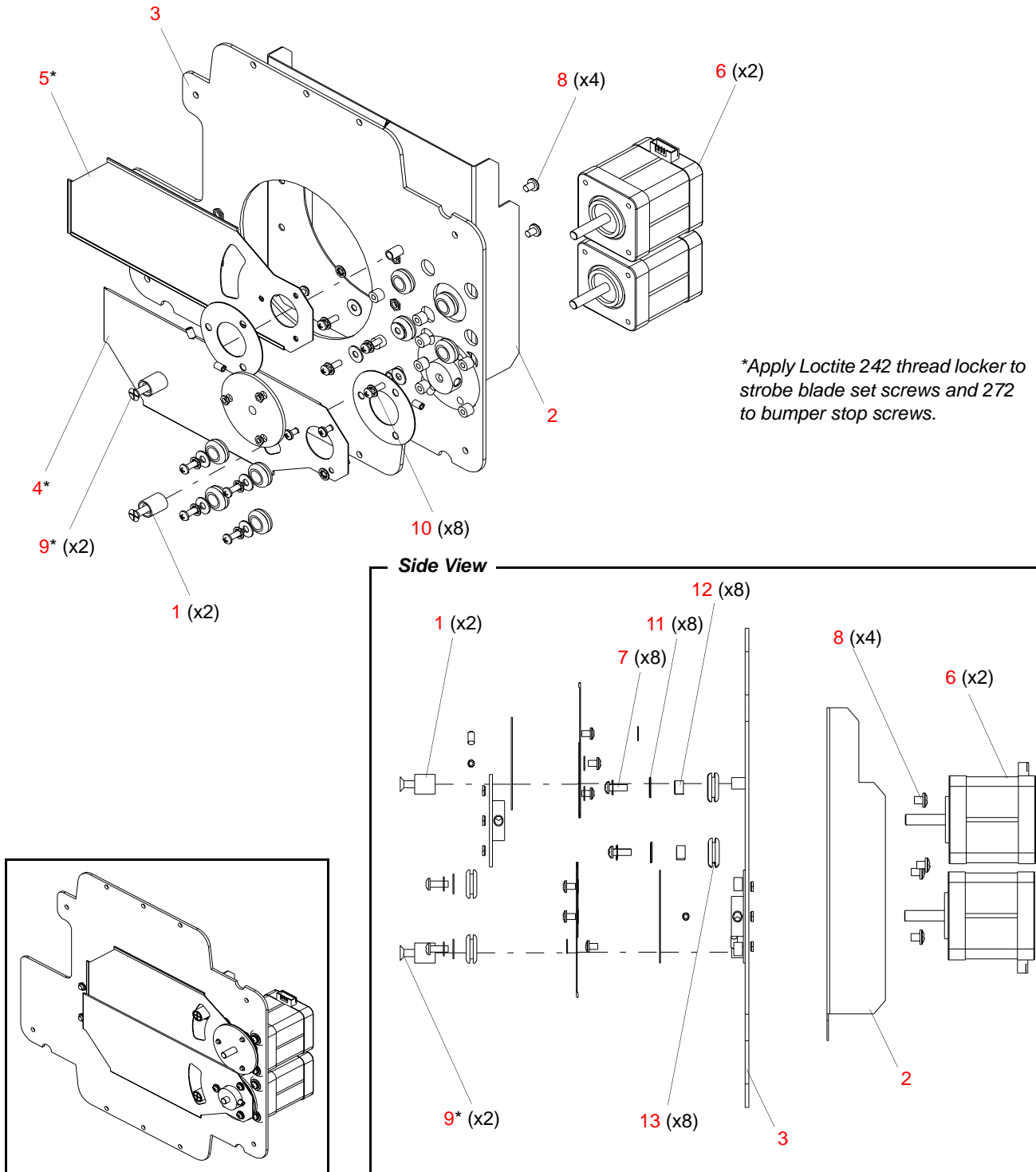


Figure 3-24: Strobe System Assembly

Top Strobe Blade Assembly

21.9698.2437 Rev B

Refer to [Figure 3-25](#)

No.	Item	Qty.	UM.	Description
1	10.9678.0432	1	EA	HUB, STROBE BLADE
2	10.9678.0466	1	EA	STROBE BLADE, DAMPER
3	10.9698.2432	1	EA	STROBE BLADE, NOTCHED
4	53.5559.0250	2	EA	SCREW, 6-32 X 1/4" SET CONE PO
5	53.6597.0001	3	EA	SCREW, 4-40 X 3/16" PPZ
6	55.3303.0004	3	EA	WASHER, #4 LOCK INT. TOOTH SS

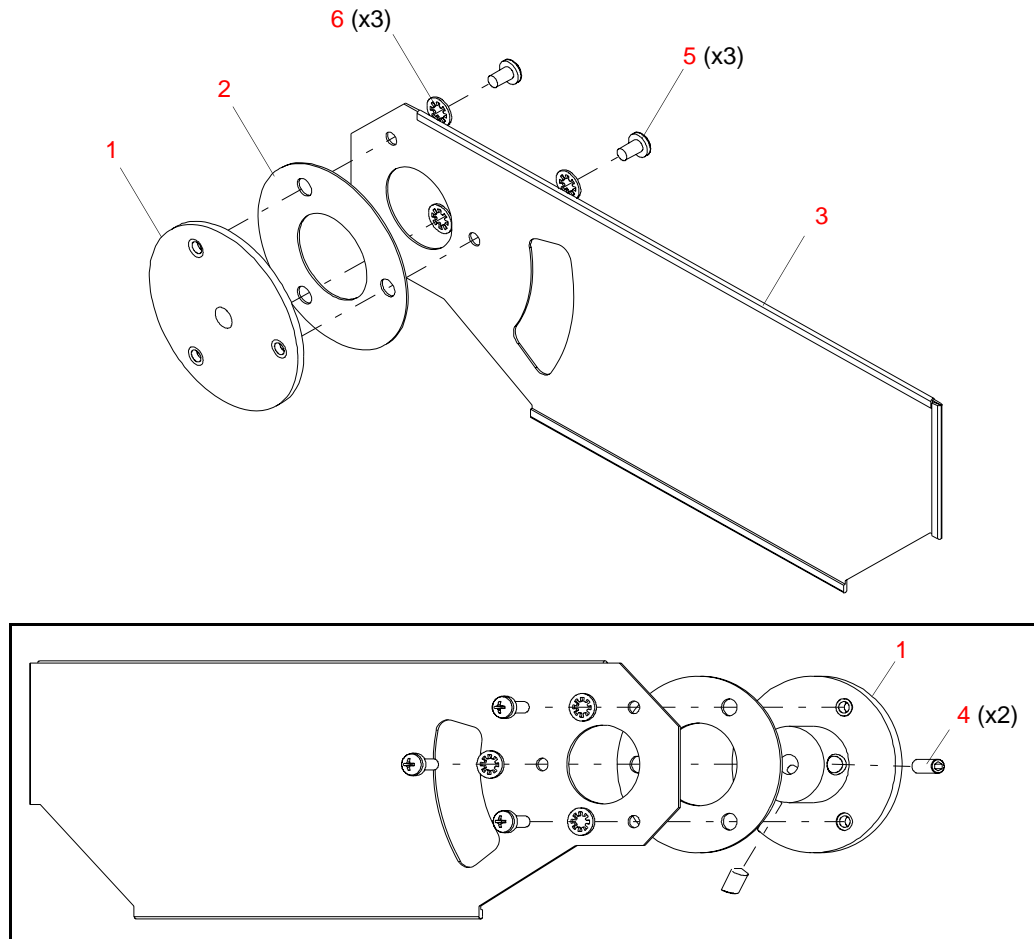


Figure 3-25: Top Strobe Blade Assembly

Bottom Strobe Blade Assembly

21.9698.2438 Rev B

Refer to [Figure 3-26](#)

No.	Item	Qty.	UM.	Description
1	10.9678.0432	1	EA	HUB, STROBE BLADE
2	10.9678.0466	1	EA	STROBE BLADE DAMPER
3	10.9698.2431	1	EA	STROBE BLADE, NOTCHED
4	53.5559.0250	2	EA	SCREW, 6-32 X 1/4" SET CONE PO
5	53.6597.0001	3	EA	SCREW, 4-40 X 3/16" PPZ
6	55.3303.0004	3	EA	WASHER, #4 LOCK INT. TOOTH SS

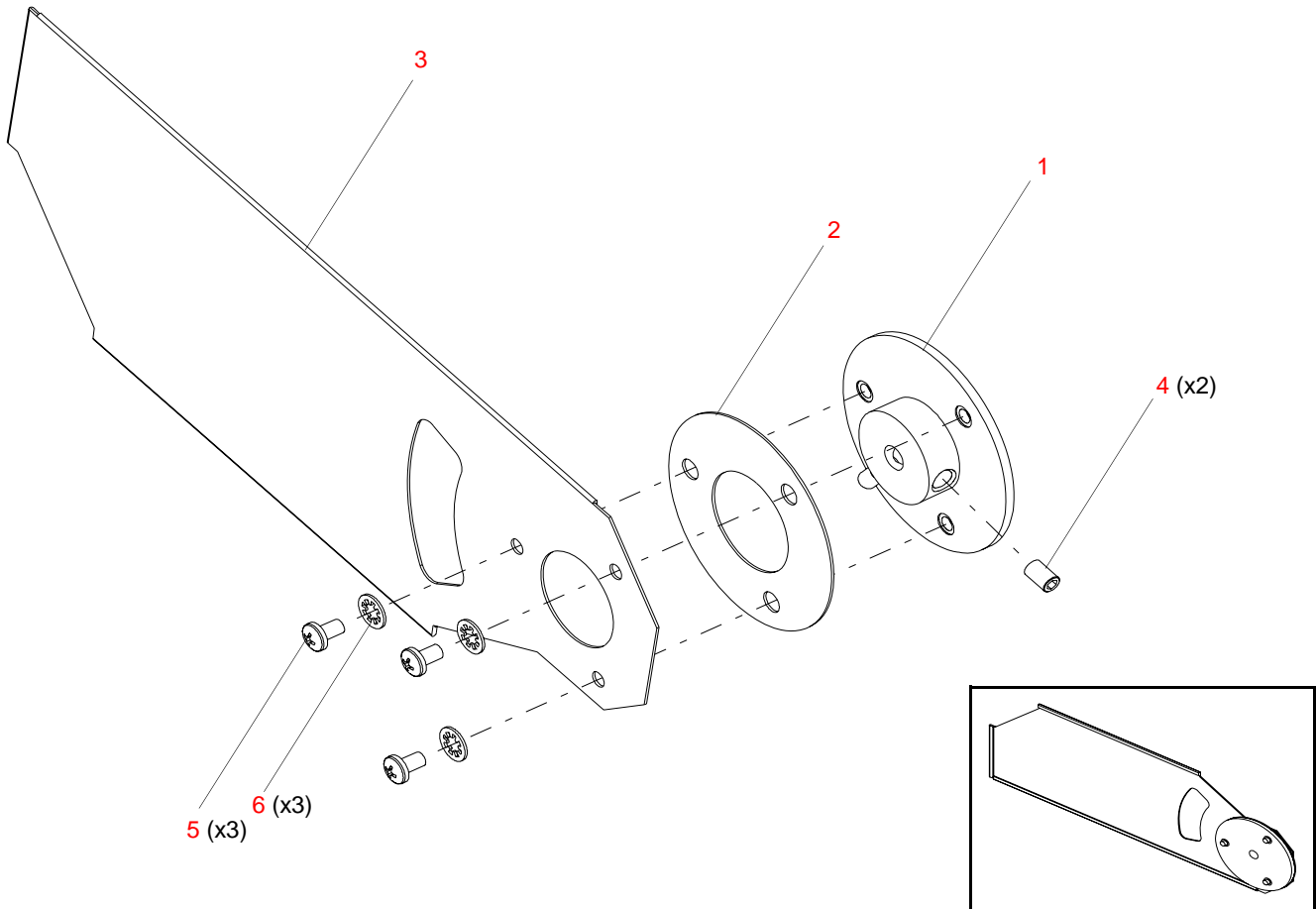


Figure 3-26: Bottom Strobe Blade Assembly

Fixed Color Wheel 2 Assembly

21.9686.1480 Rev A

Refer to [Figure 3-27](#)

No.	Item	Qty.	UM.	Description
1	10.9686.0481	1	EA	WHEEL, FIXED COLOR
2	10.9686.0482	1	EA	SPACER PLATE, FIXED COLOR
3	10.9686.0483	1	EA	SPRING PLATE, FIXED COLOR
4	22.9686.1416	1	EA	FIXED COLOR WHEEL HUB WITH BEARINGS
5	41.9686.0495	1	EA	COLOR FILTER, BLUE
6	41.9686.0496	1	EA	COLOR FILTER, AMBER
7	41.9686.0497	1	EA	COLOR FILTER, DARK FUCHSIA
8	41.9686.0498	1	EA	COLOR FILTER, ORANGE
9	41.9686.0499	1	EA	COLOR FILTER, GREEN
10	53.6598.0312	4	EA	SCREW, 4-40 X 5/16 " PFB

Fixed Color Wheel 2 Assembly (continued)

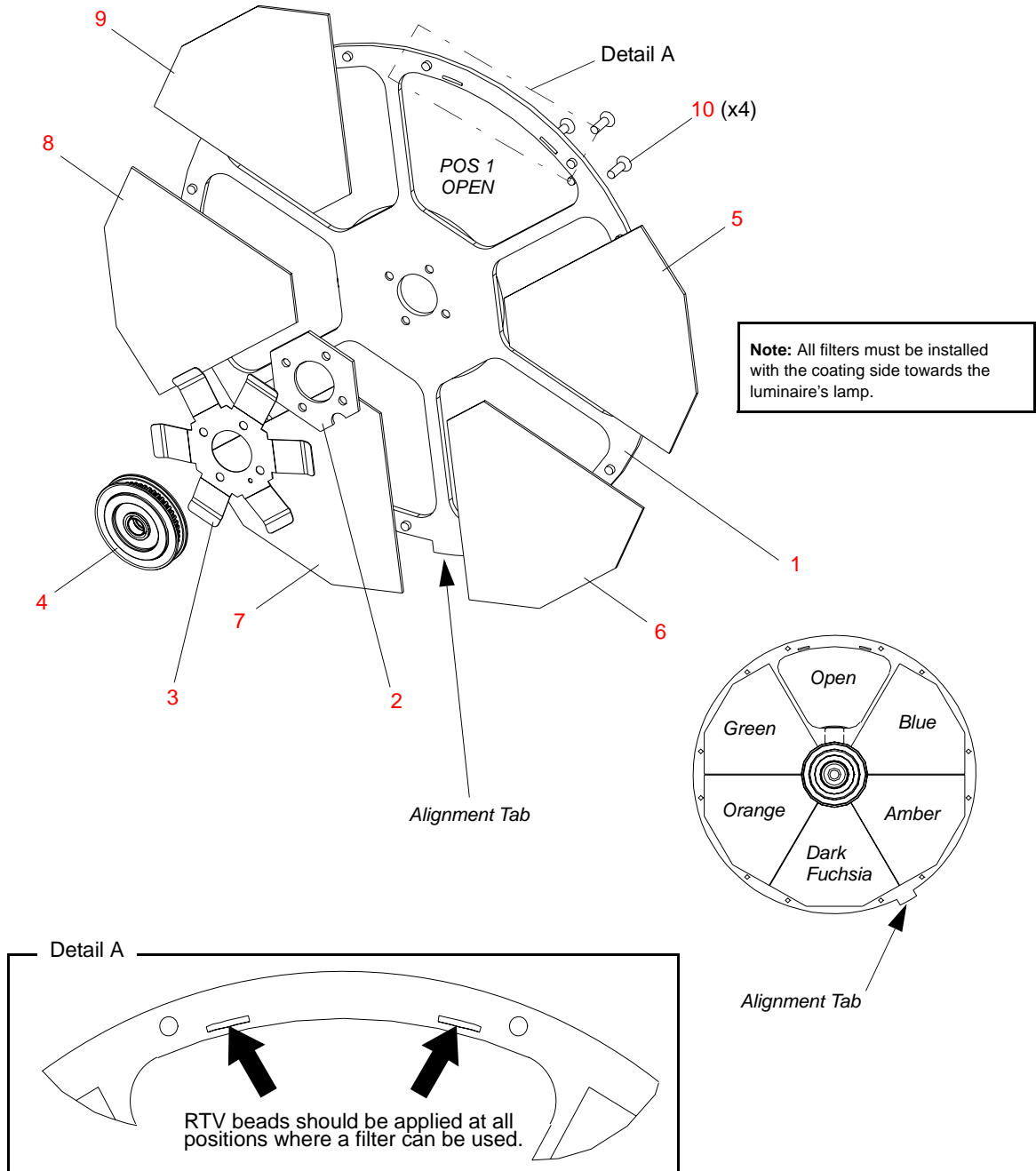


Figure 3-27: Fixed Color Wheel 2 Assembly

Fixed Color Wheel 1 Assembly

21.9698.1484 Rev B

Refer to [Figure 3-28](#)

No.	Item	Qty.	UM.	Description
1	10.9686.0481	1	EA	WHEEL, FIXED COLOR
2	10.9686.0482	1	EA	SPACER PLATE, FIXED COLOR
3	10.9686.0483	1	EA	SPRING PLATE, FIXED COLOR
4	22.9686.1416	1	EA	FIXED COLOR WHEEL HUB WITH BEARINGS
5	41.9686.0490	1	EA	COLOR FILTER, RED
6	41.9686.0491	1	EA	COLOR FILTER, YELLOW
7	41.9686.0492	1	EA	COLOR FILTER, MAGENTA
8	41.9686.0493	1	EA	COLOR FILTER, KELLY GREEN
9	41.9686.0494	1	EA	COLOR FILTER, CONGO BLUE
10	53.6599.0001	4	EA	SCREW, 4-40 X 3/8" PFZ

Fixed Color Wheel 1 Assembly (continued)

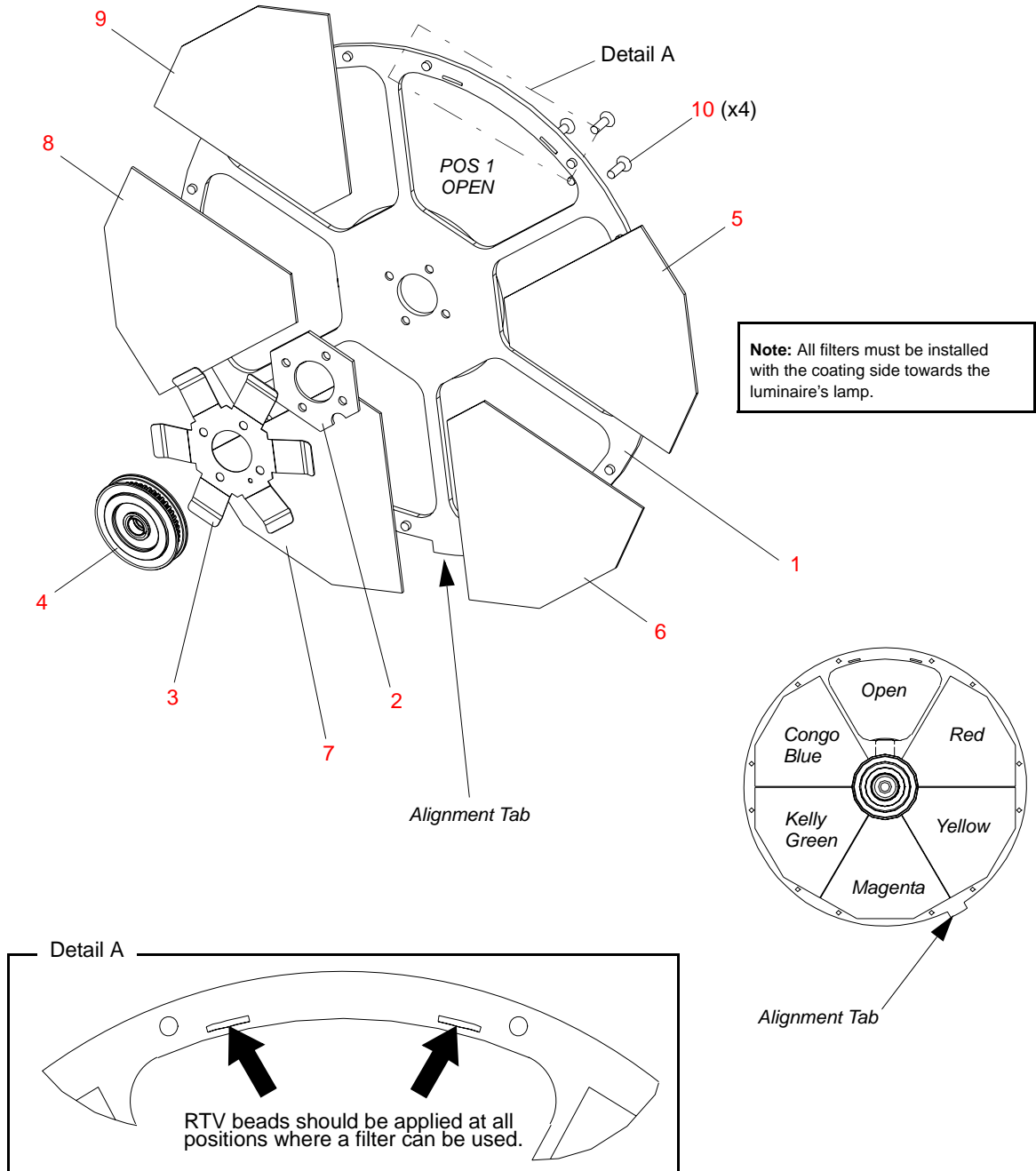


Figure 3-28: Fixed Color Wheel 1 Assembly

Notes

Yoke Assembly

Yoke Assembly

21.9698.0700 Rev G

Refer to [Figure 3-29](#)

No.	Item	Qty.	UM.	Description
1	10.9678.0756	1	EA	IGNITOR SHIELD
2	10.9678.0764	1	EA	PLATE, TILT ENCODER MOUNT
3	21.9698.0765	1	EA	ASSY, TILT MOTOR
4	22.9661.0609	2	EA	ASSY, YOKE FAN
5	22.9698.1705	1	EA	ASSY, YOKE STRUCTURE
6	23.9661.1253	1	EA	ELEC ASSY, PAN EOT SENSOR
7	23.9650.3327	1	EA	ELEC ASSY, RELAY
8	24.9661.3126	1	EA	PCB ASSY, IGNITOR
-	25.9661.1526	2	EA	CABLE ASSY, RELAY TO IGNITOR (not shown)
-	25.9678.0758	1	EA	CABLE ASSY, YOKE FAN (not shown)
-	25.9698.0015	1	EA	CABLE ASSY, 24V RELAY TO INTERCONNECT (not shown)
-	25.9698.0681	1	EA	CABLE ASSY, YOKE FAN TO VOLT REG PCB (not shown)
9	53.2019.0004	2	EA	NUT, 3/8-16 X 7/32" THK HEX JAM G
10	53.2200.0006	1	EA	NUT, 6-32 KEPS SS
11	53.5634.0250	8	EA	SCREW, 4-40 X 1/4" PFSS-B
12	53.6525.0001	2	EA	SCREW, 6-32 X 5/16" PPZ
13	53.6539.0001	2	EA	WASHER, 3/8" SPLIT LOCK
14	53.6558.0009	10	EA	SCREW, 6-32 X 3/8" PPZ SEMS
15	53.6626.0001	6	EA	SCREW, 10-32 X 1/2" PPZ
16	53.6634.0003	2	EA	SCREW, 3/8-16 X 1/2" SOC HD CAP
17	55.2150.0002	1	EA	STANDOFF, 1/4" HEX 6-32 X 1.187" MF
18	55.2178.0001	1	EA	CABLE ANCHOR MOUNT, #8 SCREW MOUNTING
19	55.6528.0001	2	EA	WASHER, #6 FLAT ZINC
20	55.6541.0002	2	EA	GROMMET, 1" ID X 1-3/4" OD X 1-3/8"
21	55.6568.0074	2	EA	SPRING, CPRSN, 0.600" OD, 0.080" WIR
22	55.6658.0009	2	EA	STANDOFF, 1/4" HEX 6-32 X 0.750" LG FF

Yoke Assembly (continued)

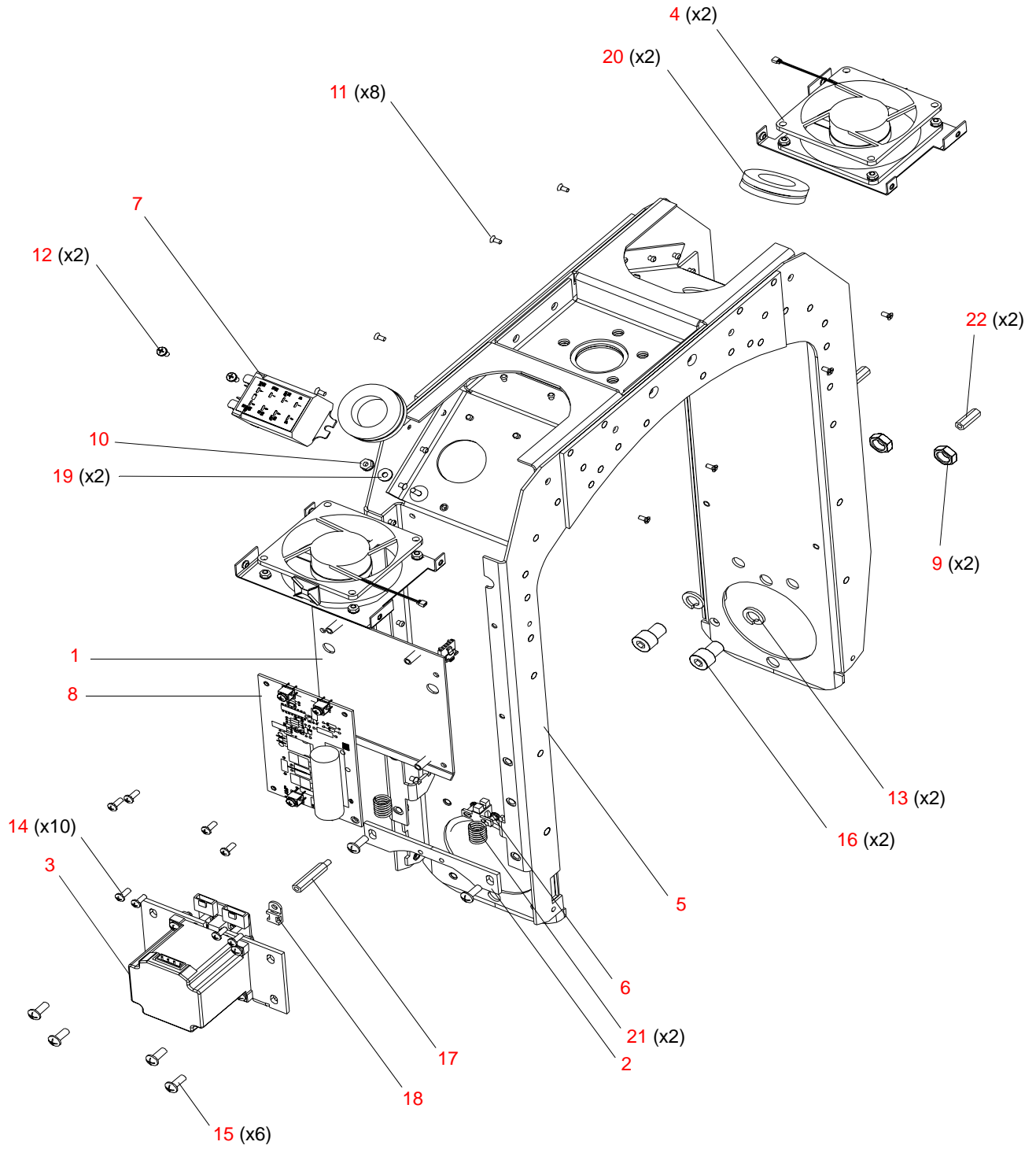


Figure 3-29: Yoke Assembly

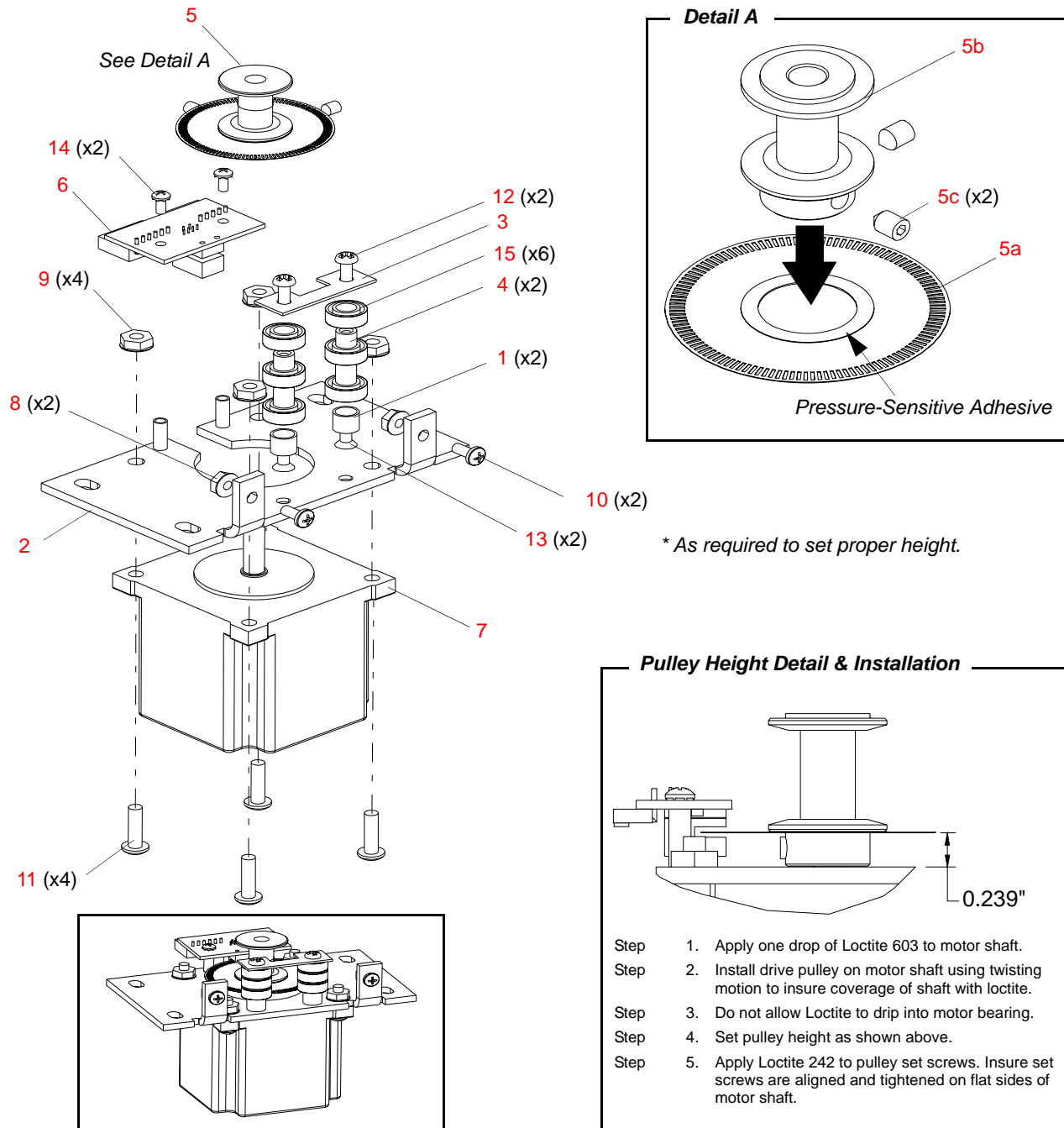
Tilt Motor Assembly

21.9698.0765 Rev D

Refer to [Figure 3-30](#)

No.	Item	Qty.	UM.	Description
1	10.9686.0457.05	2	EA	SPACER, COLOR WHEEL
2	10.9698.0763	1	EA	PLATE, TILT MOTOR MOUNT
3	10.9698.0861	1	EA	PLATE, BELT GUIDE
4	10.9698.0835	2	EA	STANDOFF, BELT GUIDE, TILT MOTOR ASSY
5	21.9698.0708	1	EA	ASSY, DRIVE PULLEY
5a	- 10.9678.8720	1	EA	CODEWHEEL, 120 COUNT, LARGE ID
5b	- 10.9698.1749	1	EA	TIMING PULLEY, 17 TOOTH, SHORTENED
5c	- 53.5560.0250	2	EA	SCREW, 8-32 X 1/4" SET CONE POINT
6	24.9661.5000	1	EA	PCB ASSY, PAN TILT ENCODER
7	44.9698.0680	1	EA	MOTOR, 3 PHASE, SZ 23 HI-TOQ, MOONS
8	53.2200.0006	2	EA	NUT, 6-32 KEPS, SS
9	53.2200.0008	4	EA	NUT, 8-32 KEPS, SS
10	53.6525.0001	2	EA	SCREW, 6-32 X 5/16" PPZ
11	53.6546.0001	4	EA	SCREW, 8-32 X 5/8" PPB
12	53.6558.0001	2	EA	SCREW, #6-32 X 3/8", PPZ
13	53.6609.0001	2	EA	SCREW, 6-32 X 3/8" PFZ
14	53.6682.0002	2	EA	SCREW, 4-40 X 1/4" PPZ SEMS
15	54.1259.0009	6	EA	BEARING, 1/4" ID, 1/2" OD, EXT INNER RACE

Tilt Motor Assembly (continued)



Note: Vari-Lite recommends that this assembly be replaced as a complete assembly. Although you can replace only the motor, the pulley (Item 2) is bonded to the motor shaft during assembly and cannot be removed intact. If you order a replacement motor (Item 4), also order the pulley (Item 2). Contact Vari-Lite Customer Service for installation information.

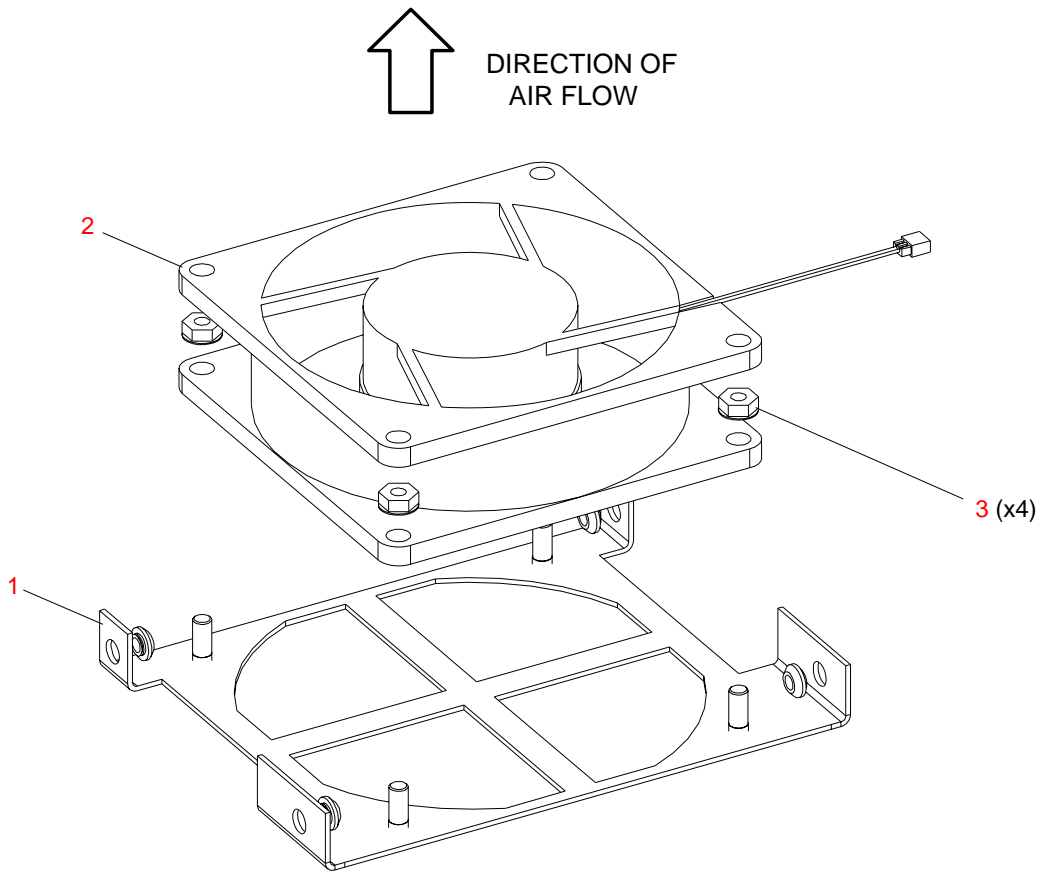
Figure 3-30: Tilt Motor Assembly

Yoke Fan Assembly

22.9661.0609 Rev D

Refer to [Figure 3-31](#)

No.	Item	Qty.	UM.	Description
1	10.9661.0646	1	EA	FAN TRAY
2	40.7113.1001	1	EA	FAN, +24V 80 X 80 X 25MM, 32CFM
3	53.2200.0006	4	EA	NUT, 6-32 KEPS SS



Note fan wire orientation.

Figure 3-31: Yoke Fan Assembly

Notes

Enclosure Assembly

Upper Enclosure Assembly

21.9698.0800 Rev. N

Refer to [Figure 3-32](#), [Figure 3-33](#) and [Figure 3-34](#)

No.	Item	Qty.	UM.	Description
1	04.9640.0374	1	EA	LABEL, GROUND
2	04.9698.0040	1	EA	LABEL, VL3500 SERIES COMPLIANCE
3	10.9661.1358	1	EA	AIR SEAL, DUCT
4	10.9678.0820	1	EA	LANYARD, PAN TUBE
5	10.9678.0869	1	EA	BRACKET, LVS
6	10.9678.0886	1	EA	SPACER, PAN BEARING, 0.235" THK
7	10.9678.0892	1	EA	BUSHING, WIRE PROTECTION, PAN TUBE
8	10.9678.1258	1	EA	BRACKET, APS SIDE
9	10.9678.1876	1	EA	AIR DIST PLENUM, 1200W SW BALLAST P/S
10	10.9698.0820	1	EA	PLATE, PAN LOCK
11	10.9698.0821	2	EA	GLIDE, LEVER, PAN LOCK
12	10.9698.0822	1	EA	SPRING, PAN LOCK
13	10.9698.0823	1	EA	COVER, PAN LOCK
14	10.9698.0824	2	EA	SPACER, PAN LOCK SLIDE, GUIDE
15	10.9698.0833	4	EA	SPACER, COVER, VENTILATION
16	10.9698.0839	1	EA	COVER, TOP
17	10.9698.0840	1	EA	COVER, TOP
18	10.9698.0846	2	EA	HANDLE, UPPER ENCLOSURE, EXTENDED
19	10.9698.1850	1	EA	DRIVEN PULLEY, S2M, WIDE BELT
20	12.9678.0842	1	EA	DUCT, UPPER ENCLOSURE, AIR
21	12.9686.1238	2	EA	COVER, SIDE MACHINED
22	12.9686.2236	2	EA	COVER, FRONT, MACHINED
23	21.9678.0767	1	EA	STABILIZER, ASSEMBLY
24	21.9679.0811	1	EA	ASSY, EXHAUST FAN, HIGH FLOW
25	21.9698.0805	1	EA	ASSY, PANEL, INPUT
26	21.9698.0840	1	EA	ASSY, COVER, VENTILATION
27	21.9698.0864	1	EA	ASSY, PAN MOTOR
28	21.9698.0881	1	EA	ASSY, PAN TUBE, MACHINED

VARI*LITE - VL3015LT SPOT LUMINAIRE SERVICE MANUAL

No.	Item	Qty.	UM.	Description
29	22.9698.0690	1	EA	ASSY, VL3015LT FAN VOLT. REG. UPPER ENCLOSURE
30	22.9698.0851	1	EA	ASSY, UPPER ENCLOSURE STRUCTURE
31	23.9698.0686	1	EA	FAN ASSY, UPPER ENCLOSURE
-	25.9661.1514	1	EA	CABLE ASSY, LVS CHASSIS GND (EMI GND) (not shown)
-	25.9661.1520	1	EA	CABLE ASSY, CHASSIS TO YOKE GND (not shown)
-	25.9678.0813	1	EA	CABLE ASSY, DATA I/O LINK (not shown)
-	25.9678.0816	1	EA	CABLE ASSY, BALLAST TO CONTROLLER (not shown)
-	25.9678.0829	1	EA	CABLE ASSY, LAMP SUPPLY TO RELAY (not shown)
-	25.9678.1825	1	EA	CABLE ASSY, DISPLAY (not shown)
-	25.9698.0801	1	EA	CABLE ASSY, PAN/TILT CONTROL (not shown)
-	25.9698.0832	1	EA	CABLE ASSY, VL3015LT EXHAUST FAN (not shown)
-	25.9698.1003	1	EA	CABLE ASSY, LVS TO BALLAST (not shown)
-	25.9698.1010	1	EA	CABLE ASSY, 36V SUPPLY (not shown)
-	25.9698.2514	1	EA	CABLE ASSY, LVS CHASSIS GROUND (not shown)
32	52.8295.0002	1	EA	TERMINAL BLOCK, 300V, 12AWG, 20A 2 POS
33	53.2001.0003	3	EA	NUT, 10-32 HEX SS NYLON INSERT
34	53.2019.0004	4	EA	NUT, 3/8-16 X 7/32" THK HEX JAM G
35	53.2200.0006	4	EA	NUT, 6-32 KEPS SS
36	53.5560.0250	4	EA	SCREW, SET, 1/4" LG CONE POINT
37	53.5606.0187	1	EA	SCREW, 6-32 X 3/16" PPSS BL
38	53.6505.0022	3	EA	CARRIAGE BOLT, 3/8"-16 X 3/4"
39	53.6515.0001	8	EA	SCREW, 10-32 X 3/4" SCB
40	53.6522.0001	1	EA	SCREW, 6-32 X 1/4" PPZ
41	53.6522.0004	2	EA	SCREW, 6-32 X 1/4" SOC HD
42	53.6525.0188	2	EA	SCREW, 6-32 X 3/16" LG PPZ SEMS
43	53.6530.0023	2	EA	RIVET, 1/8" OD POP, 0.376" - 0.500" GRP DOME HD STL MNDRL
44	53.6539.0001	4	EA	WASHER, 3/8" SPLIT LOCK
45	53.6543.0001	4	EA	SCREW, 6-32 X 3/8" PPB
46	53.6545.0003	4	EA	SCREW, 8-32 X 3/8" PFZ
47	53.6545.0004	4	EA	SCREW, 8-32 X 3/8" PPZ
48	53.6553.0009	2	EA	SCREW, 10-32 X 7/8" PFZ
49	53.6556.0002	1	EA	SCREW, 4-40 X 3/4" PPB
50	53.6558.0001	5	EA	SCREW, 6-32 X 3/8" PPZ
51	53.6558.0007	3	EA	SCREW, 6-32 X 1/4" PPZ SEMS
52	53.6558.0009	7	EA	SCREW, 6-32 X 3/8" PPZ SEMS
53	53.6558.0010	4	EA	SCREW, 6-32 X 1/4" LG PPZ BLK SEMS
54	53.6571.0003	1	EA	SCREW, 6-32 X 1-1/2" PPB
55	53.6591.0001	2	EA	SCREW, 6-32 X 1/4" PFZ

No.	Item	Qty.	UM.	Description
56	53.6607.0001	4	EA	SCREW, 6-32 X 1/4" PPB
57	53.6609.0001	4	EA	SCREW, 6-32 X 3/8" PFZ
58	53.6626.0001	1	EA	SCREW, 10-32 X 1/2" PPZ
59	53.6634.1000	1	EA	SCREW, 3/8-16 X 1.00" LG SOC HD CAP ALLOY STEEL
60	53.6667.0005	3	EA	SCREW, 10-32 X 3/8" LG SET CUP
61	53.7018.0750	4	EA	SCREW, 1/4-20 X 0750" PFZ
62	54.1206.0014	2	EA	RING, RETAINING, 1.375" SHAFT
63	54.1255.0001	1	EA	BEARING/HOUSING ASSY
64	54.9698.0224	1	EA	BELT, TIMING, S2M 224 GRV 15MM WIDE URTH/KVLR
65	55.1000.0026	2	EA	SPRING, 0.360 OD, 0.375" LG
66	55.2149.0001	1	EA	STANDOFF, 1/4" HEX 6-32 X 3/8" LG MF
67	55.2178.0001	4	EA	CABLE ANCHOR MOUNT, #8 SCREW MOUNT
68	55.2179.0001	3	EA	CABLE ANCHOR MOUNT, #6 SCREW MOUNT
69	55.2191.0002	1	EA	CABLE CLAMP, 1/2" WIDE, 1.00" DIA NYLON
70	55.2261.0001	1	EA	SLEEVE, NYLON IN WALL, #6 1"; 0.015" WALL
71	55.2267.0001	2	EA	RUBBER STRIP, SPONGE CLSD CELL, 3/8" W, 3/16" T ADHV
72	55.3301.0010	2	EA	WASHER, #10 FLAT
73	55.6532.0004	2	EA	BRACKET, #6-32 THREADED HOLES
74	55.6538.0001	1	EA	WASHER, #6 LOCK INTERNAL TOOTH
75	55.6543.0001	0.312	FT	GROMMET STRIP, SERRATED, 0.062" (cut into sections as shown in diagrams)
76	55.6543.0001	1.54	FT	GROMMET STRIP, SERRATED, 0.125" (cut into sections as shown in diagrams)
77	55.6568.0074	2	EA	SPRING, CPRSN, 0.600" OD, 0.080" WIRE
78	55.6577.0005	2	EA	STANDOFF, 1/2" HEX 6-32, 1.625" LG
79	55.6580.0002	1	EA	CABLE TIE, 0.18" WD X 8.00" LG
80	55.6669.0005	1	EA	STANDOFF, 4-40 X 5/8" LG, 1/4" HEX SS
81	55.6677.0044	1	EA	WASHER, TEFLON
82	55.6775.0010	1	EA	BUSHING, SNAP, 1.00" ID 1.25" MT HOLE
83	67.4018.0001	1	EA	FERRITE, 26 X 28, 0.5 X 13 MM CYL
84	67.9686.1500	1	EA	FILTER, EMI CCI
85	68.9678.0827	1	EA	CHOKER, COMMON MODE
86	69.9679.1216	1	EA	BALLAST, UNIVERSAL, 1200W/1650W
87	69.9698.0036	1	EA	LVS, CCI, 36VDC

Upper Enclosure Assembly (continued)

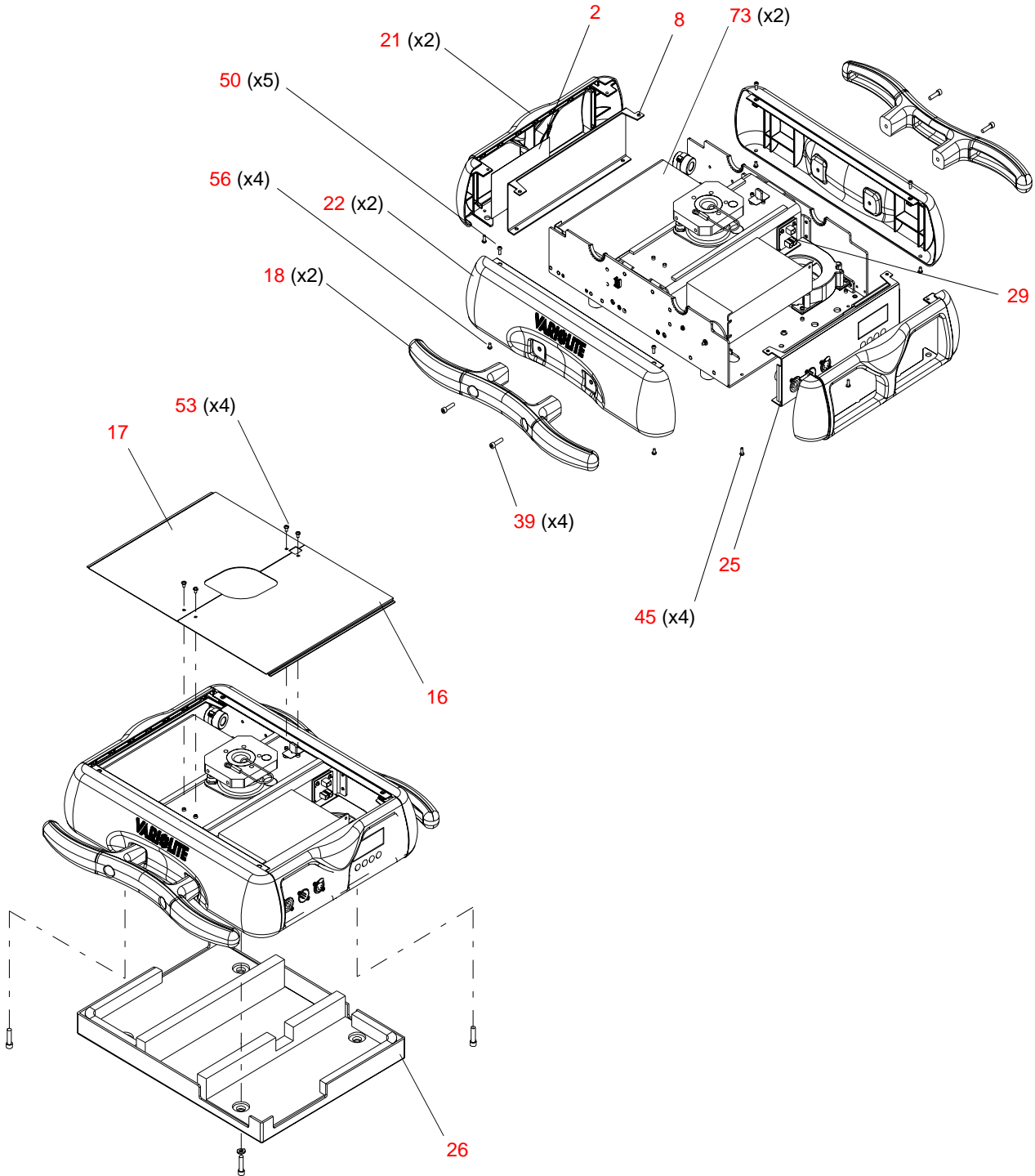


Figure 3-32: Upper Enclosure Assembly Part 1

Upper Enclosure Assembly (continued)

Pan Tube Assembly

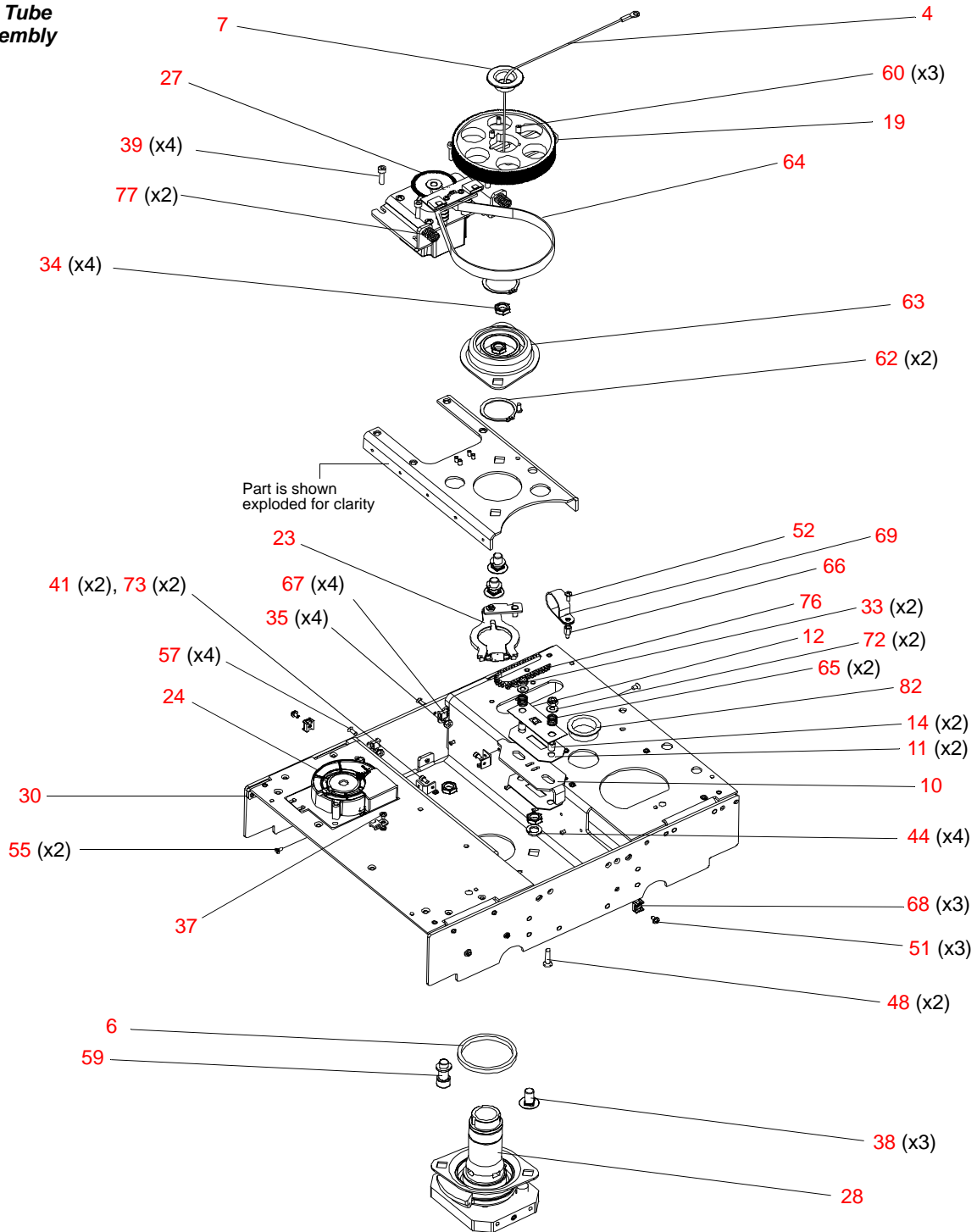


Figure 3-33: Upper Enclosure Assembly Part 2

Upper Enclosure Assembly (continued)

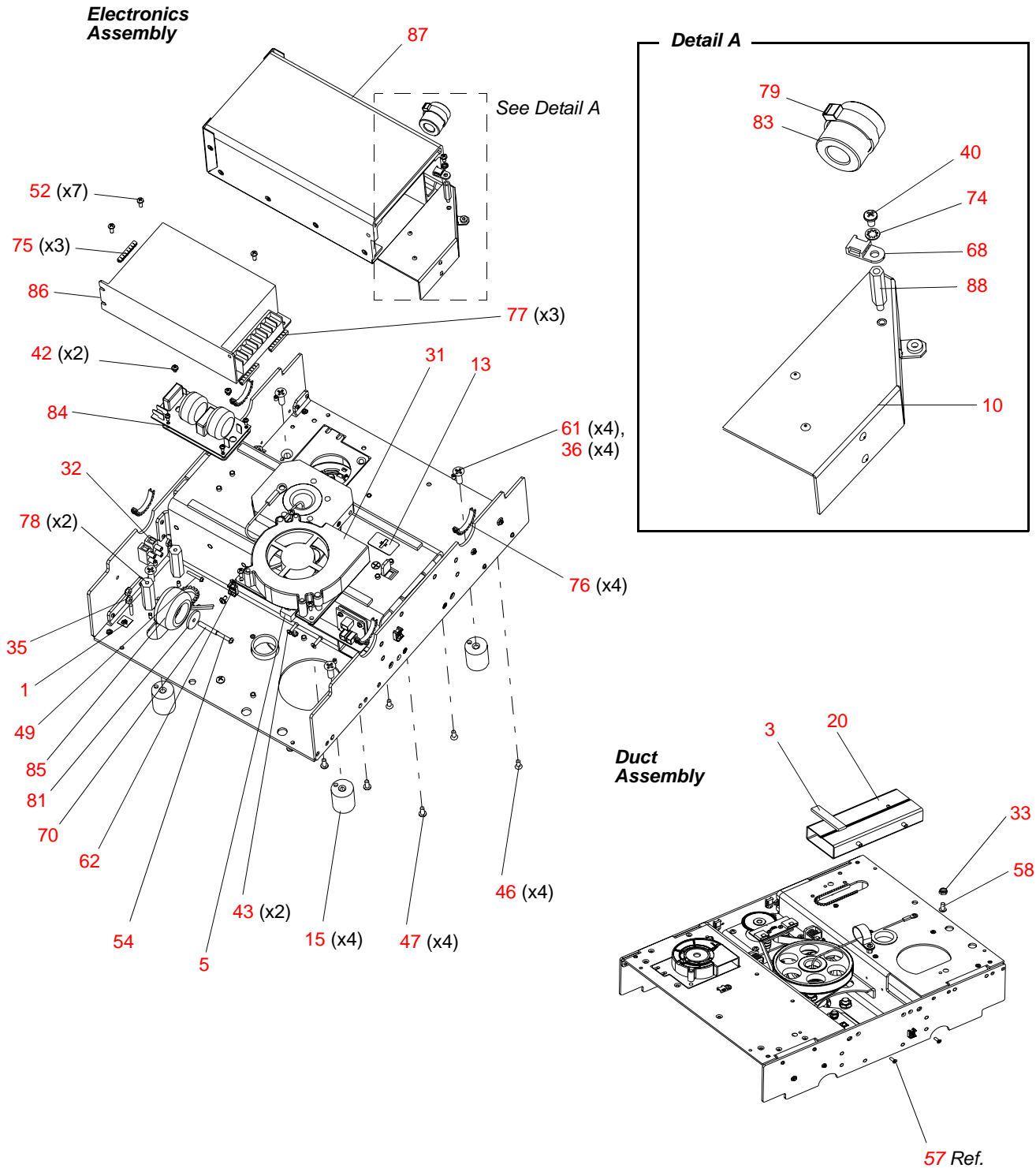


Figure 3-34: Upper Enclosure Assembly Part 3

Stabilizer Assembly

21.9678.0767 Rev 0

Refer to [Figure 3-35](#)

No.	Item	Qty.	UM.	Description
1	10.9678.0757	1	EA	STABILIZER, 1.377 DIA
2	10.9678.0762	1	EA	BRACKET, STABILIZER
3	53.6610.0003	1	EA	SCREW, 6-32 X 7/16" PPZ
4	55.6568.0075	1	EA	SPRING, EXTN, 0.375" OD, 1.0" LG, 0.041" DIA, WIRE

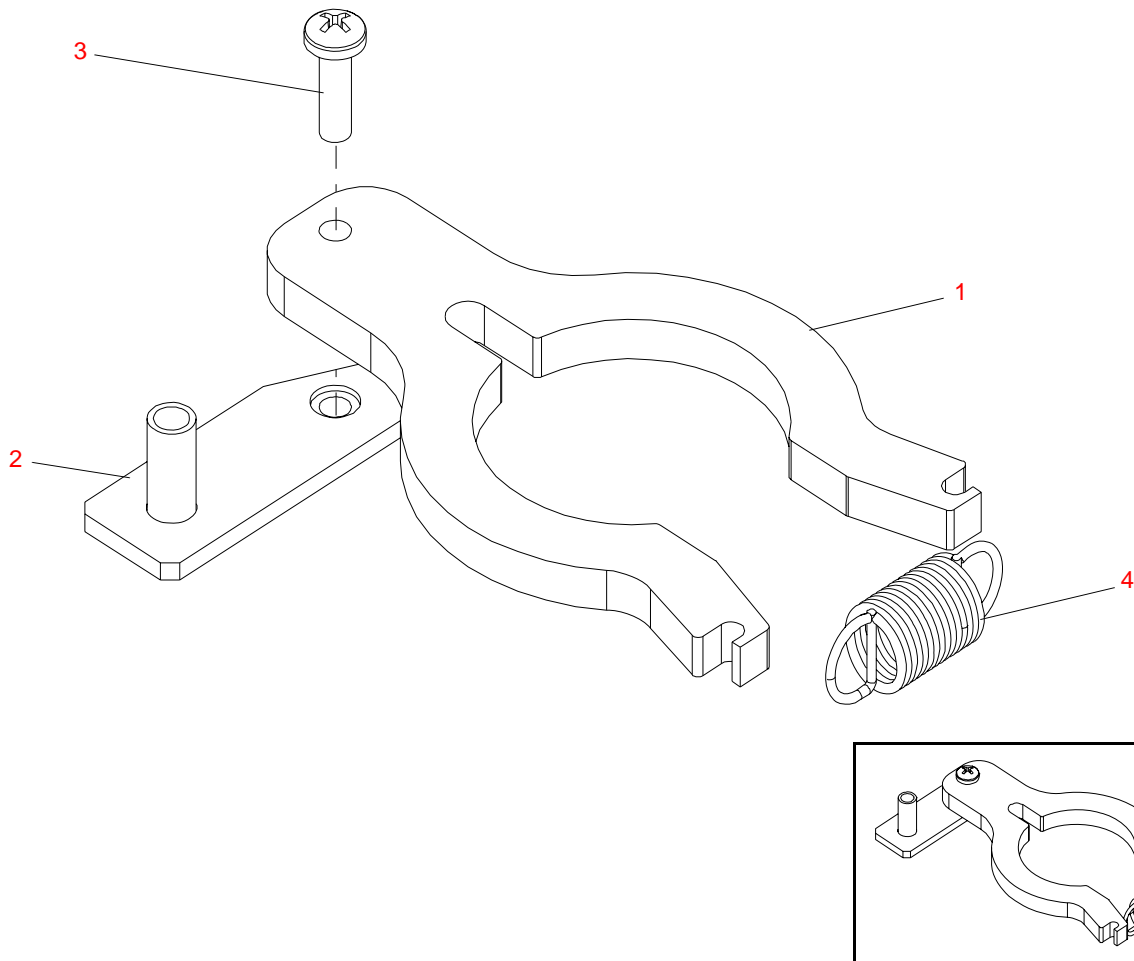


Figure 3-35: Stabilizer Assembly

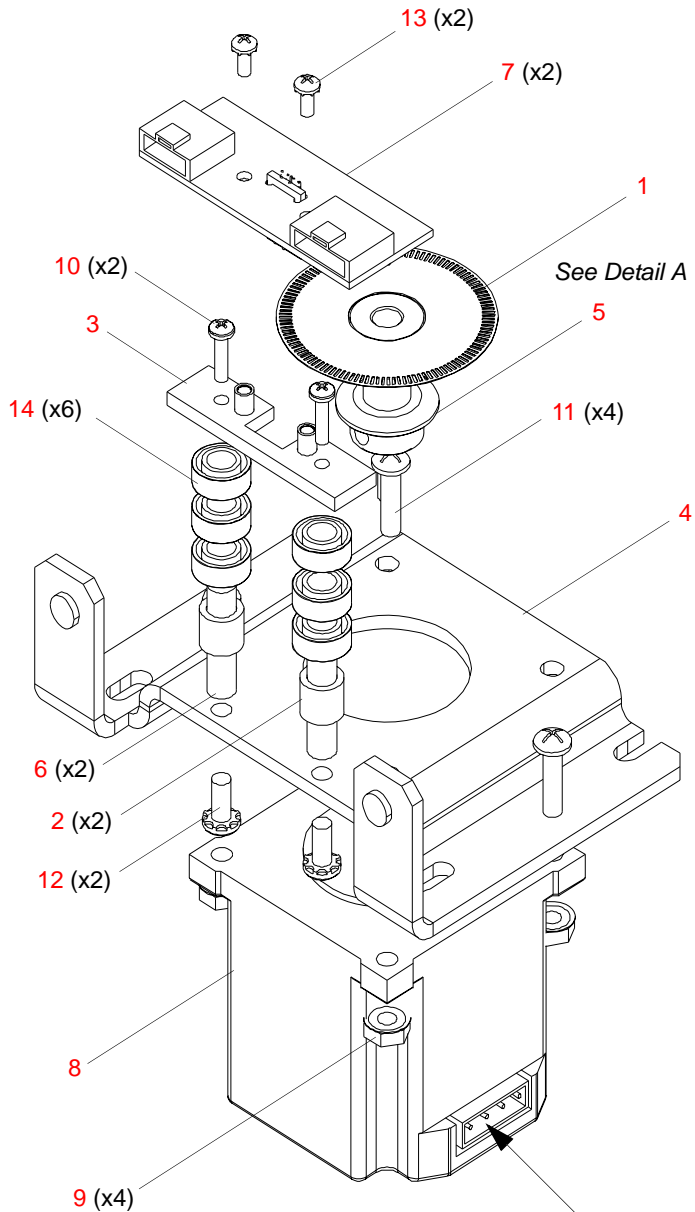
Pan Motor Assembly

21.9698.0864 Rev E

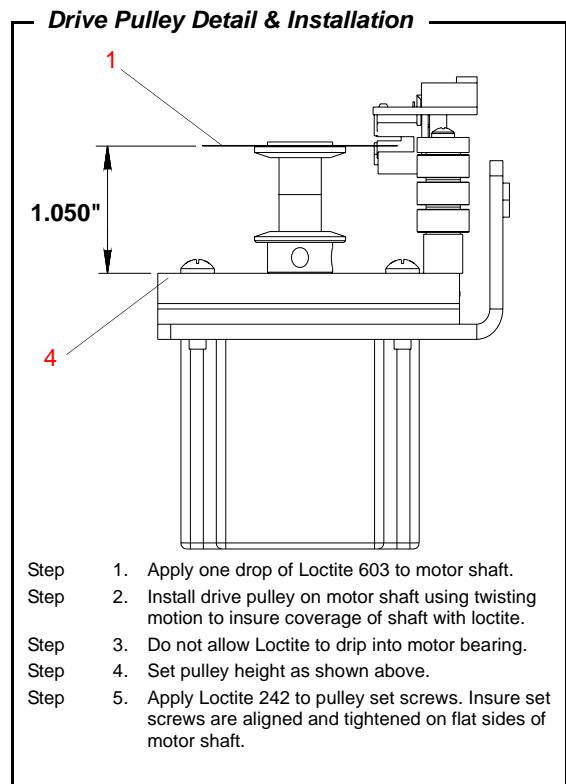
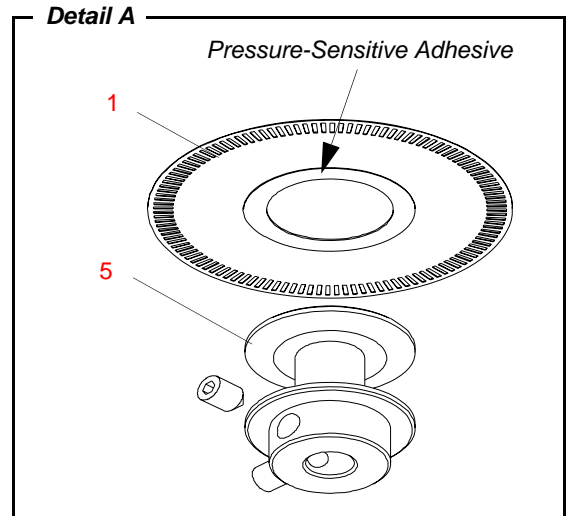
Refer to [Figure 3-36](#)

No.	Item	Qty.	UM.	Description
1	10.9678.8720	1	EA	CODEWHEEL, 120 COUNT, LARGE ID
2	10.9686.0457.01	2	EA	SPACER, COLOR WHEEL
3	10.9686.0841	1	EA	ADAPTOR PLATE, PAN SENSOR PCB
4	10.9686.0865	1	EA	PLATE, TENSION ADJUST, PAN MOTOR
5	10.9698.1749	1	EA	17T 2MM TIMING PULLEY, WIDE BELT
6	10.9698.1835	2	EA	STANDOFF, PAN MOTOR ASSY
7	24.9678.5000	1	EA	PCB ASSY, PAN/TILT ENCODER
8	44.9698.0680	1	EA	MOTOR, 3 PHASE, SZ 23 HI-TRQ, MOONS
9	53.2200.0008	4	EA	NUT, 8-32 KEPS SS
10	53.6520.0002	2	EA	SCREW, 4-40 X 7/16" PPZ
11	53.6546.0001	4	EA	SCREW, 8-32 X 5/8" PPB
12	53.6575.0009	2	EA	SCREW, 8-32 X 3/8" PPZ SEMS
13	53.6682.0002	2	EA	SCREW, 4-40 X 1/4" PPZ SEMS
14	54.1259.0009	6	EA	BEARING, 1/4" ID, 1/2" OD, EXT. INNER RACE

Pan Motor Assembly (continued)



Note orientation of connector in relationship to pan motor plate when pan motor is attached / installed.



Note: Vari-Lite recommends that this assembly be replaced as a complete assembly. Although you can replace only the motor, the pulley (Item 5) is bonded to the motor shaft during assembly and cannot be removed intact. If you order a replacement motor (Item 8), also order the pulley (Item 5) and encoder wheel (item 1). Contact Vari-Lite Customer Service for installation information.

Figure 3-36: Pan Motor Assembly

Ventilation Cover Assembly

21.9698.0840 Rev D

Refer to [Figure 3-37](#)

No.	Item	Qty.	UM.	Description
1	10.9661.1249	4	EA	POST, TRUSS HOOK
2	10.9678.0835	1	EA	AIR SEAL, SHORT SIDE
3	10.9678.0836	1	EA	AIR SEAL, LONG SIDE
4	10.9678.0837	1	EA	AIR SEAL, FAN SIDE
5	10.9678.0838	1	EA	AIR SEAL, APS SIDE
6	10.9678.0887	2	EA	RAIN COVER FOAM, QUIET, ALUMINUM
7	10.9686.0883	1	EA	COVER, VENTILATION
8	53.7017-1000	4	EA	SCREW, 1/4-20 X 1" SCSS
9	54.1206.0015	4	EA	RING, RETAINING, PRESS-ON, 1" SHAFT
10	55.6549.0001	4	EA	WASHER, 1/4" SPLIT LOCK

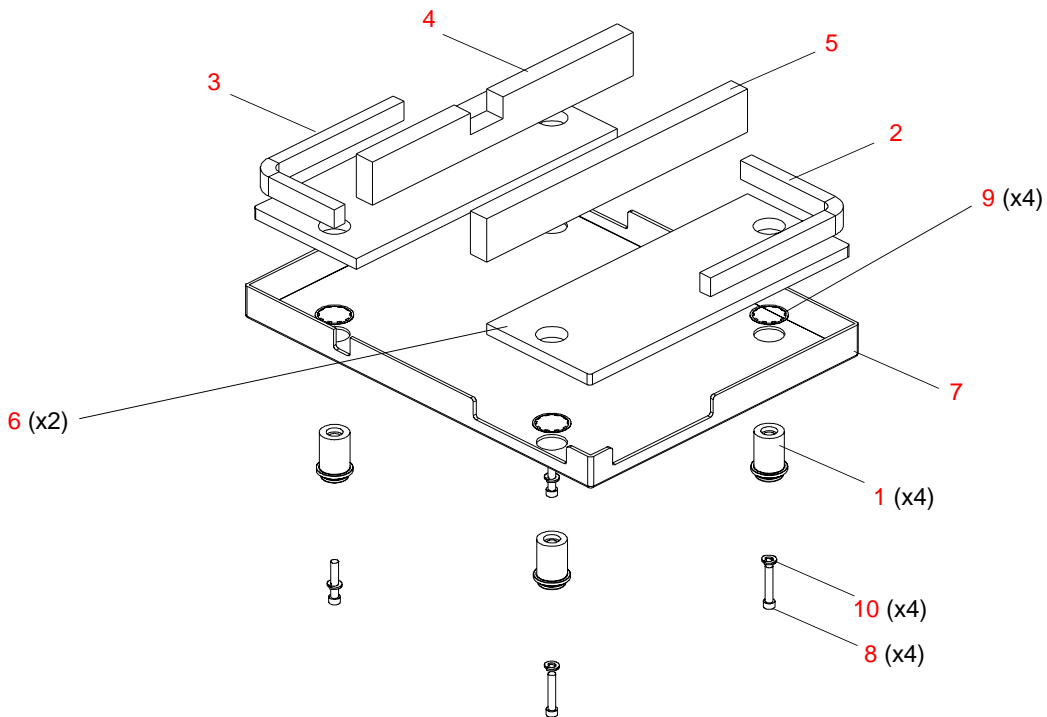


Figure 3-37: Ventilation Cover Assembly

Input Panel Assembly

21.9698.0805 Rev C

Refer to [Figure 3-38](#)

No.	Item	Qty.	UM.	Description
1	10.9678.0872	1	EA	STIFFENER, DISPLAY BOARD
2	10.9679.0850	1	EA	BACKING PLATE, NEUTRIK
3	10.9698.0852	1	EA	OVERLAY, INPUT PANEL, VL3015
4	10.9698.0859	1	EA	BRACKET, INPUT
5	24.9663.1830	1	EA	PCB ASSY, DMX INPUT
6	24.9678.3825	1	EA	PCB ASSY, VL3000 DISPLAY
7	25.9679.0001	1	EA	CONNECTOR, CHASSIS POWER, INLET 3-POLE LK
8	53.6543.0001	2	EA	SCREW, 6-32 X 3/8" PPB
9	53.6598.0001	6	EA	SCREW, 4-40 X 3/8" PFB
10	55.2284.0001	1	EA	CARD GUIDE, 3" LONG, SNAP IN

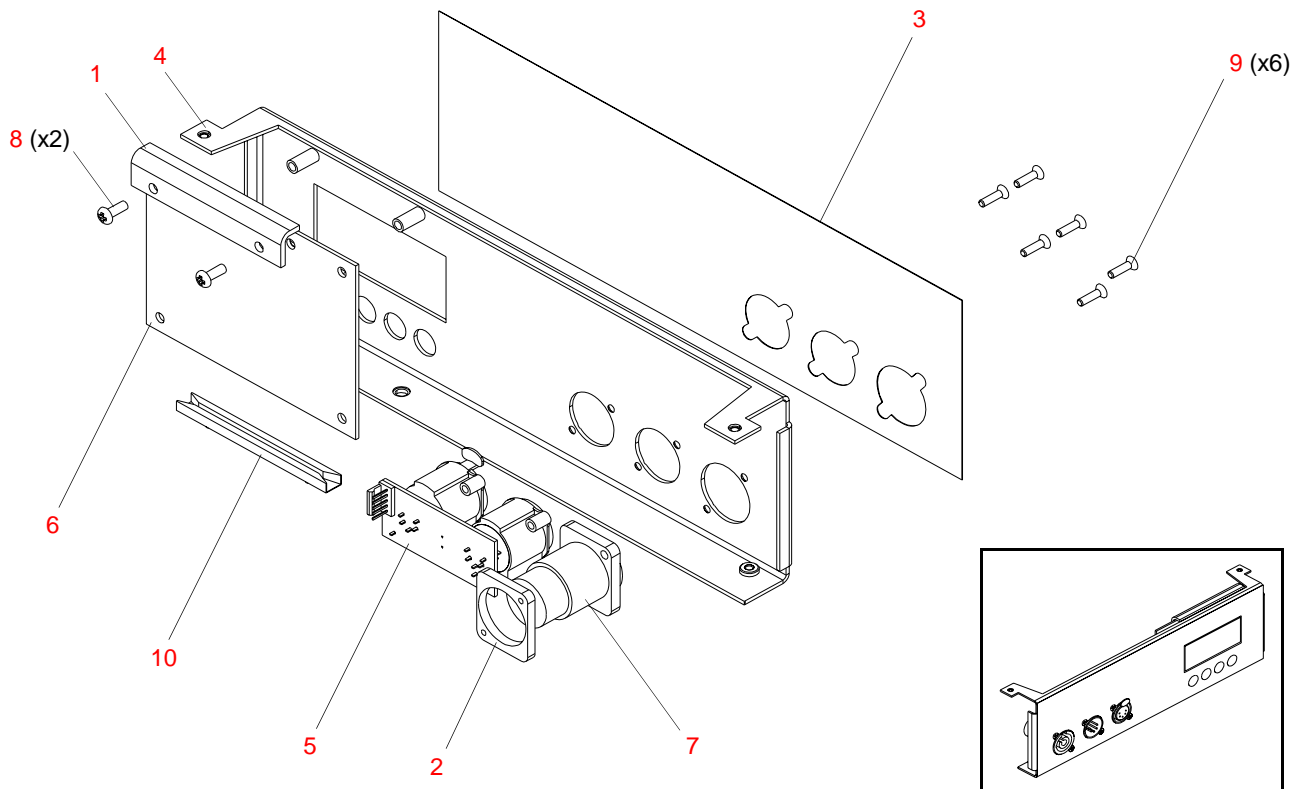


Figure 3-38: Input Panel Assembly

Machined Pan Tube Assembly

21.9698.0881 Rev 0

Refer to [Figure 3-39](#)

No.	Item	Qty.	UM.	Description
1	10.9678.0809	1	EA	PAN TOGGLE STOP
2	10.9678.0847	1	EA	SILICONE FOAM WASHER
3	10.9678.0848	2	EA	WASHER, PAN TEFLON
4	12.9698.0877	1	EA	PAN TUBE, MACHINED
5	54.1206.0021	1	EA	RING, RETAINING, 1.562" SHAFT, 1.468" GRV DIA , 0.068" GRV WD EXT
6	54.1255.0002	1	EA	BEARING ASSY, FLUSH MOUNT HOUSING LARGE

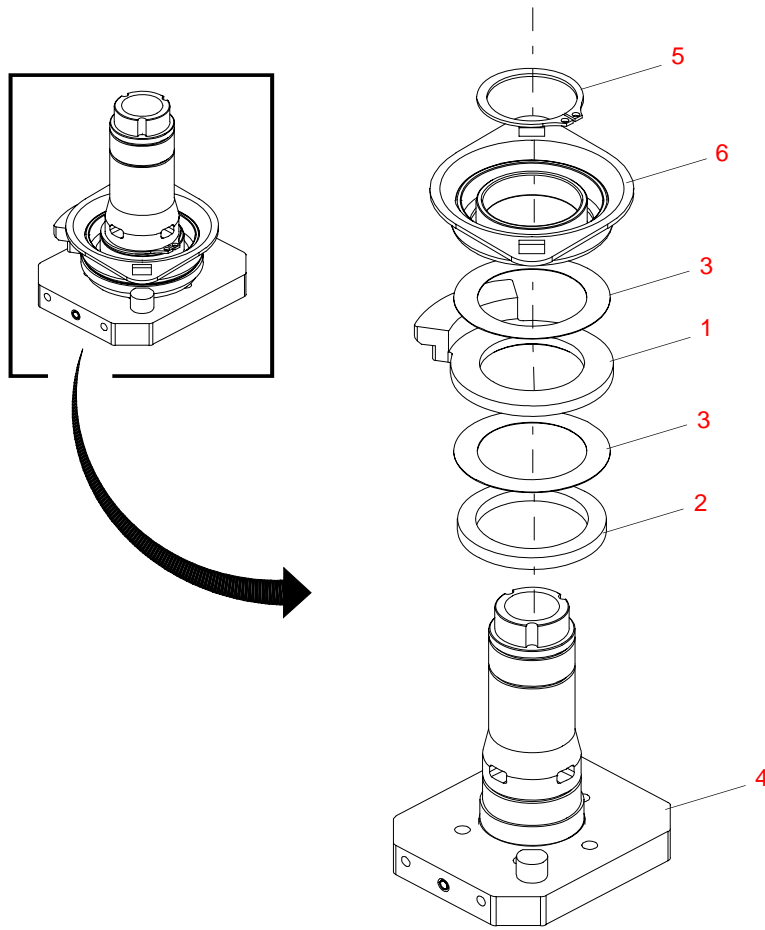


Figure 3-39: Pan Tube Assembly

High Flow Exhaust Fan Assembly

21.9679.0811 Rev A

Refer to [Figure 3-40](#)

No.	Item	Qty.	UM.	Description
1	10.9686.0810	1	EA	MOUNTING PLATE, EXHAUST FAN
2	40.9687.0001	1	EA	BLOWER, CENTRIFUGAL, 24VDC 10.6 CFM, 3 IN
3	55.6576.0001	2	EA	SCREW, #10-16 X 3/8" TYPE B PFZ

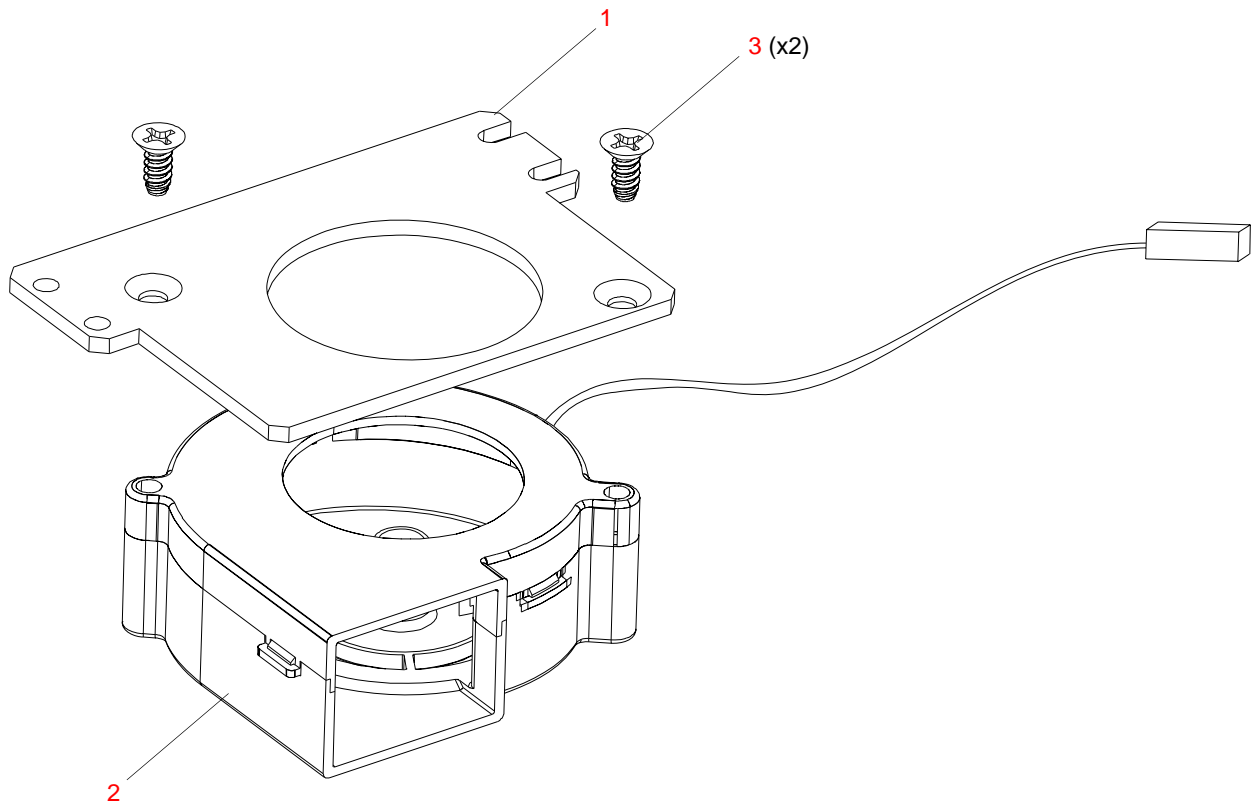


Figure 3-40: High Flow Exhaust Fan Assembly

Fan Regulator Board Assembly

22.9698.0690 Rev B

Refer to [Figure 3-41](#)

No.	Item	Qty.	UM.	Description
1	10.9686.0690	1	EA	MOUNTING PLATE, FAN VOLTAGE REG.
2	24.9698.1690	1	EA	PCB ASSY, VL3015LT FAN VOLTAGE REGULATOR
3	53.5504.0250	2	EA	SCREW, 4-40 X 1/4" PPSS

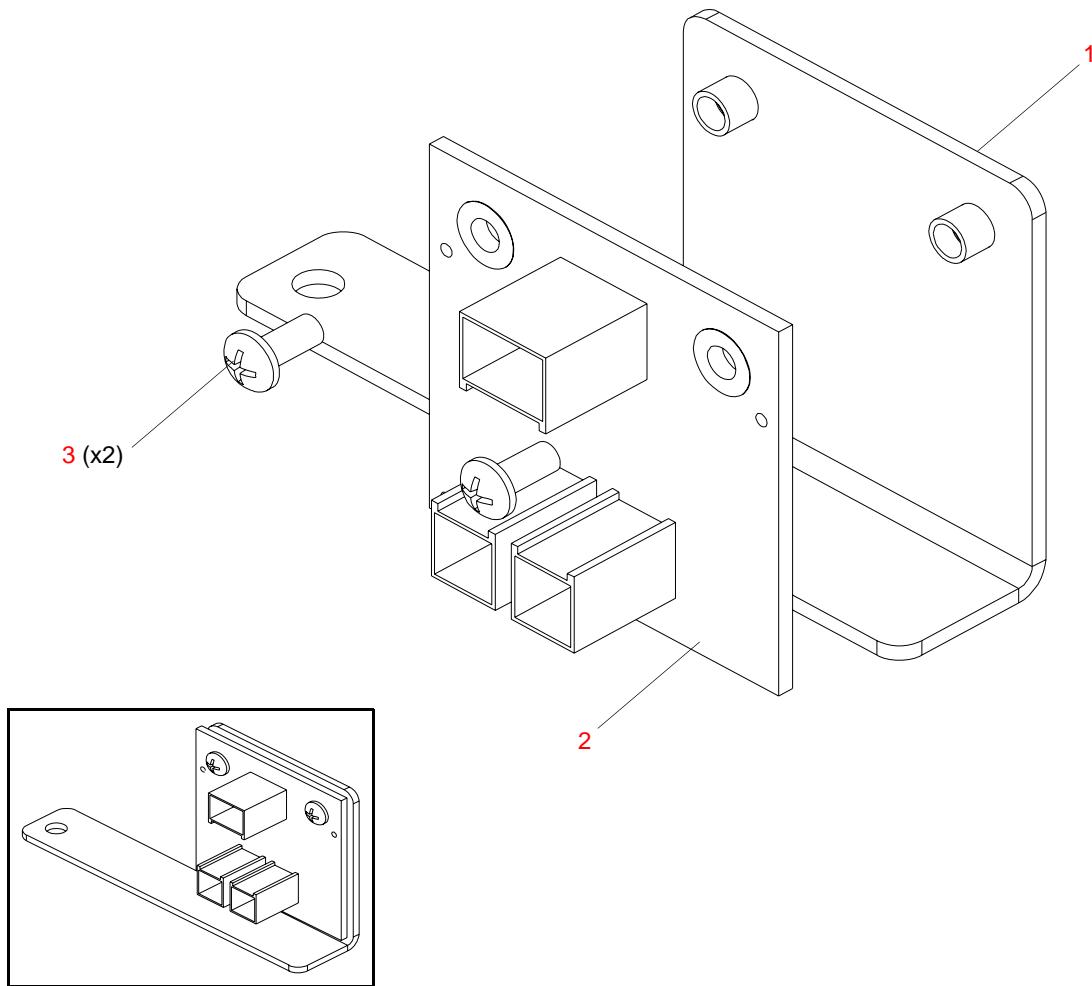


Figure 3-41: Fan Regulator Board Assembly

Cable Assemblies

LVS Chassis Ground Cable Assembly

25.9661.1514 Rev A

Refer to [Figure 3-42](#)

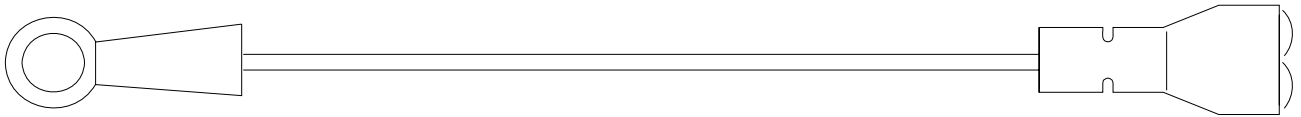


Figure 3-42: LVS Chassis Ground Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Chassis To Yoke Ground Cable Assembly

25.9661.1520 Rev C

Refer to [Figure 3-43](#)

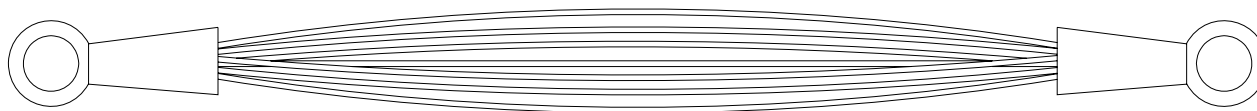


Figure 3-43: Chassis To Yoke Ground Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Head to Back Cap Ground Cable Assembly

25.9661.1522 Rev C

Refer to [Figure 3-44](#).

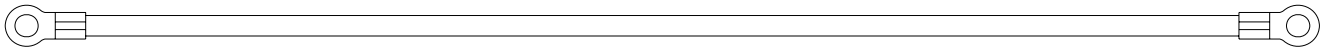


Figure 3-44: Head to Back Cap Ground Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Ignitor to Relay Cable Assembly

25.9661.1526 Rev C

Refer to [Figure 3-45](#).



Figure 3-45: Ignitor to Relay Cable Assembly

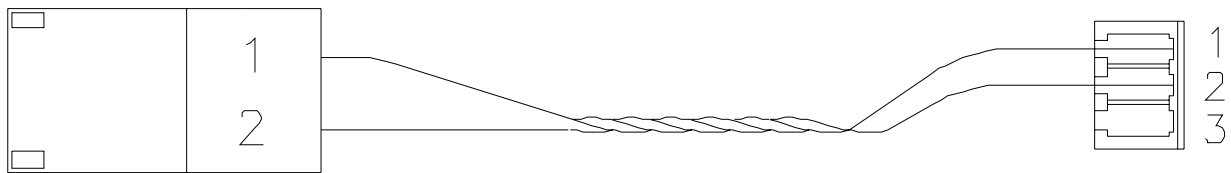


Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Yoke Fan Cable Assembly

25.9678.0758 Rev A

Refer to [Figure 3-46](#)



WIRE CHART				
FROM	CONN ITEM NO.	TO	CONN ITEM NO.	WIRE COLOR
PIN 1	2	PIN 1	1	RED
PIN 2	2	PIN 2	1	BLK

Figure 3-46: Yoke Fan Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Data I/O Link Cable Assembly

25.9678.0813 Rev A

Refer to [Figure 3-47](#)

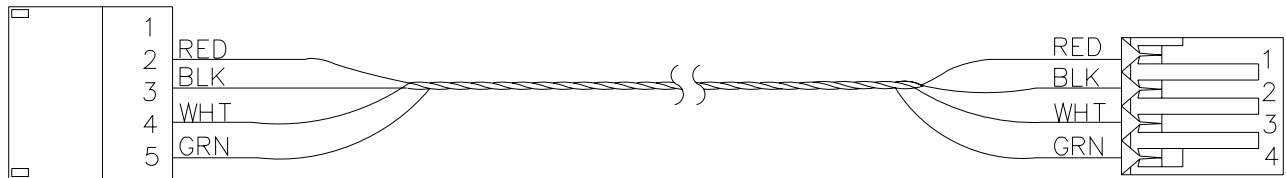


Figure 3-47: Data I/O Link Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Ballast to Controller Cable Assembly

25.9678.0816 Rev A

Refer to [Figure 3-48](#)

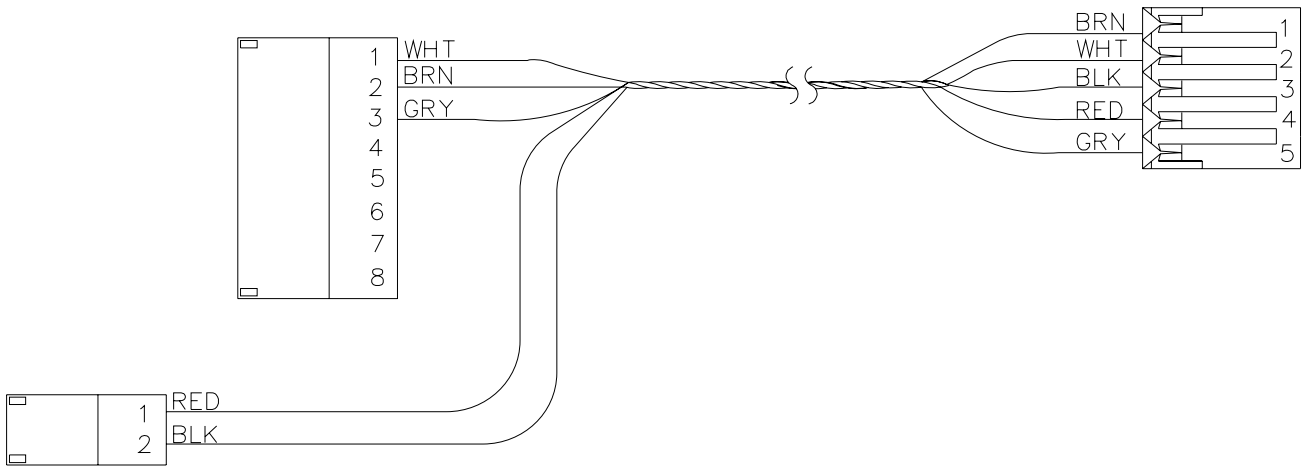


Figure 3-48: Ballast to Controller Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Lamp Supply to Relay Cable Assembly

25.9678.0829 Rev A

Refer to [Figure 3-49](#)

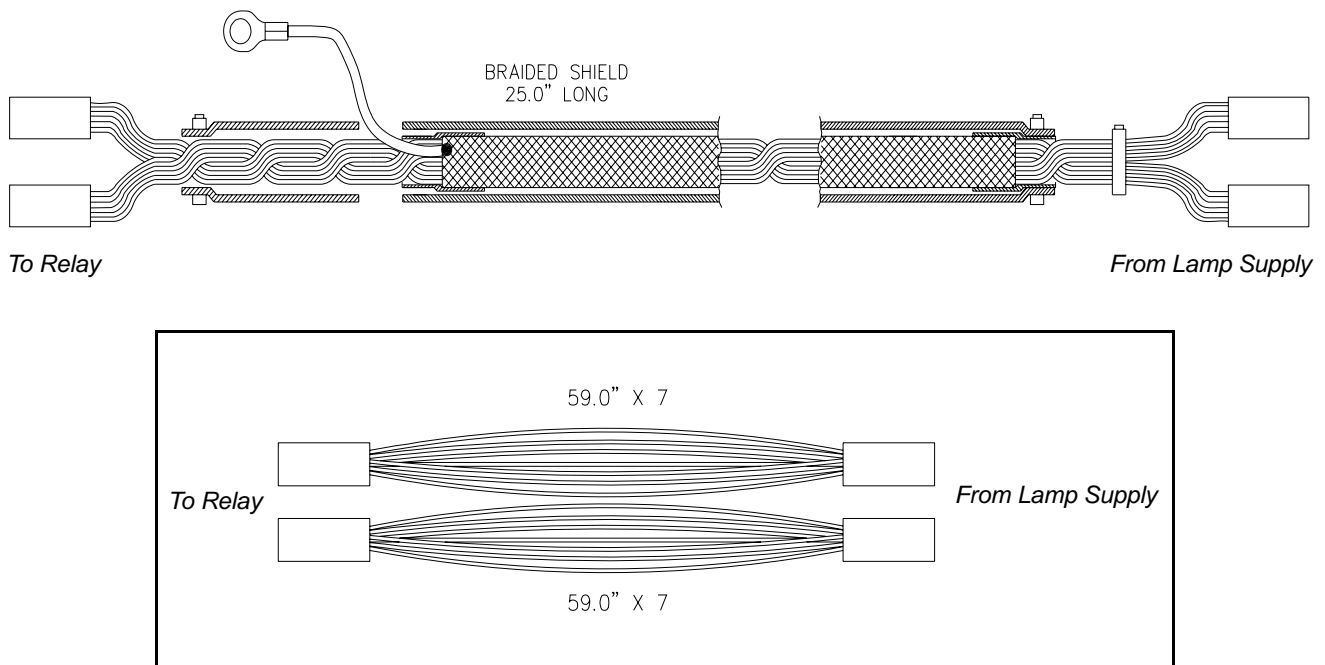


Figure 3-49: Lamp Supply to Relay Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Display Cable Assembly

25.9678.1825 Rev A

Refer to [Figure 3-50](#)

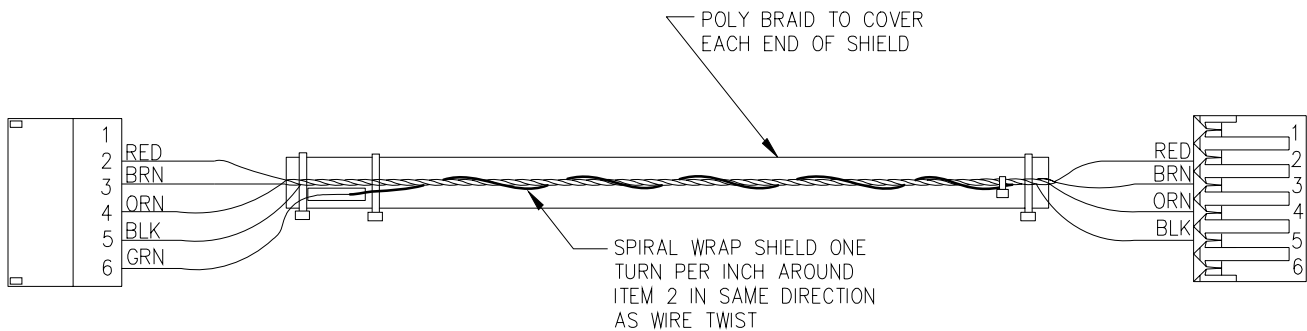


Figure 3-50: Display Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

AC Input Connector/Cable Assembly

25.9679.0001 Rev 0

Refer to [Figure 3-51](#)

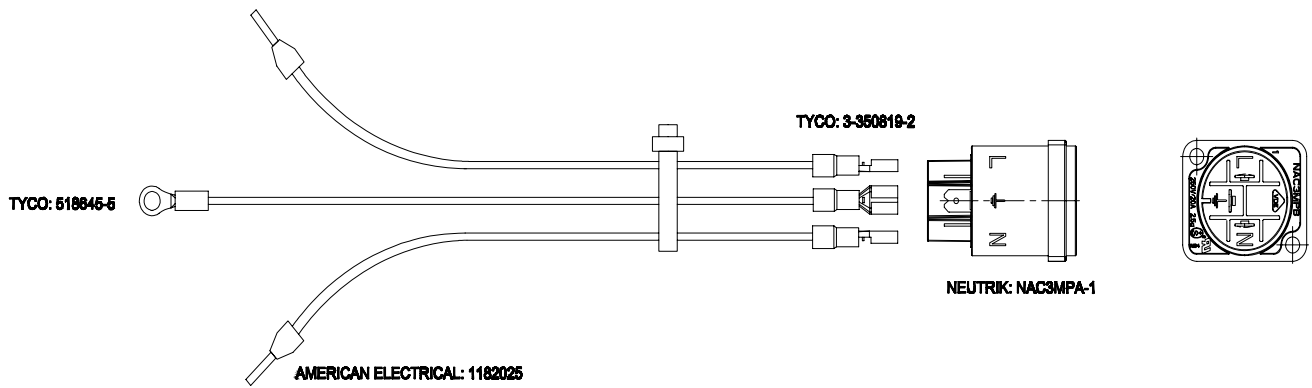


Figure 3-51: AC Input Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Iris Fan Cable Assembly

25.9679.0007 Rev A

Refer to [Figure 3-52](#)

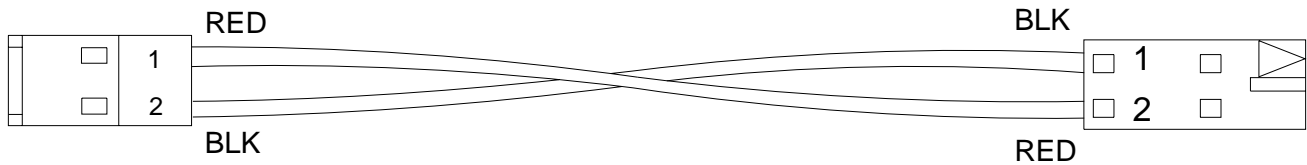


Figure 3-52: Iris Fan Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

36V Interconnect Cable Assembly

25.9698.0011 Rev 0

Refer to [Figure 3-53](#)

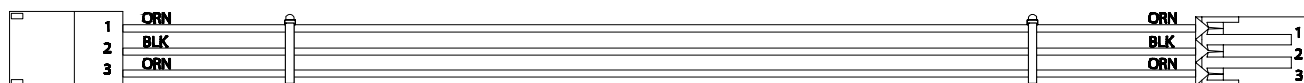


Figure 3-53: 36V Interconnect Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

36V Yoke Reg PCB Cable Assembly

25.9698.0012 Rev A

Refer to [Figure 3-54](#)

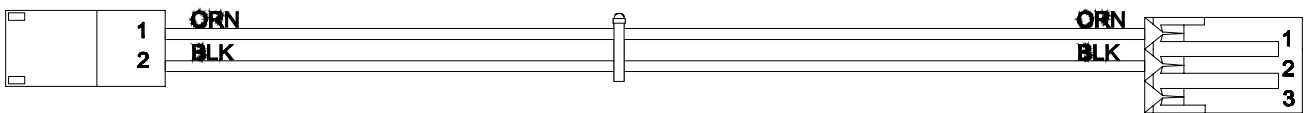


Figure 3-54: 36V Yoke Reg PCB Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

24V Relay to Interconnect Cable Assembly

25.9698.0015 Rev A

Refer to [Figure 3-55](#)

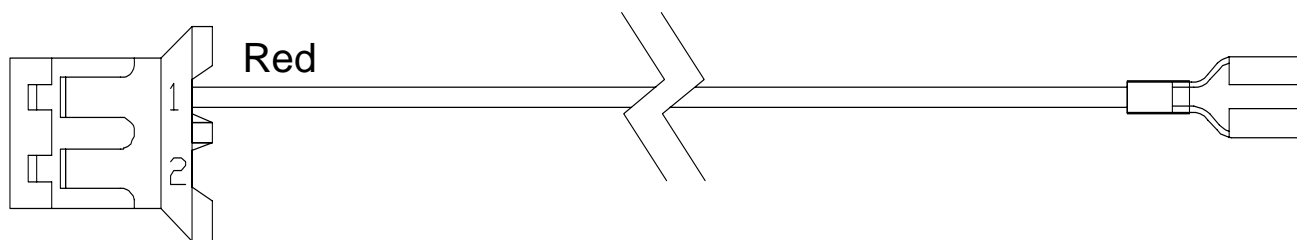


Figure 3-55: 24V Relay to Interconnect Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Optics (MCB to Interconnect) Cable Assembly

25.9698.0109 Rev A

Refer to [Figure 3-56](#)

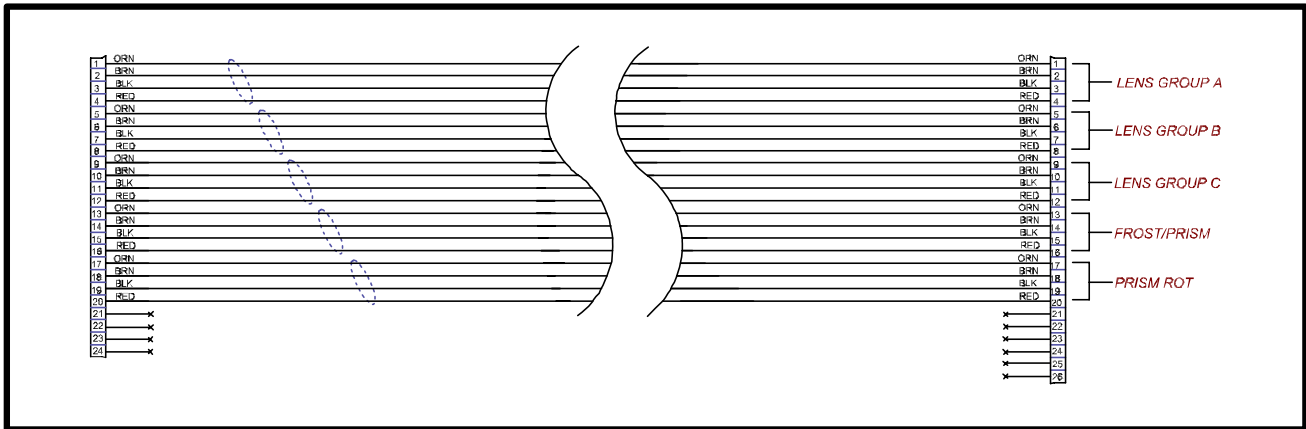
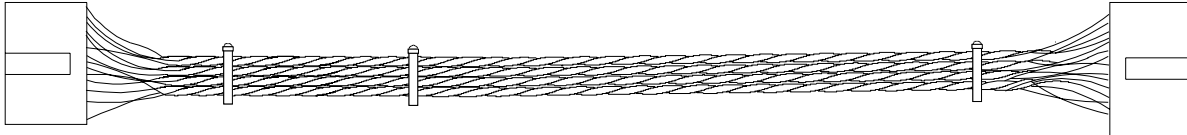


Figure 3-56: Optics (MCB to Interconnect) Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Gobo (MCB to Interconnect) Cable Assembly

25.9698.0209 Rev B

Refer to [Figure 3-56](#)

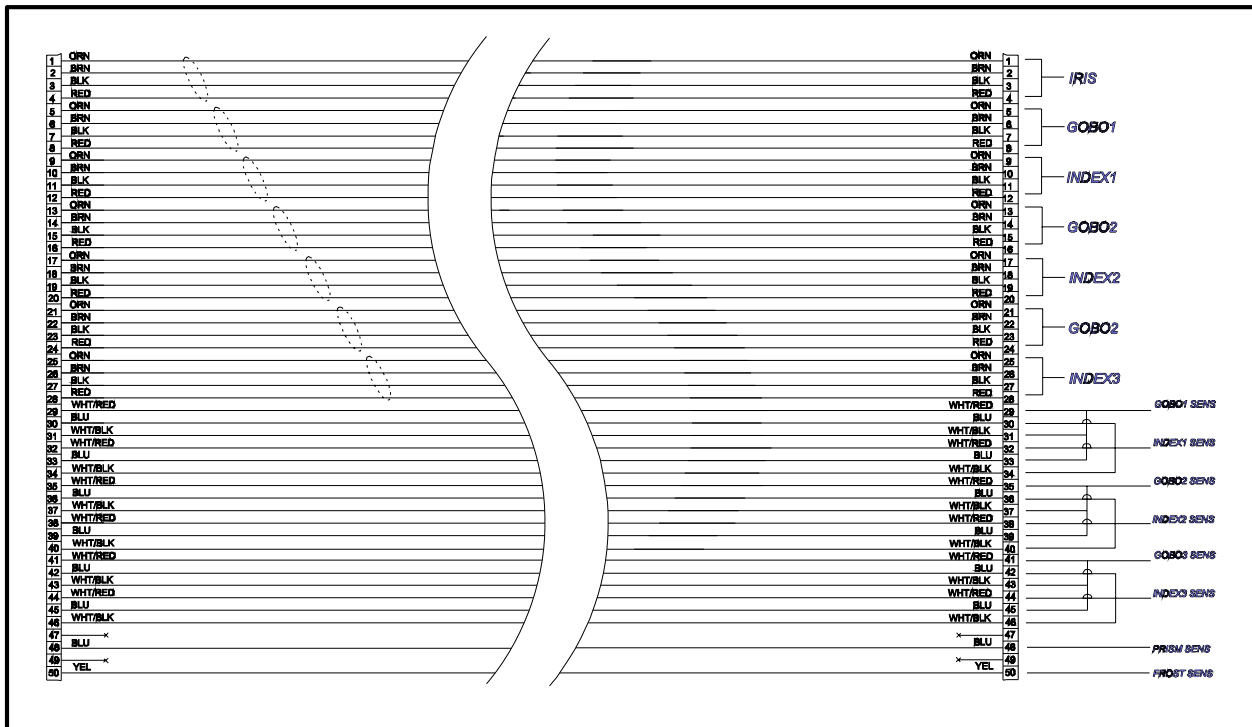
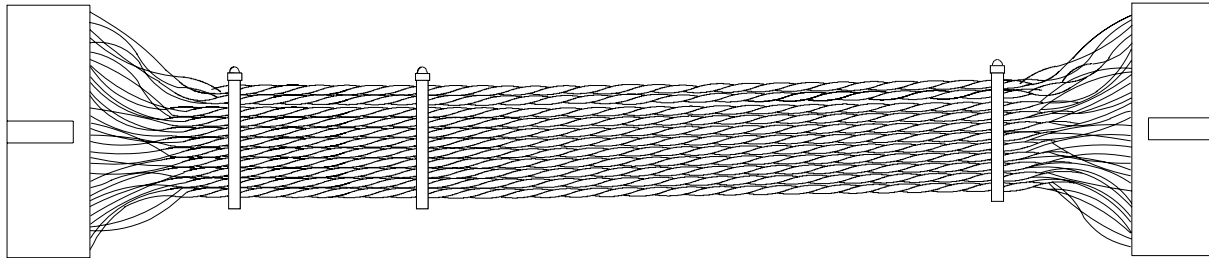


Figure 3-57: Gobo (MCB to Interconnect) Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Interconnect to Gobo Cable Assembly

25.9698.0210 Rev B

Refer to [Figure 3-56](#)

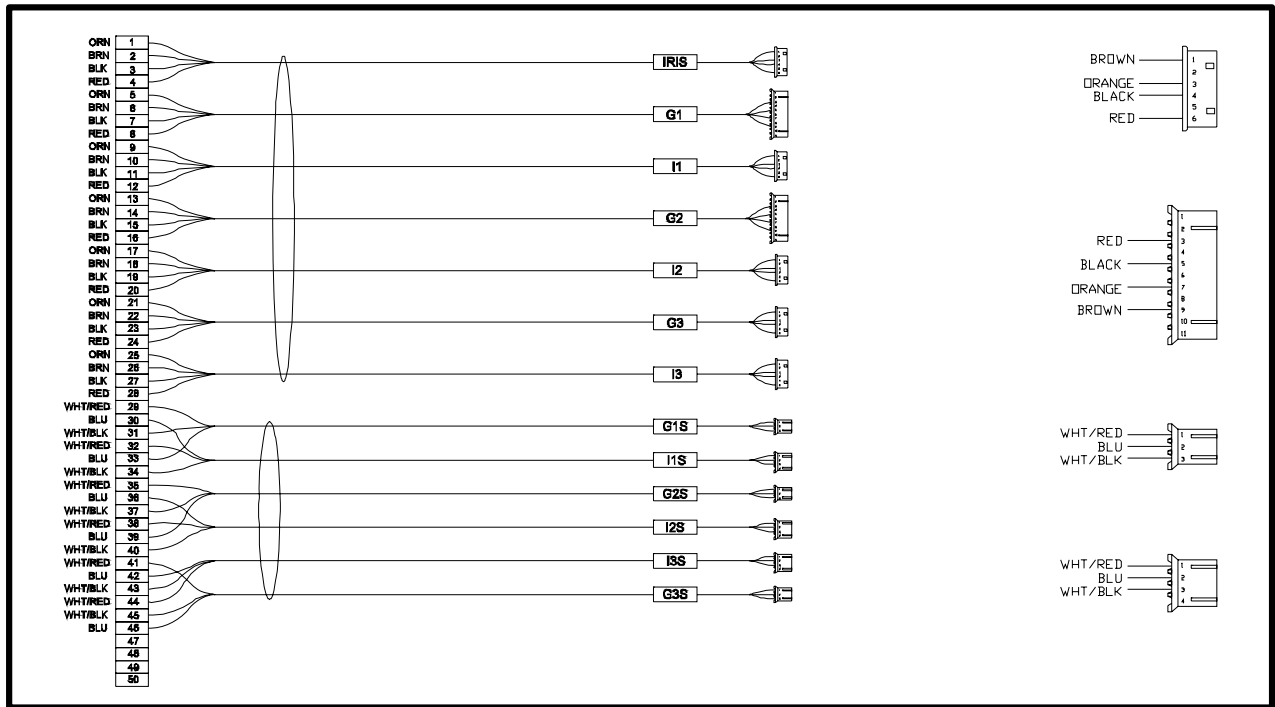
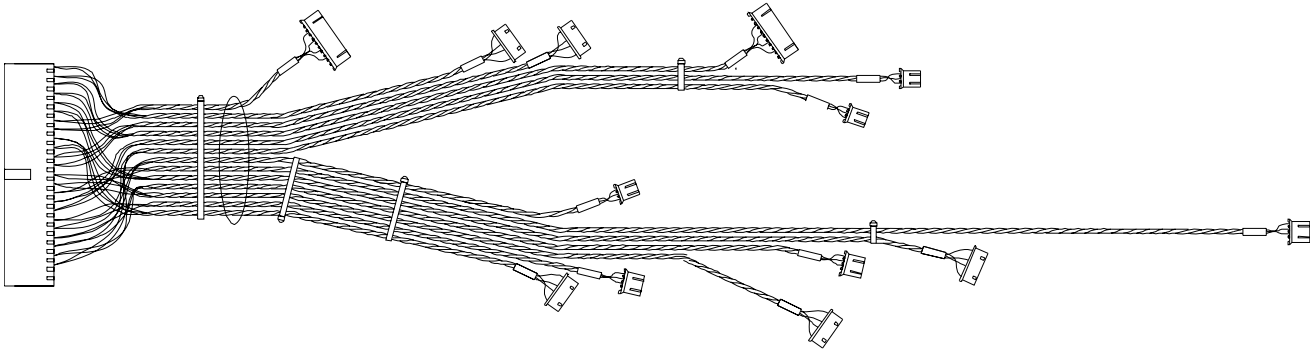


Figure 3-58: Interconnect to Gobo Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Color (MCB to Interconnect) Cable Assembly

25.9698.0409 Rev C

Refer to [Figure 3-59](#)

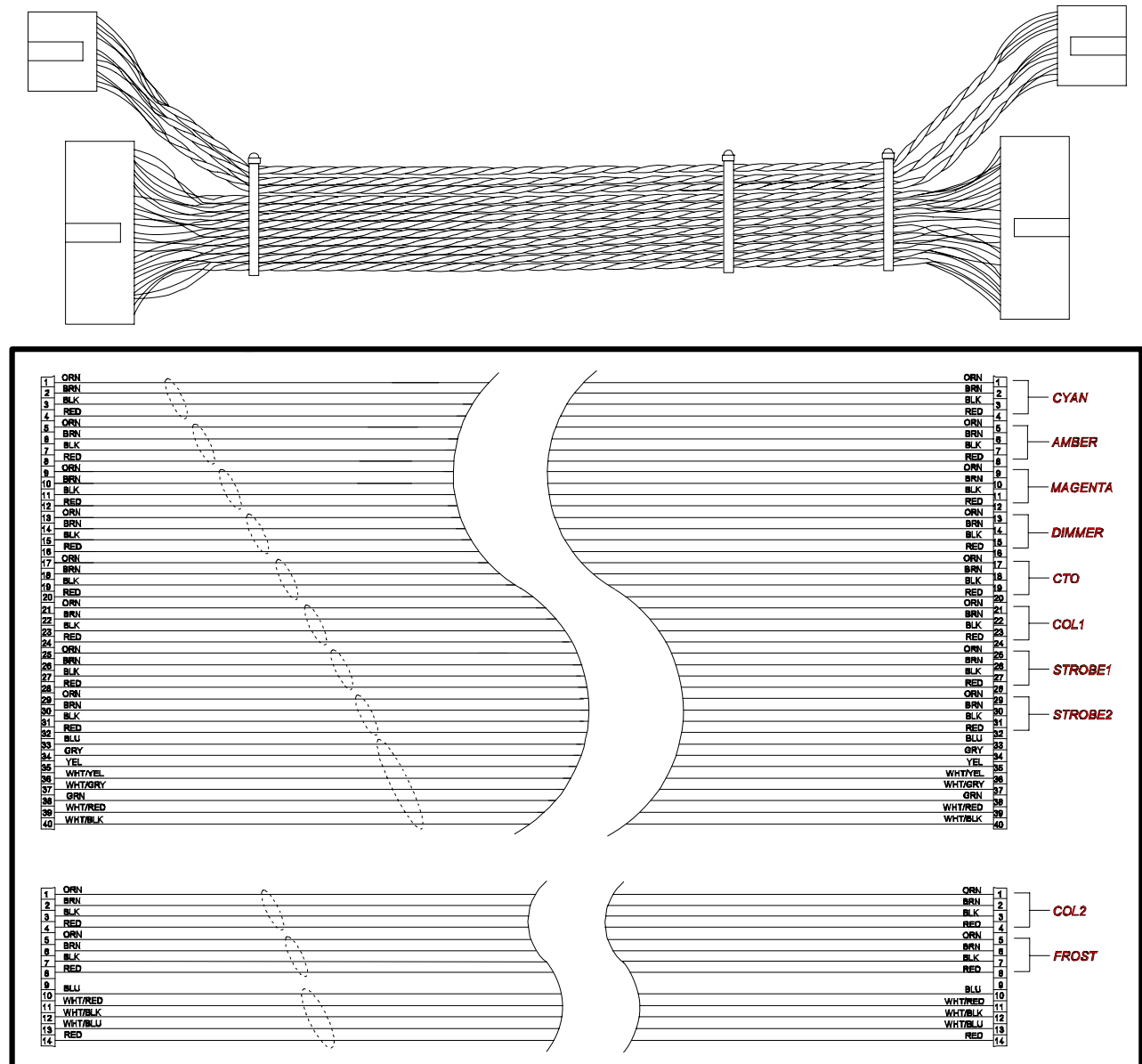


Figure 3-59: Color (MCB to Interconnect) Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Interconnect to Color Cable Assembly

25.9698.0410 Rev B

Refer to [Figure 3-60](#)

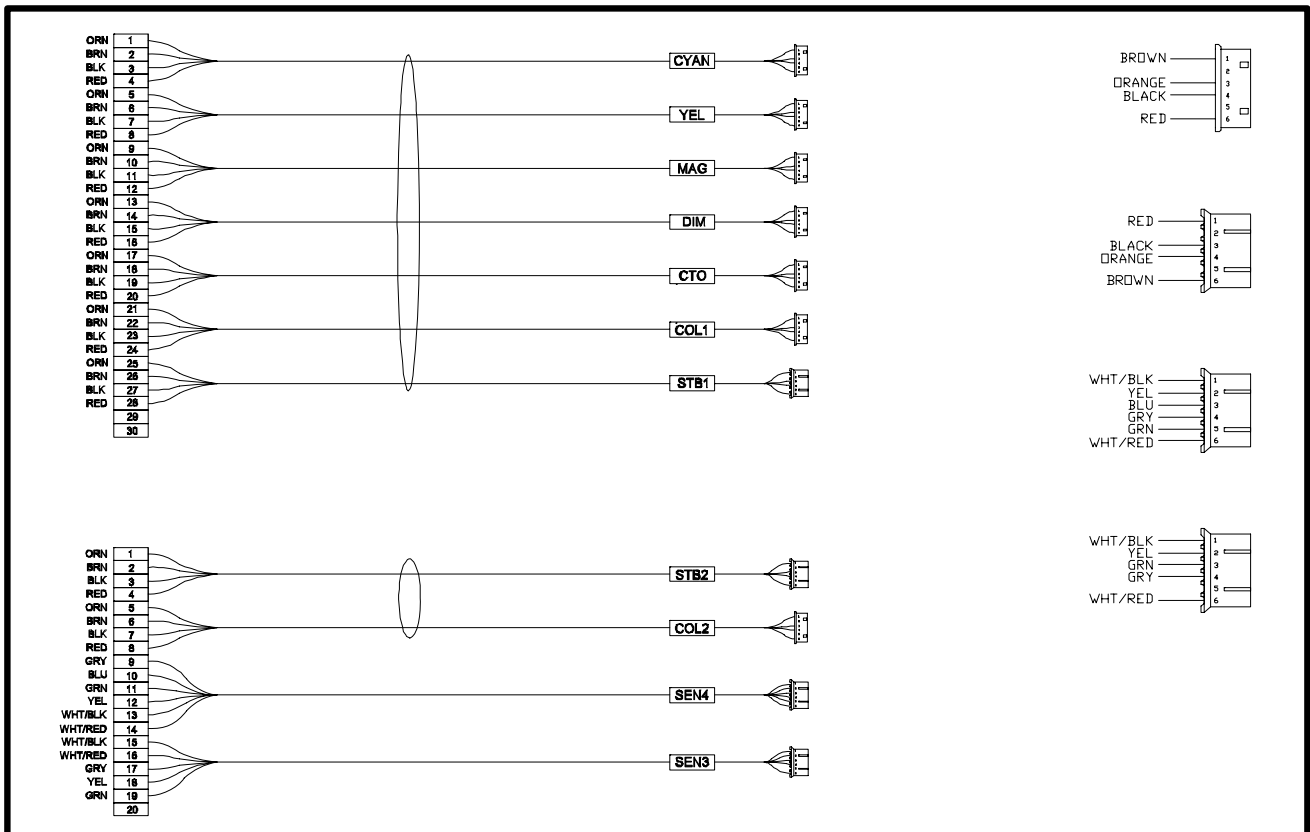
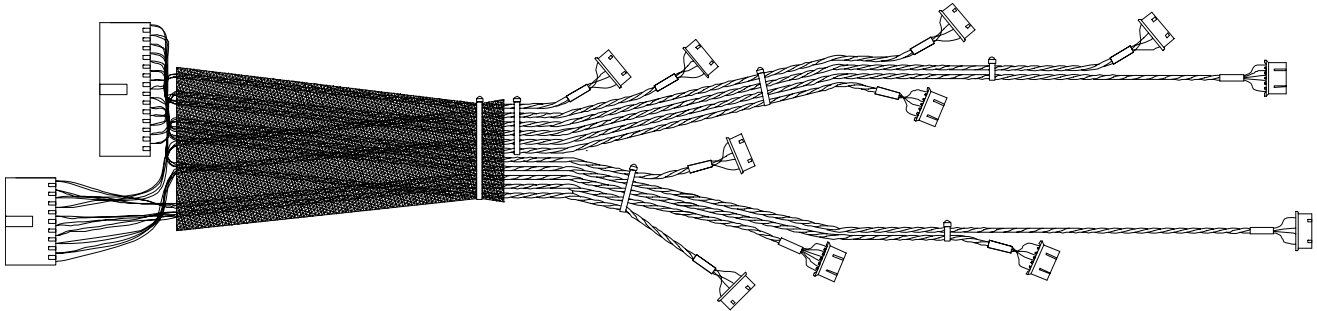


Figure 3-60: Interconnect to Color Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

OT Switch to Backcap Interlok Cable Assembly

25.9698.0601 Rev B

Refer to [Figure 3-61](#)

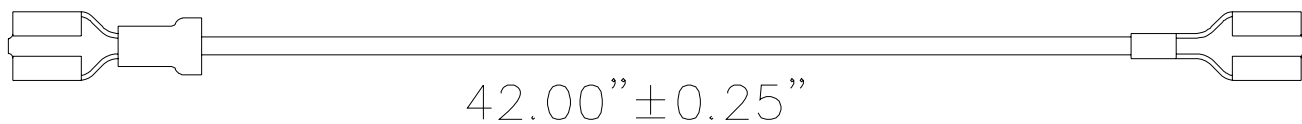


Figure 3-61: OT Switch to Backcap Interlok Cable Assembly

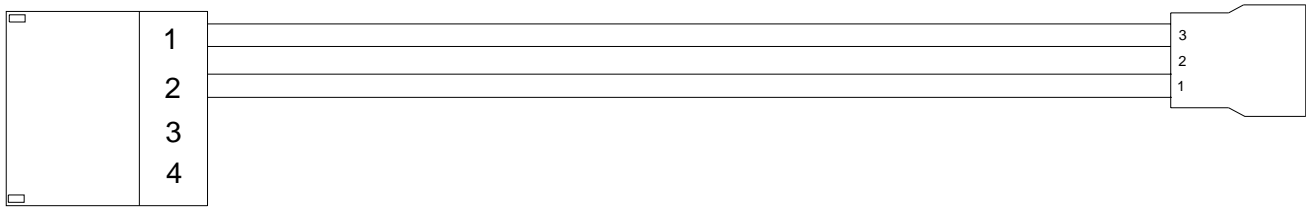


Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Transfer Fan to Interconnect Cable Assembly

25.9698.0622 Rev D

Refer to [Figure 3-62](#)



WIRE CHART				
FROM	CONN ITEM NO.	TO	CONN ITEM NO.	WIRE COLOR
PIN 1	1	PIN 3	2	RED
PIN 2	1	PIN 1	2	BLK
PIN 3	1	-	-	-
PIN 4	1	-	-	-

Figure 3-62: Transfer Fan to Interconnect Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Lamp and Bulkhead Fans Cable Assembly

25.9698.0650 Rev A

Refer to [Figure 3-63](#)

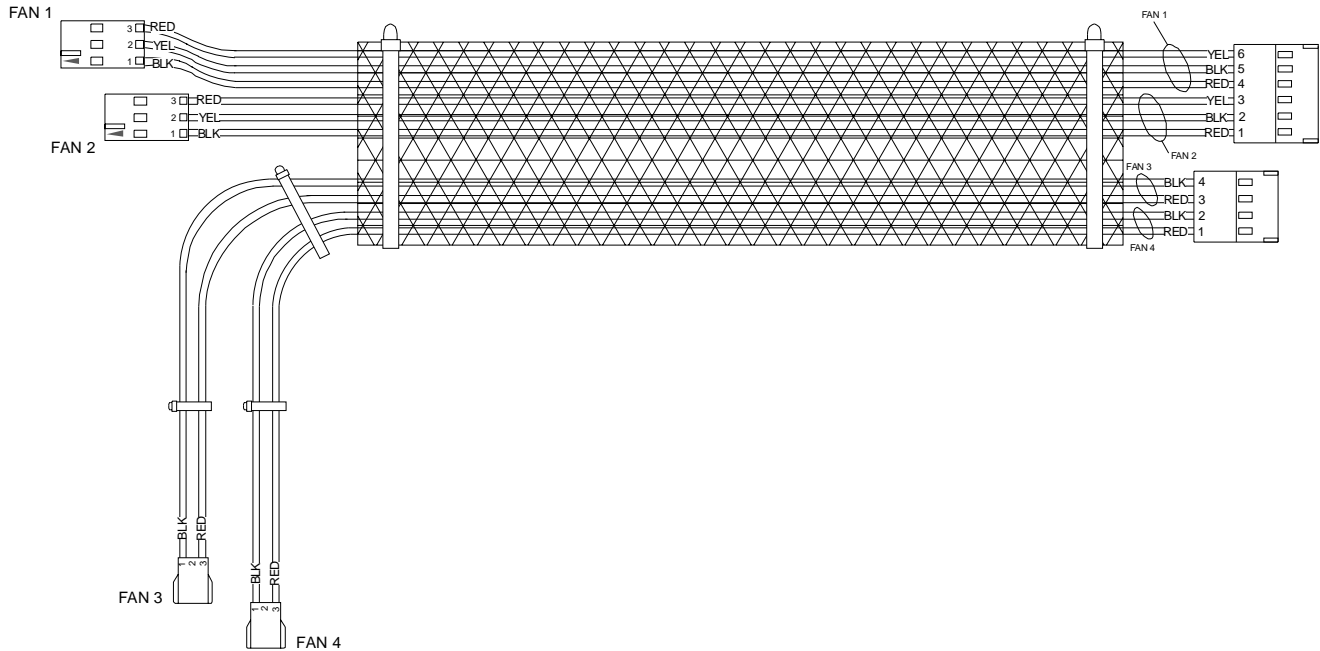


Figure 3-63: Lamp and Bulkhead Fans Cable Assembly

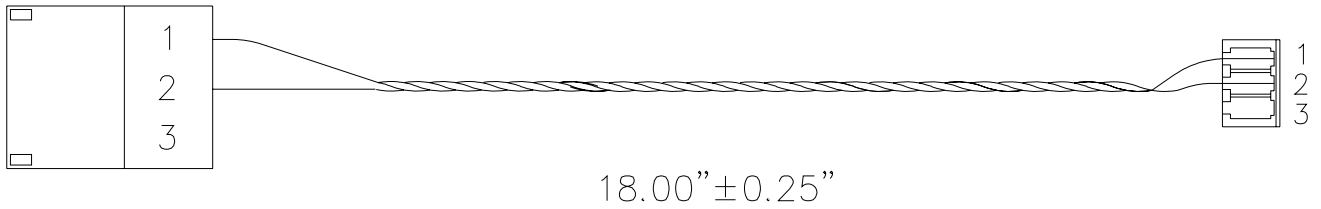


Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Yoke Fan to Volt Reg PCB Cable Assembly

25.9698.0681 Rev B

Refer to [Figure 3-64](#)



WIRE CHART				
FROM	CONN ITEM NO.	TO	CONN ITEM NO.	WIRE COLOR
PIN 1	2	PIN 1	1	RED
PIN 2	2	PIN 2	1	BLK

Figure 3-64: Yoke Fan to Volt Reg PCB Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Pan / Tilt Cable Assembly

25.9698.0801 Rev A

Refer to [Figure 3-65](#)

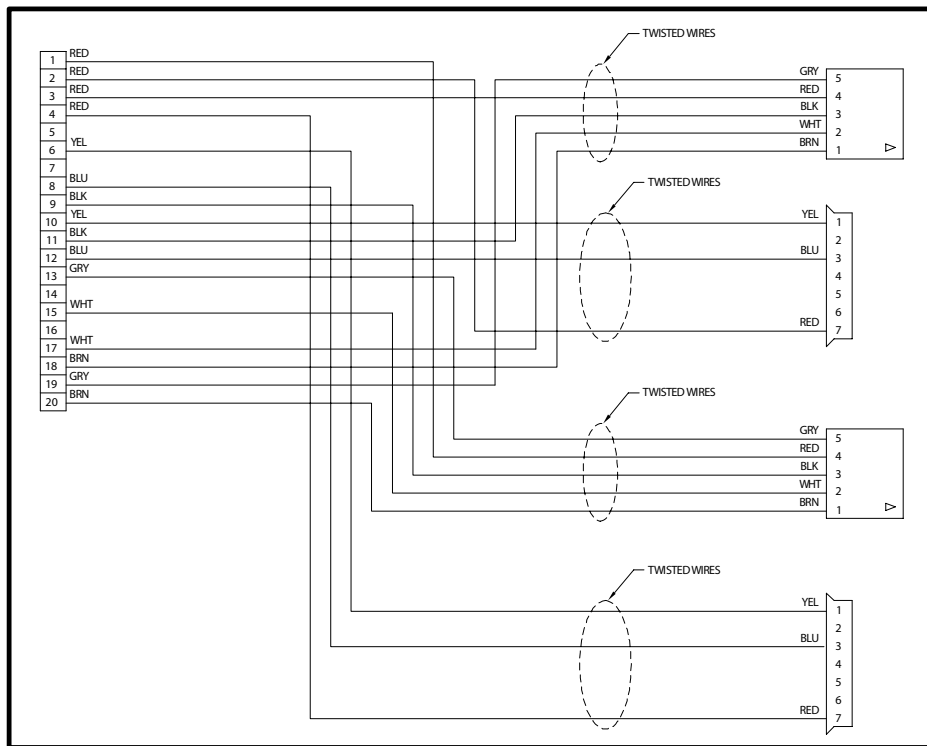
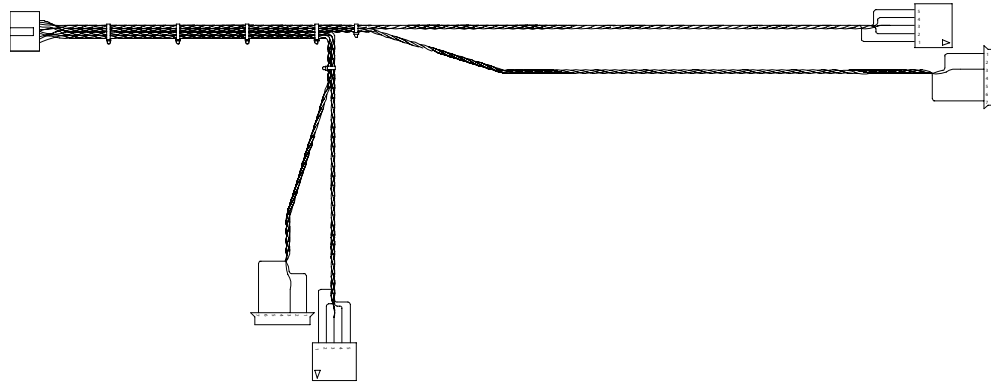


Figure 3-65: Pan / Tilt Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Fan Exhaust Cable Assembly

25.9698.0832 Rev B

Refer to [Figure 3-66](#)

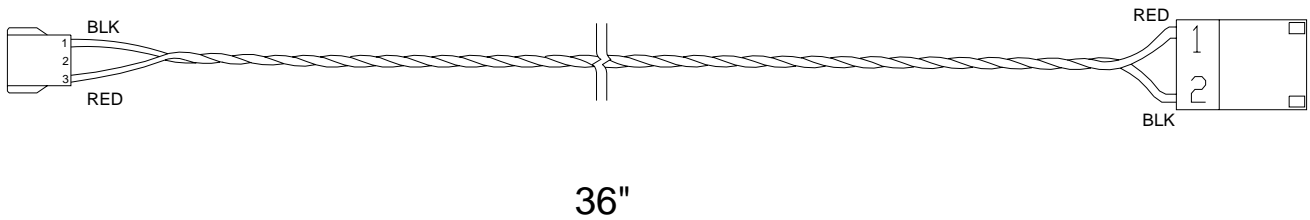


Figure 3-66: Fan Exhaust Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Ballast Power Cable Assembly

25.9698.1003 Rev B

Refer to [Figure 3-67](#)

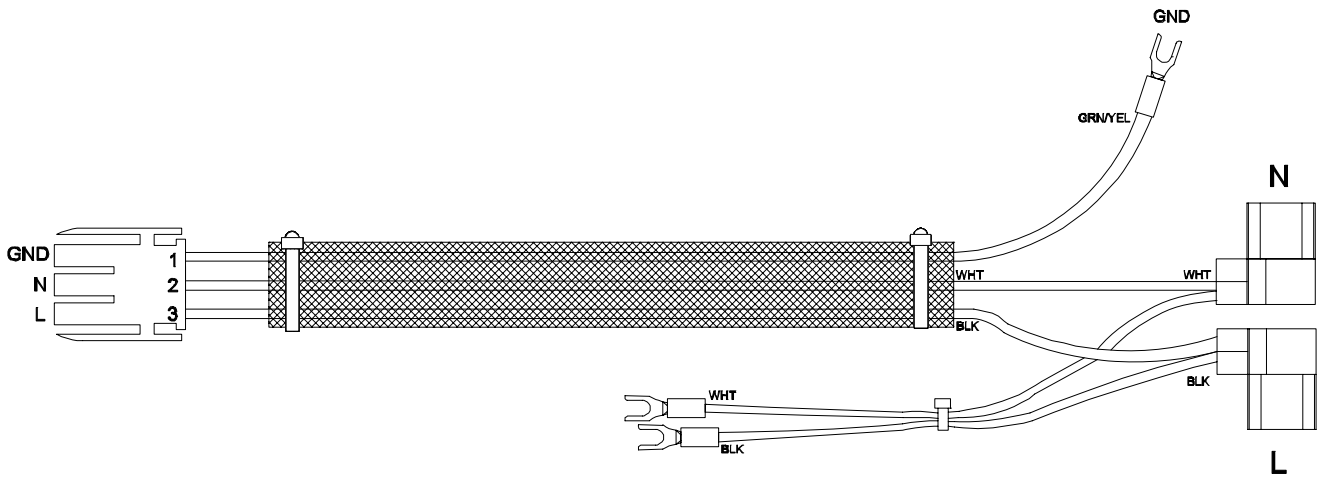


Figure 3-67: Ballast Power Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

36V Supply Cable Assembly

25.9698.1010 Rev B

Refer to [Figure 3-68](#)



Figure 3-68: 36V Supply Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Optics Bulkhead Cable Assembly

25.9698.1110 Rev B

Refer to [Figure 3-69](#)

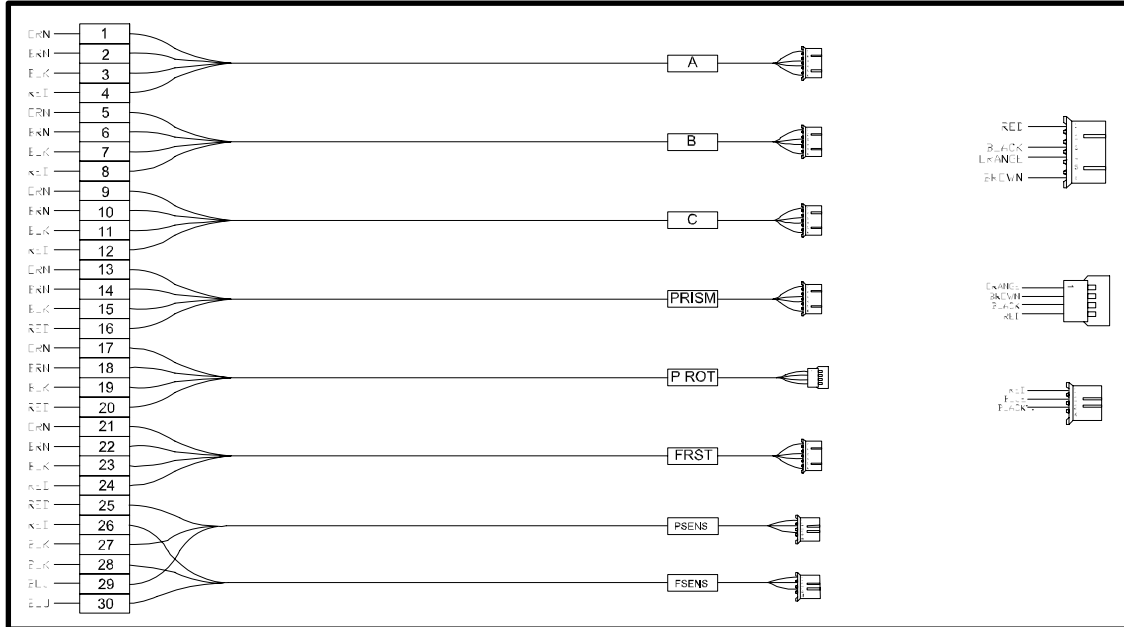
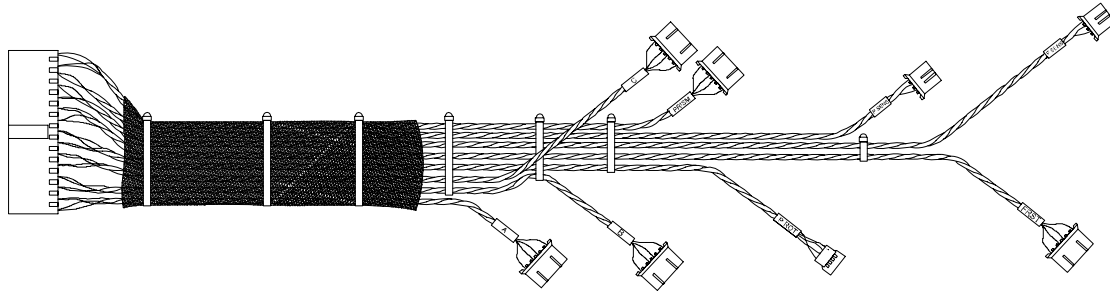


Figure 3-69: Optics Bulkhead Cable Assembly

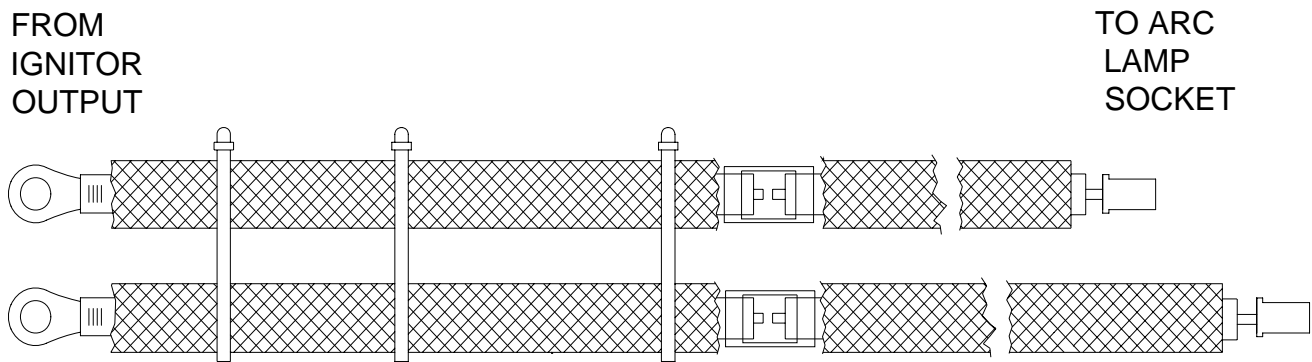


Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

Ignitor to Lamp Socket Cable Assembly

25.9698.1688 Rev A

Refer to [Figure 3-70](#)



Note: Cut away view shown for clarity.

Figure 3-70: Ignitor to Lamp Socket Cable Assembly

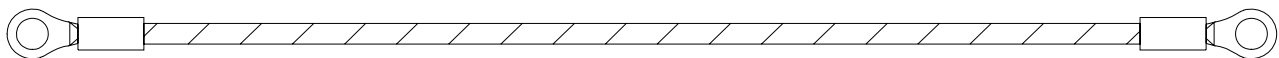


Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

LVS Chassis Ground Cable Assembly

25.9698.2514 Rev A

Refer to [Figure 3-71](#)



13.00"

16AWG, 300V, 105C PVC - Green/Yellow UL1569

Figure 3-71: Chassis Ground Cable Assembly



Note: Cables are only available as complete assemblies. The information contained in this section is for reference only.

APPENDIX A.

Technical Notices & Bulletins

VL3015LT Spot Luminaires

The following tables identify the current technical notices and bulletins associated with the VL3015LT Spot Luminaires. These improvements have been incorporated into this manual (where applicable) and are available on the Vari-Lite web site at www.vari-lite.com. Please note that not all bulletins or notices are applicable to all versions of the fixtures included in this manual. Refer to each bulletin and notice for specific information and application.

Note: Check the Vari-Lite web site periodically for any technical notices or bulletins released after the publishing date of this manual.

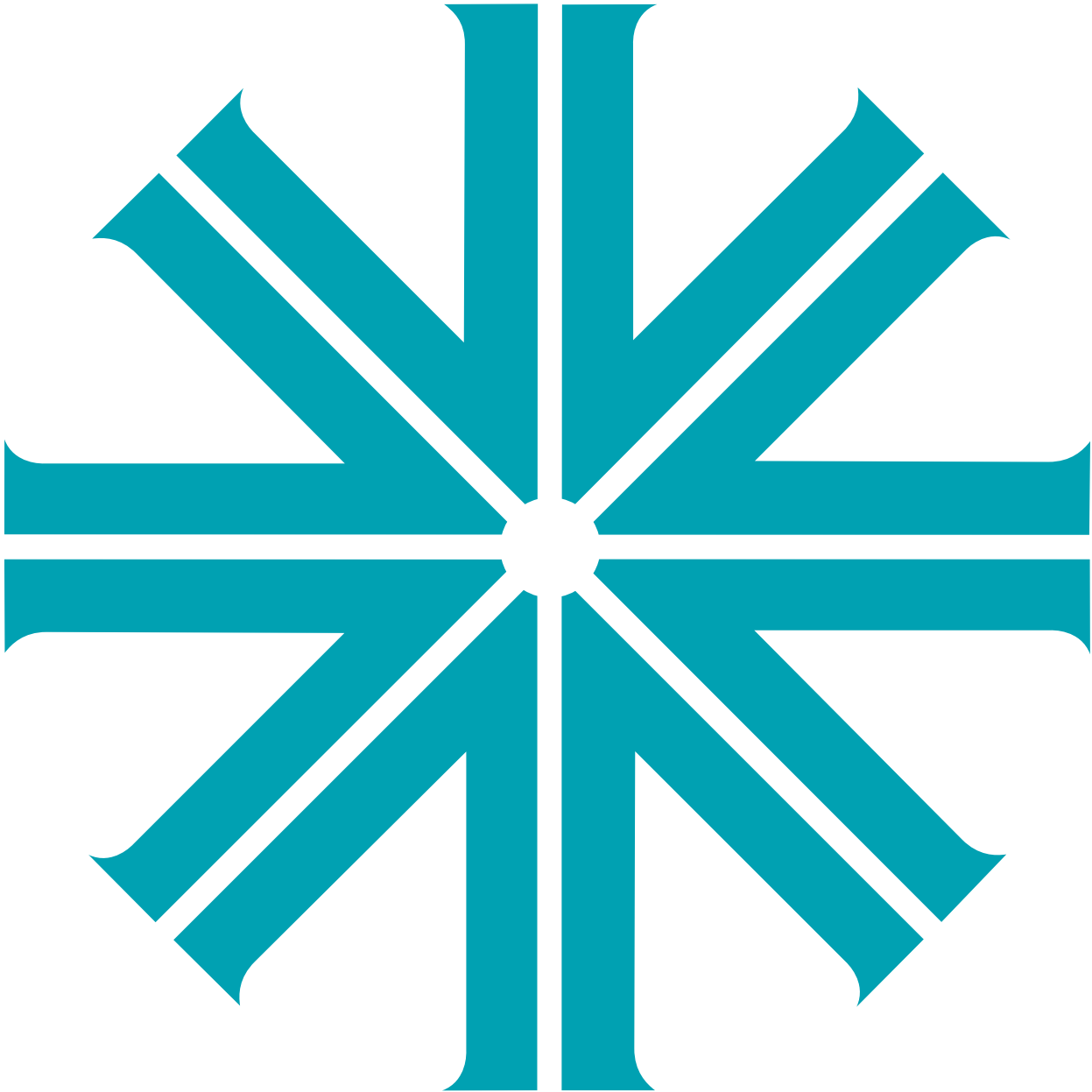
Technical Notices

Technical Notice	Description
TN-229A	Powering Luminaires From Dimmer Circuits - NOT RECOMMENDED
TN-230	Dousing Lamps Before Shutting Off Power
TN-232A	Use of Third Party Parts or Accessories
TN-248K	Specified and Approved Lamps for use in VARI*LITE Luminaires
TN-321	Luminaires Without Power Switches (Using Neutrik Power Connectors)
TN-332	VL3015LT Spot Luminaires - Gobo / Gag Use and Positioning

Technical Bulletins

Technical Bulletin	Description
LSW-076	Software Update 04.19.13 - VL3015LT Spot

Notes



VARI*LITE

Express yourself.

Philips Vari-Lite
10911 Petal Street
Dallas, Texas 75238 USA
1.877.VARI-LITE * Fax 1.214.647.8038
www.vari-lite.com

Date: **04 June 2013** / Manual Part Number: **02.9698.0010 0**

©2013 Philips Vari-Lite, a Philips Group Company. All rights reserved.
Produced in the U.S.A.