

A world map composed of a grid of small grey dots, with a few red dots scattered across the continents.

SOFTWARE VERSION  
**3.03**

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# **BEST BOY<sup>®</sup> HP SPOT LUMINAIRE**

## **SERVICE MANUAL**



AutoPar®, Bad Boy®, Best Boy®, Followspot Controller™, GroundControl™, Mbox®, Mini Node™, Nocturne®, Series 400®, Remote Followspot System™, ReNEW®, Super Node™, UV Bullet™, V476®, V676®, Virtuoso®, and White Light Bullet™, are trademarks of Production Resource Group, LLC, registered in the U.S. and other countries.

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Best Boy® HP Spot Luminaire  
Service Manual

Version as of  
September 1, 2019  
Written by J. Hutchison

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Production Resource Group, LLC  
Dallas Office  
8617 Ambassador Row, Suite 120  
Dallas, Texas 75247  
[www.prg.com](http://www.prg.com)

Best Boy® HP Spot Luminaire Service Manual  
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# FOREWORD

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## Compliance Notice

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

- 1) This device may not cause harmful interference, and
- 2) This device must accept any interference received, including interference that may cause undesired operation.

Conforms to:

UL STD 1573

Certified to:

CAN/CSA STD E598-1

CAN/CSA STD E598-2-17



## 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:



### ATTENTION

This advises you that important or helpful information follows.



### CAUTION

This advises you of a precaution to take. Not taking that precaution can cause damage to the product, injury to yourself and others, or both.



### WARNING!

This advises you of a warning to heed. Not following the warning could cause death or serious injury.



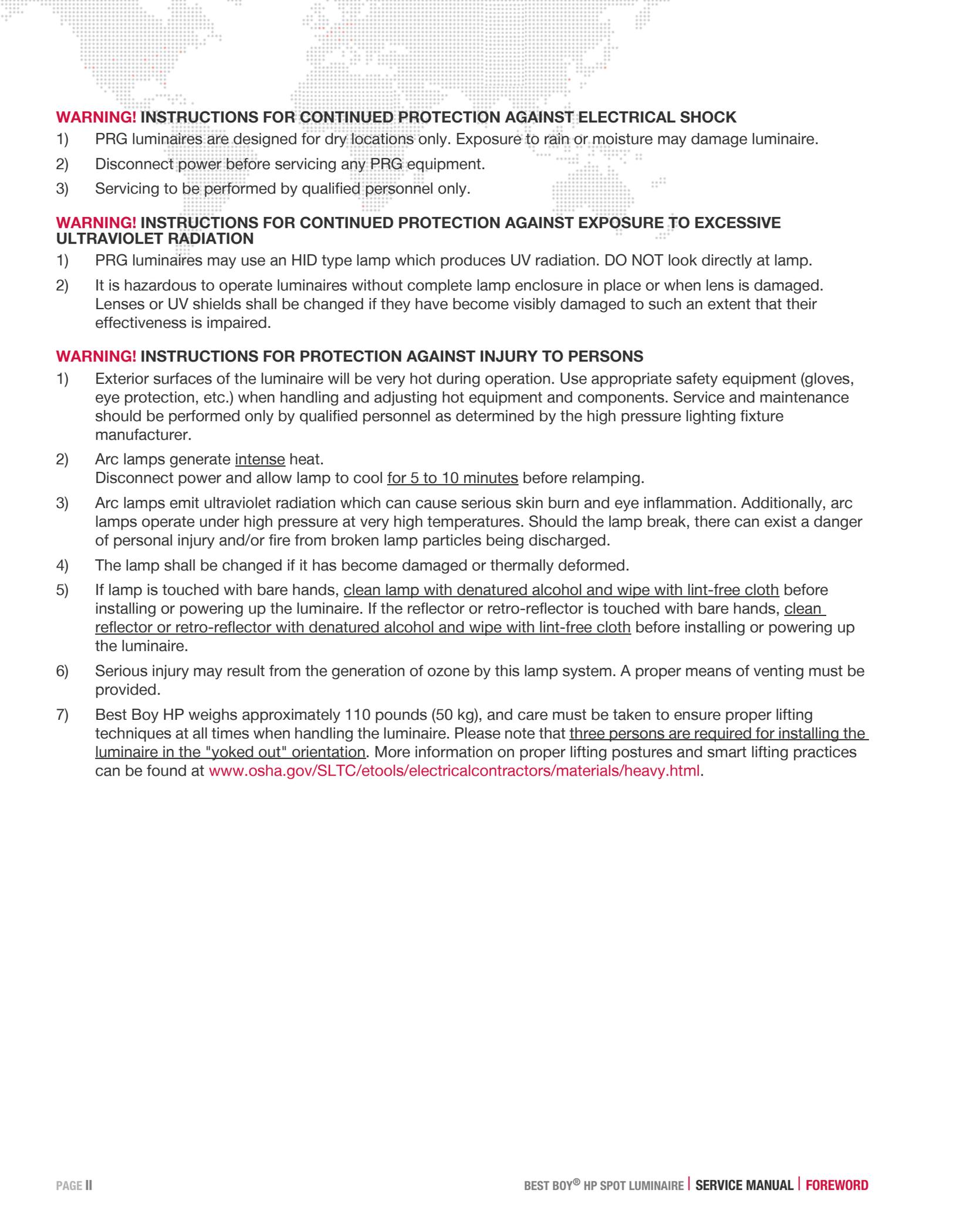
### DANGER!

This warns you of a danger to avoid. Not avoiding the danger will cause death or serious injury.

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) PRG luminaires have been designed for use only with specific lamps. Note lamp type before replacing. Installing another type of lamp may be hazardous.
- 2) PRG luminaires may be mounted on any type of surface as long as mounting instructions are followed. See instructions detailed in this manual.
- 3) Replace fuses with same type and rating only.
- 4) Minimum distance from head to any flammable object is 2m.



**WARNING! INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST ELECTRICAL SHOCK**

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

**WARNING! INSTRUCTIONS FOR CONTINUED PROTECTION AGAINST EXPOSURE TO EXCESSIVE ULTRAVIOLET RADIATION**

- 1) PRG luminaires may use an HID type lamp which produces UV radiation. DO NOT look directly at lamp.
- 2) It is hazardous to operate luminaires without complete lamp enclosure in place or when lens is damaged. Lenses or UV shields shall be changed if they have become visibly damaged to such an extent that their effectiveness is impaired.

**WARNING! INSTRUCTIONS FOR PROTECTION AGAINST INJURY TO PERSONS**

- 1) Exterior surfaces of the luminaire will be very hot during operation. Use appropriate safety equipment (gloves, eye protection, etc.) when handling and adjusting hot equipment and components. Service and maintenance should be performed only by qualified personnel as determined by the high pressure lighting fixture manufacturer.
- 2) Arc lamps generate intense heat. Disconnect power and allow lamp to cool for 5 to 10 minutes before relamping.
- 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) The lamp shall be changed if it has become damaged or thermally deformed.
- 5) 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. If the reflector or retro-reflector is touched with bare hands, clean reflector or retro-reflector with denatured alcohol and wipe with lint-free cloth before installing or powering up the luminaire.
- 6) Serious injury may result from the generation of ozone by this lamp system. A proper means of venting must be provided.
- 7) Best Boy HP weighs approximately 110 pounds (50 kg), and care must be taken to ensure proper lifting techniques at all times when handling the luminaire. Please note that three persons are required for installing the luminaire in the "yoked out" orientation. More information on proper lifting postures and smart lifting practices can be found at [www.osha.gov/SLTC/etools/electricalcontractors/materials/heavy.html](http://www.osha.gov/SLTC/etools/electricalcontractors/materials/heavy.html).

## 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: RISQUE D'EXPLOSION.

- 1) Le service et le maintenance ne devront être assurés que par des personnes qualifiées comme précisé par le fabricant des lampes à haute pression.
- 2) Des vêtements de protection et les procédures précisées dans le manuel du fabricant doit être fournies.

### AVERTISSEMENT: RÉGLAGE DES LAMPES

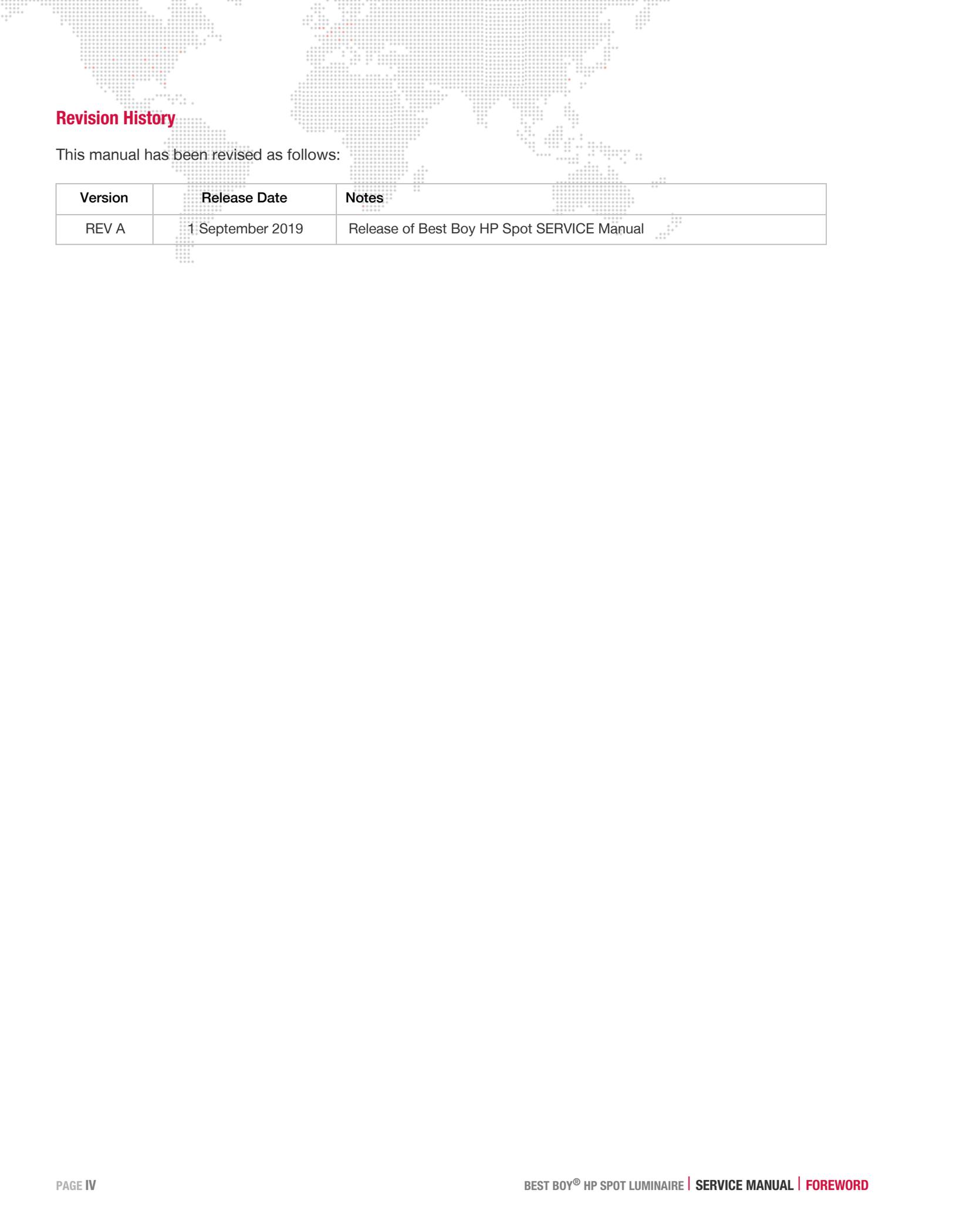
- 1) Chaleur intense. Débrancher le matériel et laisser refroidir pendant 5 minutes avant de rallumer.
- 2) Risque d'incendie. N'utilisez que des Philips MSR Gold™ FastFit Lamp.

### AVERTISSEMENT: DIRECTIVES POUR SE PROTÉGER CONTRE UNE EXPOSITION EXCESSIVE AUX RAYONS UV

- 1) Risque d'explosion en cas de radiation ultraviolet imprantes.
- 2) Ne pas intervenir en l'absence de confinement de la lampe en place ou quand la lentille est abîmée.

### AVERTISSEMENT: DIRECTIVES POUR SE PROTÉGER CONTRE LES ACCIDENTS POUVANT ENTRAÎNER DES BLESSURES

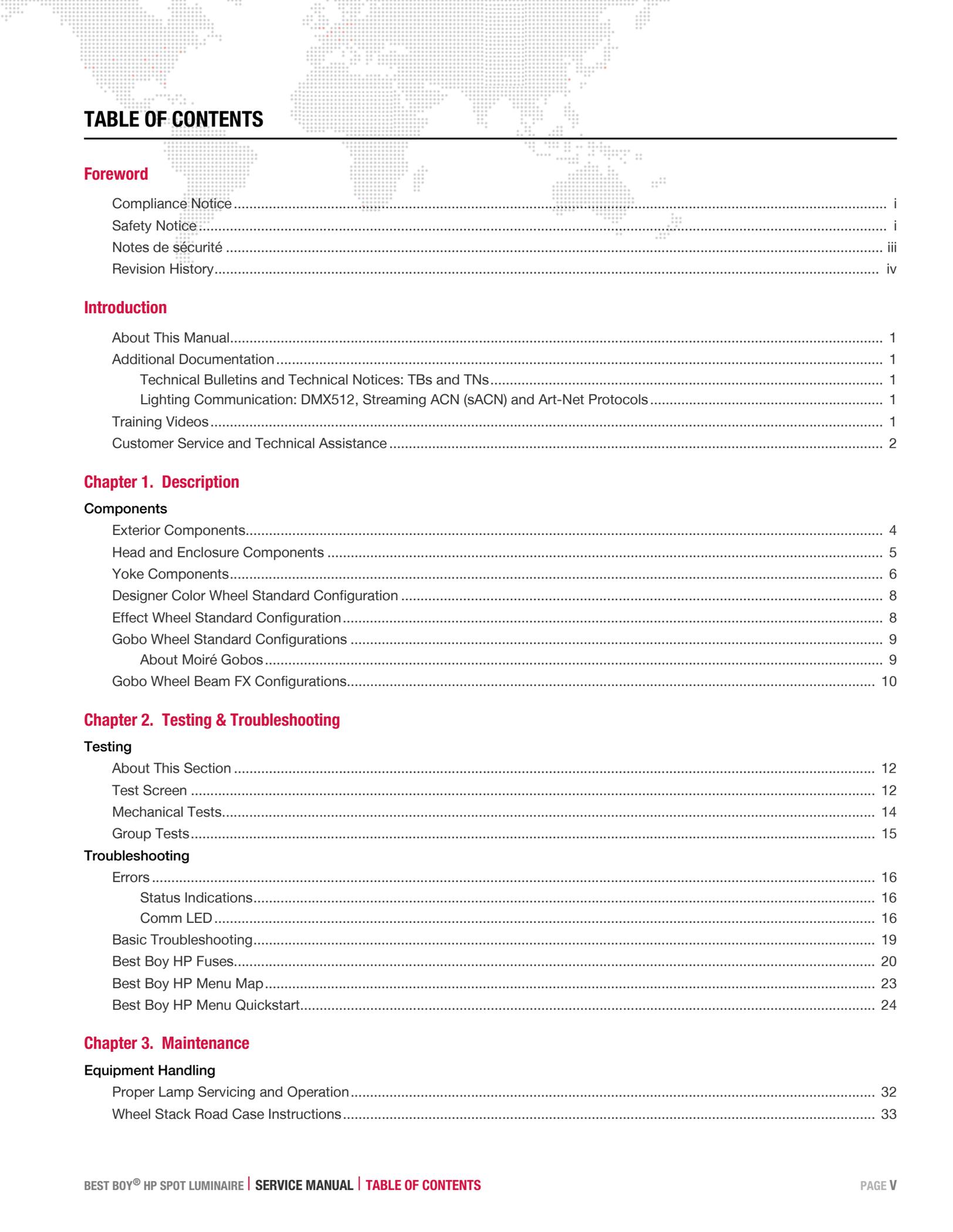
- 1) Chaleur intense. Éviter tout contact avec des personnes ou des tissus. Attention, de graves blessures peuvent résulter de production d'ozone par cette lampe. Un système de ventilation adapté doit être fournies
- 2) La température de surface = 300.c  
La température de l'ambiance = 50.c
- 3) Ne convient pas pour un usage résidentiel.
- 4) Utilisable seulement dans les locaux secs.



## Revision History

This manual has been revised as follows:

Version	Release Date	Notes
REV A	1 September 2019	Release of Best Boy HP Spot SERVICE Manual



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# INTRODUCTION

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## About This Manual

This manual provides testing, troubleshooting, maintenance procedures, and full illustrated parts breakdowns for the following equipment:

- + Best Boy® HP Spot Luminaire

This manual is intended for use by authorized shop and field personnel only.



### **WARNING!**

It is important to read ALL of the accompanying safety instructions contained herein to avoid damage to the product, and potential injury or death to yourself and others.

## Additional Documentation

For installation and operation instructions, refer to the following PRG manual:

- + Best Boy® HP Spot Luminaire User Manual (02.9817.0001)

## Technical Bulletins and Technical Notices: TBs and TNs

Technical updates regarding this equipment, in the form of Technical Bulletins and Notices, are issued by the PRG Dallas office from time to time as we upgrade and improve the fleet. These bulletins and notices are not found in any other documentation, and will include critical and required information on updates and retrofits to equipment.

## Lighting Communication: DMX512, Streaming ACN (sACN) and Art-Net Protocols

For more information about DMX512 and sACN protocols, refer to the following documents available from the American National Standards Institute (ANSI) at [www.ansi.org](http://www.ansi.org):

- + [ANSI E1.11 - 2008 \(R2013\)](#)  
Entertainment Technology - USITT DMX512-A, Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories
- + [ANSI E1.31 - 2009](#)  
Entertainment Technology – Lightweight streaming protocol for transport of DMX512 using ACN
- + [ANSI E1.20 - 2010](#)  
Entertainment Technology-RDM-Remote Device Management over USITT DMX512 Networks

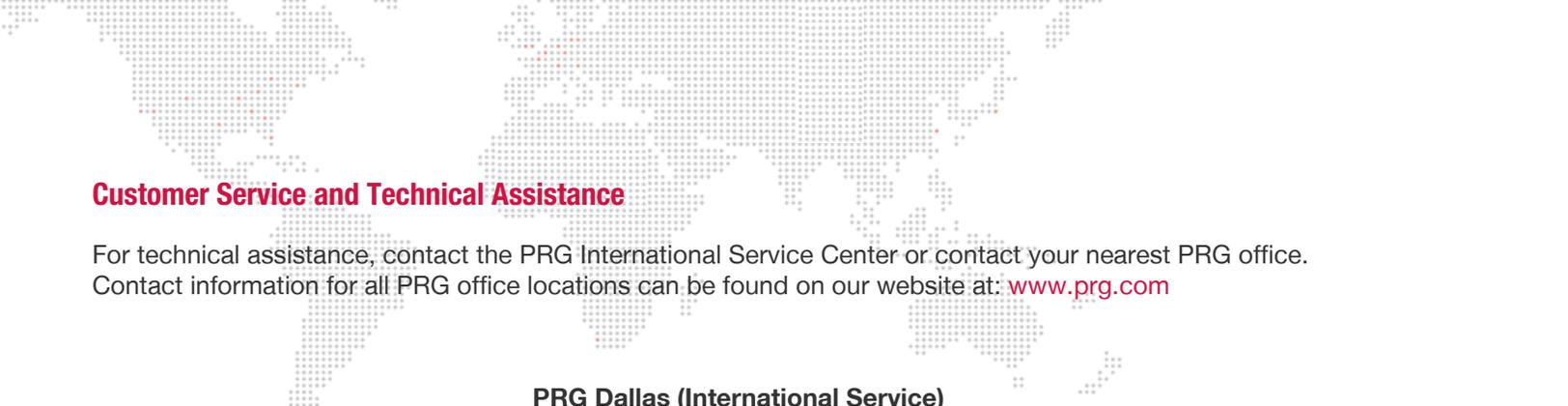
The above documents are also available for free in electronic format at <http://tsp.esta.org/tsp/about/index.html>

For more information about Art-Net, refer to the following document available from Artistic License Engineering at [www.artisticlicence.com](http://www.artisticlicence.com).

## Training Videos

Best Boy Training Videos are available on the PRG website. For a list of videos, refer to the following webpage:

- + [https://www.prg.com/news\\_media/videos#SearchTerm=Best+Boy](https://www.prg.com/news_media/videos#SearchTerm=Best+Boy)



## Customer Service and Technical Assistance

For technical assistance, contact the PRG International Service Center or contact your nearest PRG office. Contact information for all PRG office locations can be found on our website at: [www.prg.com](http://www.prg.com)

### PRG Dallas (International Service)

Address	8617 Ambassador Row, Suite 120 Dallas, Texas 75247 USA
Phone	214-630-1963
Fax	214-630-5867
Service Fax	214-638-2125
Service Email	<a href="mailto:orders@prg.com">orders@prg.com</a>
<b>BEST BOY</b> Direct Support	<a href="mailto:bestboysupport@prg.com">bestboysupport@prg.com</a>

For additional resources and documentation, please visit our website, [www.prg.com](http://www.prg.com)



**1.**

## **DESCRIPTION**

This chapter contains an overview of Best Boy® HP spot luminaire components.

+ **COMPONENTS**

# COMPONENTS

## Exterior Components

The following illustration shows the exterior Best Boy HP components and controls.

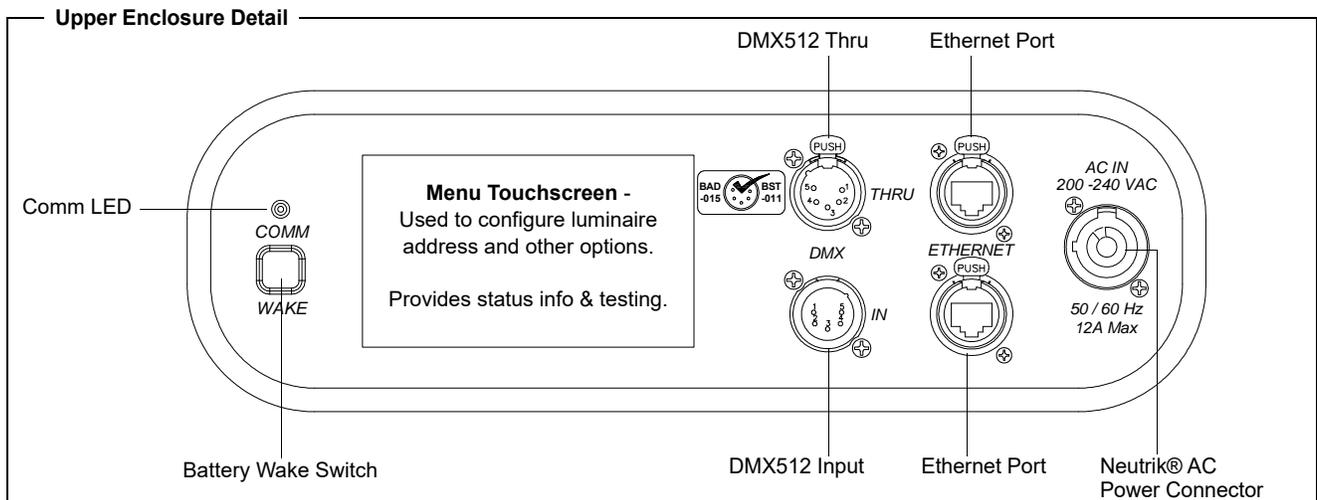
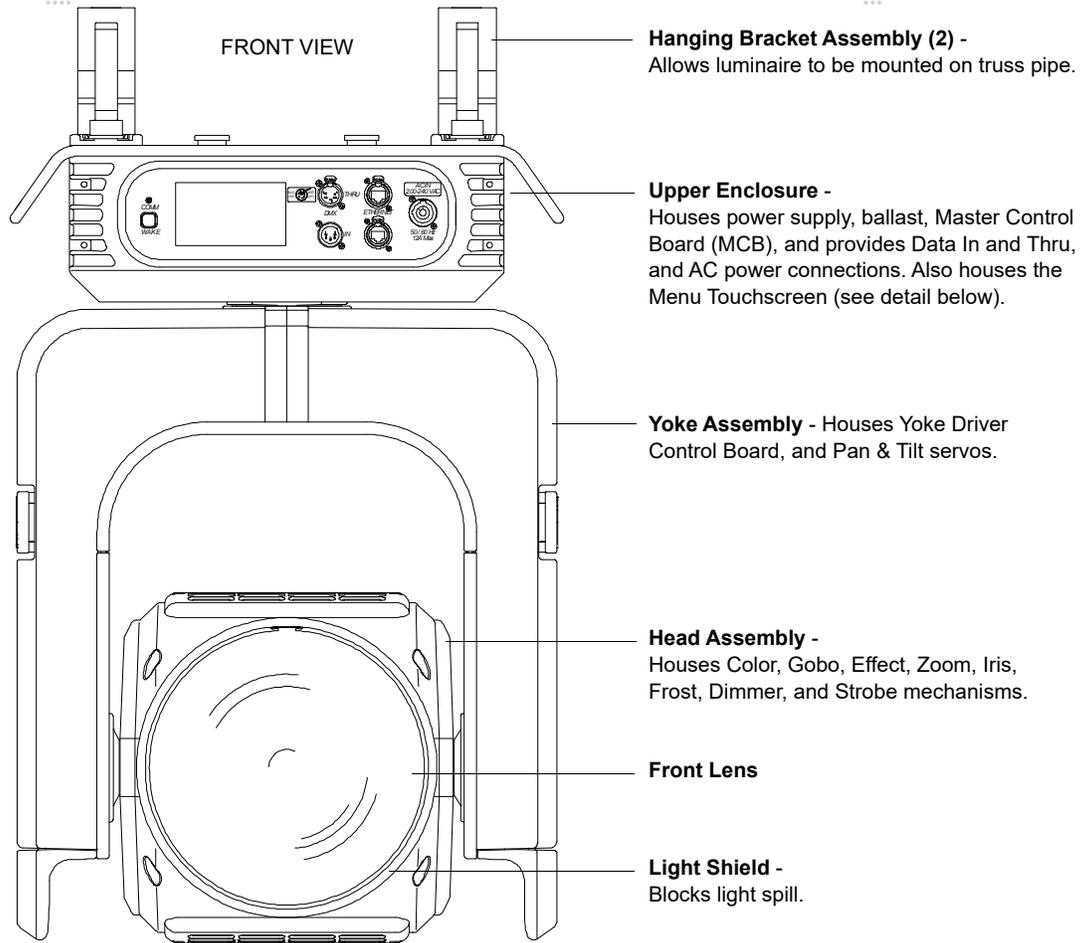


Figure 1-1: Exterior Components

## Head and Enclosure Components

The following illustration shows the major sub-assemblies located in the Best Boy HP Head and Enclosure.

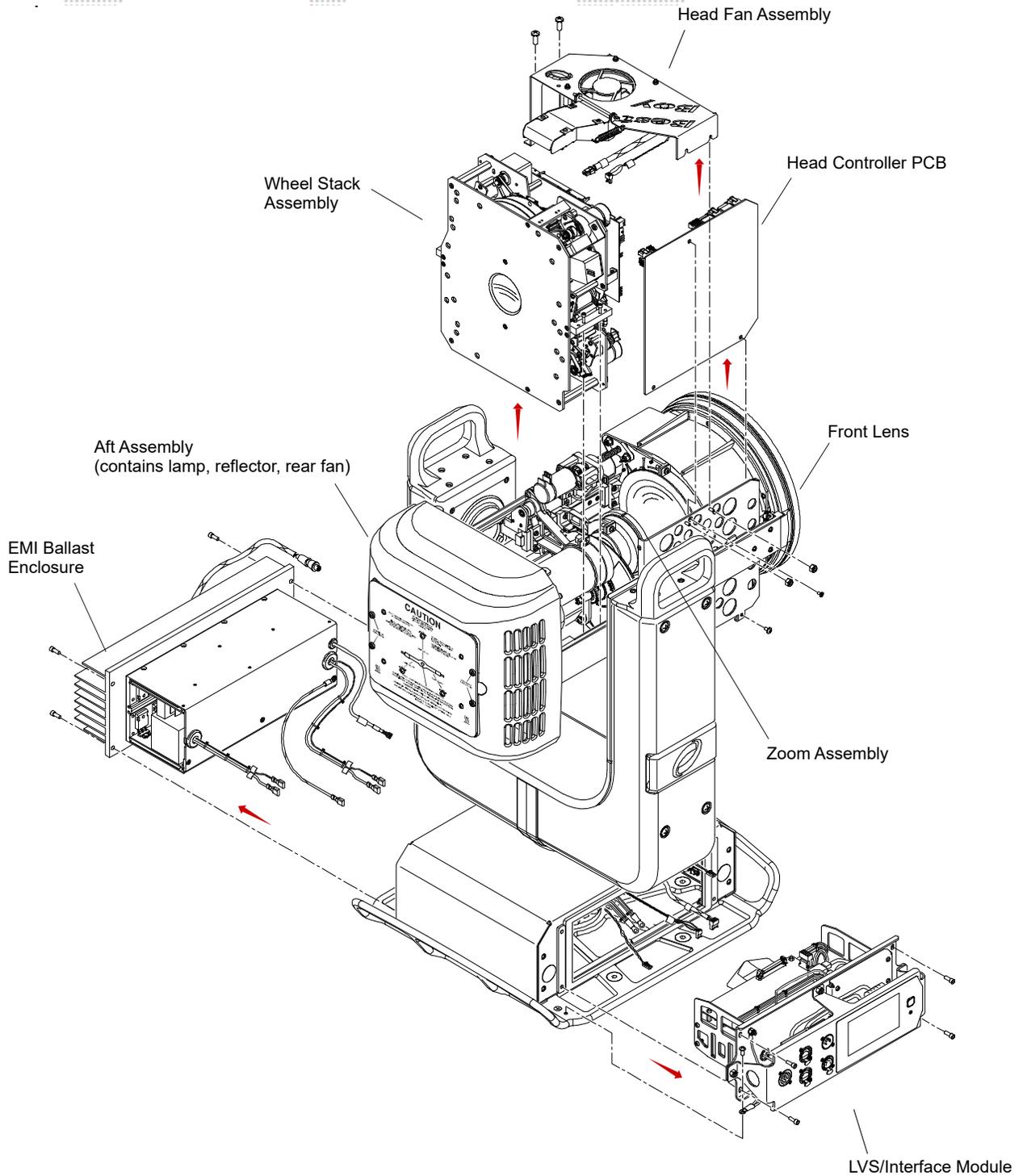


Figure 1-2: Head and Enclosure Components

## Yoke Components

### Tilt-Side Yoke

The following illustration shows the major sub-assemblies located in the Best Boy HP Tilt-Side Yoke Leg.

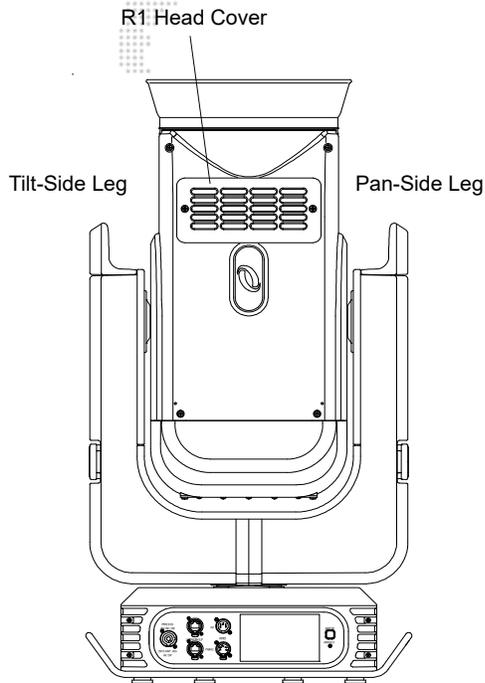


Figure 1-3: Yoke Leg Identification

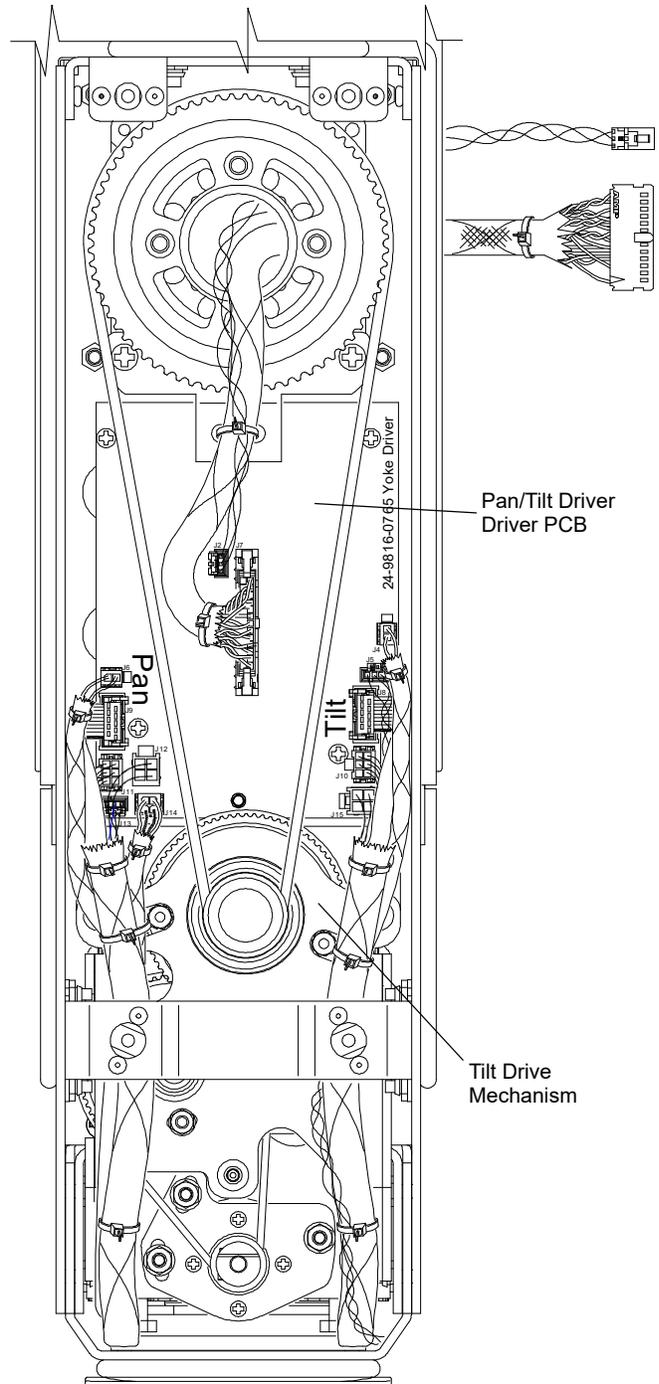


Figure 1-4: Tilt-Side Yoke Leg

## Pan-Side Yoke Leg

The following illustration shows the major sub-assemblies located in the Best Boy HP Pan-Side Yoke Leg.

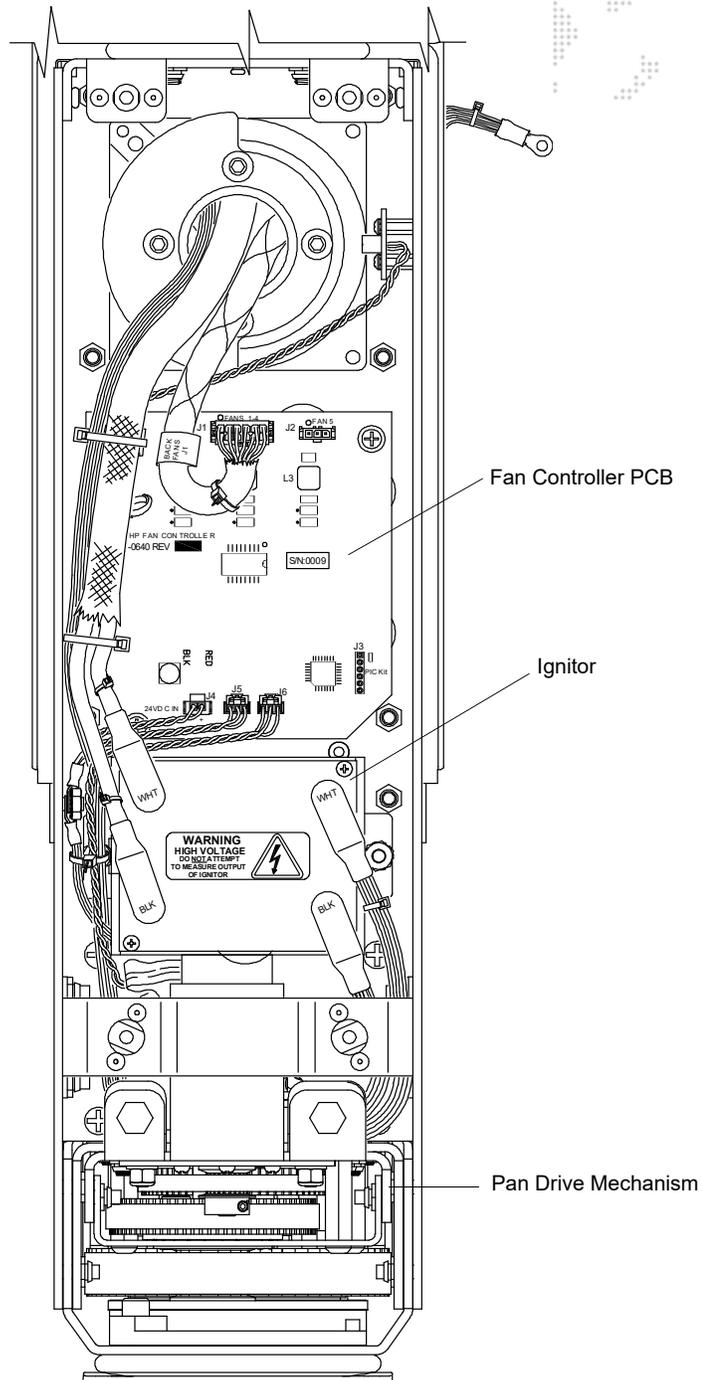


Figure 1-5: Pan-Side Yoke Leg

## Designer Color Wheel Standard Configuration

The following drawing shows the standard Designer Color Wheel configuration.

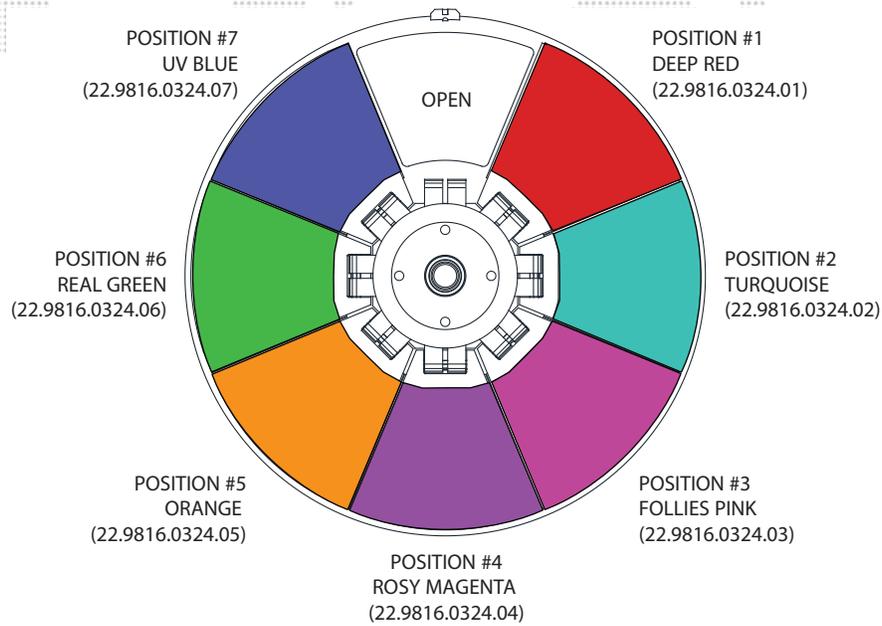


Figure 1-6: Designer Color Wheel Standard Configuration

## Effect Wheel Standard Configuration

The following drawing shows the standard Effect Wheel configuration.

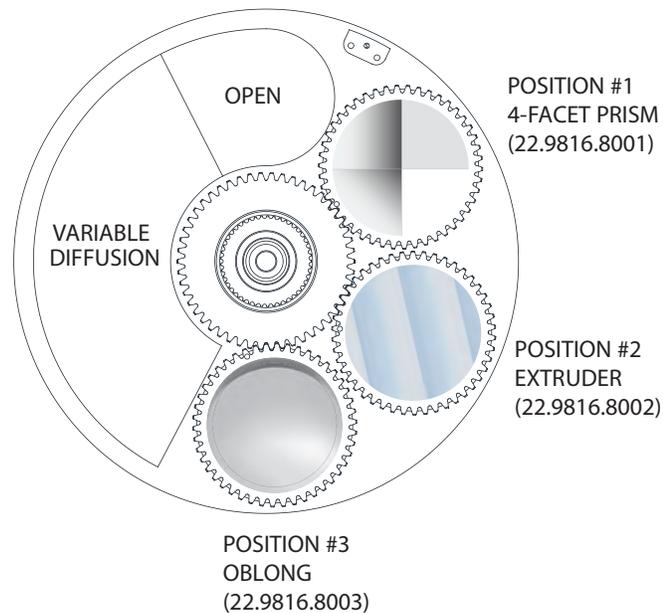


Figure 1-7: Effect Wheel Standard Configuration

## Gobo Wheel Standard Configurations

The following drawings show the standard Gobo Wheel configurations.

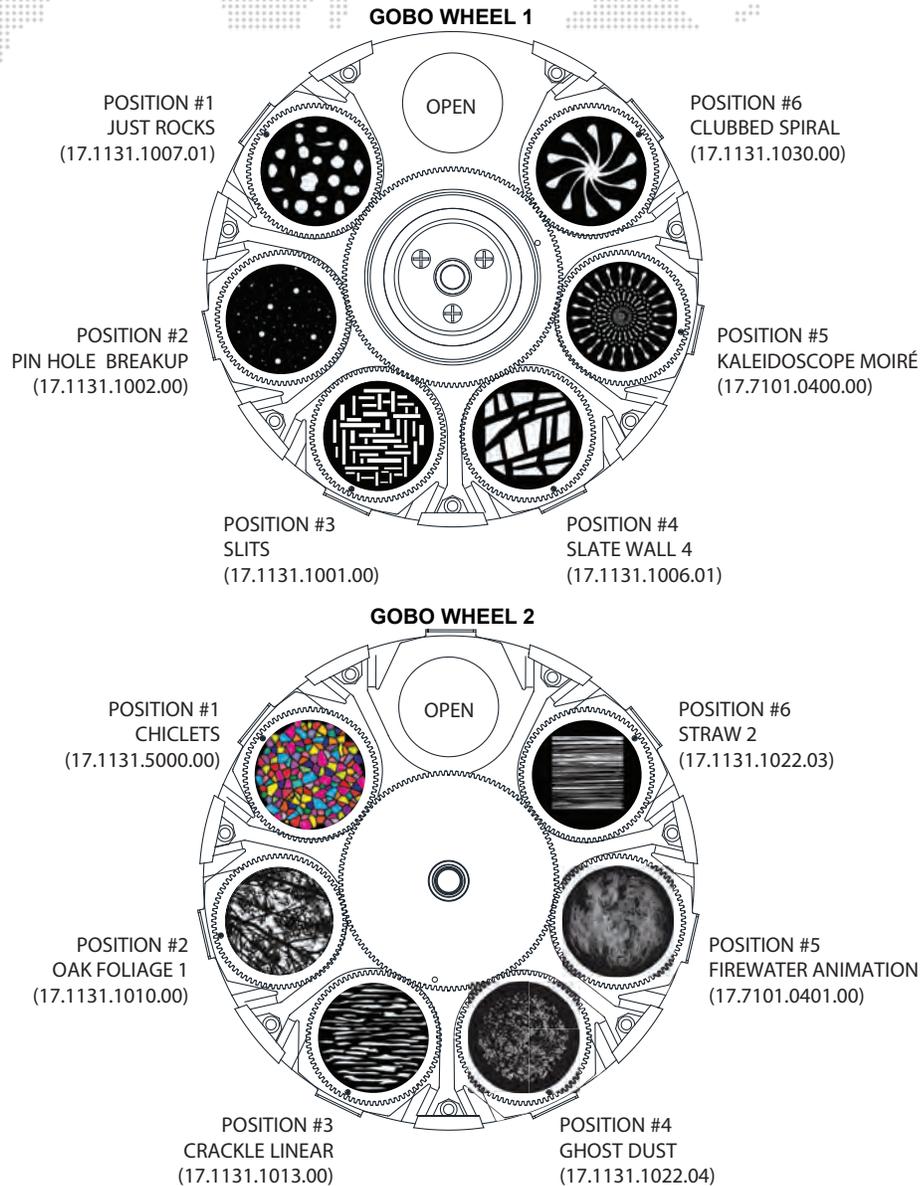


Figure 1-8: Gobo Wheel Standard Configurations

### About Moiré Gobos

Moiré gobos contain two pieces of glass: one that is fixed and another that rotates. Since the two pieces of glass are very close together, it creates an interesting interference effect (which is referred to as the "moiré"). Due to this construction they do not contain sensors, and therefore cannot be calibrated to a certain orientation at startup as with standard gobos.



#### CAUTION

When you add or remove a Moiré gobo, it is critical to change the menu settings. Failure to do this will cause the wheel not to calibrate, and likely damage the fixture.

## Gobo Wheel Beam FX Configurations

The Best Boy Beam FX luminaire features a different set of gobos to achieve both hard-edged and soft-edged aerial effects. The following drawings show the Beam FX configurations.



### ATTENTION

Make sure that you specify that you want to use Beam FX gobos in your Best Boy HP. They are not a standard configuration item, and will need to be installed.

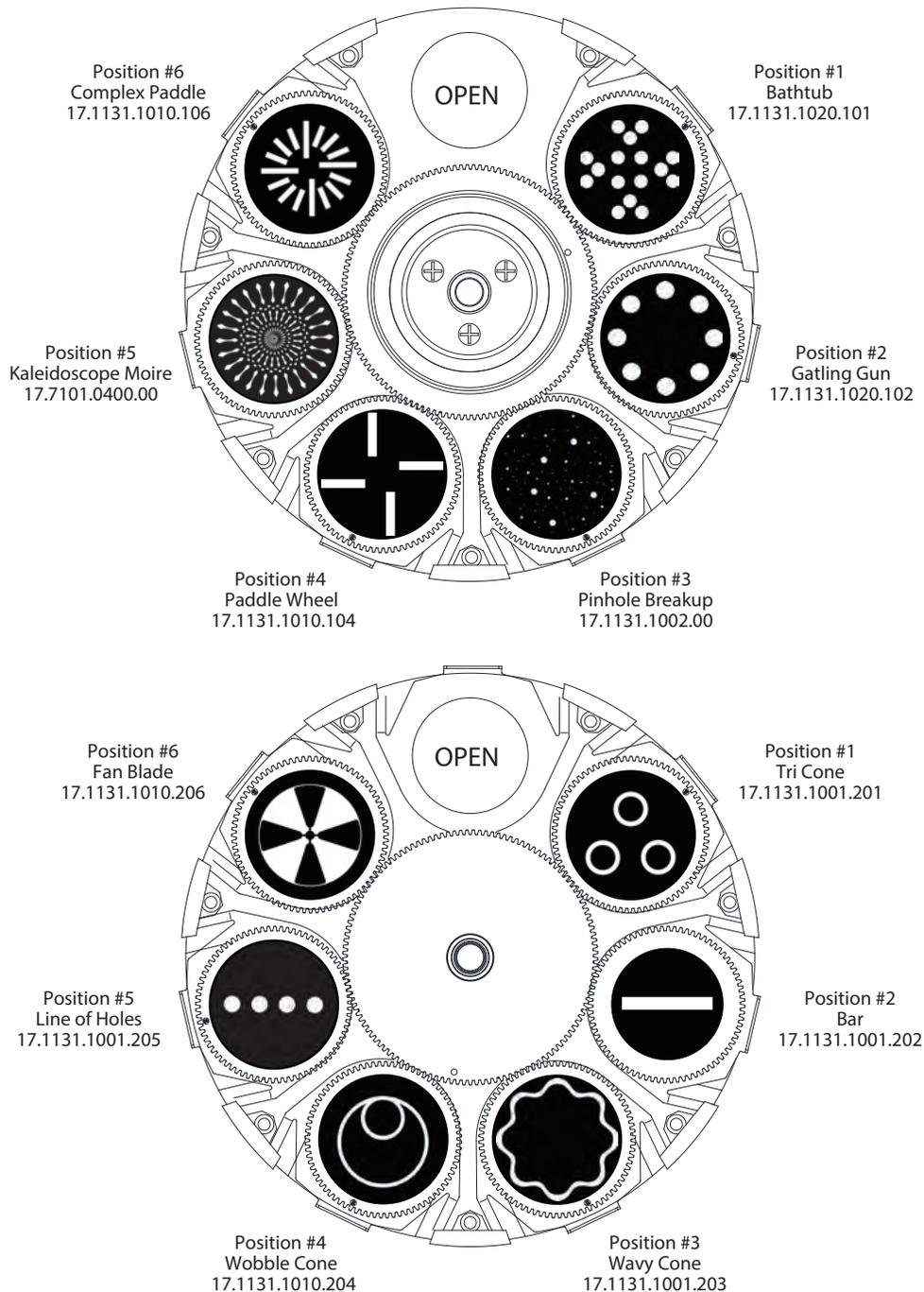


Figure 1-9: Best Boy HP BeamFX Gobo Options



**2.**

## **TESTING & TROUBLESHOOTING**

This chapter provides testing and troubleshooting procedures for the luminaire.

- + TESTING
- + TROUBLESHOOTING

## TESTING

### About This Section

The following section provides instructions for using the test and recalibration features of the Bad Boy menu system. For complete menu operating instructions, refer to the Best Boy HP Spot Luminaire User Manual (02.9816.0001).

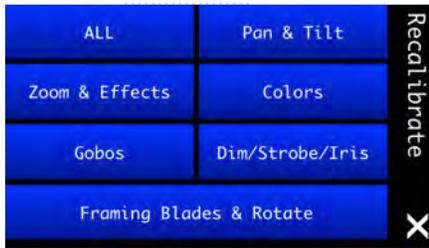
### Test Screen

The Test menu provides options for using the luminaire's self-test features.

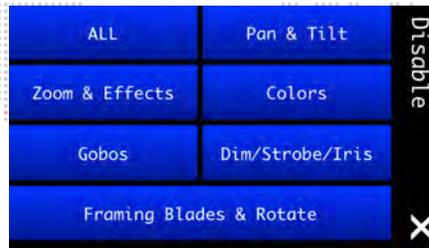
- + **Recalibrate** - press to bring up Recalibration Screen. (During recalibration, intensity goes out until all mechanism calibrations are complete and back in position, then fades in.)
- + **Recal All** - press to bring up Recalibrate All Yes/No options.
- + **Disable** - press to bring up Disable Screen, which allows specific mechanisms to be disabled during testing.
- + **Moiré Positions** - press to bring up Moiré Gobos screen, which provides a way to specify the wheel positions containing Moiré gobos. Moiré gobos contain two pieces of glass: one that is fixed and another that rotates. Due to this construction they do not contain sensors, and therefore cannot be calibrated to a certain orientation at startup as with standard gobos. After verifying the Moiré gobo position on each wheel (or lack thereof), the Moiré slot can be enabled or disabled by simply touching the slot on the respective gobo wheel via the **Moire Positions** menu. An uppercase "M" will appear/disappear upon touching the slot, with the "M" denoting that a Moiré gobo is in place.
- + **Mech Test** - press to bring up Mechanical Tests Screen. (See "**Mechanical Tests**" on page 14 for more explanation.)
- + **Clean Lenses** - press to bring up Cleaning Lenses screen. This feature will position lenses so that all surfaces may be cleaned with a cloth. (Note that pressing the buttons does not actually clean the lenses.)
- + **Group Test** - press to bring up Group Tests screen, which allows multiple luminaires to be run through a configurable test sequence when chained together via DMX512 or Ethernet. (See "**Group Tests**" on page 15 for more explanation.)

Recalibrate	Recal All	Test X
Disable	Moire Positions	
Mech Test	Group Test	
Clean Lenses	Fuse Map	

## Test Sub-Menu Screens



**Recalibrate Screens** - Specifies a specific mechanism for recalibration.



**Disable Screen** - Specifies mechanisms to be excluded from tests.



**Mechanical Tests Screen** - Specifies mechanisms to be tested.



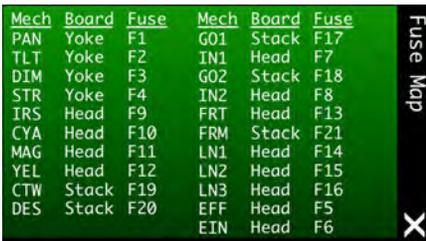
**Cleaning Lenses Screen** - Positions lenses so that they may be easily cleaned with a cloth.



**Moiré Gobos Screen** - Provides a way to specify which wheel positions contain Moiré gobos (M).



**Group Tests Screen** - Allows multiple luminaires to be tested when daisy-chained together.



**Fuse Map** - Provides the circuit board location for all mechanism fuses.

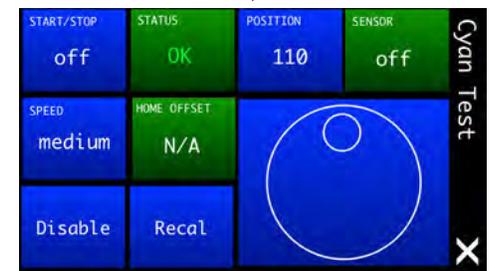
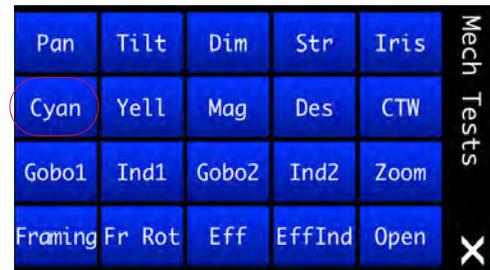
## Mechanical Tests

The Mechanical Tests menu provides a method for exercising all luminaire mechanisms individually. Each mechanism has a similar Test screen. Cyan is shown in the example to the right.

The following test functions are available:

- + **Test Chase** - The mechanism will move back and forth between two positions. The START/STOP button starts and stops the motion, and the SPEED button sets the rate of the motion. For mechanisms with sensors, one of the positions will be on the sensor and the other position will be off.
- + **Manual Control** - The knob at the bottom right of the screen moves the mechanism through its range of travel, manually.
- + **Manual Position Entry** - Press POSITION to enter a value for the mechanism's position.
- + **Feedback** - The current status of the mechanisms encoder (POSITION) and sensor (SENSOR) are shown (if available for that mechanism). STATUS indicates whether the mechanism is in an error state or normal operating state.
- + **Utility Functions** - Press **Recalibrate** to recalibrate the mechanism or **Disable** to turn off the motor control to allow the mechanism to move freely.
- + **Configuration Information** - HOME OFFSET indicates whether the home position\* has been adjusted to fine tune sensor positions (applies to gobo wheel only).

\* Due to small variations in sensor and sensor board positions, the open position on a gobo wheel might not be precisely aligned with the optical axis, creating a slight blockage on one side of the open beam. Adjust the wheel position via DMX to get the proper alignment and send the HOME OFFSET command to store the current position as the new "home" position. This position is stored in persistent memory and will be used going forward as the home position.



## Group Tests

The Group Test menu allows multiple Best Boy HP Luminaires to be run through a configurable test sequence while chained together via DMX512 or Ethernet.

### To perform a group test:

- Step 1. At Group Test screen, select options to run: Pan/Tilt, Intensity, Colors, Gobos, Zoom, and/or Framing.
- Step 2. Select test option: Concurrently (all selected tests are run at once) or Sequentially (tests are run one at a time as each one finishes).
- Step 3. Press START to begin testing. All luminaires connected to the main fixture (now referred to as the "Master") will become "Slaves" and follow the test routine set on the Master in an endless loop.
- Step 4. To stop the test sequence, press STOP on the Master.

While in group test, a Master can manually change certain values by using the Manual Control screen. From here, you can adjust the levels of parameters not active in the test sequence. For example, if a test were running on gobos and colors, you can adjust the pan and tilt to point the Master and all Slaves to a position where it will be easier see the output of the fixtures.

The diagram illustrates the process of starting and stopping a group test, and then accessing manual control. It shows three stages of the interface:

- Initial State:** The 'Group Tests' screen shows 'START' highlighted in red. Parameters include Pan & Tilt (off), Intensity Iris & Effects (off), Colors (off), Sequential/Concurrent (Conc), Gobos (off), Zoom (off), Framing (off), and Manual Control.
- Running Test:** After pressing 'START', the 'STOP' button is highlighted in red. Parameters change to Pan & Tilt (off), Intensity Iris & Effects (off), Colors (active, Yellow pos 4), Sequential/Concurrent (Conc), Gobos (active, Gobo 1 pos 3), Zoom (active, Zoom min Edge max), and Framing (off).
- Manual Control:** Pressing 'Manual Control' leads to the 'Manual Ctrl' screen, which features circular sliders for Pan, Tilt, Inten, Zoom, Edge, and Gobo 1.
- Slave State:** A 'SLAVE' fixture's 'Group Tests' screen is shown, displaying 'SLAVE' in the top left corner. The parameters match the running test state.

Slave fixtures will display "SLAVE" in the Group Tests screen as shown.

# TROUBLESHOOTING

## Errors

### Status Indications

The STATUS panel at the Home screen will report overall luminaire conditions as follows:

- + **CALIBRATION** (yellow)
- + **OK** (green)
- + **ERROR** (red)
- + **LOCKED** (white)

Pressing the STATUS panel will bring up a detailed Status screen as shown below:



The Status screen will indicate which specific mechanisms, if any, have errors. It also provides a log of systems activity. The Status screen operates as follows:

- + **Mechanisms** - displays mechanism status. Mechanism names will be shown in yellow during calibration, green if okay, and red if an error exists. If an error exists, press the Mechanisms panel to bring up the Recalibration screen. Try recalibrating the mechanism(s) that is reporting the error.
- + **Log** - displays system log. Use touchscreen arrows to scroll up or down. Press CLR to bring up Clear Log Yes/No options.

### Comm LED

In the case of a mechanism error, the Comm LED on the input panel will flash either red or green (depending on the comm state).

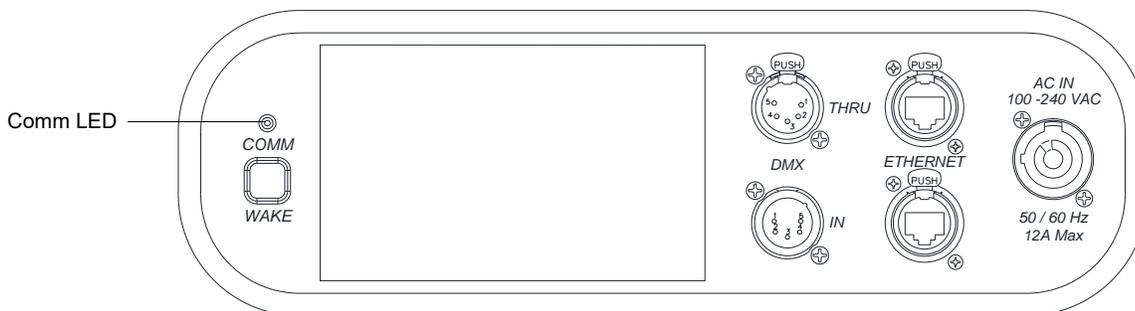


Figure 2-1: Comm LED

## Mechanism Errors

Errors will be shown after the mechanism code, for example: PAN:Comm Error.

Error Code	Explanation	Solution
Cal Error	Error resetting position values in motion processor at beginning of calibration	Check CAN cables/connections, motor control board
Cal Timeout	An action during calibration took longer than expected	Check CAN cables/connections, motor control board
Comm Error	Error communicating with motion processor	Check CAN cables/connections, motor control board
Get Position Error	Error when retrieving current position from motion processor	Check CAN cables/connections, motor control board
Init Error	Error during initialization of motion processor	Check CAN cables/connections, motor control board
Motion Error	Mechanism's actual position is too far from its commanded position	Check mechanism motion
No Sensor	During calibration, no sensor was found in the range of travel	Check for mechanism motion, sensor operation
No Stop	Mechanism which calibrates to a physical stop did not find that stop	Check mechanism
Sensor Stuck	During calibration, could not find either the edge of the sensor, or the sensor did not turn off as expected	Check for mechanism motion, sensor operation
Spin Error	Error while sending spin command to motion processor	Check CAN cables/connections, motor control board
Stop Spin Error	Error while sending stop spin command to motion processor	Check CAN cables/connections, motor control board

## Other Errors

Error Code	Explanation	Solution
Ballast Errors: Parity, Overrun, Bad Header, Msg Too Long, Ballast Comm Error	Various ballast errors	Check ballast comm cable/connections Check Mains fuses, located on LVS
Ballast Heat Sink Over Temp	Ballast too hot	Check fans
Ballast Lamp EOL H/L Voltage Limit	Lamp life limit exceeded	Check lamp
Ballast Line Voltage Low	Wrong voltage to strike	Check power connection
Ballast Short Detected	Short circuit on ballast output	Check wiring
Ballast Timeout: Lamp Strike	Lamp failed to strike	Check igniter, lamp
CAN Comm Error	Stopped receiving CAN messages from motion processor	Check CAN cables/connections, motor control board
Crossload Timeout	Crossload execution took too long due to error	Remove any incoming DMX, retry
Data not crossload format	Data in memory is not proper format for crossload	Load software via computer
DMX busy: cancel crossload	Cannot execute crossload with traffic on DMX line	Remove incoming DMX control for cross load
DMX: UART transmit error	Transmit buffer busy when trying to send	Remove any incoming DMX, retry
Fuse Blown	One or more fuses are blown	Check fuse on specified board
Gobo out of zero range	When zeroing gobo wheels, the wheel is too far away from zero to set the position	Move wheel closer to home position before zero command
Head Fan Error	Fan not running properly	Check fan
In Free Mode: Can't Lock	Free mode is enabled	Use pan/tilt menu to change from "free" to "lock"
Lamp Off	Fan Error: Cannot strike lamp while any fan is in error state	Check fan, fan cabling
Lamp Off: Over Temperature	Head temperature too high	Check fans
Lamp over threshold	Lamp hours above recommended maximum	Change lamp
Must Unlock via Free Option	Lock is enabled	Use pan/tilt menu to change from "lock" to "norm"
Plenum Fan Error	Fan not running properly	Check fan
PMD Motion Error	Mechanism's actual position is too far from its commanded position	Check mechanism motion
Framing Motor Disabled	Framing not running properly	Recalibrate, check mechanism motion
Stack Fan Error	One or more stack fans not running properly	Check fan, fan cabling
Temp over threshold	Temperature too high	Check fans/filters
Tip Fan Error	Fan not running properly	Check fan
UPE Fans Error	Upper Enclosure fans not running properly	Check fan, fan cabling
Yoke Fan Error	Fan not running properly	Check fan

## Basic Troubleshooting

The following table provides a list of common start-up problems and possible solutions. Refer to the Best Boy HP Spot Luminaire User Manual for more information about installation and operation.

Symptom	Solution(s)
No power to luminaire.	Ensure power cable is properly connected to Neutrik input connector.
	Ensure power is switched on at source (mains, disconnect box, etc.)
No console control.	Ensure DMX512 or Ethernet data cable is properly connected.
	Ensure DMX512 address setting is correct.
DMX512 control not working correctly throughout daisy-chain.	Ensure data cables are correctly configured.
	Ensure termination connector is installed at last luminaire in data link.
Lamp does not strike at power-up.	Configure lamp to start at power-up.
Comm LED is red indicating that no valid DMX or Ethernet signal is detected.	Ensure DMX512 or Ethernet data cable is properly connected. Check console.
No Ethernet control.	Ensure that luminaire is not also receiving a DMX signal. If both valid DMX and Ethernet control are being received, DMX control will take precedence.
Beam obstructed by gobo in open position.	Set new gobo zero position.
Luminaire won't take software update.	Remove active control (DMX512 or Art-Net).
Light spill occurring at some zoom angles.	Engage Light Shield.
Comm LED flashing red or green.	Indicates an internal error on the fixture. Check Status screen to isolate.

## Best Boy HP Fuses

Loss of power issues at targeted points in the fixture (like the Cyan wheel motor or a rotating gobo wheel's index motor not receiving power, etcetera) can be traced to fuses. Try the simplest solution first: before you go removing components from the fixture, check to see if the fuse is intact.



### ATTENTION

The fuse map is listed here, but can also be found via the Main Menu by pressing TEST and then FUSE MAP. It is also listed on the rear of the Head PCB Bracket, as in **Figure 2-2** below.

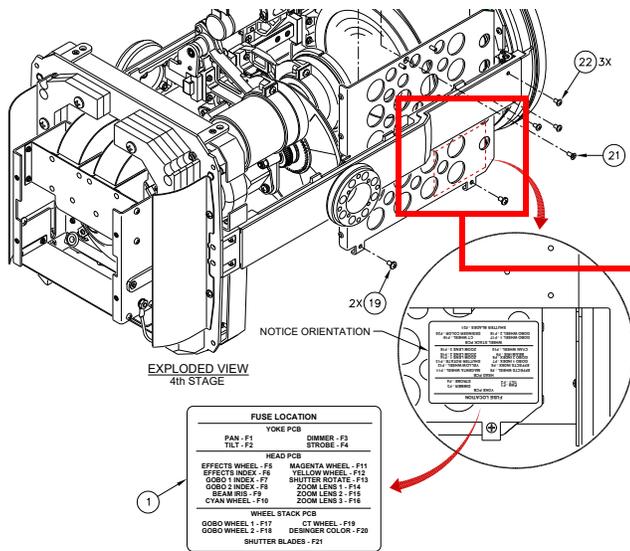


Figure 2-2: Fuse Map Location on Head PCB Bracket

Fuses for Best Boy HP are located in four places: on the Head PCB Card, on the Wheel Stack PCB card atop the Wheel Stack, on the Yoke PCB, located on the Tilt Side Leg, and one fuse on the Main Controller PCB that sits on top of the Interface/LVS. On the bottom of the LVS, there are two main power supply fuses to check in the event you have no power-up. Fuse layout on the Best Boy HP Spot is as follows -- see next page for a graphical layout.

Component	Fuse	Location	Fuse Port	Component	Fuse	Location	Fuse Port
Pan	4A Slow	Yoke PCB	F1	Head Fan	2A Slow	Head PCB	FF1
Tilt	4A Slow	Yoke PCB	F2	Yoke Fan	2A Slow	Head PCB	FF2
Dimmer	2A Slow	Yoke PCB	F3	Rear Fan	7A Fast	Head PCB	FF3
Strobe	2A Slow	Yoke PCB	F4	Lamp Fan	7A Fast	Head PCB	FF4
Effects Wheel	2A Slow	Head PCB	F5	Gobo Wheel 1	2A Slow	Wheel Stack PCB	F17
Effects Index	2A Slow	Head PCB	F6	Gobo Wheel 2	2A Slow	Wheel Stack PCB	F18
Gobo 1 Index	2A Slow	Head PCB	F7	CT Wheel	2A Slow	Wheel Stack PCB	F19
Gobo 2 Index	2A Slow	Head PCB	F8	Designer Color Wheel	2A Slow	Wheel Stack PCB	F20
Beam Iris	2A Slow	Head PCB	F9	Shutter Blades	7A Fast	Wheel Stack PCB	F21
Cyan Wheel	2A Slow	Head PCB	F10	Ballast and Chassis Fans	2A Slow	Main Controller PCB	FF5
Magenta Wheel	2A Slow	Head PCB	F11	<b>MAINS Fuses</b> FUSE, 15A 250V .25 X 1.25" SLO-BLO CERAMIC MDA-15-R  PRG # 70.3773.0001.0		Bottom of Interface/LVS	
Yellow Wheel	2A Slow	Head PCB	F12				
Shutter Rotate	2A Slow	Head PCB	F13				
Zoom Lens 1	2A Slow	Head PCB	F14				
Zoom Lens 2	2A Slow	Head PCB	F15				
Zoom Lens 3	2A Slow	Head PCB	F16				

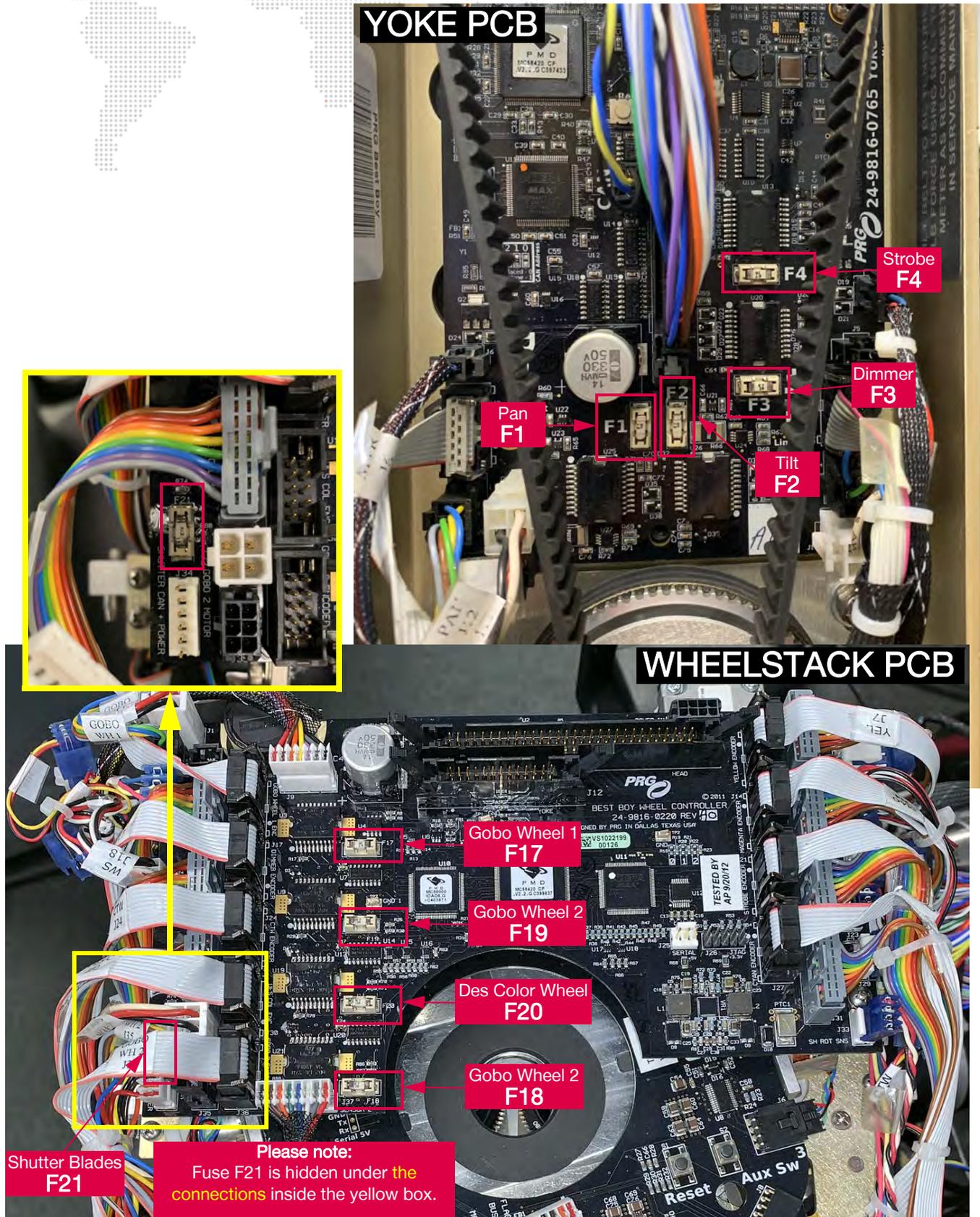
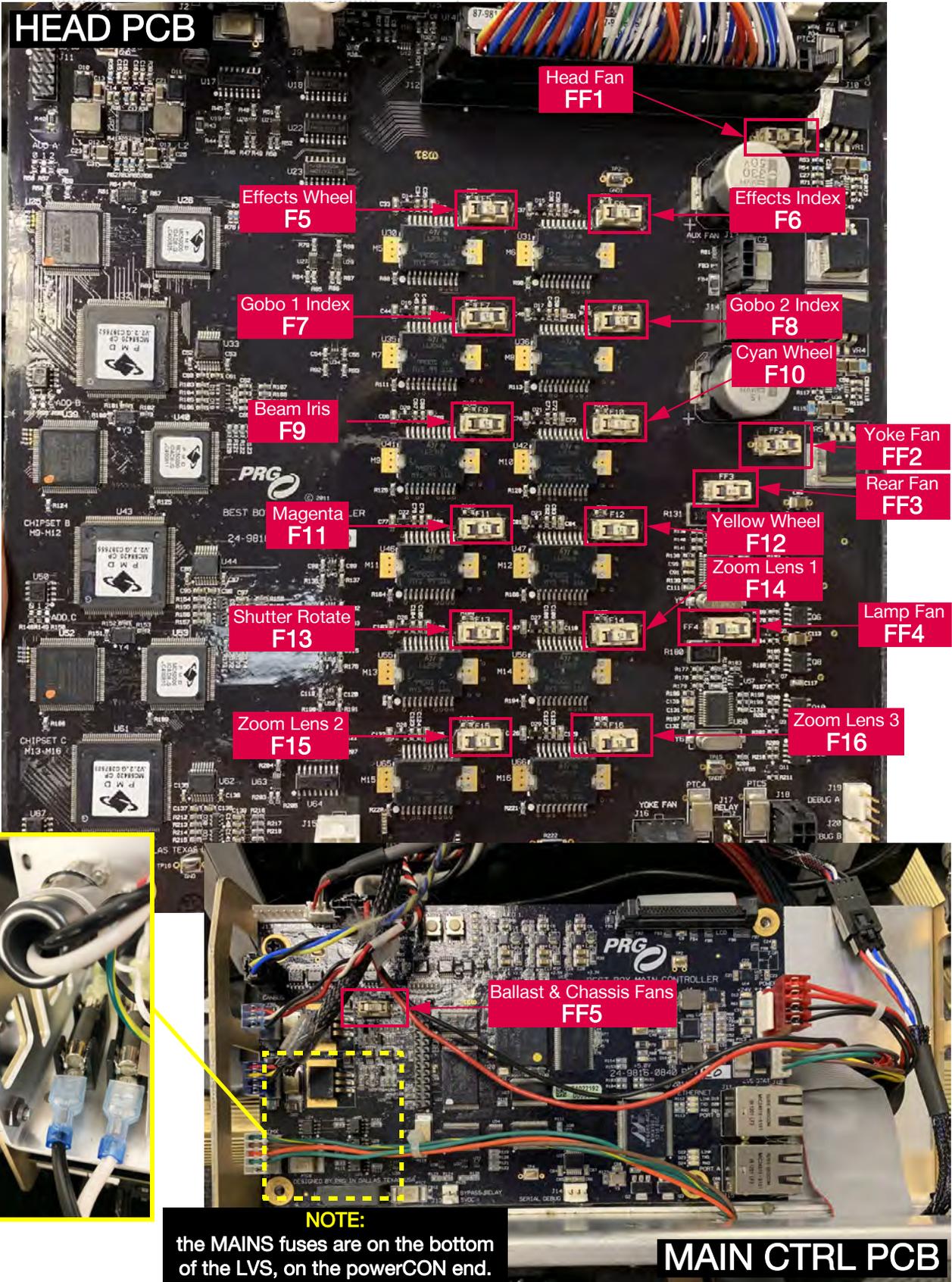


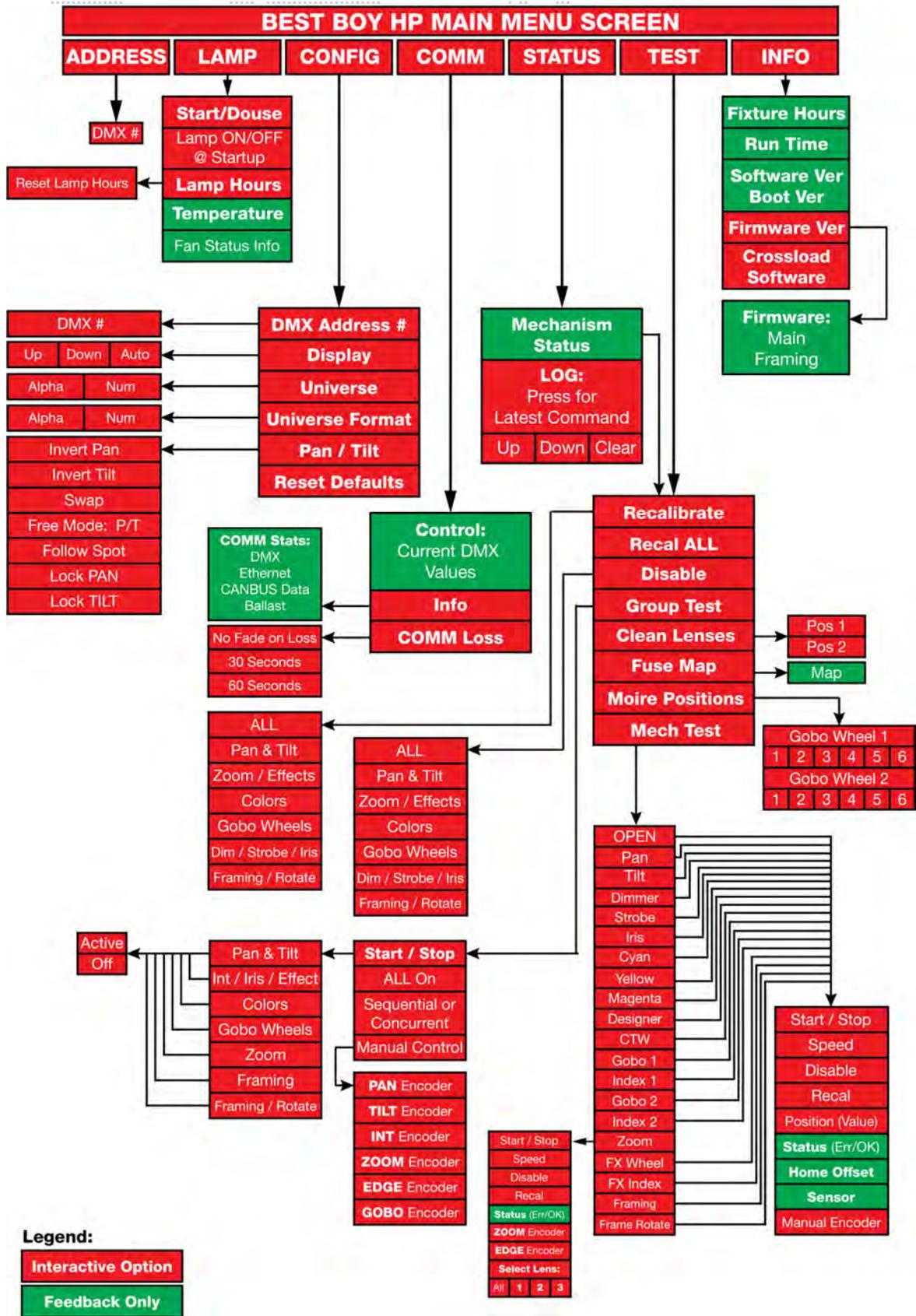
Figure 2-3: Yoke PCB and Wheelstack PCB Fuse Detail



**NOTE:**  
the MAINS fuses are on the bottom of the LVS, on the powerCON end.

Figure 2-4: Head PCB and Main Controller PCB Fuse Detail

# Best Boy HP Menu Map



## Best Boy HP Menu Quickstart



Lamp  
Start / Douse



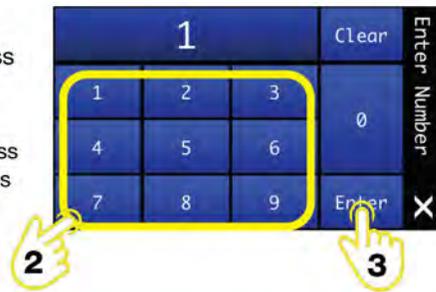
1. Touch LAMP Box (gray lamp = doused)
2. Touch START (or douse if dousing)
3. Touch YES to confirm



Entering  
DMX Address



1. Touch Address
2. Enter Address
3. Touch Enter



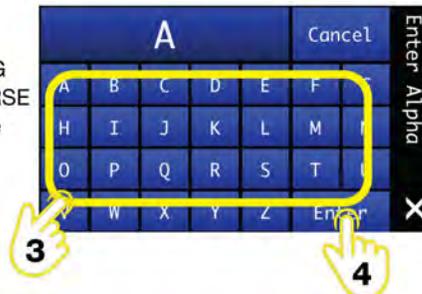
Entering  
Art-Net / sACN  
Address



1. Touch CONFIG
2. Touch UNIVERSE
3. Enter Universe
4. Touch Enter



OR



## Best Boy HP Menu Quickstart, Con't



Accessing  
Lens Cleaning  
Routine



1. Touch TEST  
Test Screen appears
2. Touch CLEAN LENSES,  
Cleaning Lenses Screen appears
3. Touch POS 1 for the first lens position;  
Clean lenses in Position 1
4. Touch POS 2 for the second lens position;  
Clean lenses in Position 2



### VERY IMPORTANT:

Touch the X to close cleaning routine when finished



Accessing  
Info Screen  
and Crossload



1. Touch INFO  
INFO Screen appears
2. To CROSSLOAD, touch CROSSLOAD,  
CROSSLOAD Screen appears
3. Touch YES or NO



Accessing  
Status and  
Test Screens



1. Touch STATUS
2. Touch MECHANISMS,  
TEST SCREEN appears
3. Touch desired test, recal, or option

## Best Boy HP Menu Quickstart, Con't



1. Touch CONFIG
2. Touch INFO, Comm Stats appears
3. Touch X to close

Accessing Comm Stats



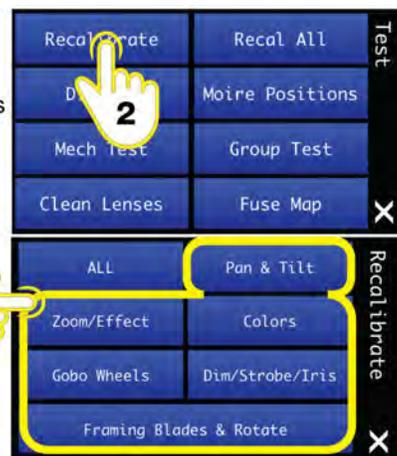
1. Touch COMM Box
2. Touch Comm Loss
3. Touch to choose Setting

Configure COMM Loss



1. Touch TEST
2. Touch RECALIBRATE, Recalibrate Screen appears
3. Touch Mechanism Group to recal
4. Touch YES or NO when prompted

Accessing Test Menu and Recalibrating Mechanism Groups



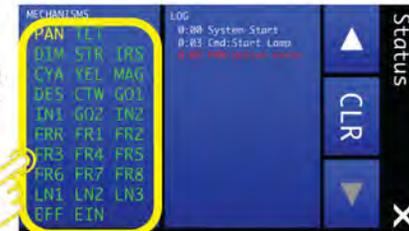
## Best Boy HP Menu Quickstart, Con't

**Accessing Status Screen and Recalibrating ALL Mechanisms**



1. Touch STATUS

**Accessing Status Screen and Recalibrating ALL Mechanisms**



2. Touch MECHANISMS, TEST Screen appears

**Accessing Status Screen and Recalibrating ALL Mechanisms**



- 3A. Touch RECAL ALL
- 4A. Touch RECALIBRATE, Recalibrate screen appears

**Accessing Status Screen and Recalibrating ALL Mechanisms**



- 3B. Touch YES or NO

**Accessing Status Screen and Recalibrating ALL Mechanisms**



- 4B. Touch ALL, choose YES or NO

**Disabling ALL Mechanisms or Blocks of Mechanisms**



1. Touch TEST

**Disabling ALL Mechanisms or Blocks of Mechanisms**



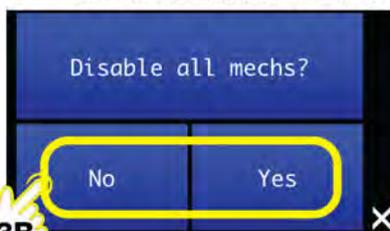
2. Touch DISABLE, Disable Screen appears

**Disabling ALL Mechanisms or Blocks of Mechanisms**



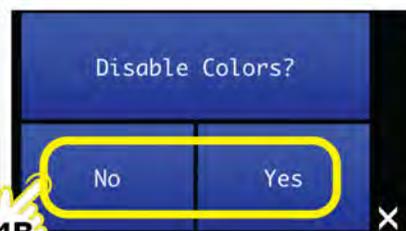
- 3A. Touch ALL to disable all mechanisms
- 4A. Touch mechanism block to disable Color mechanisms in this example

**Disabling ALL Mechanisms or Blocks of Mechanisms**



- 3B. Confirm Disable YES or NO

**Disabling ALL Mechanisms or Blocks of Mechanisms**



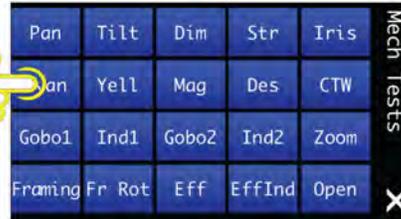
- 4B. Confirm Disable YES or NO

## Best Boy HP Menu Quickstart, Con't



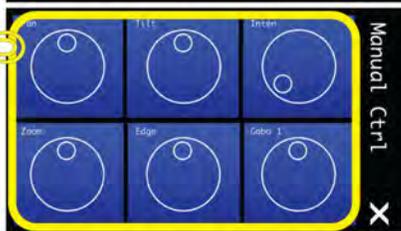
1. Touch TEST
2. Touch MECH TEST, Mech Test Screen appears
3. Touch a mechanism to test (Cyan chosen for example) Cyan test screen appears
4. Touch Start/Stop to begin/end test; Adjust parameters of test on screen
5. Spin wheel for manual control

Accessing Mechanical Tests (Mech Test)



1. Touch TEST
2. Touch GROUP TEST, Group TEST Screen appears
3. Touch START on the Master fixture; Fixtures connected to the Master unit will show as SLAVE
4. Touch MANUAL CONTROL on Master to affect all units, spin wheels to move
5. Touch STOP to end test

Accessing Group Mechanical Tests (Group Test)



Group Test Screen showing Slave units

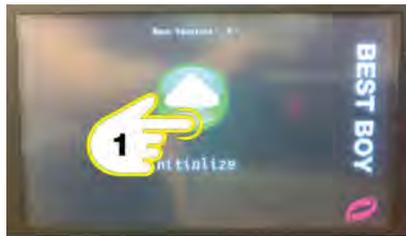


## Best Boy HP Menu Quickstart, Con't

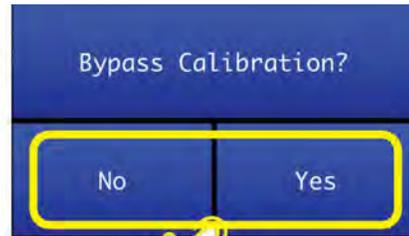


1. Touch CONFIG
2. Touch PAN/TILT
3. Touch to choose an option
4. Touch YES or NO to confirm

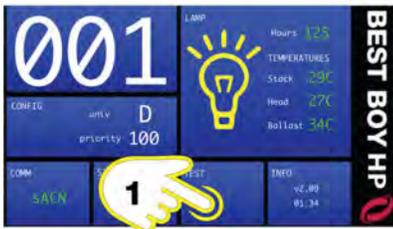
Altering Pan / Tilt Settings



Bypassing CALIBRATION on Startup



1. Directly upon powerup, when you see the "Initialize" screen appear, instantly press and hold your finger on the screen for 7-10 seconds or until the Bypass Calibration screen appears.
2. Choose YES to bypass calibration, NO to return to calibration routine



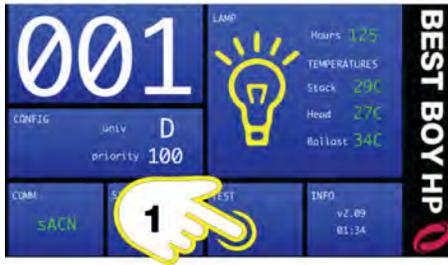
1. Touch TEST
2. Touch FUSE MAP
3. Touch X to close

Accessing the FUSE MAP



Mech	Board	Fuse	Mech	Board	Fuse
PAN	Yoke	F1	G01	Stack	F17
TLT	Yoke	F2	IN1	Head	F7
DIM	Yoke	F3	G02	Stack	F18
STR	Yoke	F4	IN2	Head	F8
IRS	Head	F9	FRT	Head	F13
CYA	Head	F10	FRM	Stack	F21
MAG	Head	F11	LN1	Head	F14
YEL	Head	F12	LN2	Head	F15
CTW	Stack	F19	LN3	Head	F16
DES	Stack	F20	EFF	Head	F5
			EIN	Head	F6

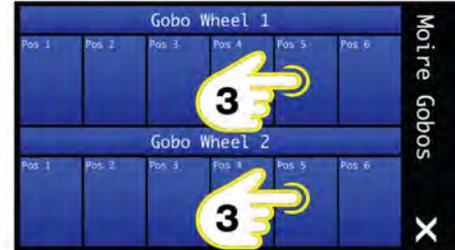
## Best Boy HP Menu Quickstart, Con't



Setting  
MOIRE GOBO  
Positions



1. Touch TEST
2. Touch MOIRE POSITIONS
3. Touch the POS box that has the Moire Gobo  
An "M" will toggle On/Off by touching a box  
indicating that a Moire Gobo sits in that position
4. Press "X" to close



Setting  
FOLLOW SPOT  
Mode



For use with the FOLLOW SPOT CONTROLLER

1. Touch CONFIG
2. Touch PAN/TILT
3. Touch FOLLOW SPOT
4. Touch to toggle control ON/OFF for  
**Intensity, Iris, Edge, Zoom**  
Touch ALL to toggle all params ON  
Touch NONE to toggle all params OFF





### 3.

## MAINTENANCE

This chapter provides maintenance procedures for the luminaire.

- + EQUIPMENT HANDLING
- + ROUTINE MAINTENANCE
- + REMOVE AND REPLACE PROCEDURES

## EQUIPMENT HANDLING

### Proper Lamp Servicing and Operation

#### Servicing

- + When handling a lamp, hold it by the ceramic base while wearing cotton gloves or finger cots. Do not touch the glass part of the envelope (bulb), the reflector, or the retro reflector. If you touch glass with bare fingers, wipe off any fingerprints with alcohol. Do not skip this process.

#### Heat

- + When lamps are lit, the interior of the luminaires becomes very hot. To aid in the airflow circulation within the luminaires, after dousing the lamps, wait at least 5 minutes before removing power to the luminaires. This will provide enough time for the equipment fan to cool off the unit.

#### Lamp Life

- + When operating arc lamps, allow luminaires to operate for at least 3 minutes. It takes about 3 minutes for the fill components (mercury and halogen-metal compounds) in the lamp tubes to vaporize completely. If the lamps are switched off earlier than 3 minutes, the fill components are partially vaporized. The inadequately vaporized fill components and the electrode material (tungsten) are deposited in the areas of the lamp tubes that have remained cool. As a result, the lamp tubes blacken prematurely and reduce the service lives of the lamps.
- + If system will be unattended for more than 3-4 hours, luminaire lamps should be doused.
- + The lamp indicator (available on the menu Home screen) displays total lamp hours. Lamp hours are shown in green if under threshold, yellow at 650 hours, and red at 750 hours. *It is mandatory that the lamp be changed before 750 hours.*



#### **WARNING!**

It is **mandatory** that the lamp be changed before 750 hours.

## Wheel Stack Road Case Instructions

### Parts:

20.9816.1229 / 2.3749A-P05 CASE, WHEEL STACK

A special road case is provided for shipping Best Boy Wheel Stack Assembly. The case is necessary to protect the fragile components of the Wheel Stack Assembly during storage, transport and shipping.

Pre-printed labels (addressed to the PRG Dallas office) are provided for ease of shipping. The labels can be found in a plastic bag taped to the inside of all wheel stack road cases.

The illustrations in **Figure 3-1** show how the Wheel Stack Assembly should be packed and unpacked inside the case.

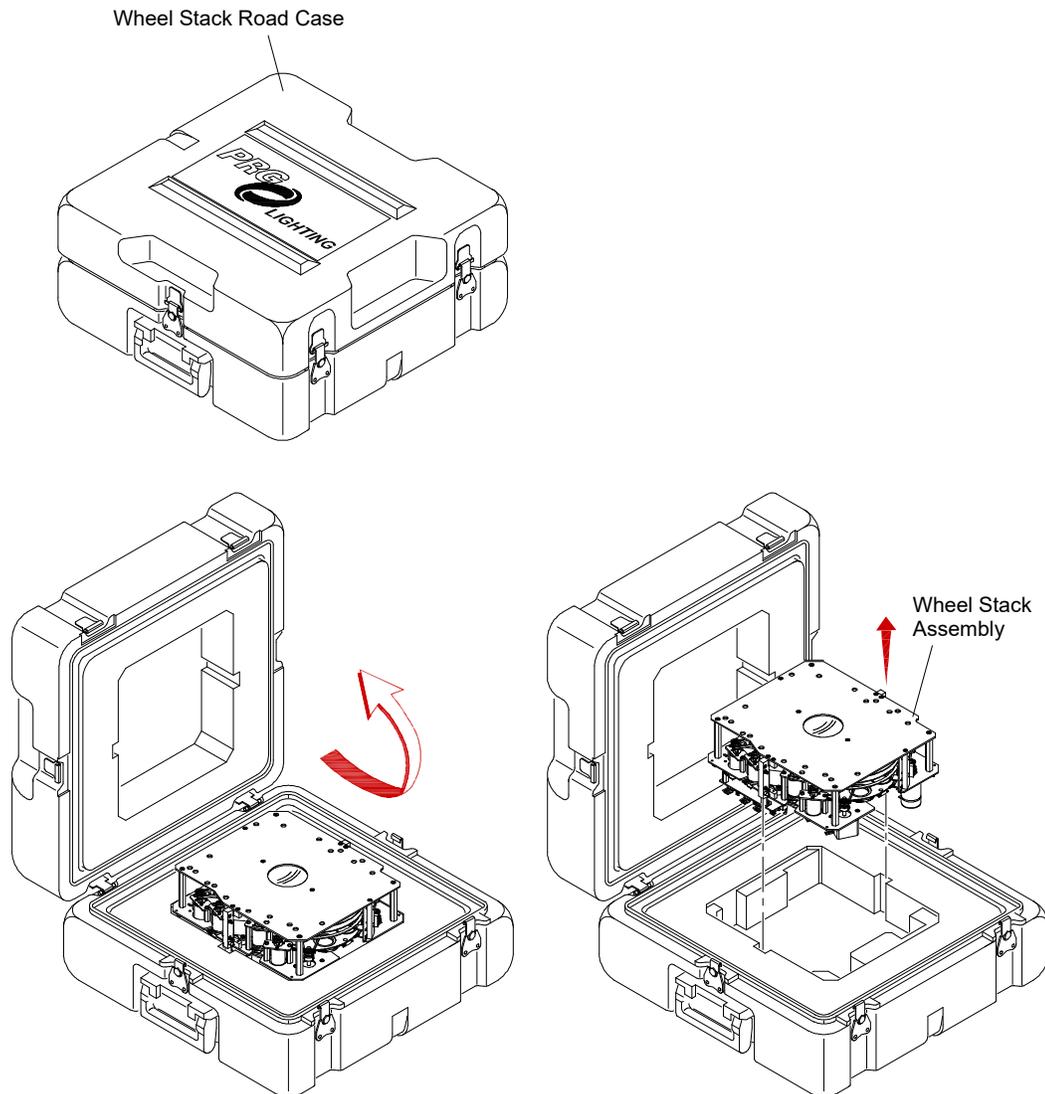


Figure 3-1: Wheel Stack Road Case

## ROUTINE MAINTENANCE

### Removing Head Covers

To access some interior head components, one or both of the Head Covers may need to be removed. A label on the backcap indicates which wheel components the head cover provides access to.

#### Parts:

22.9817.0630 EA, ASSY HEAD COVER, BEST BOY HP SPOT

#### Tools:

#2 Philips screwdriver

#### To remove Head Covers:

- Step 1. At cover, loosen four captive screws (**Figure 3-2**). (Cover will still be secured by a safety lanyard.)
- Step 2. Unclip lanyard to completely remove cover.

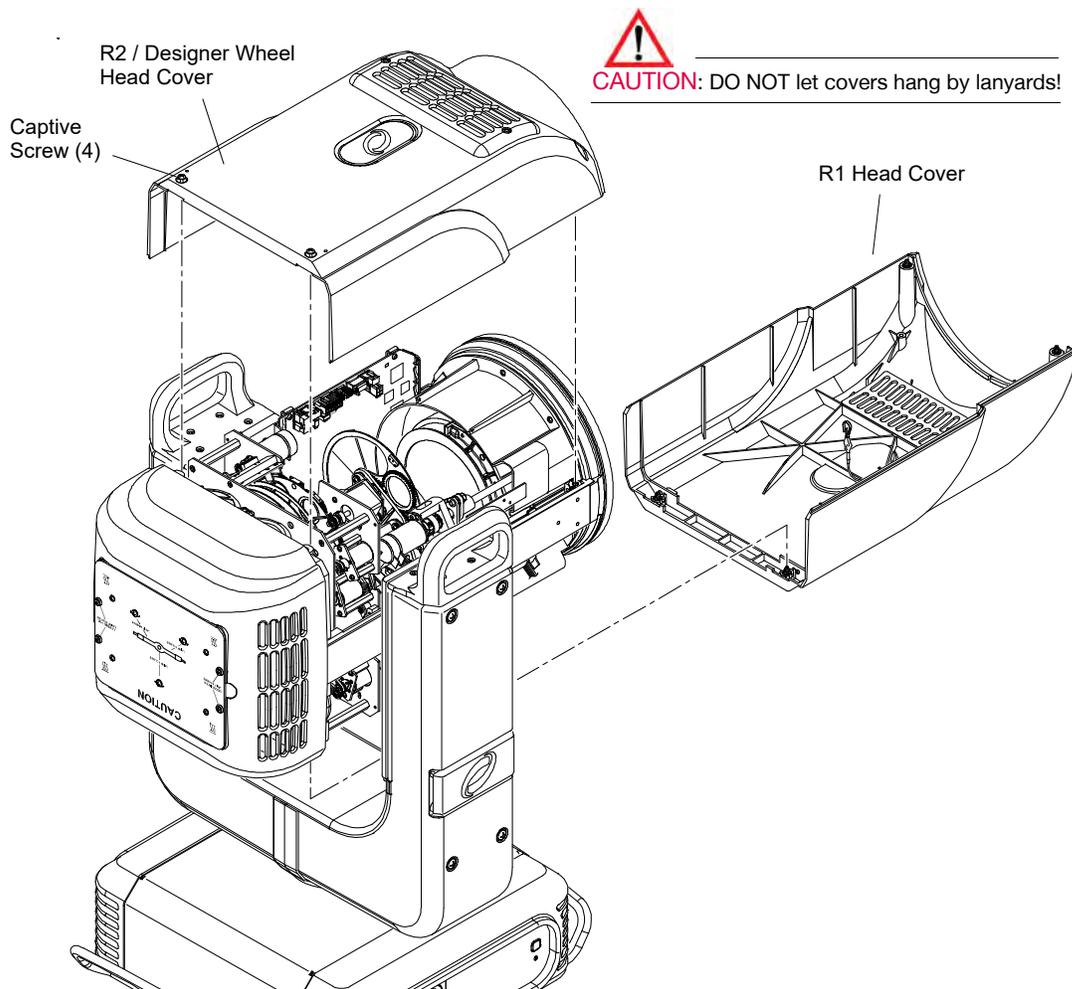


Figure 3-2: Removing Head Covers

- Step 3. Replace covers as follows:
  - a. Attach lanyard clip.
  - b. Fit cover in place.
  - c. Tighten four captive screws.

## Removing Aft Cover

To access some interior components, the Aft Cover may need to be removed.

### Tools:

#2 Phillips screwdriver



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To remove Aft Cover:

- Step 1. Remove top head cover and Wheel Stack. (Refer to "Replacing Wheel Stack" on page 61.)
- Step 2. Open lamp access door and remove lamp. (Refer to "Replacing Lamp" on page 44.)
- Step 3. Remove four 6-32 x 5/16" PPSS screws which secure XYZ Assembly in place (**Figure 3-3**).
- Step 4. Disconnect Ignitor Output to Lamp Socket Cable from two locations by loosening screws. (Refer to detail in **Figure 3-3** below.)
- Step 5. Completely remove XYZ Assembly and set aside.

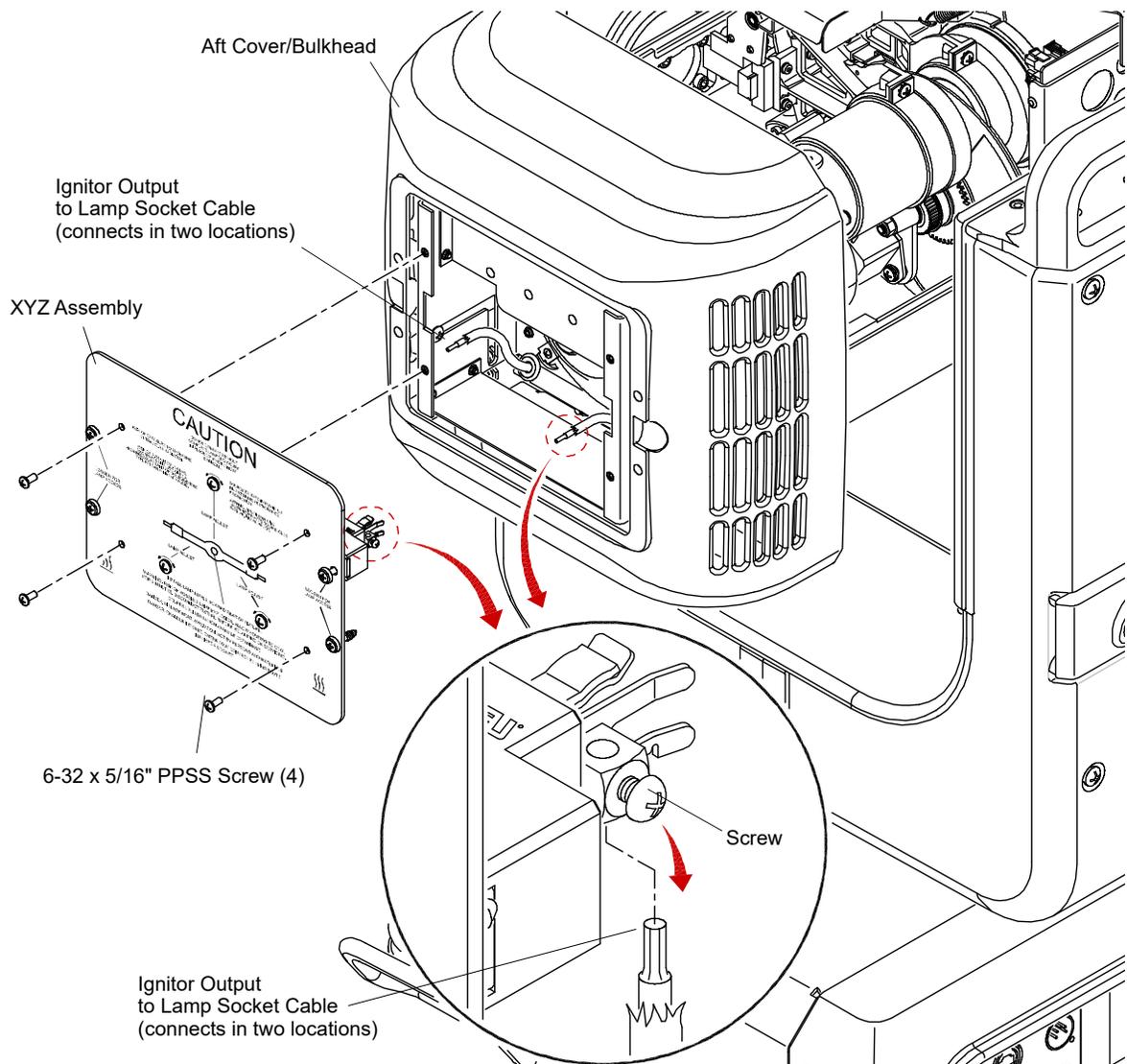


Figure 3-3: Removing XYZ Assembly

Step 6. Remove Aft Cover by removing four 10-32 x 3/8" PPSS screws.

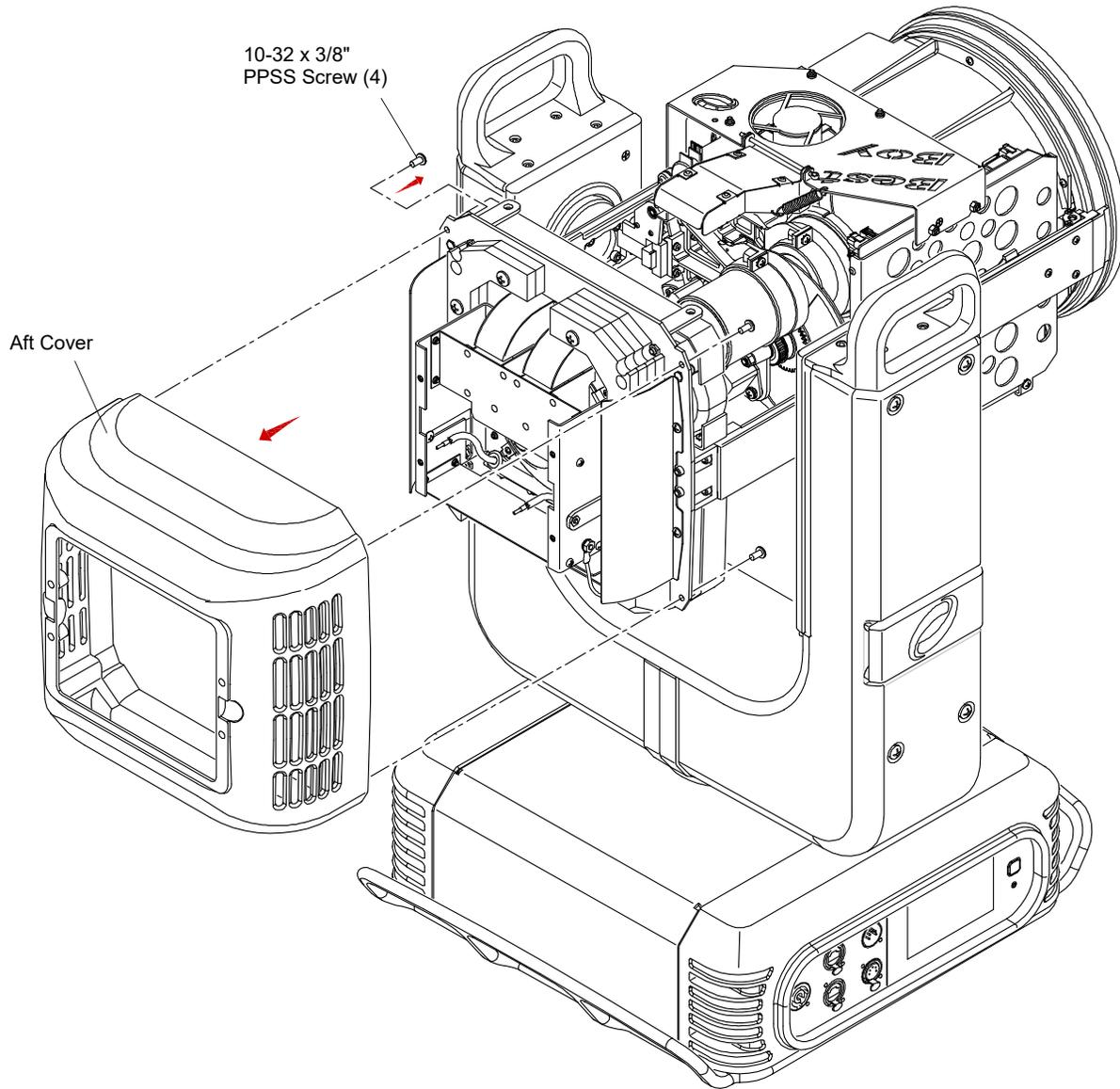


Figure 3-4: Removing Aft Cover

## Removing Yoke Leg Covers

To access some interior components, one or more of the Yoke Leg Covers may need to be removed.

### Tools:

#2 Philips screwdriver



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To remove yoke leg covers:

- Step 1. At yoke leg cover, loosen four captive screws (**Figure 3-5**).
- Step 2. Remove cover by pulling away from yoke leg.

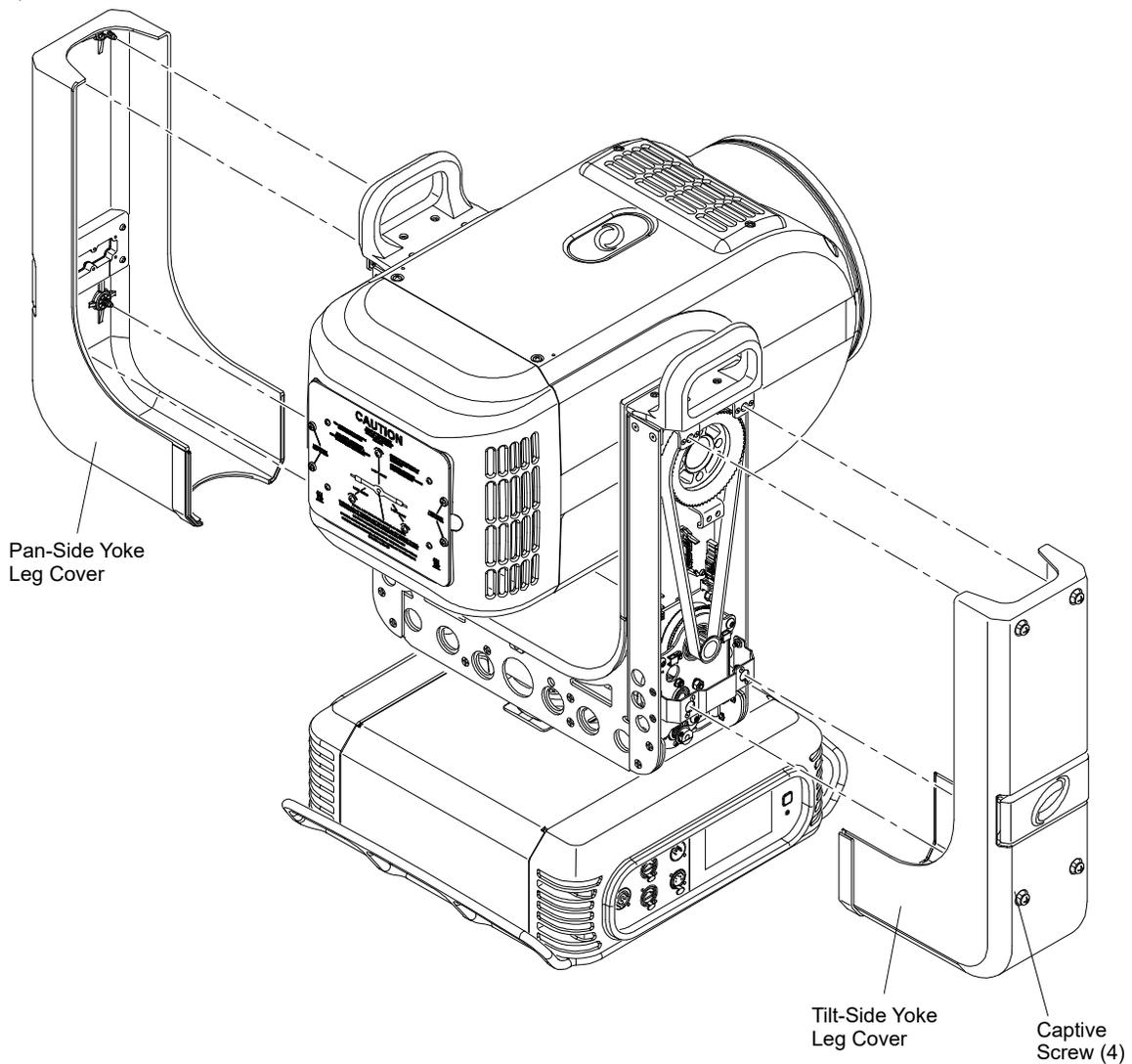


Figure 3-5: Removing Yoke Leg Covers

## Removing Upper Enclosure Covers

To access some interior components, one or both of the Upper Enclosure Covers may need to be removed.

### Tools:

#2 Phillips screwdriver



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To remove upper enclosure covers:

- Step 1. Loosen four captive screws in each of the two covers, ballast-side and LVS-side.
- Step 2. At cover, pull outward to remove.

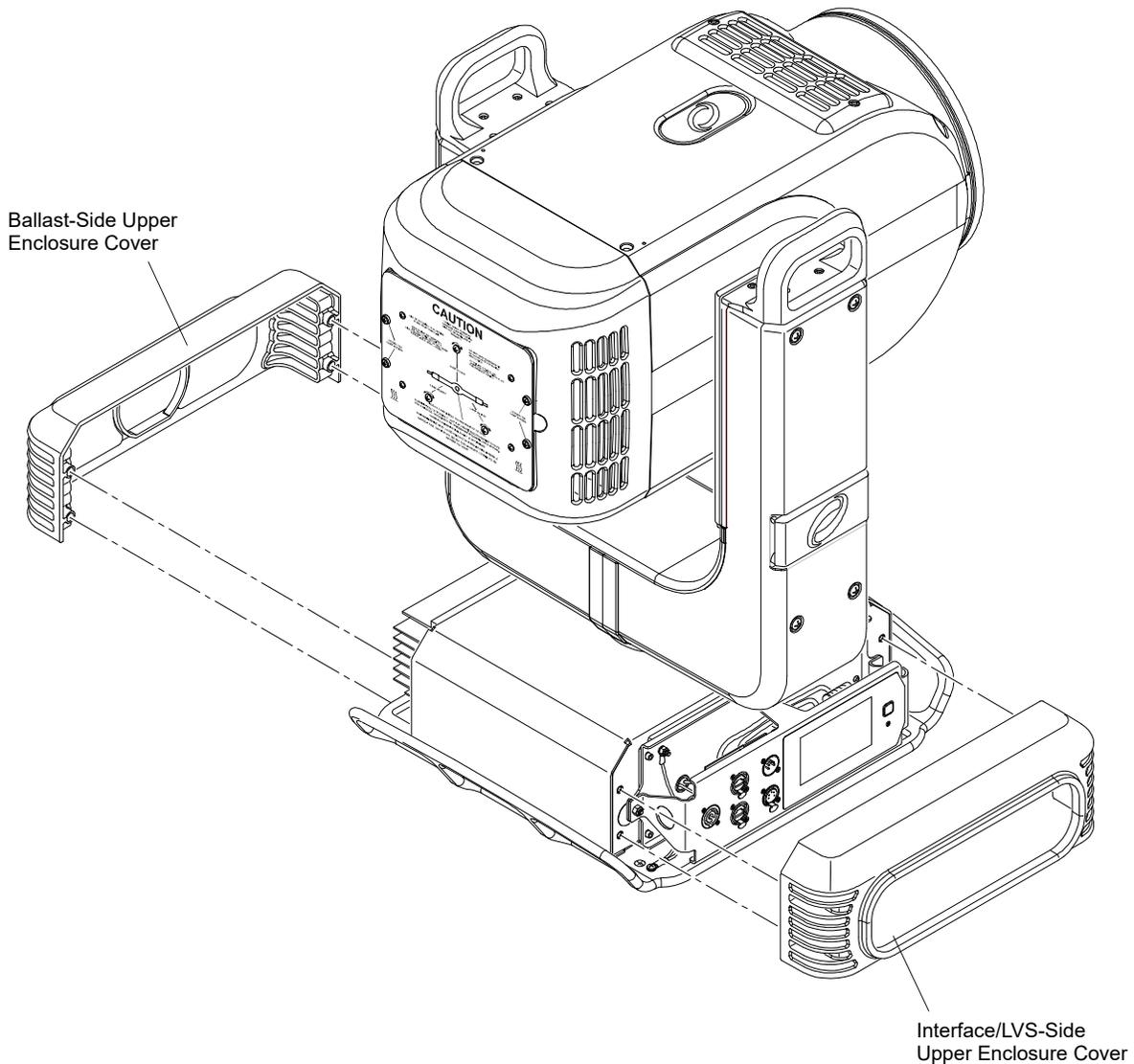


Figure 3-6: Removing Upper Enclosure Covers



## Cleaning Luminaire Exterior

### Tools:

- Lint-free cloth
- Window cleaner
- Vacuum cleaner with brush nozzle or compressed air
- #2 Phillips screwdriver

### To clean luminaire:



---

---

**WARNING!** Remove power from luminaire before this procedure.

---

---



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**CAUTION:** Use ONLY OptiMax™ Ultra Pure Cleaning Solution to clean optical components. DO NOT use Window Cleaner on lens!

---

---

- Step 1. Remove power from luminaire.
- Step 2. Using vacuum cleaner with brush nozzle or compressed air, clean dust from external components. *If using compressed air to clean out luminaire, DO NOT allow fans or blower to spin at high speeds, as this will damage their bearings.*
- Step 3. Using window cleaner and a clean, lint-free cloth, wipe outside surface of luminaire.  
**DO NOT use window cleaner on lens!**

## Cleaning Lenses

### Tools:

- (2) Micro Fiber cloths (06.6085.0001.0)
- OptiMax™ Ultra Pure Cleaning Solution (06.6084.0001.0)
- Cotton gloves or finger cots
- #2 Phillips screwdriver
- 3/16" flat screwdriver

### To clean lenses:



**CAUTION:** Use caution when handling lenses. Avoid scratching optical surfaces.



**CAUTION:** Use ONLY OptiMax™ Ultra Pure Cleaning Solution to clean optical components. DO NOT use Window Cleaner on lenses! Wear cotton gloves or finger cots when handling lenses/glass.

- Step 1. Apply power to luminaire and set intensity to 20%.  
(A beam will be necessary to see dirt and dust on the lenses.)
- Step 2. Remove R2/Designer Head Cover to access Zoom Lens Assembly.  
(Refer to "[Removing Head Covers](#)" on page 34.)

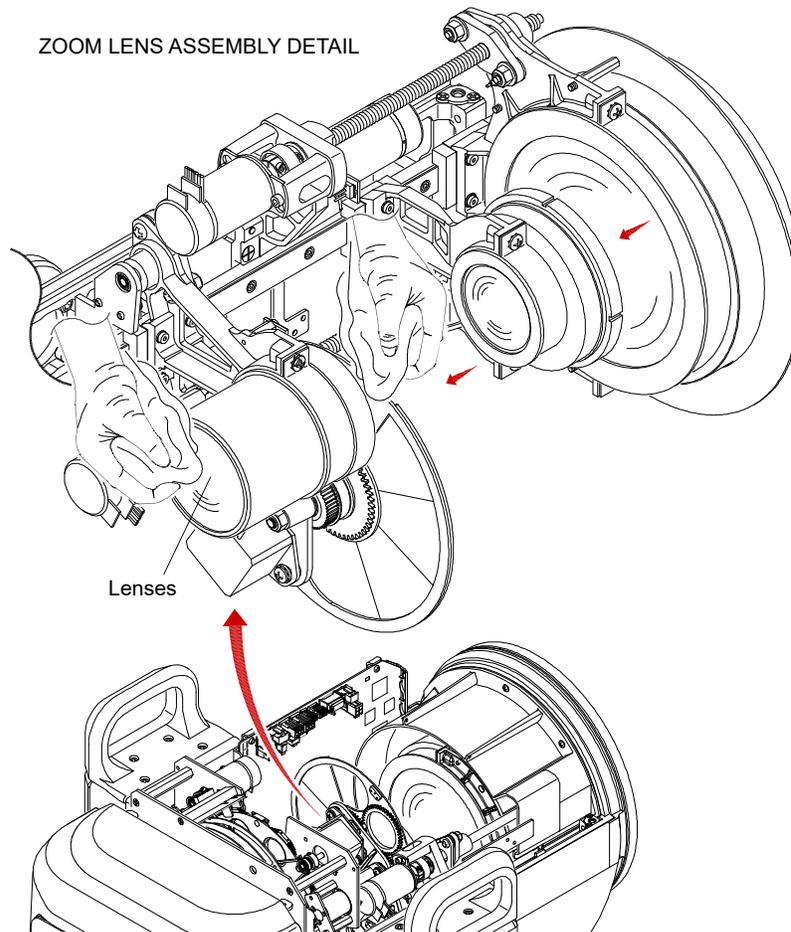
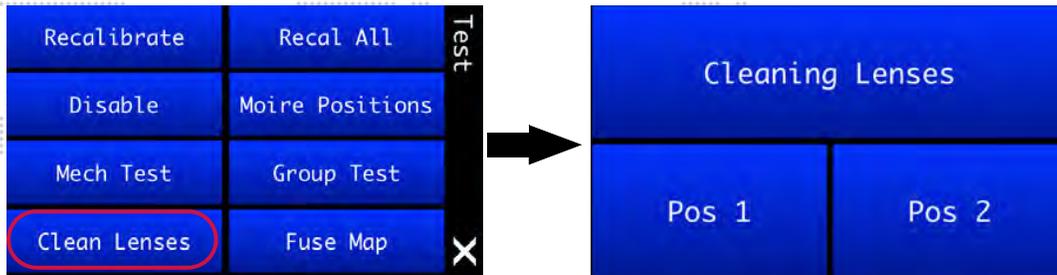


Figure 3-7: Accessing Zoom Lens Assembly

Step 3. At menu TEST screen, press "Clean Lenses." The Cleaning Lenses screen will open.

Step 4. Press "Pos 1" to position lenses in first cleaning configuration.



**CAUTION:** When cleaning, do not allow the cleaning cloth to come into contact with the lens carrier rail. The rail has lubrication that will contaminate the cleaning cloth. Wear cotton gloves or finger cots.

Step 5. If lenses are only dusty, use Micro Fiber cloth to carefully wipe lens surfaces. If further cleaning is required, use OptiMax™ Ultra Pure Cleaning Solution and a Micro Fiber cloth to clean. **DO NOT use window cleaner!**

Step 6. At menu, press "Pos 2" to position lenses in second cleaning configuration. (This will allow access to the remaining lens surfaces.)

Step 7. As in Step 5 above, clean remaining lens surfaces and front of luminaire Front Glass (**Figure 3-8**).

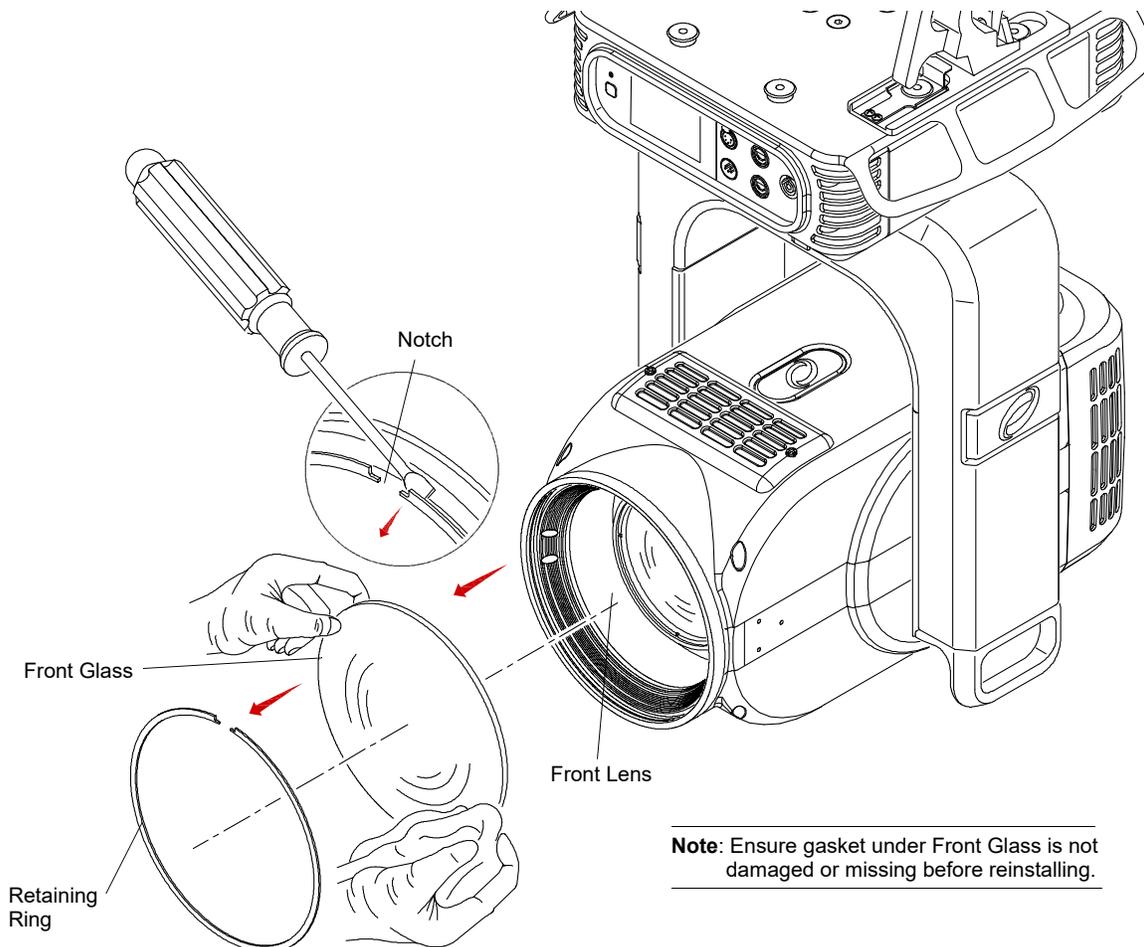


Figure 3-8: Removing Front Glass



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**CAUTION:** Be extremely careful when removing Retaining Ring and Front Glass in next step. The glass can be easily chipped or cracked.

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- Step 8. To clean backside of Front Glass and front of Lens Group , remove Front Glass as follows:
- a. Position luminaire head so that Front Glass is facing upward. (To prevent it from falling onto the floor when the Retaining Ring is removed in the next step.)
  - b. Insert flat screwdriver under notch in Front Lens Retaining Ring. Carefully remove Retaining Ring.
  - c. Remove Front Glass and place facedown on a Micro Fiber cloth.
  - d. Using OptiMax™ Ultra Pure Cleaning Solution and a Micro Fiber cloth, clean both sides of Front Glass and front of Lens Group. *DO NOT use window cleaner!*
  - e. Ensure gasket under Front Glass is not damaged or missing.
  - f. Re-install Front Glass.



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**CAUTION:** "Done" MUST BE pressed at the menu to complete the procedure. If the lens motors are left in the cleaning configuration for too long, they may be damaged due to overheating.

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- Step 9. At menu, press "Done." This will free the motors and recalibrate the lenses.
- Step 10. Replace Head Cover.

## Cleaning Gobo, Color, and Effect Wheels

### Tools:

- Micro Fiber cloth (06.6085.0001.0)
- OptiMax™ Ultra Pure Cleaning Solution (06.6084.0001.0)
- Cotton gloves or finger cots
- #2 Phillips screwdriver

### To clean gobo, color and effect wheels:



**CAUTION:** Use ONLY OptiMax™ Ultra Pure Cleaning Solution to clean optical components. DO NOT use Window Cleaner on gobo, color, or dimmer wheels! Wear cotton gloves or finger cots when handling optical components.



**CAUTION:** The optical components are very fragile, use extreme caution when cleaning! Color gobos have thin layers applied to one side that can be damaged if cleaned too roughly. Use caution.



**WARNING!** Remove power from luminaire before this procedure.

- Step 1. Remove power from luminaire.
- Step 2. Remove Head Covers. (Refer to "Removing Head Covers" on page 34.)
- Step 3. To clean Gobos:
  - a. Remove all gobos. (Refer to "Replacing a Gobo in Gobo Wheel 1" on page 48.)
  - b. Using OptiMax™ Ultra Pure Cleaning Solution and a Micro Fiber cloth, carefully clean gobos.  
**DO NOT use window cleaner!**
- Step 4. To clean Designer Wheel:
  - a. Remove each filter. (Refer to "Replacing a Designer Color Filter" on page 52.)
  - b. Using OptiMax™ Ultra Pure Cleaning Solution and a Micro Fiber cloth, carefully clean filters.  
**DO NOT use window cleaner!**
- Step 5. To clean Color Wheels:
  - a. Using OptiMax™ Ultra Pure Cleaning Solution and a Micro Fiber cloth, carefully clean color wheels.  
**DO NOT use window cleaner!**
  - b. Rotate wheels to access all surfaces.
- Step 6. To clean Effect Wheel:
  - a. Using OptiMax™ Ultra Pure Cleaning Solution and a Micro Fiber cloth, carefully clean Effect Wheel.  
**DO NOT use window cleaner!**
  - b. Rotate wheel to access all surfaces.
- Step 7. Replace Head Covers.

## REMOVE AND REPLACE PROCEDURES

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### Replacing Lamp

#### Parts:

71.2550.1500.0 / 2.3749D-11 1 EA LAMP, HTI 1500W/D7/60

#### Tools:

Cotton gloves or finger cots  
Alcohol wipe (supplied with new lamp)



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**WARNING!** Remove power from luminaire before performing any maintenance procedures.

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**CAUTION:** Refer to "**Proper Lamp Servicing and Operation**" on page 32 before handling the lamp.

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**CAUTION:** Wear cotton gloves or finger cots while servicing lamp. Touching the lamp glass with bare fingers will leave oil and cause the lamp to explode or burn out early. Clean with alcohol wipe after installing.

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#### To replace lamp:

- Step 1. If luminaire is powered-up, douse lamp and allow fans to run for at least 5 minutes.
- Step 2. Remove power from luminaire.
- Step 3. At lamp access door, loosen four captive screws (two on each side). Refer to **Figure 3-9** on next page.
- Step 4. Pull lamp box out of head assembly and rotate 90 degrees to access lamp.
- Step 5. Grasp lamp at metal ends and carefully remove from lamp box.
- Step 6. While holding new lamp at metal ends, install lamp so that nipple faces rear of luminaire (towards reflector).
- Step 7. Ensure lamp base is fully seated so that it touches contacts on both ends of socket.
- Step 8. Using supplied alcohol wipe, carefully - but thoroughly - clean glass bulb.
- Step 9. Re-insert lamp box into head and tighten four captive screws.
- Step 10. Reset Lamp Hours. (Refer to Best Boy HP User Manual.)
- Step 11. Optimize lamp. (Refer to "**Adjusting Lamp**" on page 46.)



**CAUTION:** Allow lamp to cool before servicing.

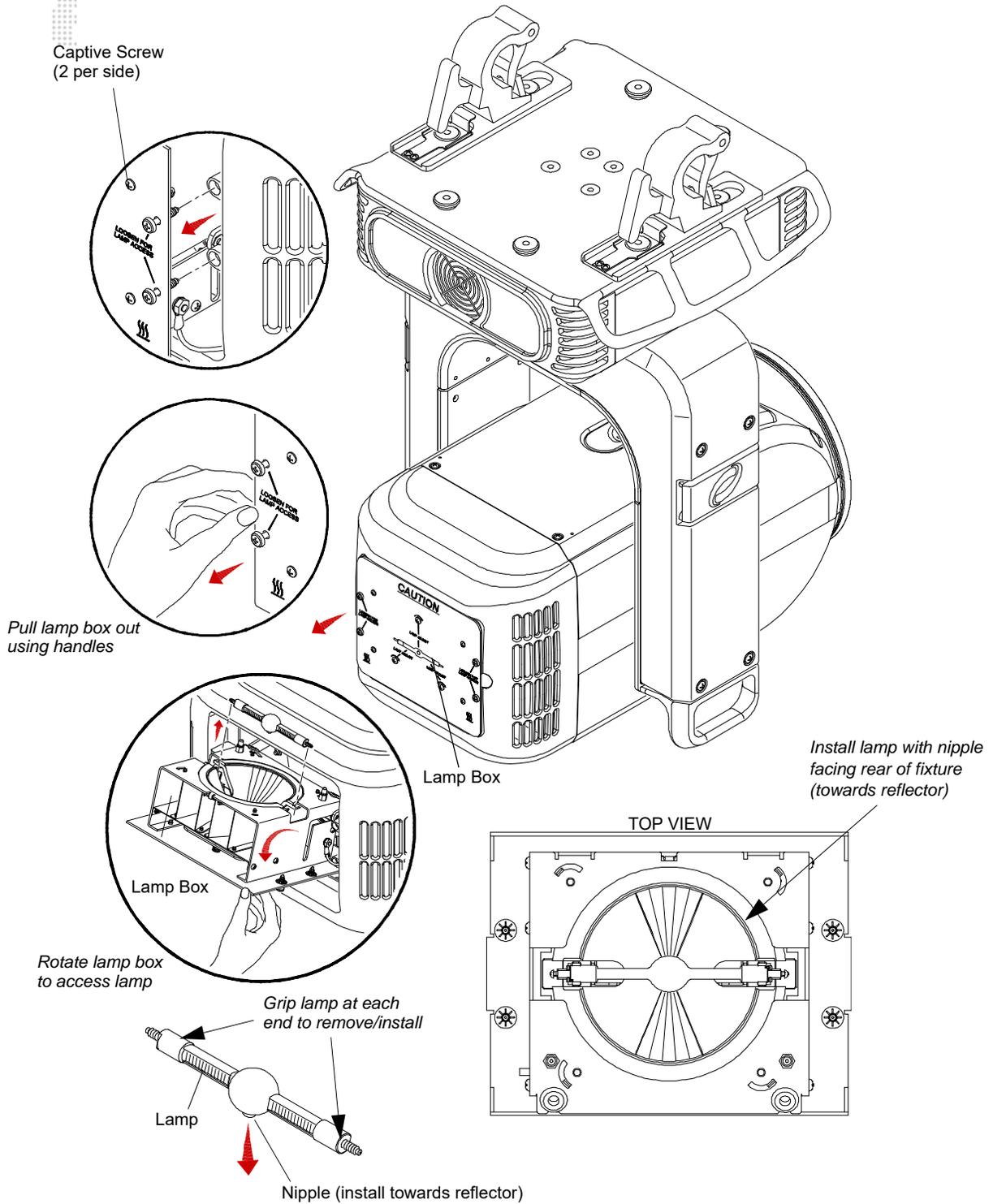


Figure 3-9: Replacing the Lamp

## Adjusting Lamp

After a new lamp is installed, the lamp must be aligned to optimize the beam. Adjustment controls are located on the backcap.

### Tools:

#2 Phillips screwdriver

optional: 5/16"-1/2" telescoping gauge (<http://www.mcmaster.com/#inside-micrometers/=r6gx02> - item # 2081A6)



**WARNING!** Backcap WILL be HOT during lamp operation.

### To adjust lamp:

- Step 1. Power up luminaire and allow to warm up for at least ten minutes.
- Step 2. Set intensity to 100%.
- Step 3. Position beam on a white wall at a distance of 20'.
- Step 4. At backcap, use three adjustment screws to optimize beam (**Figure 3-10**).

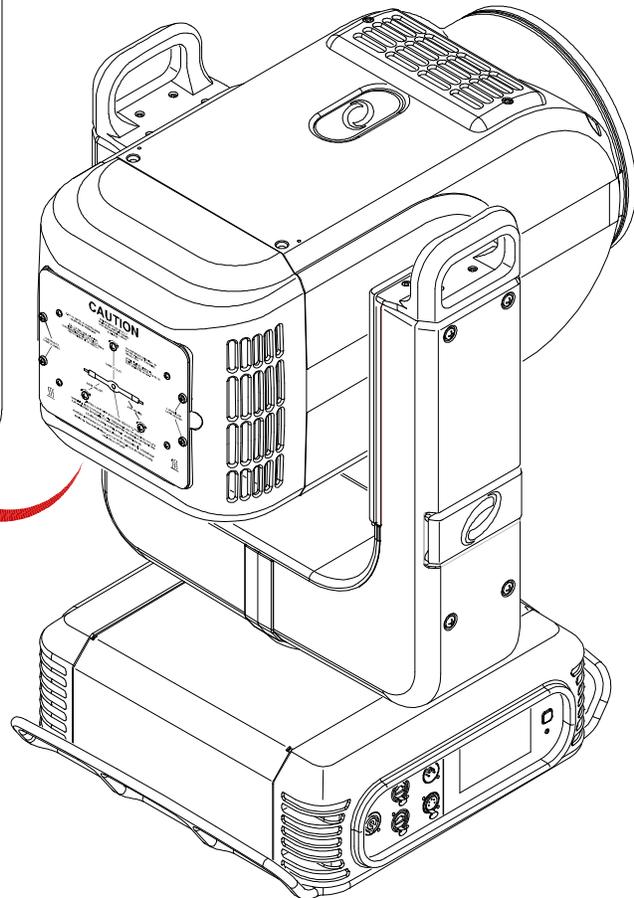
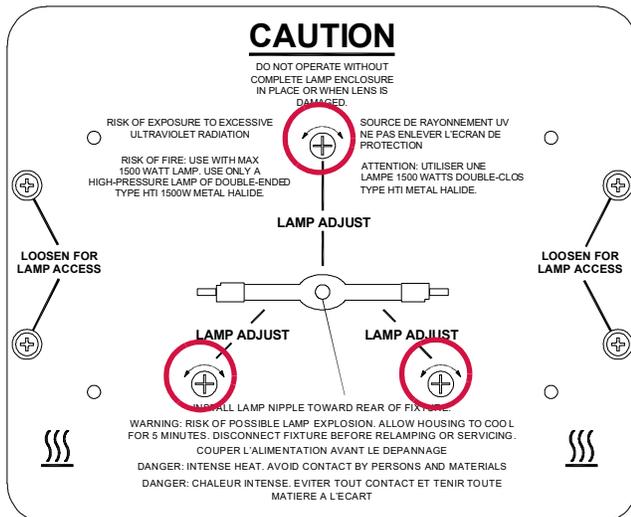


Figure 3-10: Adjusting the Lamp

**Note:** Be sure to reset Lamp Hours when installing a new lamp.



**CAUTION:** Allow lamp to cool before servicing, **at least** five minutes after dousing.

- Step 5. (Optional) Lamp alignment can be double-checked and/or adjusted by measuring the distance of the lamp plate from the rear door.
- First, open the lamp access door (refer to "Remove and Replace Procedures" on page 44).
  - Using a telescoping hole gauge, set the top screw to 0.446", and the bottom two screws to 0.429".
  - When finished, close lamp access door.

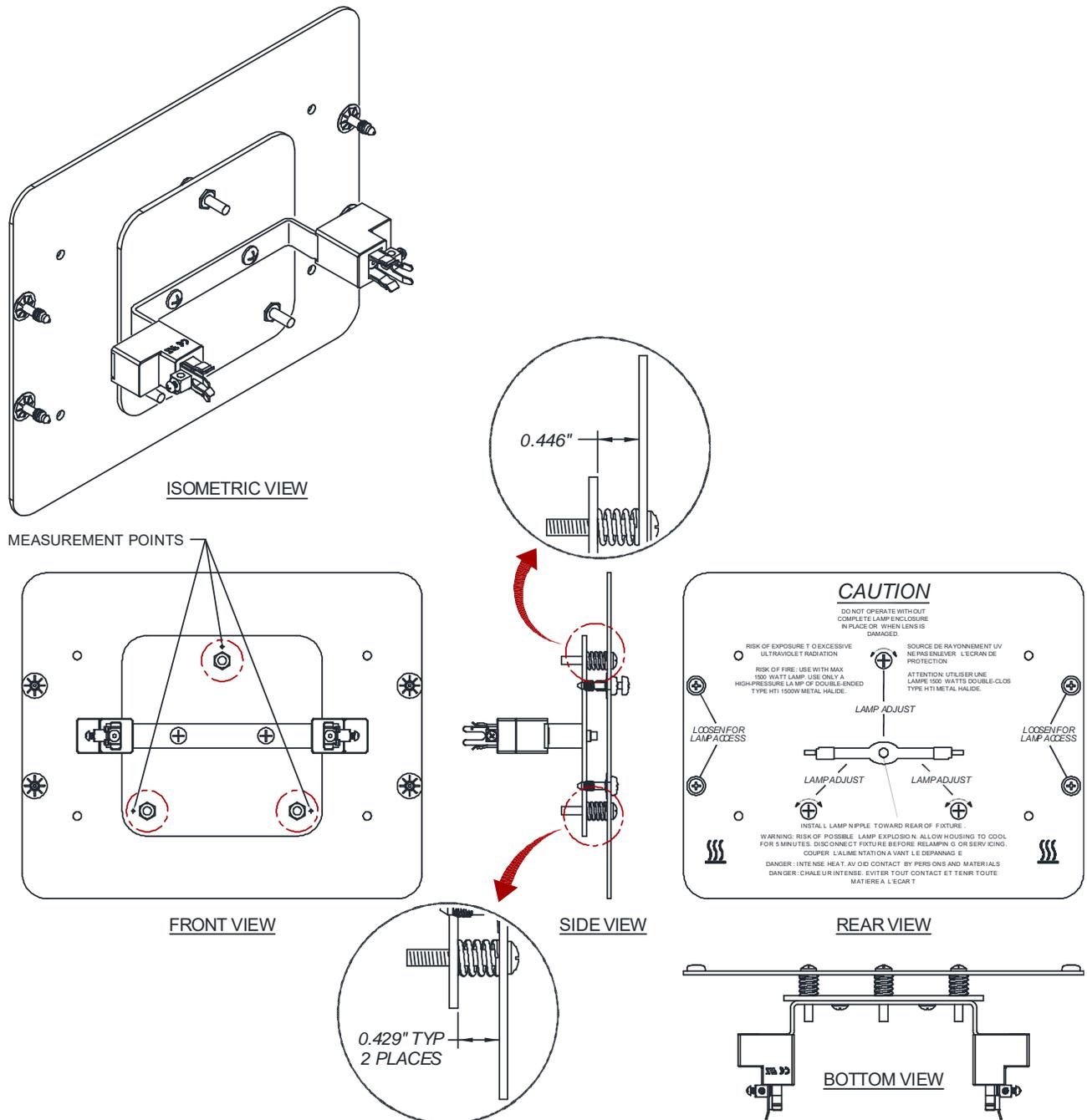


Figure 3-11: Measuring Lamp Alignment Position

## Replacing a Gobo in Gobo Wheel 1

Due to the complex gear alignment, it is best to remove ALL gobos from the wheel even when replacing or swapping only one gobo. This way all gobos can be re-installed at one time with the proper alignment. Recalibrating a single gobo can be a difficult process.

### Parts:

Standard or Custom Gobo(s), as required. (Refer to "Gobo Wheel Standard Configurations" on page 9.)

### Tools:

#2 Phillips screwdriver  
Cotton gloves or finger cots



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace a gobo:

- Step 1. Remove power from luminaire.
- Step 2. Remove R1 Head Cover. (Refer to "Removing Head Covers" on page 34.)



**CAUTION:** Do not touch gobos with bare fingers. Wear cotton gloves or finger cots when handling.

- Step 3. Using fingers, grasp frame of each gobo and pull out of wheel (**Figure 3-12**). Remove ALL gobos.

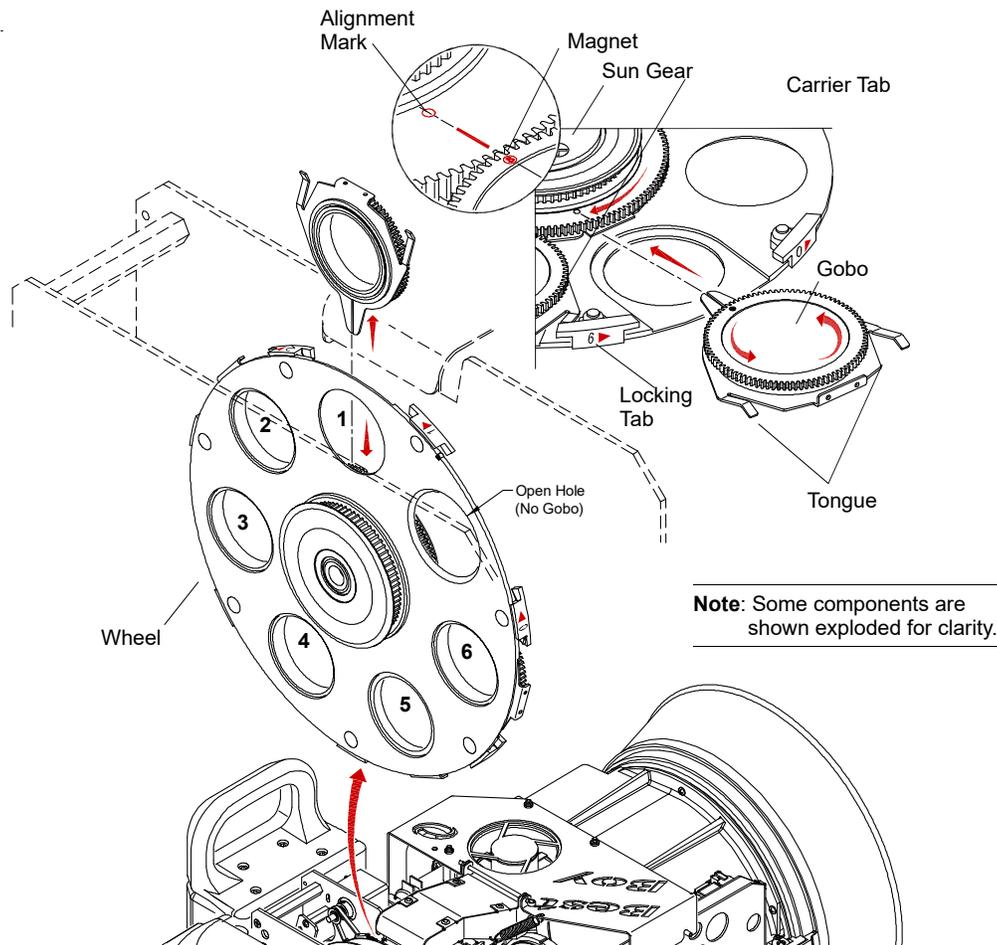


Figure 3-12: Replacing a Gobo (Wheel 1)

- Step 4. Re-install all gobos (making changes as necessary) by doing the following:
- Rotate gobo wheel so that first position is accessible. Refer to **Figure 3-13** for wheel positions.
  - Align gobo's magnet with alignment mark on sun gear as shown in **Figure 3-12**.
  - Carefully insert gobo, ensuring that carrier tab goes under retaining plate (under sun gear). Press until tongue is secured by locking tab.
  - Rotate gobo wheel to next position and install next gobo in same manner. Repeat for remaining gobos.
- Step 5. When finished, rotate gobo wheel as a visual test. When properly installed, the gobo magnet for each installed gobo should be positioned in the same approximate position as the gobo wheel is spun around. Adjust as necessary.
- Step 6. Replace Head Cover.

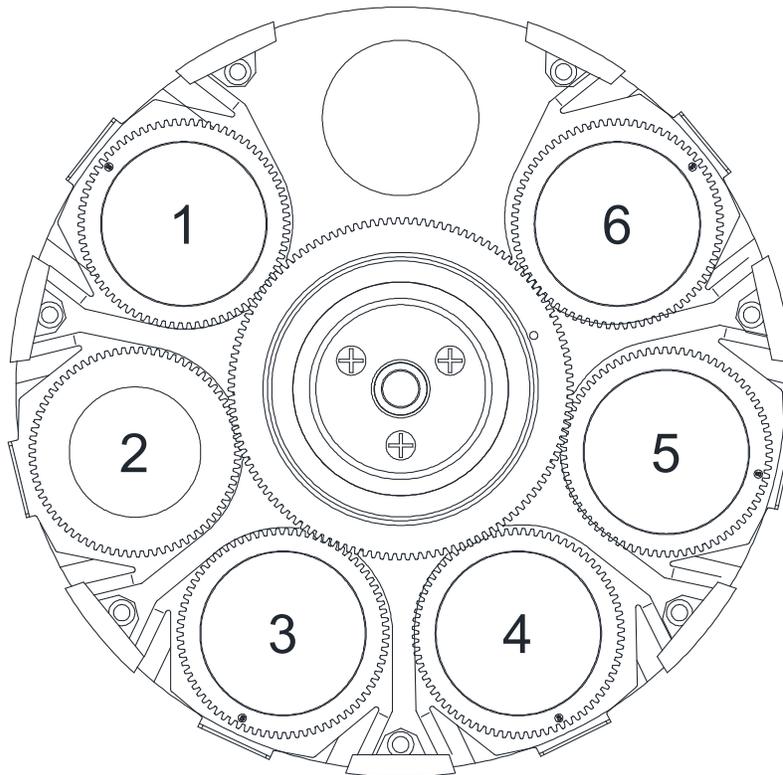


Figure 3-13: Gobo Wheel 1 Positions

## Replacing a Gobo in Gobo Wheel 2

Due to the complex gear alignment, it is best to remove ALL gobos from the wheel even when replacing or swapping only one gobo. This way all gobos can be re-installed at one time with the proper alignment. Recalibrating a single gobo can be a difficult process.

### Parts:

Standard or Custom Gobo(s), as required. (Refer to "Gobo Wheel Standard Configurations" on page 9.)

### Tools:

#2 Phillips screwdriver  
Cotton gloves or finger cots



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace a gobo:

Step 1. Remove power from luminaire.

Step 2. Remove R2/Designer Head Cover. (Refer to "Removing Head Covers" on page 34.)



**CAUTION:** Do not touch gobos with bare fingers. Wear cotton gloves or finger cots when handling.

Step 3. Using fingers, grasp frame of each gobo and pull out of wheel (**Figure 3-14**). Remove ALL gobos.

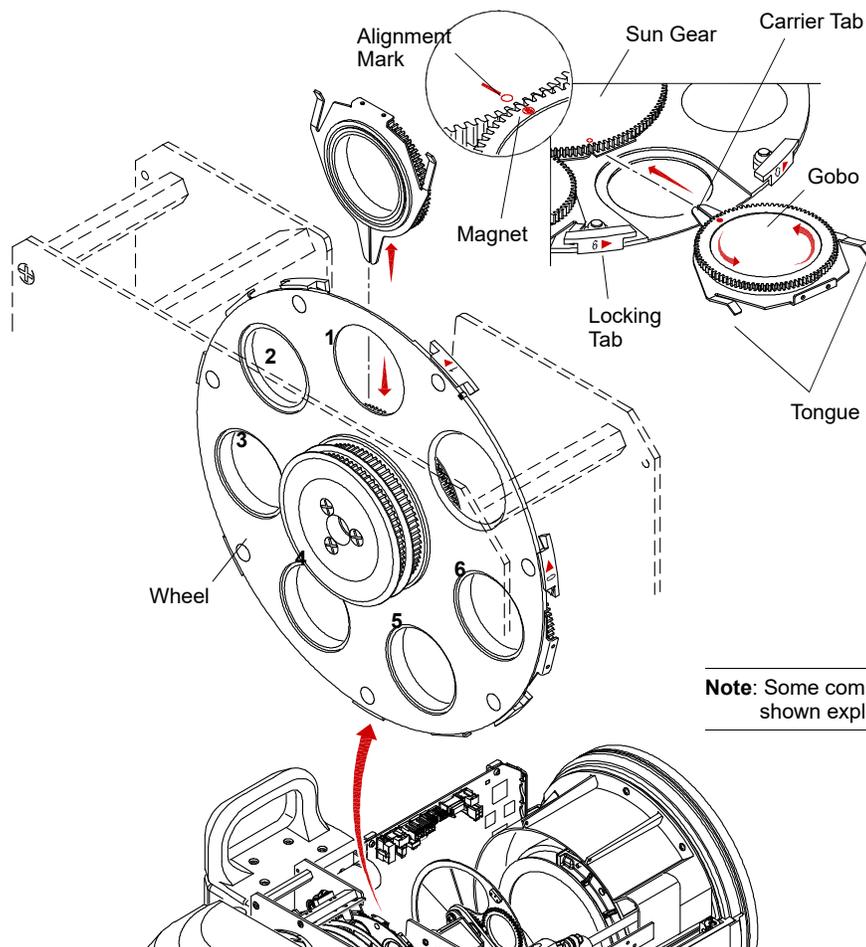


Figure 3-14: Replacing a Gobo (Wheel 2)

- Step 4. Re-install all gobos (making changes as necessary) by doing the following:
- Rotate gobo wheel so that first position is accessible. Refer to **Figure 3-15** for wheel positions.
  - Align gobo's magnet with alignment mark on sun gear as shown in **Figure 3-14**.
  - Carefully insert gobo, ensuring that carrier tab goes under retaining plate (under sun gear). Press until tongue is secured by locking tab.
  - Rotate gobo wheel to next position and install next gobo in same manner. Repeat for remaining gobos.
- Step 5. When finished, rotate gobo wheel as a visual test. When properly installed, the gobo magnet for each installed gobo should be positioned in the same approximate position as the gobo wheel is spun around. Adjust as necessary.
- Step 6. Replace Head Cover.

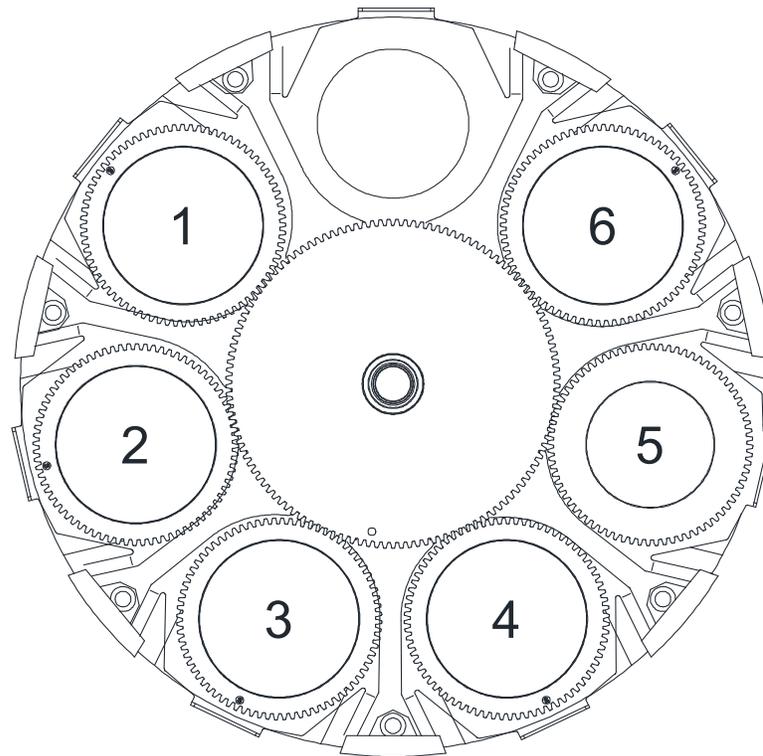


Figure 3-15: Gobo Wheel 2 Positions

## Replacing a Designer Color Filter

### Parts:

Designer Color Filter(s), as required. (Refer to "Designer Color Wheel Standard Configuration" on page 8.)

### Tools:

#2 Phillips screwdriver  
Cotton gloves or finger cots



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace a designer color filter:

Step 1. Remove power from luminaire.

Step 2. Remove R2/Designer Head Cover. (Refer to "Removing Head Covers" on page 34.)



**CAUTION:** Do not touch color filters with bare fingers. Wear cotton gloves or finger cots when handling.

Step 3. Rotate wheel until desired designer color filter is accessible (**Figure 3-16**).

Step 4. Using fingers, grasp frame of color filter and pull straight out of wheel hub.

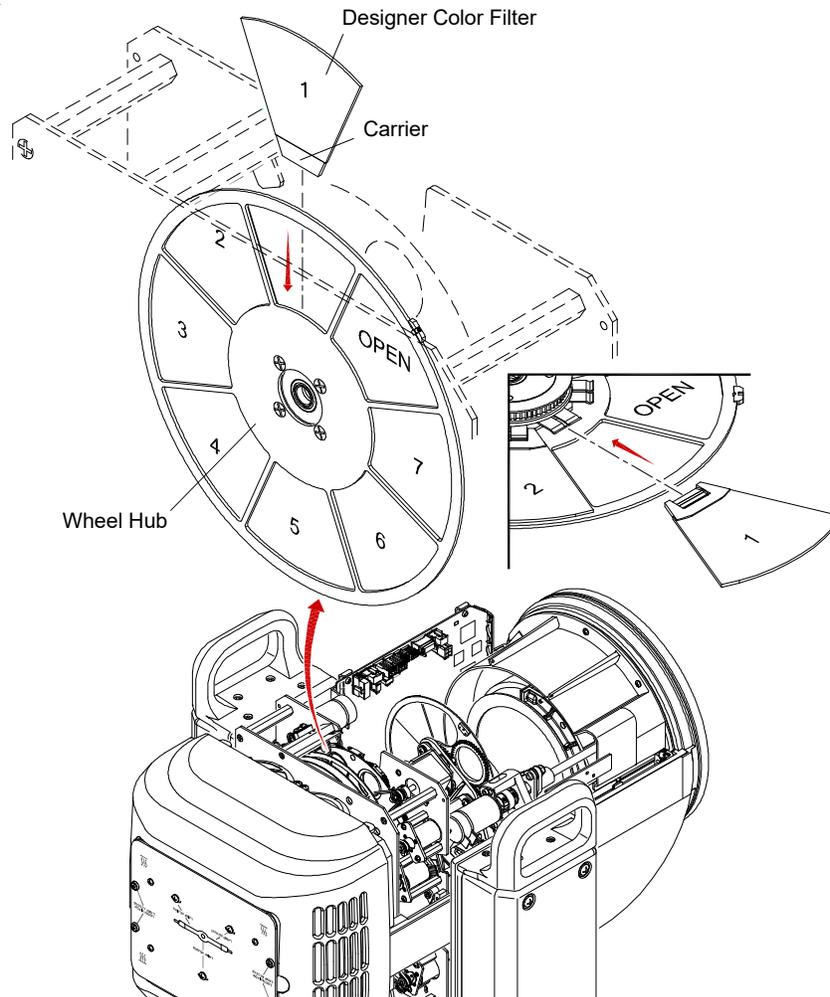


Figure 3-16: Removing a Designer Color Filter

- Step 5. Noting proper orientation of carrier, insert new designer color filter into position and push until carrier clicks into place. Refer to **Figure 3-17** for wheel positions.
- Step 6. Replace Head Cover.

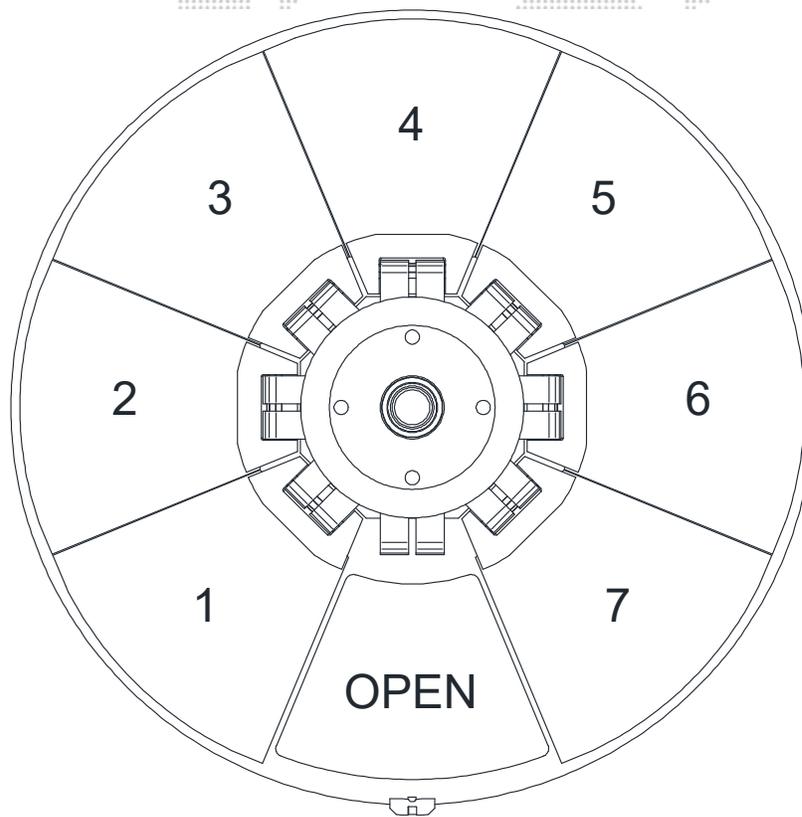


Figure 3-17: Designer Color Wheel Positions

## Replacing Front Glass

### Parts:

41.9816.0628 / 2.37493-R10 1 EA FRONT GLASS

### Tools:

Flat screwdriver  
Cotton gloves or finger cots



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace front glass:

Step 1. Remove power from luminaire and allow components to cool for at least 5 minutes.



**CAUTION:** Be extremely careful when removing Retaining Ring and Front Glass in next step. The glass can be easily chipped or cracked. Wear cotton gloves or finger cots when handling the glass.

Step 2. Position luminaire head so that Front Glass is facing upward. (To prevent it from falling onto the floor when the Retaining Ring is removed in the next step.)

Step 3. Insert flat screwdriver under notch in Front Lens Retaining Ring. Carefully remove Retaining Ring.

Step 4. Remove Front Glass.

Step 5. Replace Front Glass by doing steps in reverse. Ensure gasket under Front Glass is not damaged or missing.

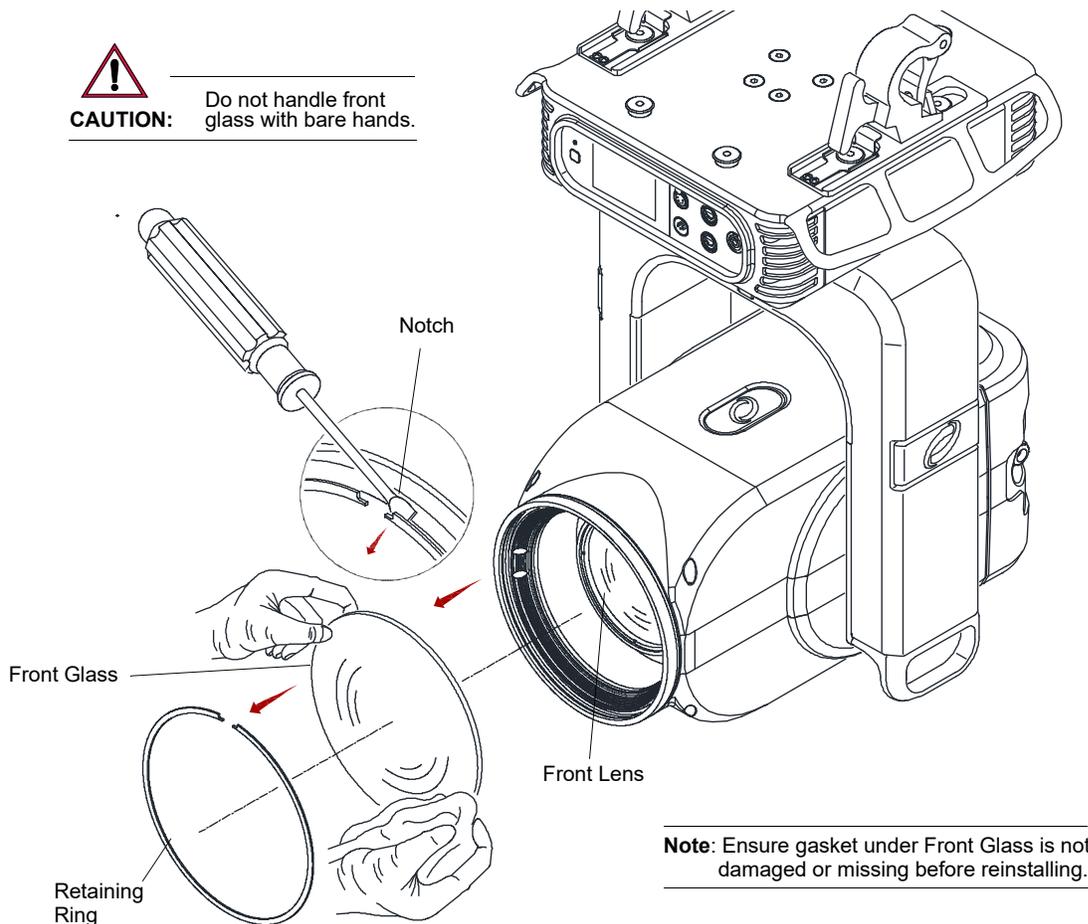


Figure 3-18: Removing Front Glass



## Replacing Light Shield

### Parts:

10.9816.0029 / 2.37493-R20	1 EA	LENS HOOD, FLEXIBLE
55.0078.1000.0	1 EA	BALL LOKT TIE, 316SS, .310" X .010" X 39.4" COATED (STEEL BAND)

### Tools:

Tensioning Tool (07.4035.0001.0)  
Flat screwdriver  
Large wire cutters



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**WARNING!** Remove power from luminaire before performing any maintenance procedures.

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### To replace light shield:

- Step 1. Remove power from luminaire and allow components to cool for at least 5 minutes.
- Step 2. Fold Light Shield to outward position, if applicable. (To access steel band.)
- Step 3. Using wire cutters, cut existing steel band to release Light Shield.
- Step 4. Install new Light Shield over front ring (**Figure 3-19**). The notch around the edge of the Light Shield should fit into the groove of the front ring as shown in Detail A.
- Step 5. Wrap new steel band (55.0078.1000.0) around outside edge of Light Shield as shown in Detail B.
- Step 6. Feed end of belt through fastener clip, positioning clip near side rail as shown.
- Step 7. Be sure band is flush against rubber ridge. Start using Tensioning Tool to tighten band. As band is tightening, position fastener clip in the middle of the side rail as shown in Detail B.
- Step 8. Fully tighten belt, then press silver arm of Tensioning Tool to cut excess.

Step 9. Using a flat screwdriver, press down on sharp edges of belt (left by the cutter) as shown in Detail B. (This should remove the cutting hazard.)

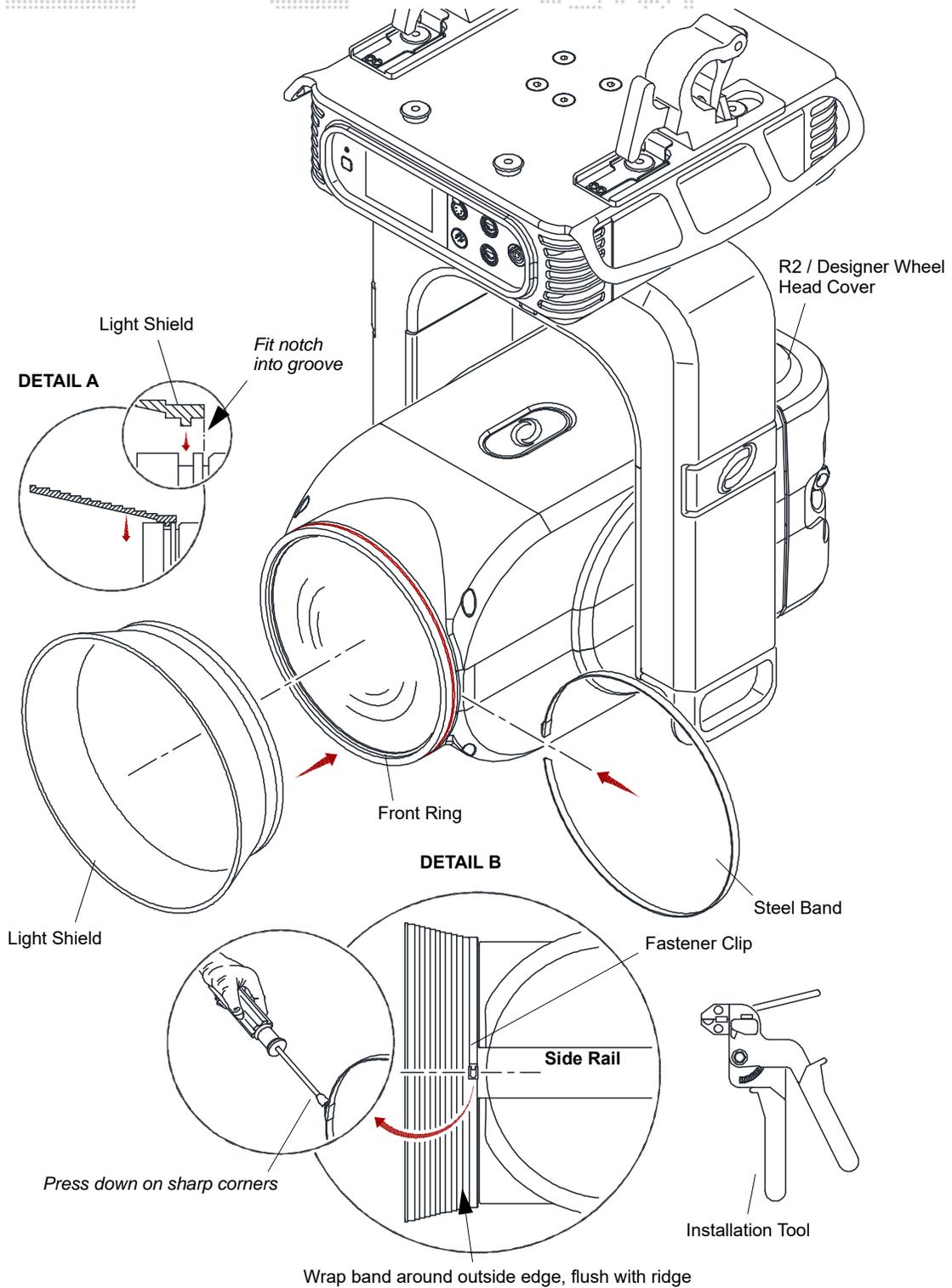


Figure 3-19: Installing Light Shield with Steel Band

## Replacing Head Fan

### Parts:

25.9816.0996.A

1 EA CABLE ASSY, HEAD FAN, 24V NO SENSOR, ALTERNATE

### Tools:

#2 Phillips screwdriver

Wire cutters

Cable Ties



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace the head fan:

- Step 1. Remove power from luminaire.
- Step 2. Remove R1 Head Cover. (Refer to "Removing Head Covers" on page 34.)
- Step 3. At Head Fan Assembly, loosen two 6-32 x 1/4" screws and two 6-32 Nylon Insert Hex Nuts.
- Step 4. Disconnect two fan cables and remove Head Fan Assembly.

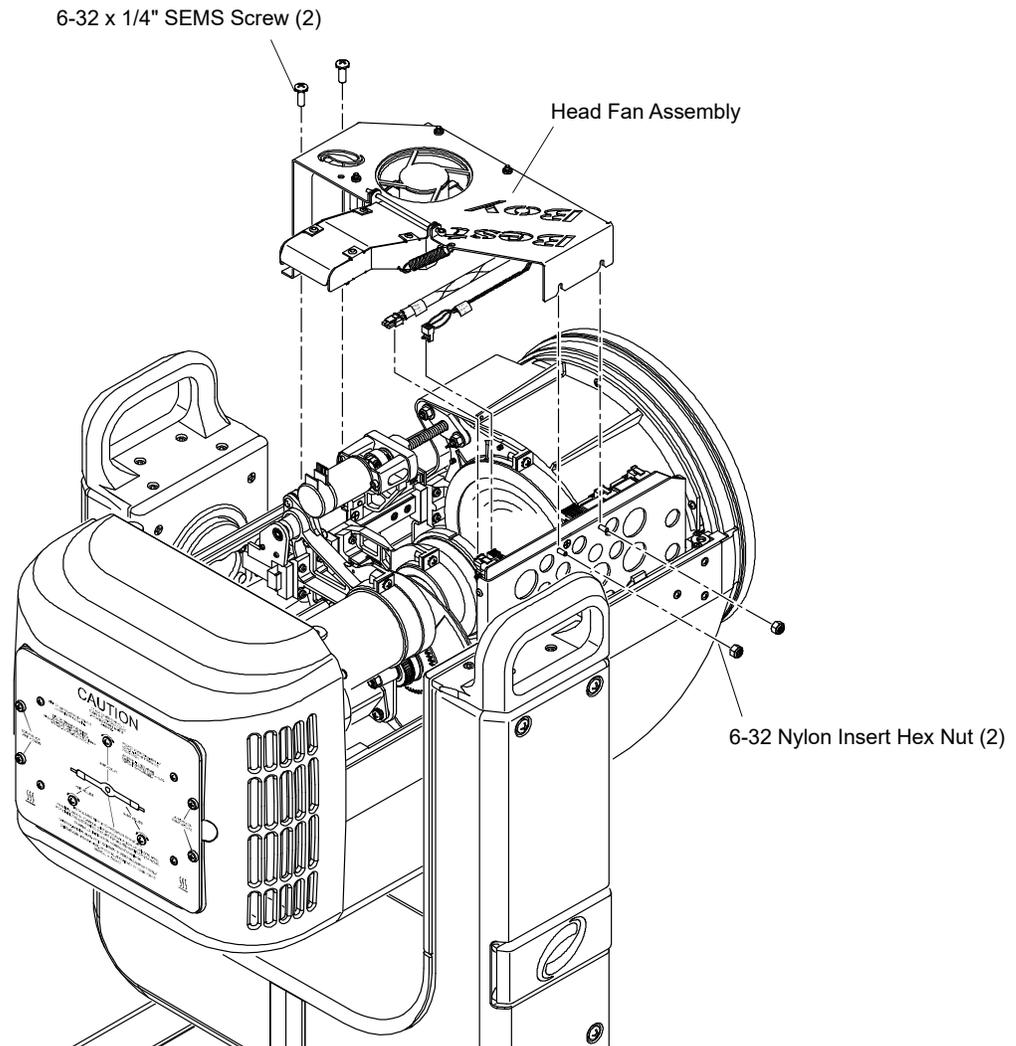


Figure 3-20: Removing Head Fan Assembly

- Step 5. At bottom side of Head Fan Assembly, cut cable tie which secure cables to mounting bracket.
- Step 6. At Fan, remove two 6-32 x 1-1/4" screws and one 6-32 x 1-3/8" screw. (The cable anchor mount and #6 flat washer will also become loose when the screw is removed.)
- Step 7. Replace Fan by doing steps in reverse. Apply Loctite 242 to 6-32 screws when installing.
- Step 8. Re-secure cables with a cable tie.
- Step 9. Verify that Kapton tape is protecting fan leads at top of fan.

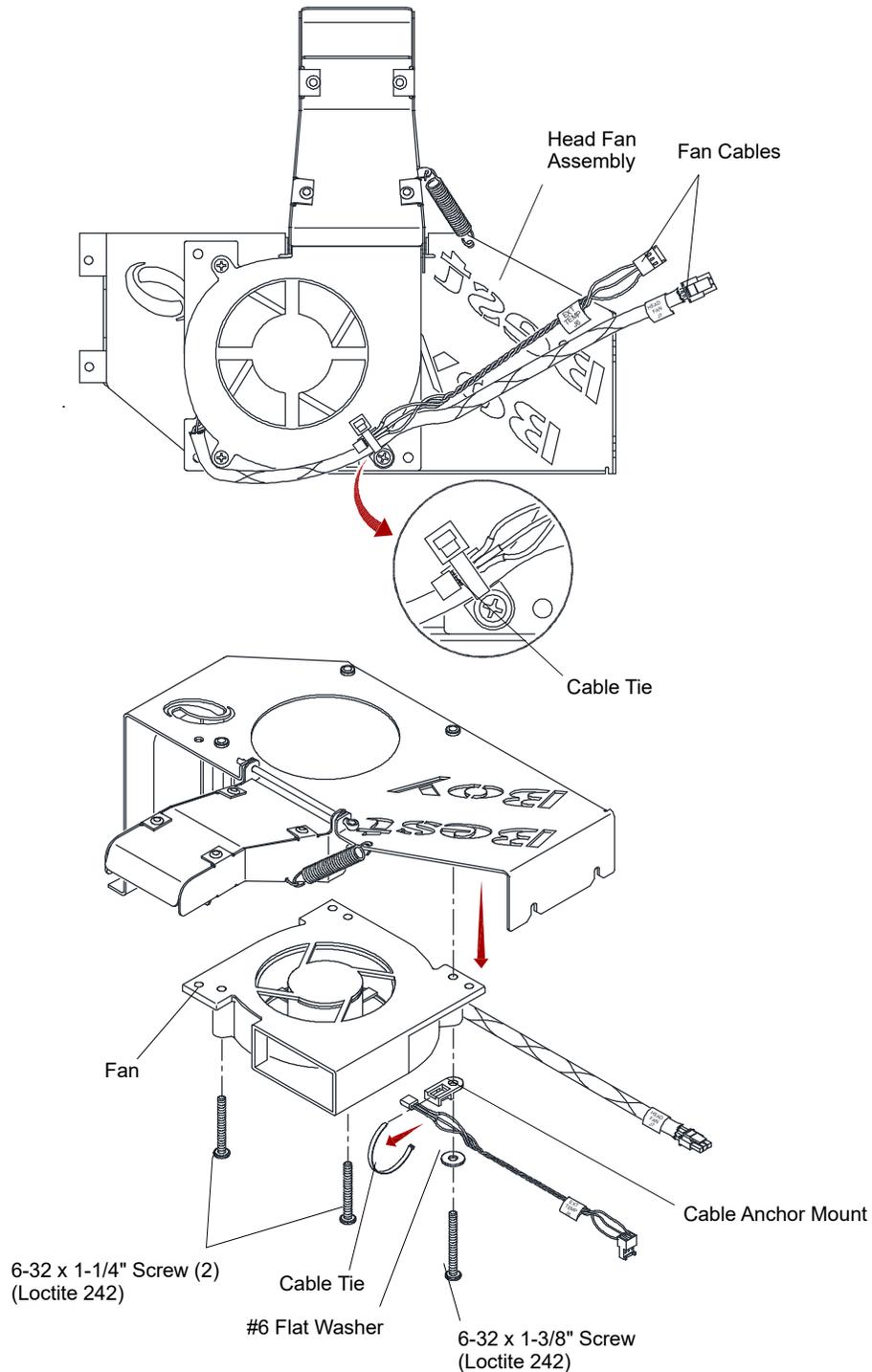


Figure 3-21: Removing Head Fan From Bracket

## Replacing Head Controller PCB

### Parts:

24.9816.0640

1 EA HEAD CONTROLLER, BEST BOY

### Tools:

#2 Phillips screwdriver



**WARNING!** Remove power from luminaire before performing any maintenance procedures.



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

### To replace the Head Controller PCB:

- Step 1. Remove power from luminaire.
- Step 2. Remove both Head Covers. (Refer to "Removing Head Covers" on page 34.)
- Step 3. Remove Head Fan and Bracket Assembly. (Refer to "Replacing Head Fan" on page 57.)
- Step 4. At Head Controller PCB, disconnect all cables (**Figure 3-22**).

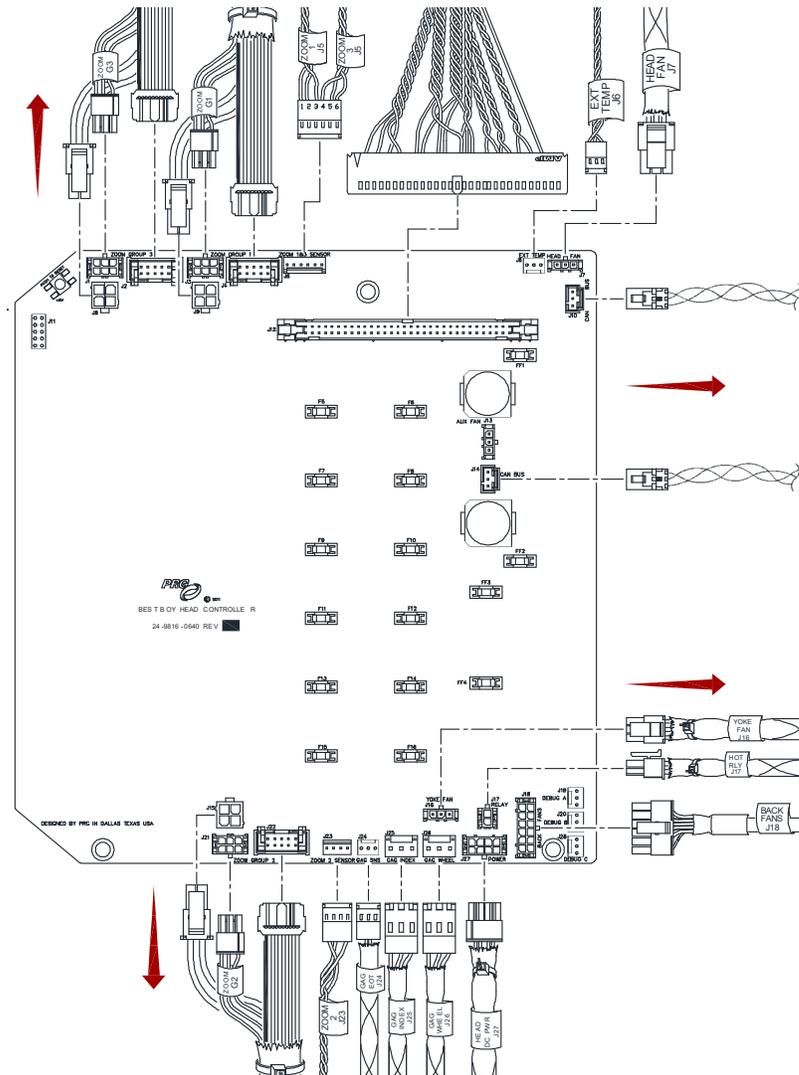
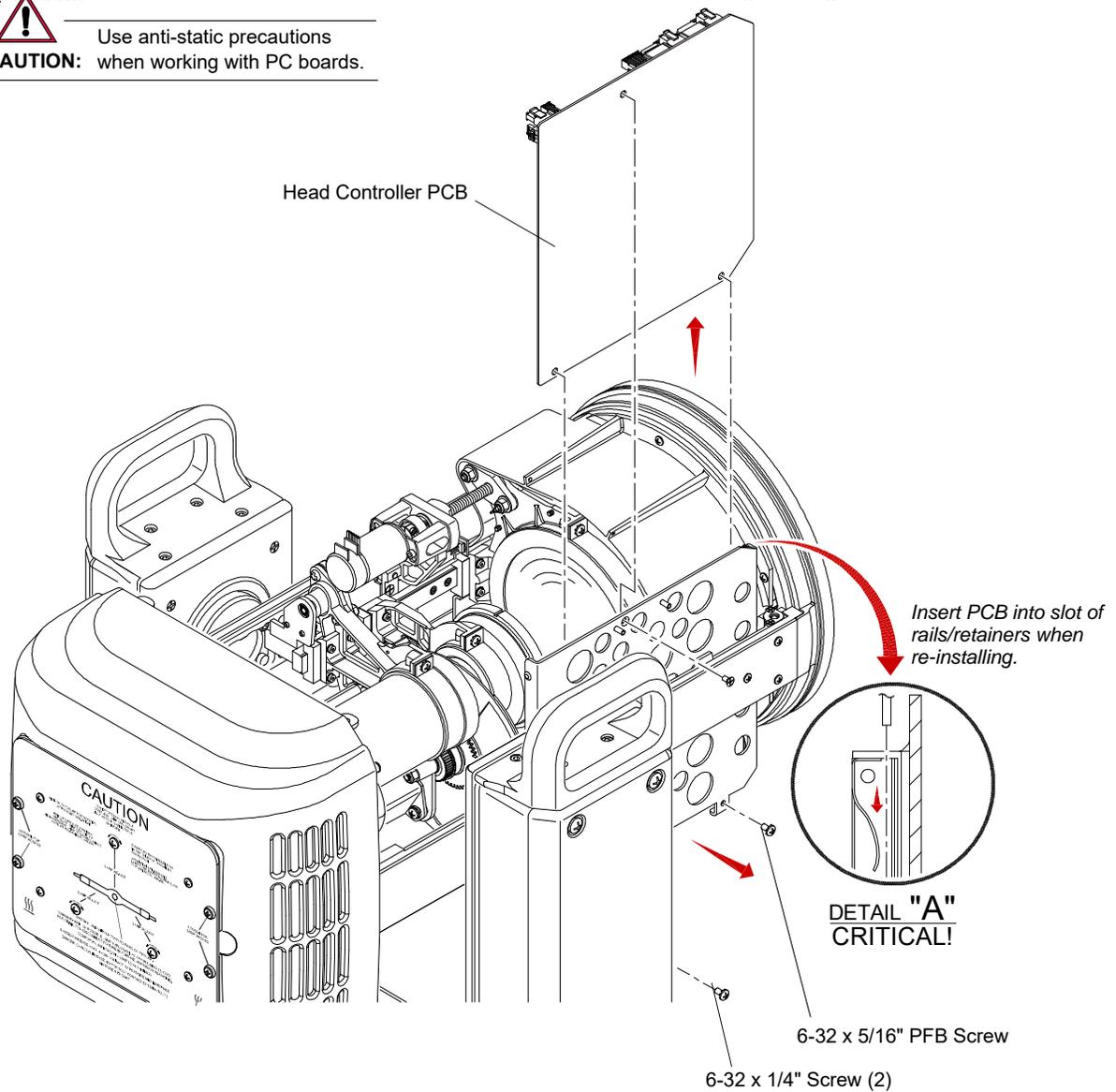


Figure 3-22: Head Controller PCB Cable Connections

- Step 5. At Head Controller PCB, remove two 6-32 x 1/4" screws and one 6-32 x 5/16" PFB screw (**Figure 3-23**).
- Step 6. Slide Head Controller PCB up and out of Head Assembly.
- Step 7. Replace PCB by doing steps in reverse. When re-installing, insert PCB into slot of rails/retainers as shown in Detail A below.

 Use anti-static precautions  
**CAUTION:** when working with PC boards.



**Figure 3-23: Removing Head Controller PCB**

## Replacing Wheel Stack

### Parts:

21.9817.0200

1 EA ASSY, WHEEL STACK BEST BOY HP SPOT

### Tools:

#2 Phillips screwdriver



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace the wheel stack:

- Step 1. Remove power from luminaire.
- Step 2. Remove R1 Head Cover. (Refer to "Removing Head Covers" on page 34.)
- Step 3. Move Head Fan Duct to up position (**Figure 3-24**).

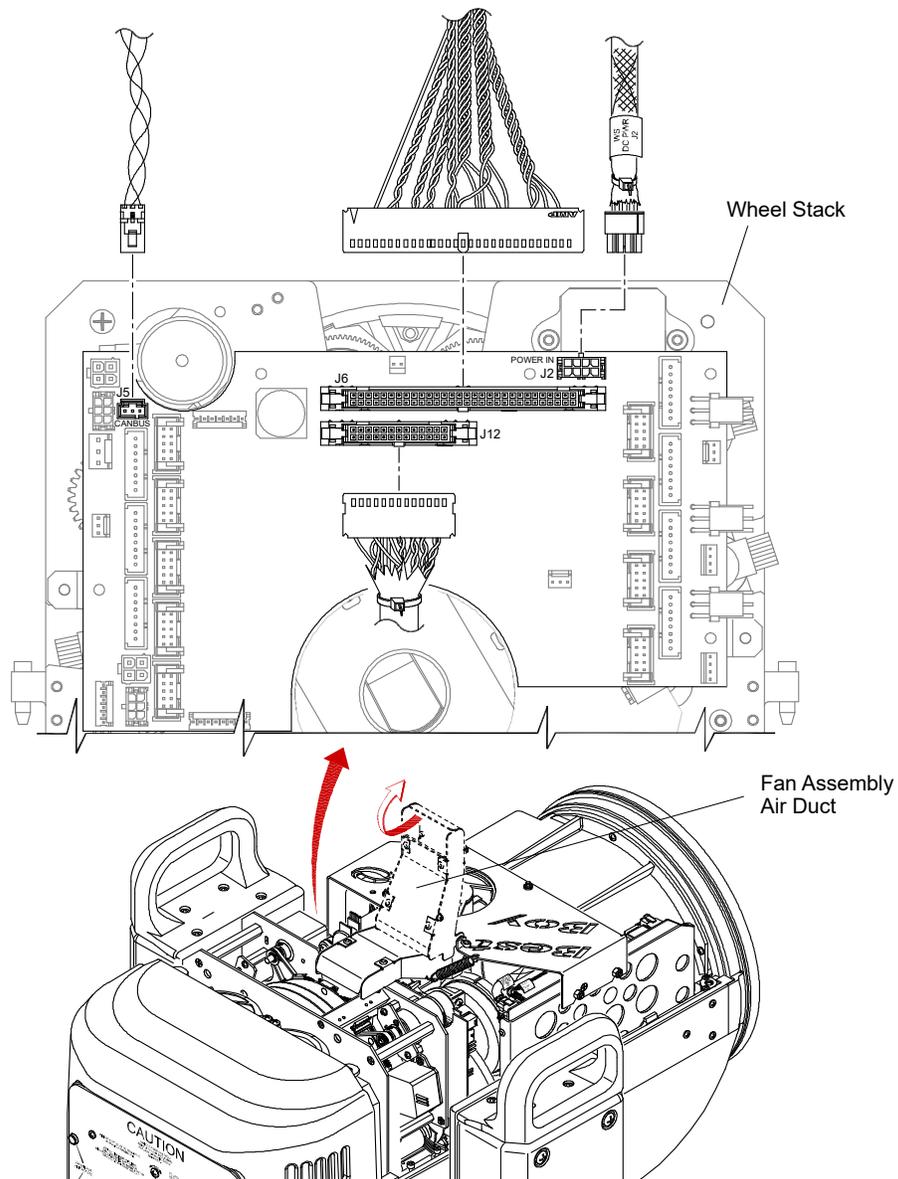


Figure 3-24: Disconnecting Wheel Stack Cables

- Step 4. Disconnect four cables.
- Step 5. At Wheel Stack, loosen captive screws (**Figure 3-25**).
- Step 6. Verify that Lens Group 1 will not interfere with removal of Wheel Stack Assembly. If lenses are in the way, turn Group 1 pulley until lenses are clear.
- Step 7. Grasp Wheel Stack Assembly on either side and lift straight up and out of luminaire head.
- Step 8. Install new Wheel Stack by doing steps in reverse.

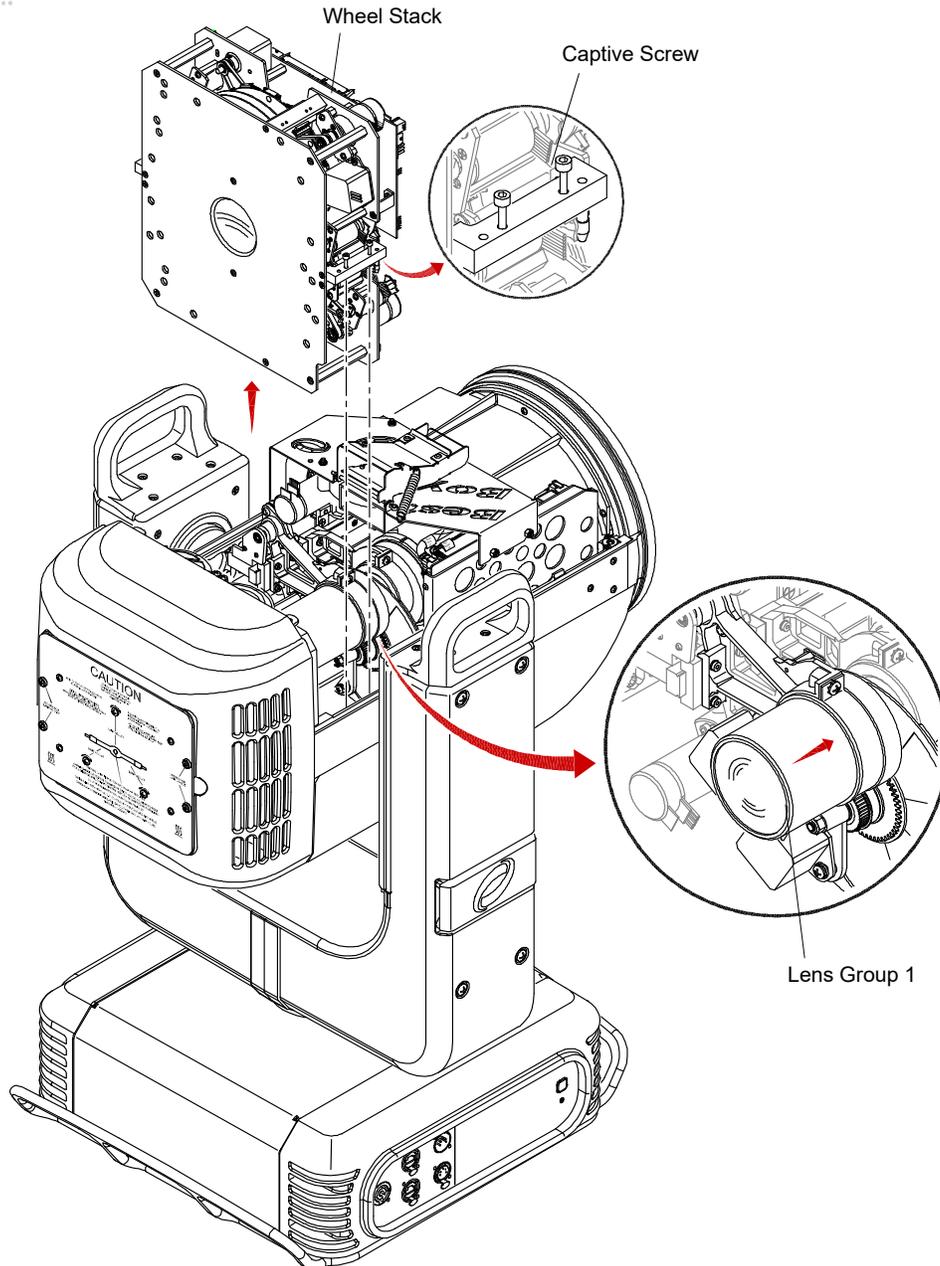


Figure 3-25: Removing Wheel Stack

## Replacing Gobo Index 1 Motor

### Parts:

23.9816.0211.01 1 EA MOTOR ASSY, GOBO INDEX 1

### Tools:

#2 Phillips screwdriver  
Loctite #242 (06.6008.0001)



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace Gobo Index 1 Motor:

- Step 1. Remove power from luminaire.
- Step 2. Remove Wheel Stack Assembly. (Refer to "Replacing Wheel Stack" on page 61.)
- Step 3. At Gobo Index 1 Motor, disconnect cable (**Figure 3-26**).
- Step 4. Remove two 6-32 x 5/16" PPSS screws at bottom plate.
- Step 5. Tilt motor enough to slip belt off of gear and remove motor.
- Step 6. Replace motor by doing steps in reverse. Apply Loctite 242 to threads of screws.
- Step 7. Adjust belt tension by rotating motor mount.

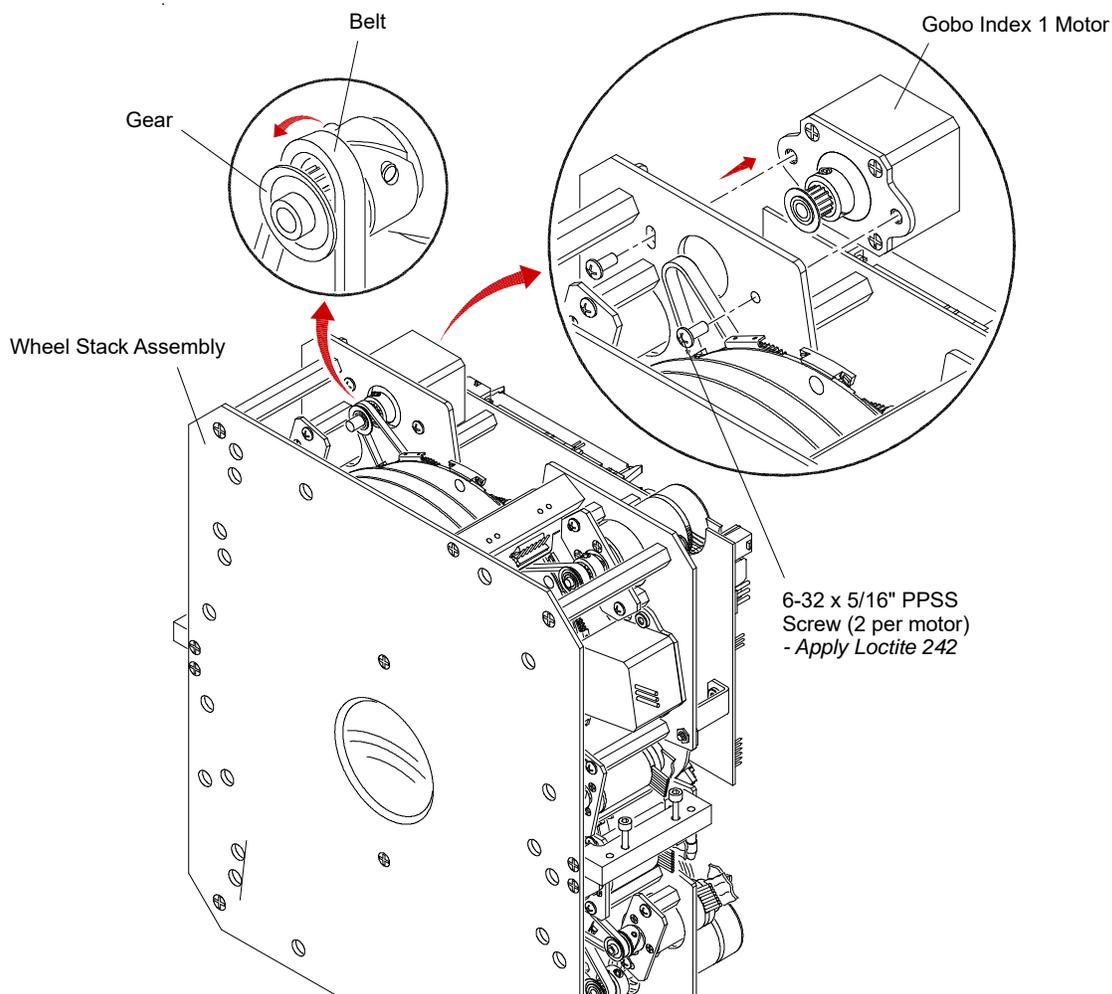


Figure 3-26: Removing Gobo Index 1 Motor

## Replacing Gobo Index 2 Motor

### Parts:

23.9816.0231.02 1 EA MOTOR ASSY, GOBO INDEX 2

### Tools:

#2 Phillips screwdriver  
Loctite #242 (06.6008.0001)



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace Gobo Index 2 Motor:

- Step 1. Remove power from luminaire.
- Step 2. Remove Wheel Stack Assembly. (Refer to "Replacing Wheel Stack" on page 61.)
- Step 3. At Gobo Index 2 Motor, disconnect cable (**Figure 3-27**).
- Step 4. Remove two 6-32 x 5/16" PPSS screws at bottom plate.
- Step 5. Tilt motor enough to slip belt off of gear and remove motor.
- Step 6. Replace motor by doing steps in reverse. Apply Loctite 242 to threads of screws.
- Step 7. Adjust belt tension by rotating motor mount.

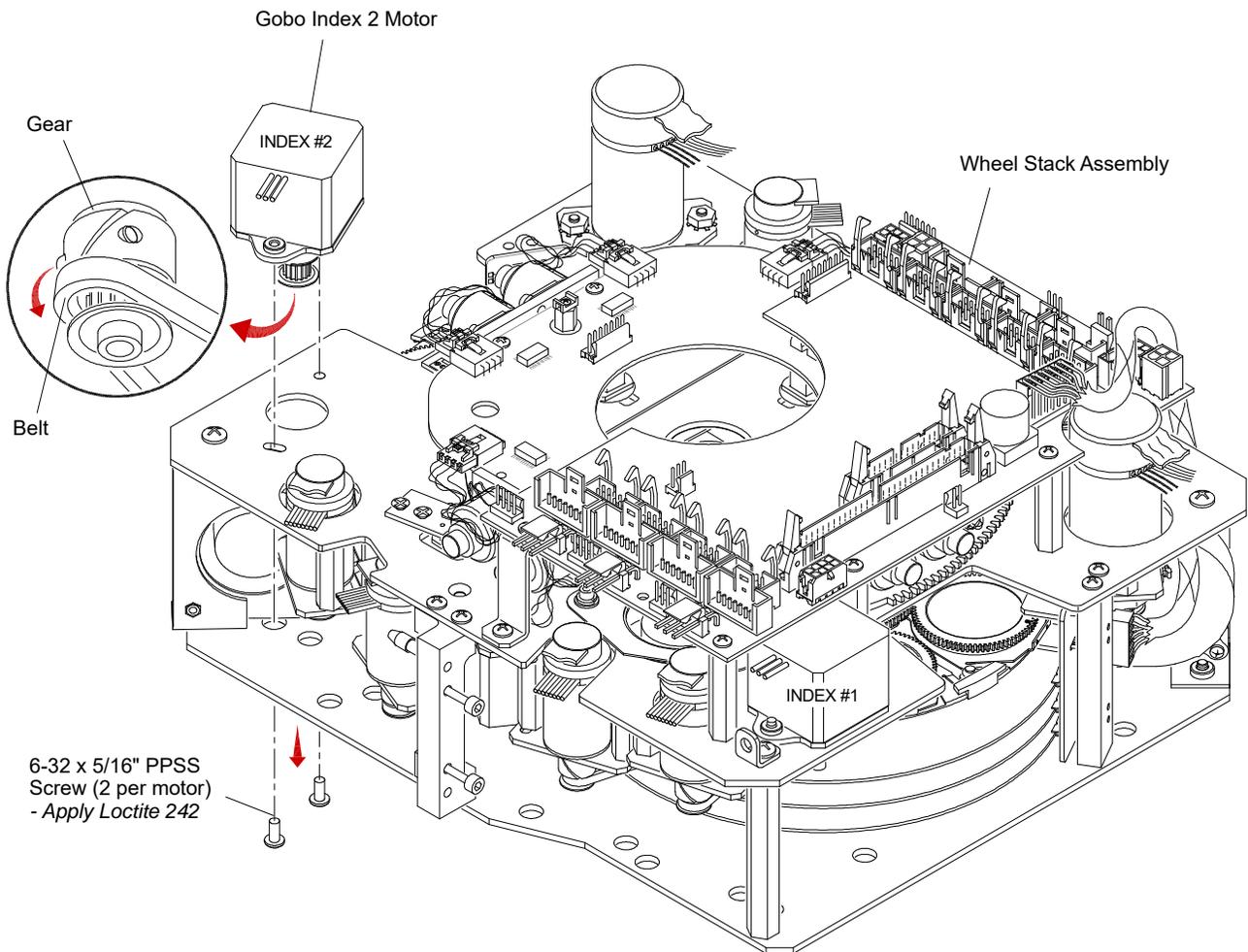


Figure 3-27: Removing Gobo Index 2 Motor

## Replacing Gag EOT Sensor

### Parts:

25.9816.0988 / 2.3749A-P45 1 EA CABLE ASSY, GAG EOT SENSOR

### Tools:

#2 Phillips screwdriver  
Wire cutters  
Loctite #242 (06.6008.0001)  
Cable Ties



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace the gag sensor:

- Step 1. Remove power from luminaire.
- Step 2. Remove R2 Head Cover. (Refer to "Removing Head Covers" on page 34.)
- Step 3. Move Lens Group away from Wheel Stack.
- Step 4. At Head Controller PCB, disconnect Gag EOT Sensor Cable from J24.
- Step 5. Cut cable tie which secures Gag EOT Sensor Cable to luminaire.
- Step 6. At Gag Sensor PCB, remove two 4-40 x 3/16" PFSS screws and remove Gag Sensor PCB Cable Assembly.
- Step 7. Replace Gag EOT Sensor PCB Cable Assembly by doing steps in reverse. Apply Loctite 242 to screws.

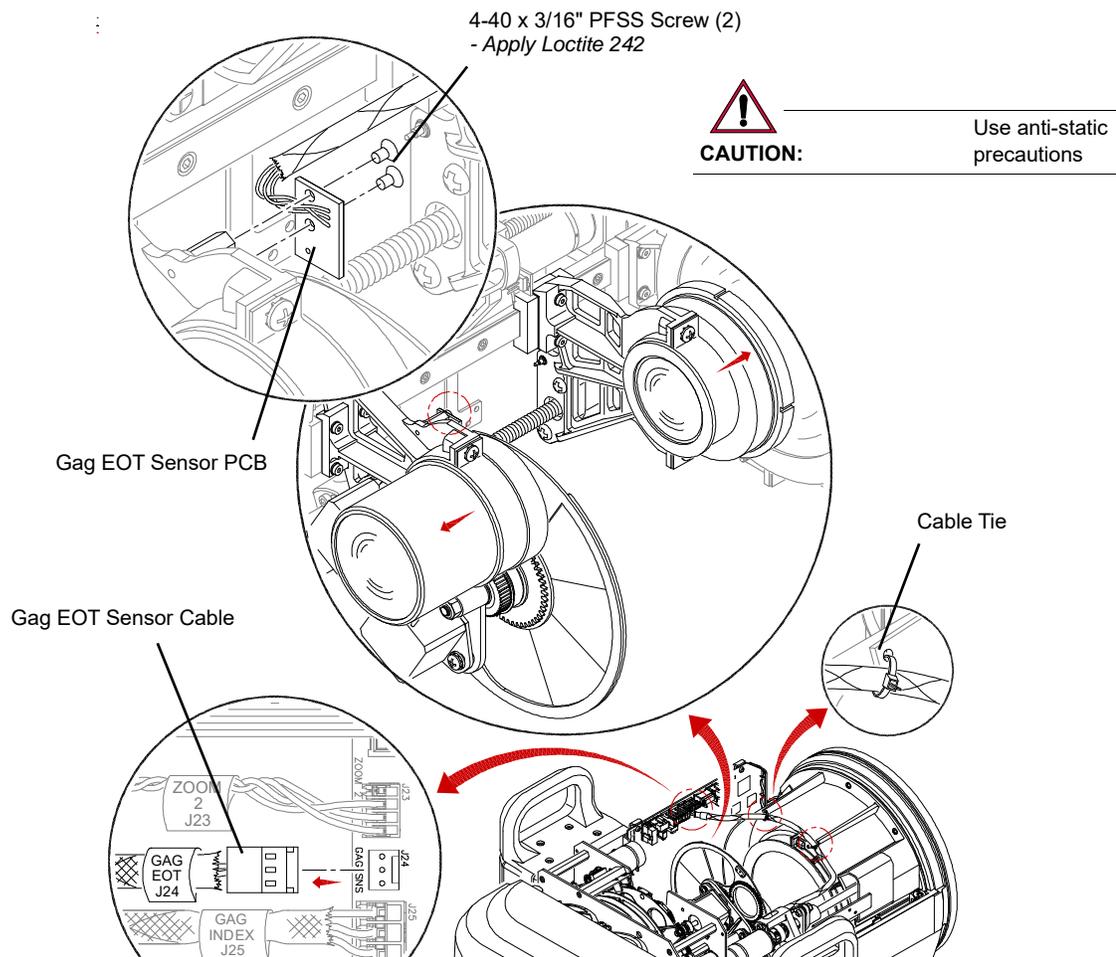


Figure 3-28: Removing Gag Sensor Cable Assembly

## Replacing Gag Wheel Motor

### Parts:

23.9816.0568 / 2.37493-P7F 1 EA ASSY, MOTOR GAG WHEEL

### Tools:

#2 Phillips screwdriver  
Wire cutters  
Cable Ties



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace the gag wheel motor:

- Step 1. Remove power from luminaire.
- Step 2. Remove R1 Head Cover. (Refer to "**Removing Head Covers**" on page 34.)
- Step 3. Move Lens Group away from Wheel Stack.
- Step 4. At Head Controller PCB, disconnect Gag Wheel Cable from J26 (**Figure 3-29**).
- Step 5. Cut cable tie securing Gag Wheel Cable to luminaire.
- Step 6. At Gag Wheel Motor, loosen two 8-32 x 3/8" PPZ screws.
- Step 7. Rotate Gag Wheel Motor to loosen timing belt.
- Step 8. Remove two screws (previously loosened in Step 6) and remove motor from Head Assembly.
- Step 9. Install new Gag Wheel Motor by doing steps in reverse.
- Step 10. Adjust belt tension by rotating motor mount.

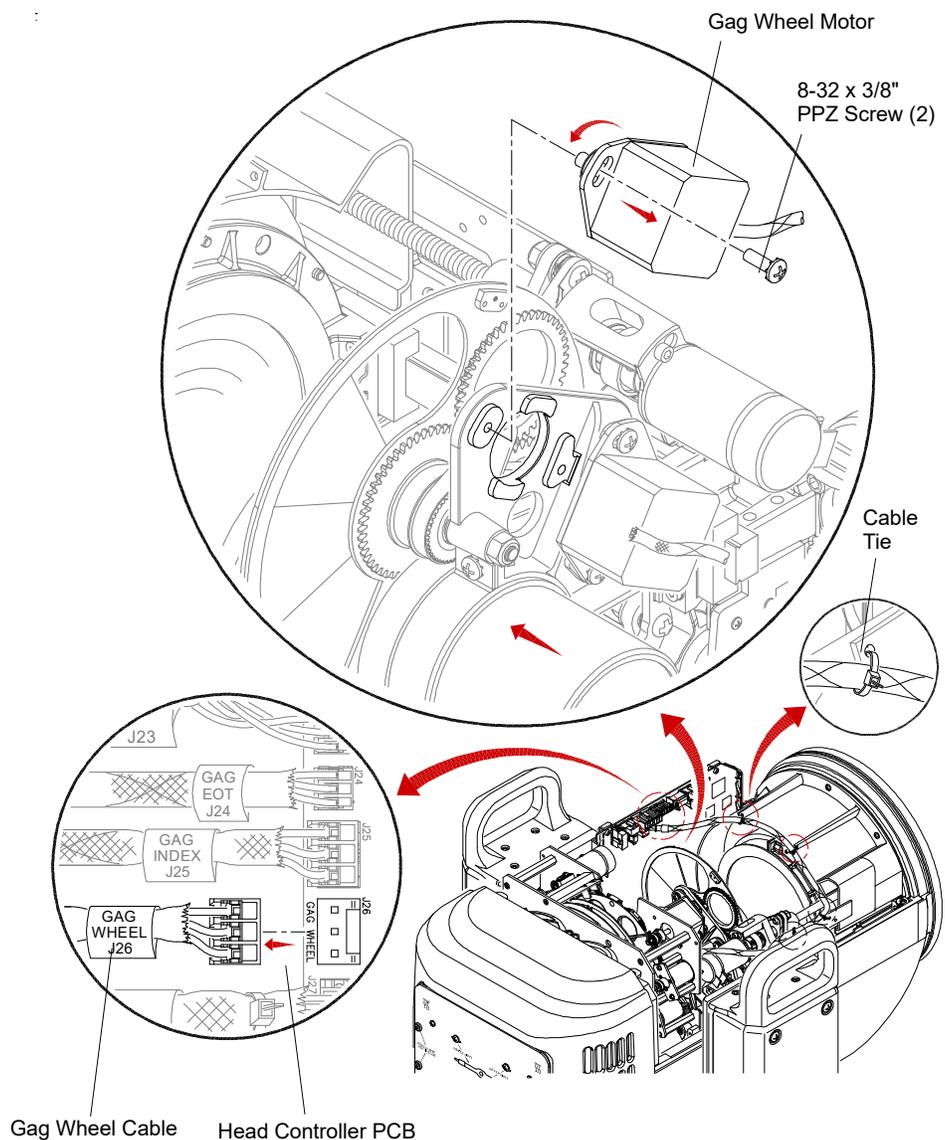


Figure 3-29: Removing Gag Wheel Motor

## Replacing Gag Index Motor

### Parts:

23.9816.0569 / 2.37493-P7H 1 EA MOTOR ASSY, GAG INDEX (EXT SHAFT)

### Tools:

#2 Phillips screwdriver  
Wire cutters  
Cable Ties



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace the gag index motor:

- Step 1. Remove power from luminaire.
- Step 2. Remove R1 Head Cover. (Refer to "Removing Head Covers" on page 34.)
- Step 3. Move Lens Group away from Wheel Stack.
- Step 4. At Head Controller PCB, disconnect Gag Index Cable from J26 (**Figure 3-30**).
- Step 5. Cut cable tie securing Gag Index Cable to luminaire.
- Step 6. At Gag Wheel Index Motor, remove two 8-32 x 3/8" PPZ screws.
- Step 7. Rotate Gag Wheel Index Motor to loosen timing belt, and then remove motor from Head Assembly.
- Step 8. Install new Gag Wheel Index Motor by doing steps in reverse.
- Step 9. Adjust belt tension by rotating motor mount.

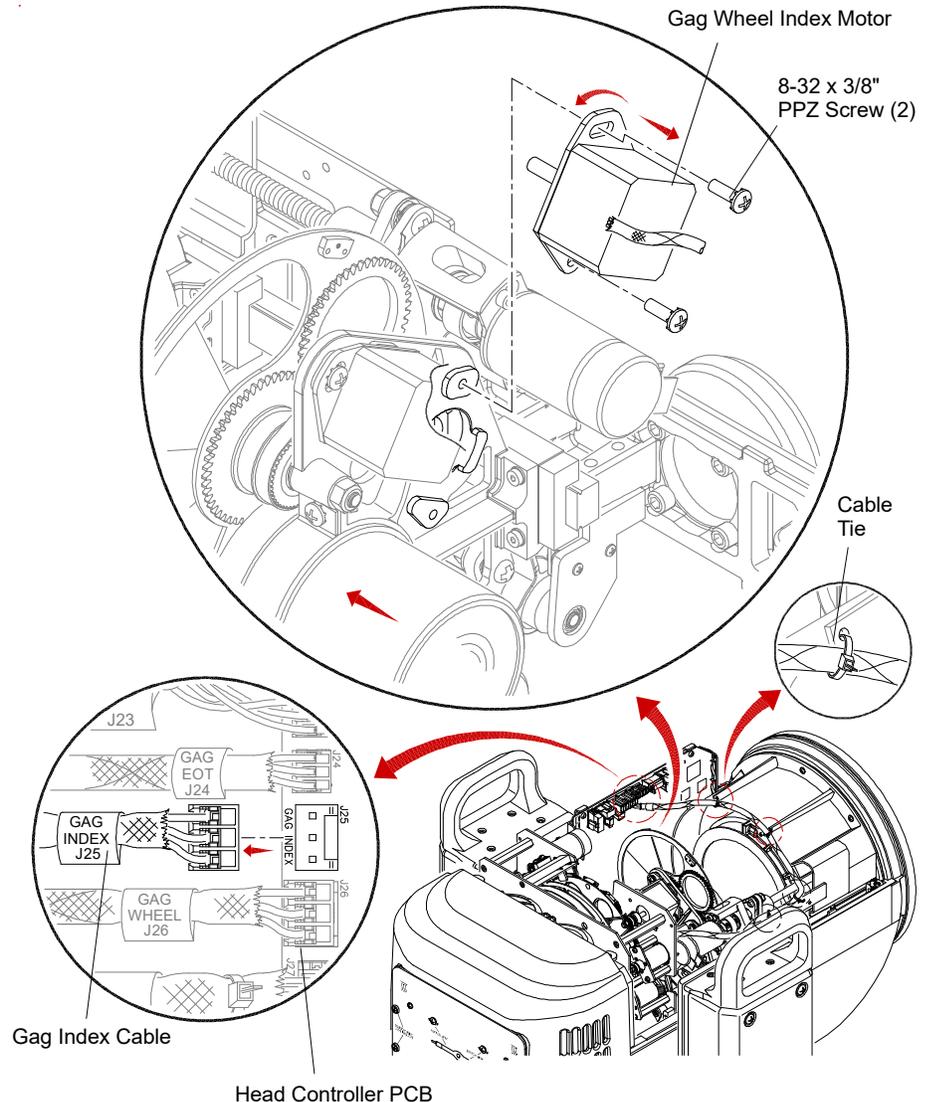


Figure 3-30: Removing Gag Wheel Index Motor

## Replacing a Zoom Sensor

The Zoom Assembly contains three Zoom Sensor PCBs (one for each Zoom Lens Group). This procedure provides instructions for changing any one of the three sensors.

Note that one (1) Zoom Sensor PCB is located on the top side of the Head Assembly (under the R1 cover) and two (2) Zoom Sensor PCBs are located on the bottom side of the Head Assembly (under the R2 cover).

### Parts:

24.9812.0510 / 2.3749A-P40 3 EA PCB ASSY, ZOOM SENSOR

### Tools:

#2 Philips screwdriver

#1 Right-angle Philips screwdriver or #1 Philips screwdriver, as required



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**WARNING!** Remove power from luminaire before performing any maintenance procedures.

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

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### To replace a zoom sensor:

Step 1. Remove power from luminaire.

Step 2. Remove Head Covers. (Refer to "Removing Head Covers" on page 34.)



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**CAUTION: NEVER touch or adjust** the brass spring-loaded standoff. It is set at the factory.

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Step 3. To remove Zoom Sensor 1:

- a. Remove R2 Head Cover. (Refer to "Removing Head Covers" on page 34.)
- b. At Zoom Sensor, disconnect cable from header (**Figure 3-31**).
- c. Remove Zoom Sensor by removing two 2-56 x 3/16" PPSS screws.

Step 4. To remove Zoom Sensor 3:

- a. Remove R2 Head Cover. (Refer to "Removing Head Covers" on page 34.)
- b. At Zoom Sensor, disconnect cable from header (**Figure 3-31**).
- c. Remove Zoom Sensor by removing two 2-56 x 3/16" PPSS screws.
- d. Remove two 3/16" Hex Standoffs from Zoom Sensor PCB and install on new Zoom Sensor PCB.

Step 5. To remove Zoom Sensor 1:

- a. Remove R1 Head Cover. (Refer to "Removing Head Covers" on page 34.)
- b. At Zoom Sensor, disconnect cable from header (**Figure 3-32**).
- c. Remove Zoom Sensor by removing two 2-56 x 3/16" PPSS screws.

Step 6. Replace a Zoom Sensor by doing steps in reverse. Apply Loctite 222 to all screws.



**CAUTION: NEVER touch or adjust the brass spring-loaded standoff. It is set at the factory.**

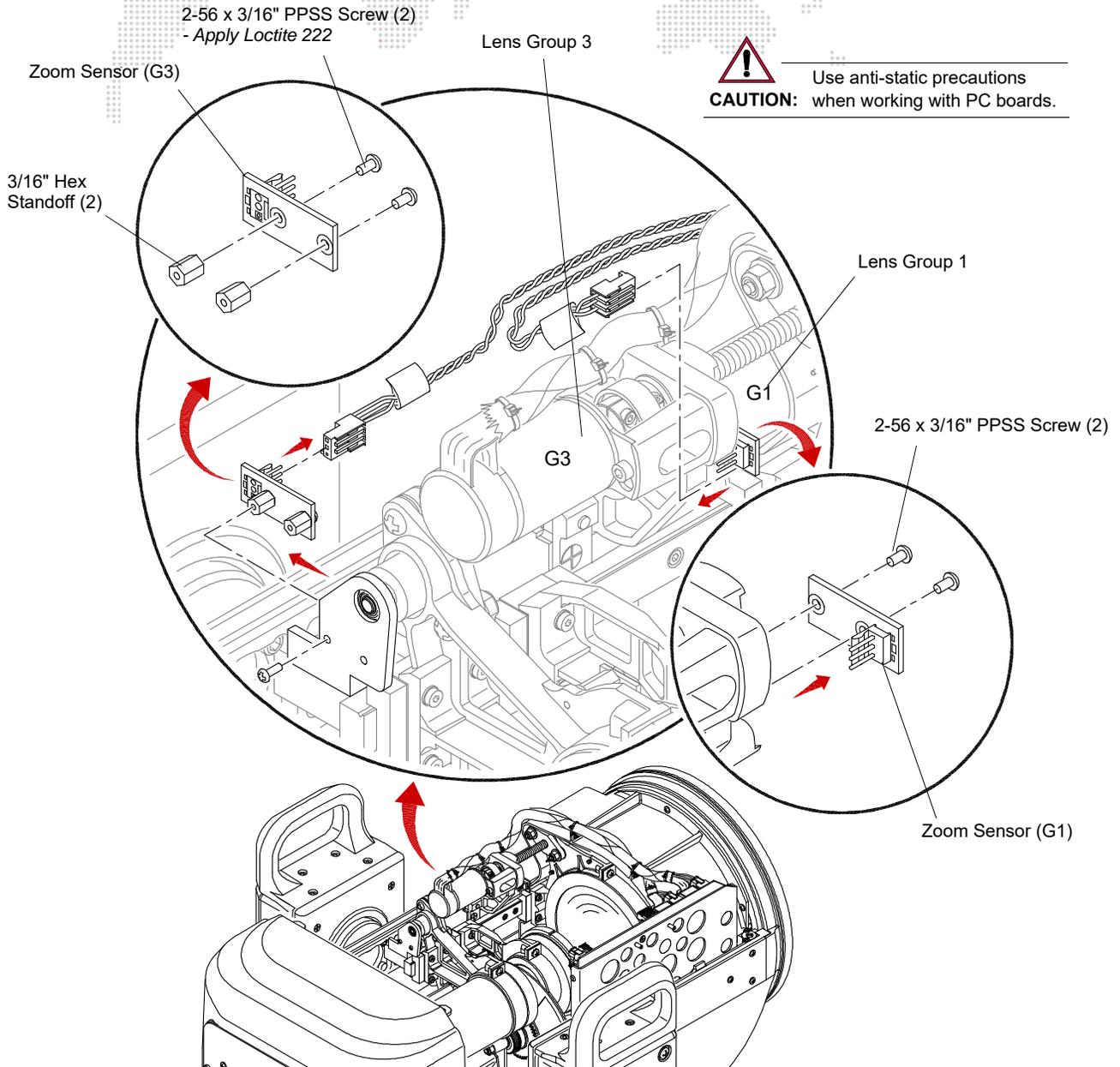


Figure 3-31: Removing Zoom Sensors 1 & 3



**CAUTION:** NEVER touch or adjust the brass spring-loaded standoff. It is set at the factory.



Use anti-static precautions  
**CAUTION:** when working with PC boards.

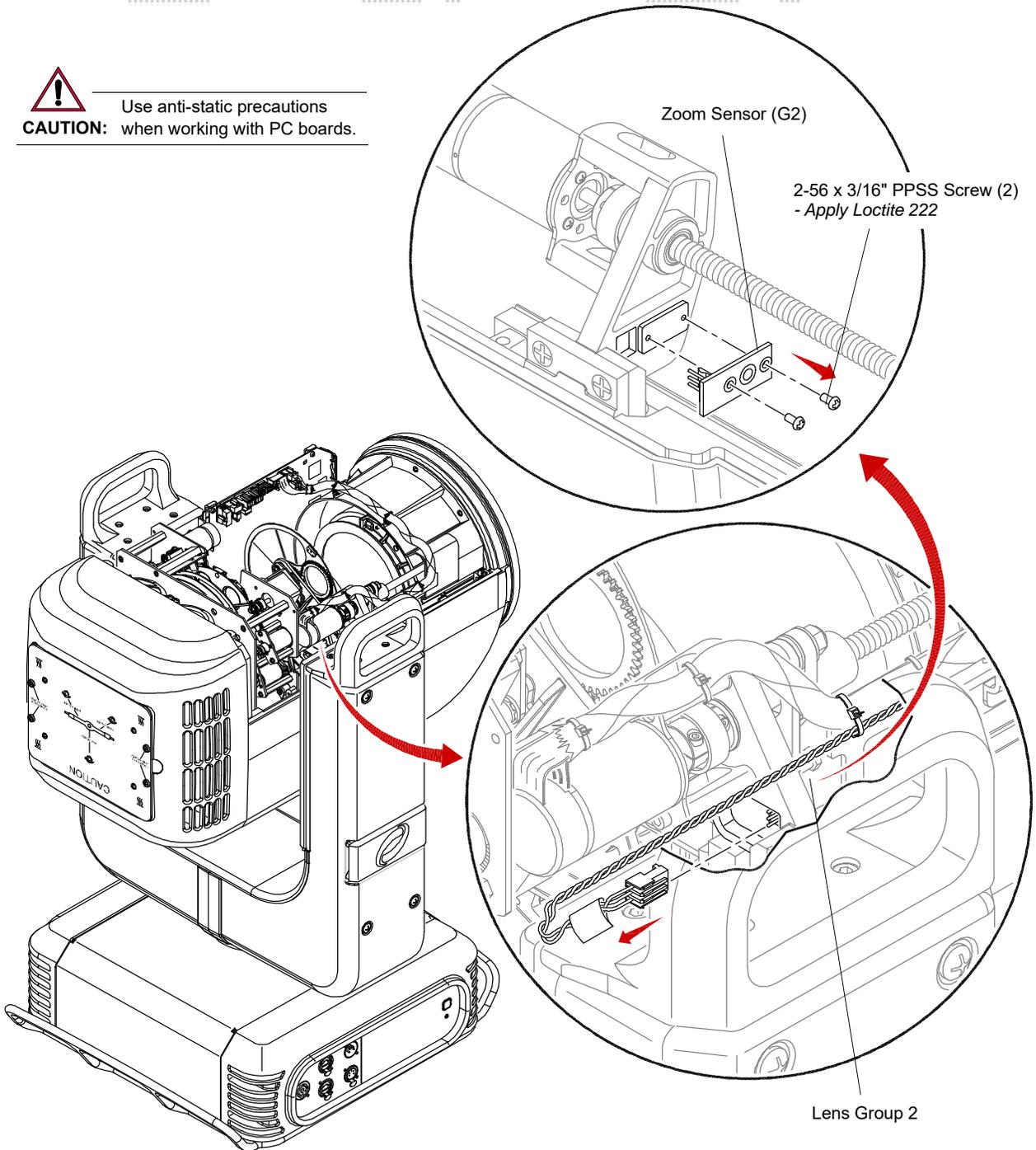


Figure 3-32: Removing Zoom Sensor 2

## Replacing a Zoom Lens Motor

### Parts:

23.9816.0530.01 / 2.3749A-R25	1 EA	MOTOR ASSY, ZOOM LENS GROUP 1
23.9816.0530.02 / 2.3749A-R30	1 EA	MOTOR ASSY, ZOOM LENS GROUP 2
23.9816.0530.03 / 2.3749A-R35	1 EA	MOTOR ASSY, ZOOM LENS GROUP 3

### Tools:

#2 Phillips screwdriver  
Wire cutters  
Loctite #242 (06.6008.0001)  
Loctite #425 (06.6008.0003)  
Cable Ties



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace a zoom lens motor:

- Step 1. Remove power from luminaire.
- Step 2. Remove R2/Designer Wheel Head Cover. (Refer to "**Removing Head Covers**" on page 34.)



**CAUTION: NEVER touch or adjust** the brass spring-loaded standoff. It is set at the factory.

- Step 3. At Head Controller PCB, disconnect cable of required Zoom Lens Motor. Refer to the following illustrations:
  - a. Lens Group 1 Motor (G1) in **Figure 3-33**
  - b. Lens Group 2 Motor (G2) in **Figure 3-34**
  - c. Lens Group 3 Motor (G3) in **Figure 3-35**
- Step 4. Cut cable tie which secures cable to luminaire. Make note of its position for re-installation.
- Step 5. At Zoom Lens Motor, loosen set screw which secures shaft to coupling.
- Step 6. Remove Zoom Lens Motor by removing two 6-32 x 3/8" socket head screws.
- Step 7. Install new Zoom Lens Motor by doing steps in reverse. Do the following:
  - a. Apply Loctite 242 to threads of 6-32 x 3/8" socket head screws.
  - b. Torque set screw to 2 in-lbs and apply a drop of Loctite 425 to threads.
  - c. Re-install cable ties.



**CAUTION: NEVER touch or adjust the brass spring-loaded standoff. It is set at the factory.**

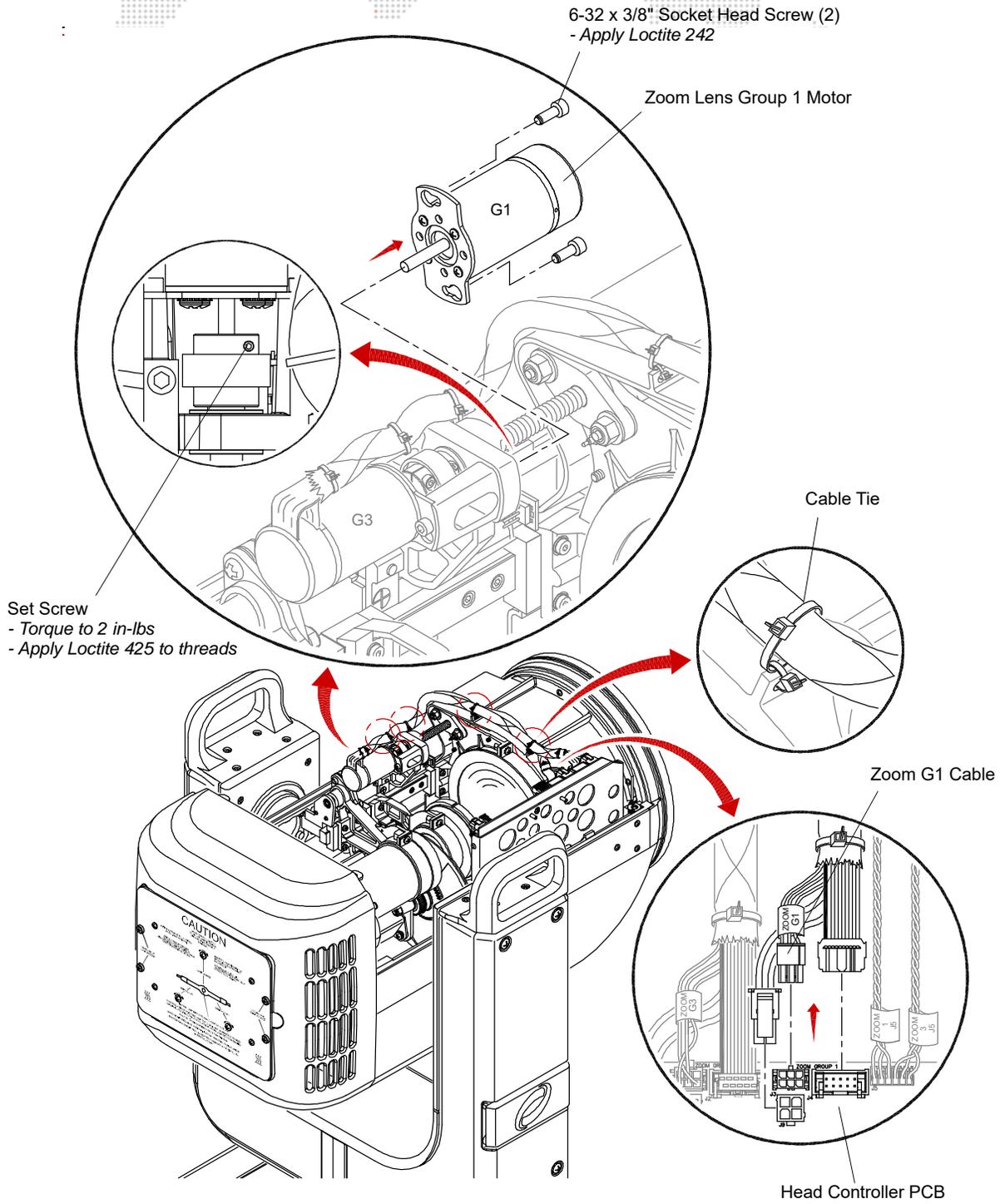


Figure 3-33: Removing Zoom Lens Group 1 Motor



**CAUTION:** NEVER touch or adjust the brass spring-loaded standoff. It is set at the factory.

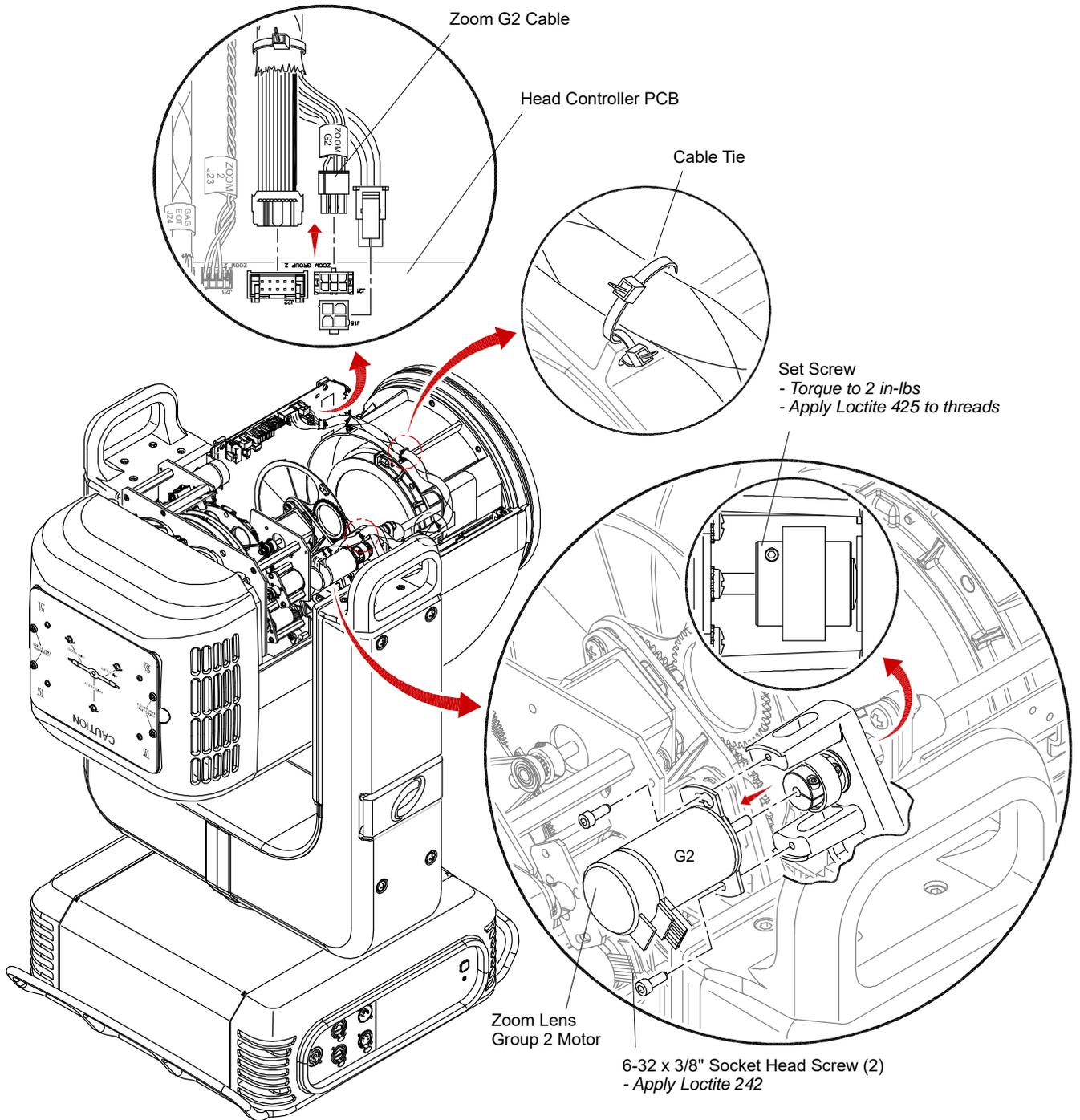


Figure 3-34: Removing Zoom Lens Group 2 Motor



**CAUTION: NEVER touch or adjust the brass spring-loaded standoff. It is set at the factory.**

Set Screw  
- Torque to 2 in-lbs  
- Apply Loctite 425 to threads

6-32 x 3/8"  
Socket Head Screw (2)  
- Apply Loctite 242

Zoom Lens  
Group 3 Motor

Cable Tie

Zoom G3 Cable

Head Controller PCB

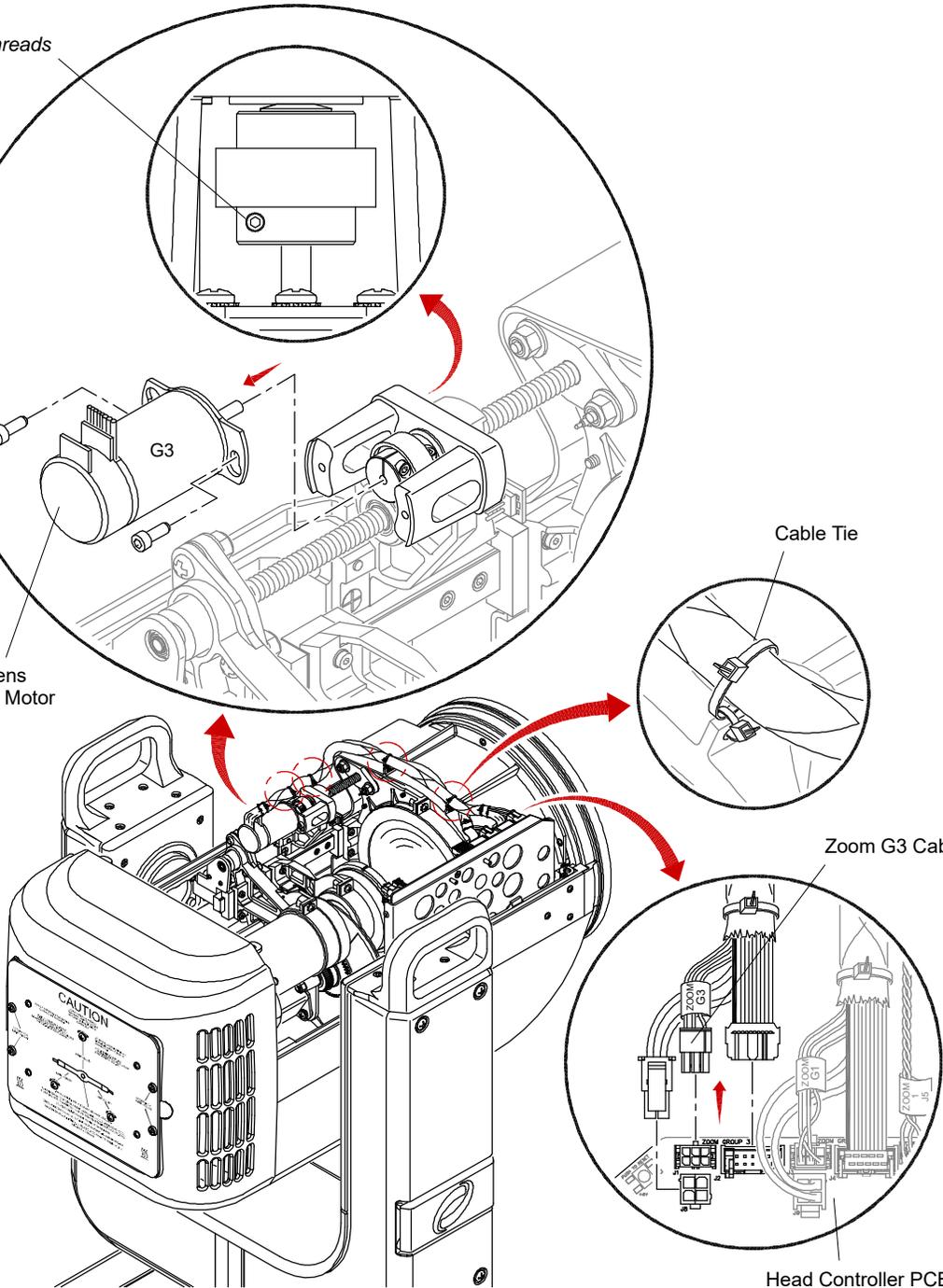


Figure 3-35: Removing Zoom Lens Group 3 Motor

## Replacing Zoom Lens Lead Screws

Best Boy HP uses precision lead screws to drive the fixture's zoom lens system. As the lead screws age, the coating on the metal that aids in smooth operation wears off of the lead screws. See the example below, **Figure 3-36**:



Figure 3-36: Lead Screw with Coating Worn from Threads

Once the lead screws begin to lose their coating, they may produce noise as they travel through the lead screw nut. Particularly on the Best Boy HP, Lens Group 3's lead screw tends to wear the most. The procedure for Lens Groups 1 and 2 is very similar to Group 3. Use this procedure as a guide for the remaining Lens Group lead screws.



**WARNING!**

Disconnect power before performing any maintenance procedures.

**CAUTION!**

The zoom optics have moving parts. Be careful not to pinch fingers and hands.

**Parts:**

10-9816-0560	LEADSCREW, G1, 1/4 - 0.03125 PITCH
10-9816-0561	LEADSCREW, G2, 5/16 - 0.0714 PITCH
10-9816-0562	LEADSCREW, G3, 5/16 - 0.0714 PITCH
6-6008-0003	Loctite #425

**Tools:**

- 5/32" Hex Head or T-Handle Wrench
- Wire ties
- Optional: Glass Suction Tool for removing Front Glass

**To replace the Lead Screw for Lens Group 3:**

- Step 1. Remove power to the luminaire.
- Step 2. Remove both Head Covers. See "Removing Head Covers" on page 34.
- Step 3. Remove the Head Fan. See "Replacing Head Fan" on page 57.
- Step 4. Remove the Wheel Stack. See "Replacing Wheel Stack" on page 61.
- Step 5. Remove the Front Glass from the Head. See "Replacing Front Glass" on page 54.  
Take care when removing the Front Glass, there is a gasket that may adhere to it on removal.



**CAUTION!**

Before continuing, after Front Glass is removed, orient your fixture lenses towards the sky and secure that position so the fixture does not move during the next portion of this procedure. For reference, see  
You will be exposing the lens rail and freeing a lens to move across the rail without control. DO NOT let the Group 3 Lens come off of the rails! If this happens, the fixture must be sent back to Dallas for repair of the bearings in the rails.

## REMEMBER:

LENS GROUP 1 IS CLOSEST TO THE LAMP  
LENS GROUP 3 IS FURTHEST FROM THE LAMP  
LENS GROUP 2 IS IN THE MIDDLE

- Step 6. Prior to removing the Group 3 Light Shield from the front of the fixture, you must remove at least one of the cable bundles secured to the top and bottom of the Light Shield. You have two options for this step, depending on your personal working preference:
- You can remove both cable bundles and completely remove the Group 3 Light Shield assembly, or
  - You can remove one side and allow the Light Shield to remain connected as long as you support any stress on the cables attached. See **Figure 3-37** below.

When cutting either cable bundle loose from the Light Shield, do not cut the wire tie attached directly to the Light Shield, cut the tie that is secured to that tie, you will need it upon reinstallation. Don't cut the bundle apart, either. See **Figure 3-37** below.

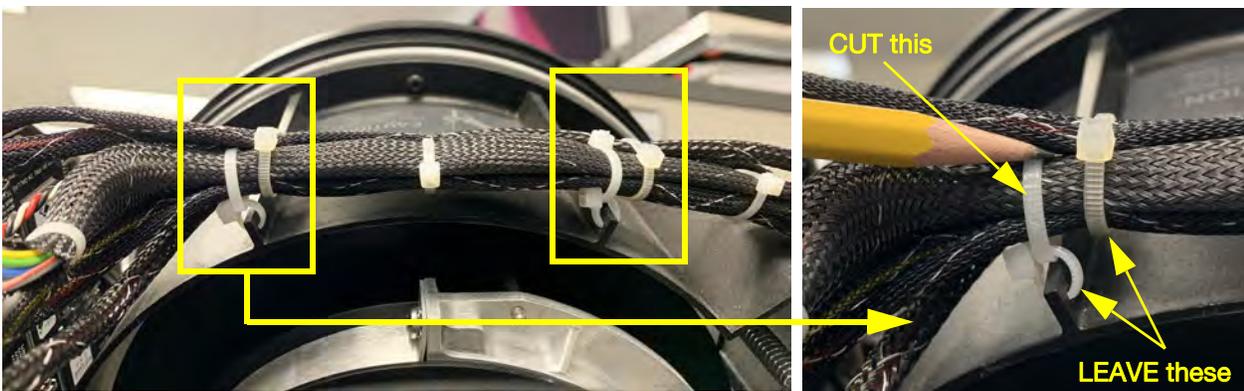


Figure 3-37: Freeing Cable Bundles from Group 3 Light Shield

- Step 7. Remove the four 10-32 x 1/2" Socket Cap screws securing the light shield assembly to the lens rails, two screws per side. See **Figure 3-38** below.



Figure 3-38: Removing the Light Shield Assembly

- Step 8. Gently pull the Group 3 Light Shield assembly straight off of the rails once the screws are removed. Set the shield aside if you remove both cable bundles, or make sure it is secured if you remove just one.
- Step 9. Orient yourself so that you are on the Group 3 lens Motor assembly side.
- Step 10. Loosen the set screw on the Lead Screw, not the Group 3 motor, so that the lead screw can spin inside the carrier. As you turn the lead screw it WILL still move the lens, so use caution with the lens groups.
- Step 11. Turn the lead screw so the Group 3 Lens is moving towards the lamp. The lead screw may start to pull up the bearing assembly the lead screw goes through; simply push it back down into its hole. **Figure 3-40**

Step 12. Once the lead screw is loose from the threads of the Group 3 lens carrier, pull it straight out.

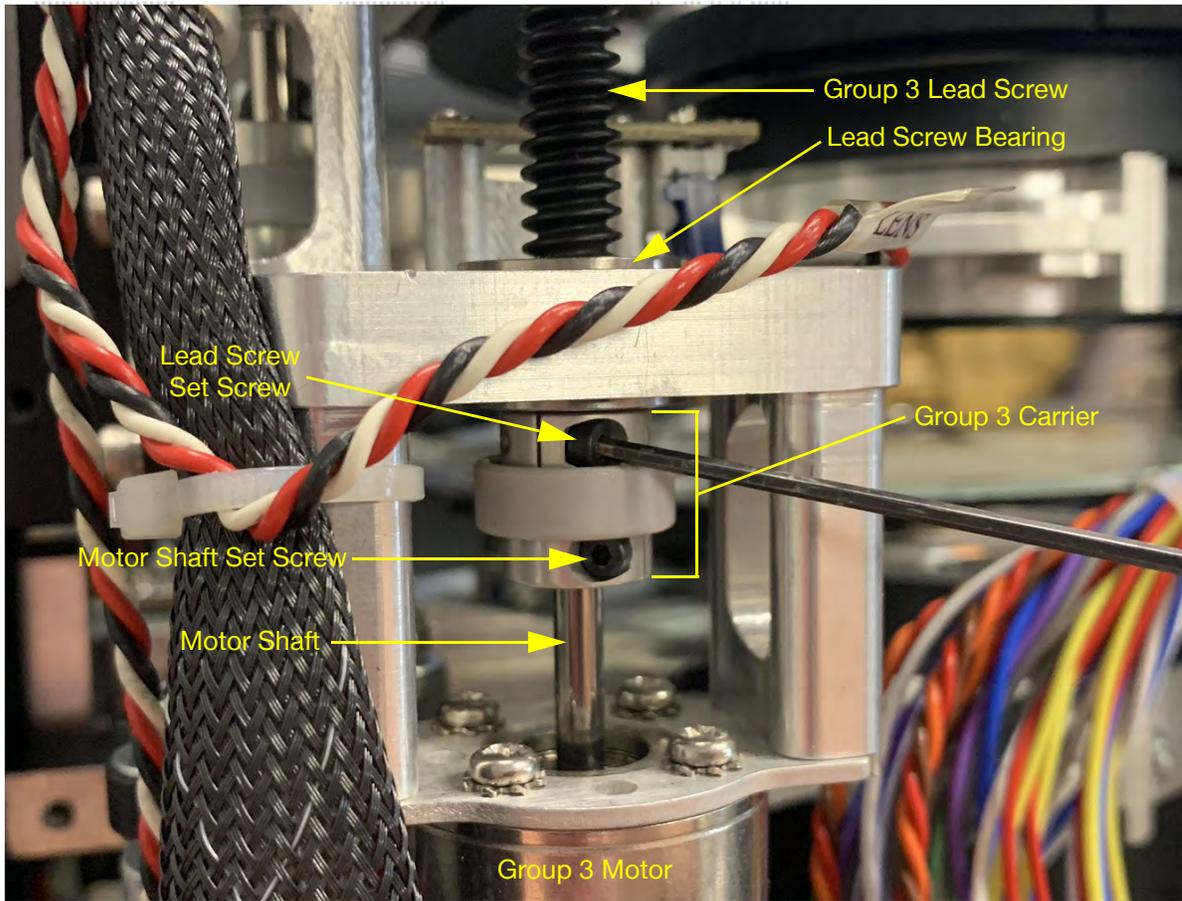


Figure 3-39: Group 3 Lens Motor Assembly Detail

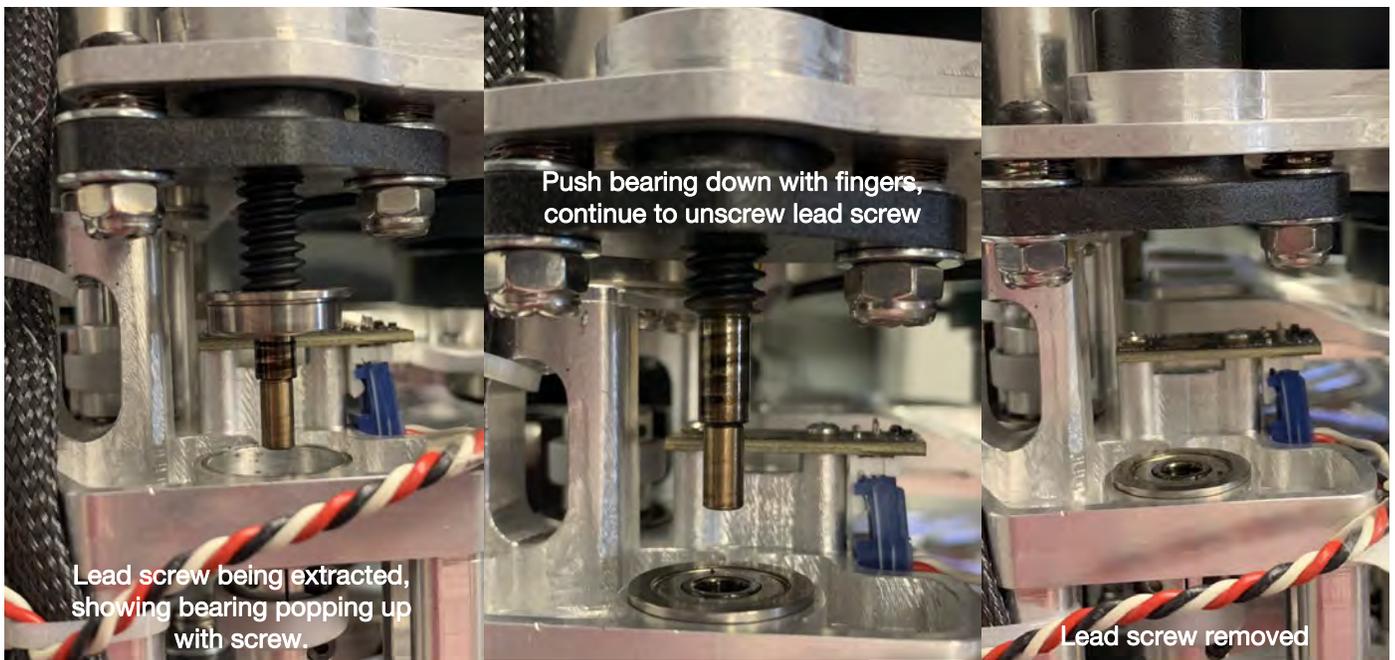
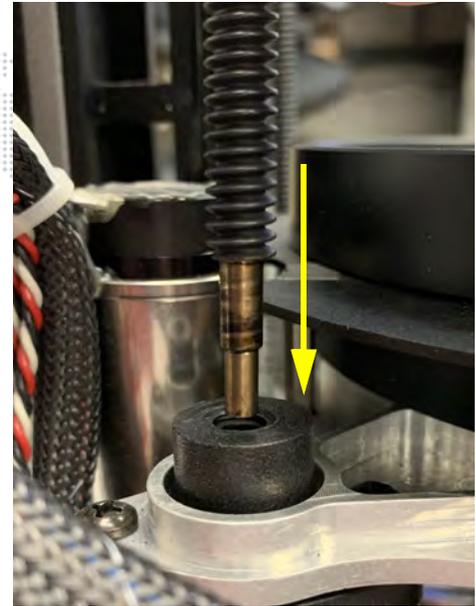


Figure 3-40: Removing the Lead Screw

- Step 13. To reinstall a new lead screw, carefully thread the new lead screw, shaft end first, down through the lead screw nut. Once you're screwed in so that the exposed shaft begins to come in contact with the bearing, hold onto the Lens carrier assembly and keep threading to properly seat the lead screw.
- Step 14. Once the lead screw is properly set back into the carrier, torque the lead screw set screw to 2 in-lbs, and apply a drop of Loctite #425 to the threads.
- Step 15. Reinstall the Group 3 Light Shield to the front of the fixture, securing it with its four 10-32 x 1/2" Socket Cap screws.
- Step 16. If you have touched any of the lens glass with bare fingers or you see dirt on Lens Group 3, clean those surfaces according to the procedures listed in this manual. See ["Cleaning Lenses" on page 40](#).
- Step 17. Clean the Front Glass panel and reinstall it onto the front of the fixture, making sure that the ring is properly seated into its groove. See ["Replacing Front Glass" on page 54](#).
- Step 18. Reattach the top and bottom cable bundles to the Light Shield using the four zip ties installed onto the Light Shield. See ["Freeing Cable Bundles from Group 3 Light Shield" on page 76](#).
- Step 19. Replace the Wheel Stack.
- Step 20. Reinstall the Head Fan.
- Step 21. Replace the Head Covers.



## Replacing Back Head Fans

There are four fans located on the Aft bulkhead as shown below:

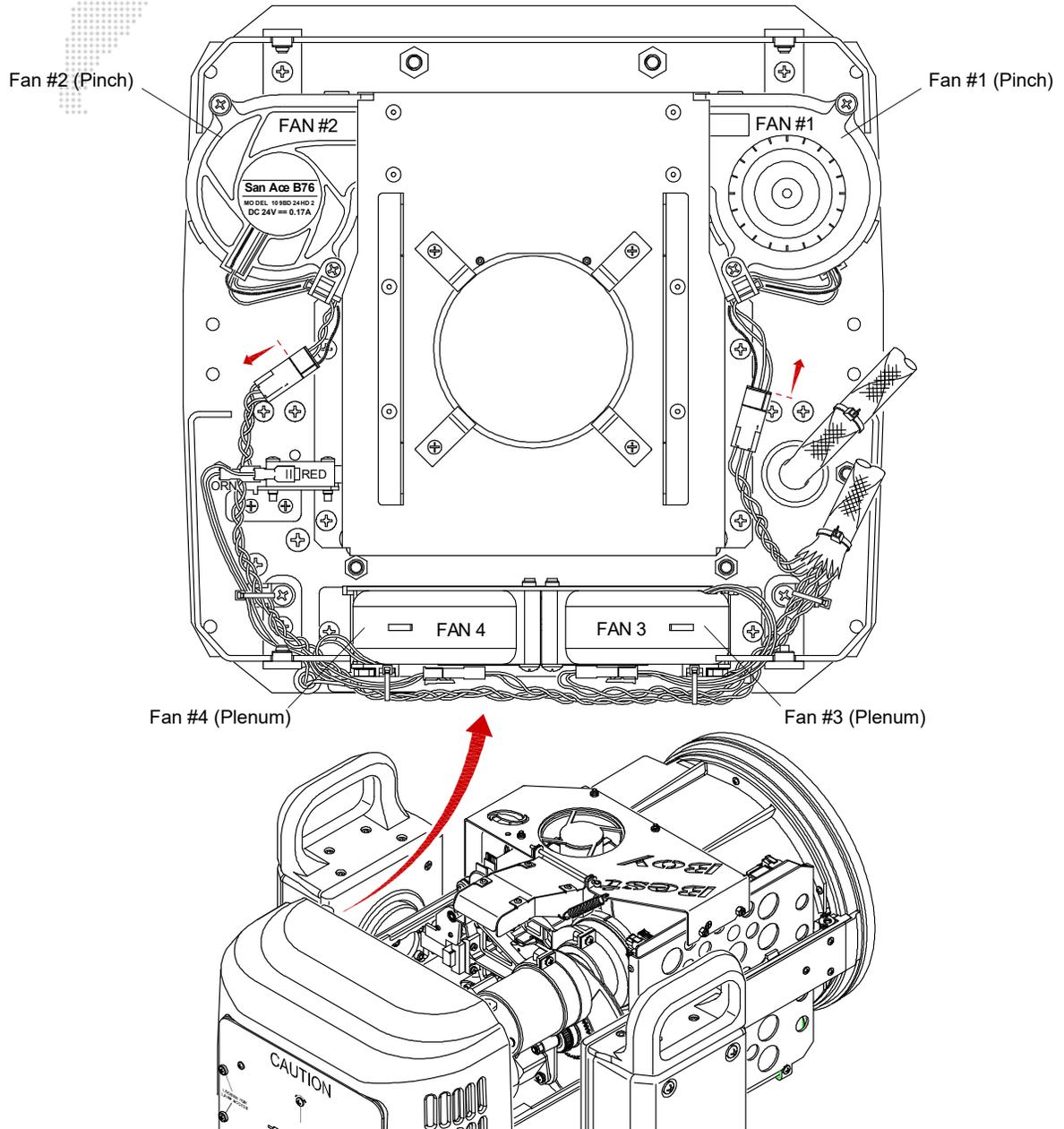
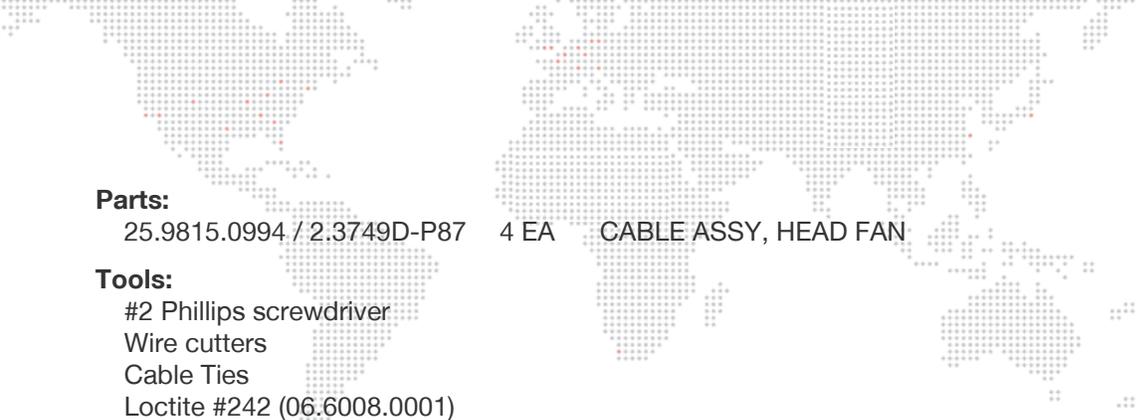


Figure 3-41: Back Head Fan Locations



**Parts:**

25.9815.0994 / 2.3749D-P87 4 EA CABLE ASSY, HEAD FAN

**Tools:**

#2 Phillips screwdriver  
Wire cutters  
Cable Ties  
Loctite #242 (06.6008.0001)



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**WARNING!** Remove power from luminaire before performing any maintenance procedures.

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**To replace Fan #1 or Fan #2:**

- Step 1. Remove power from luminaire.
- Step 2. Remove top head cover. (Refer to "**Removing Head Covers**" on page 34.)
- Step 3. Remove Wheel Stack. (Refer to "**Replacing Wheel Stack**" on page 61.)
- Step 4. At required fan, cut cable ties which secure Head Fan Cable to Head Assembly (**Figure 3-42**). Note their position for re-installation.
- Step 5. Disconnect Head Fan Cable from Back Fans Cable.
- Step 6. Remove Fan by removing two 8-32 x 1-1/2" PPZ screws. *Retain cable anchor.*
- Step 7. Install new Head Fan Cable Assembly - along with saved cable anchor - by doing steps in reverse. Apply Loctite 242 to screws when installing new Fan as shown in **Figure 3-42**.

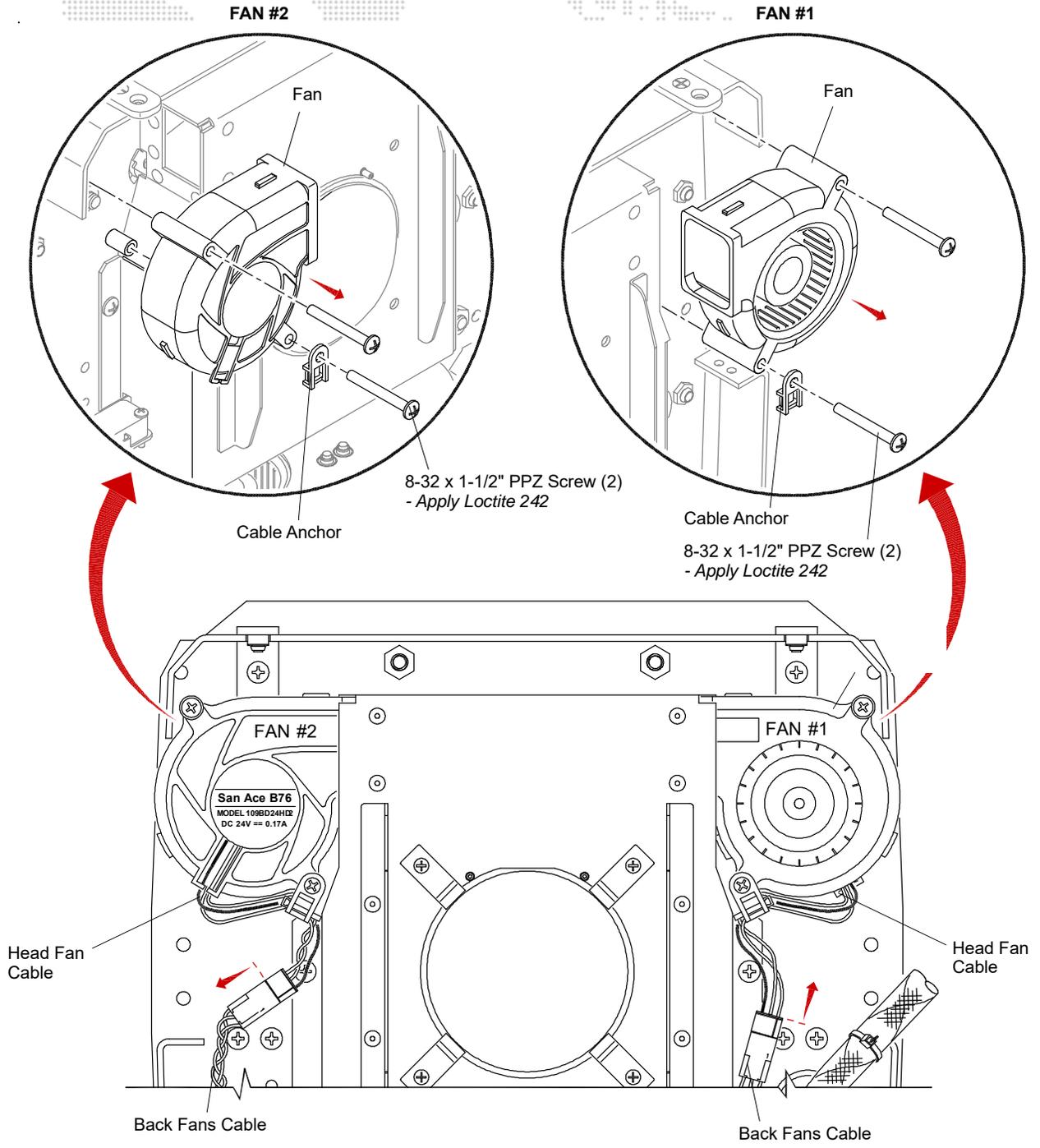


Figure 3-42: Replacing Back Fan #1 or #2

### To replace Fan #3 or Fan #4:

- Step 1. Remove power from luminaire.
- Step 2. Remove head covers. (Refer to "Removing Head Covers" on page 34.)
- Step 3. Remove Aft Cover. (Refer to "Removing Aft Cover" on page 35.)
- Step 4. At required fan, cut cable ties which secure Head Fan Cable to Head Assembly (Figure 3-43).
- Step 5. Disconnect Head Fan Cable from Back Fans Cable.
- Step 6. Remove Fan by removing two 8-32 x 1-1/2" PPZ screws. *Retain cable anchor (Fan #4).*
- Step 7. Install new Head Fan Cable Assembly - along with saved cable anchor for Fan #4 - by doing steps in reverse. Apply Loctite 242 to screws when installing new Fan as shown in Figure 3-43.

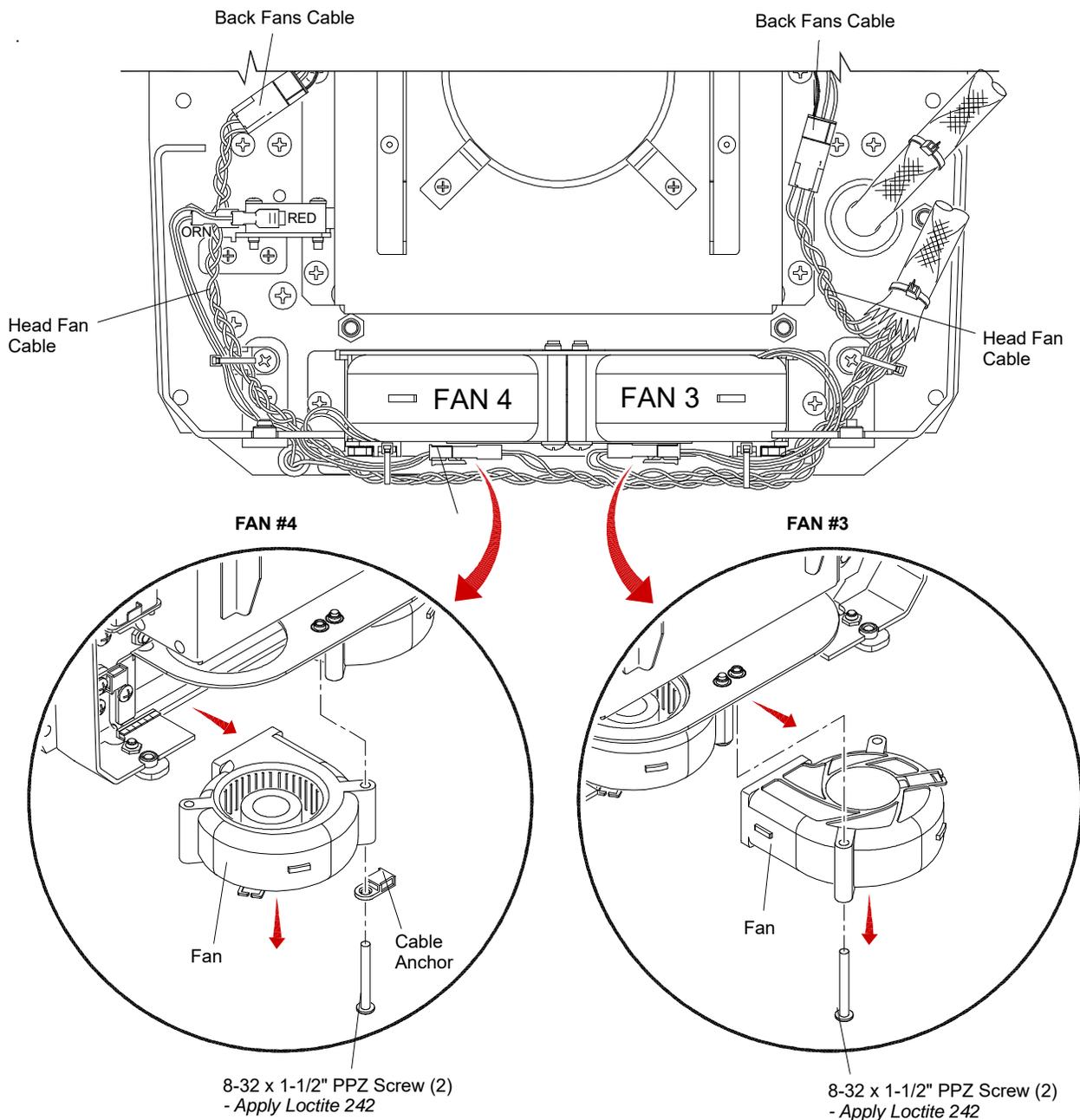


Figure 3-43: Replacing Back Fan #3 or #4

## Replacing Door Closure Safety Switch

### Parts:

12.2003.0001.0 / 2.PR-74200300010 1 EA SWITCH SAFETY, HIGH TEMP

### Tools:

#1 and #2 Phillips screwdrivers



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**WARNING!** Remove power from luminaire before performing any maintenance procedures.

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### To replace door closure safety switch:

- Step 1. Remove power from luminaire.
- Step 2. Remove head covers. (Refer to "Removing Head Covers" on page 34.)
- Step 3. At Aft Bulkhead, remove four 6-32 x 5/16" PPSS screws and pull XYZ Assembly outward about 1/2-inch as shown in **Figure 3-44**. (This will clear the pin from the Safety Switch toggle so it can be removed.)
- Step 4. Rotate Head Assembly so that bottom side is on top.
- Step 5. At Safety Switch, disconnect two wires.
- Step 6. Remove Safety Switch from mounting bracket by removing two 4-40 x 5/8" PPZ screws.
- Step 7. Replace Safety Switch by doing steps in reverse.

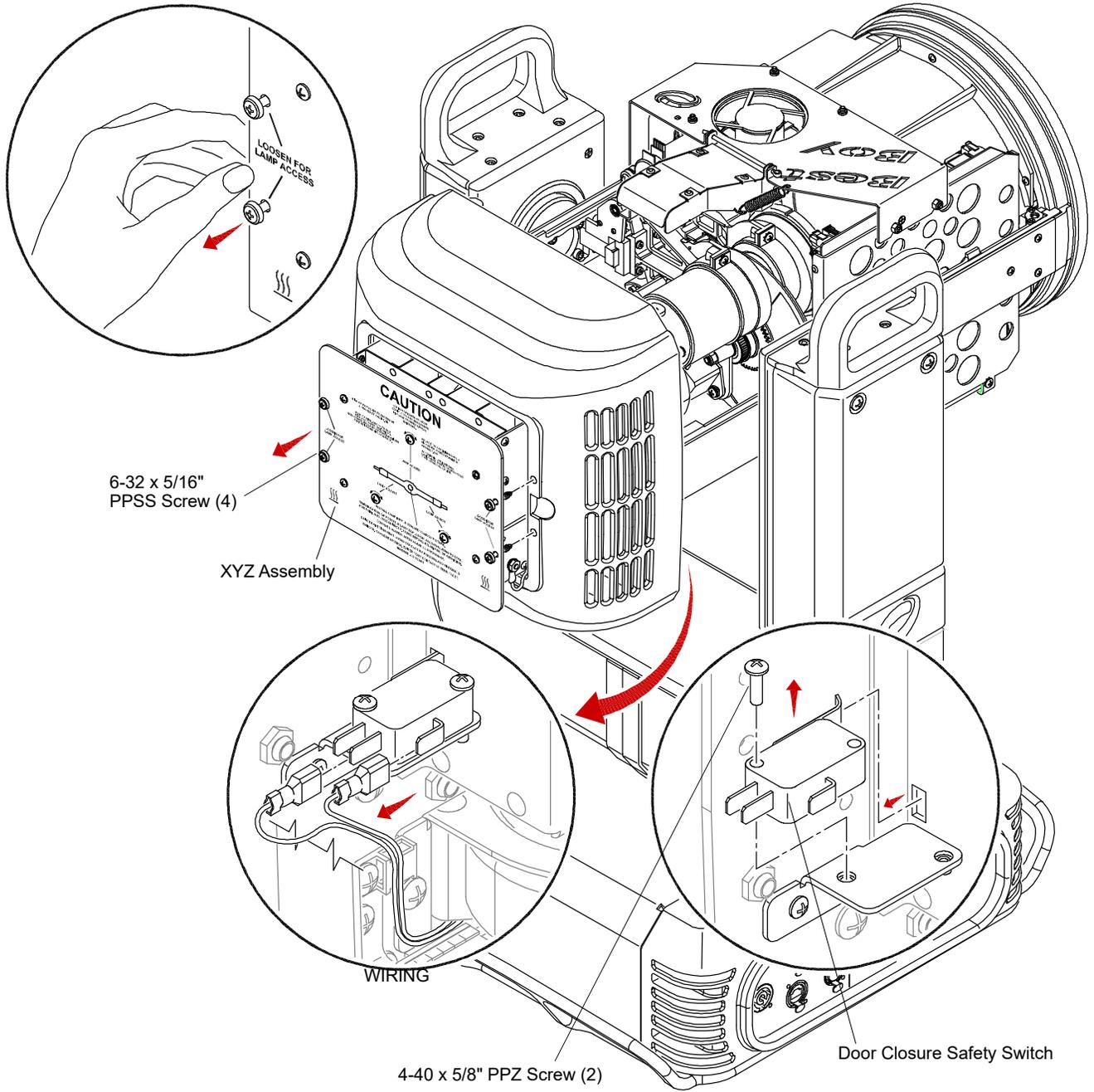


Figure 3-44: Replacing Door Closure Safety Switch

## Replacing Reflector

### Tools:

42.9816.0170 / 3749D-P091 EA REFLECTOR, STEPPED, 10 LUNES, COATED  
#1 and #2 Phillips screwdrivers



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace reflector:

- Step 1. If luminaire is powered-up, douse lamp and allow fans to run for **at least** 5 minutes.
- Step 2. Remove power from luminaire.
- Step 3. Remove lamp. (Refer to "**Replacing Lamp**" on page 44.)
- Step 4. At XYZ Assembly, remove four 6-32 x 5/16" PPSS screws (**Figure 3-45**).
- Step 5. Completely remove XYZ Assembly and set aside.

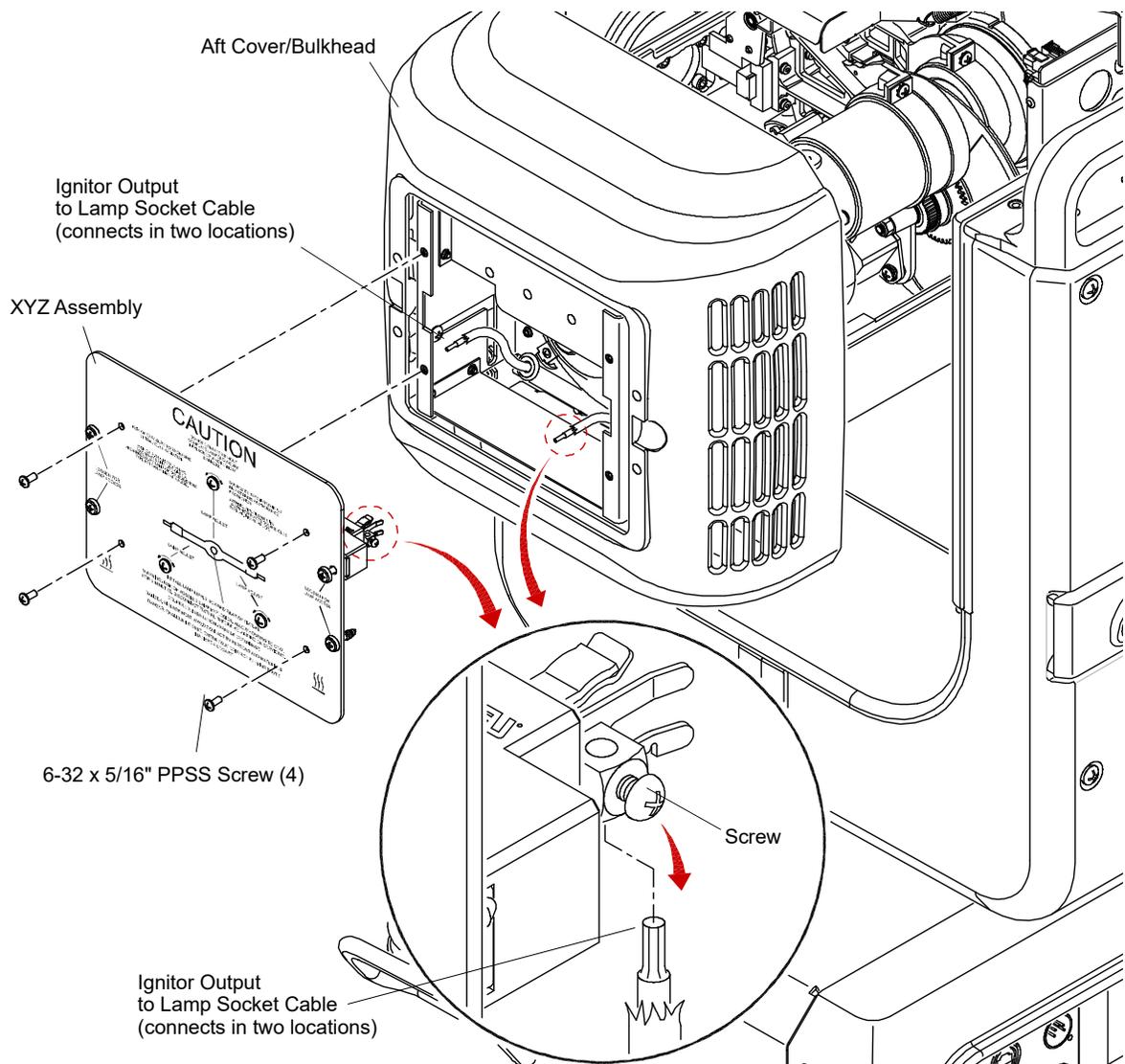


Figure 3-45: Removing XYZ Assembly

- Step 6. At Lamp Box, remove Flipper Duct by removing four 6-32 x 1/4" PPSS screws (**Figure 3-46**).
- Step 7. At Reflector, in alternating fashion, gradually loosen 4-40 x 1/4" PPSS screws until all four clips are loose. (Don't completely remove screws or clips.)
- Step 8. Rotate clips and remove Reflector and gasket, if gasket is present. (If gasket is present, discard. It is no longer needed with the new 42.9816.0170 Reflector.)

**Note:** When installing the Reflector, align its clocking notch with the clocking tab as shown below in **Figure 3-46**.

- Step 9. Install new Reflector and gradually tighten clips in an alternating fashion.  
**DO NOT overtighten clips, or you might crack the reflector.**
- Step 10. Re-assemble luminaire by doing steps 3-6 in reverse.

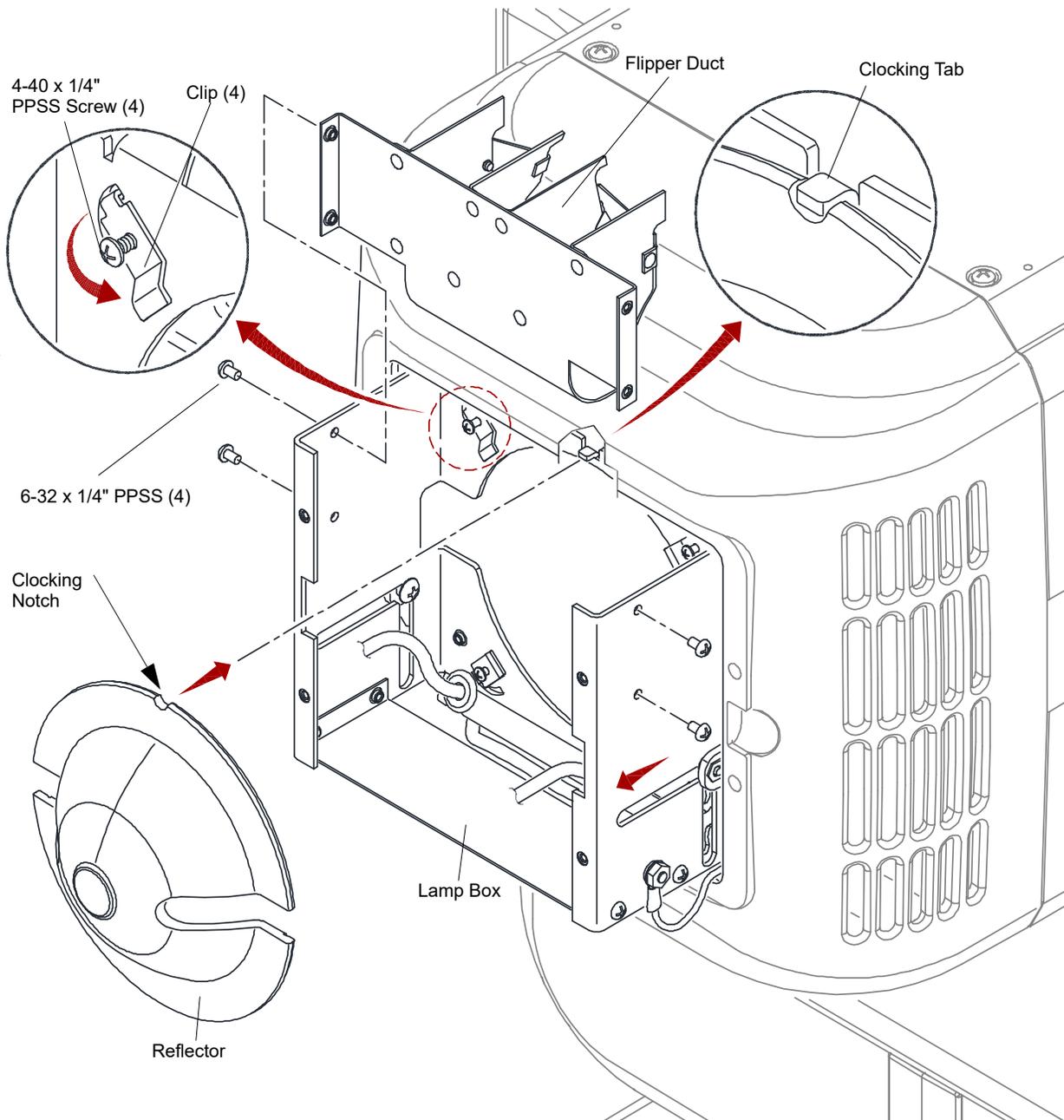


Figure 3-46: Replacing Reflector

## Replacing Retro-Reflector

### Parts:

42.9815.0161 / 2.PR-4298150161 1 EA RETRO-REFLECTOR, WASH

### Tools:

#1 and #2 Phillips screwdrivers  
Wire cutters  
Cable Ties  
Loctite #242 (06.6008.0001)



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace retro-reflector:

- Step 1. Remove power from luminaire.
- Step 2. Remove head covers. (Refer to "Removing Head Covers" on page 34.)
- Step 3. Remove Aft Cover. (Refer to "Removing Aft Cover" on page 35.)
- Step 4. Remove Wheel Stack. (Refer to "Replacing Wheel Stack" on page 61.)
- Step 5. Remove two Fans located at top of Aft Bulkhead as follows (**Figure 3-47**):
  - a. At each fan, cut cable ties which secure Head Fan Cable to Head Assembly.
  - b. Disconnect Head Fan Cable from Back Fans Cable.
  - c. Remove Fans by removing two 8-32 x 1-1/2" PPZ screws each. *Retain cable anchors.*

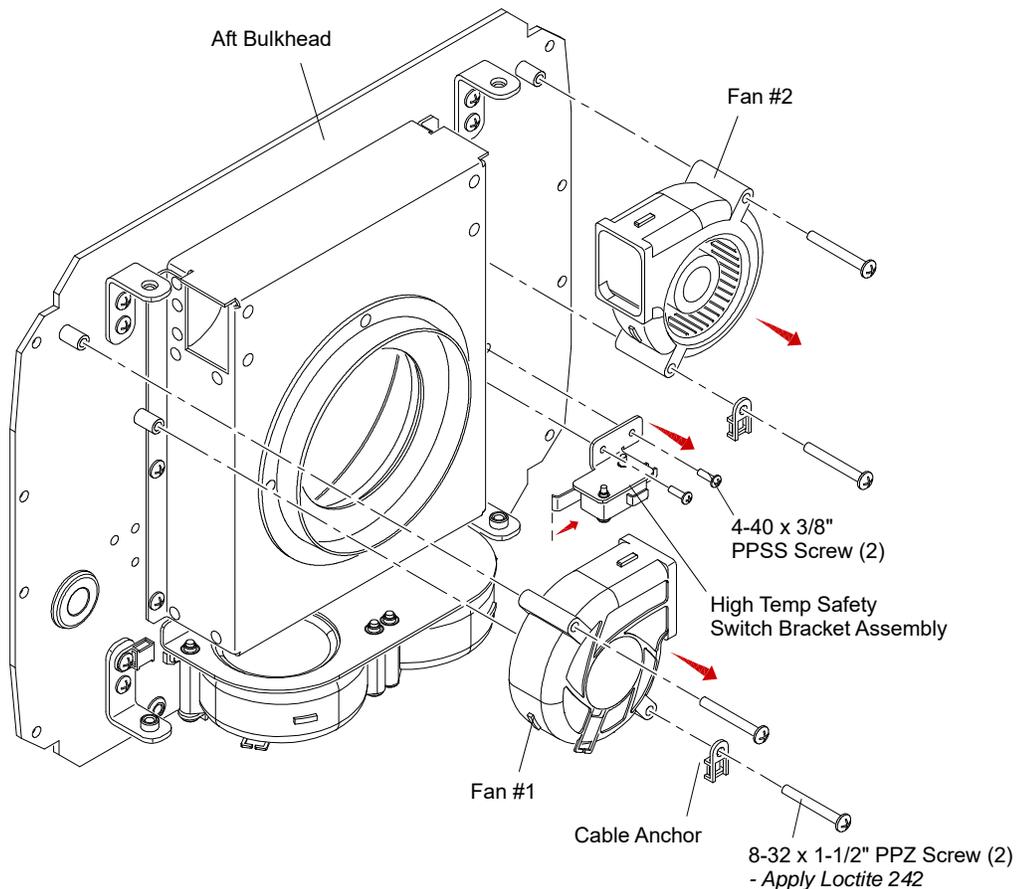


Figure 3-47: Removing Fans and High Temp Safety Switch

- Step 6. Remove entire High Temp Switch Bracket Assembly as follows:
- At High Temp Safety Switch, disconnect two wires.
  - Remove High Temp Safety Switch Bracket Assembly by removing two 4-40 x 3/8" PPSS screws.
- Step 7. Remove UV/IR Assembly by removing four 8-32 x 7/16" PPSS screws (**Figure 3-48**).
- Step 8. At Retro-Reflector, in an alternating fashion, gradually loosen four 4-40 x 3/8" PPSS screws until all four mounting clips are free.
- Step 9. Remove Retro-Reflector.
- Step 10. Replace Retro-Reflector by doing steps in reverse. Apply Loctite 242 to screws when re-installing Fans as shown in **Figure 3-47**.

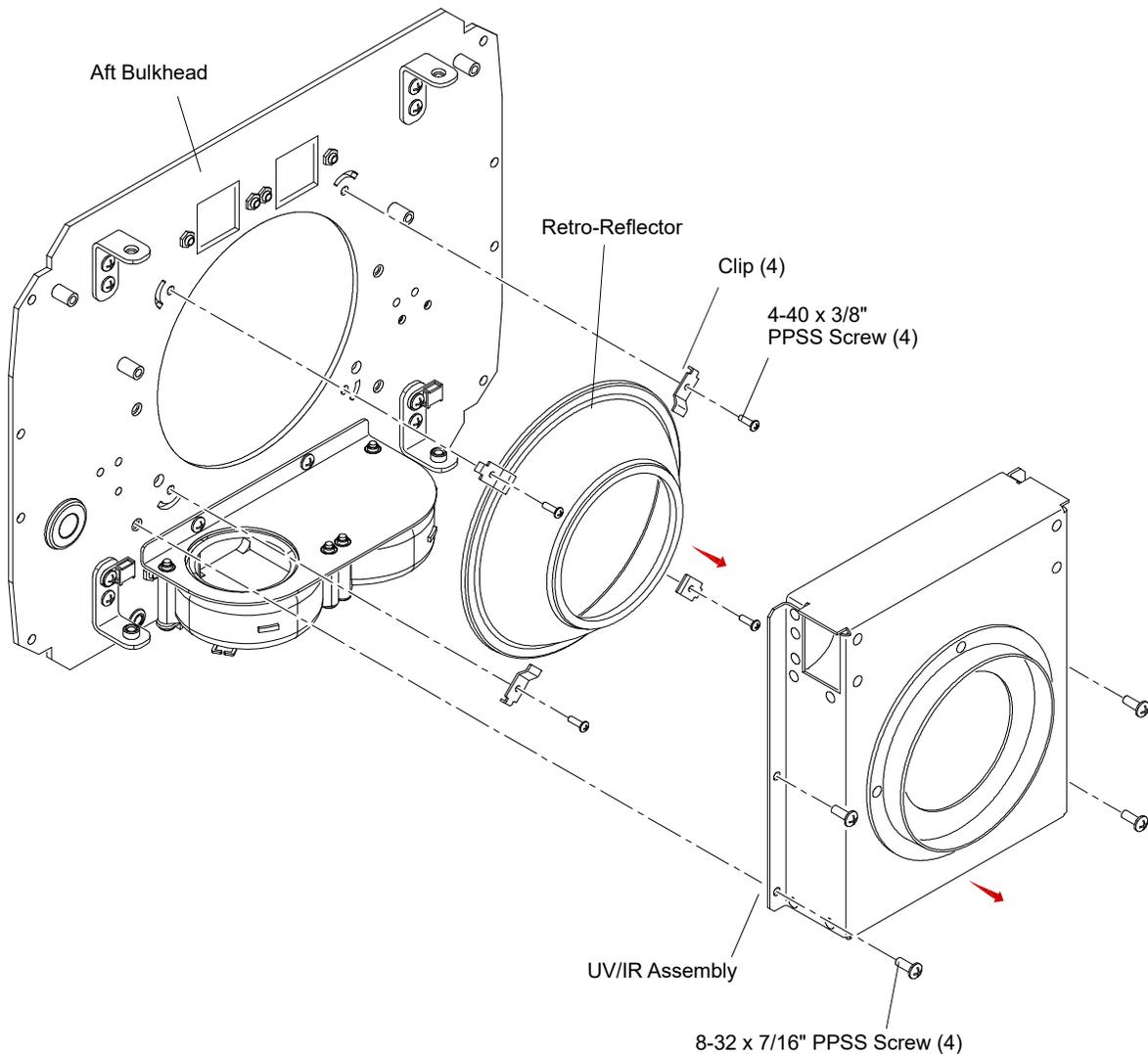


Figure 3-48: Replacing Retro-Reflector

## Replacing Ignitor

### Parts:

12.9815.0787 / 2.3749D-P36 1 EA IGNITOR, MODIFIED

### Tools:

#1 Phillips screwdriver  
Loctite #242 (06.6008.0001)



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace the ignitor:

- Step 1. Remove power from luminaire.
- Step 2. Remove pan-side yoke leg cover. (Refer to "Removing Yoke Leg Covers" on page 37.)
- Step 3. At Ignitor, disconnect four cables.
- Step 4. Remove Ignitor by removing four 4-40 x 1-3/8" PPZ screws.
- Step 5. Replace Ignitor by doing steps in reverse. Apply Loctite 242 to 4-40 x 1-3/8" PPZ screws.

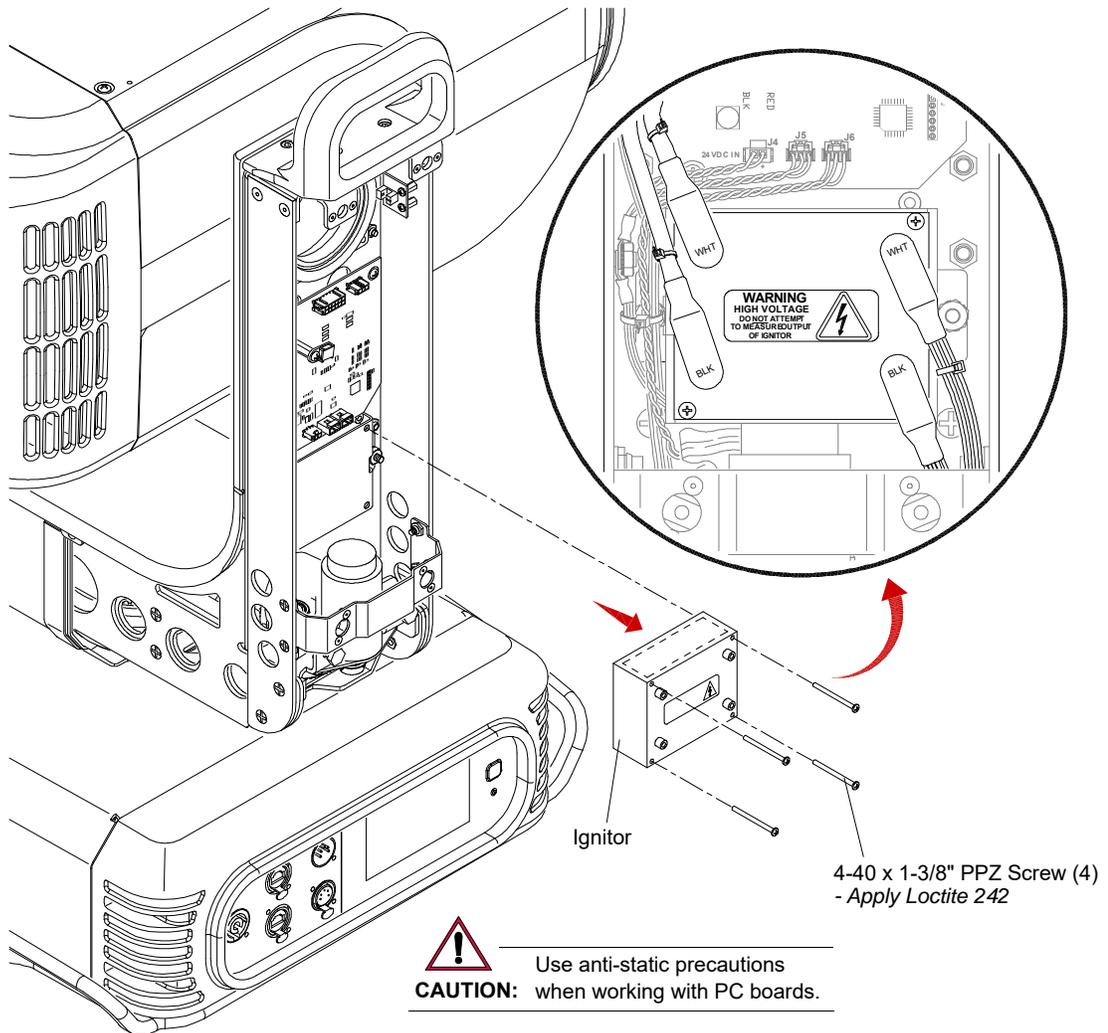


Figure 3-49: Replacing Ignitor

## Replacing Fan Controller PCB

### Parts:

24.9817.0640 / 2.3749D-P42 1 EA PCB, FAN CONTROLLER, BEST BOY HP SPOT

### Tools:

#1 Phillips screwdriver  
Loctite #242 (06.6008.0001)



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace the Fan Controller PCB:

- Step 1. Remove power from luminaire.
- Step 2. Remove pan-side yoke leg cover. (Refer to "[Removing Yoke Leg Covers](#)" on page 37.)
- Step 3. Remove Fan Controller PCB by removing three 6-32 x 1/4" PPSS screws, one 1/4" hex 6-32 standoff, and cable anchor.
- Step 4. Replace Fan Controller PCB by doing steps in reverse. Apply Loctite 242 to 6-32 x 1/4" PPSS screws.

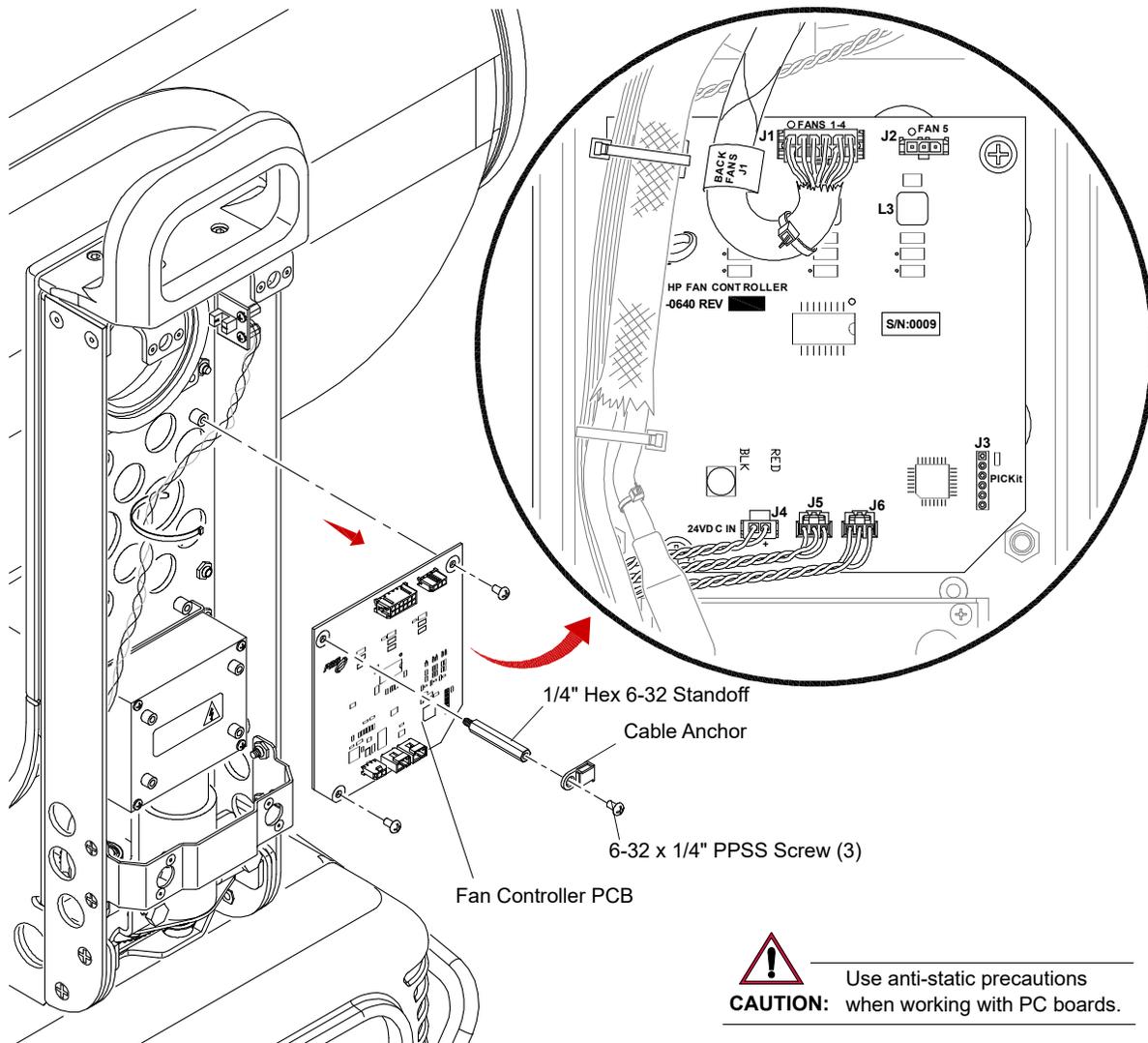


Figure 3-50: Replacing Fan Controller PCB

## Replacing Interface/LVS Assembly

### Parts:

21.9817.0811

1 EA ASSY, INTERFACE/LVS, BEST BOY HP SPOT

### Tools:

#2 Phillips screwdriver

5/32" Allen wrench, T-bar



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace the Interface/LVS assembly:

- Step 1. Remove power from luminaire.
- Step 2. Remove Interface/LVS-side Cover. (Refer to "Removing Upper Enclosure Covers" on page 38.)
- Step 3. At front of Interface/LVS Assembly, remove four 10-32 x 3/4" socket head screws (**Figure 3-51**).
- Step 4. Remove one 10-32 x 3/8" PPB screw that secures ground wire lug.
- Step 5. At Main Controller PCB, disconnect four cables as shown in **Figure 3-51**.

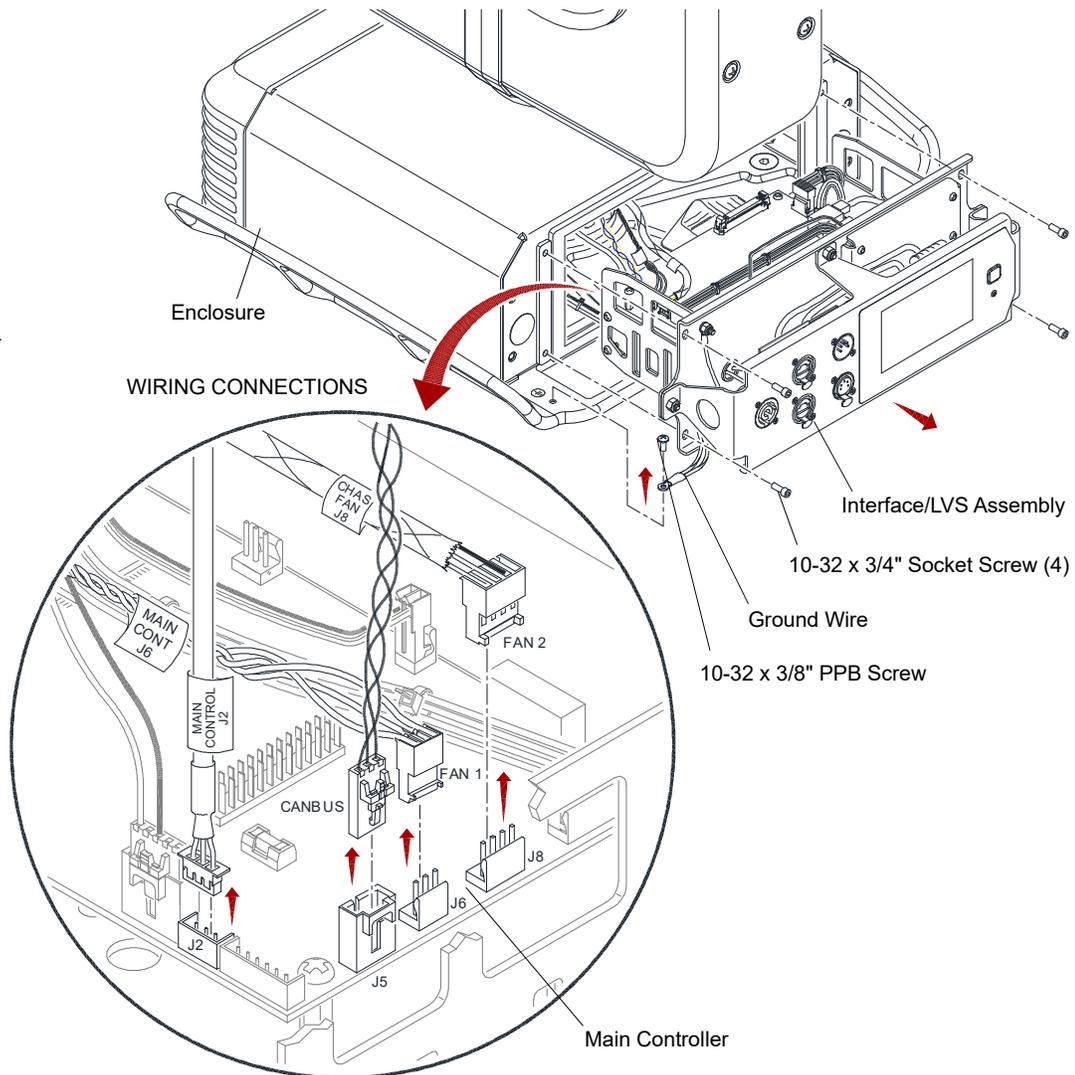


Figure 3-51: Disconnecting Interface/LVS Cables

- Step 6. Flip Interface/LVS Assembly upside down as shown in **Figure 3-52**.
- Step 7. Disconnect AC cables and LVS DC Output cables.
- Step 8. Remove Interface/LVS Assembly
- Step 9. Replace component by doing steps in reverse.

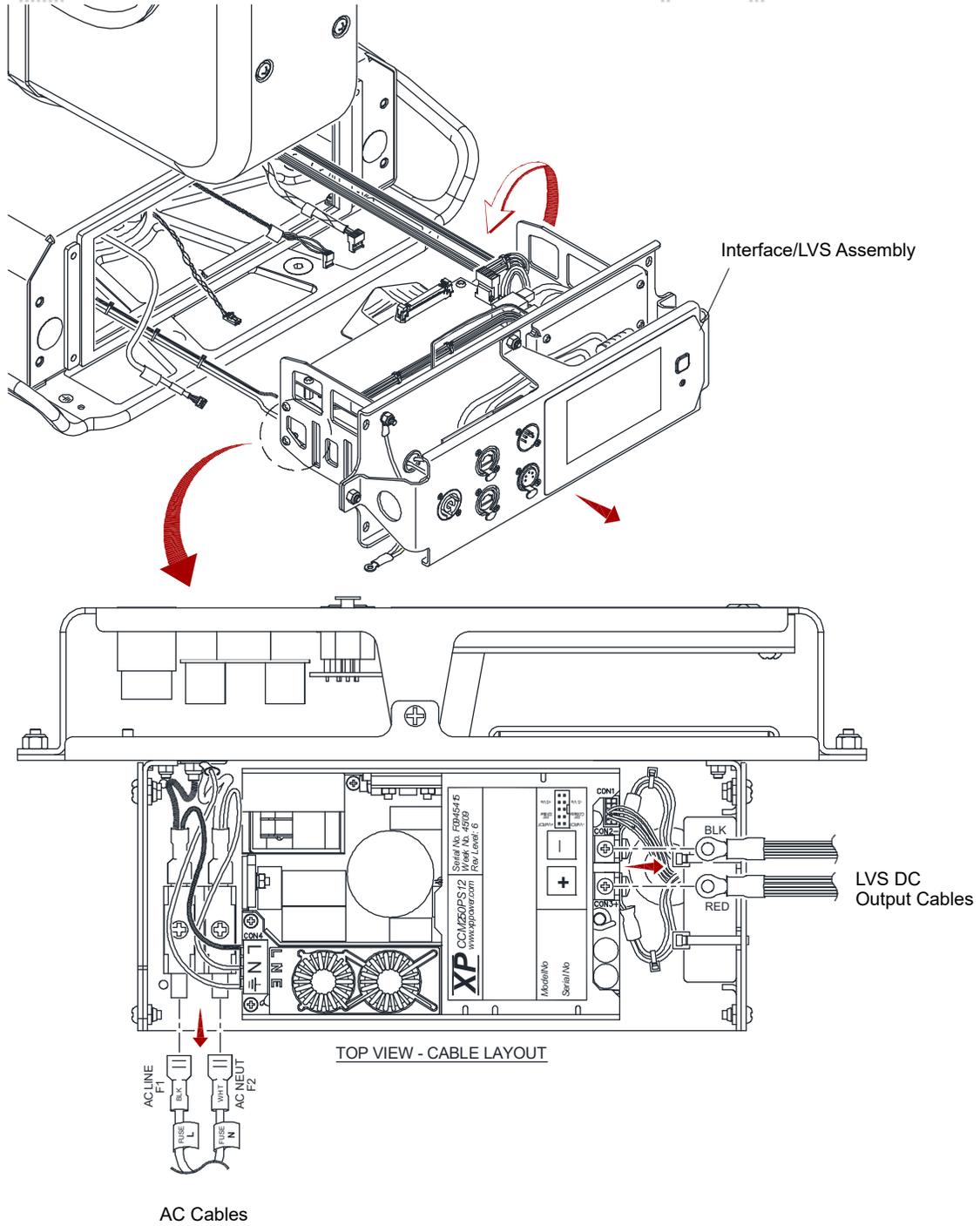
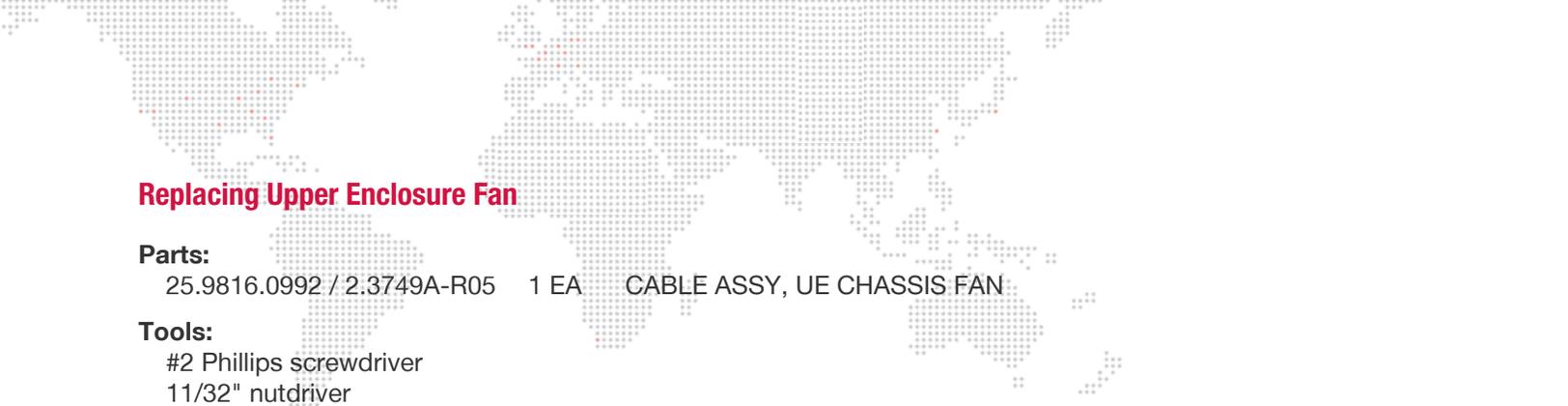


Figure 3-52: Removing Interface/LVS Assembly



## Replacing Upper Enclosure Fan

### Parts:

25.9816.0992 / 2.3749A-R05 1 EA CABLE ASSY, UE CHASSIS FAN

### Tools:

#2 Phillips screwdriver  
11/32" nutdriver  
5/32" Allen wrench, T-bar



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**WARNING!** Remove power from luminaire before performing any maintenance procedures.

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### To replace the enclosure fan:

- Step 1. Remove power from luminaire.
- Step 2. Remove Interface/LVS-side Cover. (Refer to "[Removing Upper Enclosure Covers](#)" on page 38.)
- Step 3. At front of Interface/LVS Assembly, remove four 10-32 x 3/4" socket head screws (**Figure 3-53**).
- Step 4. Remove one 10-32 x 3/8" PPB screw that secures ground wire lug.
- Step 5. Pull Interface/LVS Assembly out of enclosure enough to disconnect Upper Enclosure Fan Cable.
- Step 6. Remove fan by removing two 6-32 nylon hex nuts.
- Step 7. Install new Upper Enclosure Fan by doing steps in reverse.

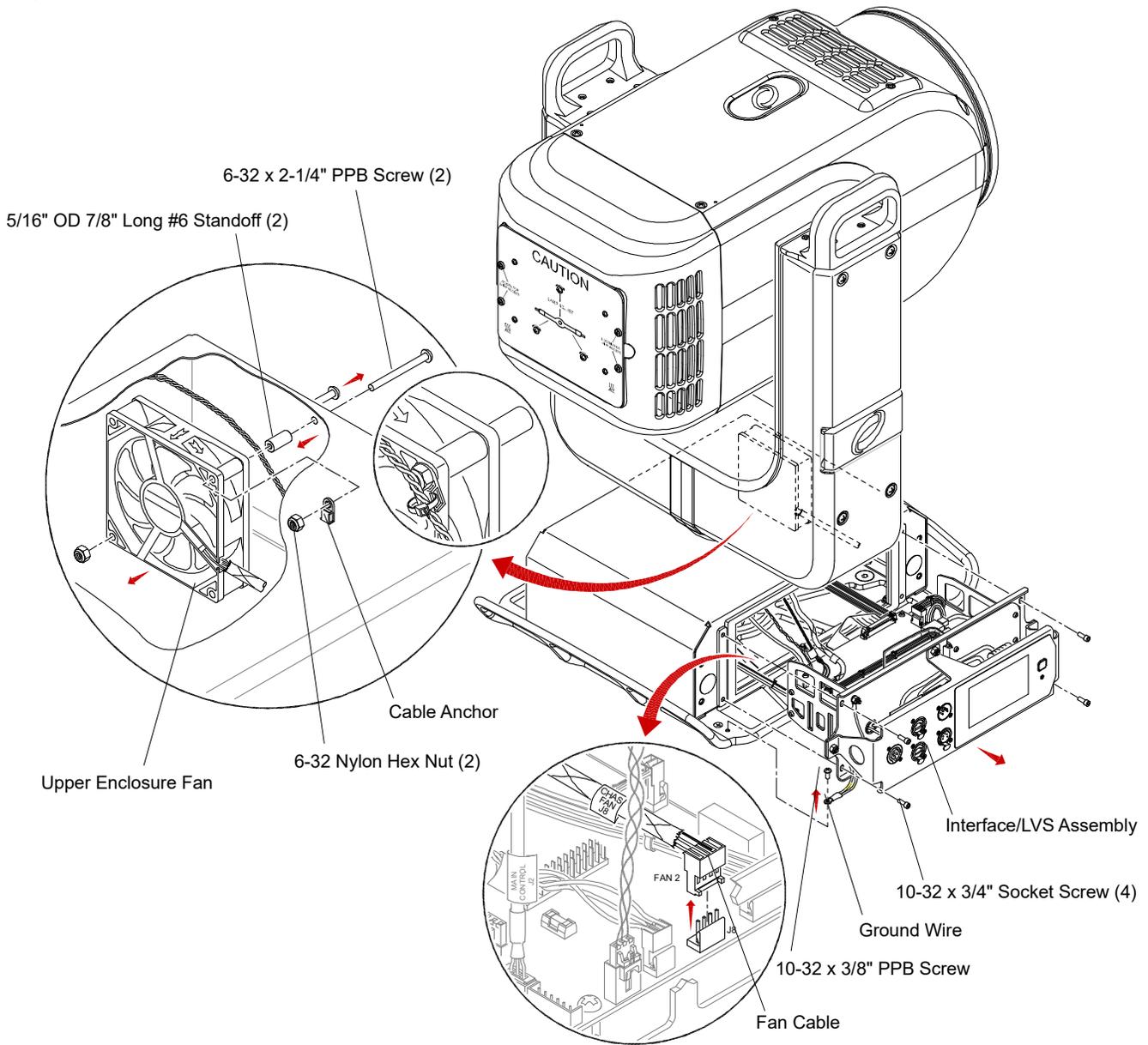


Figure 3-53: Removing Upper Enclosure Fan



## Replacing Ballast

### Parts:

21.9817.0810

1 EA ASSY, BALLAST, BEST BOY HP SPOT

### Tools:

#2 Phillips screwdriver

5/32" Allen wrench, T-bar



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**WARNING!** Remove power from luminaire before performing any maintenance procedures.

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### To replace the ballast:

- Step 1. Remove power from luminaire.
- Step 2. Remove both Enclosure Covers. (Refer to "[Removing Upper Enclosure Covers](#)" on page 38.)
- Step 3. To disconnect wiring, partially remove Interface/LVS Assembly as follows:
  - a. At front of Interface/LVS Assembly, remove four 10-32 x 3/4" socket head screws (**Figure 3-54**).
  - b. Remove one 10-32 x 3/8" PPB screw that secures ground wire lug.
  - c. Pull assembly out of enclosure enough to access wiring.
  - d. Disconnect AC wires and Main Control wire.
- Step 4. At front of Ballast, remove four 10-32 x 3/4" socket head screws. Pull Ballast partially out of enclosure, it will still be tethered by Relay wires and ground cable.
- Step 5. Disconnect Relay wires and ground cable.
- Step 6. Twist Fan Cable connector to disconnect.



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**CAUTION:** Use caution when removing the Ballast from the enclosure.

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- Step 7. Remove Ballast from enclosure.
- Step 8. Install new Ballast by doing steps in reverse.

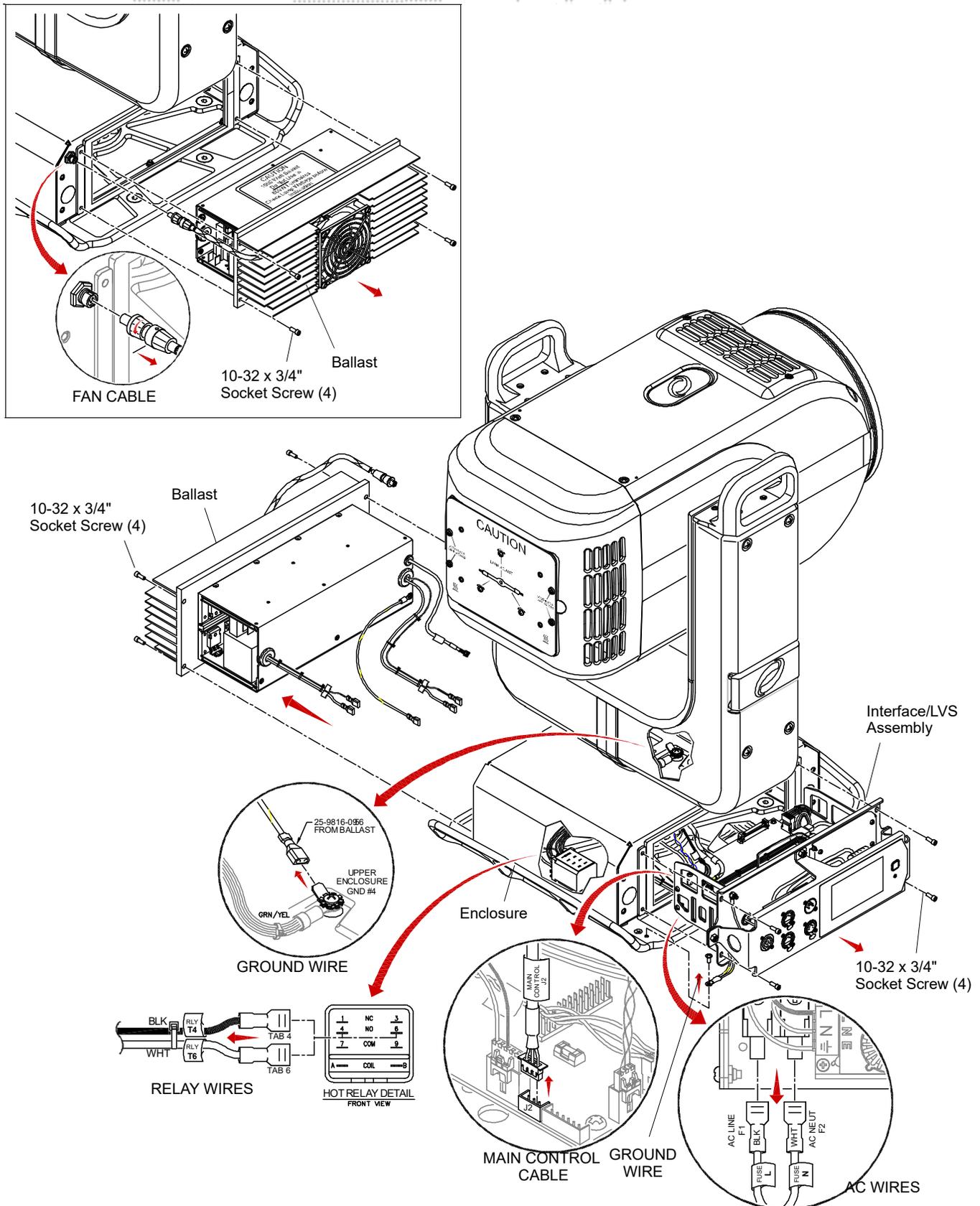


Figure 3-54: Removing Ballast

## Replacing Ballast Fan

### Parts:

25.9816.0991 / 2.3749A-R10 1 EA CABLE ASSY, BALLAST HEATSINK FAN BEST BOY

### Tools:

#2 Phillips screwdriver  
Loctite #242 (06.6008.0001)



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace the ballast fan:

- Step 1. Remove power from luminaire.
- Step 2. Remove Ballast-side Enclosure Cover. (Refer to "Removing Upper Enclosure Covers" on page 38.)
- Step 3. Disconnect Fan Cable connector by twisting.
- Step 4. At Ballast Fan, remove four 8-32 x 1-1/2" PPZ screws and #8 washers.
- Step 5. Remove mesh screen and Ballast Fan. Remove any accumulated debris from the mesh screen.
- Step 6. Install new Ballast Fan by doing steps in reverse. Apply Loctite 242 to screws.

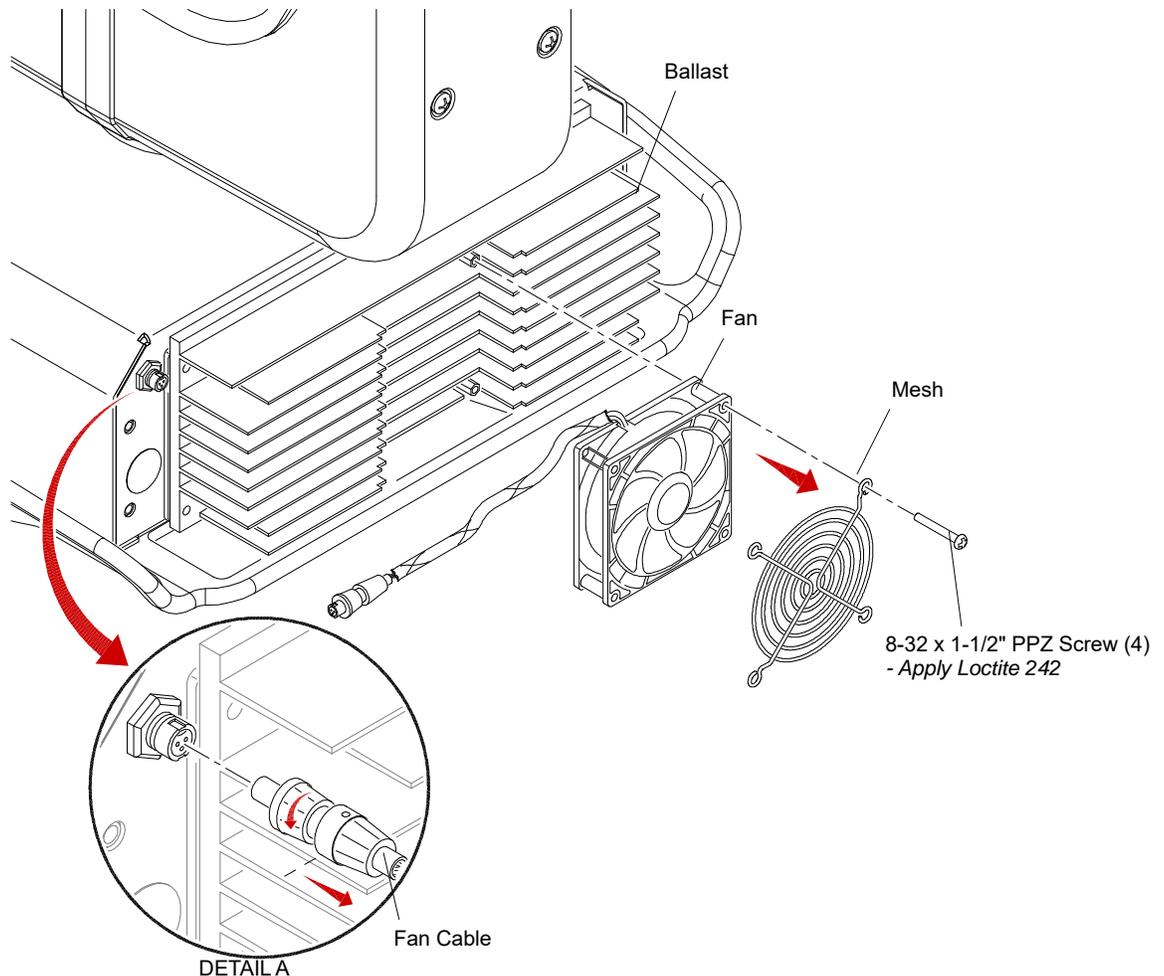


Figure 3-55: Removing Ballast Fan

## Replacing Pan/Tilt Driver PCB

### Parts:

24.9816.0765 / 2.3749A-P55 1 EA PCB ASSY, YOKE DRIVER

### Tools:

#2 Phillips screwdriver  
Sonic Tension Meter  
Loctite #242 (06.6008.0001)



**WARNING!** Remove power from luminaire before performing any maintenance procedures.



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

### To replace the Pan/Tilt Driver PCB:

- Step 1. Remove power from luminaire.
- Step 2. Remove tilt-side yoke leg cover. (Refer to "[Removing Yoke Leg Covers](#)" on page 37.)
- Step 3. At Tilt Drive Mechanism, loosen four 10-32 hex nuts so that Timing Belt becomes loose ([Figure 3-56](#)).
- Step 4. Remove Timing Belt.

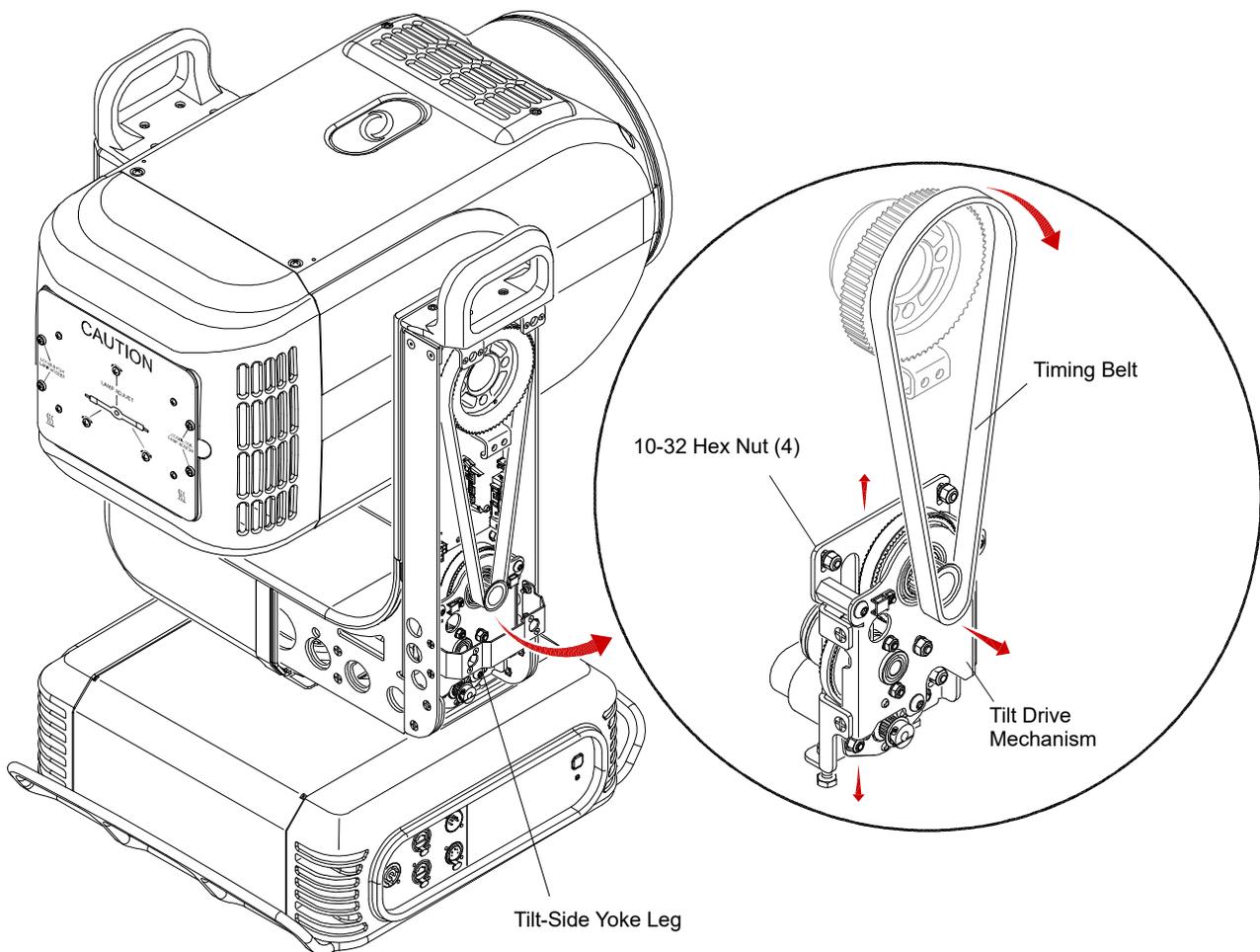


Figure 3-56: Removing Timing Belt

- Step 5. At Pan/Tilt Driver PCB, disconnect all cables (**Figure 3-57**).
- Step 6. Remove Pan/Tilt Driver PCB by removing four 6-32 x .250 PPSS screws.
- Step 7. Replace Pan/Tilt Driver PCB by doing steps in reverse. Apply Loctite 242 to 6-32 x .250 PPSS screws.
- Step 8. Set proper belt tension. Refer to "**Setting Pan/Tilt Belt Tension**" on page 106.

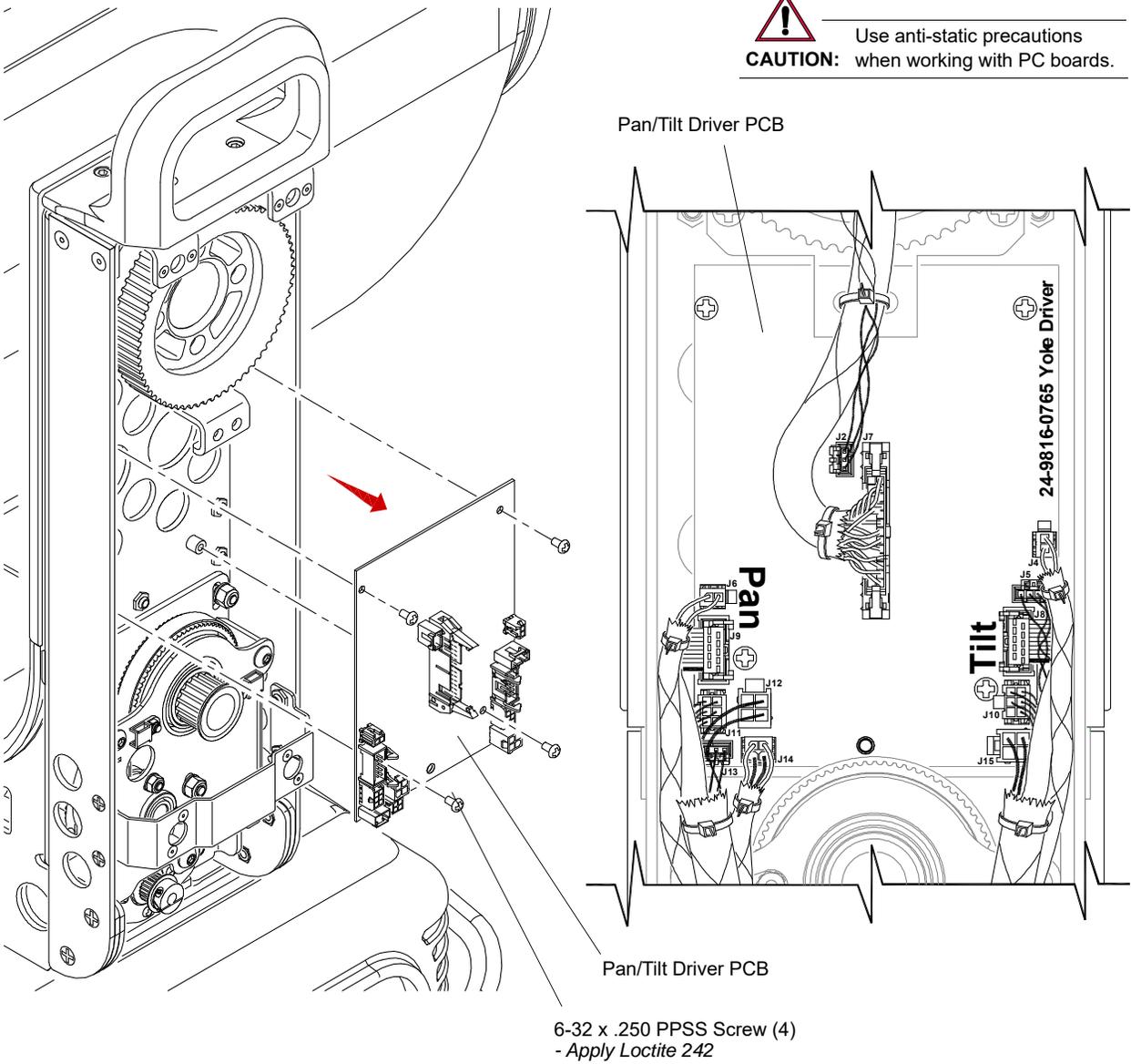


Figure 3-57: Removing Pan/Tile Driver PCB

## Replacing Tilt COT Sensor

### Parts:

25.9816.0981 / 2.3749A-P30 1 EA CABLE ASSY, TILT COT SENSOR

### Tools:

#1 and #2 Phillips screwdrivers  
1/4" nutdriver  
Wire cutters  
Loctite #242 (06.6008.0001)  
Cable Ties



**WARNING!** Remove power from luminaire before performing any maintenance procedures.



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

### To replace the tilt COT sensor:

- Step 1. Remove power from luminaire.
- Step 2. Remove both Yoke Leg Covers by loosening four captive screws each (**Figure 3-58**).
- Step 3. Remove Pan Shield by removing six 8-32 x 1/2" PPB screws.

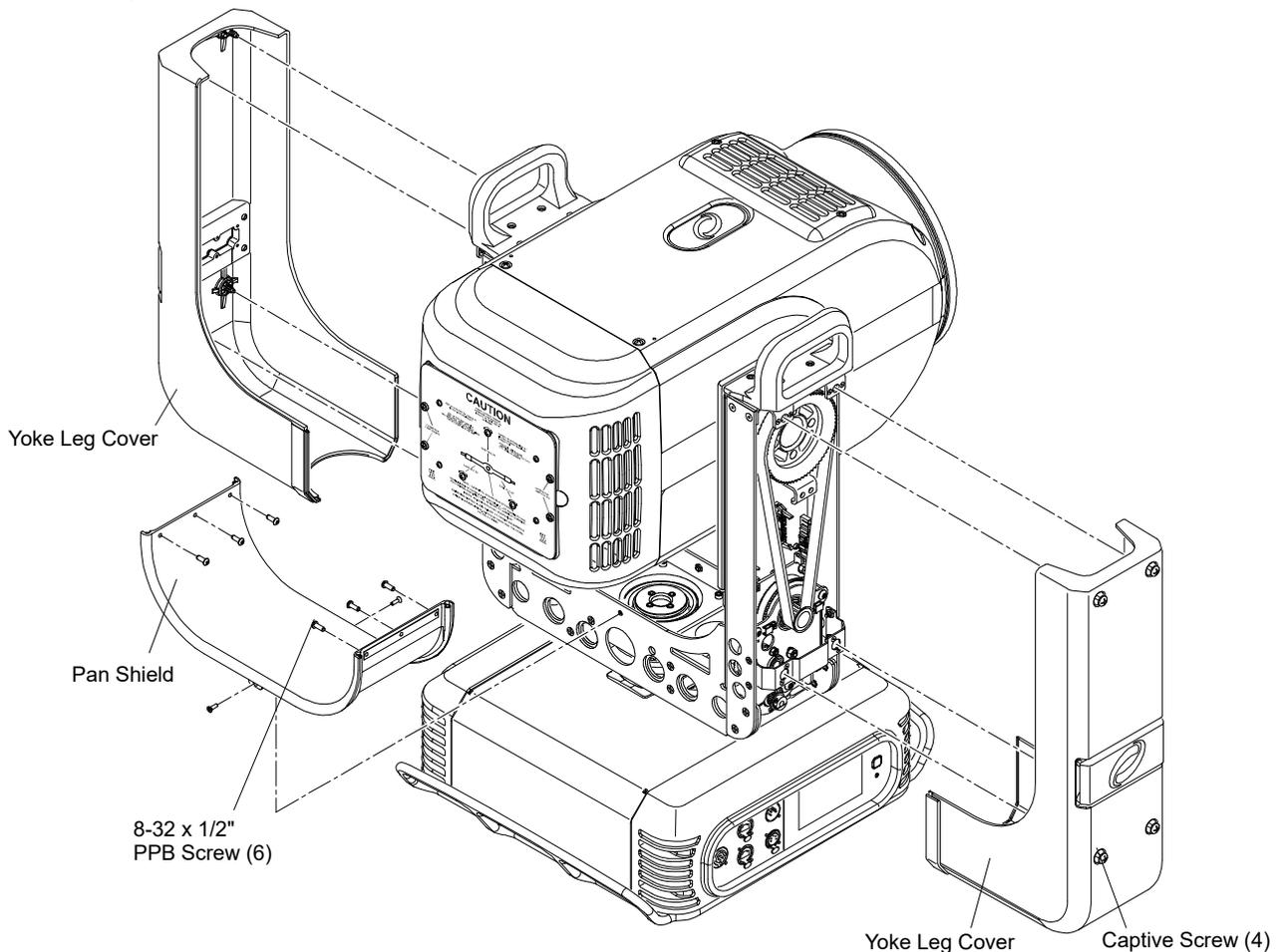


Figure 3-58: Removing Yoke Leg Covers and Pan Shield

- Step 4. At Tilt-Side Yoke Leg, disconnect Tilt COT Sensor Cable from Pan/Tilt Driver PCB (**Figure 3-59**).
- Step 5. Cut all cable ties which secure Tilt COT Sensor Cable to yoke and crossmember. Note placements.
- Step 6. At Tilt COT Sensor PCB, remove two 4-40 x 1/4" PFSS screws which secure standoffs to yoke.
- Step 7. Remove Tilt COT Sensor Cable Assembly.
- Step 8. Remove two 1/4" Hex Standoffs from PCB by removing two 4-40 x 1/4" PPSS screws.
- Step 9. Install 1/4" Hex Standoffs on new Tilt COT Sensor PCB, applying Loctite 242 to screws/standoffs.
- Step 10. Install new Tilt COT Sensor Cable Assembly by doing steps in reverse.

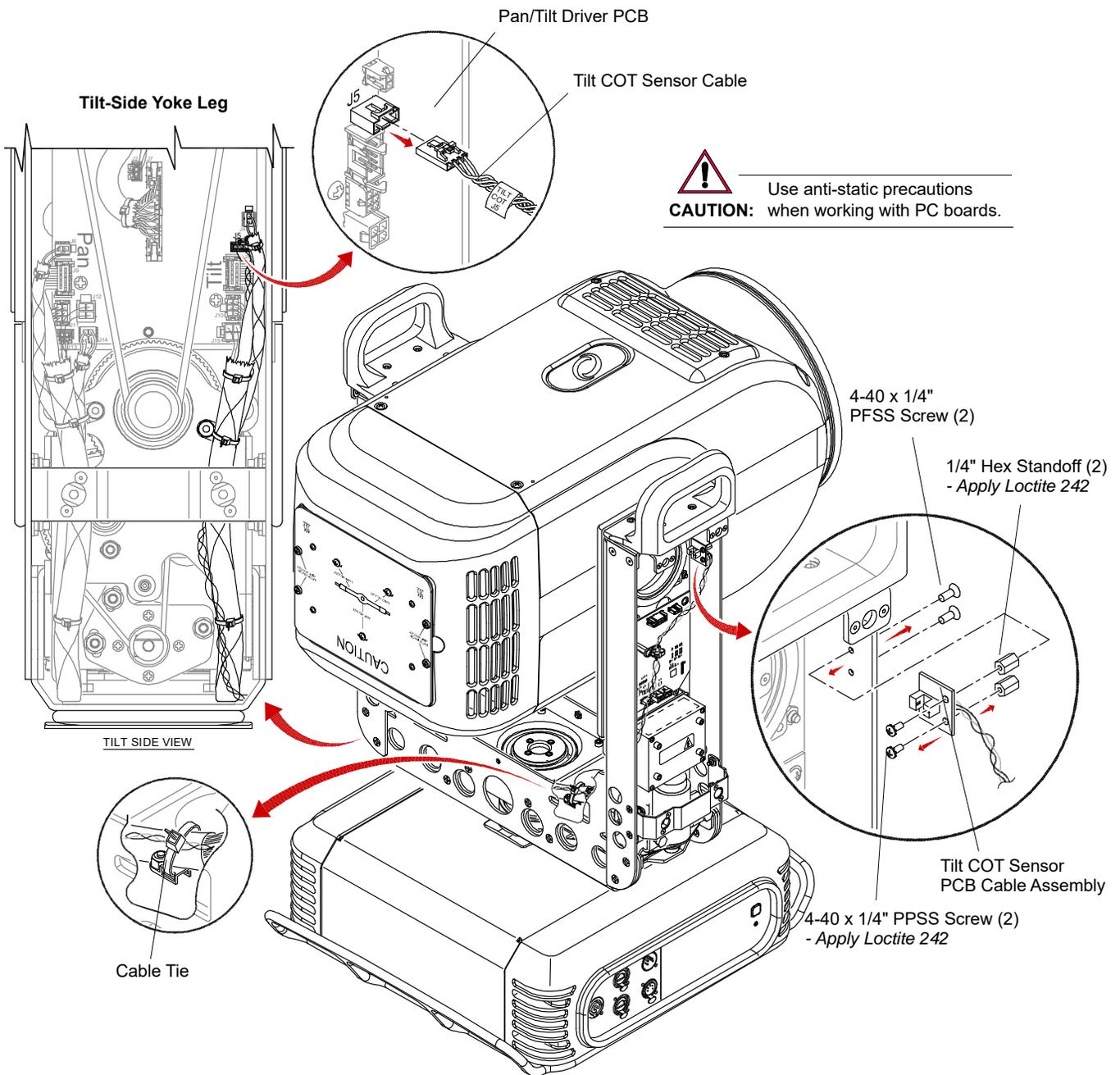


Figure 3-59: Removing Tilt COT Sensor PCB

## Replacing Tilt Drive Mechanism

### Parts:

21.9816.0719 / 2.3749A-P75 1 EA ASSY, TILT DRIVE MECHANISM

### Tools:

#2 Phillips screwdriver  
3/8" nutdriver  
Wire cutters  
Sonic Tension Meter  
Cable Ties



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace the tilt drive mechanism:

- Step 1. Remove power from luminaire.
- Step 2. Remove tilt-side yoke leg cover. (Refer to "Removing Yoke Leg Covers" on page 37.)
- Step 3. At Pan/Tilt Driver PCB, disconnect pan and tilt drive cables (**Figure 3-60**).
- Step 4. Cut cable ties which secure cables to luminaire, note their placement for re-installation.

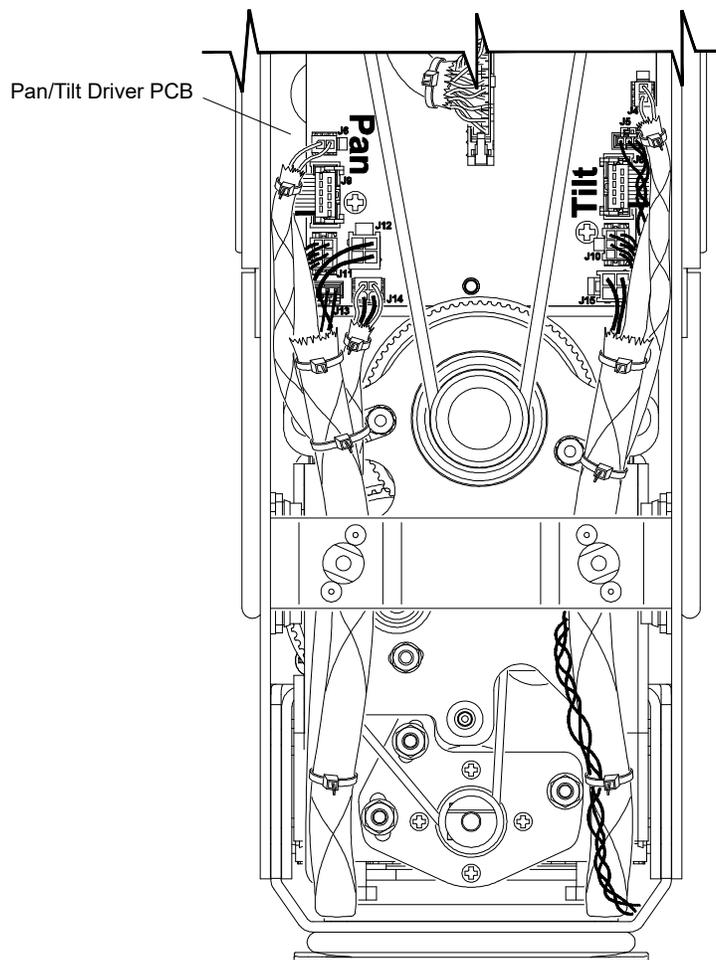


Figure 3-60: Tilt-Side Yoke Leg with Pan/Tilt Driver PCB

- Step 5. Remove Yoke Cover Mounting Bracket by removing four 8-32 x 1/2" PFB screws.
- Step 6. At Tilt Mechanism, loosen four 10-32 nylon insert nuts and move Tilt Mechanism enough so that Timing Belt can be removed.
- Step 7. To remove Tilt Mechanism, fully remove four 10-32 nylon insert nuts and #10 flat washers.
- Step 8. Replace component by doing steps in reverse.
- Step 9. Set proper belt tension. Refer to "[Setting Pan/Tilt Belt Tension](#)" on page 106.

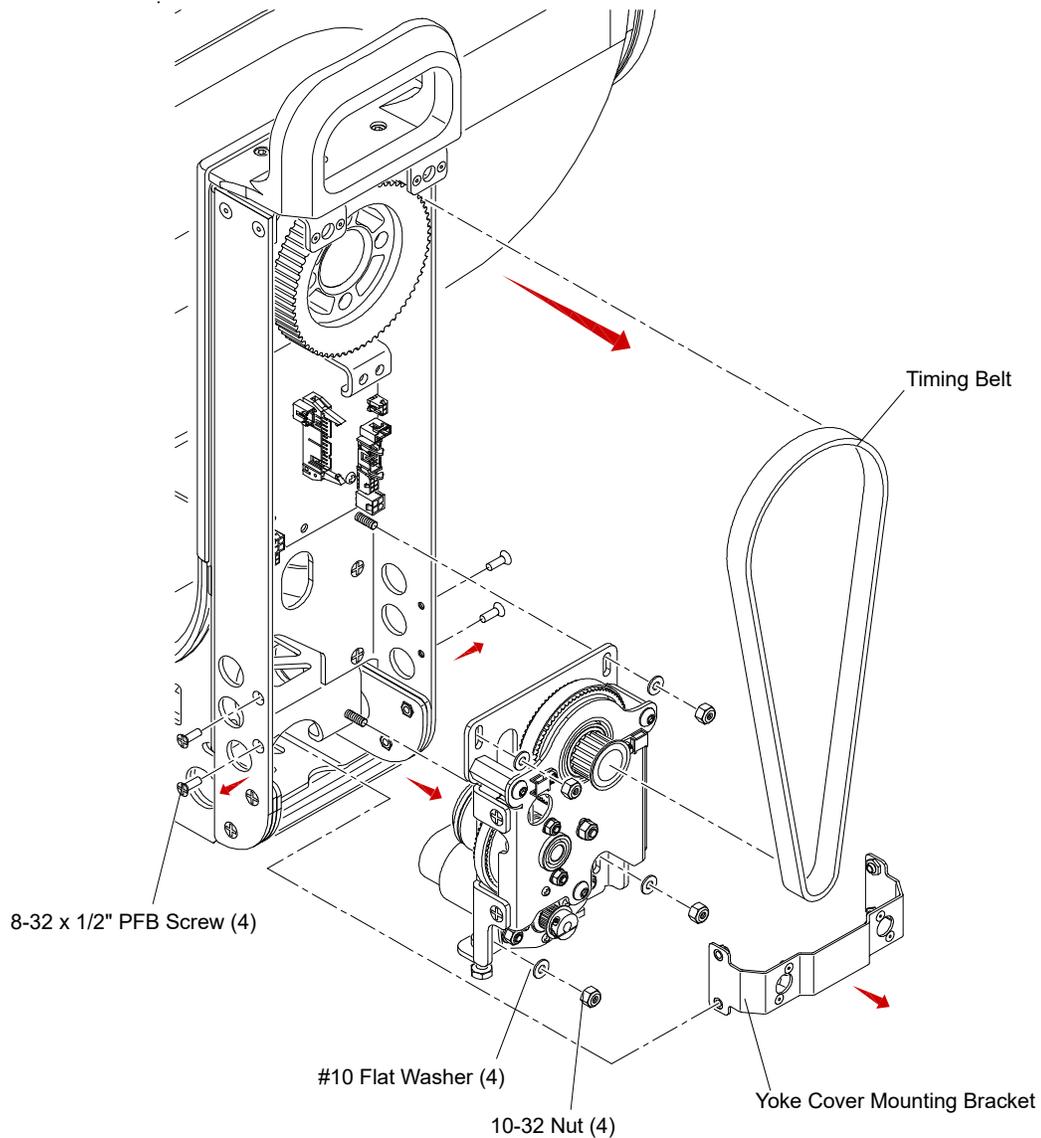


Figure 3-61: Removing Tilt Mechanism

## Replacing Pan Drive Mechanism

### Parts:

21.9816.0718 / 2.3749A-P70 1 EA ASSY, PAN DRIVE MECHANISM

### Tools:

#2 Phillips screwdriver  
5/32" Allen wrench, T-bar  
Wire cutters  
Cable Ties



**WARNING!** Remove power from luminaire before performing any maintenance procedures.

### To replace the pan drive mechanism:

- Step 1. Remove power from luminaire.
- Step 2. Remove both Yoke Leg Covers by loosening four captive screws each (**Figure 3-58**).
- Step 3. Remove Pan Shield by removing six 8-32 x 1/2" PPB screws.

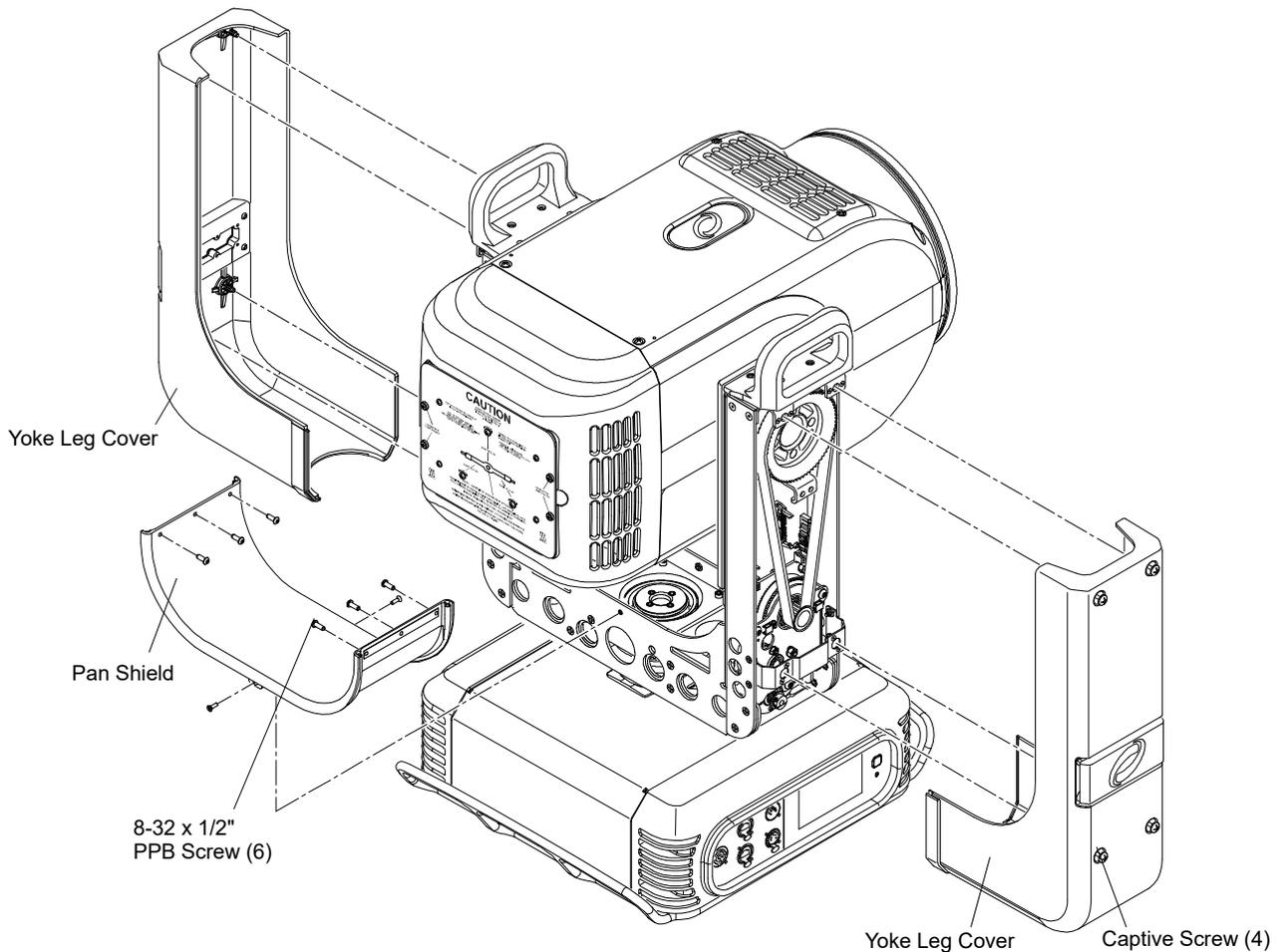


Figure 3-62: Removing Yoke Leg Covers and Pan Shield

- Step 4. At Pan/Tilt Driver PCB, disconnect pan drive cables (**Figure 3-60**).
- Step 5. Cut cable ties which secure cables to luminaire. Note placement for re-installation.
- Step 6. Remove Yoke Cover Mounting Bracket by removing four 8-32 x 1/2" PFB screws.
- Step 7. Loosen Pan Mechanism Tension Bolts and remove Timing Belt.
- Step 8. Remove four 10-32 x 5/8" socket head screws and #10 flat washers that secure Pan Mechanism to crossmember.
- Step 9. Remove Pan Mechanism.
- Step 10. Replace Pan Mechanism by doing steps in reverse.
- Step 11. Set proper belt tension. Refer to "**Setting Pan/Tilt Belt Tension**" on page 106.

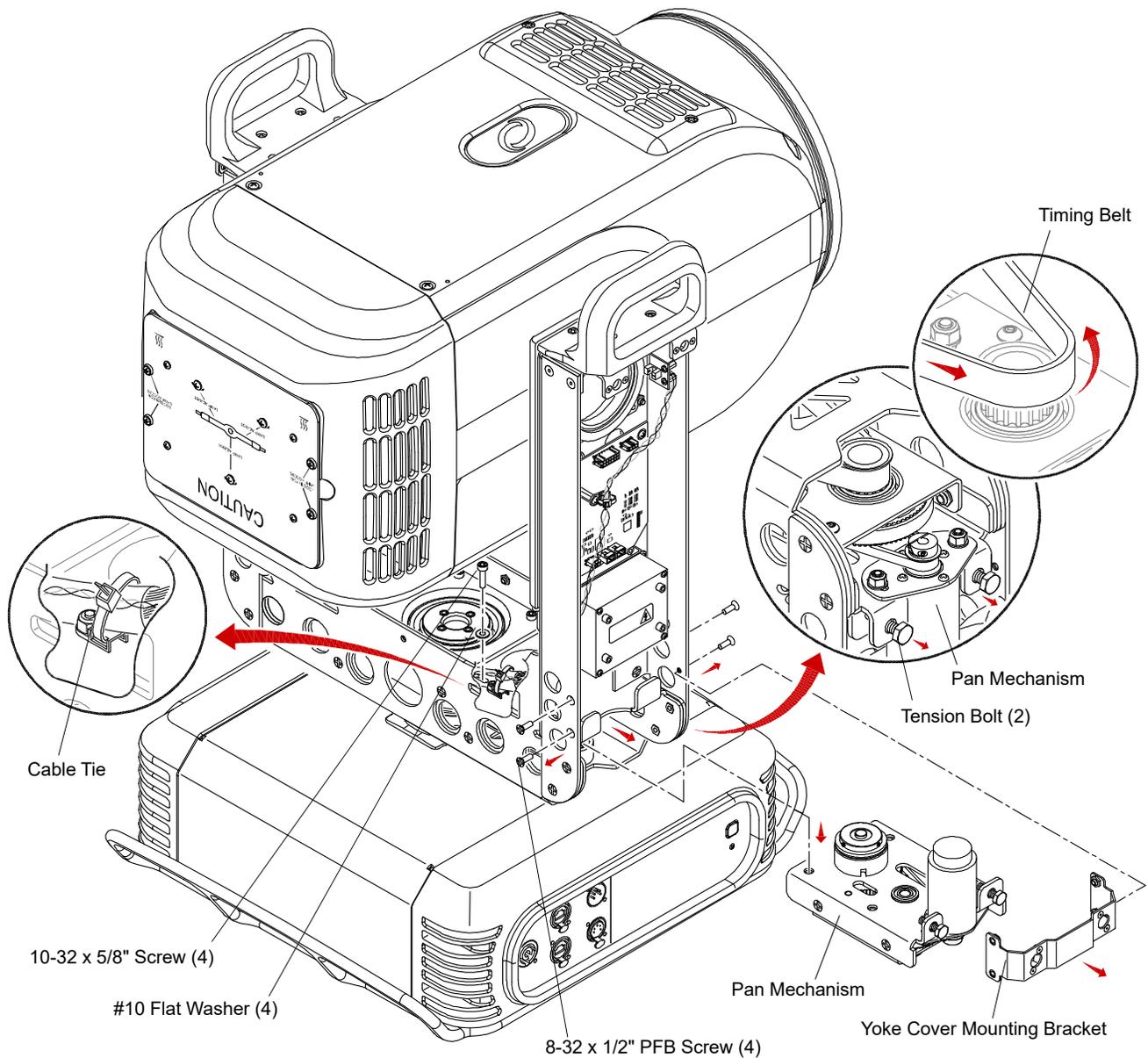


Figure 3-63: Removing Pan Drive Mechanism

## Setting Pan/Tilt Belt Tension

Loose pan/tilt drive belts can create calibration problems. When the luminaire reaches the end of travel, excess belt slack can produce a vibration causing the encoder to continue producing a movement output signal to the processor (even though the luminaire is at its stop).

When properly set, the belt should not show bilateral deflection. Bilateral deflection may be observed by loosening the tension adjustment bolt(s) and rotating the head assembly. As the head is rotated back and forth, tension is created on one side and deflections are created on the other.

There are two ways to set proper belt tension:

- 1) Using a Sonic Tension Meter (recommended).
- 2) By manually tightening until no bilateral deflection is present.

When using the Sonic Tension Meter, it will be necessary to program separate presets for the Pan and Tilt Drive belts as follows:

Preset	Belt	Mass	Width (mm)	Span (mm)	Tension (lbs.)
14	Pan Final Drive	4.1	15	145	80-100
15	Tilt Final Drive	4.1	15	237	80-100

### Tools:

7/16" open-ended wrench, *or*  
Sonic Tension Meter, Model 507C (07.3082.1052.0)



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**CAUTION:** Do not over-tighten belt! Pulley will break and/or bearings will fail.

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### To set belt tension using a meter:

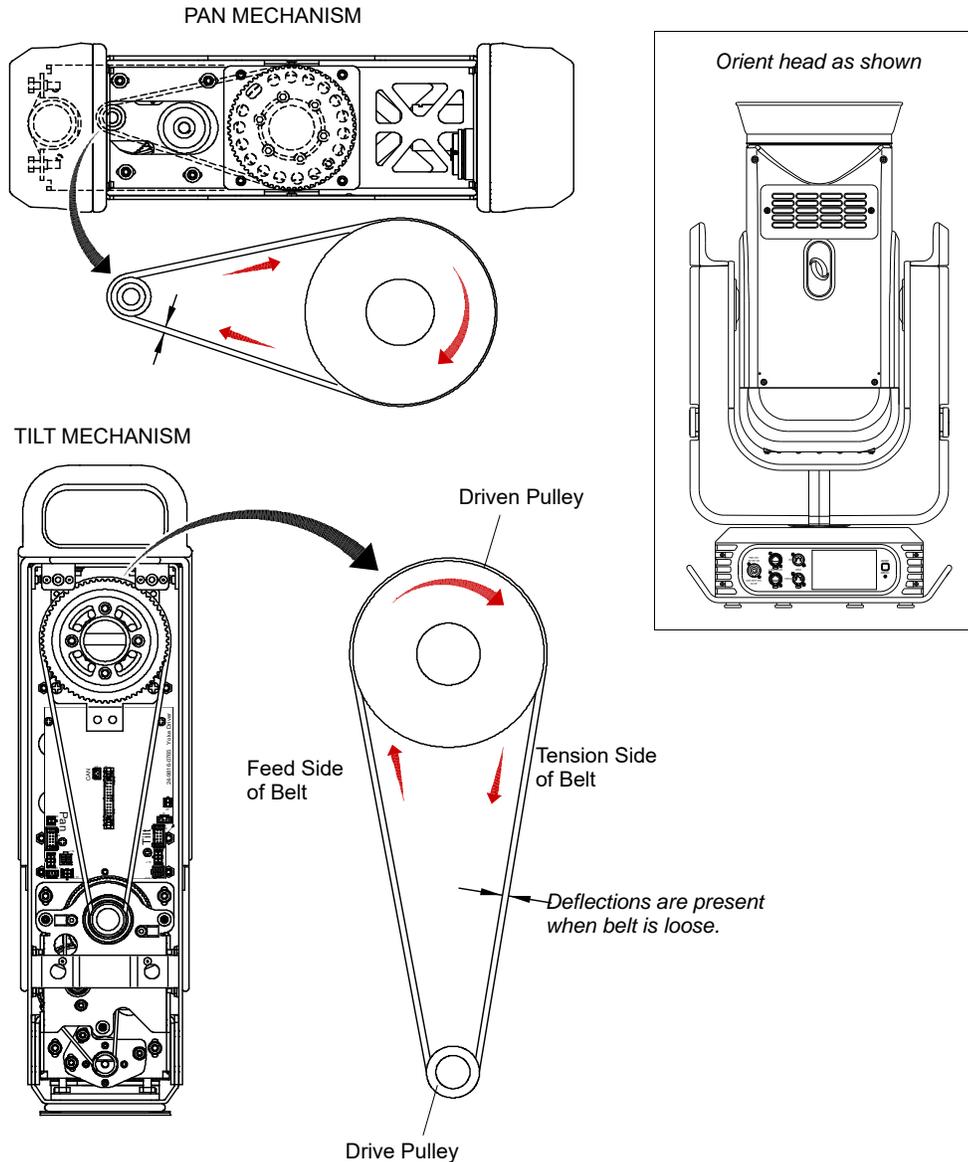
- Step 1. Set Pan and Tilt presets on the Tension Meter as given above.
- Step 2. Orient head as shown in **Figure 3-64** on next page.
- Step 3. Slowly tighten belt adjustment bolt(s). Use Tension Meter to verify correct tension.



**CAUTION:** Do not over-tighten belt! Pulley will break and/or bearings will fail.

**To set belt tension manually:**

- Step 1. Orient head as shown in **Figure 3-64**.
- Step 2. Manually move the luminaire head back and forth (tilt) or around (pan), noting the tension created on one side of belt and deflections on the other.
- Step 3. Using wrench, tighten belt adjustment bolt(s) until no bilateral deflection occurs.



**Figure 3-64: Belt Tension Adjustment**



**MAINTENANCE NOTES**



## 4.

# ILLUSTRATED PARTS BREAKDOWN

This chapter provides illustrated parts breakdowns for the luminaire sub-assemblies.

- + OVERVIEW
- + TOP ASSEMBLY
- + HEAD
- + ZOOM OPTICS
- + WHEEL STACK
- + YOKE
- + UPPER ENCLOSURE
- + BEST BOY HP SPARES LIST

## OVERVIEW

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### About this IPB

This Illustrated Parts Breakdown is intended for use with Shop and Field Service level operation of the luminaire. All subassembly breakdowns are included, except those not suitable for repair outside of PRG Manufacturing. If a breakdown is not shown for a particular subassembly, please order the entire subassembly as a replacement item. If a maintenance procedure has been provided for an assembly or single component, then it will be referenced in the "Procedure" column of the IPB table, on the right side, referencing a page number with link.



#### ATTENTION

If you require assistance that is not covered in the Service Manual, please contact [bestboysupport@prg.com](mailto:bestboysupport@prg.com) so we may assist you.

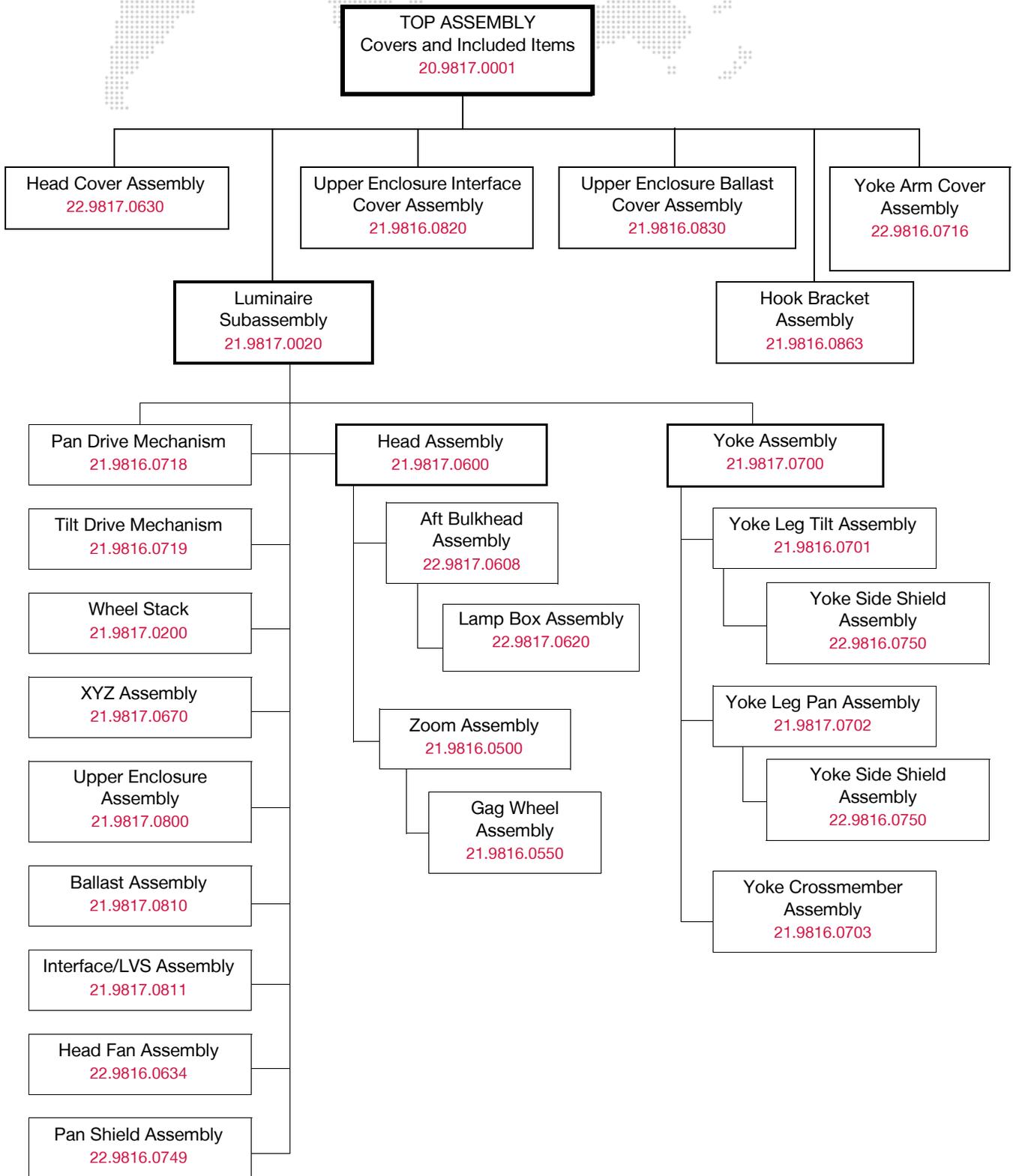
### Torque Chart

Unless otherwise specified, torque all fasteners as called out below:

TORQUE CHART	
SCREW SIZE	TORQUE IN-LBS
2-56	2.20
4-40	4.70
6-32	8.70
8-32	17.80
10-32	29.70
1/4-20	65.00

## Drawing Tree

The following diagram represents the breakdown of sub-assemblies in the luminaire.





## TOP ASSEMBLY

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### Covers and Included Items

20.9817.0001

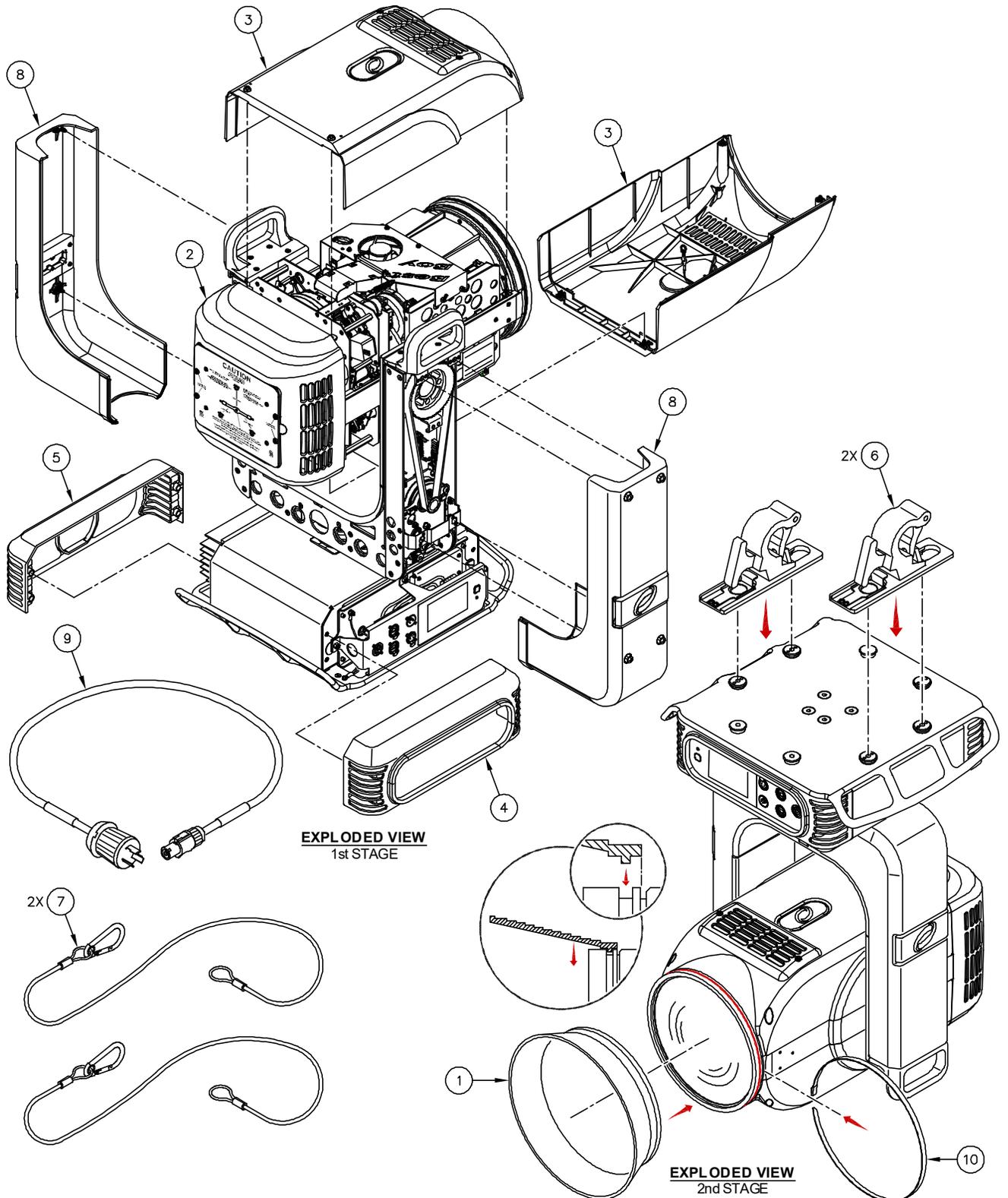
Revision: A0

No.	Item	Qty	UM	Description	Procedure
1	10.9816.0029	1	EA	LENS HOOD, FLEXIBLE	page 55
2	21.9816.0820	1	EA	ASSY, UE INTERFACE COVER	page 38
3	21.9816.0830	1	EA	ASSY, UE BALLAST COVER	page 38
4	21.9816.0863	2	EA	ASSY, HOOK BRACKET	-
5	21.9817.0020	1	EA	SUB-ASSEMBLY, LUMINAIRE w/o COVERS	-
6	22.9816.0033	2	EA	ASSY, SAFETY CABLE HEAVY DUTY	-
7	22.9816.0716	2	EA	ASSEMBLY, YOKE ARM COVER	page 37
8	22.9817.0630	2	EA	ASSY HEAD COVER, BEST BOY HP SPOT	page 34
9	25.9812.0902.5	1	EA	CABLE ASSY, AC LINE CORD 2.5' 14/3 L6-2	-
10	55.0078.1000.0	1	EA	BALL LOKT TIE	page 55

Refer to illustration on next page.

## Covers and Included Items (continued)

Refer to Parts List for "Covers and Included Items" on page 112.





## Head Cover Assembly

22.9817.0630

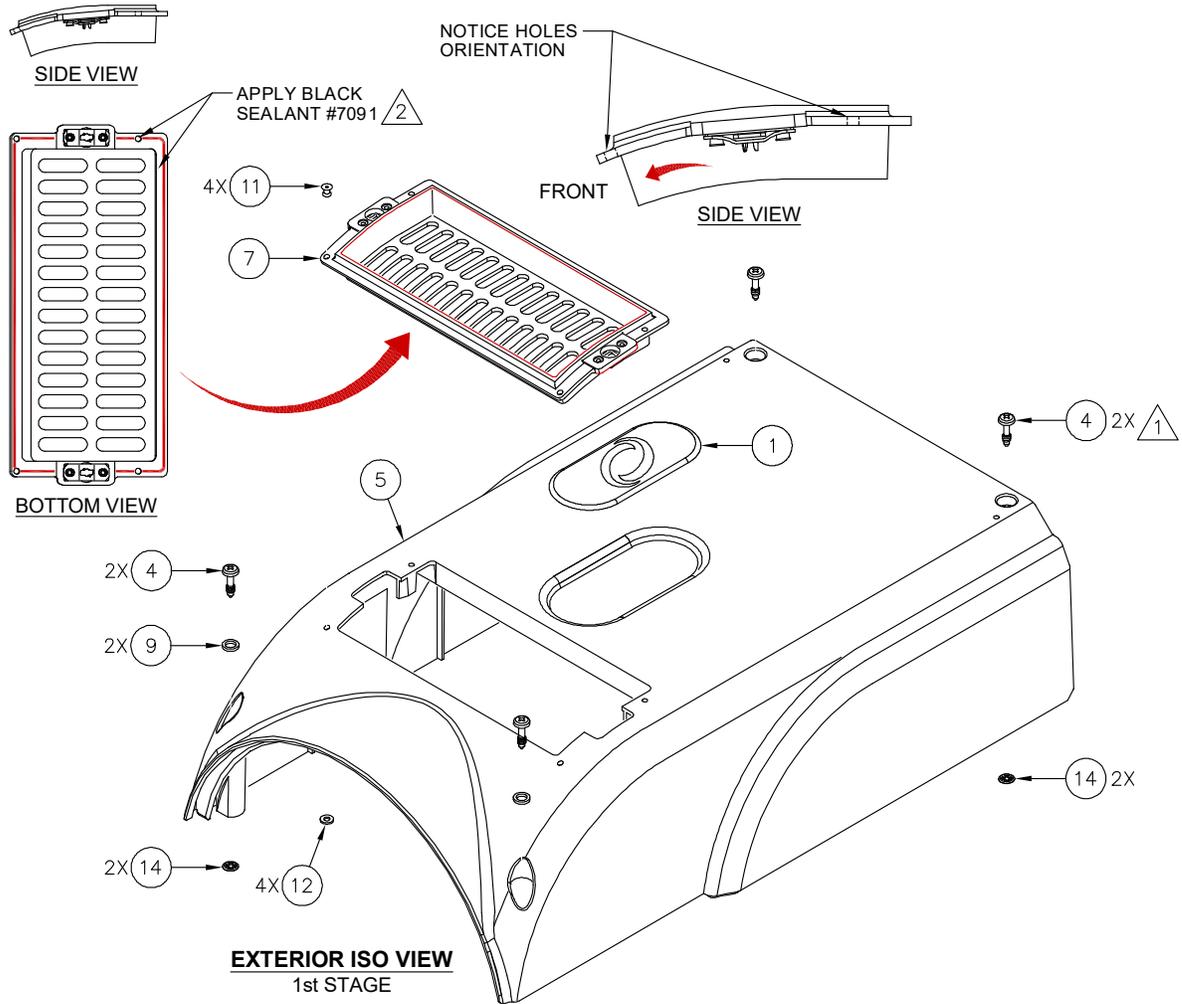
Revision: Rev B0

No.	Item	Qty	UM	Description	Procedure
1	04.9812.0630	1	EA	LABEL, HEAD COVER PRG	-
2	10.9816.0637	2	EA	RAIN MOD SHIELD SIMPLIFIED, BEST BOY	-
3	10.9817.0661	1	EA	FILTER AIR, FOAM, BEST BOY HP SPOT	-
4	12.5665.0001.0	4	EA	SCREW, BLK ZINC PLATED(COMES IN AS/53.5	-
5	12.9817.0630	1	EA	MODIFIED HEAD COVERS, BEST BOY HP SPOT	-
6	22.9816.0631	1	EA	ASSY, HEAD COVER SAFETY LANYARD COMPONE	-
7	22.9817.0667	1	EA	ASSY BOX, AIR FILTER, BEST BOY HP SPOT	-
8	22.9817.0668	1	EA	ASSY COVER, AIR FILTER, BEST BOY HP SPOT	-
9	53.6523.0011.0	2	EA	O-RING, SQUARE 1/4" ID X 3/8" OD	-
10	53.6530.0024.0	2	EA	RIVET, 1/8"OD .126-.187"GRP CSK POP ALUM	-
11	53.6534.0012.0	4	EA	RIVET, 1/8"OD .251-.312"GRP POP ALUM	-
12	53.6534.0013.0	4	EA	RIVET WASHER, BLIND 3/8"OD .134"	-
13	53.6689.0002.01	1	EA	SCREW, PLASTITE 48-2 #10-14 X 1/4" HEX	-
14	54.1206.0057.0	4	EA	RETAINING RING, EXTERNAL 1/8" SS	-

## Head Cover Assembly (continued)

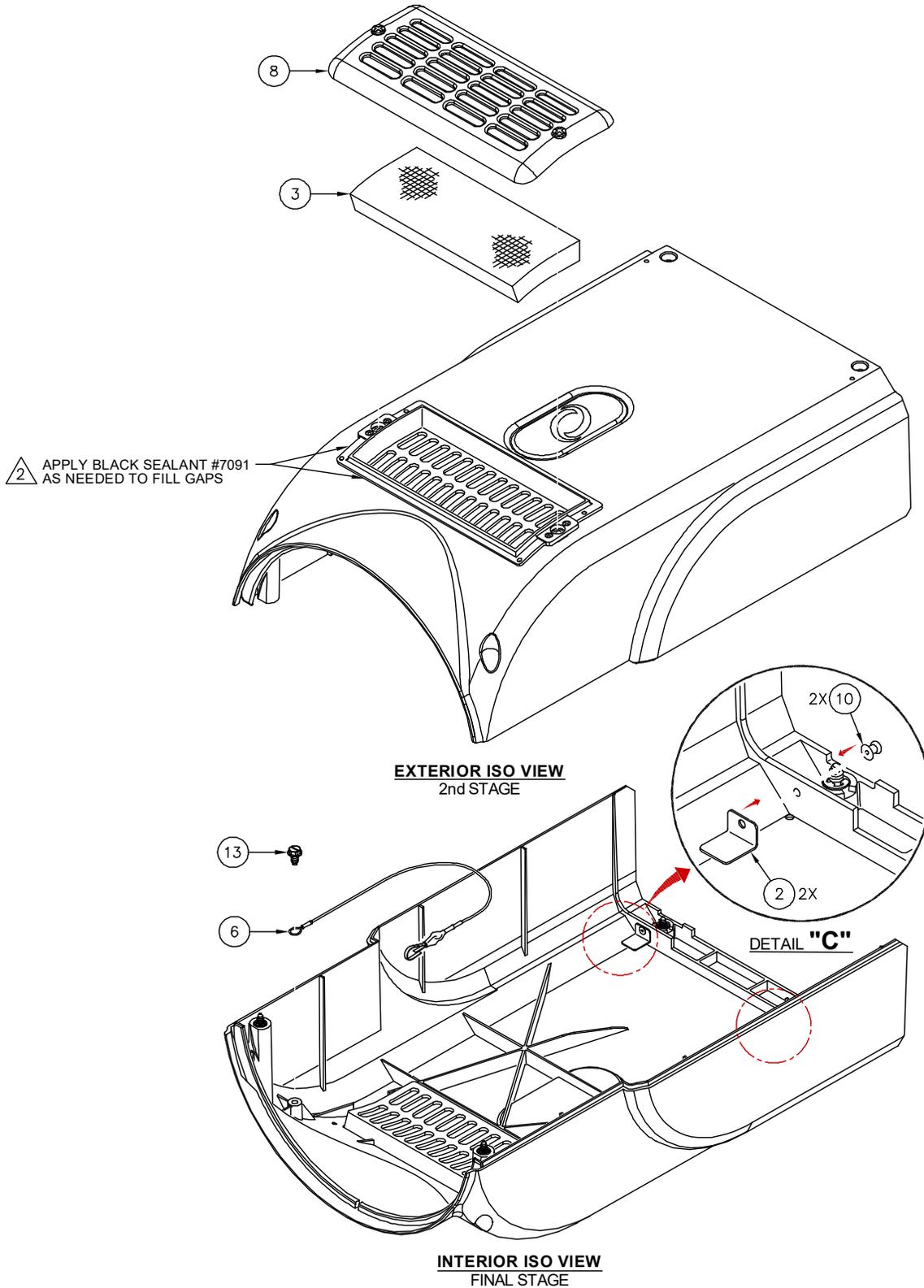
Refer to Parts List for "Head Cover Assembly" on page 114.

- 1 REMOVE PLASTIC WASHER FROM SCREW BEFORE INSTALLING.
- 2 APPLY A THIN BEAD OF ADHESIVE BLACK SEALANT #7091 PRIOR TO INSTALL.



## Head Cover Assembly (continued)

Refer to Parts List for "Head Cover Assembly" on page 114.

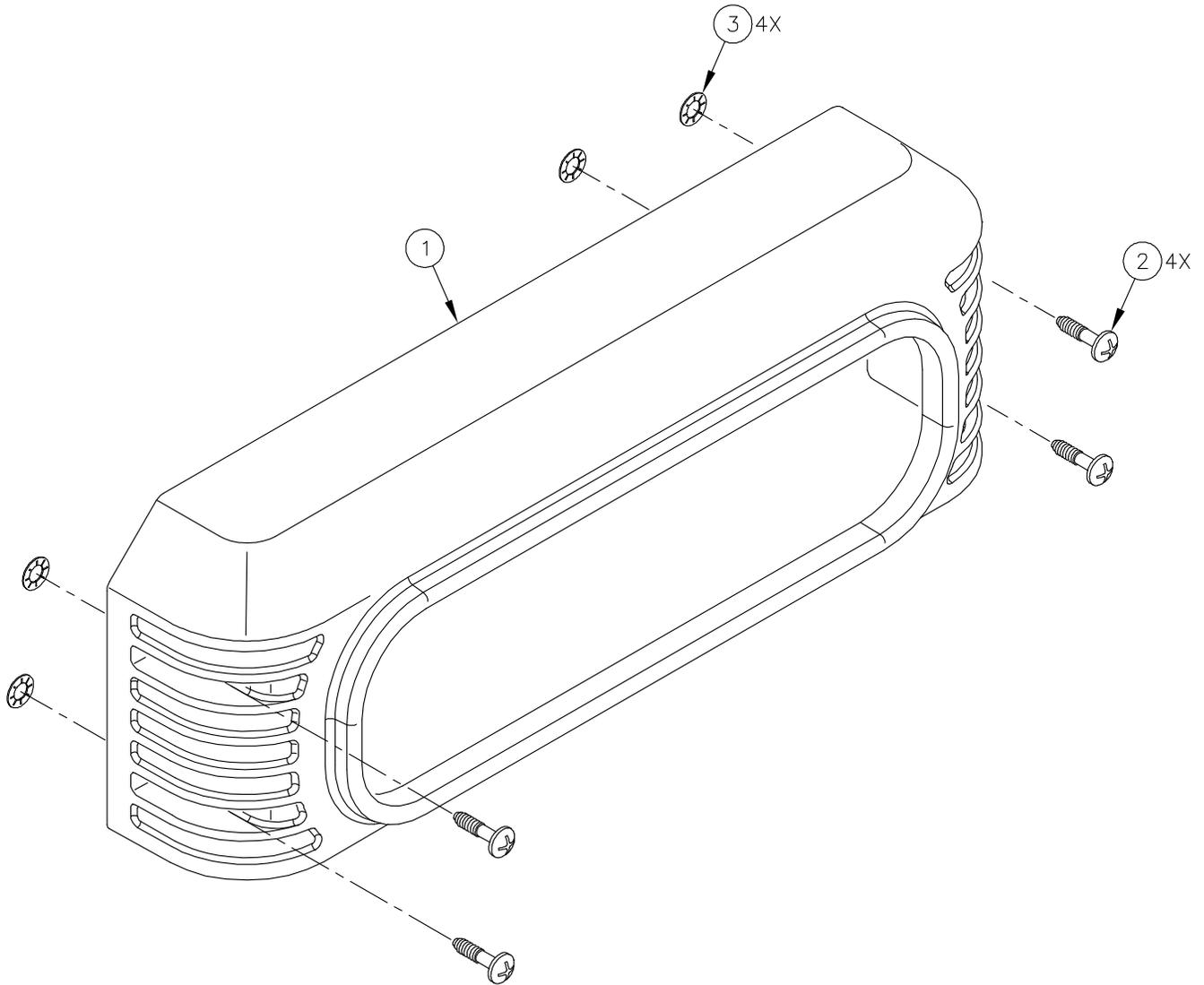


## Upper Enclosure Interface Cover Assembly

21.9816.0820

Revision: Rev B0

No.	Item	Qty	UM	Description	Procedure
1	10.9816.0820	1	EA	COVER, UPPER ENCLOSURE, INTERFACE	page 38
2	53.5510.0661.0	4	EA	SCREW, CAPTIVE 10-32 X 3/4" PHILLIPS FILLISTER HD SS BZ	-
3	55.6623.0027.0	4	EA	WASHER, NYLON RETAINER 10-32 .312"OD .167"ID .020TH	-

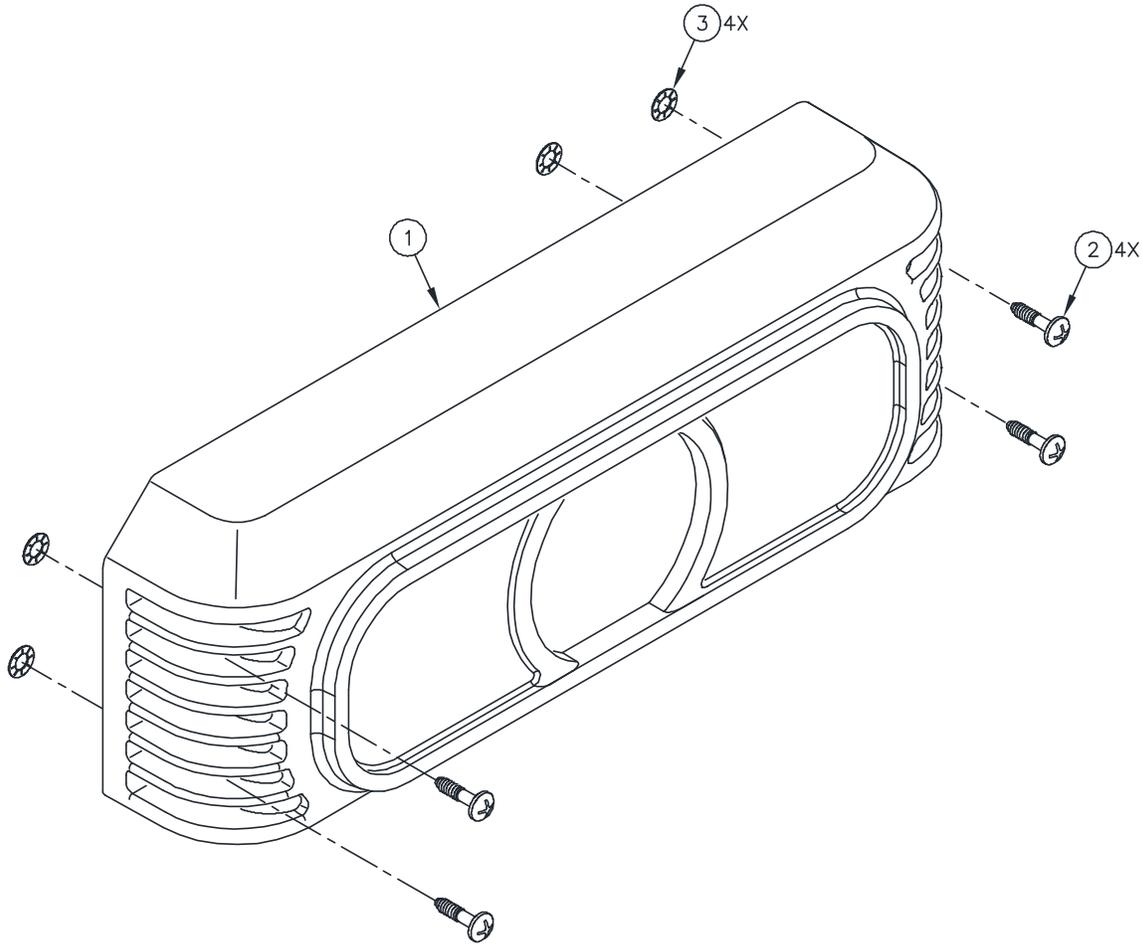


## Upper Enclosure Ballast Cover Assembly

21.9816.0830

Revision: Rev B0

No.	Item	Qty	UM	Description	Procedure
1	10.9816.0830	1	EA	COVER, UPPER ENCLOSURE, BALLAST	page 38
2	53.5510.0661.0	4	EA	SCREW, 10-32 X 5/6" CAPTIVE	-
3	55.6623.0027.0	4	EA	WASHER, NYLON RETAINER 10-32 .312"OD .167"ID .020TH	-

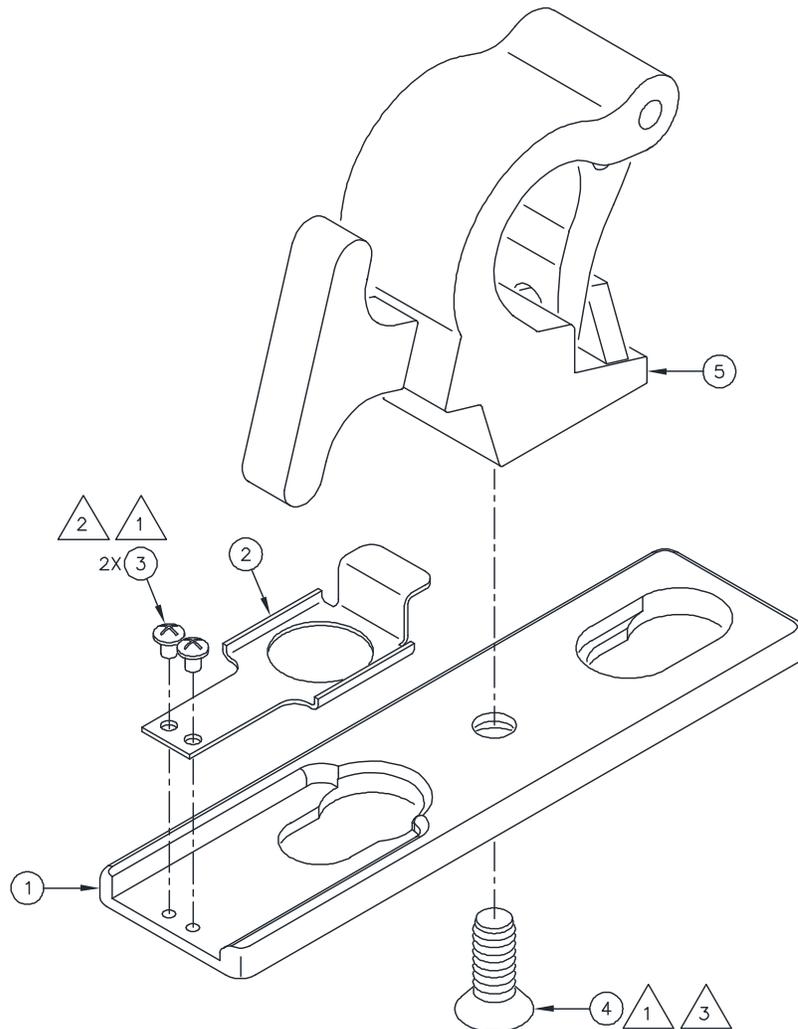


## Hook Bracket Assembly

21.9816.0863

Revision: Rev C0

No.	Item	Qty	UM	Description	Procedure
1	10.9816.0863	1	EA	HOOK BRACKET, BEST BOY	-
2	10.9816.0864	1	EA	SPRING, HOOK BRACKET BEST BOY	-
3	53.6553.0010.0	2	EA	SCREW, 10-32 X 3/16" PPBZ	-
4	53.7015.9596.0	1	EA	SCREW, 18-8 1/2" X 1" FLAT HEAD SOCKET	-
5	55.6872.0001.0	1	EA	MEGA-CLAW, TRUSS HOOK, 2" ROUND TUBE BL	-



1 APPLY LOCTITE #242 (06-6008-0001) TO SCREW THREADS.

2 TORQUE TO 27 IN-LBS.

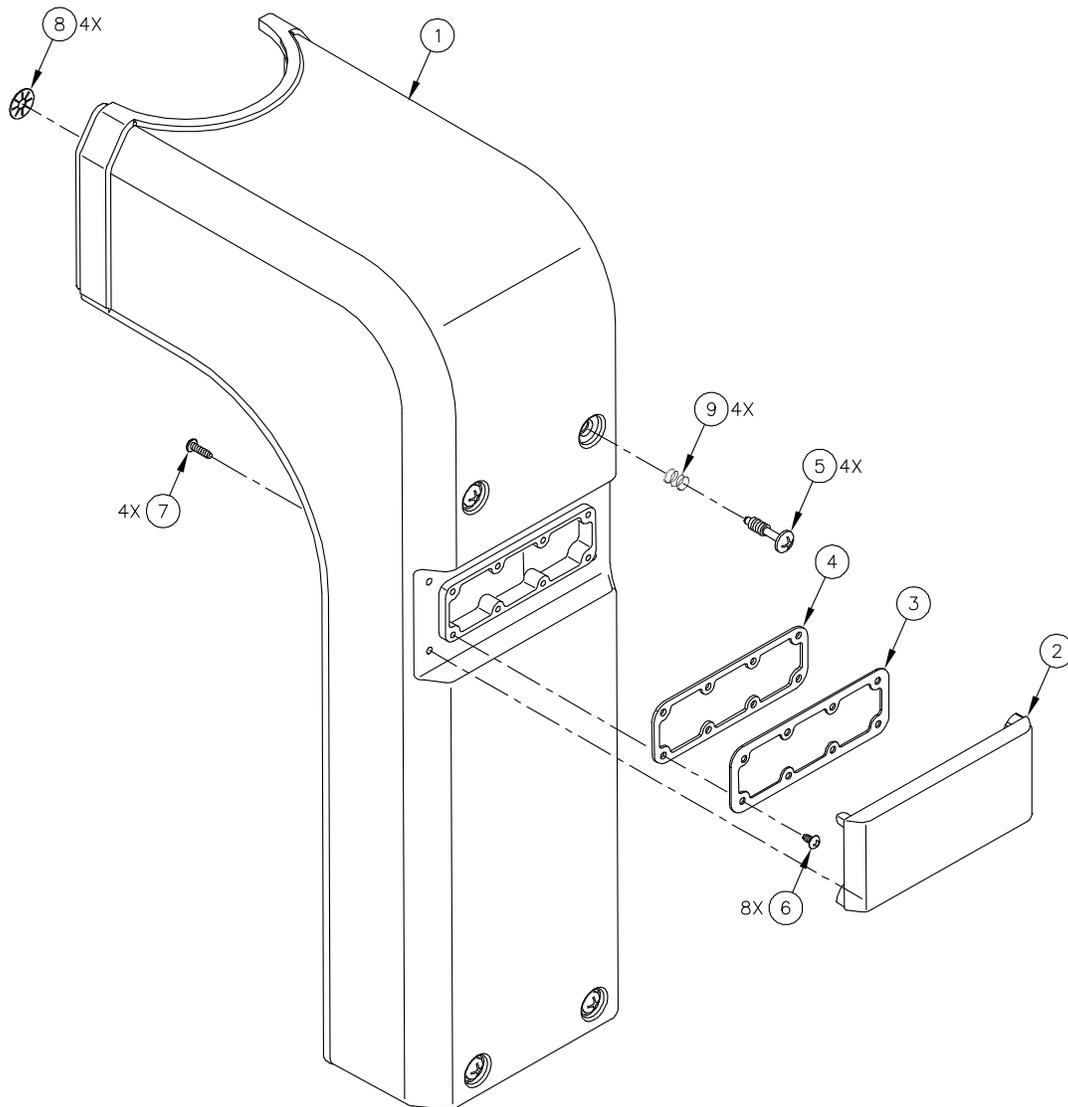
3 TORQUE TO 30 FT-LBS.

## Yoke Arm Cover Assembly

22.9816.0716

Revision: Rev C0

No.	Item	Qty	UM	Description	Procedure
1	10.9816.0716	1	EA	COVER, YOKE ARM ASSY, BEST BOY	<a href="#">page 37</a>
2	10.9816.0715	1	EA	YOKE ARM VENT COVER	-
3	10.9816.0752	1	EA	YOKE VENT FLANGE, BEST BOY	-
4	10.9816.0767	1	EA	GASKET, YOKE VENT FLANGE	-
5	12.6574.0010.0	4	EA	SCREW, BLK ZINC, 25MM LG, SOUTHCO FAST	-
6	53.6522.0002	8	EA	SCREW, 6-32 X 1/4" PPZ TYPE F	-
7	53.6690.0002.0	4	EA	SCREW, 6-32 X 1/2" THREAD CUTTING PAN SS	-
8	55.6878.0021.0	4	EA	RETAINER, FAST LEAD SCREW #12 NYLON BLK	-
9	55.6568.0064.0	4	EA	SPRING, COMPRESSION, .312"OD X .375"LG X .016" WIRE DIA	-



EXPLODED VIEW  
SCALE: 1/2

## Luminaire Subassembly

21.9817.0020

Revision: Rev C0

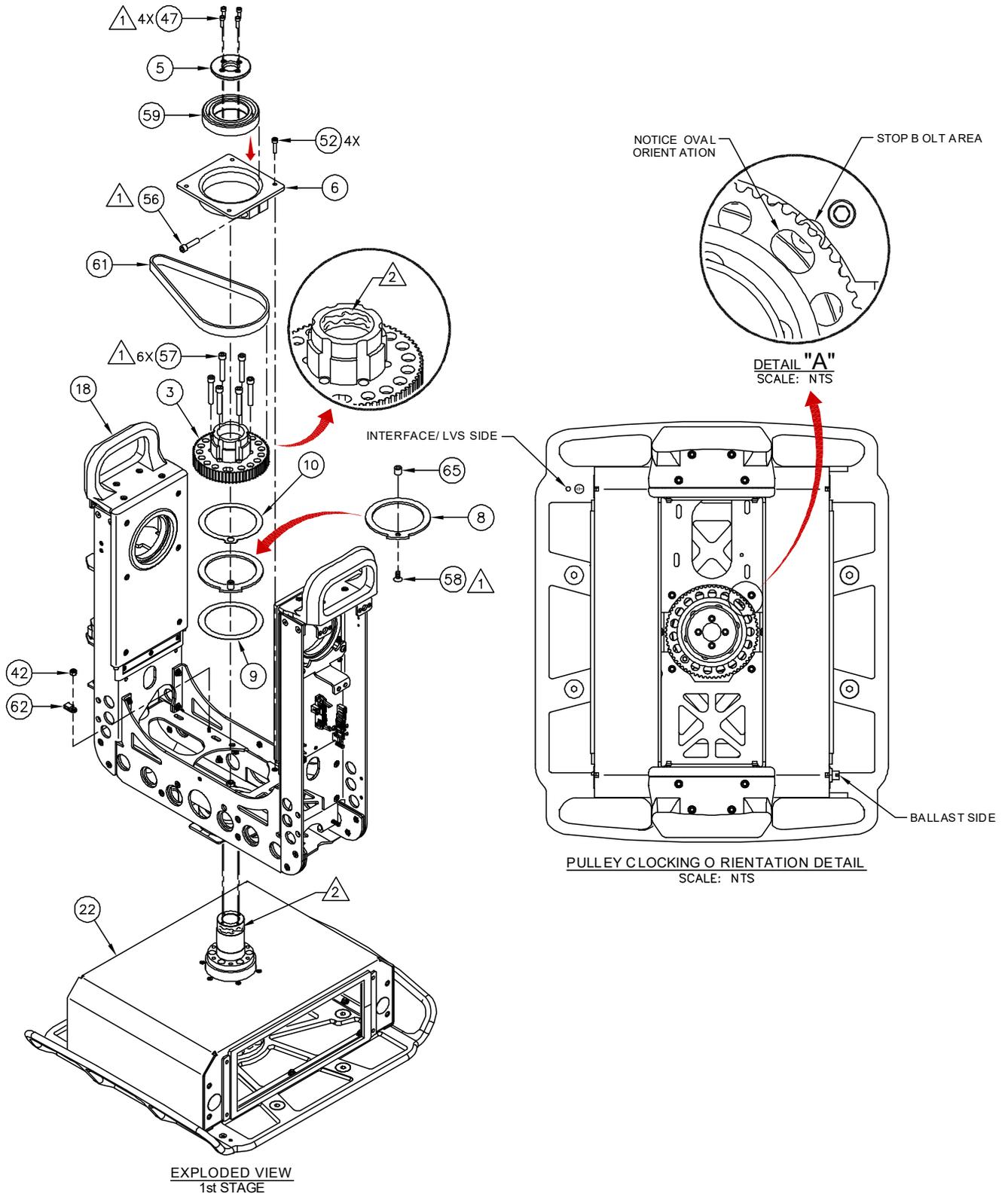
No.	Item	UM	Qty	Description	Procedure
1	25.9816.0962	EA	1	CABLE ASSY, BALLAST OUTPUT TO RELAY	-
2	10.9815.0795	EA	4	IGNITOR SAFETY CAPS	-
3	10.9816.0711	EA	1	PAN PULLEY, BEST BOY	-
4	10.9816.0712	EA	1	TILT PULLEY, BEST BOY	-
5	10.9816.0713	EA	1	PAN TUBE BEARING CLAMP, BEST BOY	-
6	10.9816.0737	EA	1	PAN BEARING CLAMP, BEST BOY	-
7	10.9816.0738	EA	2	YOKE COVER MOUNTING BRACKET, BEST BOY	-
8	10.9816.0754	EA	1	PAN END STOP, BESTBOY	-
9	10.9816.0755	EA	1	WASHER, TEFLON, PAN STOP, BEST BOY	-
10	10.9816.0757	EA	1	WASHER, TEFLON, PAN STOP, PIN SIDE, BEST BOY	-
11	10.9816.0758	EA	1	TILT CLAMP BOSS, BESTBOY	-
12	10.9816.0759	EA	1	TILT COT FLAG, BESTBOY	-
13	10.9816.0633	EA	1	FRONT GLASS SEAL, BEST BOY	-
14	10.9817.1612.02	EA	1	AFT COVER, MACHINED CASTING, BEST BOY HP SPOT	-
15	12.9816.0629	EA	1	PAINTED INTEND RETAINER, FRONT GLASS	-
16	21.9817.0200	EA	1	ASSY, WHEEL STACK BEST BOY HP SPOT	-
17	21.9817.0600	EA	1	ASSY, HEAD BEST BOY HP SPOT	-
18	21.9817.0700	EA	1	ASSY, YOKE, BEST BOY HP SPOT	-
19	21.9816.0718	EA	1	ASSY, PAN DRIVE MECHANISM	page 104
20	21.9816.0719	EA	1	ASSY, TILT DRIVE MECHANISM	page 102
21	21.9817.0670	EA	1	ASSY, XYZ BEST BOY HP SPOT	page 46
22	21.9817.0800	EA	1	ASSY, UPPER ENCLOSURE BEST BOY HP SPOT	-
23	21.9817.0810	EA	1	ASSY, BALLAST, BEST BOY HP SPOT E-Code 3749D-P12	page 95
24	21.9817.0811	EA	1	ASSY, INTERFACE/LVS, BEST BOY HP SPOT	page 91
25	22.9816.0634	EA	1	FAN ASSEMBLY, HEAD	page 57
26	22.9816.0749	EA	1	ASSY, PAN SHIELD	page 37
27	25.9817.0963	EA	1	CABLE ASSY, RELAY OUTPUT TO IGNITOR INPUT	-
28	25.9817.0964	EA	1	CABLE ASSY, IGNITOR OUTPUT TO LAMP SOCKET	-
29	25.9817.0968	EA	1	CABLE ASSY, LVS DC OUTPUT TO MAIN CTRL PCB BEST BOY HP SP	-
30	25.9816.0969	EA	1	CABLE ASSY, LVS DC OUTPUT TO YOKE & HEAD	-
31	25.9816.0971	EA	1	CABLE ASSEMBLY, YOKE PCB to WS PCB	-
32	25.9816.0972	EA	1	CABLE ASSEMBLY, HEAD DRIVER PCB TO WHEEL STACK PCB	-
33	22.9816.0634	EA	1	CABLE ASSY, OVER-TEMP/INTERLOCK, BEST BOY HP SPOT	-
34	25.9816.0975	EA	1	CABLE ASSY, HEAD CONTROLLER TO HOT RELAY	-
35	25.9817.0977	EA	1	CABLE ASSY, BACK FANS	page 79
36	25.9816.0979	EA	1	CABLE ASSEMBLY, INTERLOCK TO HEAD OVER-TEMP SWITCH	-
37	25.9816.0980.01	EA	1	CABLE ASSY, MAIN CONTROL PCB TO YOKE PCB	-
38	25.9816.0980.02	EA	1	CABLE ASSEMBLY, YOKE PCB TO HEAD PCB	-
39	25.9816.0980.03	EA	1	CABLE ASSEMBLY, HEAD PCB TO WHEEL STACK PCB	-

No.	Item	UM	Qty	Description	Procedure
40	25.9816.0980.04	EA	1	CABLE ASSY, CAN BUS DATA, BEST BOY HP SPOT	-
41	41.9816.0628	EA	1	GLASS, FRONT, BESTBOY	page 54
42	53.2202.0006	EA	3	NUT, 6-32 HEX SS NYLON INSERT	-
43	53.2202.0010	EA	4	NUT, 10-32 HEX SS NYLON INSERT	-
44	53.6522.0004.0	EA	2	SCREW, 6-32 X 1/4" SEMS	-
45	53.5606.0312	EA	4	SCREW, 6-32 X 5/16" PPSS BLK ZINC	-
46	53.6611.0001	EA	2	SCREW, 6-32 X 1/2" PFBZ	-
47	53.5508.0505.0	EA	4	SCREW, 8-32 X 1/2" SOCKET HD CAP SS	-
48	53.6521.0001	EA	6	SCREW, 8-32 X 1/2" PPB	-
49	53.6552.0002	EA	12	SCREW, 8-32 X 1/2" PFB	-
50	53.6517.0002	EA	1	SCREW, 10-32 X 3/8" PP SEMS EXTERNAL TOOTH BLACK ZINC	-
51	53.5510.0375	EA	4	SCREW, 10-32 X 3/8" PPSS	-
52	53.6579.0012.1	EA	8	SCREW, 10-32 X 5/8" SHCS ZINC	-
53	53.9816.7500.0	EA	8	SCREW, 10-32 X 3/4" SHCS STEEL BLK ZINC	-
54	53.6530.0024.0	EA	8	RIVET, 1/8"OD .126-187"GRP CSK POP ALUM	-
55	53.6653.0038.0	EA	4	SCREW, 1/4-20 X 1" SOCKET BUTTON HD CAP SS	-
56	53.6653.0040.0	EA	2	SCREW, 1/4 -20 x 1" SOC CAP SS	-
57	53.6653.0041.0	EA	10	SCREW, 1/4 x 1-1/2" SOC CAP	-
58	55.6653.0504.0	EA	1	SCREW, 1/4-20 X 1/2" PFSS 100 DEG	-
59	54.1240.0006.0	EA	1	BEARING, 50MM X 80MM X 16MM SMR6010-2RS	-
60	54.2050.0004.0	EA	1	TIMING BELT, 5GT 140 TEETH 15MM WIDE/KEVLAR	-
61	54.2050.0005.0	EA	1	TIMING BELT, 5GT 105 TEETH, 15MM WIDE/KEVLAR	-
62	55.2178.0001	EA	1	CABLE ANCHOR MOUNT, #8 OFFSET SCREW MOUNTING	-
63	55.2186.0001	EA	0	CABLE TIE, .10"WD 4.00"LG SMALL CLEAR (PACK OF 1000)	-
64	55.6623.0001	EA	8	WASHER, #10 FLAT OD .503 THKNS .045 STL ZINC PLTD	-
65	55.6677.1420.0	EA	1	STANDOFF, ROUND 1/4-20 X 3/8" OD X 3/8" LG	-
66	55.6852.0001.0	FT	0.33	SLEEVING, 1/2"DIA 125 DEG C POLYESTER SELF-WRAPPING	-
67	55.6880.0001.0	EA	4	RECEPT, FAST LEAD, #12 SADDLE RIVET-ON SS 12-11043-12	-
68	55.6886.0002.0	EA	1	SPACER, ROUND CLEARANCE 1.4"ID x 1/2" OD x1/2" LG	-
69	71.2550.1500.0	EA	1	LAMP, 1500W/D7/60 DOUBLE ENDED OSRAM BULK 54326	page 44
70	25.9816.0958	EA	1	CABLE ASSY, YOKE TO HEAD GND BEST BOY	-
71	53.2001.0001	EA	1	NUT, 10-32 KEPS ZINC PLATED	-
72	53.6575.0022.0	EA	1	SCREW, 8-32 X 5/16" PPZ SEMS EXT	-
73	53.6624.0003	EA	1	SCREW, 10-32 X 1/2" PFSS	-

Refer to illustrations on the following pages.

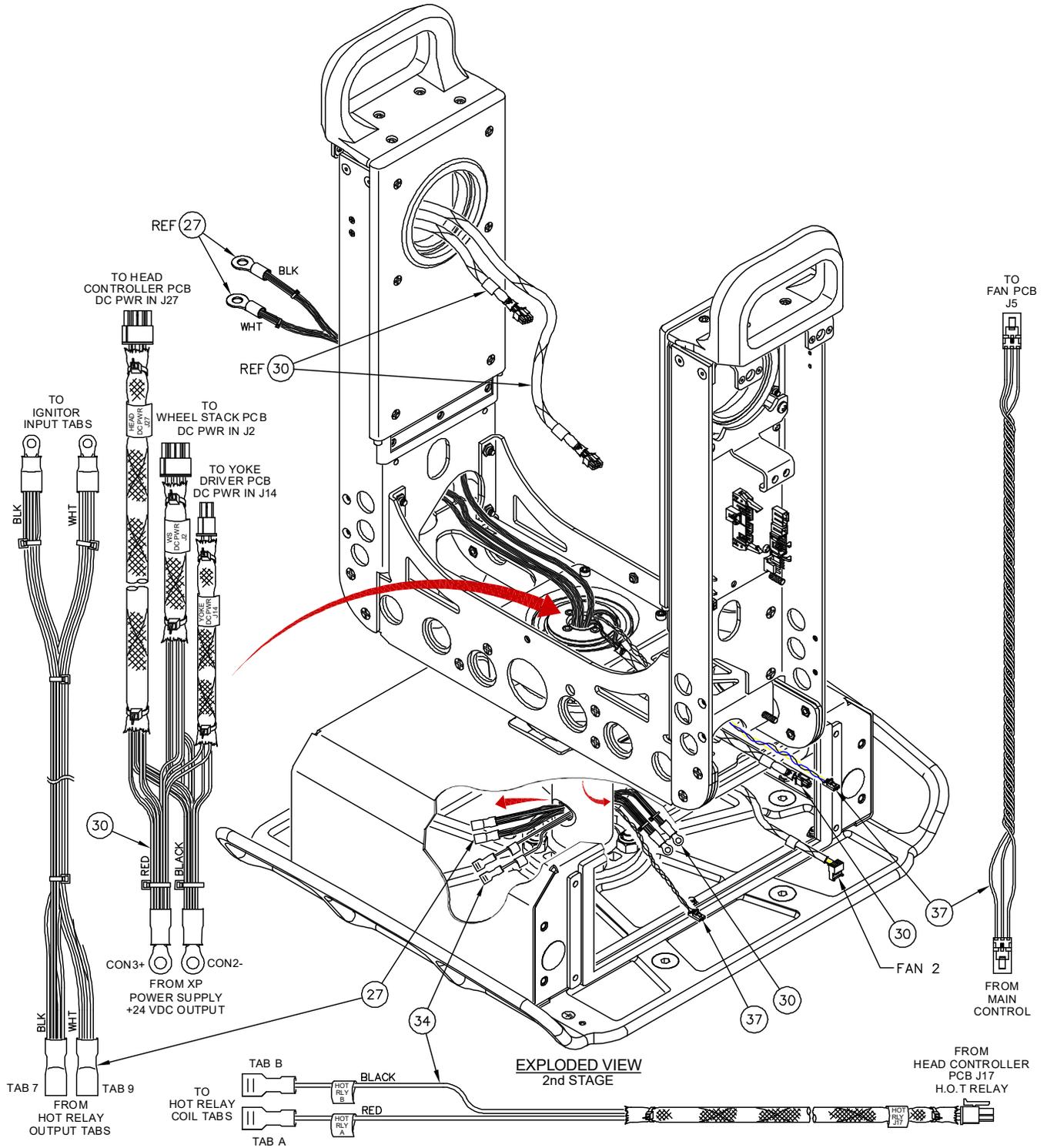
## Luminaire Subassembly (continued)

Refer to Parts List for "Luminaire Subassembly" on page 121.



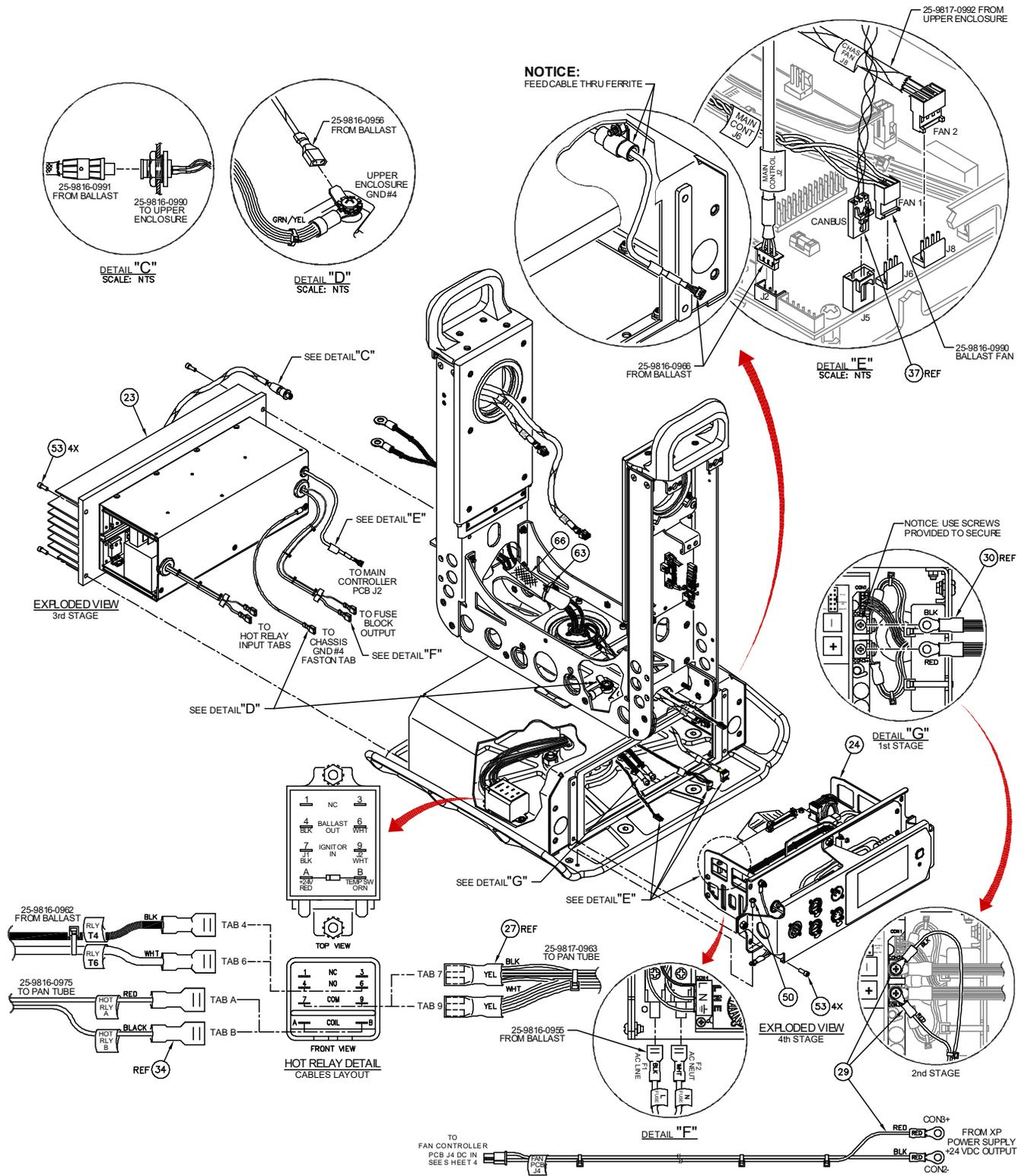
## Luminaire Subassembly (continued)

Refer to Parts List for "Luminaire Subassembly" on page 121.



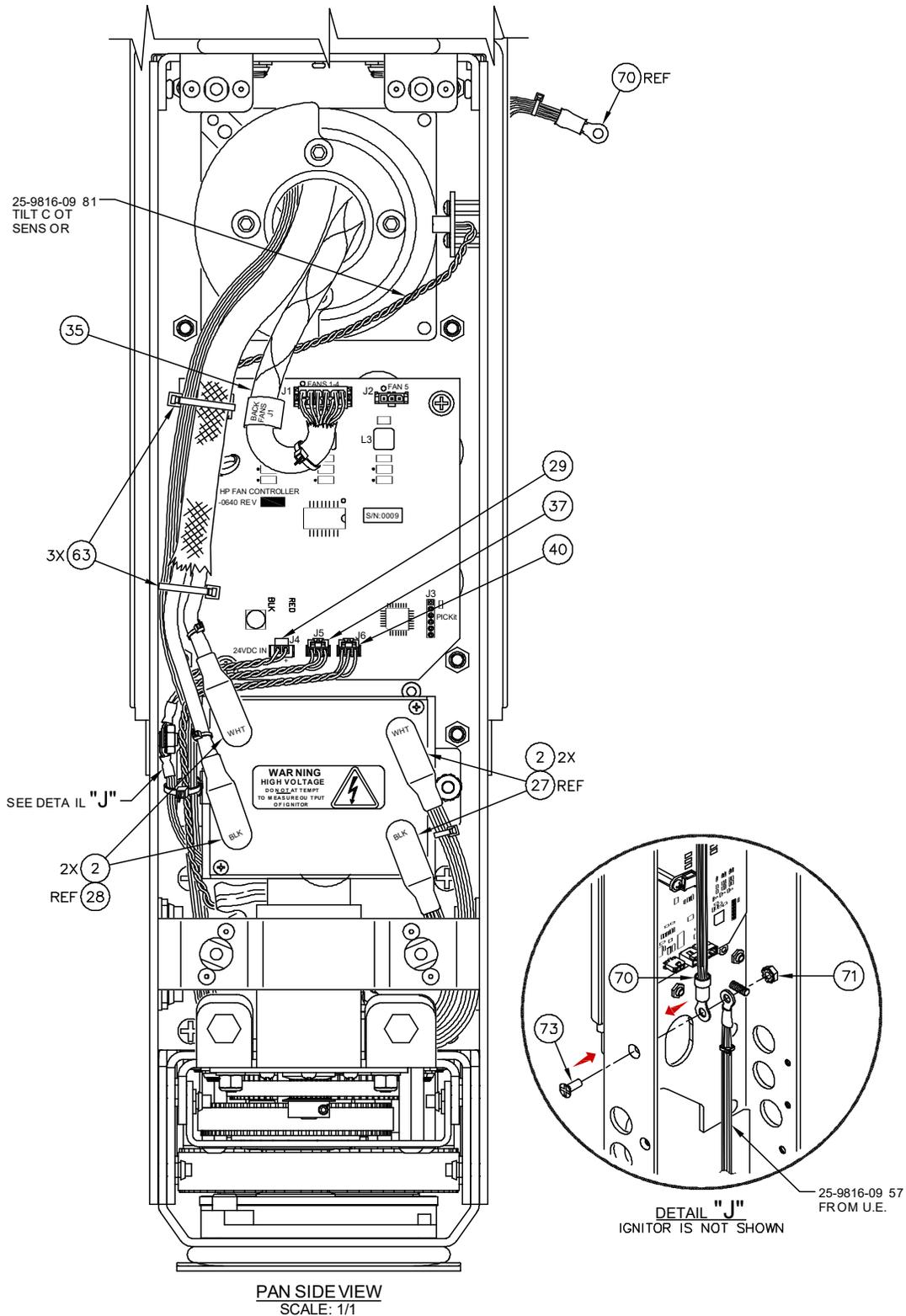
# Luminaire Subassembly (continued)

Refer to Parts List for "Luminaire Subassembly" on page 121.



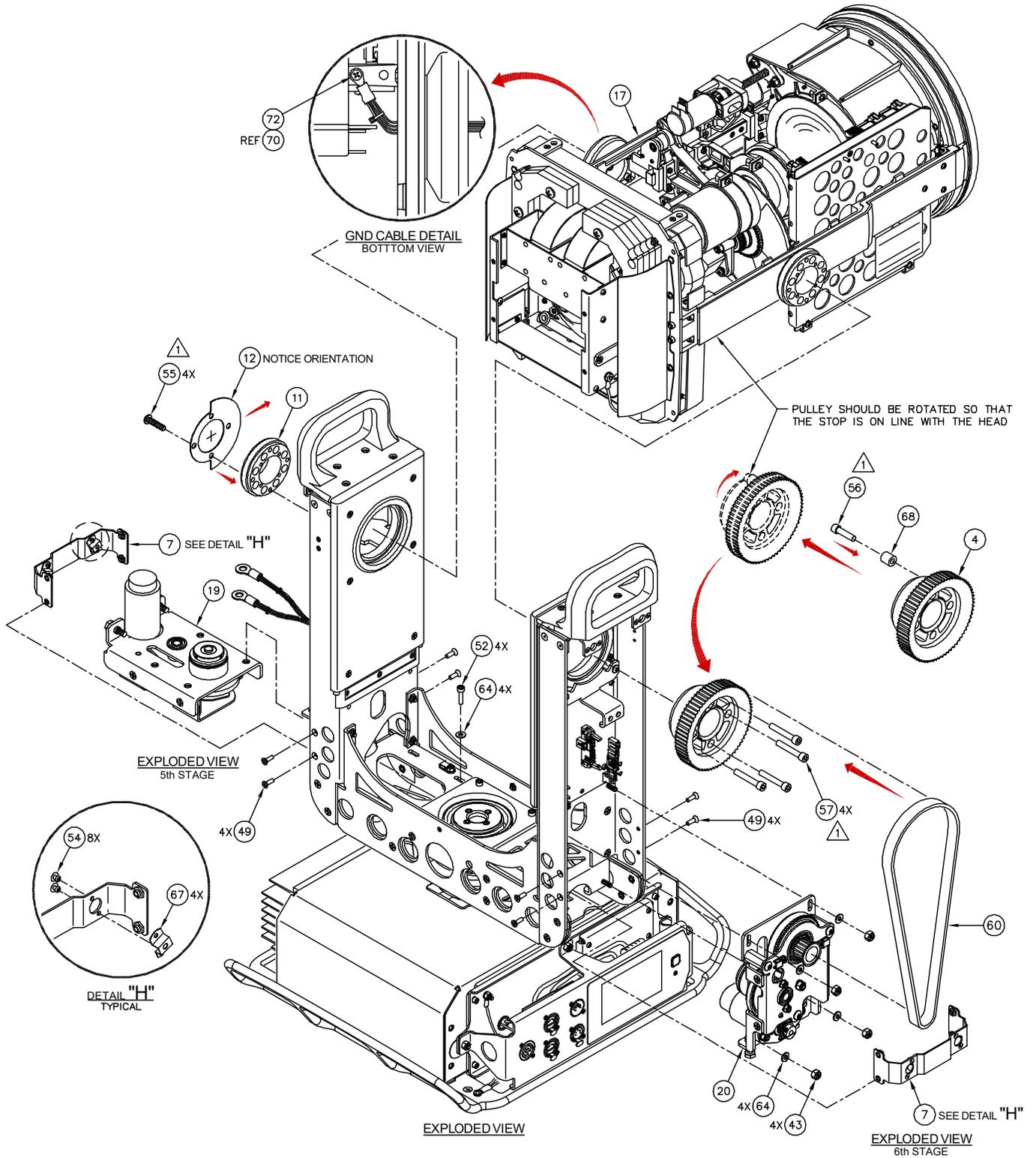
## Luminaire Subassembly (continued)

Refer to Parts List for "Luminaire Subassembly" on page 121.



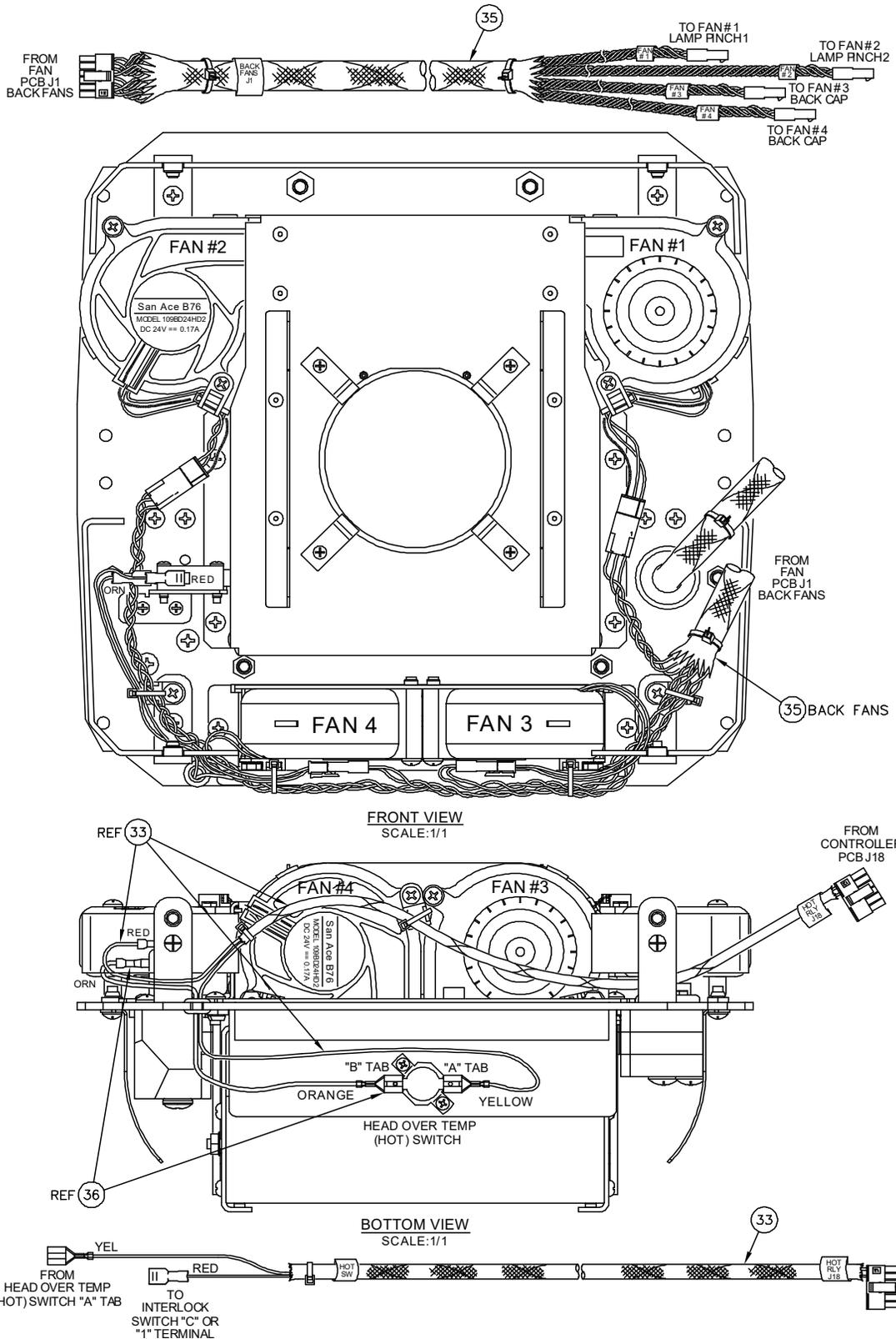
## Luminaire Subassembly (continued)

Refer to Parts List for "Luminaire Subassembly" on page 121.



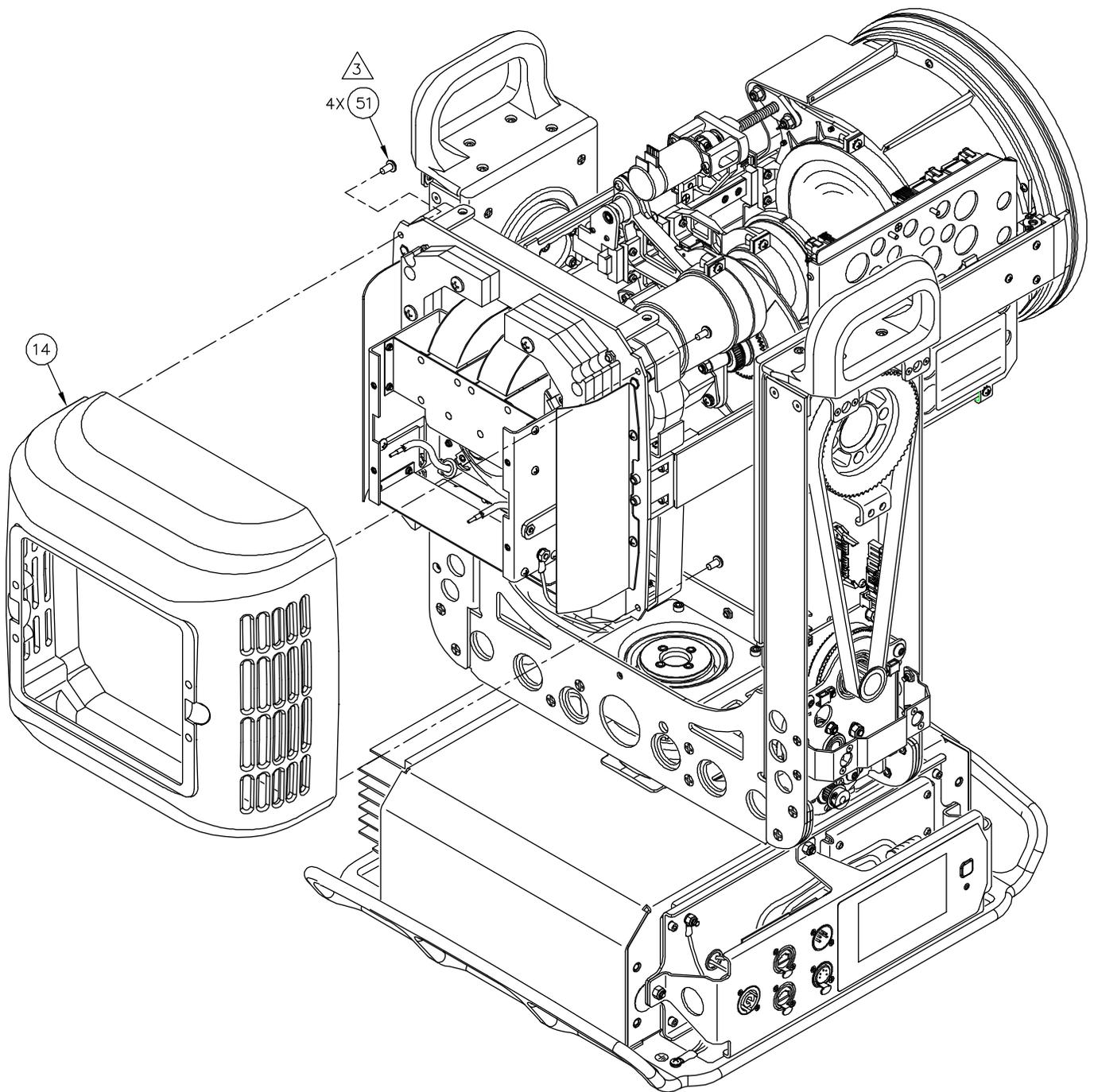
## Luminaire Subassembly (continued)

Refer to Parts List for "Luminaire Subassembly" on page 121.



## Luminaire Subassembly (continued)

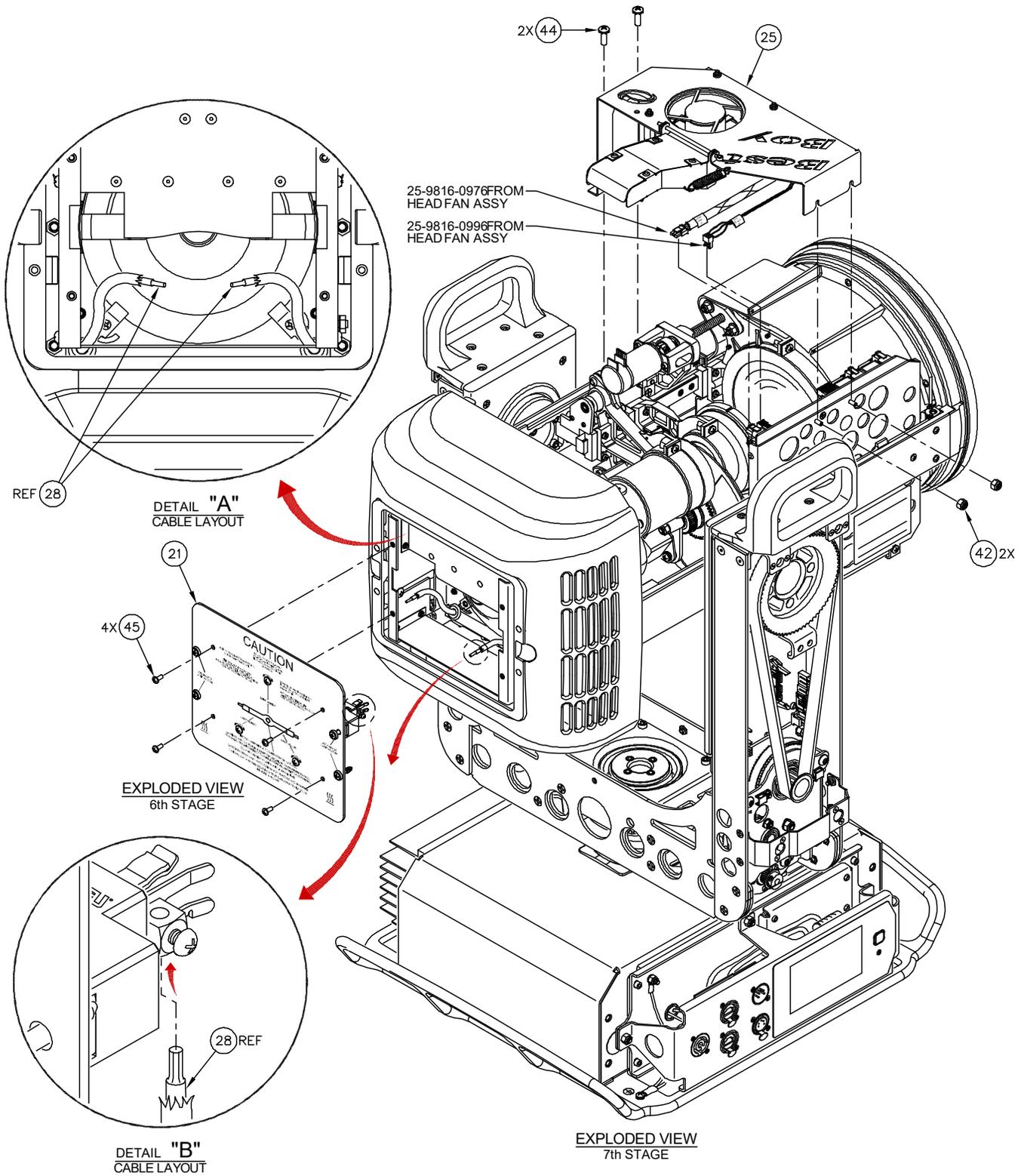
Refer to Parts List for "Luminaire Subassembly" on page 121.



EXPLODED VIEW  
7th STAGE

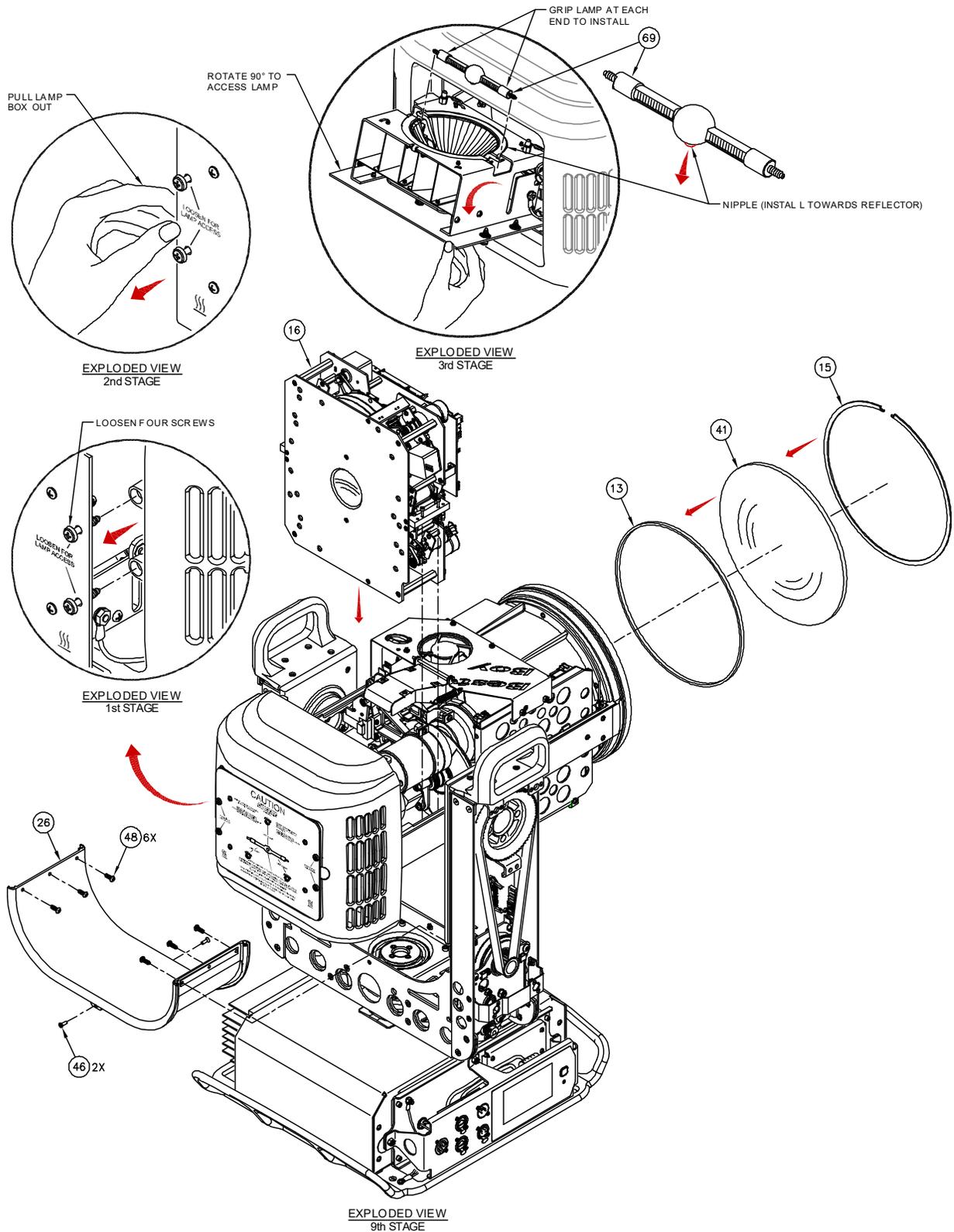
## Luminaire Subassembly (continued)

Refer to Parts List for "Luminaire Subassembly" on page 121.



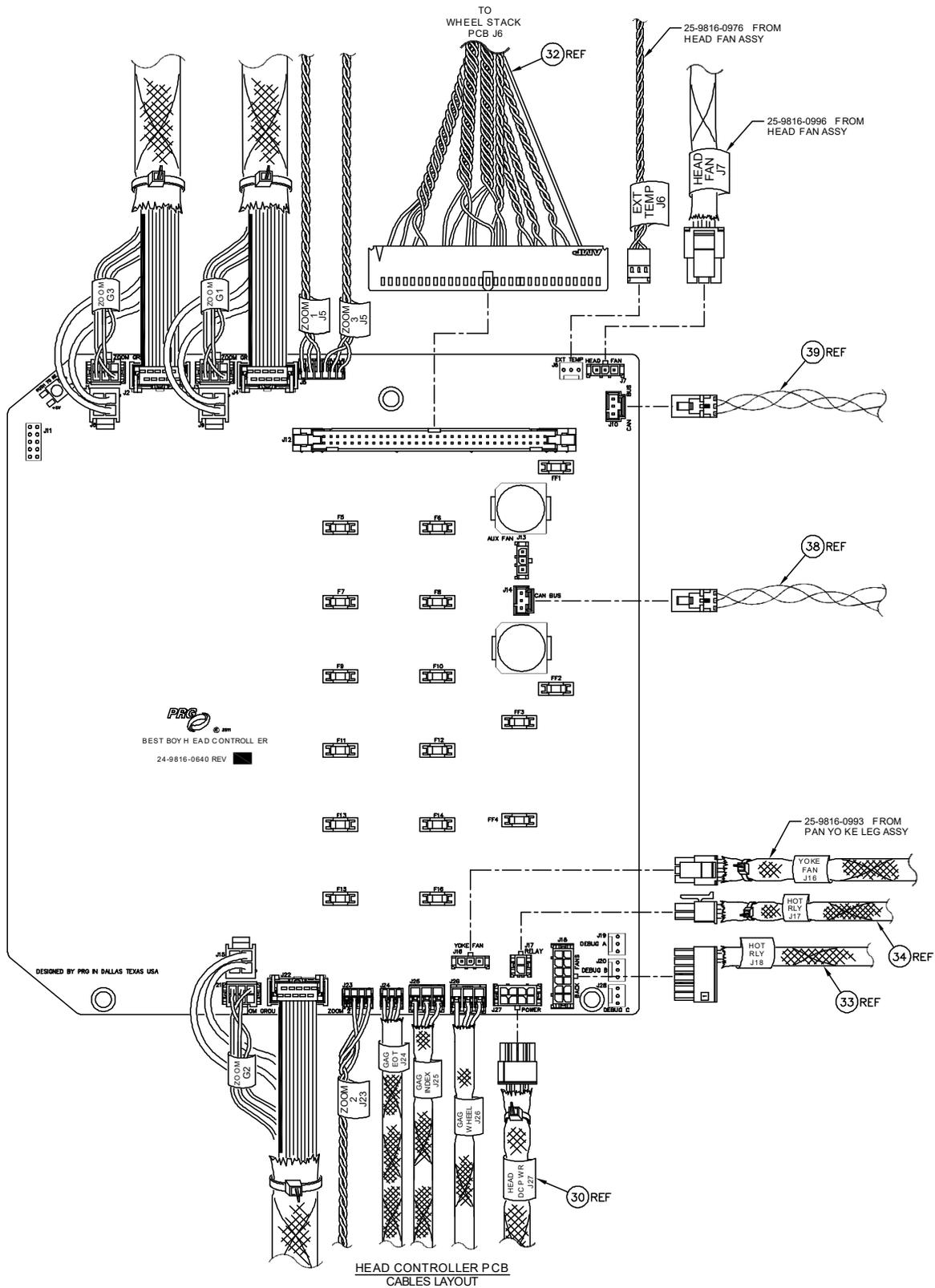
## Luminaire Subassembly (continued)

Refer to Parts List for "Luminaire Subassembly" on page 121.



# Luminaire Subassembly (continued)

Refer to Parts List for "Luminaire Subassembly" on page 121.



# WHEEL STACK

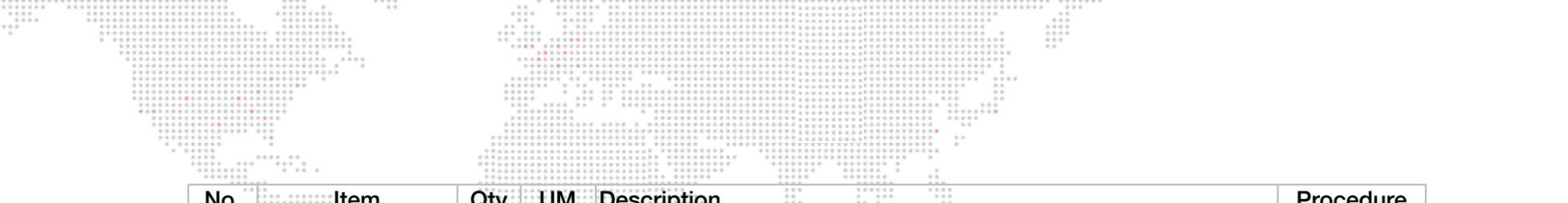
## Wheel Stack Assembly

21.9817.0200

Revision: Rev C0

No.	Item	Qty	UM	Description	Procedure
1	10.9816.0203	2	EA	RAIL MOUNT, WHEEL STACK	-
2	10.9816.0204	2	EA	7MM AXLE, WHEEL STACK	-
3	10.9816.0205	1	EA	FRONT PLATE, BEST BOY	-
4	10.9816.0206	2	EA	SENSOR BAR, WHEEL STACK	-
5	10.9816.0214	1	EA	CRANK ARM, IRIS WHEEL STACK	-
6	10.9816.0215.01	2	EA	WHEEL SPACERS, WHEEL STACK .238x.002	-
7	10.9816.0215.02	3	EA	WHEEL SPACERS, WHEEL STACK .110 x .002	-
8	10.9816.0227	2	EA	BRACKET, COVER LANYARD	-
9	10.9816.0215.04	3	EA	WHEEL SPACERS, WHEEL STACK .040 x .002	-
10	10.9816.0215.05	1	EA	WHEEL SPACERS, WHEEL STACK .180 x .002	-
11	55.6947.0112.0	1	EA	SPRING, WAVE 5.5LBS @.112" WH, FH .200" DESIGN 1	-
12	10.9816.0215.07	1	EA	WHEEL SPACERS, WHEEL STACK .075 x .002	-
13	10.9816.0225	2	EA	SUPPORT, CCA BEST BOY	-
14	10.9816.0219	2	EA	MOUNT, BLOWER BEST BOY	-
15	10.9817.0202	1	EA	REAR PLATE, WHEEL STACK BEST BOY HP SPOT	-
16	22.9816.0207	3	EA	SHUTTER MOUNT ASSY	-
17	22.9816.0380	1	EA	ASSY, STD LOAD GOBO WHEEL 1, BEST BOY	page 48
18	22.9816.0320	1	EA	ASSY, DESIGNER COLOR WHEEL	page 52
19	22.9816.0390	1	EA	ASSY, STD LOAD GOBO WHEEL 2, BEST BOY	page 50
20	22.9816.0360	1	EA	ASSY, COLOR TEMP WHEEL, BEST BOY	-
21	22.9816.0376	1	EA	ASSY, MATCHED SET, CYAN/AMBER COLOR WHLS, BEST BOY	-
22	55.6515.0001	6	EA	WASHER, .250"OD .125"ID .015"THK #4 FLAT SS	-
23	22.9816.0372	1	EA	ASSY, MAGENTA COLOR WHEEL	-
24	22.9816.0401	1	EA	ASSY, STROBE BLADE	-
25	22.9816.0410	1	EA	SHUTTER ASSY	-
26	22.9816.0430	1	EA	ASSY, DIMMER WHEEL	-
27	23.9816.0211.01	1	EA	MOTOR ASSY, GOBO INDEX 1	page 63
28	23.9816.0211.02	1	EA	MOTOR ASSY, BEAM SIZE IRIS	-
29	23.9816.0212.01	1	EA	MOTOR ASSY, DESIGNER COLOR	-
30	23.9816.0212.02	1	EA	MOTOR ASSY, CYAN	-
31	23.9816.0212.03	1	EA	MOTOR ASSY, MAGENTA	-
32	23.9816.0212.04	1	EA	MOTOR ASSY, YELLOW	-
33	23.9816.0212.05	1	EA	MOTOR ASSY, CTW	-
34	23.9816.0212.06	1	EA	MOTOR ASSY, DIMMER	-
35	23.9816.0212.07	1	EA	MOTOR ASSY, STROBE	-
36	23.9816.0213.01	1	EA	MOTOR ASSY, GOBO WHEEL 1, LENGTH 4.0"	-
37	23.9816.0213.02	1	EA	MOTOR ASSY, GOBO WHEEL 2, LENGTH 6.0"	-
38	23.9816.0231.01	1	EA	MOTOR ASSY, SHUTTER ROTATE	-
39	23.9816.0231.02	1	EA	MOTOR ASSY, GOBO INDEX	-

No.	Item	Qty	UM	Description	Procedure
40	24.9816.0220	1	EA	PCB ASSY, WHEEL CONTROLLER	-
41	24.9816.0221	1	EA	ASSY, BEST BOY R1 SENSOR	-
42	24.9816.0222	1	EA	ASSY, BEST BOY R2 SENSOR	-
43	25.9816.0970	1	EA	SHUTTER PCB DC & CAN BUS	-
44	25.9816.0982	1	EA	CABLE ASSY, IRIS EOT BEST BOY	-
45	25.9816.0983	1	EA	CABLE ASSY, R1 SENSOR	-
46	25.9816.0984	1	EA	CABLE ASSY, WHEEL STACK EOT SENSOR 2	-
47	25.9816.0985	1	EA	CABLE ASSY, SHUTTER ROTATE EOT SENSOR BEST BOY	-
48	25.9816.0997.01	1	EA	CABLE ASSY, FAN 5 24V, WHEEL STACK	-
49	25.9816.0997.02	1	EA	CABLE ASSY, FAN 6 24V, WHEEL STACK	-
50	42.9817.0401	1	EA	IRIS, MODIFIED 95410-001, BEST BOY HP SPOT	-
51	53.2200.0006	2	EA	NUT, 6-32 KEPS SS	-
52	53.5504.0187	10	EA	SCREW, 4-40 X 3/16" PPSS	-
53	53.6606.0001	4	EA	SCREW, 4-40 X 1/2" PFBZ	-
54	53.5508.0375	4	EA	SCREW, 8-32 X 3/8" PPSS	-
55	53.5534.0187	1	EA	SCREW, 4-40 X 3/16" PFSS	-
56	53.5534.0313.0	7	EA	SCREW, 4-40 X 5/16" PFSS 100 DEG HD	-
57	53.5534.0250	2	EA	SCREW, 4-40 X 1/4" PFSS	-
58	53.5538.0312	4	EA	SCREW, 8-32 X 5/16" PFSS	-
59	53.5804.0187	2	EA	SCREW, 4-40 X 3/16" SCSS	-
60	53.6522.0007.0	14	EA	SCREW, 6-32 X 3/8" PHIL FLAT UNDERCUT HD SS	-
61	53.5506.0312	32	EA	SCREW, 6-32 X 5/16" PPSS	-
62	53.6558.0020	2	EA	SCREW, 6-32 X 3/4" PFSS	-
63	53.6556.0025.0	2	EA	SCREW, 4-40 X 1/4" SCBZ	-
64	53.6605.1500.0	1	EA	ALL THREAD, 2-56 X 1-1/2"L SS	-
65	53.6659.0008	3	EA	SCREW, 2-56 X 3/16" PFZ	-
66	53.6720.0000.0	2	EA	ALIGNMENT PIN	-
67	53.7015.9106.0	4	EA	RETAINER SCREW, 18-8 SS SCREW 6-32	-
68	53.7015.9596	4	EA	SCREW, 6-32 X 5/8" SKT HD CAPTIVE PANEL SS	-
69	54.1217.0005	2	EA	KWIK LINK, 2-56 SPRING STEEL	-
70	54.2105.0001.0	2	EA	PULLEY, DRIVE GT2 (2MM) 15 TOOTH 2 FLANGE FAIRLOC HUB	-
71	54.2200.0001.0	9	EA	BELT, TIMING 144T, 2MM GT, 3.0MM WIDT	-
72	54.2201.0001.0	2	EA	BELT, TIMING 144T, 2MM GT, 4.5MM WIDT	-
73	54.2077.0001.0	2	EA	PULLEY, TIMING GT2 2MM PITCH, 15T, 6MM BELT, FAIRLOC HUB, 4MM BORE	-
74	54.9816.0001.0	7	EA	PULLEY, DRIVE GT2 (2MM) 12 TOOTH	-
75	55.3301.0004	3	EA	WASHER, #4 FLAT SS, NAS 620 (PK OF 500)	-
76	55.6571.0002.0	1	EA	GEAR SPUR, MODULE 0.8, 40 TEETH 20DEG PA	-
77	55.6506.0037.0	2	EA	SPACER, 5/16" RND, .141 ID THRU, 7/16" LG, ALUM	-
78	55.6512.0001	7	EA	WASHER, #4 SPLIT LOCK	-
79	55.6500.0002.0	4	EA	SPACER, 4.5X3X3mm ALUM	-
80	55.6704.0021.0	2	EA	STANDOFF, 5/16 HEX X 7/16 X 632, FF ALUM	-
81	55.6704.0022.0	2	EA	STANDOFF, 5/16 HEX X 9/16 X 632, FF ALUM	-
82	55.6704.0023.0	2	EA	STANDOFF, 5/16 HEX X 7/8 X 632, FF ALUM ANODIZED CLR	-
83	55.6704.0024.0	2	EA	STANDOFF, 5/16 HEX X 1-1/8 X 632, FF ALUM	-
84	55.6704.0025.0	2	EA	STANDOFF, 5/16 HEX X 1-17/64 X 632, FF ALUM	-



No.	Item	Qty	UM	Description	Procedure
85	55.6704.0026.0	3	EA	STANDOFF, 5/16 HEX X 1-3/8 X 632, FF ALUM	-
86	55.6704.0027.0	2	EA	STANDOFF, 5/16 HEX X 1-15/32 X 632, FF ALUM	-
87	55.6704.0029.0	2	EA	STANDOFF, 5/16 HEX X 1-5/8 X 632, FF ALUM	-
88	55.6704.0030.0	2	EA	STANDOFF, 5/16 HEX X 1-13/16 X 632, FF ALUM	-
89	55.6704.0031.0	2	EA	STANDOFF, 3/8" HEX 8-32, 2-21/32" LG, FF ALUM	-
90	55.6947.0267.0	1	EA	SPRING, WAVE 5.5LBS @ .267" WH, FH .450" DESIGN 2	-
91	06.6082.0001.0	0.33	FT	TAPE, KAPTON	-
92	55.6876.0001.0	1	EA	MAGNET, .062 x .062 SAMARIUM COBALT MAGNETIZED	-
93	22.9816.0229	2	EA	ASSY, STABILIZER	-
94	23.9816.0230	1	EA	ASSY, DIMMER BLOWER	-
95	25.9816.0998	2	EA	CABLE ASSY, FAN TWOFER BEST BOY	-
96	53.5506.0375	1	EA	SCREW, 6-32 X 3/8" PPSS	-
97	53.6613.0001	1	EA	SCREW, 6-32 X 1/2" PPZ	-
98	23.9817.0228	1	EA	CABLE ASSY, CTW BLOWER	-

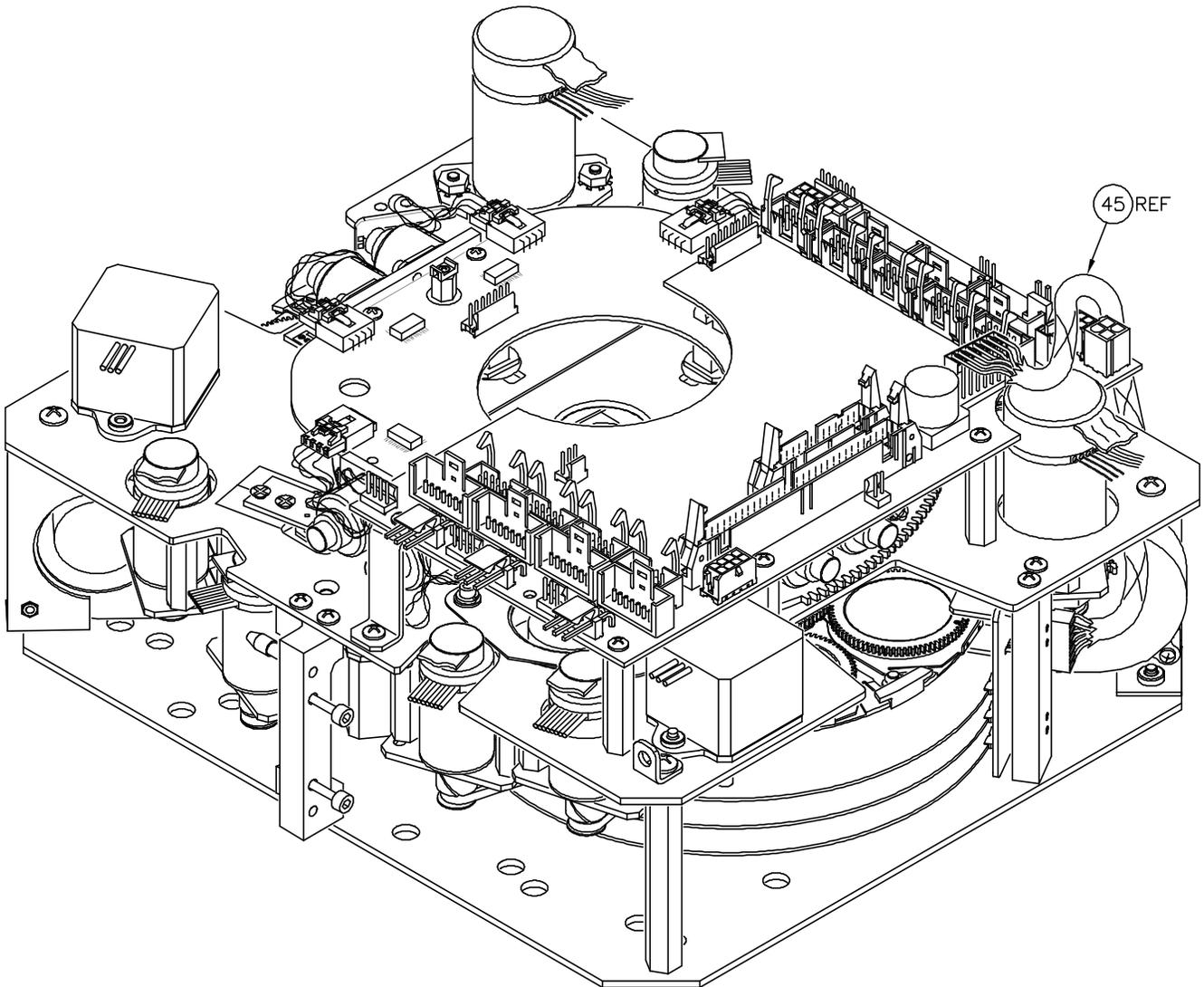
Refer to illustrations on the following pages.

## Wheel Stack Assembly (continued)

Refer to Parts List for "Wheel Stack" on page 133.

### NOTES:

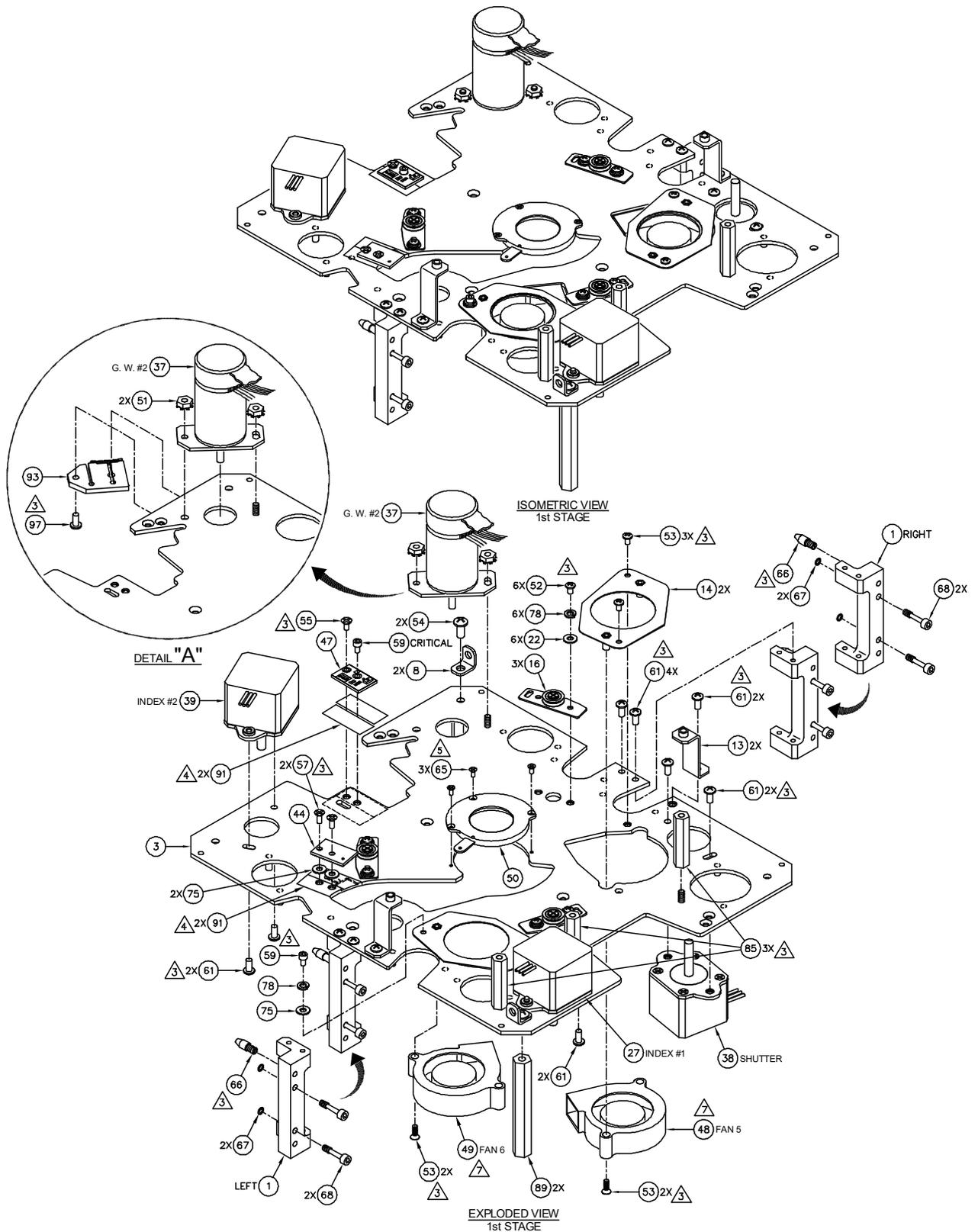
- 1 NOT USED.
- 2 OUTSIDE DISTANCE BETWEEN POSTS TO BE 2.800 INCHES THEN APPLY LOCTITE #680 THREAD LOCKER (06-6008-0002) TO BOTH CLIPS PRIOR TO ATTACHMENT.
- 3 APPLY LOCTITE #242 (06-6008-0001) TO THREADED SCREW.
- 4 APPLY KAPTON TAPE (ITEM 91) UNDER AREAS OF ITEMS 44 & 47.
- 5 APPLY LOCTITE #246 (06-6019-0001-0) TO THREADED SCREW.
- 6 MOUNT MAGNET WITH POLE ORIENTATION AS SHOWN USING RTV #3145 (06-6083-0001-0).
- 7 VERIFY, COUNTER-SINK HOLES ON (FAN 5) AND (FAN 6).  
(SEE DRAWING 25-9816-0997-01 AND -02 FOR COUNTER SINK DETAIL)



**ISOMETRIC VIEW**

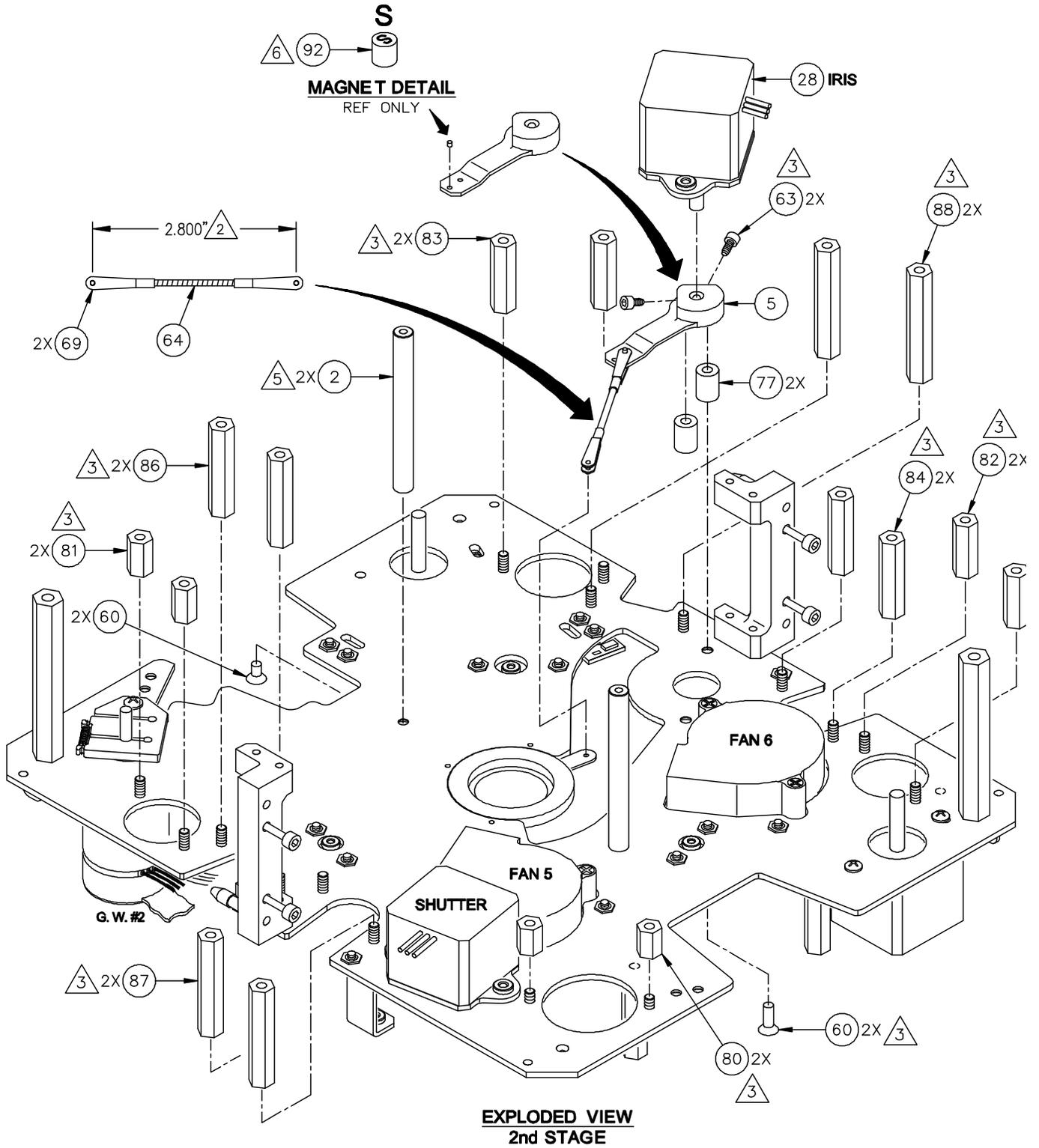
# Wheel Stack Assembly (continued)

Refer to Parts List for "Wheel Stack" on page 133.



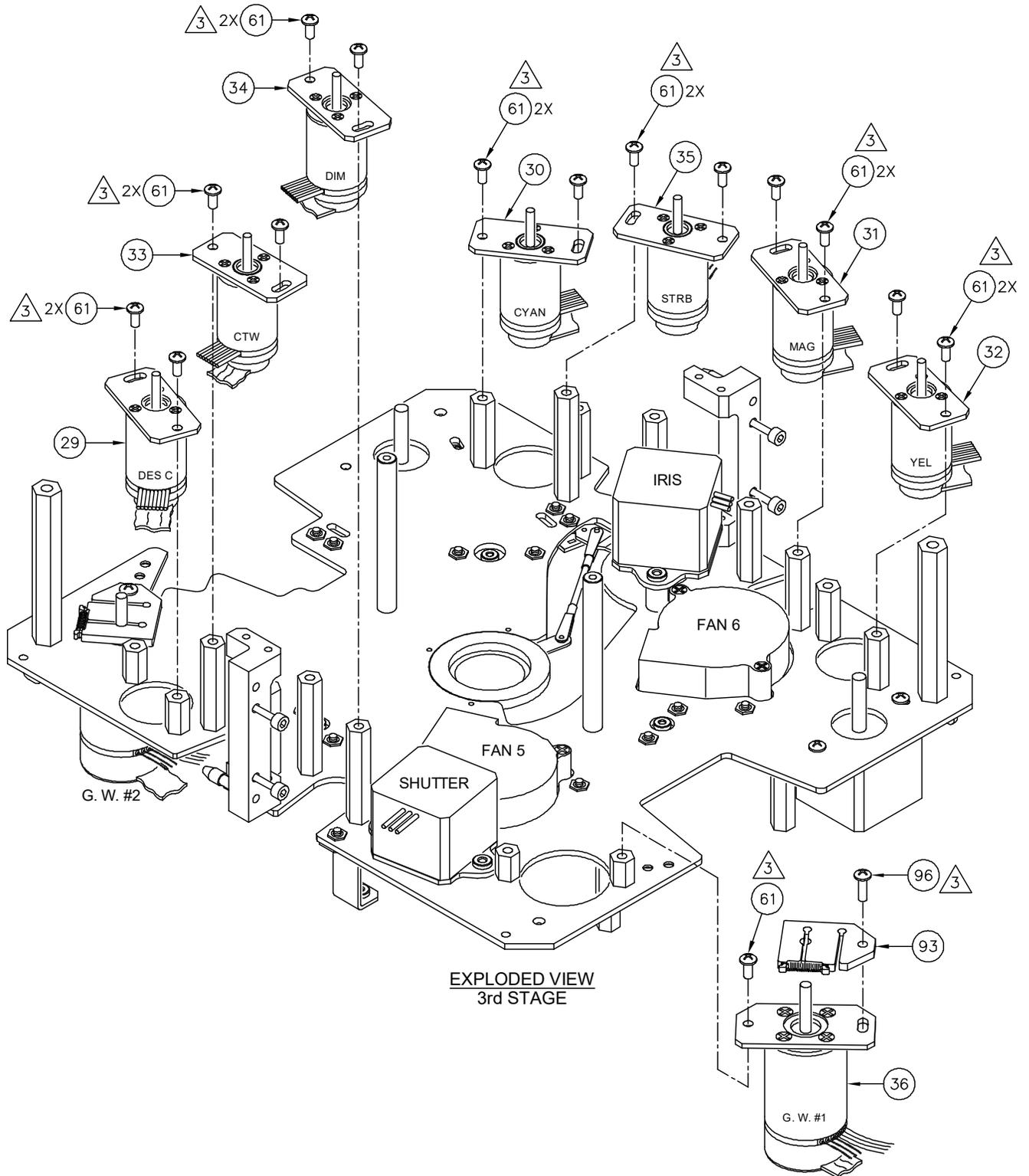
## Wheel Stack Assembly (continued)

Refer to Parts List for "Wheel Stack" on page 133.



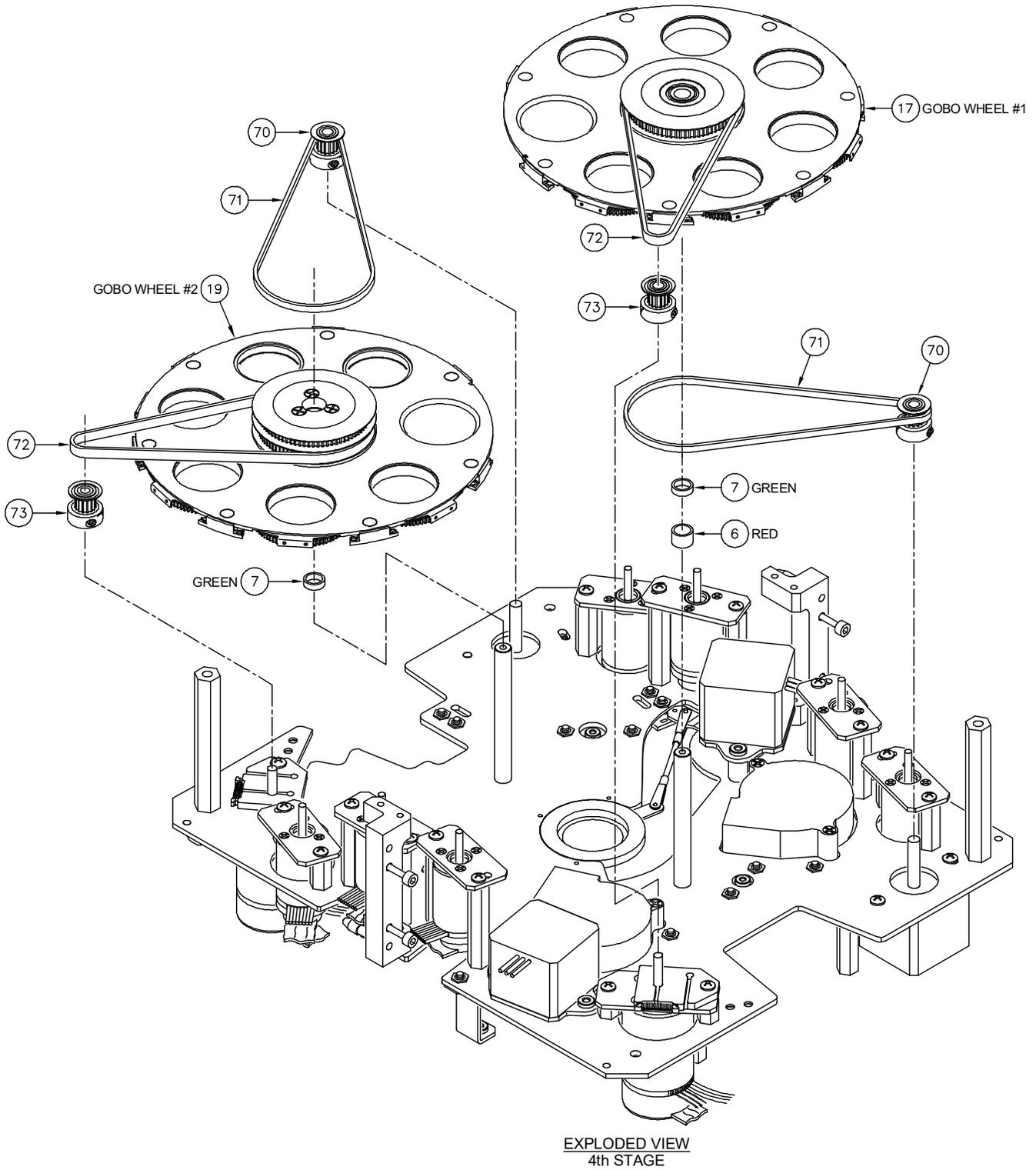
## Wheel Stack Assembly (continued)

Refer to Parts List for "Wheel Stack" on page 133.



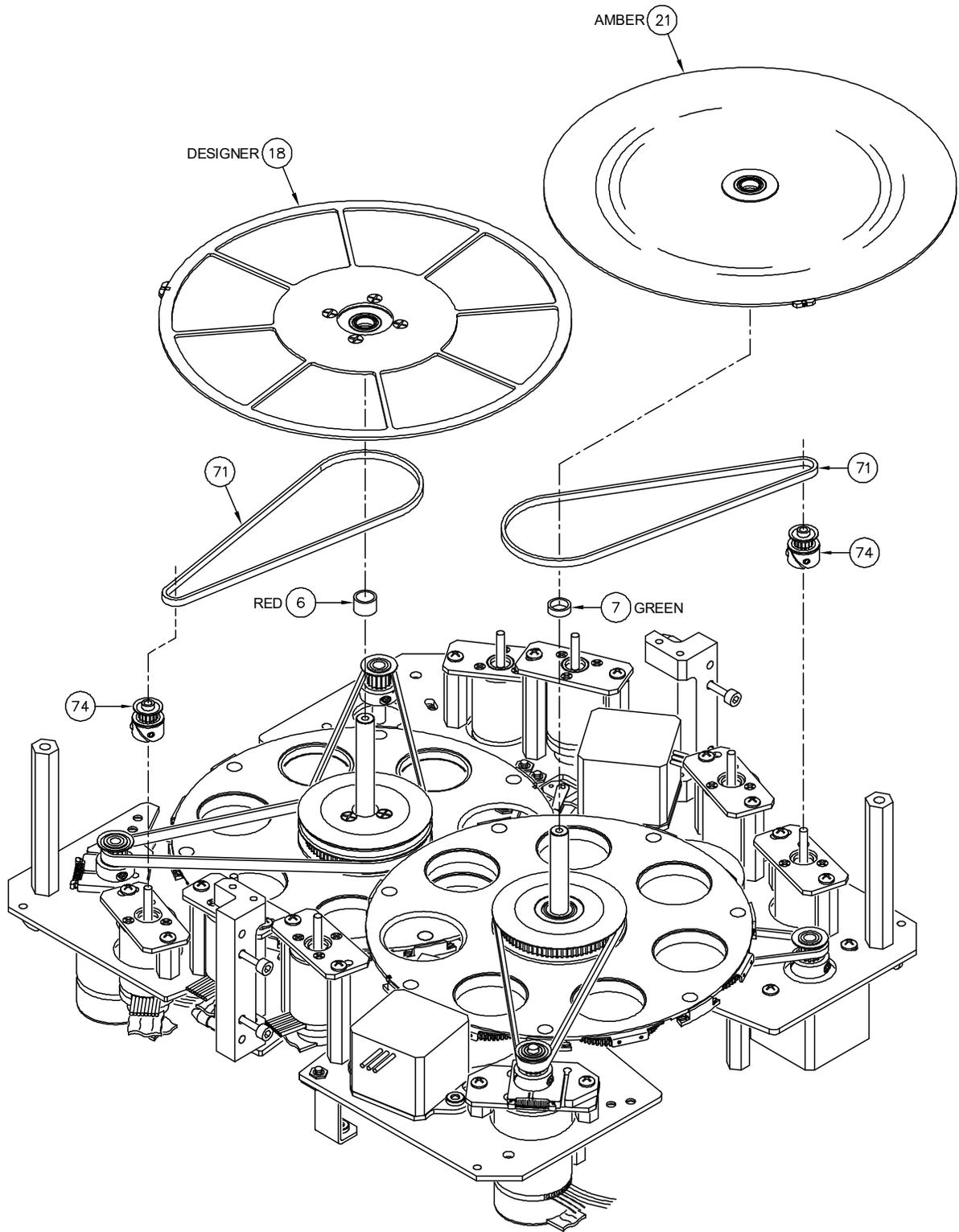
## Wheel Stack Assembly (continued)

Refer to Parts List for "Wheel Stack" on page 133.



## Wheel Stack Assembly (continued)

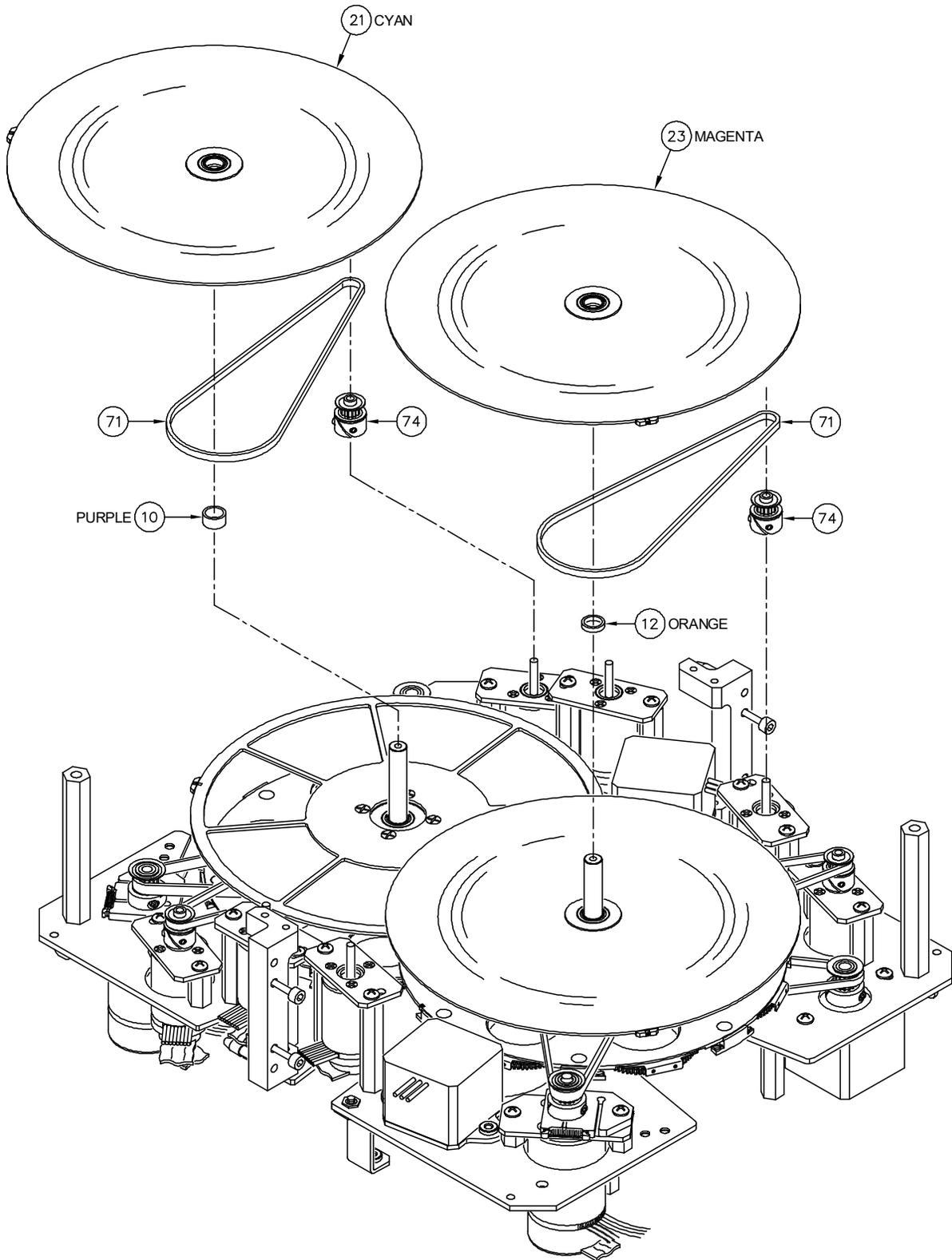
Refer to Parts List for "Wheel Stack" on page 133.



EXPLODED VIEW  
5th STAGE

## Wheel Stack Assembly (continued)

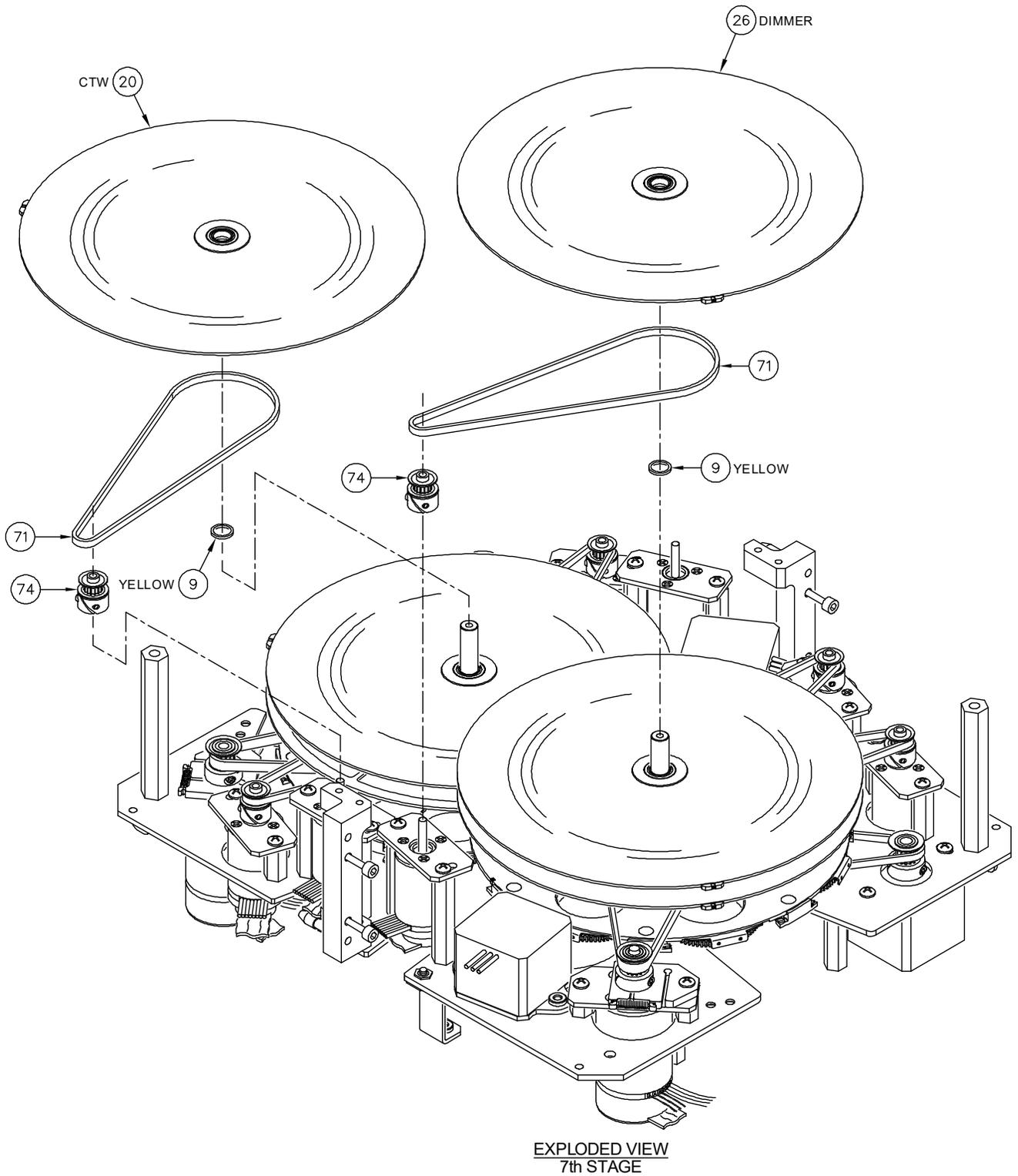
Refer to Parts List for "Wheel Stack" on page 133.



EXPLODED VIEW  
6th STAGE

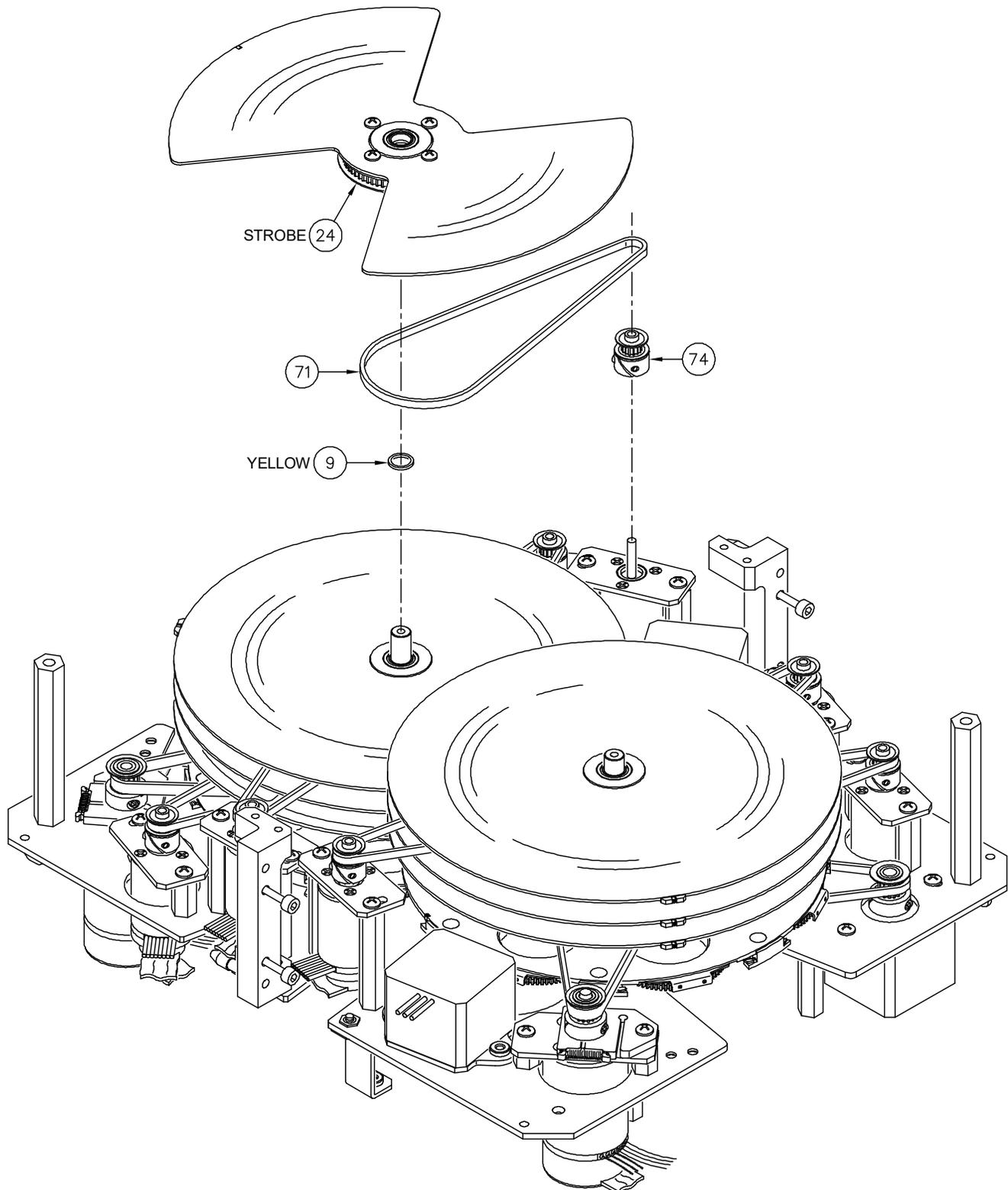
## Wheel Stack Assembly (continued)

Refer to Parts List for "Wheel Stack" on page 133.



## Wheel Stack Assembly (continued)

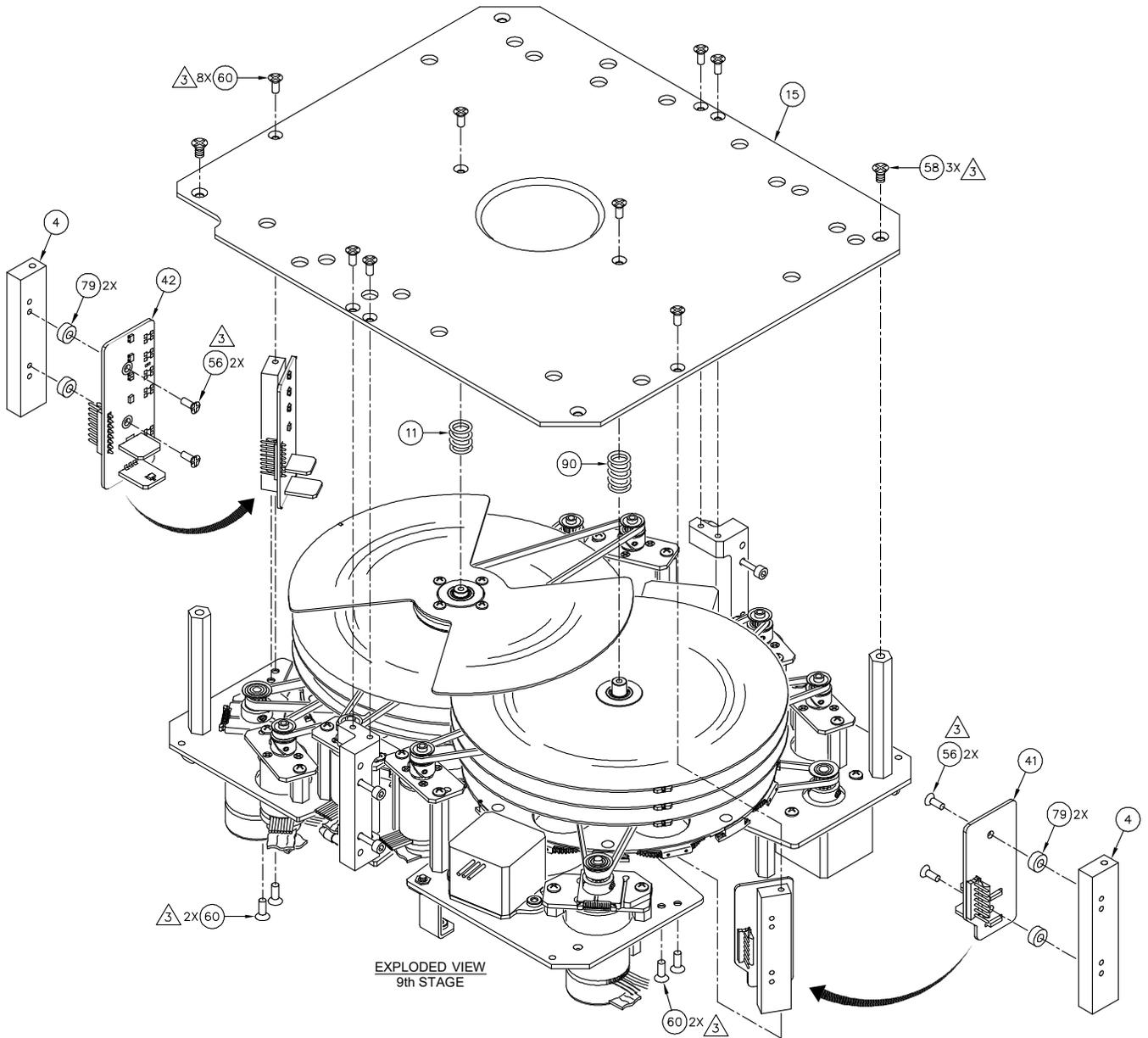
Refer to Parts List for "Wheel Stack" on page 133.



EXPLODED VIEW  
8th STAGE

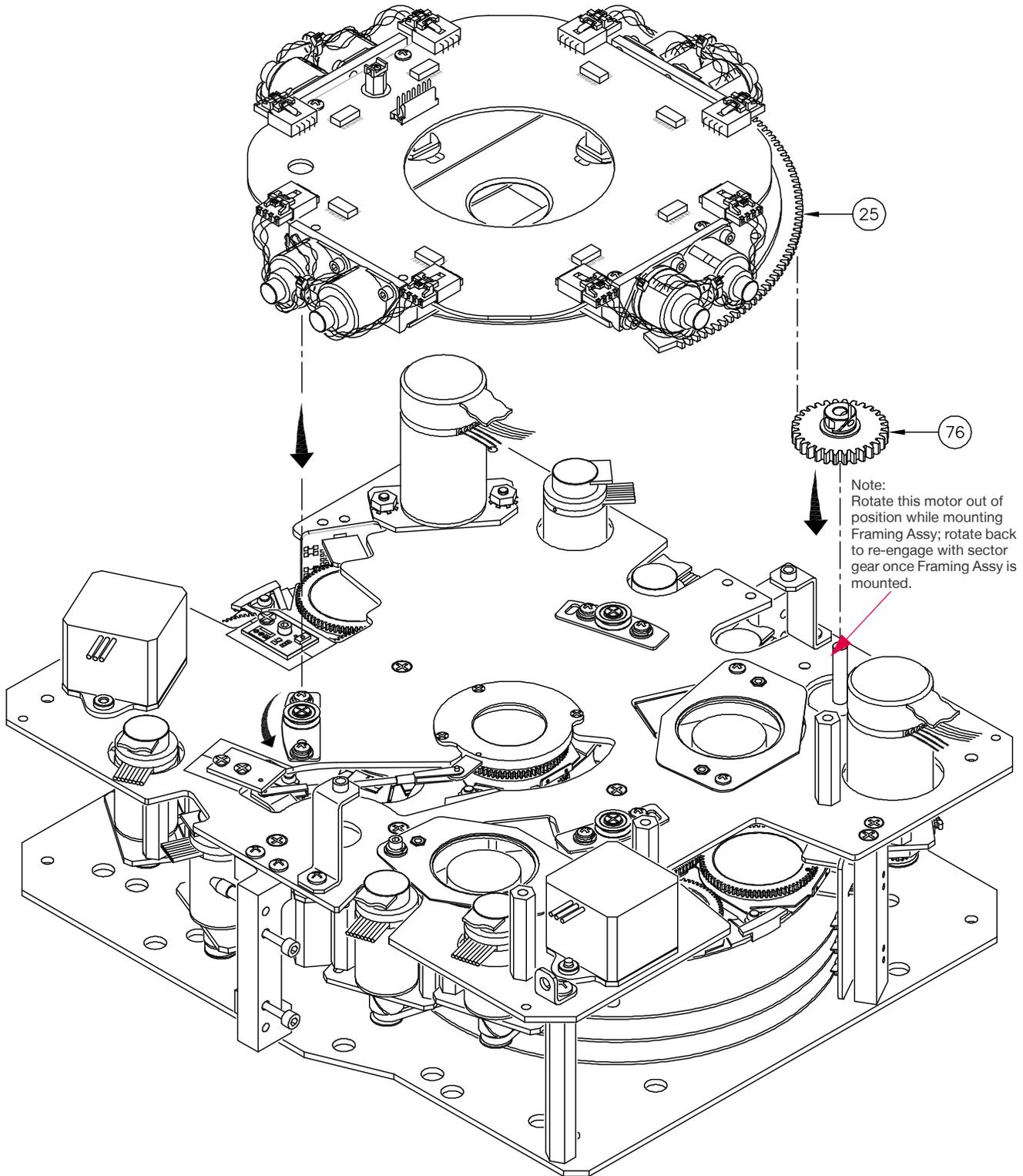
## Wheel Stack Assembly (continued)

Refer to Parts List for "Wheel Stack" on page 133.



## Wheel Stack Assembly (continued)

Refer to Parts List for "Wheel Stack" on page 133.

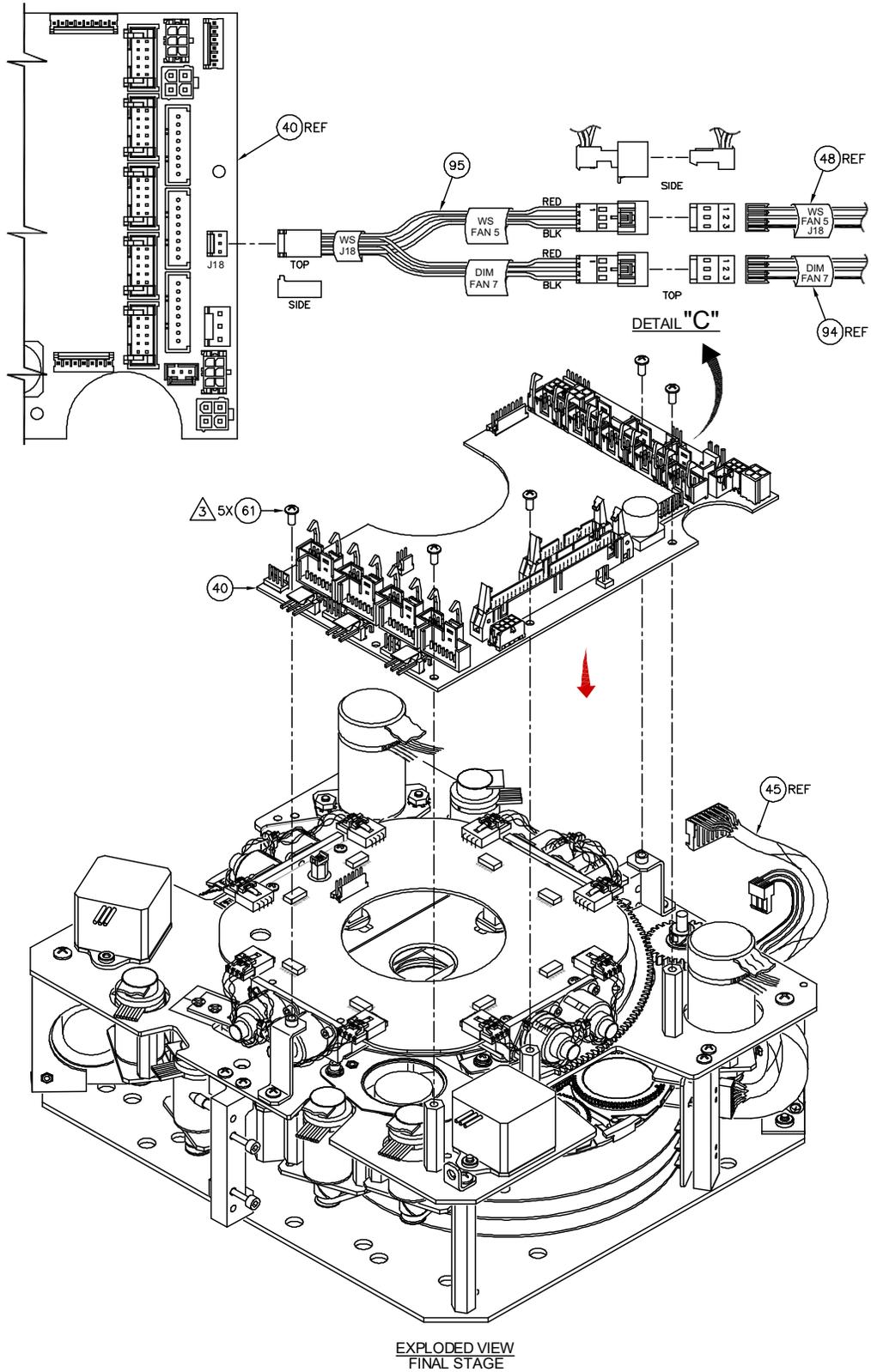


EXPLODED VIEW  
10th STAGE



## Wheel Stack Assembly (continued)

Refer to Parts List for "Wheel Stack" on page 133.



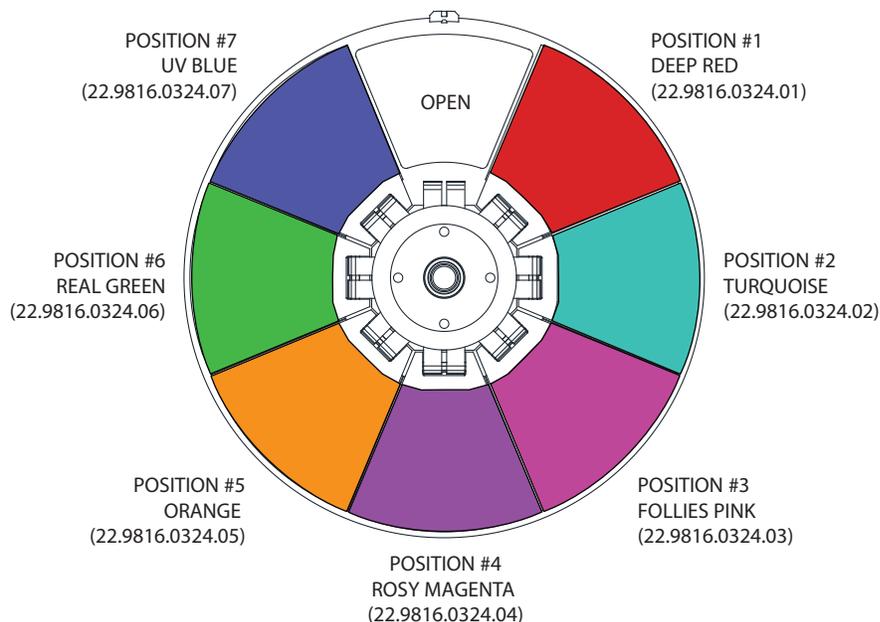
## Designer Color Wheel Assembly

22.9816.0320

Revision: Rev B0

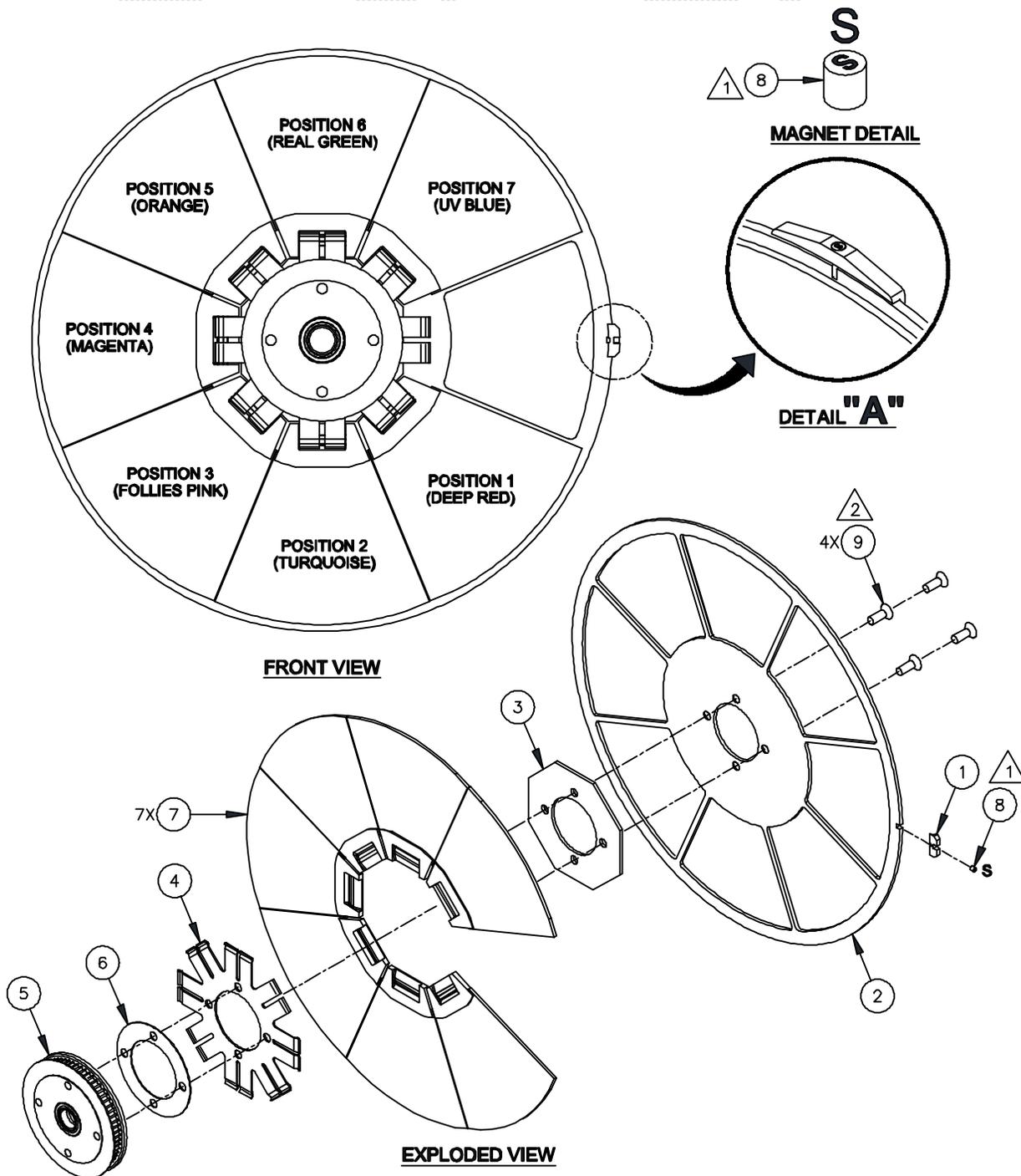
No.	Item	Qty	UM	Description	Procedure
1	10.9816.0319	1	EA	MOUNT, MAGNET	-
2	10.9816.0321	1	EA	WHEEL, DESIGNER COLOR	-
3	10.9816.0322	1	EA	HUB SPACER, DESIGNER COLOR WHEEL	-
4	10.9816.0323	1	EA	SPRING, DESIGNER COLOR WHEEL	-
5	10.9816.0338	1	EA	PULLEY, COMMON, BEST BOY	-
6	10.9816.0348	1	EA	SPACER, DESIGNER COLOR WHEEL	-
7	22.9816.0324.xx	1	EA	ASSY, DESIGNER COLOR PANELS - <i>See Table Below</i>	page 52
8	55.6876.0001.0	1	EA	MAGNET, NDFEB, GRADE N42SH	-
9	53.5534.0312	4	EA	SCREW, 4-40 X 5/16" PFSS	-
10	6.6083.0001.0	1	EA	RTV, 3145 CLEAR 305ML TUBE	-
11	6.6008.0001	AR	EA	LOCTITE, #242, REMOVABLE	-

Designer Color Panel Ordering		
Pos.	Part No.	Color
1	22.9816.0324.01	DEEP RED
2	22.9816.0324.02	TURQUOISE
3	22.9816.0324.03	FOLLIES PINK
4	22.9816.0324.04	ROSY MAGENTA
5	22.9816.0324.05	ORANGE
6	22.9816.0324.06	REAL GREEN
7	22.9816.0324.07	UV BLUE



## Designer Color Wheel (continued)

Refer to Parts List for "Designer Color Wheel Assembly" on page 149.



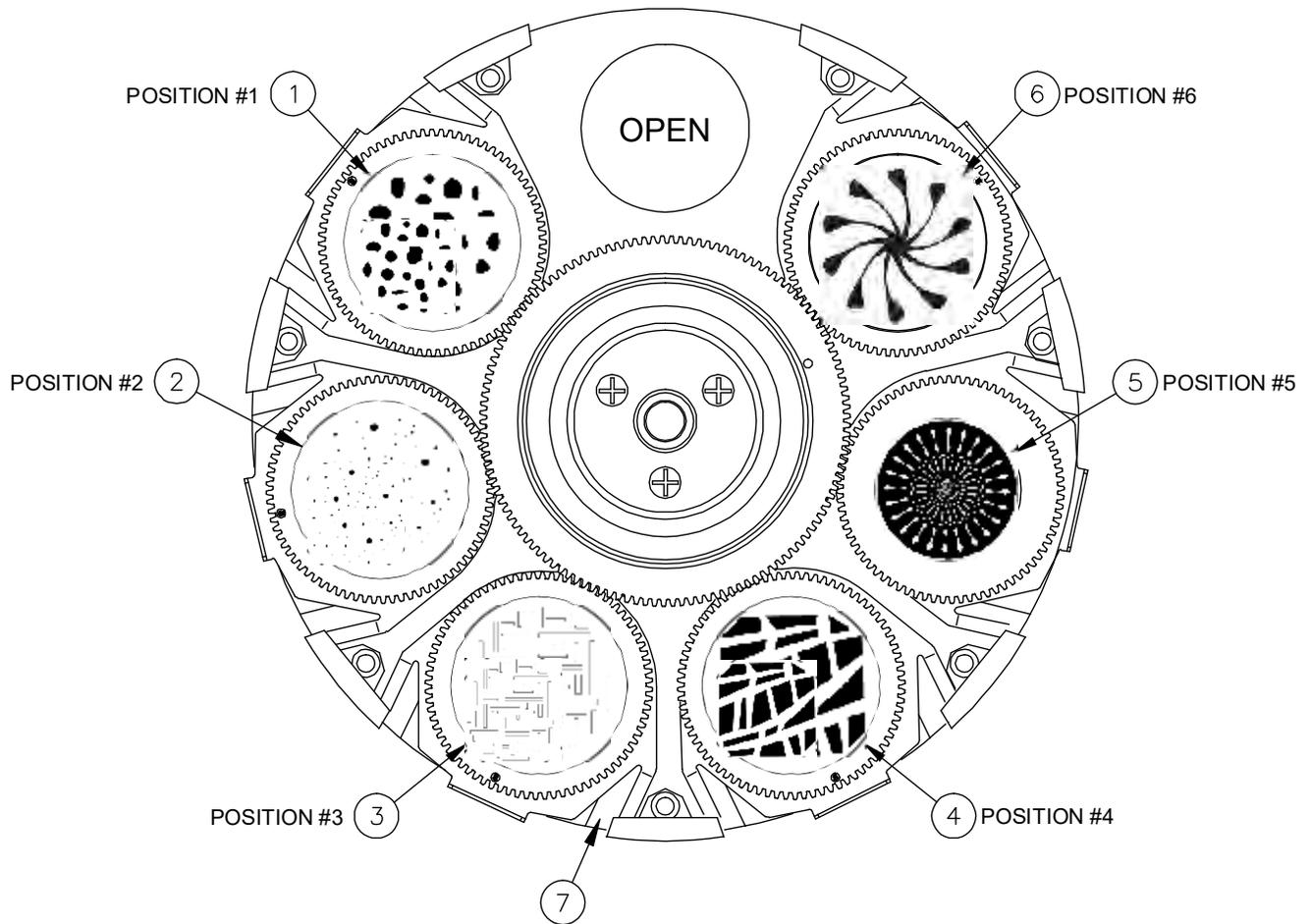
- 1 MOUNT MAGNET WITH POLE ORIENTATION AS SHOWN USING ADHESIVE, ITEM 10
- 2 APPLY ITEM 11 TO THREADS OF ITEM 9 PRIOR TO ASSEMBLY. TORQUE SCREWS (ITEM 9) TO 6 IN-LBS.
- 3 APPLY ADHESIVE (ITEM 10) BETWEEN ITEM 1 AND EDGE OF WHEEL, ITEM 2.  
ALIGN ITEM 1 WITH NOTCH IN WHEEL AS SHOWN IN DETAIL A.

## Gobo Wheel 1 Assembly (Standard Load)

22.9816.0380

Revision: Rev A0

No.	Item	Qty	UM	Description	Procedure
1	17.1131.1007.01	1	EA	GOBO ASSY, JUST ROCKS	<a href="#">page 48</a>
2	17.1131.1002.00	1	EA	GOBO ASSY, PINHOLE BREAKUP	<a href="#">page 48</a>
3	17.1131.1001.00	1	EA	GOBO ASSY, SLITS	<a href="#">page 48</a>
4	17.1131.1006.01	1	EA	GOBO ASSY, SLATE WALL 4	<a href="#">page 48</a>
5	17.7101.0400.00	1	EA	GOBO ASSY, KALEIDOSCOPE MOIRE	<a href="#">page 48</a>
6	17.1131.1030.00	1	EA	GOBO ASSY, CLUBBED SPIRAL	<a href="#">page 48</a>
7	22.9816.0310	1	EA	ASSY, BEST BOY, GOBO WHEEL 1	-

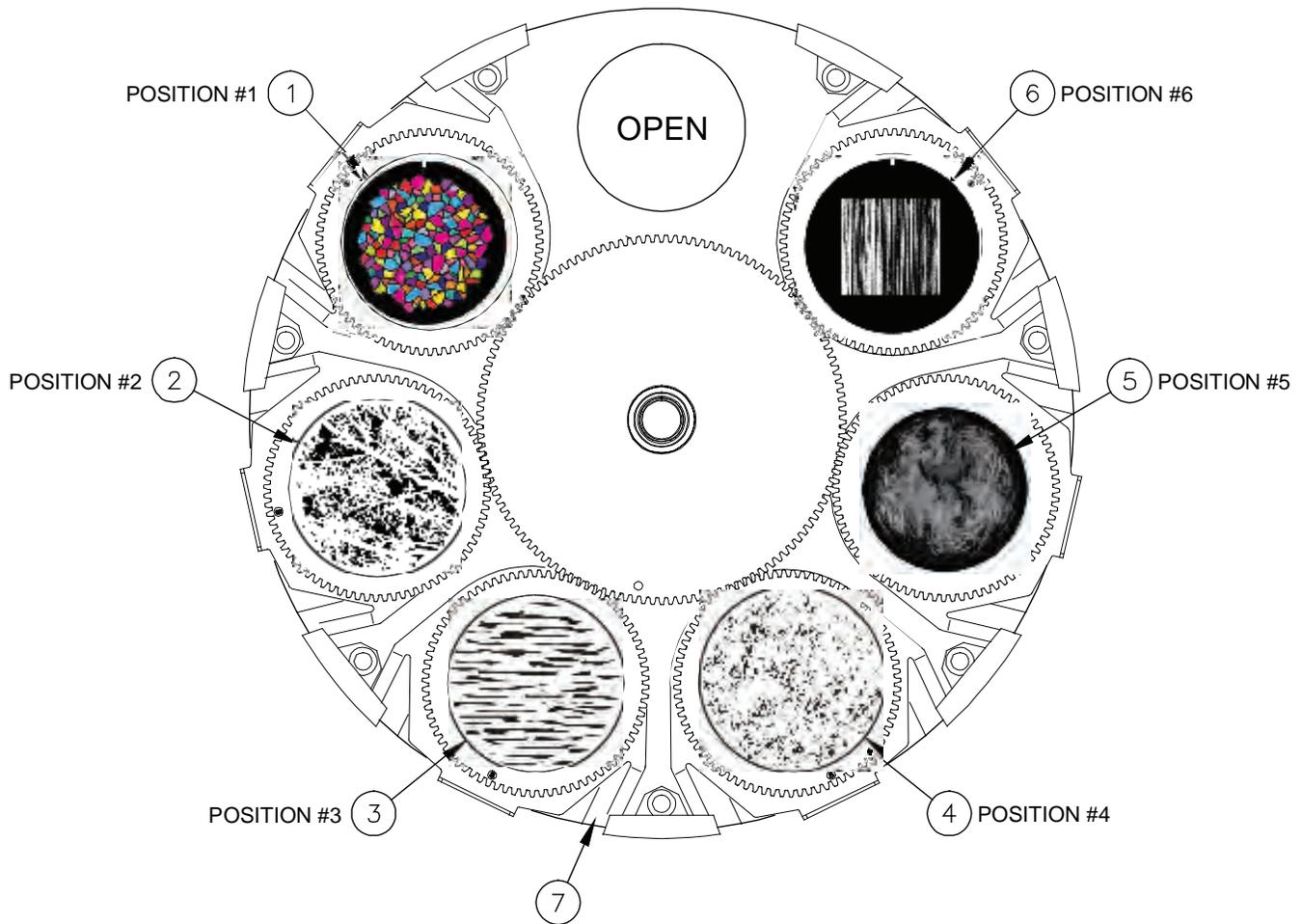


## Gobo Wheel 2 Assembly (Standard Load)

22.9816.0390

Revision: Rev A0

No.	Item	Qty	UM	Description	Procedure
1	17.1131.5000.00	1	EA	GOBO ASSY, CHICLETS	page 50
2	17.1131.1010.00	1	EA	GOBO ASSY, OAK FOLIAGE 1	page 50
3	17.1131.1013.00	1	EA	GOBO ASSY, CRACKLE LINEAR	page 50
4	17.1131.1022.04	1	EA	GOBO ASSY, GHOST DUST	page 50
5	17.7101.0401.00	1	EA	GOBO ASSY, FIREWATER ANIMATION	page 50
6	17.1131.1022.03	1 </td <td>EA</td> <td>GOBO ASSY, STRAW 2</td> <td>page 50</td>	EA	GOBO ASSY, STRAW 2	page 50
7	22.9816.0340	1	EA	ASSY, BEST BOY, GOBO WHEEL 2	-



# HEAD

## Head Assembly

21.9817.0600

Revision: Rev A0

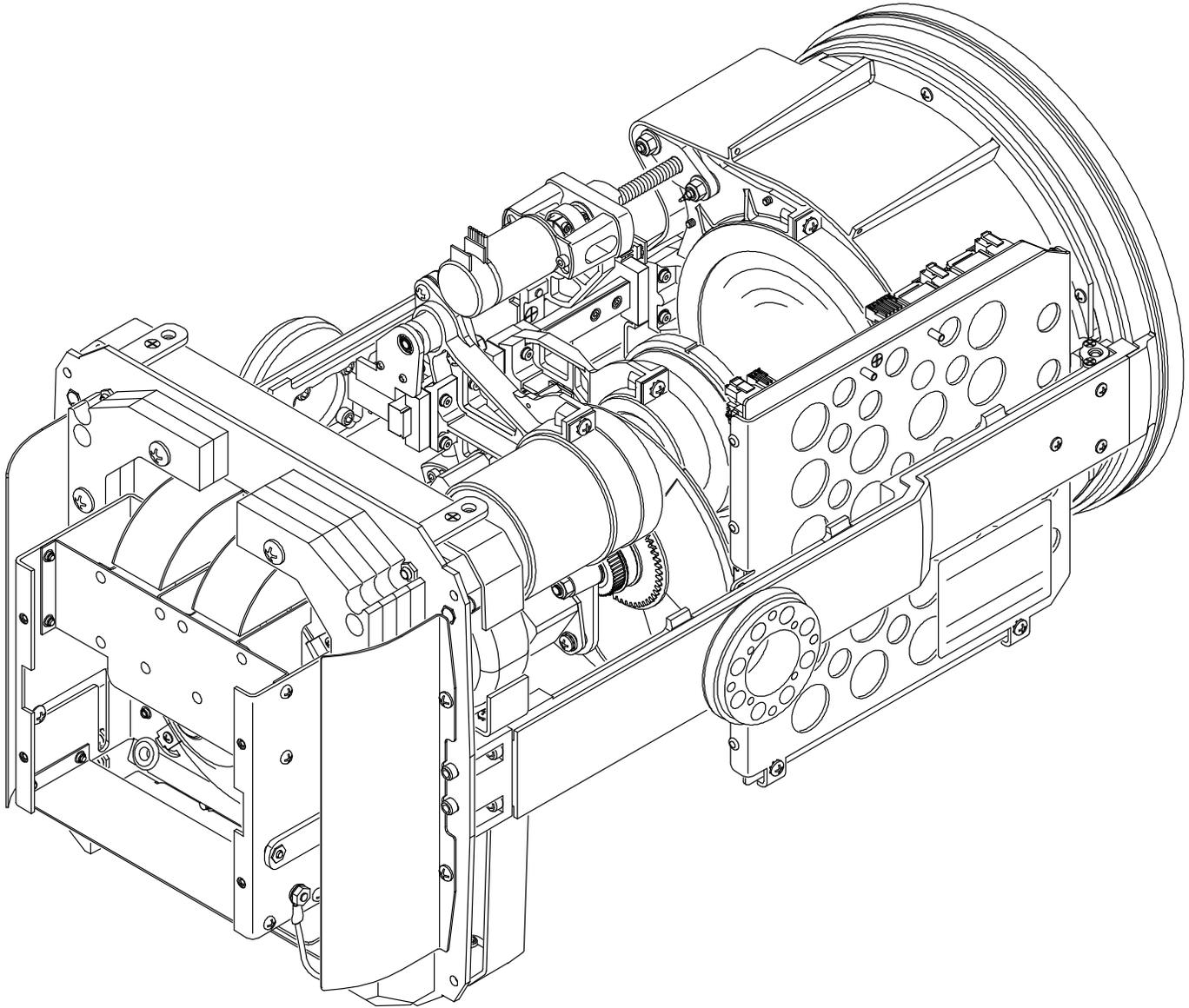
No.	Item	Qty	UM	Description	Procedure
1	04.9816.0052	1	EA	LABEL, FUSE REFERENCE	-
2	06.6083.0001.0	0	EA	RTV, 3145 CLEAR 305ML TUBE	-
3	10.9816.1611.02	1	EA	SIDE RAIL, MACHINED	-
4	10.9816.0613	1	EA	TUBE, TILT, BEST BOY	-
5	10.9816.0620	2	EA	PLATE, FAST LEAD RECEPTACLE	-
6	10.9816.0641	1	EA	BRACKET, HEAD MOTOR AND FAN DRIVER	-
7	10.9816.0642	2	EA	GASKET, SIDE RAIL (LH)	-
8	10.9816.0643	2	EA	GASKET, SIDE RAIL (RH)	-
9	10.9816.0649	2	EA	GASKET, COVER SEAL, FRONT BULKHEAD	-
10	10.9816.0653	1	EA	INSULATOR PAD, HEAD PCB BEST BOY	-
11	10.9817.0654	2	EA	LIGHT SHIELD, SHORT, BEST BOY HP SPOT	-
12	10.9817.0666	2	EA	BLOCK, SPACER REAR, BEST BOY HP SPOT	-
13	21.9816.0500	1	EA	ASSY, ZOOM	page 68
14	22.9817.0608	1	EA	ASSY, AFT BULKHEAD BEST BOY HP SPOT	-
15	24.9816.0640	1	EA	HEAD CONTROLLER, BEST BOY	page 59
16	53.5666.0002.0	1	EA	RETAINER, PCB, 7.25", RIGHT	-
17	53.5666.0003.0	1	EA	RETAINER, PCB, 7.25", LEFT	-
18	53.5534.0250	4	EA	SCREW, 4-40 X 1/4" PFSS	-
19	53.6522.0004.0	2	EA	SCREW, 6-32 X 1/4" SEMS	-
20	53.6525.0313.0	4	EA	SCREW, 6-32 X 5/16" PPZ SEMS EXT	-
21	53.6542.0001	7	EA	SCREW, 6-32 X 5/16" PFBZ	-
22	53.6621.0250.0	6	EA	SCREW, 8-32 X 1/4" PPSS BZ	-
23	53.6579.0001.0	2	EA	SCREW, 10-32 X 1/2" SHCS SS BLK ZINC	-
24	53.6579.0004	8	EA	SCREW, 10-32 X 5/8" SHCS SS	-
25	53.6515.0005.0	4	EA	SCREW, 10-32 X 3/4" SHCS SS	-
26	53.6534.0001	8	EA	RIVET, 3/32"OD POP 3/32GRIP RANGE ALUM	-
27	55.6669.0018.0	2	EA	STANDOFF, 1/4"HEX 6-32X .500" LG MF SS	-

Refer to illustrations on the following pages.

## Head Assembly (continued)

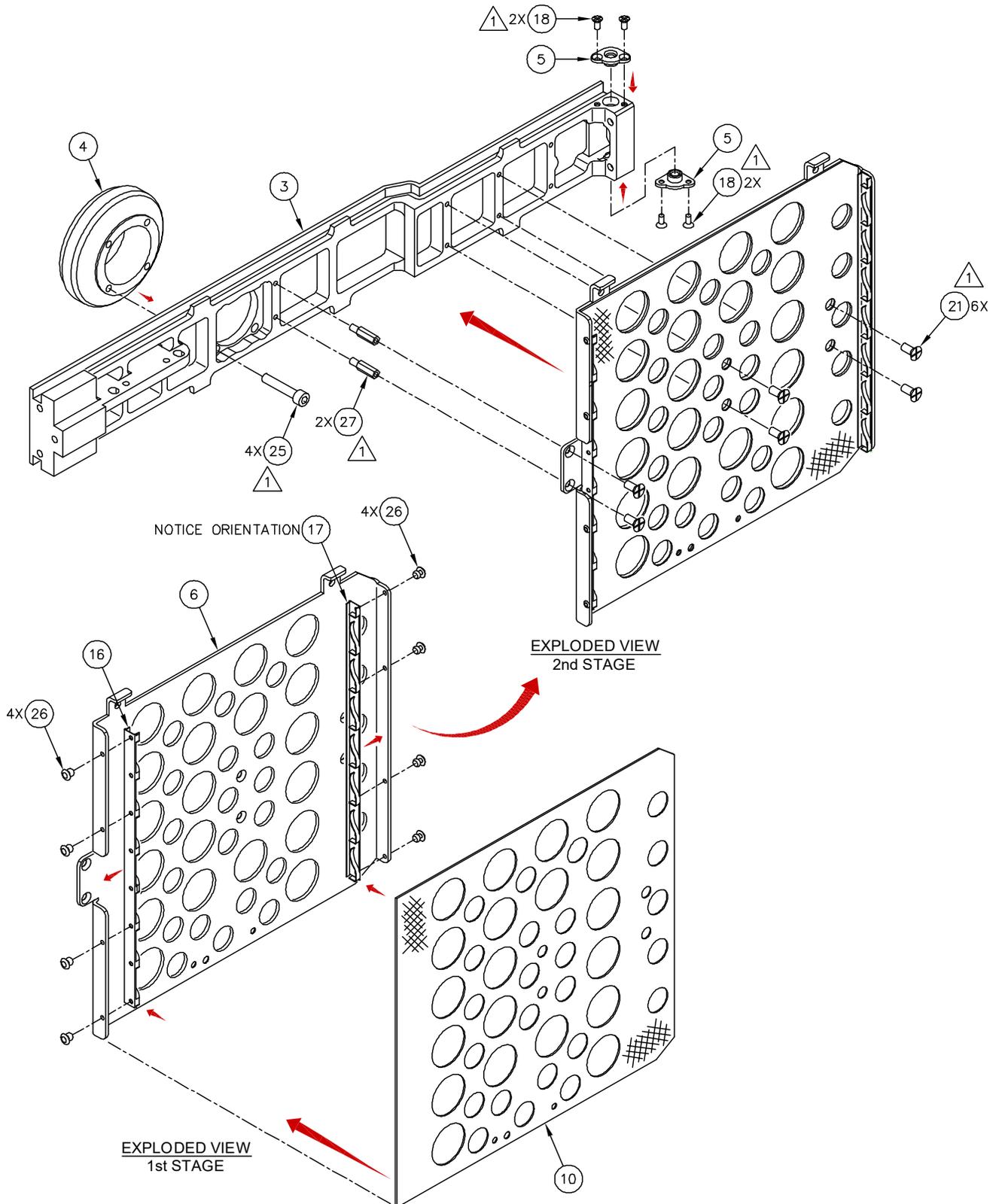
Refer to Parts List for "Head Assembly" on page 153.

- 1 APPLY LOCTITE #242 (06-6008-0001) TO THREADED SCREWS.
- 2 CLEAN SURFACES W/ALCOHOL BEFORE APPLYING SELF ADHESIVE GASKET.



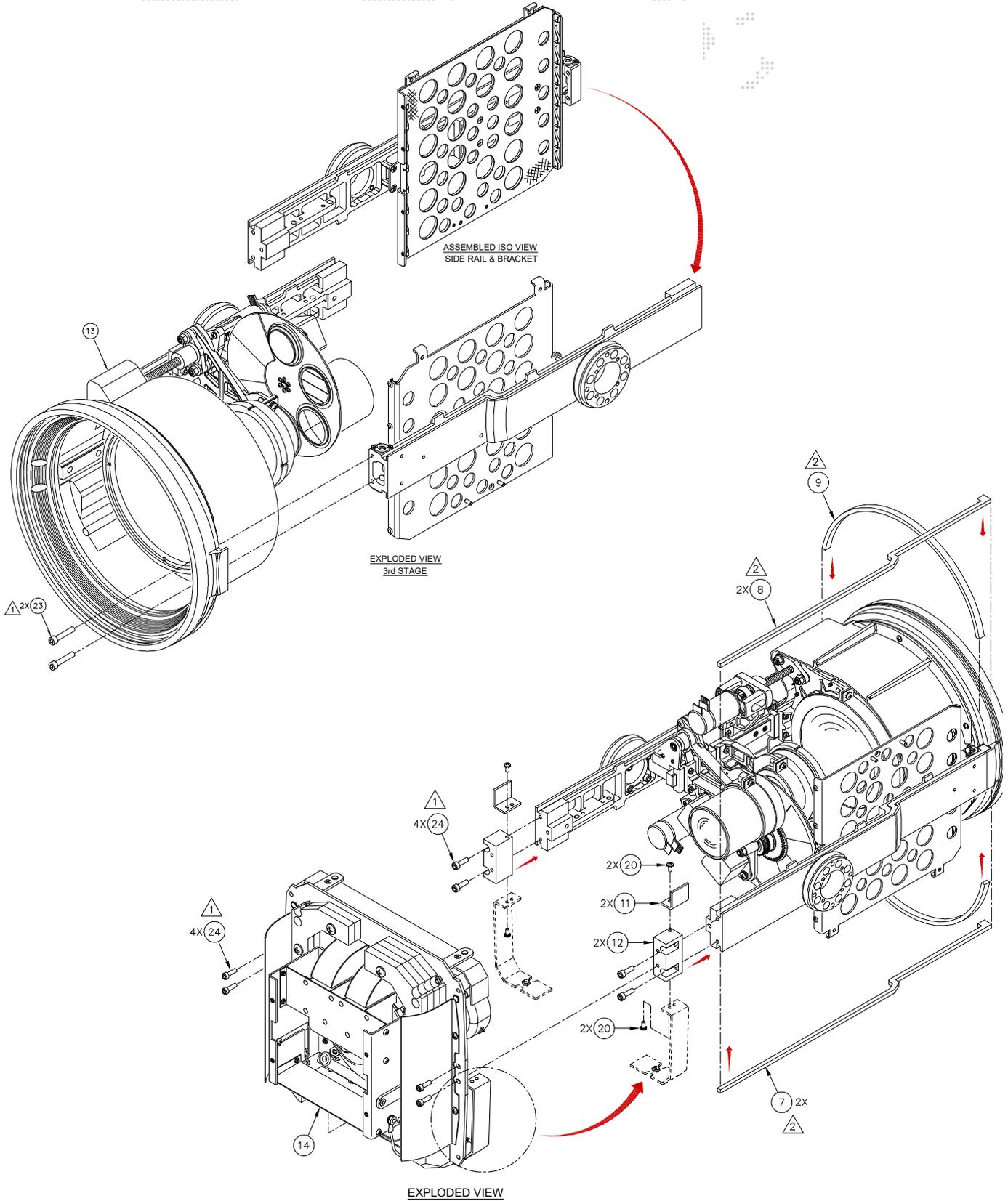
## Head Assembly (continued)

Refer to Parts List for "Head Assembly" on page 153.



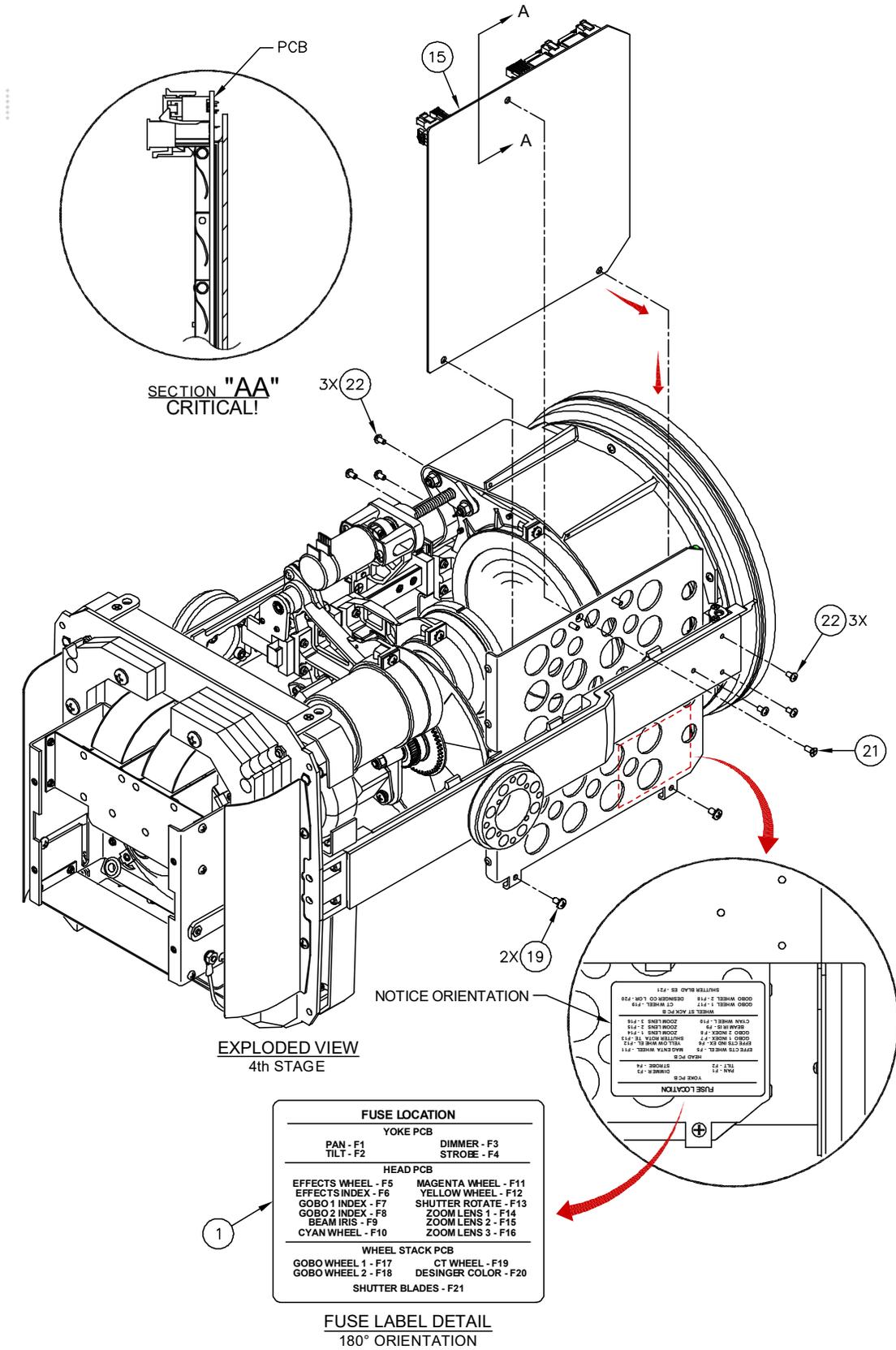
## Head Assembly (continued)

Refer to Parts List for "Head Assembly" on page 153.



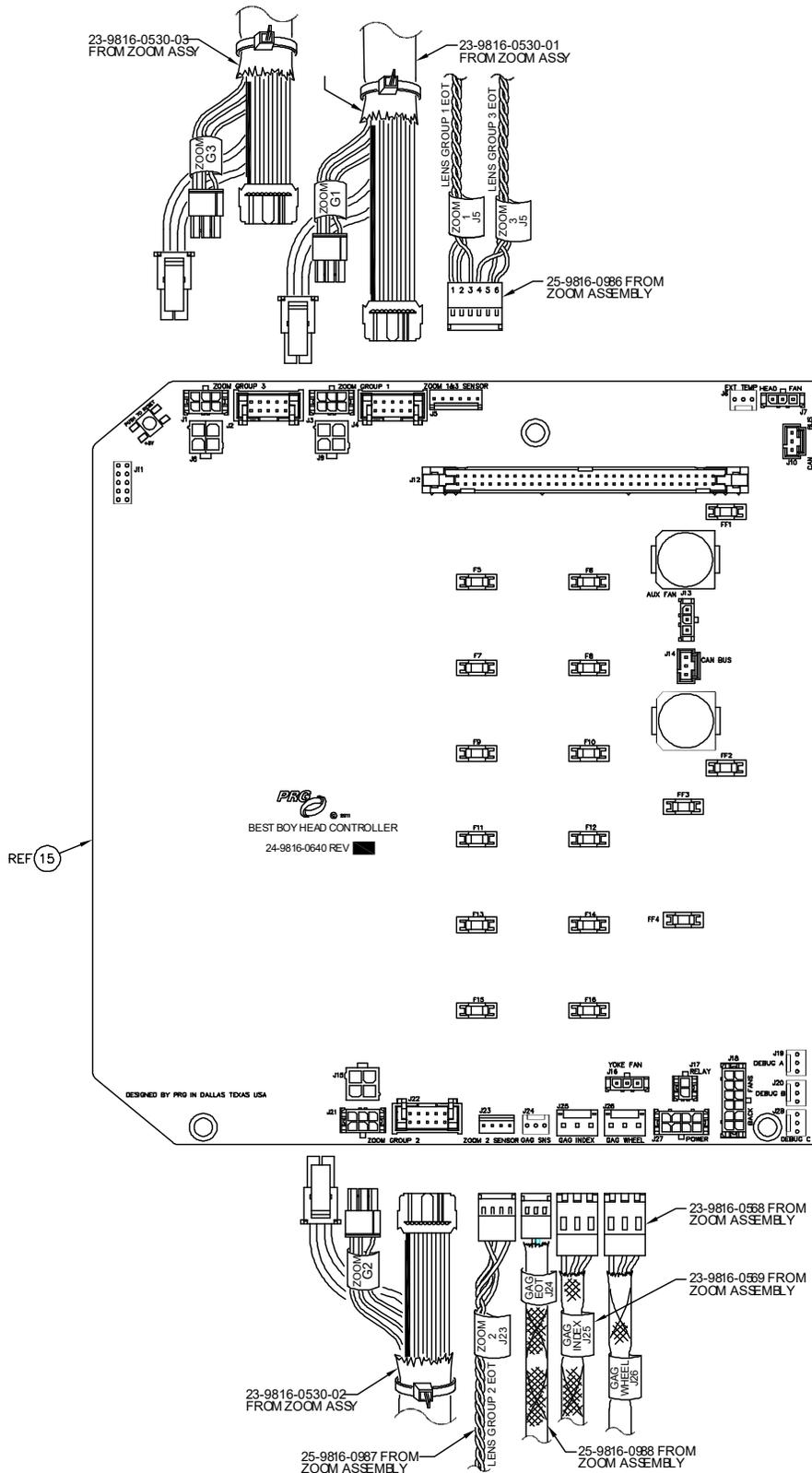
## Head Assembly (continued)

Refer to Parts List for "Head Assembly" on page 153.



## Head Assembly (continued)

Refer to Parts List for "Head Assembly" on page 153.



# ZOOM OPTICS

## Zoom Assembly

21.9816.0500

Revision: Rev H0

No.	Item	Qty	UM	Description	Procedure
1	10.9816.1521.02	1	EA	BLOCK, BEARING G1,G3, MACHINED	-
2	10.9816.1522.02	1	EA	CARRIER, LENS G1, MACHINED	-
3	10.9816.0523	1	EA	STRAP, LENS G1 BEST BOY	-
4	10.9816.1524.02	1	EA	BLOCK, BEARING, G2, MACHINED	-
5	10.9816.1525.02	1	EA	CARRIER, LENS G2, MACHINED	-
6	10.9816.0526	1	EA	STRAP, LENS G2 BEST BOY	-
7	10.9816.1528.02	1	EA	CARRIER, LENS G3, MACHINED	-
8	10.9816.0529	1	EA	STRAP, LENS G3 BEST BOY	-
9	10.9816.0531	1	EA	BRACKET, SENSOR PCB, G1 BEST BOY	-
10	10.9812.0535	3	EA	MOUNT, PIN SENSOR	-
11	10.9816.0538	1	EA	G3 LIGHT SHIELD,BEST BOY	page 75
12	10.9816.0539	1	EA	SHROUD, LIGHT, G3	-
13	55.6697.1316.0	1	EA	STANDOFF, 3/16 HEX X 13/16 X 632, LG MF SS	-
14	55.6697.0916.0	1	EA	STANDOFF, 3/16 HEX X 9/16 X 632, LG MF SS	-
15	10.9816.0560	1	EA	LEADSCREW, G1, 1/4-.03125 PITCH BEST BOY	page 75
16	10.9816.0561	1	EA	LEADSCREW, G2, 5/16- .0714 PITCH BEST BOY	page 75
17	10.9816.0562	1	EA	LEADSCREW, G3 5/16 - .0714 PITCH BEST BOY	page 75
18	10.9816.0564	2	EA	GROMMET, CUSTOM LEAD SCREW	page 75
19	10.9816.0585	1	EA	BRACKET, PI BAR, ZOOM RAIL	-
20	10.9816.1609.02	1	EA	FRONT BULKHEAD, MACHINED	-
21	10.9816.1610.02	1	EA	SIDE RAIL, ZOOM, MACHINED	-
22	10.9816.0613	1	EA	TUBE, TILT, BEST BOY	-
23	10.9816.0620	2	EA	PLATE, FAST LEAD RECEPTACLE	-
24	21.9816.0550	1	EA	ASSEMBLY, GAG WHEEL	page 65
25	22.9816.0134	1	EA	ASSY, ZOOM LENS GROUP1	-
26	22.9816.0135	1	EA	ASSY, ZOOM LENS GROUP 2	-
27	22.9816.0136	1	EA	ASSY, ZOOM LENS GROUP 3	-
28	23.9816.0530.01	1	EA	MOTOR ASSY, ZOOM LENS GROUP 1	page 71
29	23.9816.0530.02	1	EA	MOTOR ASSY, ZOOM LENS GROUP 2	page 71
30	23.9816.0530.03	1	EA	MOTOR ASSY, ZOOM LENS GROUP 3	page 71
31	23.9816.0568	1	EA	ASSY, MOTOR GAG WHEEL	-
32	23.9816.0569	1	EA	MOTOR ASSY, GAG INDEX (EXT SHAFT)	-
33	24.9812.0510	3	EA	PCB ASSY, ZOOM SENSOR	-
34	25.9816.0986	1	EA	CABLE ASSY, ZOOM 1 & 3 EOT SENSORS	-
35	25.9816.0987	1	EA	CABLE ASSY, ZOOM 2 EOT SENSORS	-
36	25.9816.0988	1	EA	CABLE ASSY, GAG EOT SENSOR	-
37	53.2202.0008	6	EA	NUT, 8-32 HEX SS NYLON INSERT	-
38	53.2001.0001	1	EA	NUT, 10-32 KEPS ZINC PLATED	-
39	53.5506.0251.0	10	EA	SCREW, 6-32 X 1/4" PPSS BLK ZINC	-
40	53.5508.0101.0	6	EA	SCREW, 8-32 X 3/8" PFSS	-
41	53.6682.0022	10	EA	SCREW, 8-32 X 3/8" PP SEMS EXT ZINC	-
42	53.5508.0505.0	4	EA	SCREW, 8-32 X 1/2" SOCKET HD CAP SS	-

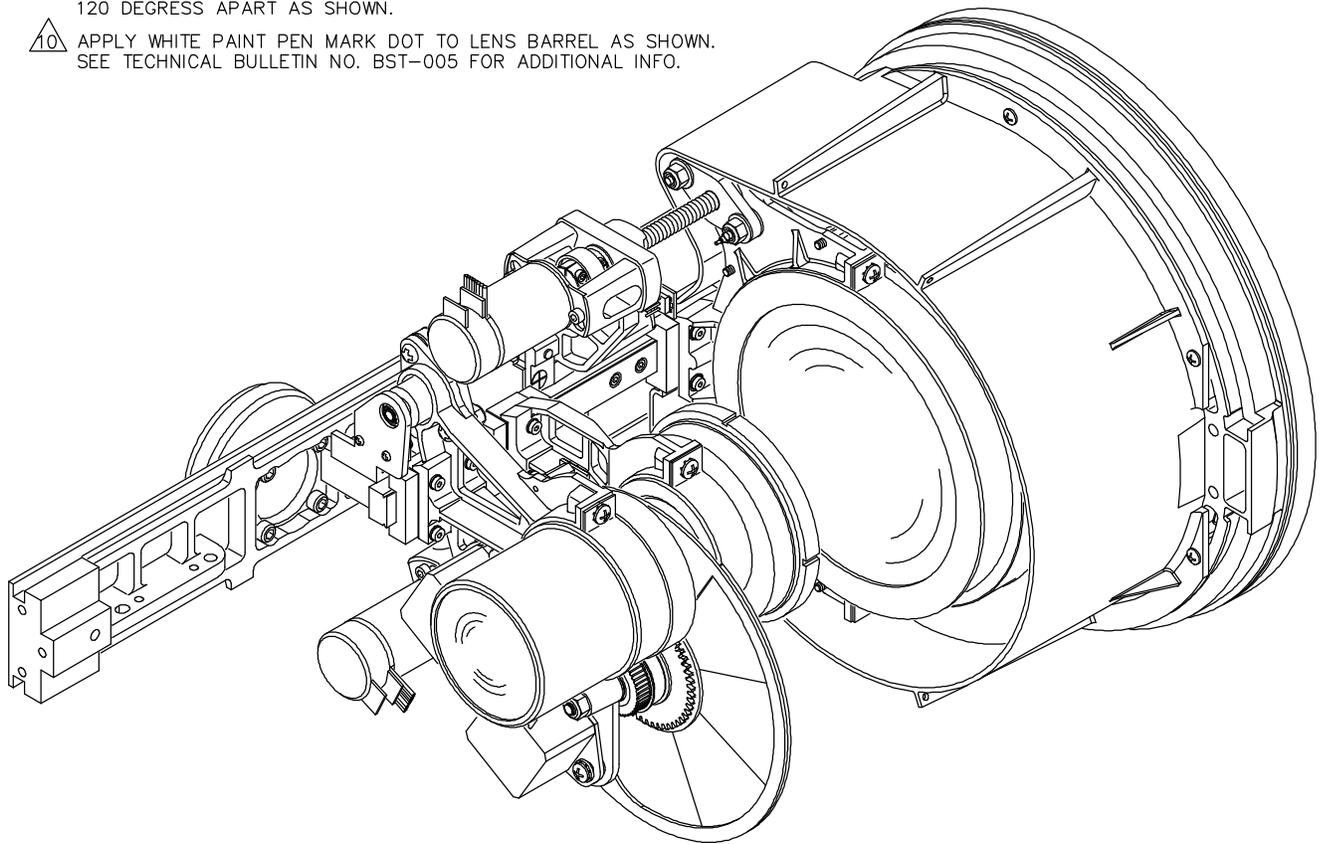
No.	Item	Qty	UM	Description	Procedure
43	53.5534.0187	2	EA	SCREW, 4-40 X 3/16" PFSS	-
44	53.5534.0250	4	EA	SCREW, 4-40 X 1/4" PFSS	-
45	53.5660.0003.0	3	EA	COUPLING, MOTOR-LEADSCREW, SUPERSHORT 4mm X 4mm	-
46	53.5808.0700	7	EA	SCREW, M3 X 10MM SCSS	-
47	53.6513.0060.0	10	EA	SCREW, 18-8 M3 X 8MM LG SOCKET HEAD CAP SS METRIC	-
48	53.6515.0005.0	4	EA	SCREW, 10-32 X 3/4" SHCS SS	-
49	53.6522.0004.0	2	EA	SCREW, 6-32 X 1/4" SEMS	-
50	53.6523.0001.0	6	EA	SCREW, 6-32 X 3/8" SOCKET HD CAP ZINC	-
51	53.6523.0001.0	1	EA	O-RING, SQUARE 3/8" ID X 1/2" OD, 70 DUROMETER BUNA-N	-
52	53.5508.0875	6	EA	SCREW, 8-32 X 7/8" PPSS	-
53	53.6579.0001.0	2	EA	SCREW, 10-32 X 1/2" SHCS SS BLK ZINC	-
54	53.6659.0021.0	6	EA	SCREW, 2-56 X 3/16" PPSS	-
55	53.6659.0015	2	EA	SCREW, 2-56 X 1/4" PPSS	-
56	54.1239.0002.0	3	EA	BEARING, 3/16"ID X 3/8" OD X 1/8" W FLANGED, SS, "SFR166ZZ"	-
57	54.1239.0003.0	6	EA	BEARING, 5mm X 16mm X 5mm FLANGED, SS "F625HZZ"	-
58	54.2050.0002.0	1	EA	BELT, 63T, 6MM WIDE, GT2 2MM PTCH	-
59	54.2050.0003.0	1	EA	BELT, 93T, 6MM WIDE, GT2 2MM PTCH	-
60	54.2105.0001.0	1	EA	PULLEY, DRIVE GT2 (2MM) 15 TOOTH 2 FLANGE FAIRLOC HUB	-
61	55.2132.0015	2	EA	STANDOFF, 1/4" HEX 4-40 .500" LG MF SS	-
62	55.2186.0001	7	EA	CABLE TIE, .10"WD 4.00"LG SMALL CLEAR (PACK OF 1000)	-
63	55.3303.0004.0	10	EA	WASHER, M3 SPLIT LOCK SS	-
64	55.6506.0040.0	6	EA	SPACER, #8 X 3/8" .230 OD .175 ZINC	-
65	55.6539.0018.0	12	EA	WASHER, 1/4" ID X 1/2" OD X .04" THK, ZN	-
66	55.6697.0024.0	2	EA	STANDOFF, 3/16" HEX 2-56 0.250" LG FF Al	-
67	55.6759.0001.0	4	EA	STANDOFF, 3/16" HEX X 6-32 X 1" LMF SS	-
68	55.6923.0001.0	3	EA	SPRING, BELLEVILLE DISC .156"ID .312"OD .011"THK SS	-
69	55.6948.0002.0	1	EA	SHIM WASHER, 1/4" ID X 3/8" OD X 0.020" THK SS	-
70	55.9816.4061.0	6	EA	WAVE SPRING, 10MM X 7 MM X 3.96 MM FH	-
71	57.9816.0001.0	1	EA	LINEAR RAIL WITH 3 SLIDERS T1 PRELOADED BLACK CHROME TREATED, ZOOM	-
72	65.5006.0001.0	3	EA	CONTACT, BATTERY	-
73	04.9816.0050	1	EA	LABEL, LENS CLEANING/CAUTION	-

Refer to illustrations on the following pages.

## Zoom Assembly (continued)

Refer to Parts List for "Zoom Assembly" on page 159.

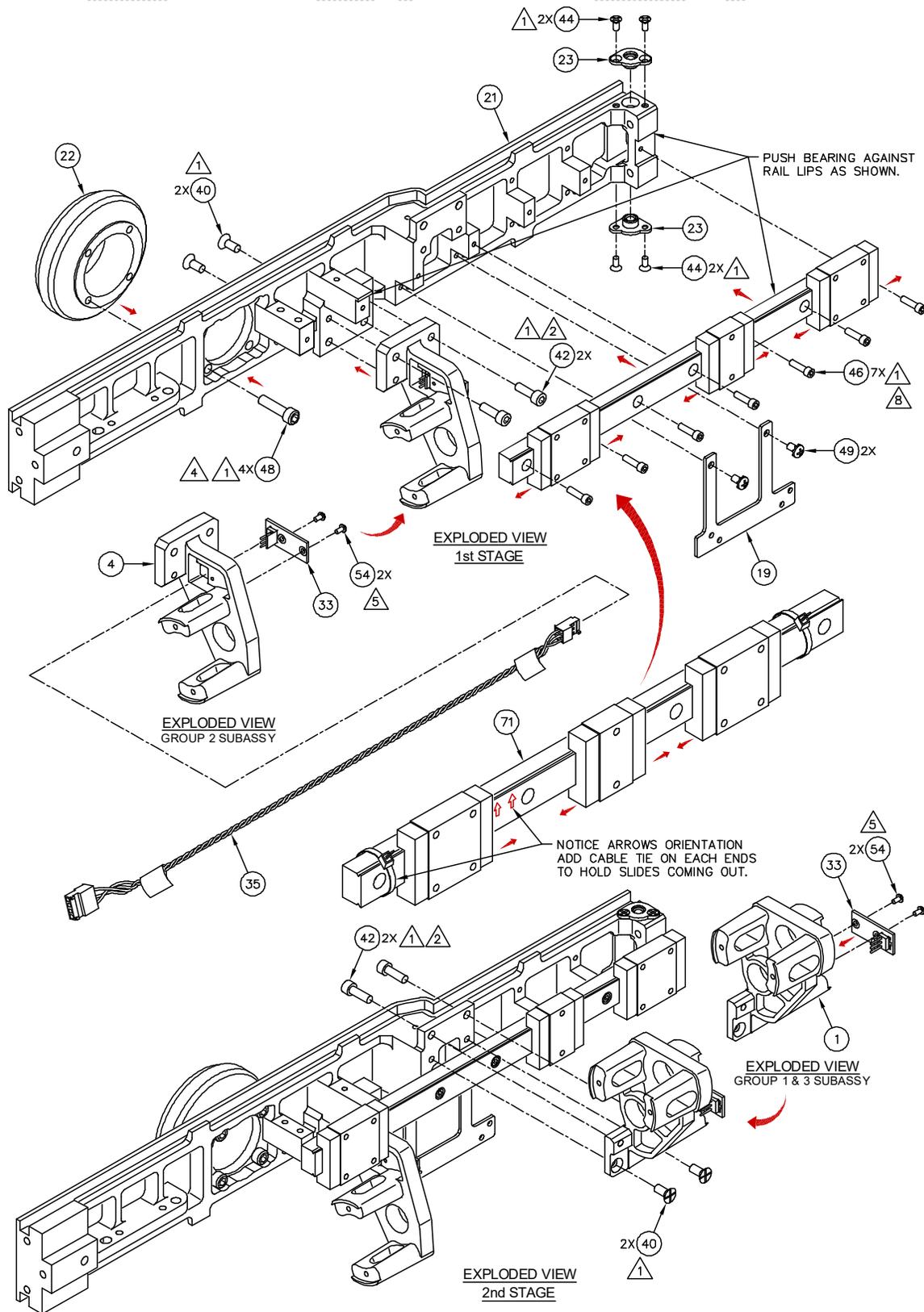
- 1 APPLY LOCTITE #242 (06-6008-0001) TO THREADS.
- 2 TORQUE TO 18 IN-LBS.
- 3 TORQUE TO 5 IN-LBS.
- 4 TORQUE TO 32 IN-LBS.
- 5 APPLY LOCTITE #222 (06-6019-0222-0) TO THREADS.
- 6 TORQUE TO 2 IN-LBS AND APPLY A DROP OF LOCTITE #425 (06-6008-0003) TO THREADS.
- 7 COMPRESS PULLEY AND BELLEVILLE AGAINST BEARING TO ELIMINATE AXIAL PLAY PRIOR TO TORQUING PULLEY CLAMP SCREW.
- 8 INSTALL SCREWS AND TORQUE TO 5 IN-LBS. SLIDE CARRIER BACK AND FORTH ON RAIL IF THEY BIND—LOOSEN SCREW 1/4 TURN IN AREA WHERE BINDING OCCURS TO ELIMINATE BINDING. **IMPORTANT:** DO NOT LOOSEN SCREWS ON EACH END OF RAIL.
- 9 SECURE LENS GROUPS 1, 2, & 3 ASSEMBLIES BY APPLYING ONE DROP OF LOCTITE #425 (06-6008-0003) TO THREADS OF LENS CAP IN THREE LOCATIONS. 120 DEGREE APART AS SHOWN.
- 10 APPLY WHITE PAINT PEN MARK DOT TO LENS BARREL AS SHOWN. SEE TECHNICAL BULLETIN NO. BST-005 FOR ADDITIONAL INFO.



**ISOMETRIC VIEW**

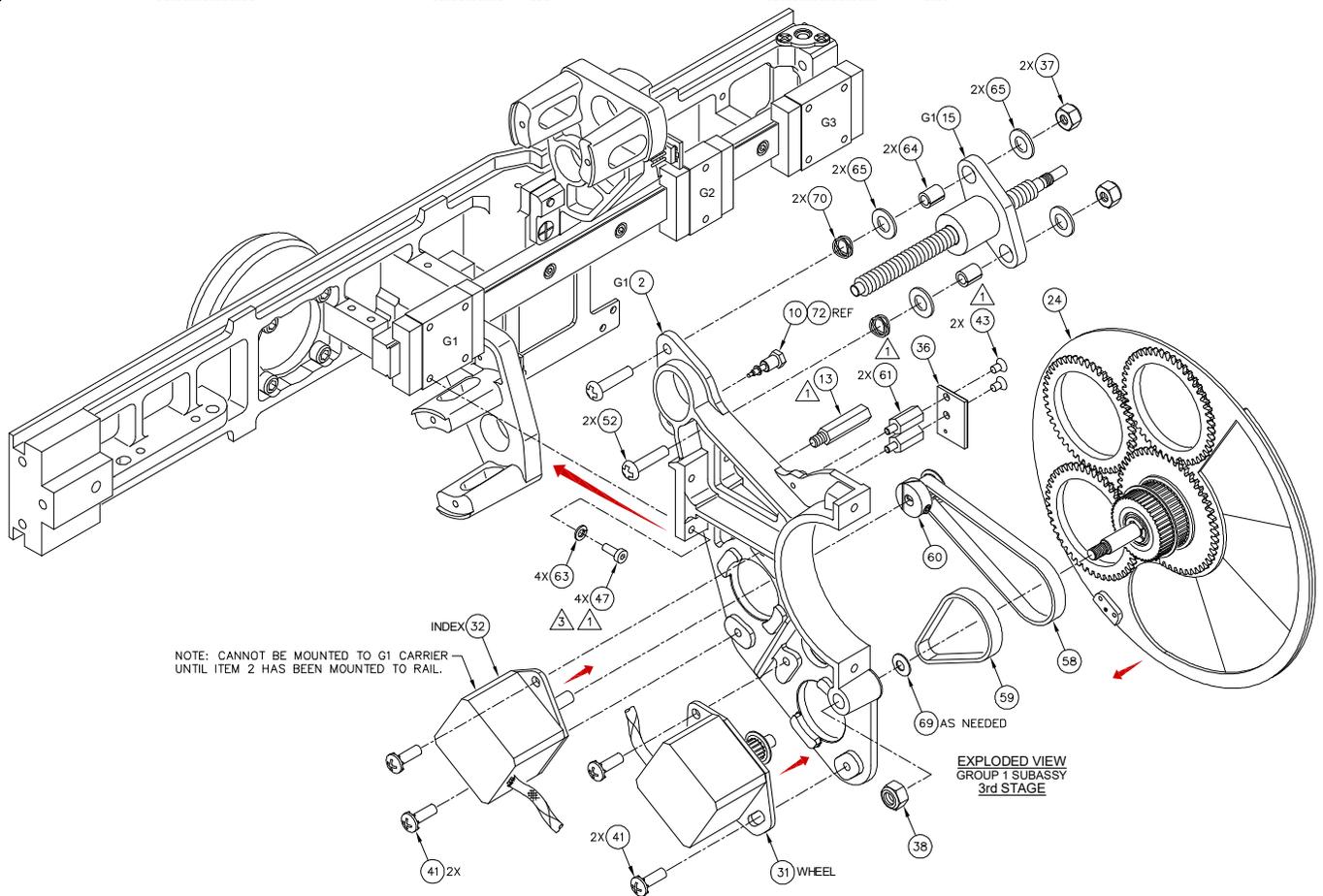
## Zoom Assembly (continued)

Refer to Parts List for "Zoom Assembly" on page 159.



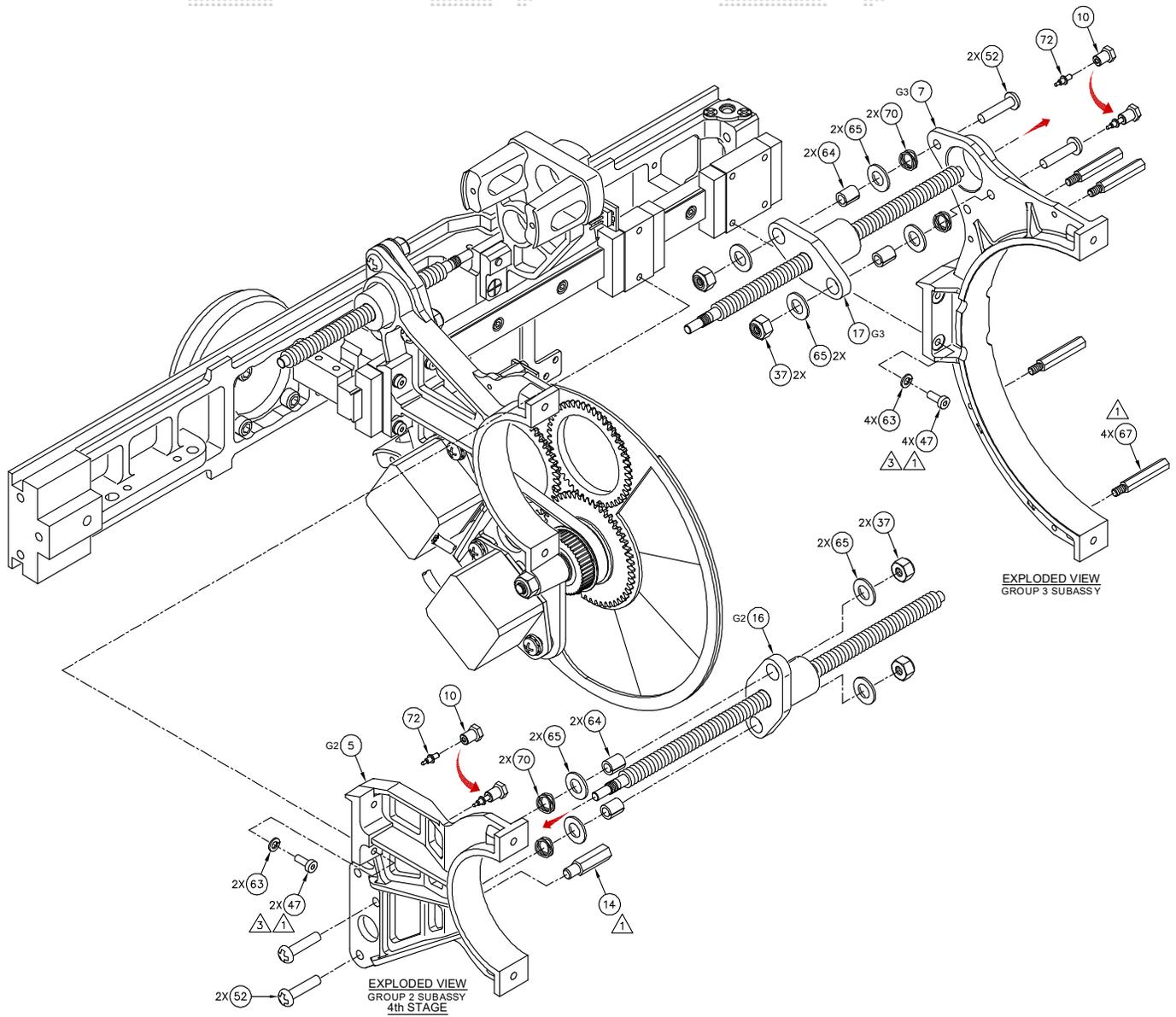
## Zoom Assembly (continued)

Refer to Parts List for "Zoom Assembly" on page 159.



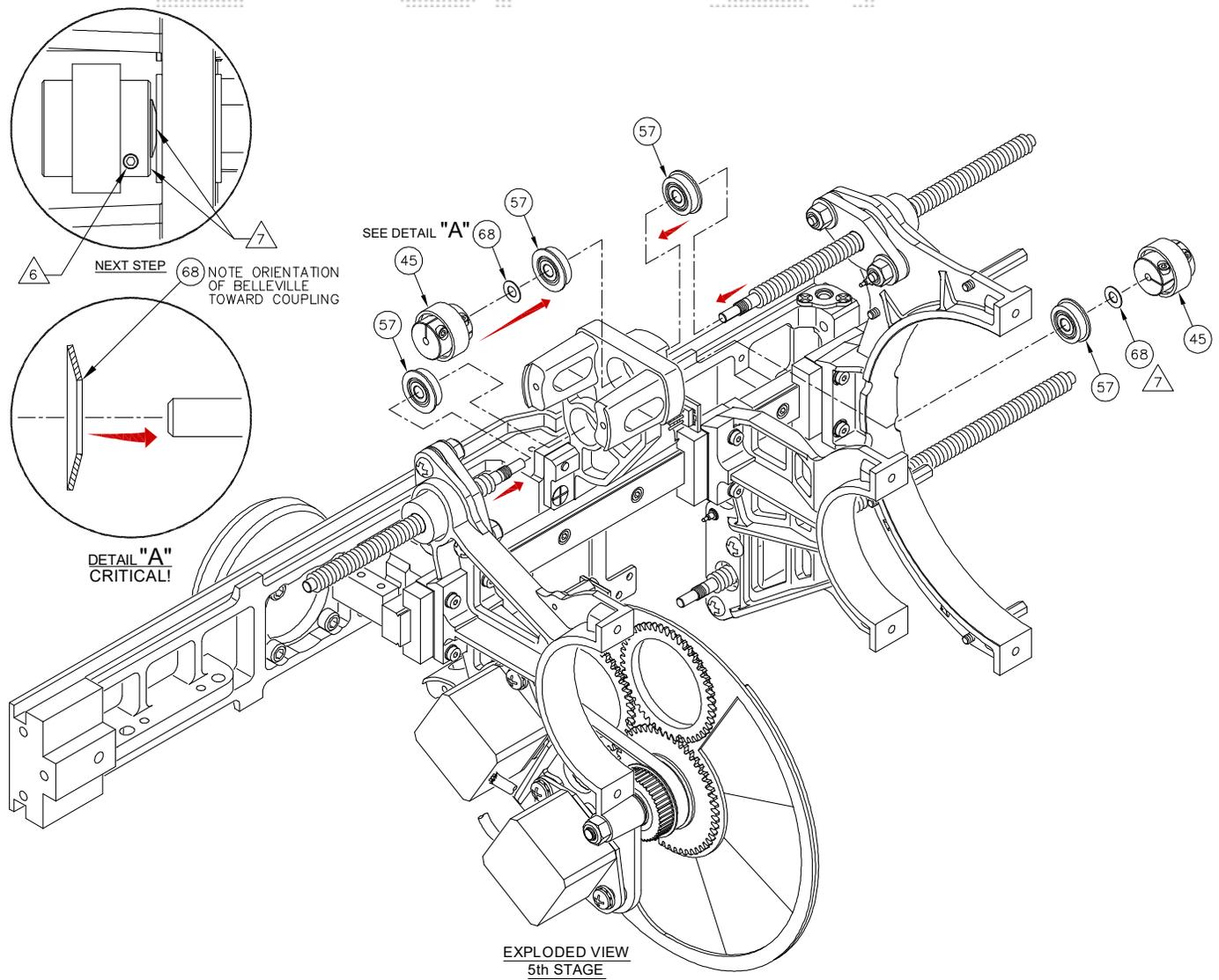
## Zoom Assembly (continued)

Refer to Parts List for "Zoom Assembly" on page 159.



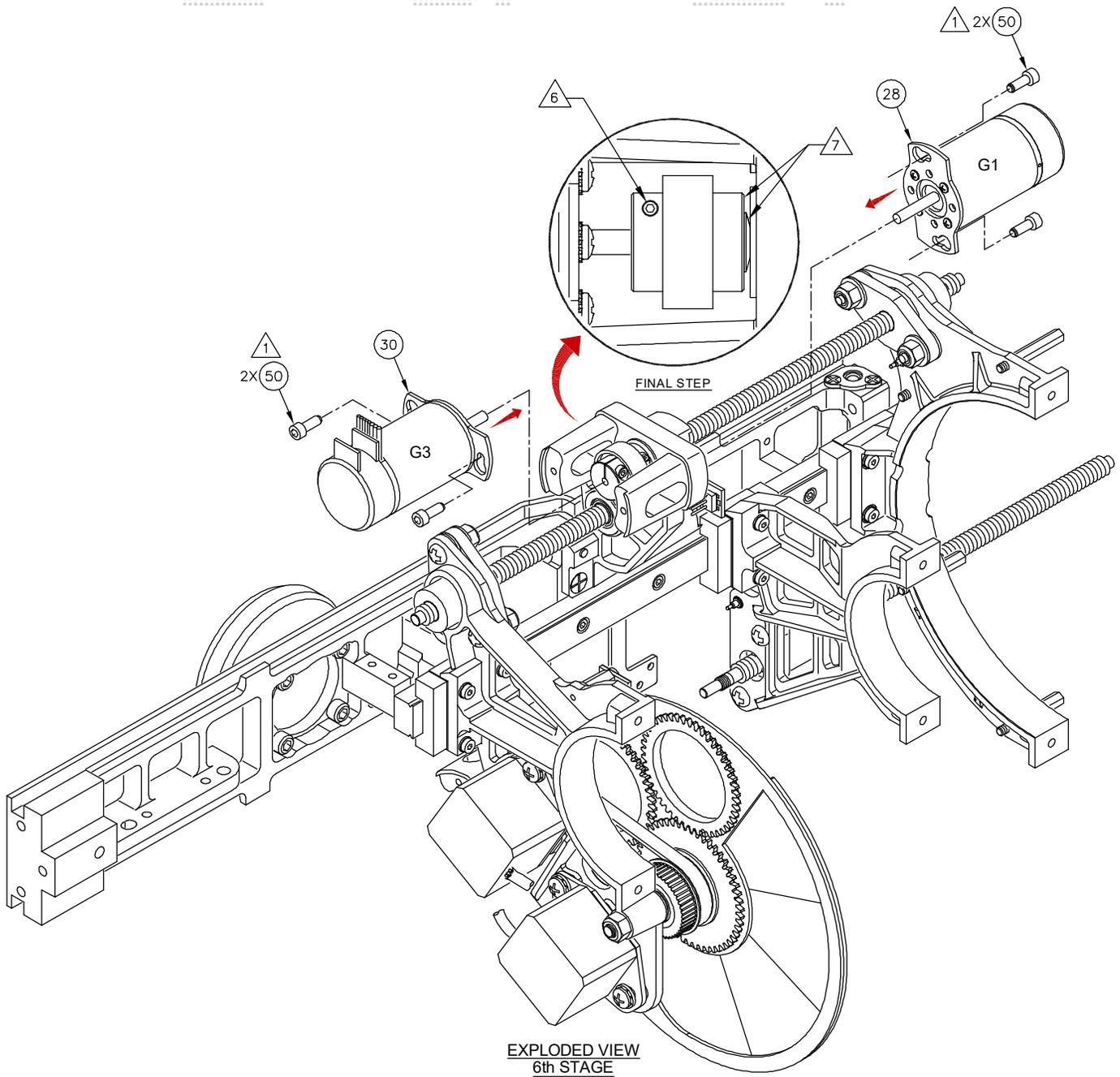
## Zoom Assembly (continued)

Refer to Parts List for "Zoom Assembly" on page 159.



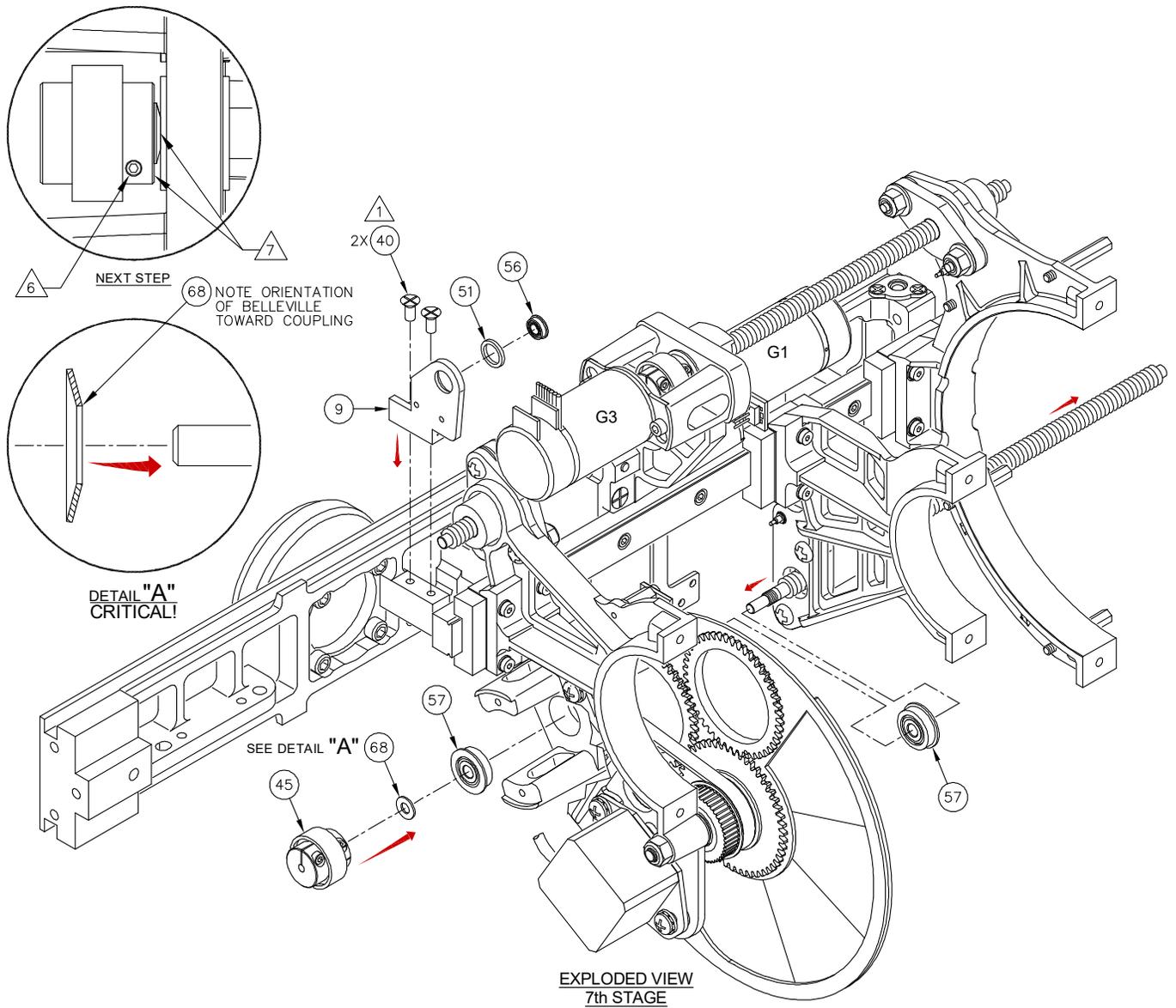
## Zoom Assembly (continued)

Refer to Parts List for "Zoom Assembly" on page 159.



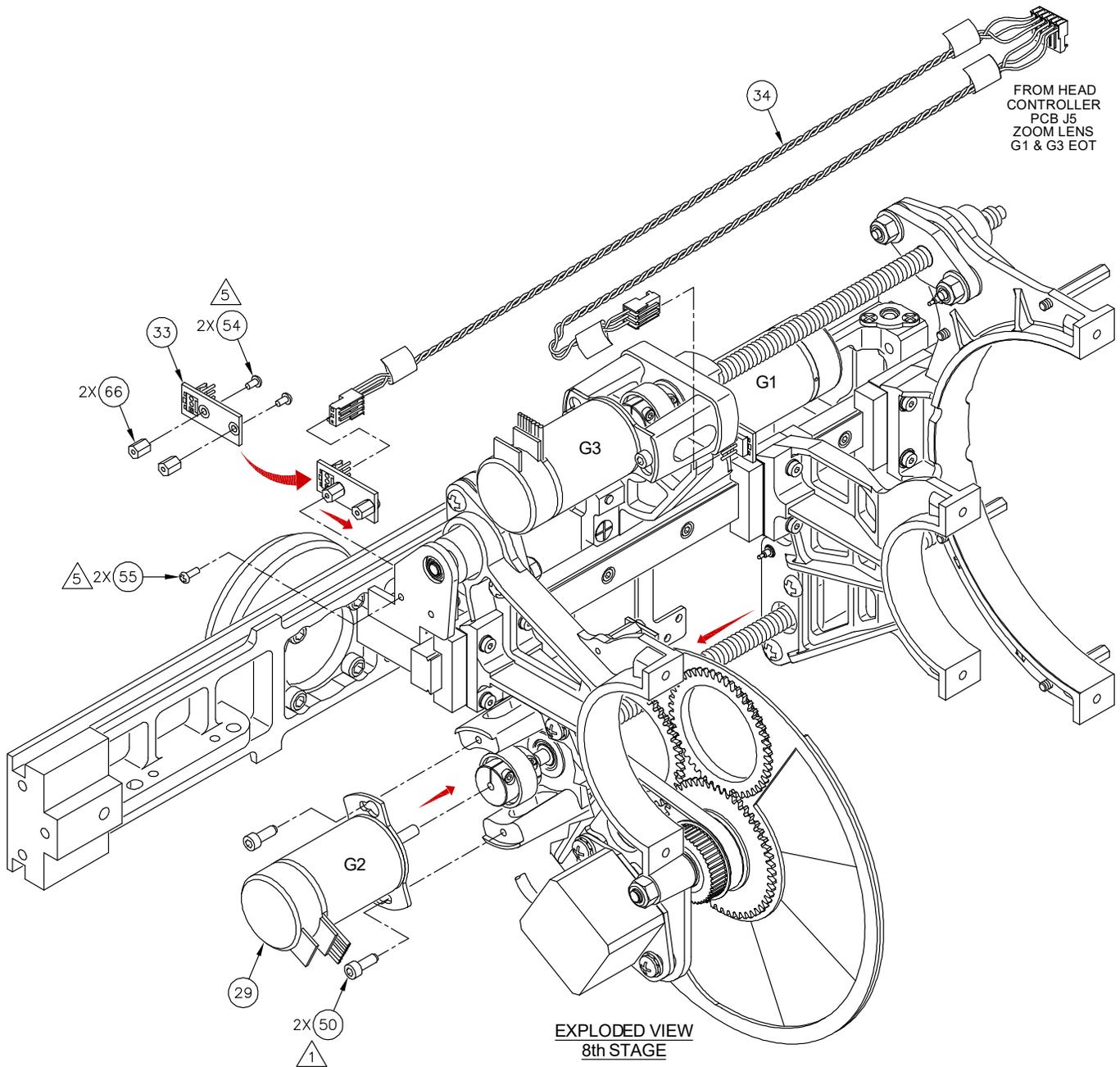
## Zoom Assembly (continued)

Refer to Parts List for "Zoom Assembly" on page 159.



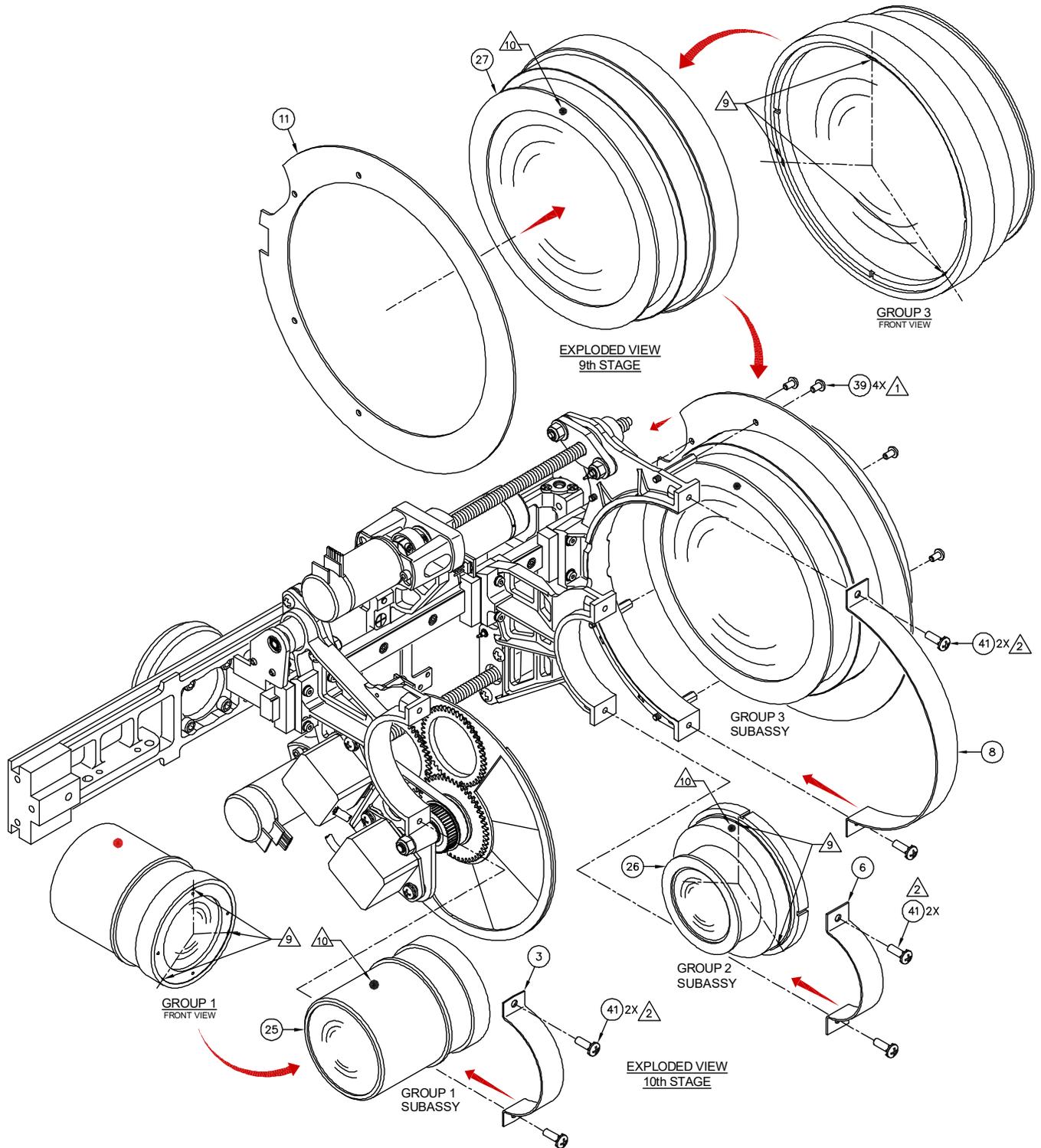
## Zoom Assembly (continued)

Refer to Parts List for "Zoom Assembly" on page 159.



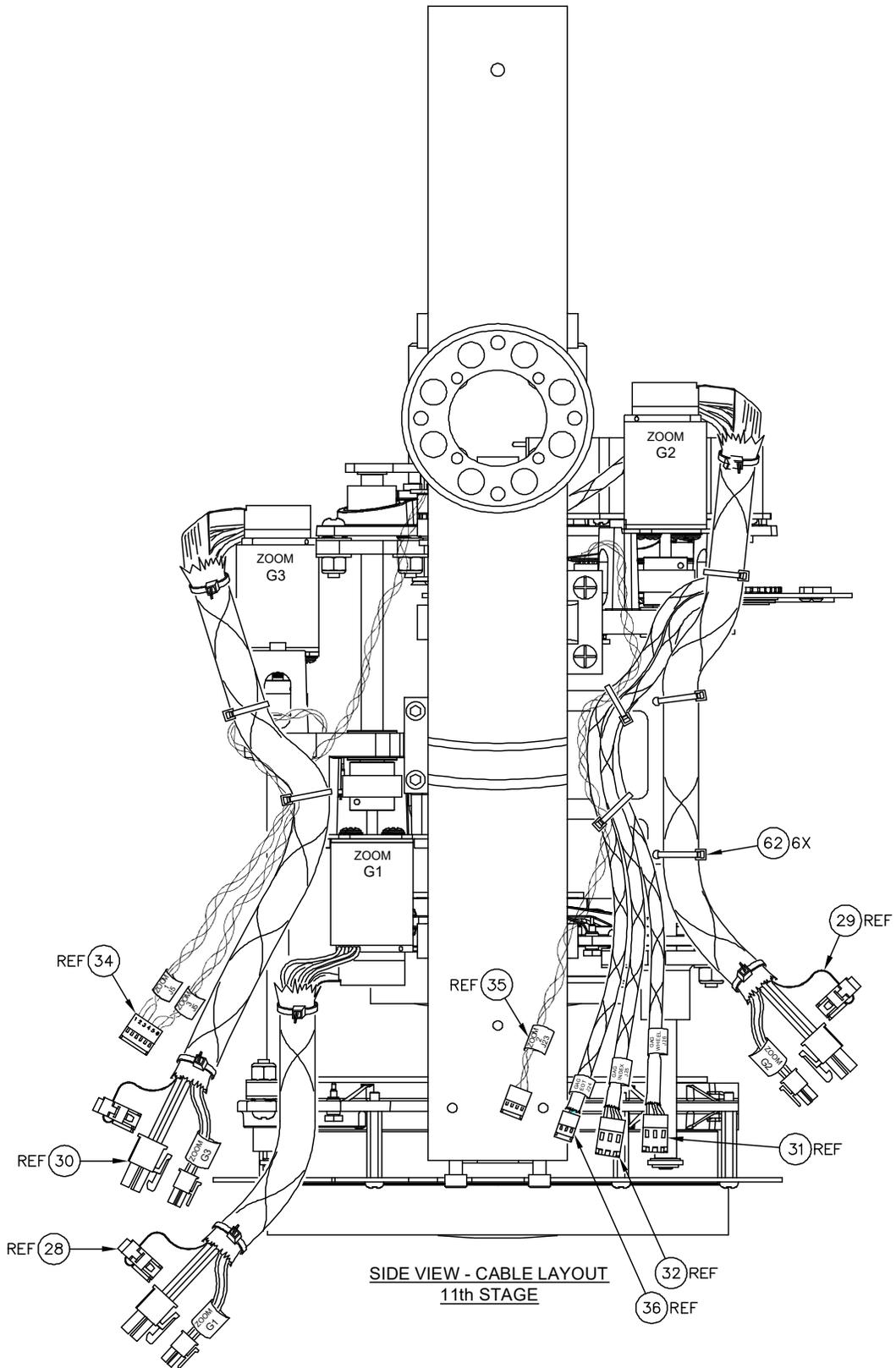
## Zoom Assembly (continued)

Refer to Parts List for "Zoom Assembly" on page 159.



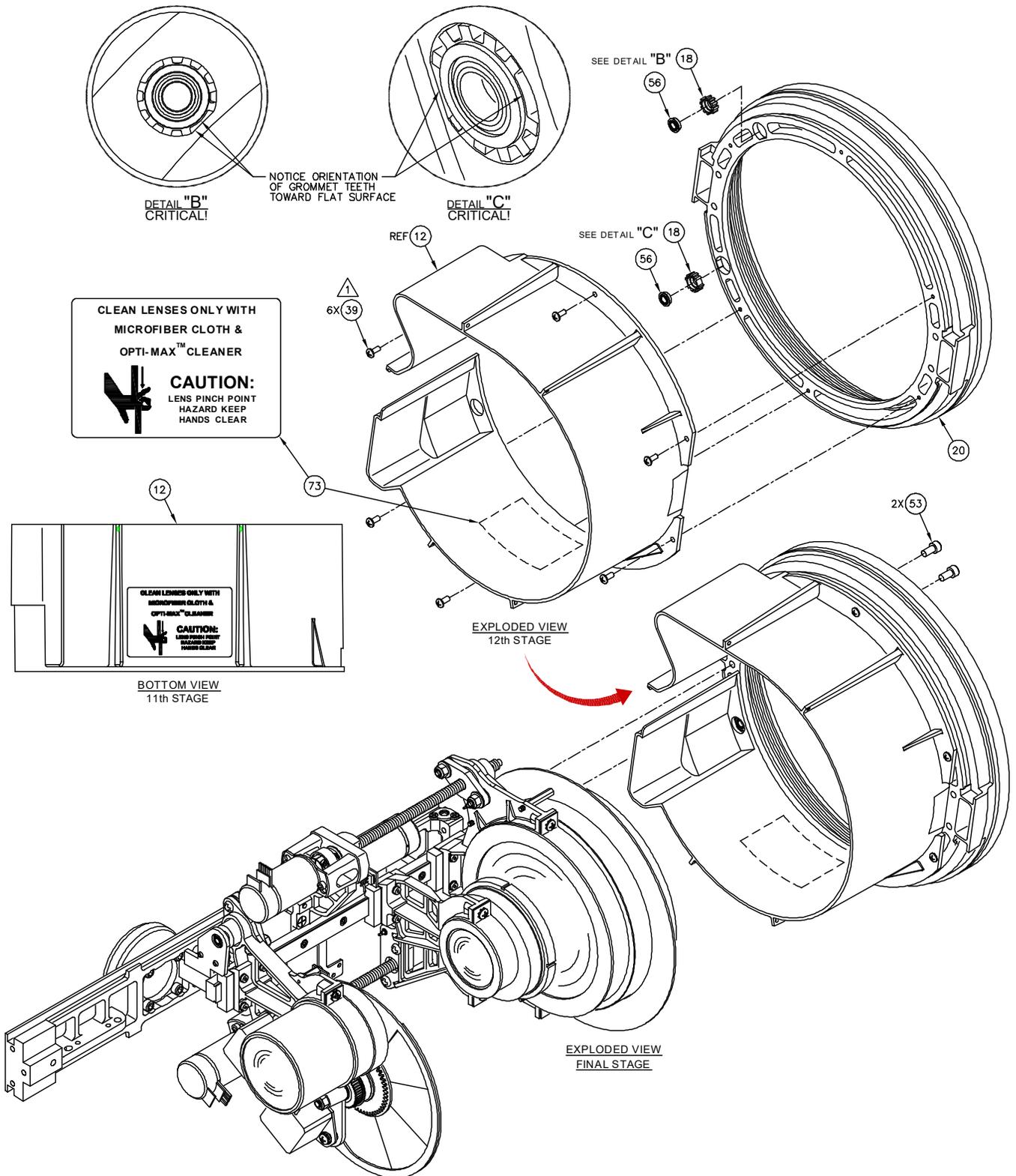
## Zoom Assembly (continued)

Refer to Parts List for "Zoom Assembly" on page 159.



## Zoom Assembly (continued)

Refer to Parts List for "Zoom Assembly" on page 159.

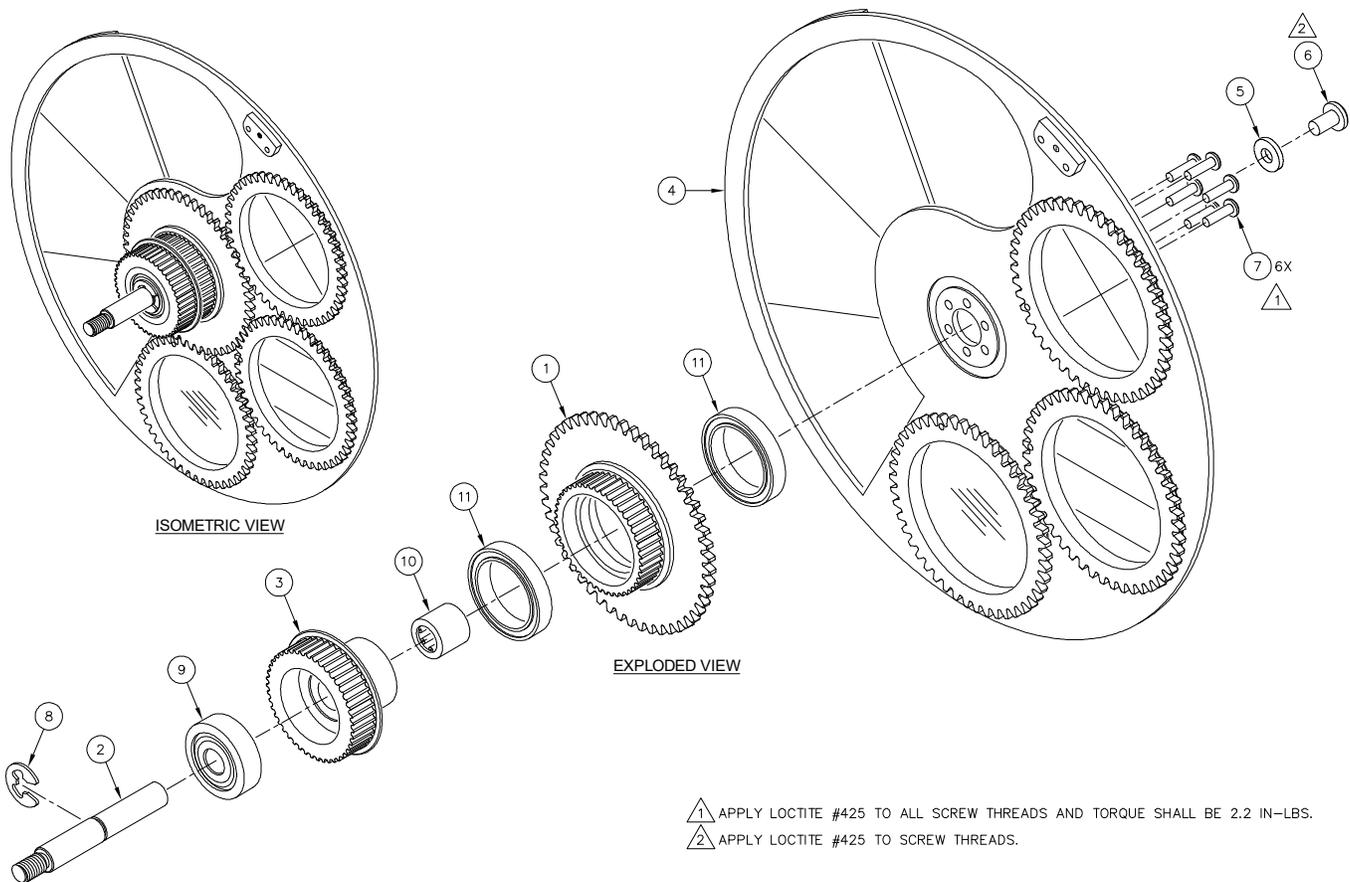


## Gag Wheel Assembly

21.9816.0550

Revision: Rev E0

No.	Item	Qty	UM	Description	Procedure
1	10.9816.0552	1	EA	ASSY, GAG SUN GEAR BEST BOY	-
2	10.9816.0554	1	EA	SHAFT, GAG WHEEL, BEST BOY	-
3	10.9816.0558	1	EA	PULLEY, GAG WHEEL DRIVE BEST BOY	-
4	22.9816.0545	1	EA	SUB-ASSEMBLY, GAG WHEEL	-
5	53.6528.0002.0	1	EA	WASHER, .140"ID, .312"OD .057-.067" THK NYLON	-
6	53.5506.0250	1	EA	SCREW, 6-32 X 1/4" PPSS	-
7	53.6659.0015	6	EA	SCREW, 2-56 X 1/4" PPSS	-
8	53.6676.0002.0	1	EA	RETAINER, E-CLIP, EXTERNAL, 6mm	-
9	54.1240.0003.0	1	EA	BEARING, 6 IDx19 ODx6 MM WIDTH, SEALED,SS	-
10	54.1240.0004.0	1	EA	BEARING, NEEDLE 6x10x9MM NON-STAINLESS "HK0609"	-
11	54.1240.0005.0	2	EA	BEARING, 17x23x4MM, SEALED, SUN GEAR	-





## Gag Wheel Sub Assembly

22.9816.0545

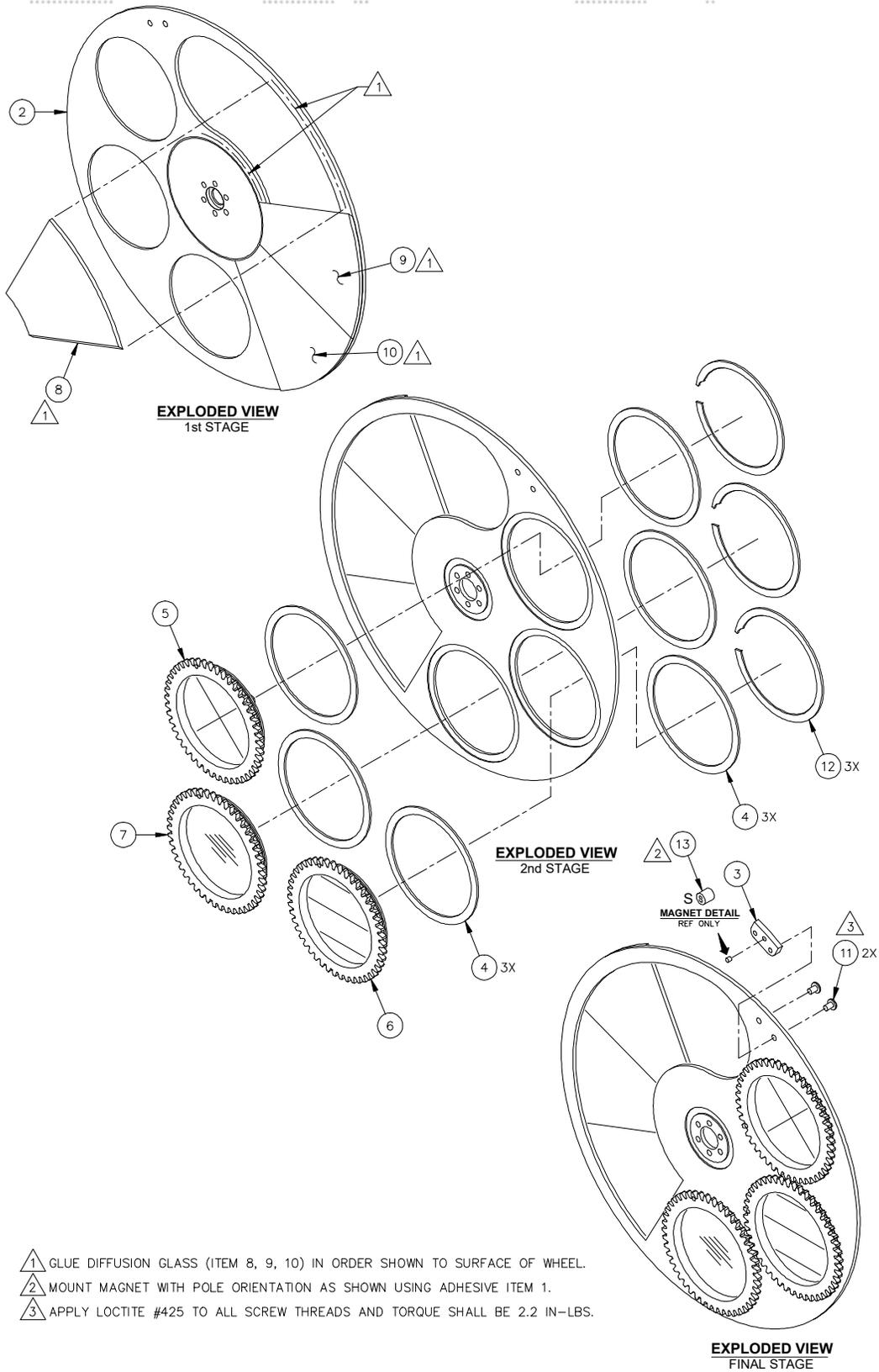
Revision: Rev A0

No.	Item	Qty	UM	Description	Procedure
1	06.6083.0001.0	-	-	RTV, 3145 CLEAR 305ML TUBE	-
2	10.9816.0551	1	EA	WHEEL, GAG, BEST BOY	-
3	10.9816.0557	1	EA	HOLDER, MAGNET, GAG WHEEL	-
4	10.9816.0571	6	EA	SLIP RING, GAG BEST BOY	-
5	22.9816.8001	1	EA	ASSY, 4 FACET PRISM GAG	-
6	22.9816.8002	1	EA	ASSY, EXTRUDER GAG	-
7	22.9816.8003	1	EA	ASSY, ELONGATOR GAG	-
8	41.9816.0547	1	EA	DIFFUSION GLASS, POSITION 1	-
9	41.9816.0548	1	EA	DIFFUSION GLASS, POSITION 2	-
10	41.9816.0549	1	EA	DIFFUSION GLASS, POSITION 3	-
11	53.6659.0532.0	2	EA	SCREW, 2-56 X 5-32" PPSS	-
12	54.2075.0002.0	3	EA	LOCK RING, SMALLEY #VSM-42	-
13	55.6876.0001	1	EA	MAGNET, NDFEB DISC/CYLINDER 1/16" X 1/16	-

Refer to illustration on the following page.

## Gag Wheel Sub Assembly (continued)

Refer to Parts List for "Gag Wheel Sub Assembly" on page 173.



## Aft Bulkhead Assembly

22.9817.0608

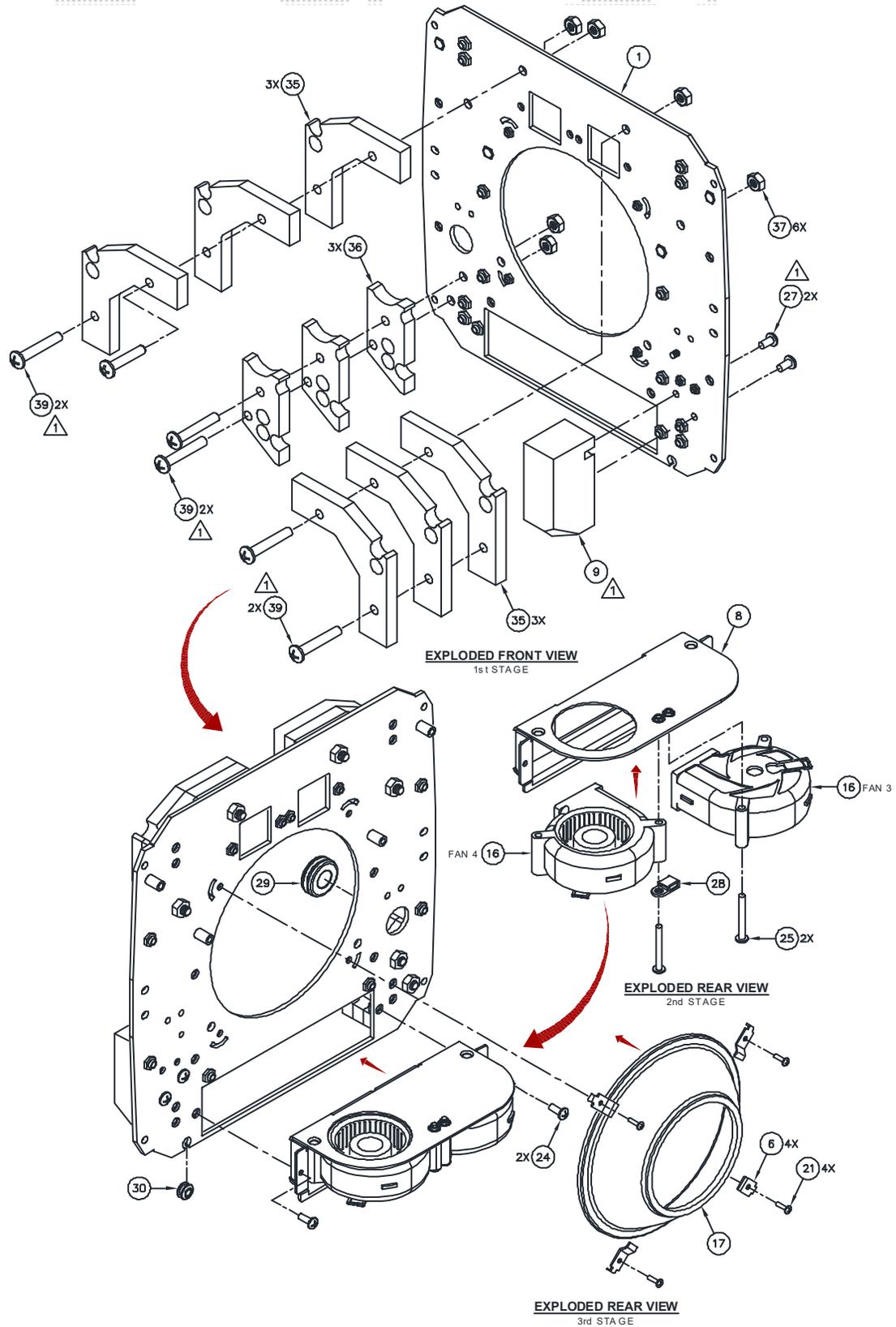
Revision: Rev D0

No.	Item	Qty	UM	Description	Procedure
1	10.9817.0608	1	EA	AFT BULKHEAD, BEST BOY HP SPOT	-
2	10.9815.0623	2	EA	DEFLECTOR, MAIN	-
3	10.9815.0624	2	EA	BRACKET, MOUNTING LAMP HOLDER	-
4	10.9817.0625	4	EA	BRACKET, HEAD COVER AFT MOUNTING, BEST BOY HP SPOT	-
5	10.9817.0626	1	EA	BRACKET, MOUNTING SAFETY SWITCH, BEST BOY HP SPOT	-
6	10.9815.0627	4	EA	REFLECTOR MOUNTING CLIP	-
7	10.9817.0632	1	EA	BRACKET, THERMAL SWITCH MOUNTING, BEST BOY HP SPOT	-
8	10.9817.0641	1	EA	BRACKET, MAIN AFT BLOWER BEST BOY HP SPOT	-
9	10.9817.0650	1	EA	COUNTER WEIGHT, BEST BOY HP SPOT	-
11	10.9817.0685	2	EA	BAFFLE, AFT LIGHT BEST BOY HP SPOT	-
12	12.2003.0001.0	1	EA	ASSY, MODIFIED SAFETY SWITCH, HIGH TEMP BB WASH	-
13	21.9817.0616	1	EA	ASSY, UVIR WASH W/UVIR GLASS & LENS, BEST BOY HP SPOT	-
14	22.9817.0620	1	EA	ASSY, LAMP BOX	-
15	25.9815.0954	1	EA	CABLE ASSY, HEAD TO LAMP HOUSE GND	-
16	25.9815.0994	4	EA	CABLE ASSY, HEAD FAN (SAN ACE)	page 57
17	42.9815.0161	1	EA	RETRO-REFLECTOR, WASH	page 87
19	53.2200.0008	2	EA	NUT, 8-32 KEPS SS	-
20	53.5504.0250	2	EA	SCREW, 4-40 X 1/4" PPSS	-
21	53.5504.0375	6	EA	SCREW, 4-40 X 3/8" PPSS	-
22	53.6519.0001	2	EA	SCREW, 4-40 X 5/8" PPZ	-
23	53.5506.0312	4	EA	SCREW, 6-32 X 5/16" PPSS	-
24	53.5508.0437	24	EA	SCREW, 8-32 X 7/16" PPSS	-
25	53.6575.0005	8	EA	SCREW, 8-32 X 1-1/2" PPZ	-
26	53.6619.0250.0	2	EA	SCREW, 8-32 X 1/4" TRUSS HD PHILLIPS SS	-
27	53.5510.0375	2	EA	SCREW, 10-32 X 3/8" PPSS	-
28	55.2178.0001	5	EA	CABLE ANCHOR MOUNT, #8 OFFSET SCREW MOUNTING	-
29	55.6541.0015.0	1	EA	GROMMET, SILICONE, 1/2" ID, 1-1/16" OD, 1/8" PANEL	-
30	55.6541.0016.0	1	EA	GROMMET, SILICONE, 3/16" ID, 7/16" OD, 1/8" PANEL	-
31	55.6677.0056.0	2	EA	WASHER TEFLON, .28 ID X .50 OD X .031 THK	-
32	74.1034.0001	1	EA	SWITCH, THERMAL 15AMP 315 DEGREE F OPEN	-
33	10.9817.0652	2	EA	LIGHT SHIELD, FAN SIDE, BEST BOY HP SPOT	-
34	10.9817.0653	1	EA	LIGHT SHIELD, PINCH SIDE, BEST BOY HP SPOT	-
35	10.9817.0670	6	EA	COUNTERWEIGHT, LEFT, BEST BOY HP SPOT	-
36	10.9817.0671	3	EA	COUNTERWEIGHT, RIGHT, BEST BOY HP SPOT	-
37	53.2020.0001	6	EA	NUT, 1/4-20 HEX STL ZINC PLTD	-
38	53.6609.0001	4	EA	SCREW, 6-32 X 3/8" PFZ	-
39	53.6653.0002	6	EA	SCREW, 1/4-20 X 1 1/2" LG PPZ	-
40	55.6543.0001	0.125	FT	GROMMET STRIP, SERRATED PE .062" PANEL .156" DEEP 120F	-

Refer to illustrations on the following pages.

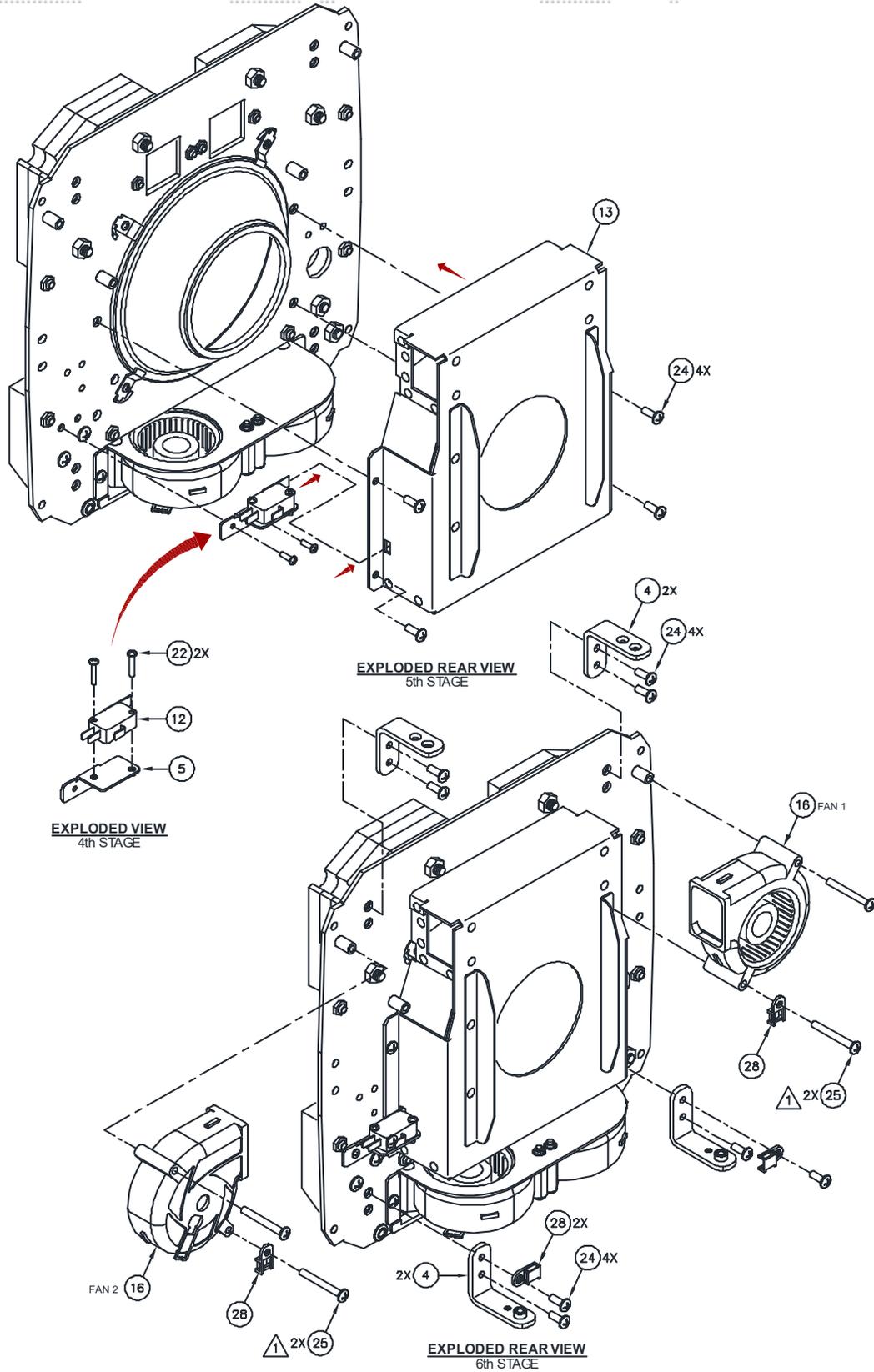
## Aft Bulkhead Assembly (continued)

Refer to Parts List for "Aft Bulkhead Assembly" on page 175.



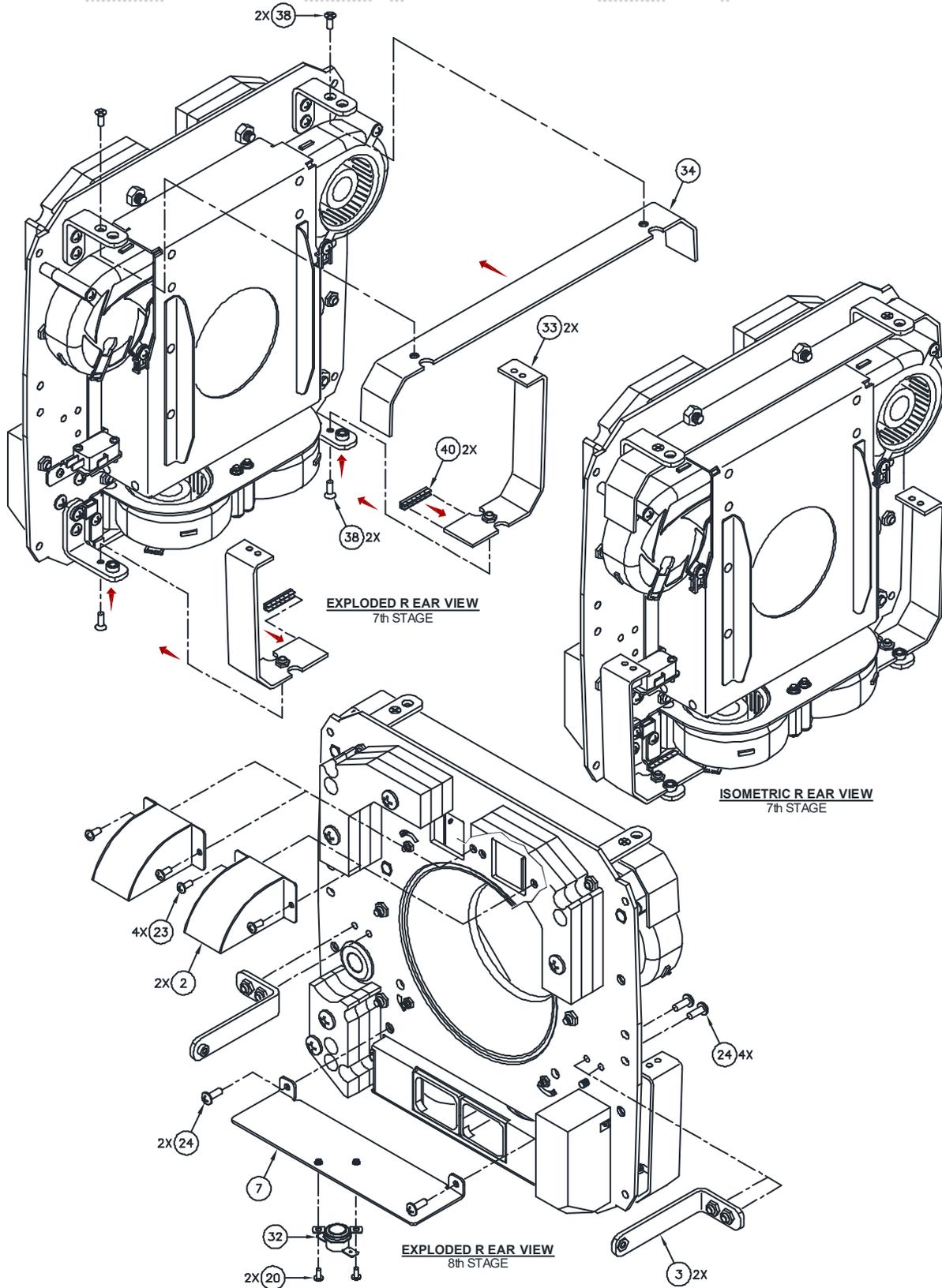
## Aft Bulkhead Assembly (continued)

Refer to Parts List for "Aft Bulkhead Assembly" on page 175.



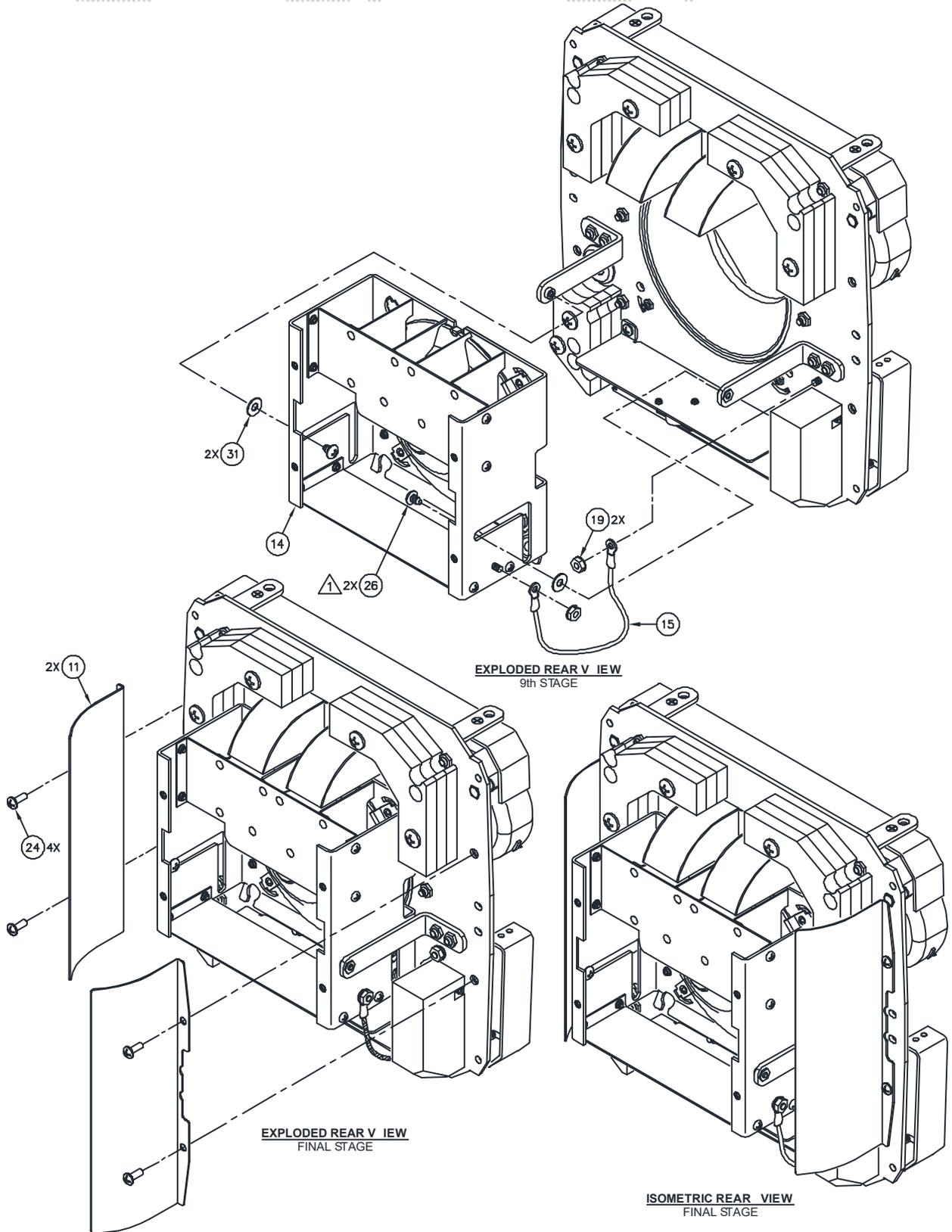
## Aft Bulkhead Assembly (continued)

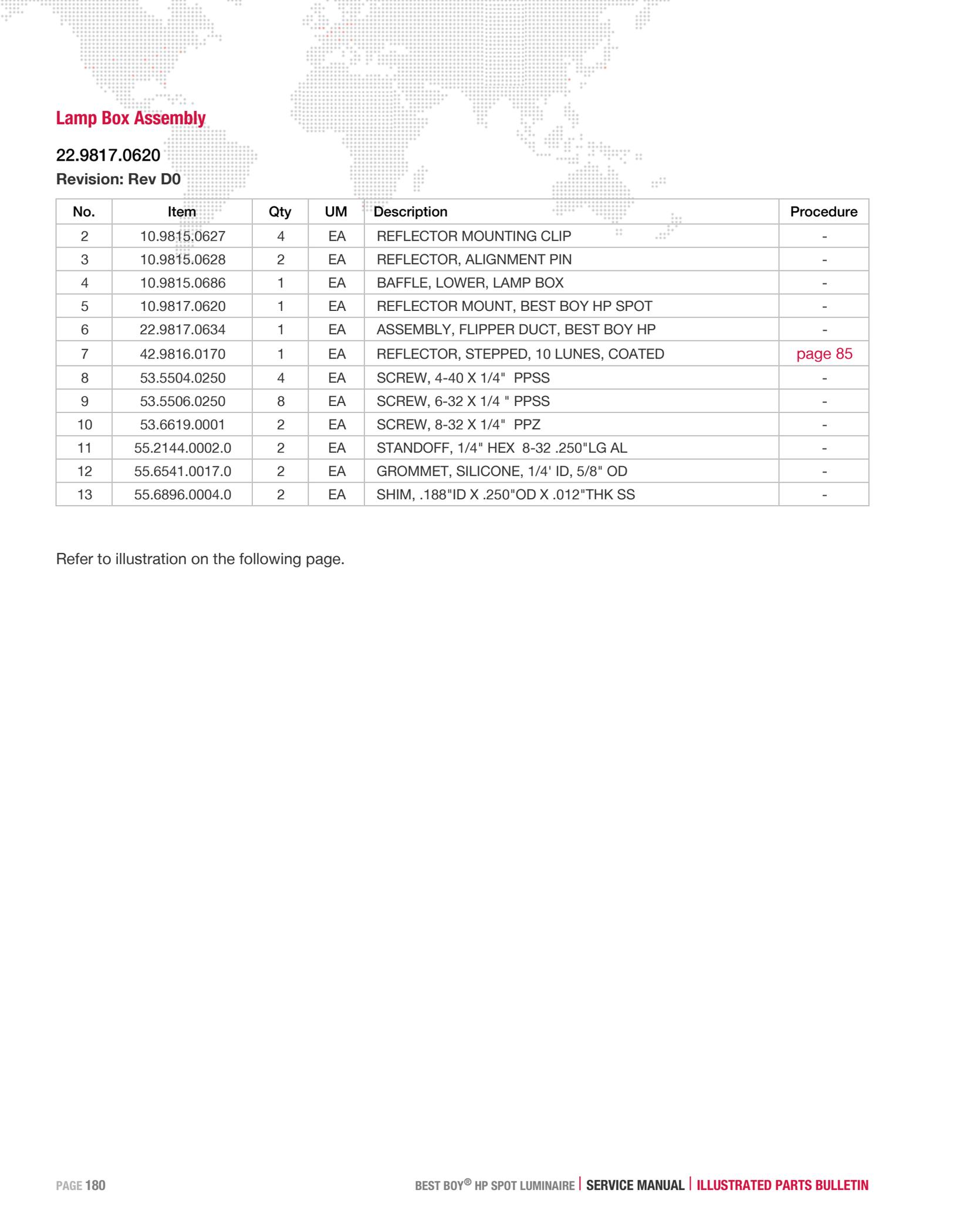
Refer to Parts List for "Aft Bulkhead Assembly" on page 175.



## Aft Bulkhead Assembly (continued)

Refer to Parts List for "Aft Bulkhead Assembly" on page 175.





## Lamp Box Assembly

22.9817.0620

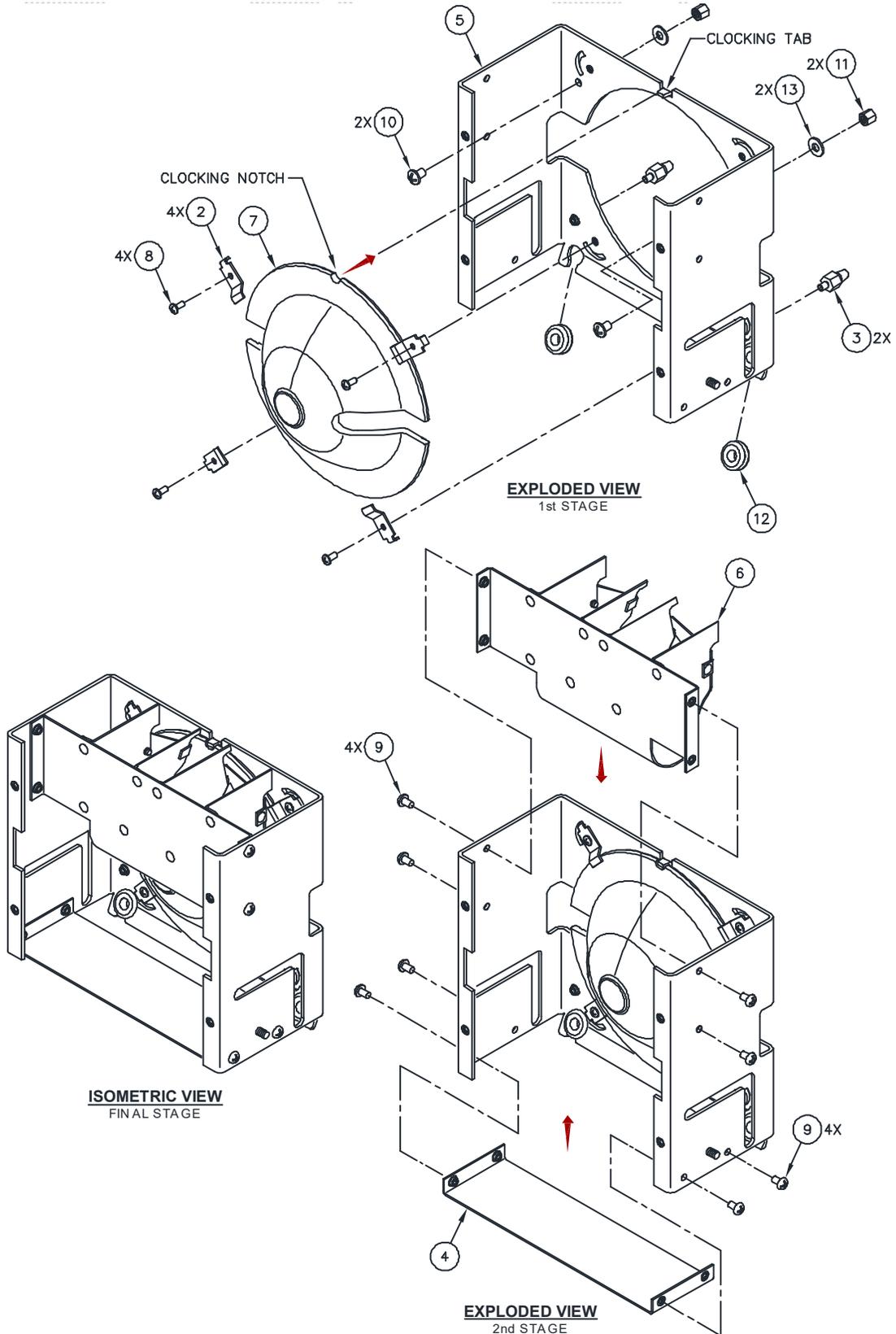
Revision: Rev D0

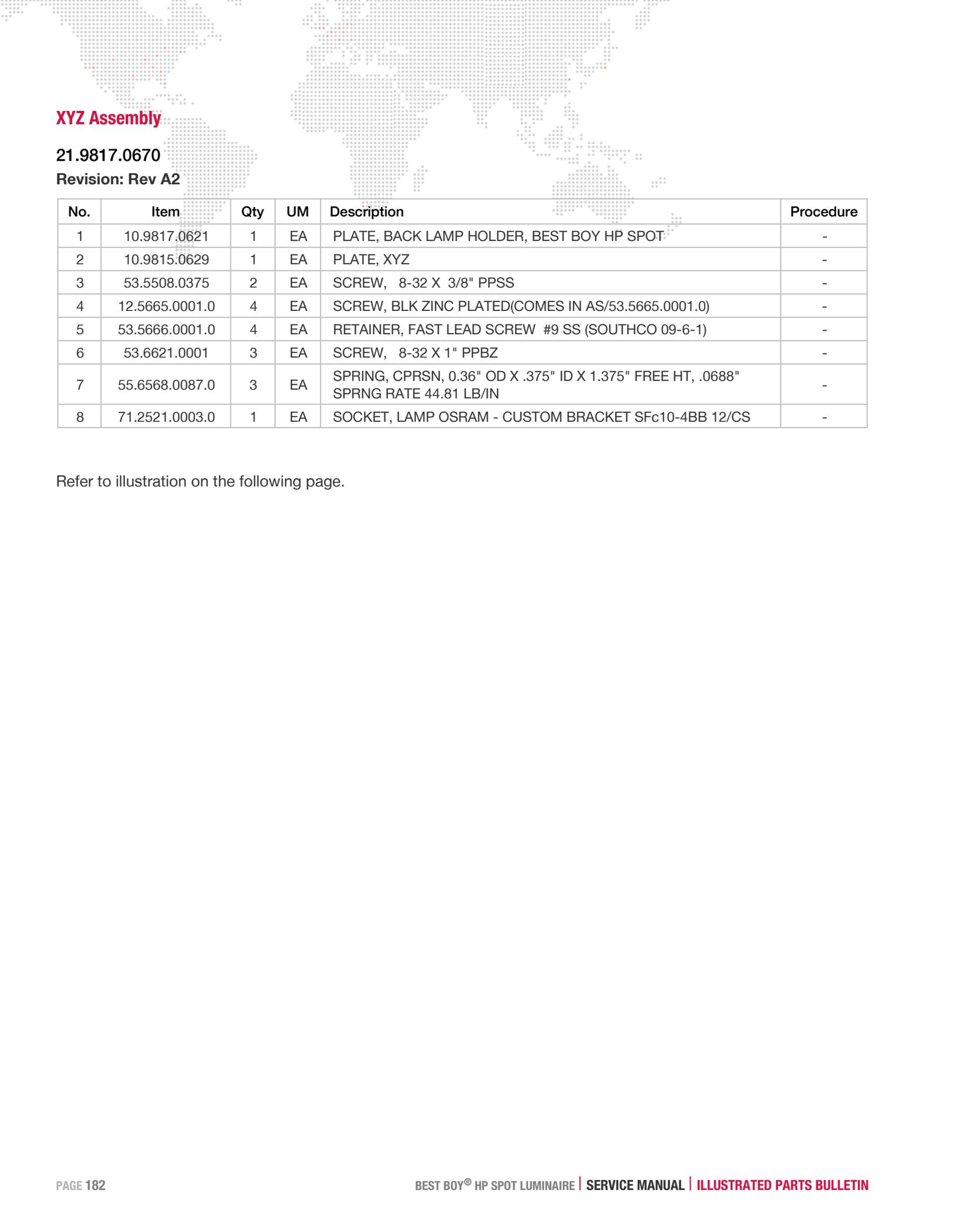
No.	Item	Qty	UM	Description	Procedure
2	10.9815.0627	4	EA	REFLECTOR MOUNTING CLIP	-
3	10.9815.0628	2	EA	REFLECTOR, ALIGNMENT PIN	-
4	10.9815.0686	1	EA	BAFFLE, LOWER, LAMP BOX	-
5	10.9817.0620	1	EA	REFLECTOR MOUNT, BEST BOY HP SPOT	-
6	22.9817.0634	1	EA	ASSEMBLY, FLIPPER DUCT, BEST BOY HP	-
7	42.9816.0170	1	EA	REFLECTOR, STEPPED, 10 LUNES, COATED	page 85
8	53.5504.0250	4	EA	SCREW, 4-40 X 1/4" PPSS	-
9	53.5506.0250	8	EA	SCREW, 6-32 X 1/4 " PPSS	-
10	53.6619.0001	2	EA	SCREW, 8-32 X 1/4" PPZ	-
11	55.2144.0002.0	2	EA	STANDOFF, 1/4" HEX 8-32 .250"LG AL	-
12	55.6541.0017.0	2	EA	GROMMET, SILICONE, 1/4" ID, 5/8" OD	-
13	55.6896.0004.0	2	EA	SHIM, .188"ID X .250"OD X .012"THK SS	-

Refer to illustration on the following page.

## Lamp Box Assembly (continued)

Refer to Parts List for "Lamp Box Assembly" on page 180.





## XYZ Assembly

21.9817.0670

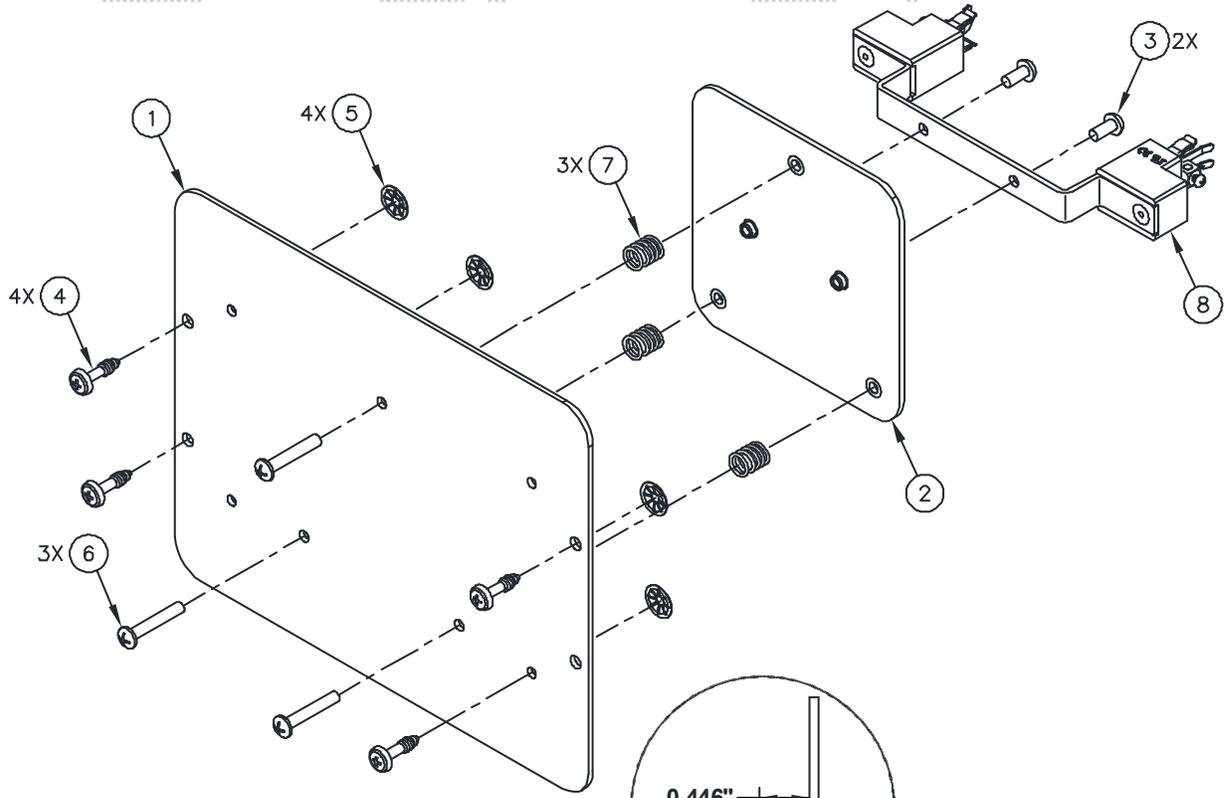
Revision: Rev A2

No.	Item	Qty	UM	Description	Procedure
1	10.9817.0621	1	EA	PLATE, BACK LAMP HOLDER, BEST BOY HP SPOT	-
2	10.9815.0629	1	EA	PLATE, XYZ	-
3	53.5508.0375	2	EA	SCREW, 8-32 X 3/8" PPSS	-
4	12.5665.0001.0	4	EA	SCREW, BLK ZINC PLATED(COMES IN AS/53.5665.0001.0)	-
5	53.5666.0001.0	4	EA	RETAINER, FAST LEAD SCREW #9 SS (SOUTHCO 09-6-1)	-
6	53.6621.0001	3	EA	SCREW, 8-32 X 1" PPBZ	-
7	55.6568.0087.0	3	EA	SPRING, CPRSN, 0.36" OD X .375" ID X 1.375" FREE HT, .0688" SPRNG RATE 44.81 LB/IN	-
8	71.2521.0003.0	1	EA	SOCKET, LAMP OSRAM - CUSTOM BRACKET SFc10-4BB 12/CS	-

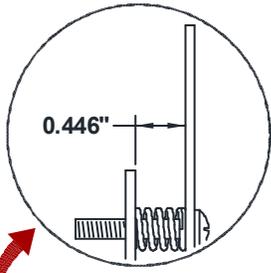
Refer to illustration on the following page.

# XYZ Assembly (continued)

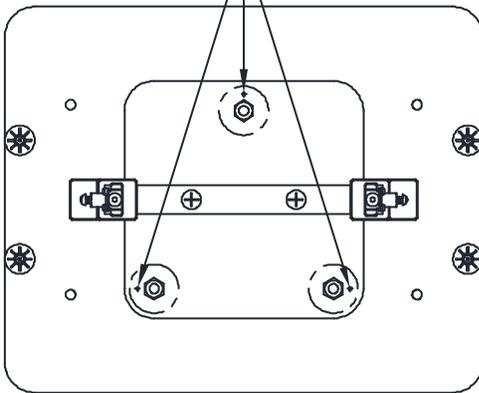
Refer to Parts List for "XYZ Assembly" on page 182.



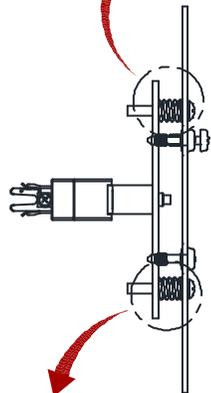
**EXPLODED VIEW**  
SCALE 3:8



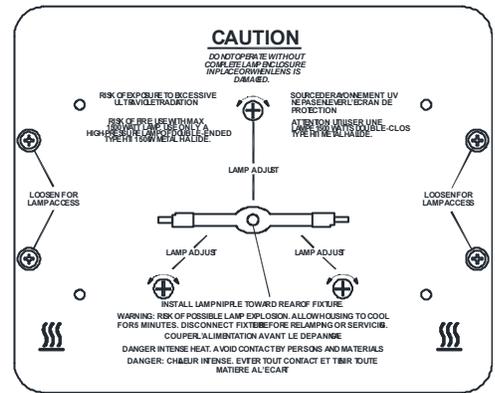
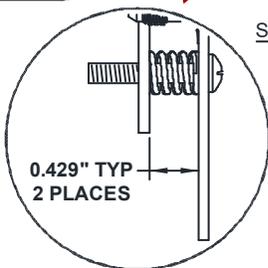
MEASUREMENT POINTS



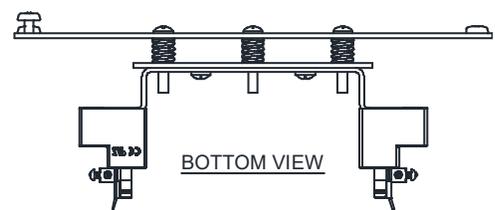
**FRONT VIEW**



**SIDE VIEW**



**REAR VIEW**



**BOTTOM VIEW**



## Head Fan Assembly

22.9816.0634

Revision: Rev B0

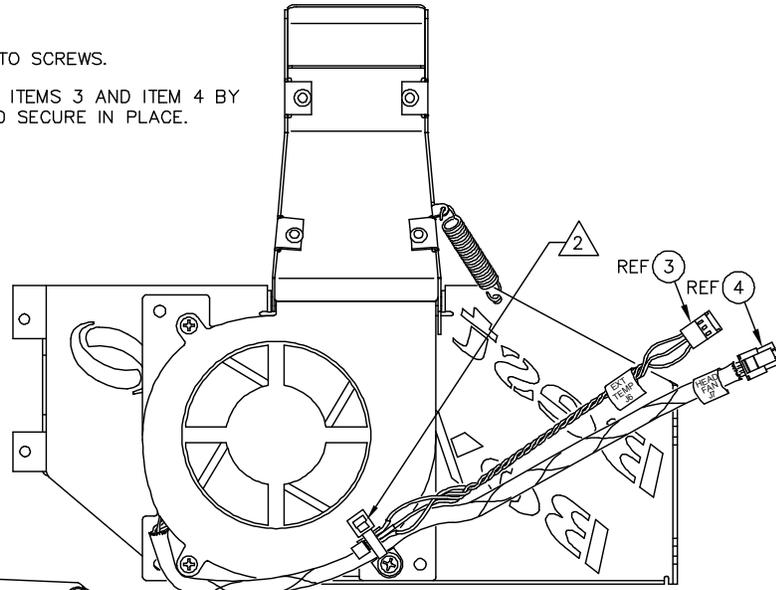
No.	Item	Qty	UM	Description	Procedure
1	10.9816.0635	1	EA	MOUNT, HEAD FAN ASSY BEST BOY	-
2	10.9816.0636	1	EA	DUCT, HEAD FAN ASSY, BEST BOY	-
3	25.9816.0976	1	EA	CABLE ASSY, HEAD EXTERNAL TEMP SENSOR	-
4	25.9816.0996.A	1	EA	CABLE ASSY, HEAD FAN, 24V NO SENSOR	-
5	53.5506.1375	1	EA	SCREW, 6-32 X 1 3/8"LG PPBZ	-
6	53.6571.0002	2	EA	SCREW, 6-32 X 1 1/4"LG PPB	-
7	55.2178.0001	1	EA	CABLE ANCHOR MOUNT, #8 SCREW MOUNTING	-
8	55.2186.0001	1	EA	CABLE TIE, .10"WD 4.00"LG SMALL	-
9	55.6525.0006.0	2	EA	WASHER, .32"OD .14"ID .07"MAX THK NYLON	-
10	55.6528.0001	1	EA	WASHER, #6 FLAT ZINC	-
11	55.6772.0003.0	1	EA	PIN, COTTER 1/8" DIA X 3"LG SS	-
12	55.6789.0003.0	1	EA	SPRING, FAN DUCT	-

Refer to illustration on next page.

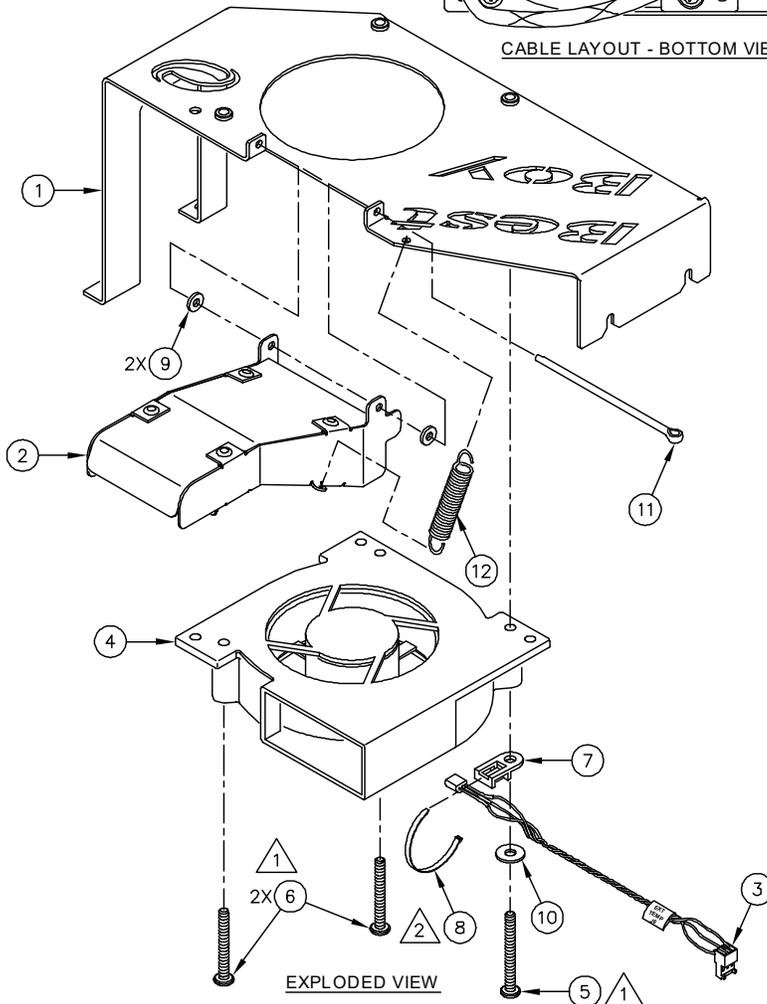
## Head Fan Assembly (continued)

Refer to Parts List for "Head Fan Assembly" on page 184.

- 1 APPLY LOCTITE #242 TO SCREWS.
- 2 ATTACH BOTH CABLES ITEMS 3 AND ITEM 4 BY USING A CABLE TIE TO SECURE IN PLACE.



CABLE LAYOUT - BOTTOM VIEW



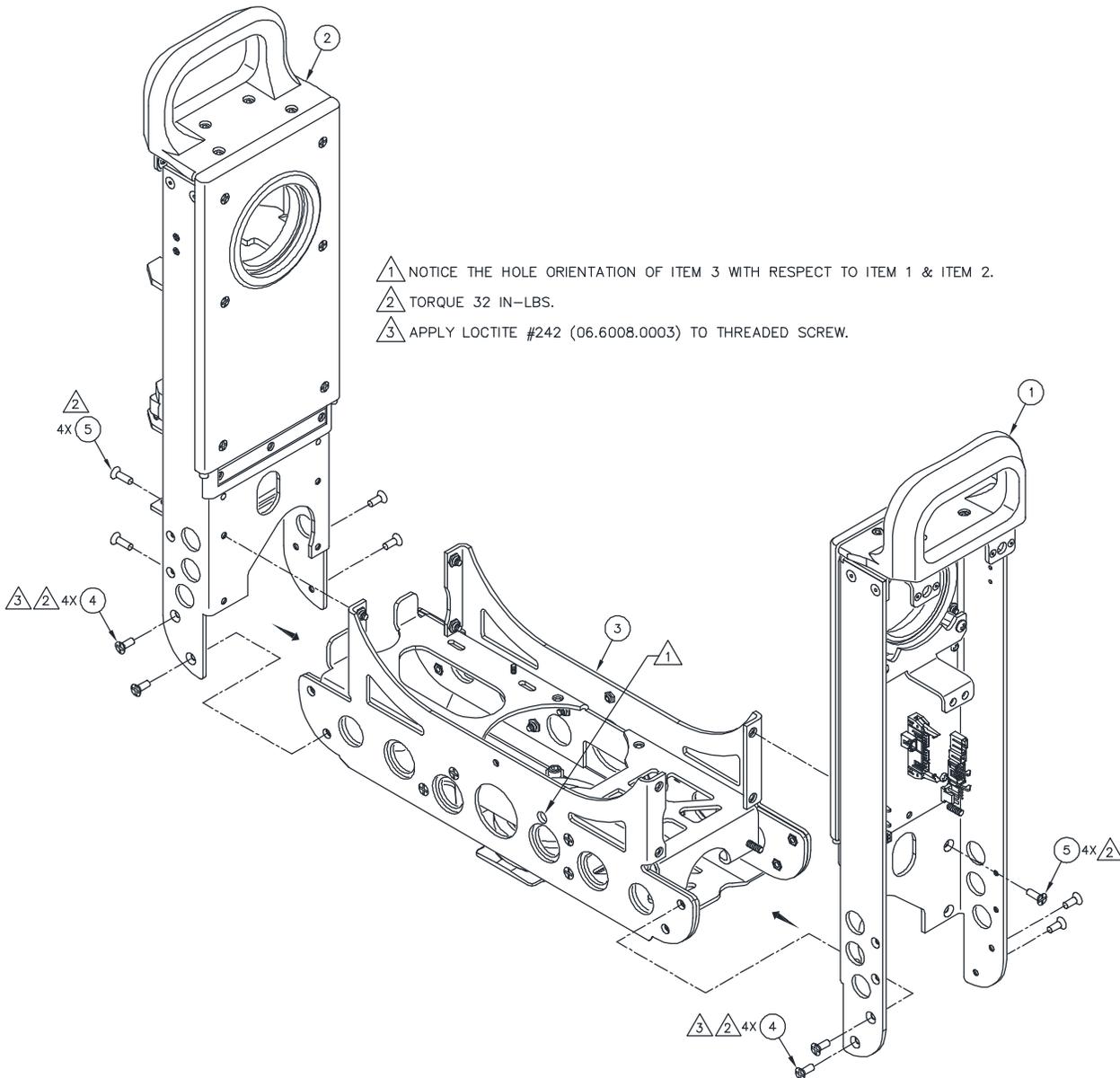
# YOKE

## Yoke Assembly

21.9817.0700

Revision: Rev A0

No.	Item	Qty	UM	Description	Procedure
1	21.9816.0701	1	EA	ASSEMBLY, YOKE LEG TILT	-
2	21.9817.0702	1	EA	ASSY, YOKE LEG PAN, BEST BOY HP SPOT	-
3	21.9816.0703	1	EA	ASSEMBLY, CROSSMEMBER	-
4	53.6697.0003.0	8	EA	SCREW, 10-32 X 3/8" PFSS	-
5	53.6624.0003	8	EA	SCREW, 10-32 X 1/2" PFSS	-



## Yoke Leg Tilt Assembly

21.9816.0701

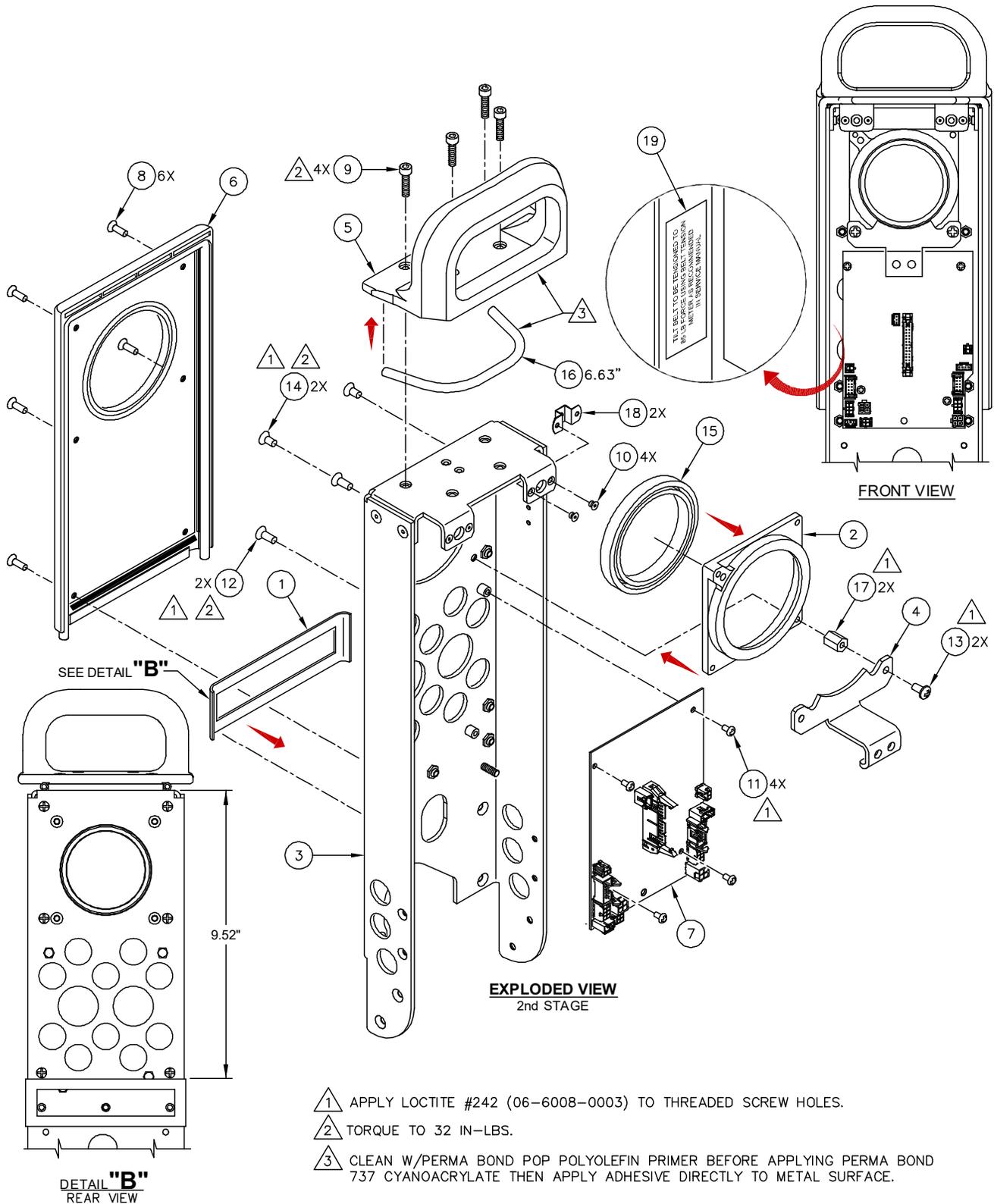
Revision: Rev F0

No.	Item	Qty	UM	Description	Procedure
1	10.9816.0732	1	EA	GASKET, PAN/SIDE SHIELD, FLAT	-
2	10.9816.0736	1	EA	PAN BEARING RETAINER, BEST BOY	-
3	10.9816.0747	1	EA	YOKE LEG, BESTBOY	-
4	10.9816.0760	1	EA	TILT STOP PLATE, BESTBOY	-
5	10.9816.1748.02	1	EA	HANDLE, YOKE, AS MACHINED	-
6	22.9816.0750	1	EA	ASSY, YOKE SIDE SHIELD	-
7	24.9816.0765	1	EA	PCB ASSY, YOKE DRIVER	-
8	53.6552.0002	6	EA	SCREW, 8-32 X 1/2" PFB	-
9	53.9816.7500.0	4	EA	SCREW, 10-32 X 3/4" SHCS STEEL BLK ZINC	-
10	53.6530.0024.0	4	EA	RIVET, 1/8"OD .126-187"GRP CSK POP ALUM	-
11	53.5506.0250	4	EA	SCREW, 6-32 X 1/4" PPSS	-
12	53.6624.0003	2	EA	SCREW, 10-32 X 1/2" PFSS	-
13	53.6697.0002.0	2	EA	(DUPLICATE USE 53.5510.0375)SCREW, 10-32 X 3/8" PPSS	-
14	53.6697.0003.0	2	EA	SCREW, 10-32 X 3/8" PFSS	-
15	54.1240.0007.0	1	EA	BEARING, 65MM X 85MM X 10MM SMR6813-2RS	-
16	55.6738.0004.01	0.55	FT	TUBING, SILICONE .25"OD X .187"ID WALL X ROLL 50 5 DURO	-
17	55.6873.0002.0	2	EA	STANDOFF, HEX 10-32 1/2" LX 1/2"HEX	-
18	55.6880.0001.0	2	EA	RECEPT, FAST LEAD, #12 SADDLE RIVET-ON SS 12-11043-12	-
19	04.9812.0046	1	EA	LABEL, BELT TENSION	-

Refer to illustration on next page.

## Yoke Leg Tilt Assembly (continued)

Refer to Parts List for "Yoke Leg Tilt Assembly" on page 187.



## Yoke Leg Pan Assembly

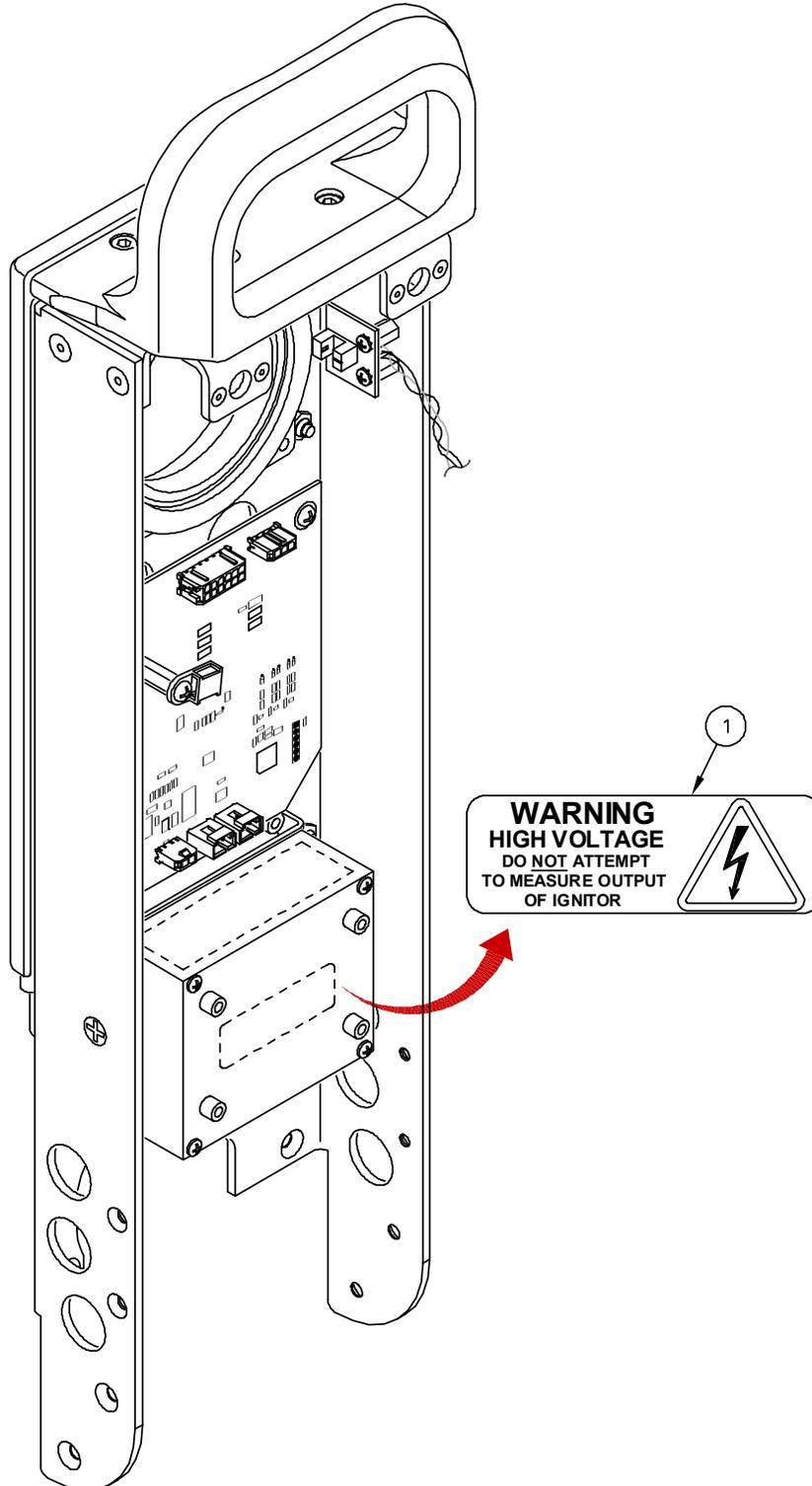
21.9817.0702

Revision: Rev C0

No.	Item	Qty	UM	Description	Procedure
1	04.9816.0053	1	EA	LABEL, HIGH VOLTAGE WARNING	-
2	10.9816.0732	1	EA	GASKET, PAN/SIDE SHIELD, FLAT	-
3	10.9816.0736	1	EA	PAN BEARING RETAINER, BEST BOY	-
4	10.9816.0747	1	EA	YOKE LEG, BESTBOY	-
5	10.9816.1748.02	1	EA	HANDLE, YOKE, AS MACHINED	-
6	10.9817.0764	1	EA	BRACKET, IGNITOR BEST BOY HP SPOT	-
7	12.9815.0787	1	EA	IGNITOR, MODIFIED	page 74
8	22.9816.0750	1	EA	ASSY, YOKE SIDE SHIELD	-
11	25.9816.0981	1	EA	CABLE ASSEMBLY, TILT COT SENSOR	page 76
12	53.2001.0001	3	EA	NUT, 10-32 KEPS ZINC PLATED	page 85
13	53.5504.0250	2	EA	SCREW, 4-40 X 1/4" PPSS	-
14	53.5534.0250	2	EA	SCREW, 4-40 X 1/4" PFSS	-
15	53.5506.0250	3	EA	SCREW, 6-32 X 1/4" PPSS	-
16	53.6552.0002	6	EA	SCREW, 8-32 X 1/2" PFB	-
17	53.6581.0001	4	EA	SCREW, 4-40 X 1-3/8" PPZ	-
18	53.6530.0024.0	4	EA	RIVET, 1/8"OD .126-187"GRP CSK POP ALUM	-
20	53.6697.0003.0	4	EA	SCREW, 10-32 X 3/8" PFSS	-
21	53.9816.7500.0	4	EA	SCREW, 10-32 X 3/4" SHCS STEEL BLK ZINC	-
22	54.1240.0007.0	1	EA	BEARING, 65MM X 85MM X 10MM SMR6813-2RS	-
23	55.2178.0001	1	EA	CABLE ANCHOR MOUNT, #8 OFFSET SCREW MOUNTING	-
24	55.6664.0001	2	EA	STANDOFF, 1/4 "HEX 4-40 .375"LG ALUM	-
25	55.6669.0026.0	1	EA	STANDOFF, 1/4 "HEX 6-32 1.5"LG MF STEEL ZINC PLATED	-
26	55.6738.0004.01	0.55	FT	TUBING, SILICONE .25"OD X .187"ID WALL X ROLL 50 5 DURO	-
27	55.6880.0001.0	2	EA	RECEPT, FAST LEAD, #12 SADDLE RIVET-ON SS 12-11043-12	-
28	12.9815.0787	1	EA	IGNITOR, MODIFIED	-

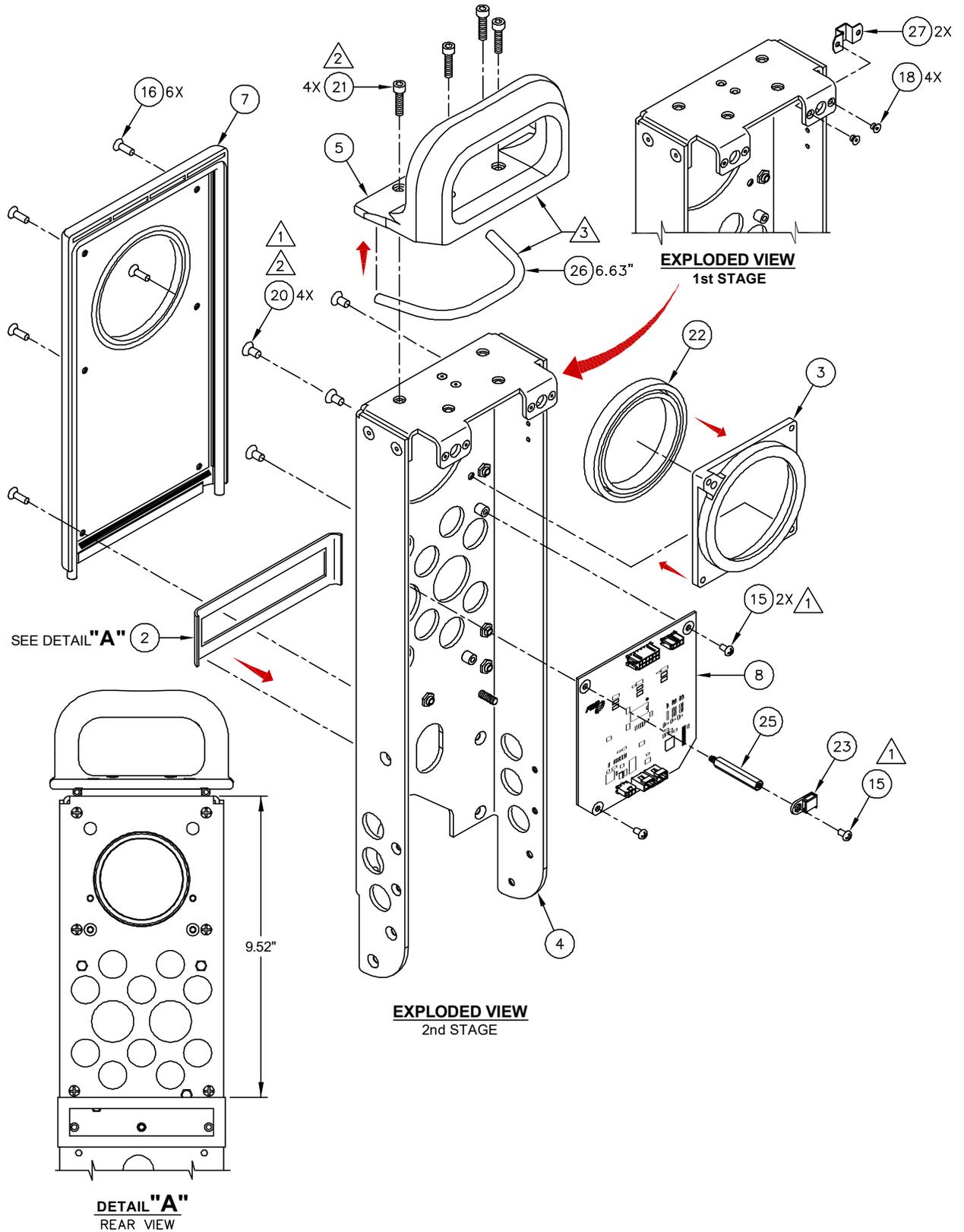
Refer to Parts List for "**Yoke Leg Pan Assembly**" on page 189. Also refer to illustrations on the following pages.

- 1 APPLY LOCTITE #242 (06-6008-0003) TO THREADED SCREW HOLES.
- 2 TORQUE TO 32 IN-LBS.
- 3 CLEAN W/PERMA BOND POP POLYOLEFIN PRIMER BEFORE APPLYING PERMA BOND 737 CYANOACRYLATE THEN APPLY ADHESIVE DIRECTLY TO METAL/PLASTIC SURFACE.



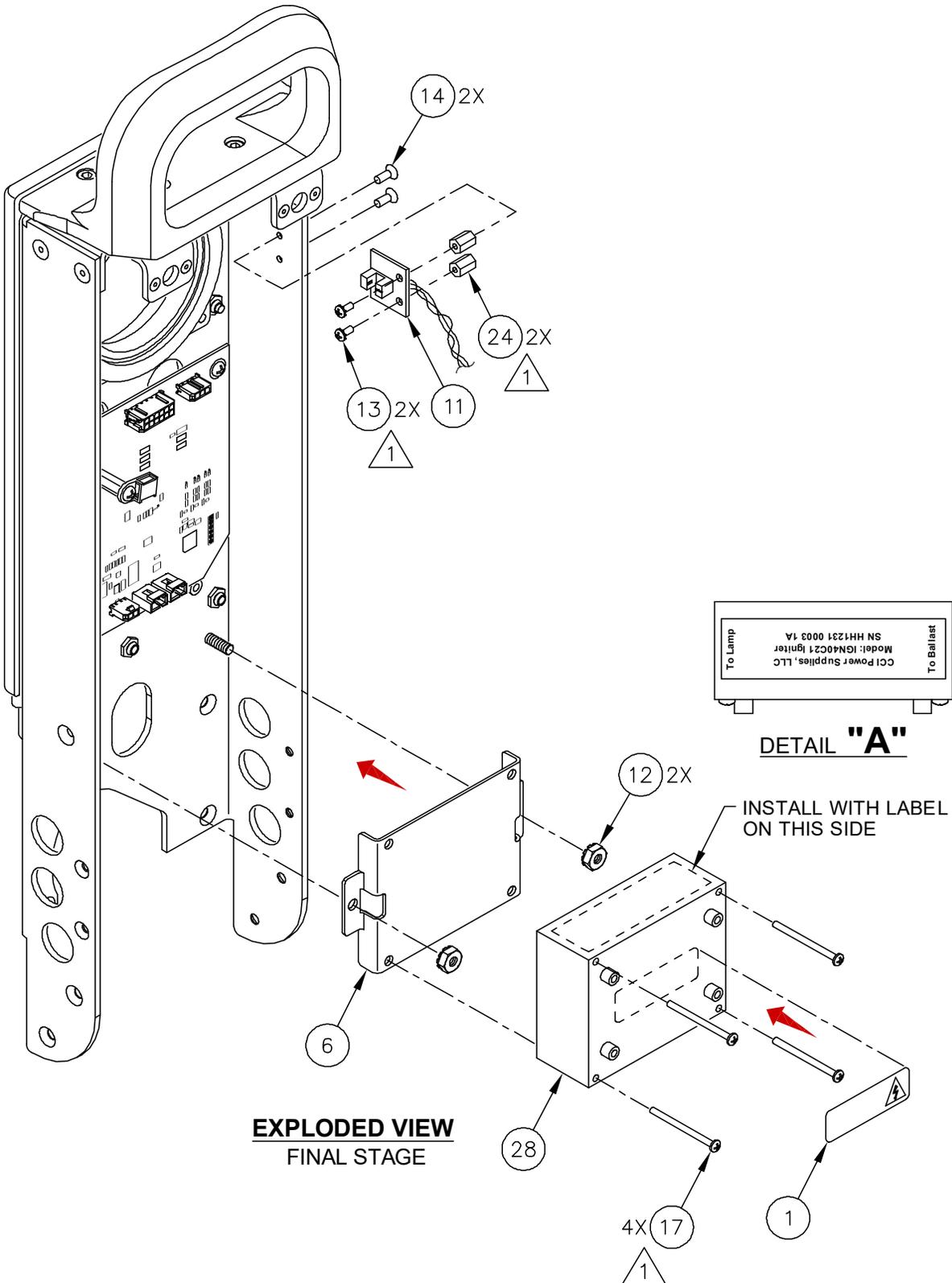
## Yoke Leg Pan Assembly (continued)

Refer to Parts List for "Yoke Leg Pan Assembly" on page 189.



## Yoke Leg Pan Assembly (continued)

Refer to Parts List for "Yoke Leg Pan Assembly" on page 189.



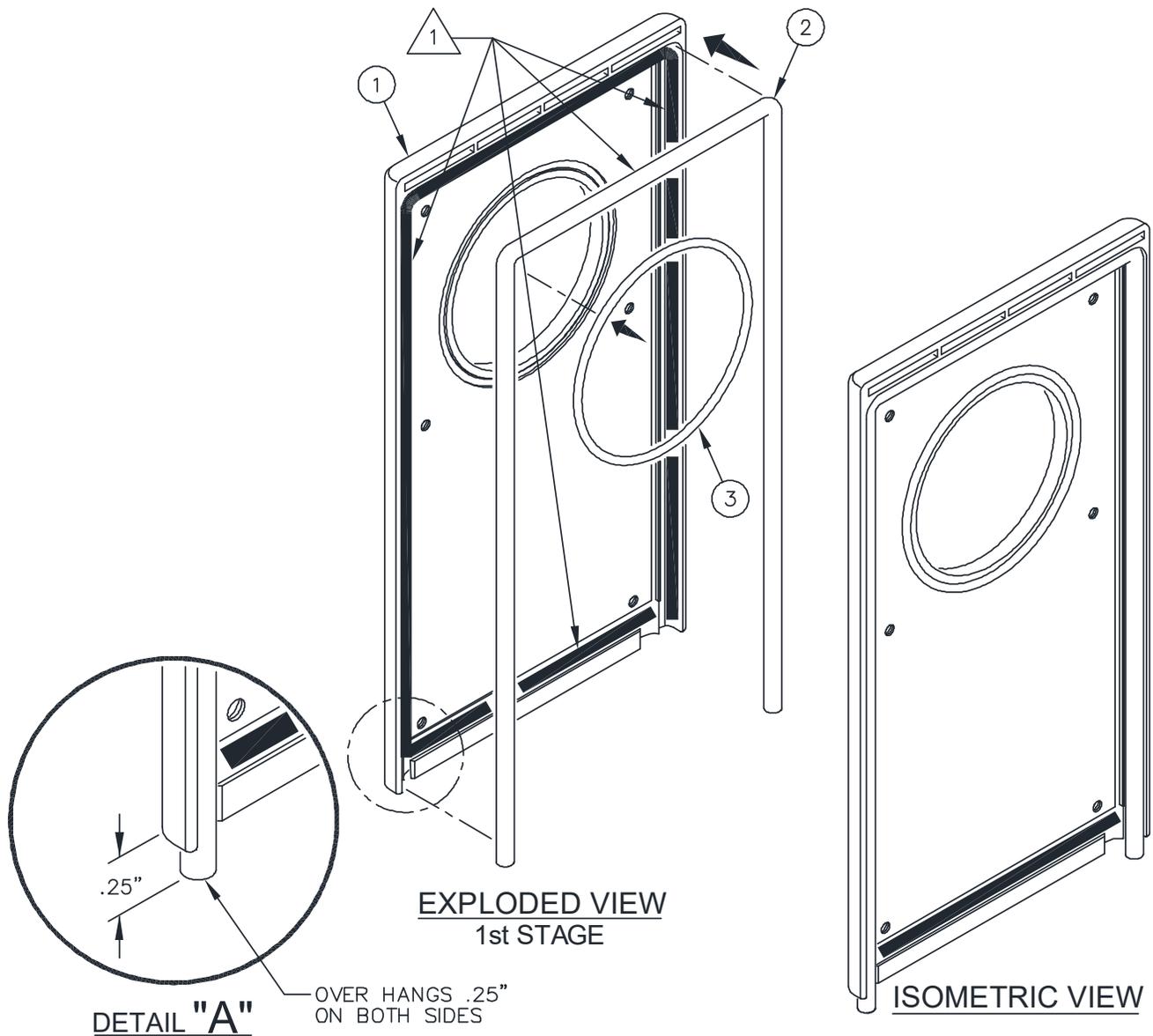
## Yoke Side Shield Assembly

22.9816.0750

Revision: Rev A0

No.	Item	Qty	UM	Description	Procedure
1	10.9816.0750	1	EA	YOKE SIDE SHIELD	-
2	55.6738.0006.0	26	IN	TUBING, SILICONE .250"OD X .150" ID	-
3	55.9816.0325.0	1	EA	O RING, 3.25"ID X 3.50" OD, 1/8" SEC	-

- 1 CLEAN W/PERMA BOND POP POLYOLEFIN PRIMER BEFORE APPLYING PERMA BOND 737 CYANOACRYLATE THEN APPLY ADHESIVE DIRECTLY TO METAL/PLASTIC SURFACE. DO NOT STRETCH TUBING WHEN INSTALLING.



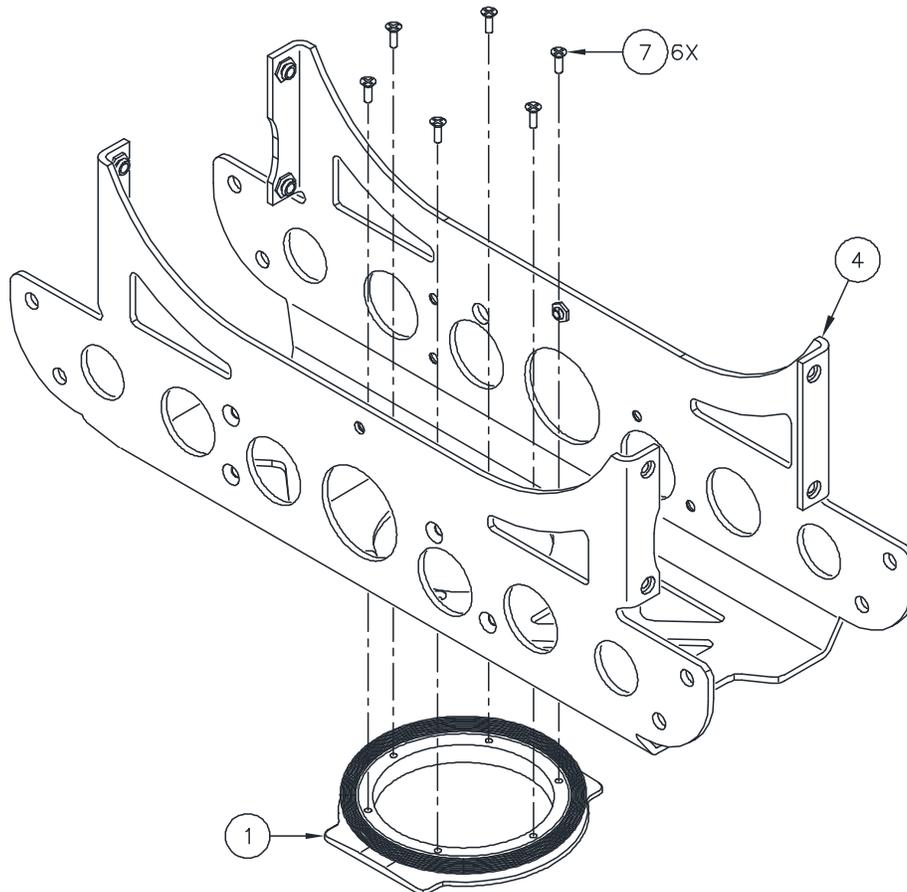
## Yoke Crossmember Assembly

21.9816.0703

Revision: Rev B1

No.	Item	Qty	UM	Description	Procedure
1	22.9816.0735	1	EA	ASSY, SEALING RING, YOKE COVER	-
2	10.9816.0736	1	EA	PAN BEARING RETAINER, BEST BOY	-
3	10.9816.0739	1	EA	YOKE LOWER CROSS MEMBER, BEST BOY	-
4	10.9816.0762	1	EA	YOKE UPPER CROSS MEMBER, BEST BOY	-
5	53.6624.0003	12	EA	SCREW, 10-32 X 1/2" PFSS	-
6	53.6653.0042.0	1	EA	SCREW, 1/4-20 x 3/8" SOC CAP	-
7	53.6522.0006.0	6	EA	SCREW, 6-32 X 3/8" TYPE F TAPPING, PF	-
8	54.1240.0007.0	1	EA	BEARING, 65MM X 85MM X 10MM SMR6813-2	-

- ① APPLY LOCTITE #242 (06.6008.0003) TO THREADS.
- ② TORQUE TO 32 IN-LBS.
- ③ TORQUE TO 80 IN-LBS.
- ④ NOTICE THE HOLE ORIENTATION OF ITEM 2 WITH RESPECT TO ITEM 4.
- ⑤ NOTICE THE HOLE ORIENTATION OF ITEM 3 WITH RESPECT TO ITEM 2.

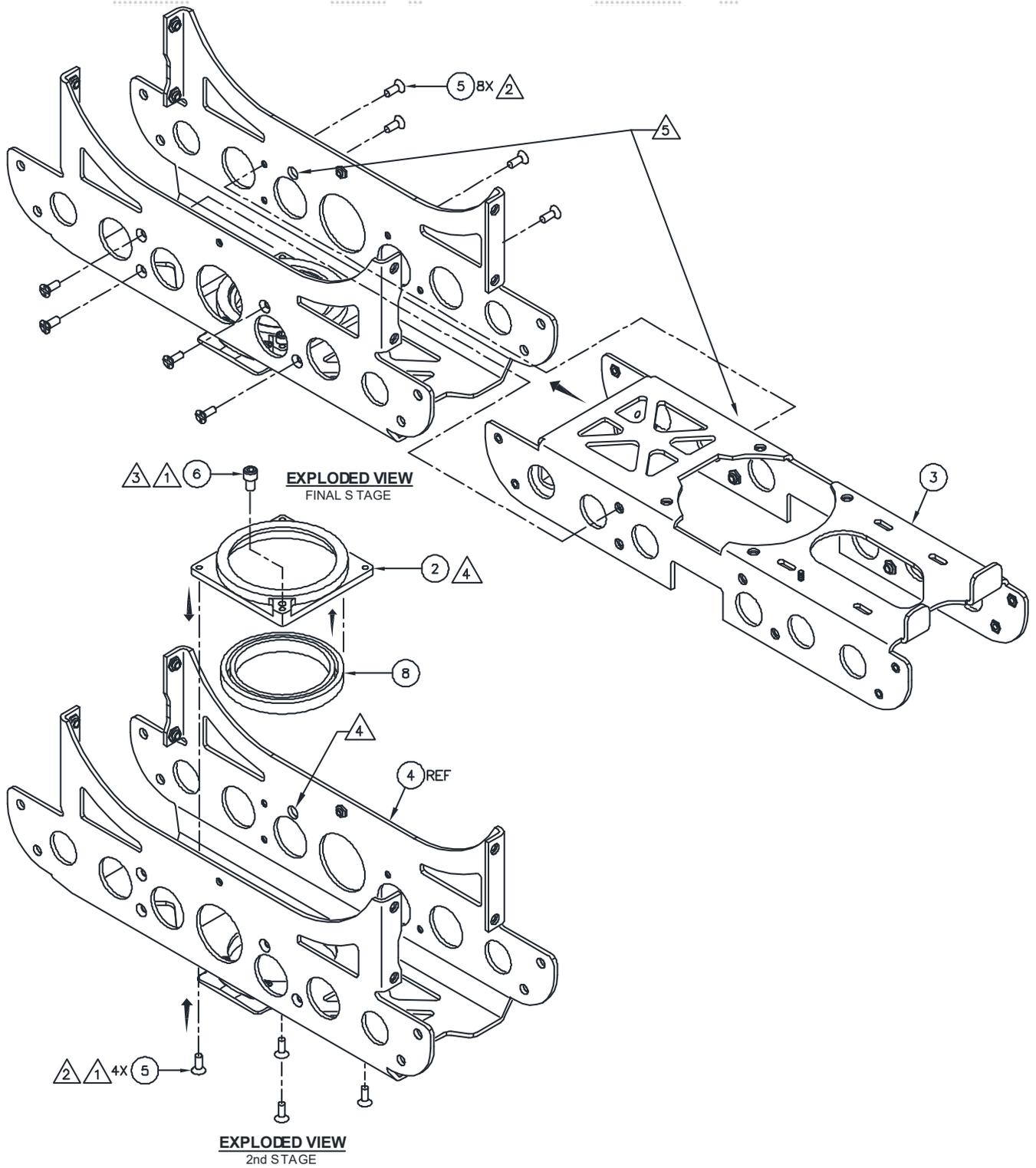


**EXPLODED VIEW**  
1st STAGE

Also refer to illustration on next page.

## Yoke Crossmember (continued)

Refer to Parts List for "Yoke Crossmember Assembly" on page 194.



## Pan Drive Mechanism

21.9816.0718

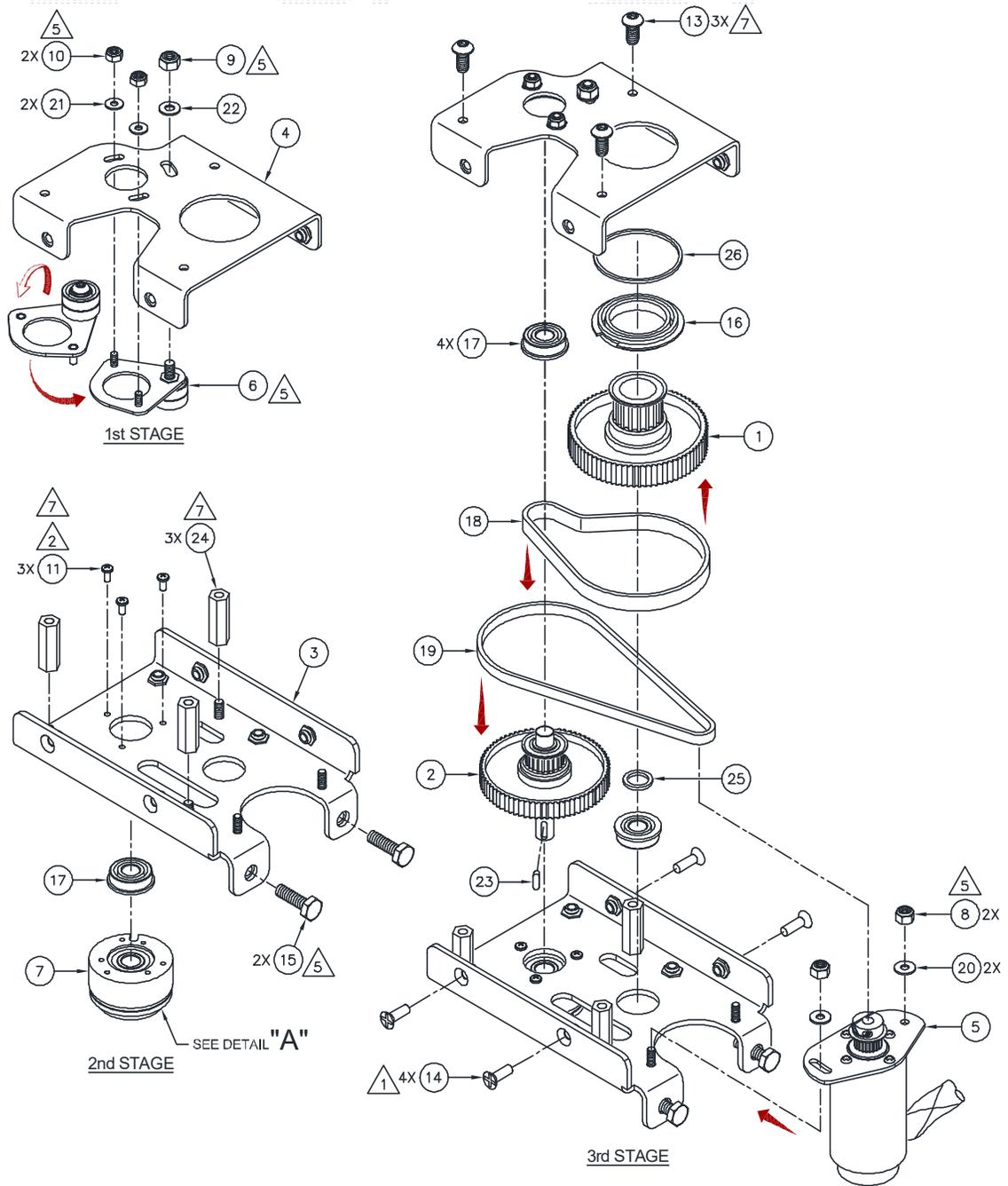
Revision: Rev B2

No.	Item	Qty	UM	Description	Procedure
1	10.9816.0714	1	EA	ASSY, FINAL DRIVE PULLEY, BEST BOY	-
2	10.9816.0721	1	EA	HYBRID PULLEY ASSY, PAN/TILT, BEST BOY	-
3	10.9816.0740	1	EA	PAN DRIVE CHASSIS PLATE, BESTBOY	-
4	10.9816.0741	1	EA	PAN DRIVE TOP PLATE, BESTBOY	-
5	22.9816.0725	1	EA	ASSY, MOTOR PAN	page 104
6	22.9816.0729	1	EA	ASSY, BELT TENSIONER, INTERMEDIATE	page 106
7	25.9816.0974.01	1	EA	CABLE ASSEMBLY, PAN BRAKE EXT	-
8	53.2202.0008	2	EA	NUT, 8-32 HEX SS NYLON INSERT	-
9	53.2202.0010	1	EA	NUT, 10-32 HEX SS NYLON INSERT	-
10	53.2202.0006	2	EA	NUT, 6-32 HEX SS NYLON INSERT	-
11	53.6568.0001.0	3	EA	SCREW, M3 X .5 X 8MM LG PPZ METRIC	-
12	53.6568.0002.0	3	EA	SET SCREW, M3X10mm L 1.5mm HEX SOCKET	-
13	53.6568.0003.0	3	EA	SCREW, 10-32 X 1/2" SS BUTTON HD CAP	-
14	53.6624.0002	4	EA	SCREW, 10-32 X 1/2" PFZ	-
15	53.6653.0034.0	2	EA	SCREW, 1/4-20 X 7/8" LG HEX HD STEEL/Z	-
16	54.1260.0002.0	1	EA	BEARING, 30X42X7MM WITH EDGE SNAP-RING	-
17	54.2096.0001.0	3	EA	BEARING, 3/8" ID X 7/8" OD X 9/32" W FLA	-
18	54.2111.0001.0	1	EA	BELT, 3MM GT 95T 9MM WIDE KEVLAR CORD	-
19	54.2050.0006.0	1	EA	BELT, 3MM GT 120T 6MM WIDE KEVLAR COR	-
20	55.6503.0004	2	EA	WASHER, #8 FLAT ZINC	-
21	55.6528.0001	2	EA	WASHER, #6 FLAT ZINC	-
22	55.6623.0001	1	EA	WASHER, #10 FLAT OD .503 THKNS .045 S	-
23	55.6764.0001.0	1	EA	KEY, MACHINE 3MM X 3MM X 10MM	-
24	55.7001.0004.0	3	EA	STANDOFF, 10-32 X 1.125" L X 3/8" HEX	-
25	55.6896.0002.0	1	EA	SHIM, 3/8" ID X 5/8" OD X .030" THK SS	-
26	10.9816.0745	1	EA	SPACER, PAN/TILT BEARING	-

Refer to illustrations on the following pages.

## Pan Drive Mechanism (continued)

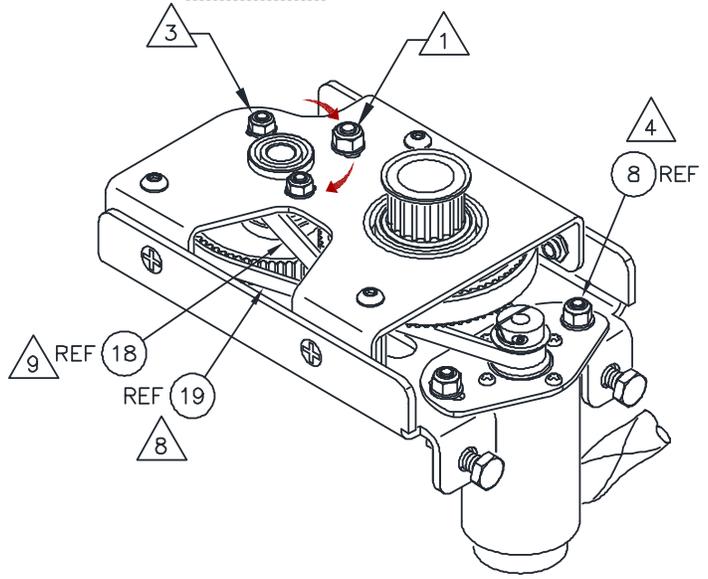
Refer to Parts List for "Pan Drive Mechanism" on page 196.



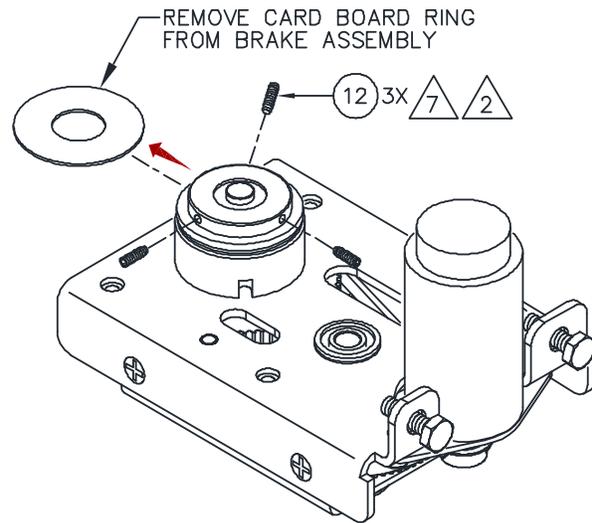
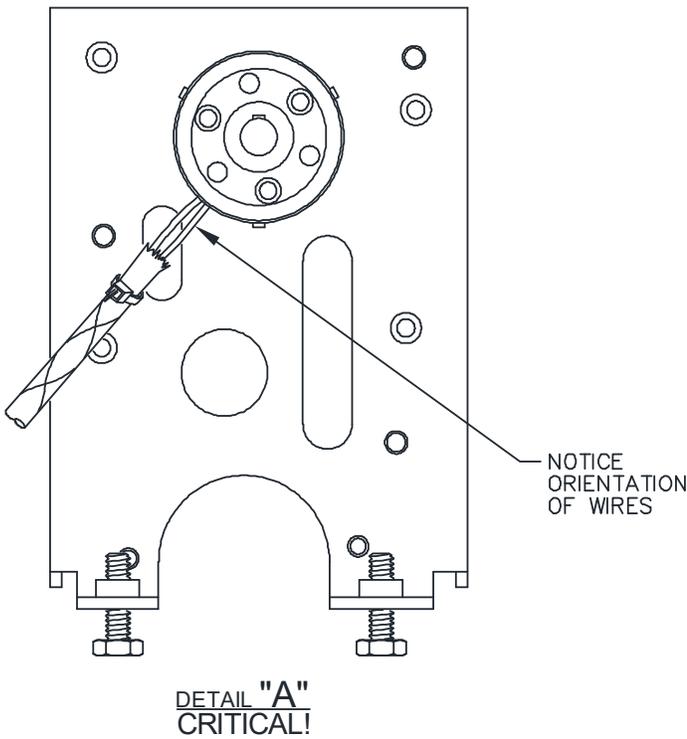
## Pan Drive Mechanism (continued)

Refer to Parts List for "Pan Drive Mechanism" on page 196.

- △1 TORQUE TO 29 IN-LBS.
- △2 TORQUE TO 4 IN-LBS
- △3 TORQUE TO 9 IN-LBS.
- △4 TORQUE TO 18 IN-LBS.
- △5 FINGER TIGHTEN ONLY AT THIS STAGE.
- △6 DELETED.
- △7 APPLY LOCTITE #242.
- △8 TENSION BELT TO 8-11 LBF.
- △9 TENSION BELT TO 16-20 LBF.



4th STAGE



FINAL STAGE

## Tilt Drive Mechanism

21.9816.0719

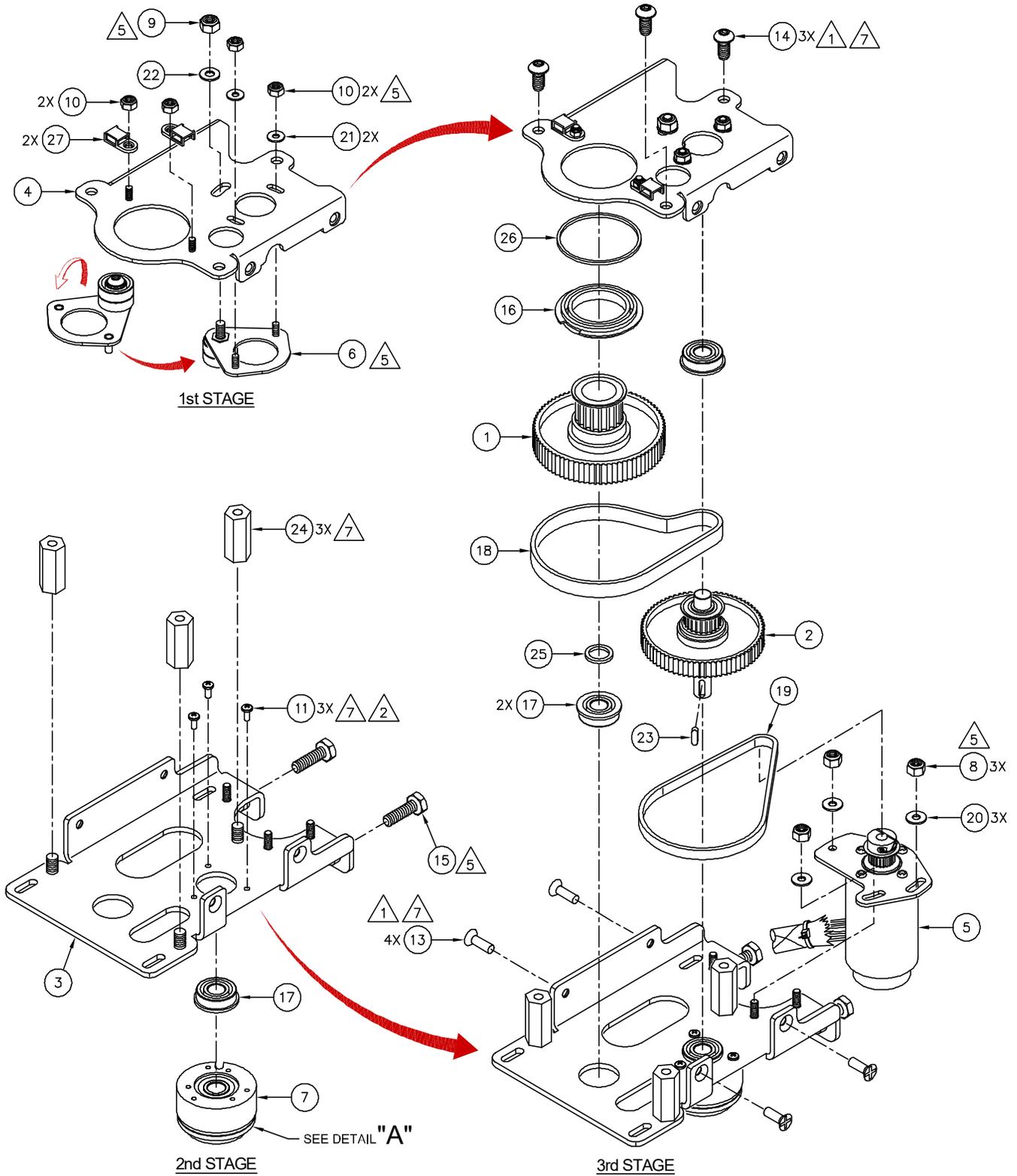
Revision: Rev E1

No.	Item	Qty	UM	Description	Procedure
1	10.9816.0714	1	EA	ASSY, FINAL DRIVE PULLEY, BEST BOY	-
2	10.9816.0721	1	EA	HYBRID PULLEY ASSY, PAN/TILT, BEST BOY	-
3	10.9816.0743	1	EA	PLATE, TILT DRIVE CHASSIS BEST BOY	-
4	10.9816.0744	1	EA	PLATE, TILT DRIVE TOP BEST BOY	-
5	10.9816.0745	1	EA	SPACER, PAN/TILT BEARING	-
6	22.9816.0727	1	EA	ASSY, MOTOR TILT	page 102
7	22.9816.0729	1	EA	ASSY, BELT TENSIONER, INTERMEDIATE	page 106
8	25.9816.0974.02	1	EA	CABLE ASSEMBLY, TILT BRAKE EXT	-
9	53.2202.0006	4	EA	NUT, 6-32 HEX SS NYLON INSERT	-
10	53.2202.0008	3	EA	NUT, 8-32 HEX SS NYLON INSERT	-
11	53.2202.0010	1	EA	NUT, 10-32 HEX SS NYLON INSERT	-
12	53.6568.0001.0	3	EA	SCREW, M3 X .5 X 8MM LG PPZ METRIC	-
13	53.6568.0002.0	3	EA	SET SCREW, M3X10mm L 1.5mm HEX SOCKET	-
14	53.6624.0002	4	EA	SCREW, 10-32 X 1/2" PFZ	-
15	53.6653.0026.0	3	EA	SCREW, 1/4-20 X 1/2" TYPE 316 SS BUTTON	-
16	53.6653.0034.0	2	EA	SCREW, 1/4-20 X 7/8"LG HEX HD STEEL/ZP	-
17	54.1260.0002.0	1	EA	BEARING, 30X42X7MM WITH EDGE SNAP-RING	-
18	54.2096.0001.0	3	EA	BEARING, 3/8"ID X 7/8"OD X 9/32"W FLANG	-
19	54.2111.0001.0	1	EA	BELT, 3MM GT 95T 9MM WIDE KEVLAR CORD	-
20	54.2120.0002.0	1	EA	BELT, 3MM GT 96T 6MM WIDE KEVLAR CORD	-
21	55.2178.0001	2	EA	CABLE ANCHOR MOUNT, #8 SCREW MOUNTING	-
22	55.6503.0004	3	EA	WASHER, #8 FLAT ZINC	-
23	55.6528.0001	2	EA	WASHER, #6 FLAT ZINC	-
24	55.6623.0001	1	EA	WASHER, #10 FLAT OD .503 THKNS .045 STL	-
25	55.6764.0001.0	1	EA	KEY, MACHINE 3MM X 3MM X 10MM	-
26	55.6881.0001.0	3	EA	STANDOFF, 1/4-20 X 1.125" L X 1/2" HEX	-
27	55.6896.0002.0	1	EA	SHIM, 3/8"ID X 5/8"OD X .030" THK SS	-

Refer to illustrations on the following pages.

## Tilt Drive Mechanism (continued)

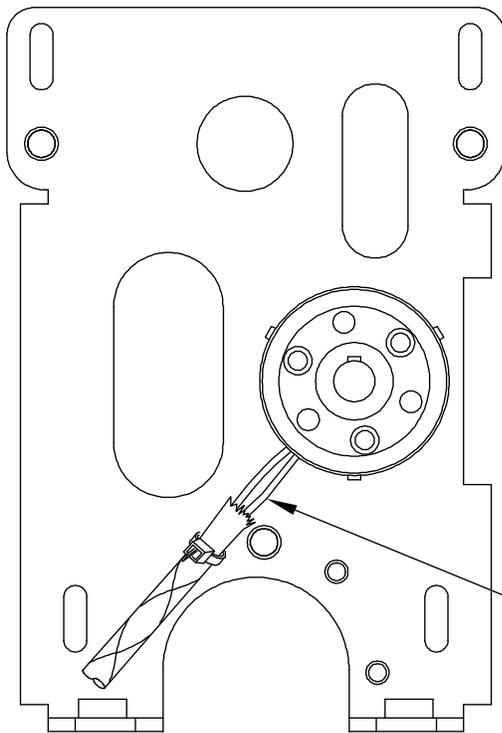
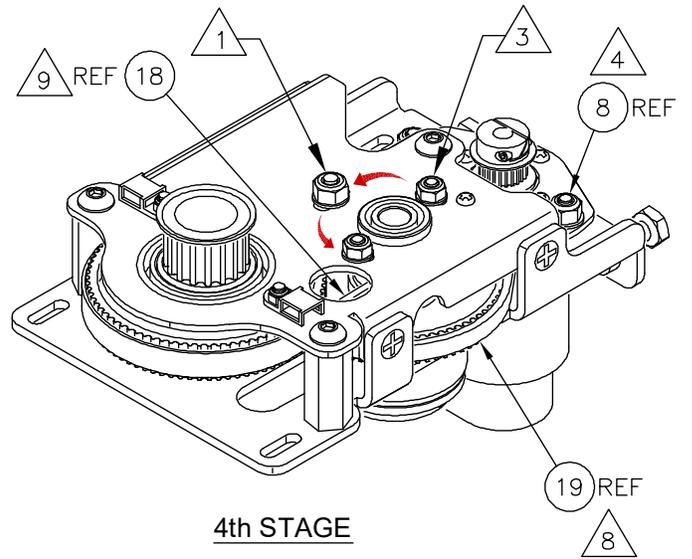
Refer to Parts List for "Tilt Drive Mechanism" on page 199.



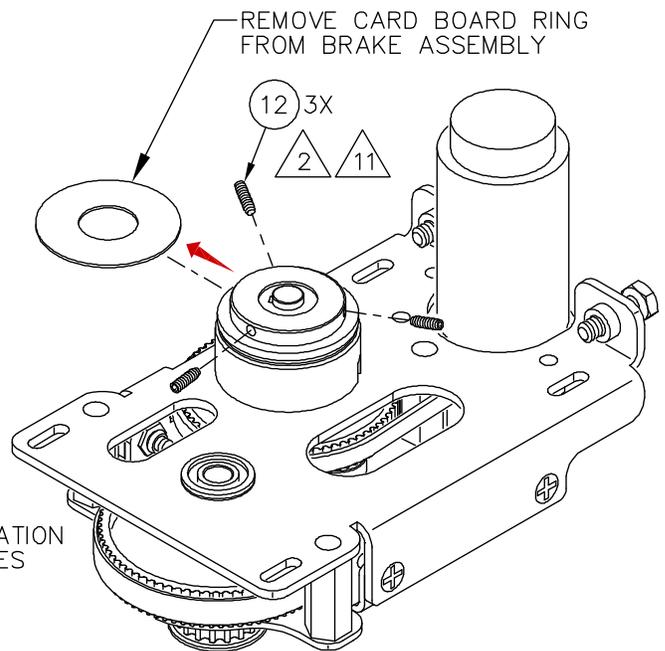
## Tilt Drive Mechanism (continued)

Refer to Parts List for "Tilt Drive Mechanism" on page 199.

- ▲ 1 TORQUE TO 29 IN-LBS.
- ▲ 2 TORQUE TO 4 IN-LBS.
- ▲ 3 TORQUE TO 9 IN-LBS.
- ▲ 4 TORQUE TO 18 IN-LBS.
- ▲ 5 FINGER TIGHTEN ONLY AT THIS STAGE.
- ▲ 6 DELETED.
- ▲ 7 APPLY LOCTITE #242 TO THREADS.
- ▲ 8 TENSION BELT TO 8-11 LBF.
- ▲ 9 TENSION BELT TO 16-20 LBF.
- ▲ 10 DELETED.
- ▲ 11 APPLY LOCTITE #222 TO THREADS.



**DETAIL "A"**  
**CRITICAL!**



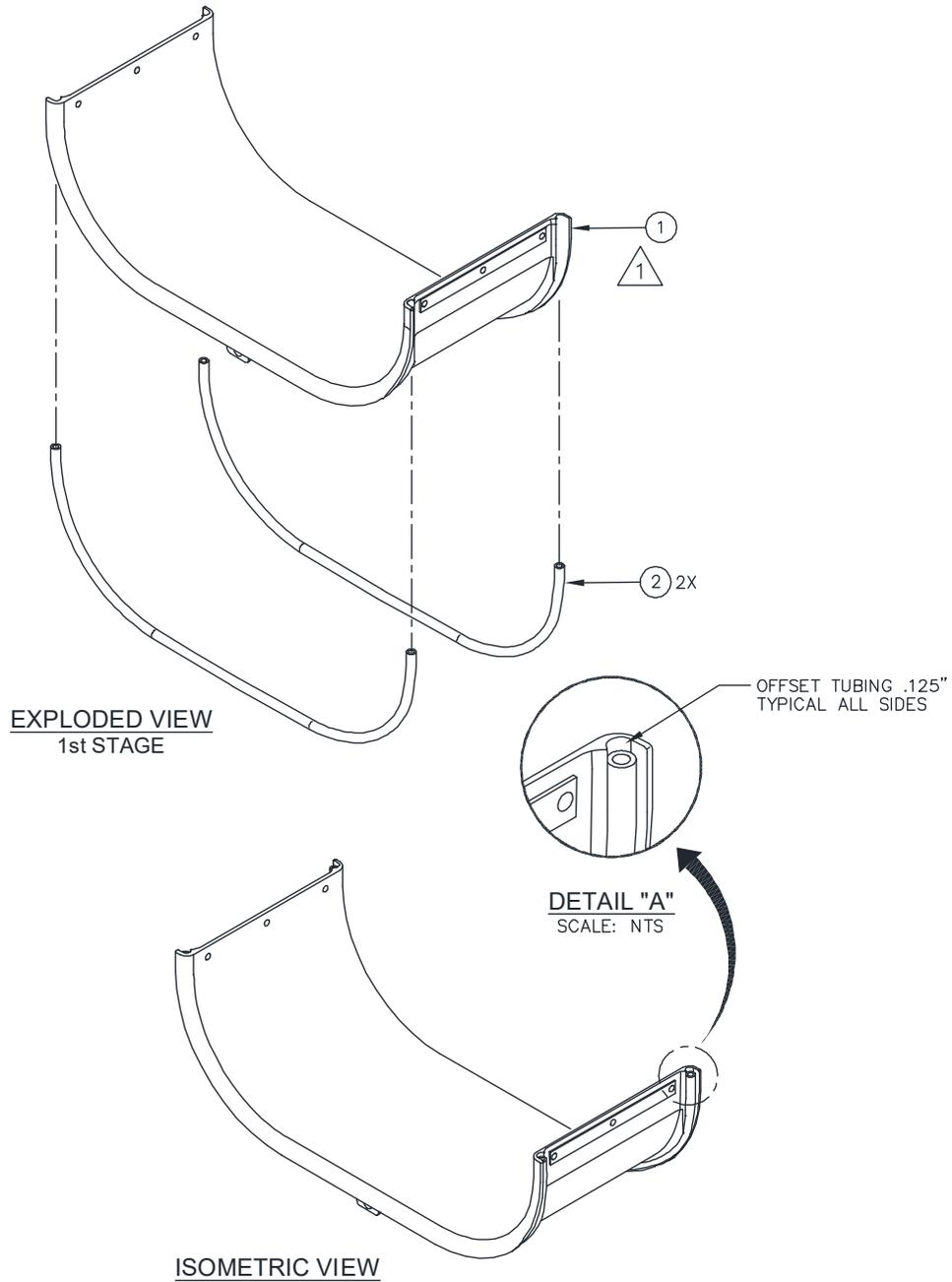
**FINAL STAGE**

## Pan Shield Assembly

22.9816.0749

Revision: Rev A0

No.	Item	Qty	UM	Description	Procedure
1	10.9816.0749	1	EA	PAN SHIELD	-
2	55.6738.0004.01	36	IN	TUBING, SILICONE .250" OD X .187" ID	-



- 1 CLEAN W/PERMA BOND POP POLYOLEFIN PRIMER BEFORE APPLYING PERMA BOND 737 CYANOACRYLATE THEN APPLY ADHESIVE DIRECTLY TO PLASTIC SURFACE. DO NOT STRETCH TUBING WHEN INSTALLING.

# UPPER ENCLOSURE

## Upper Enclosure Assembly

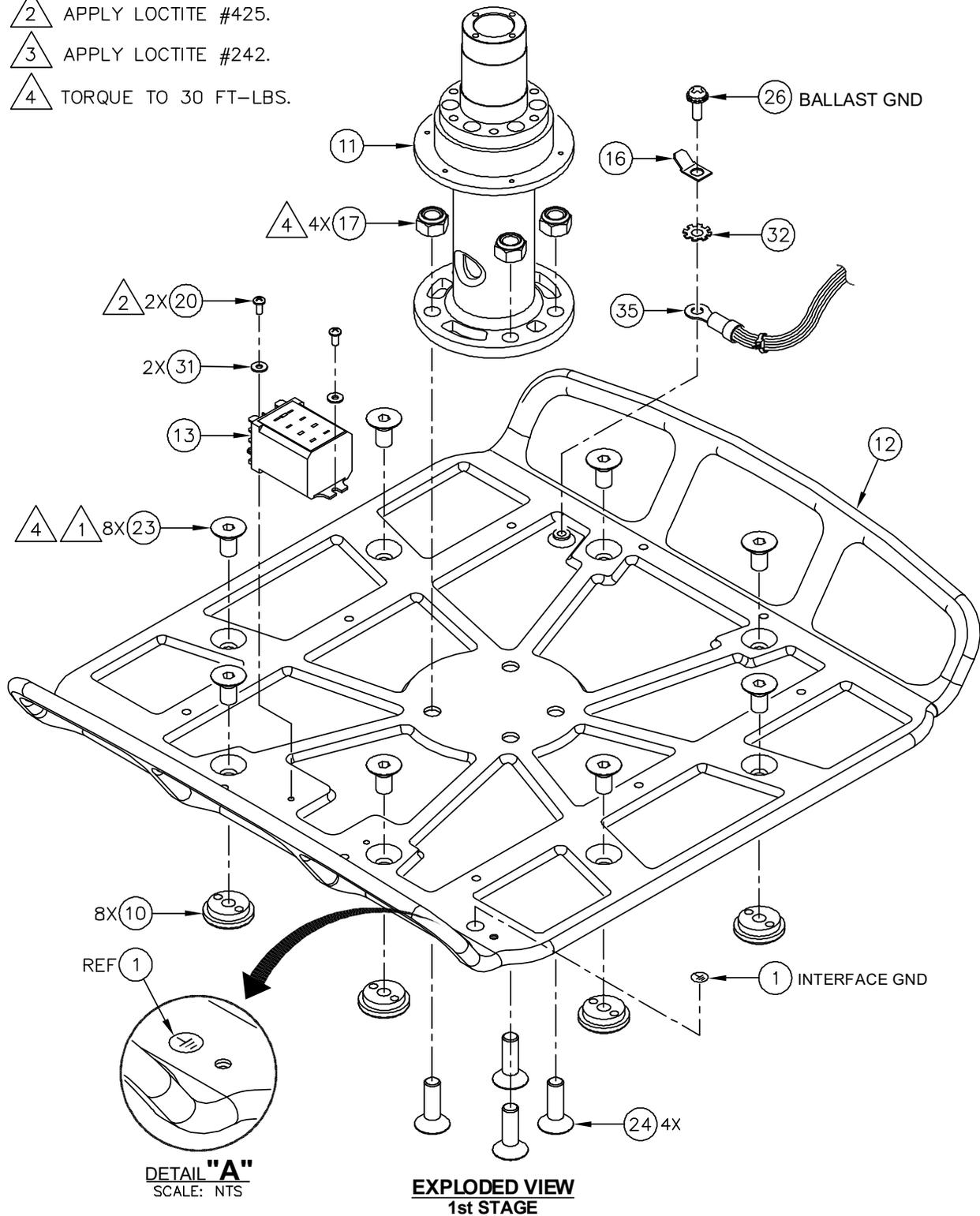
21.9817.0800

Revision: Rev B0

No.	Item	Qty	UM	Description	Procedure
1	04.9640.0374	1	EA	LABEL, NO. 5019 P.E. GROUND	-
2	04.9817.0040	1	EA	LABEL, COMPLIANCE, BEST BOY HP SPOT	-
3	04.9812.0049	1	EA	LABEL, AIR FILTERS	-
4	10.9815.0823	2	EA	GASKET, LOWER, UE BOX	-
5	10.9815.0824	2	EA	GASKET, MAIN SHORT UE BOX	-
6	10.9816.0824	1	EA	GASKET, UPPER, UE BOX, BEST BOY	-
7	10.9817.0825	1	EA	BOX, WELDED, UE BEST BOY HP SPOT	-
8	10.9815.0826	4	EA	GASKET, INTERFACE, UE BOX	-
9	10.9815.0827	4	EA	GASKET, INTERFACE STRIP SHORT UE BOX	-
10	10.9816.0862	8	EA	HOOK CLAMP MOUNT STUD, BEST BOY	-
11	10.9816.0865	1	EA	PAN TUBE, BEST BOY	-
12	10.9816.0866	1	EA	BASE PLATE UE, BEST BOY ROUNDED HANDLE	-
13	23.9812.3327	1	EA	ASSY, HOT RELAY	-
14	25.9816.0990	1	EA	CABLE ASSY, BALLAST HEATSINK FAN EXTENSION	page 95
15	25.9817.0992	1	EA	CABLE ASSY, UE CHASSIS FAN 24V, BEST BOY HP SPOT	page 93
16	52.8233.0003.0	1	EA	TAB, FASTON .250" .205" HOLE 45 DEG	-
17	53.2203.0001	4	EA	NUT, 3/8-16 NYLON INSERT	-
18	53.2202.0006	2	EA	NUT, 6-32 HEX SS NYLON INSERT	-
19	53.2202.0008	1	EA	NUT, 8-32 HEX SS NYLON INSERT	-
20	53.5506.0250	2	EA	SCREW, 6-32 X 1/4" PPSS	-
21	53.5506.2250	2	EA	SCREW, 6-32 X 2-1/4" PPB	-
22	53.6542.0001	6	EA	SCREW, 6-32 X 5/16" PFBZ	-
23	53.7020.0001.0	8	EA	SCREW, 3/8-16 X .750 FLAT HD CAP	-
24	53.6634.0004.1	4	EA	SCREW, 3/8-16 X 1-1/4 FLAT SOC CAP, CARBON STEEL BLACK ZINC	-
25	53.6648.0002.0	10	EA	SCREW, 10-32 X 11/16" PFSS BLK ZINC	-
26	53.6517.0002	1	EA	SCREW, 10-32 X 3/8" PP SEMS EXTERNAL TOOTH BLACK ZINC	-
27	53.6507.0687.0	1	EA	CLAMP, CABLE 1/2" X 11/16" NYL BLK	-
28	55.2178.0001	1	EA	CABLE ANCHOR MOUNT, #8 OFFSET SCREW MOUNTING	-
29	55.2186.0001	0	EA	CABLE TIE, .10"WD 4.00"LG SMALL CLEAR (PACK OF 1000)	-
30	55.2315.1022.0	4	EA	VENT GORE GAW1121325	-
31	55.3301.0006	2	EA	WASHER, #6 FLAT SS	-
32	55.6504.0003	1	EA	WASHER, #10 LOCK EXTERNAL TOOTH	-
33	55.6643.0005.0	2	EA	SPACER, 5/16" OD, 7/8" LG #6 UNTHREADED ROUND	-
34	67.4019.0003.0	1	EA	FERRITE BEAD, 19MM OD 11.5MM ID 50.8MML AXIAL	-
35	25.9816.0957	1	EA	CABLE ASSY, CHASSIS TO YOKE GND	-

## Upper Enclosure Assembly (continued)

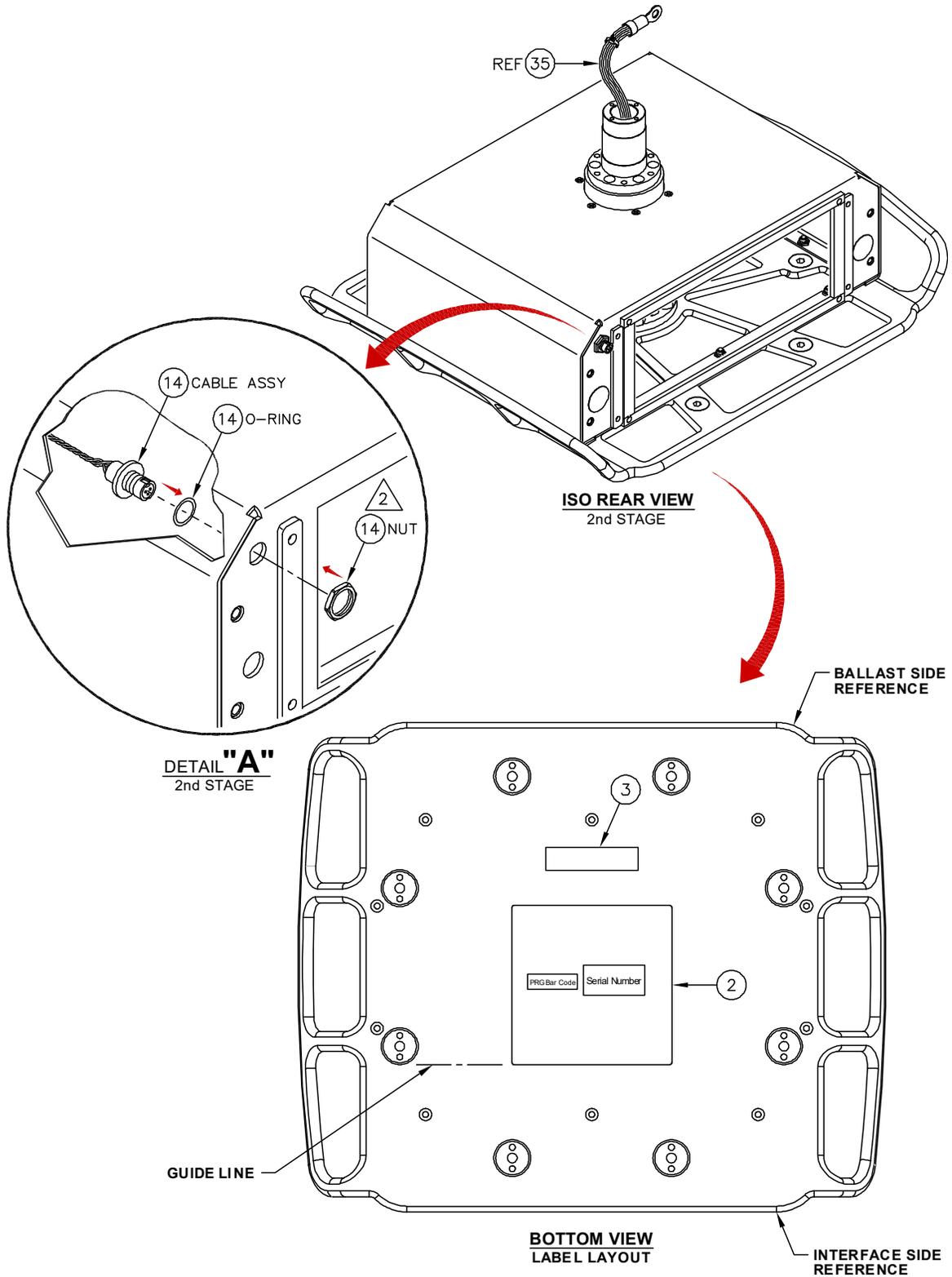
- 1 APPLY LOCTITE #272 TO THREADED SCREW HOLES.
- 2 APPLY LOCTITE #425.
- 3 APPLY LOCTITE #242.
- 4 TORQUE TO 30 FT-LBS.



Also refer to illustrations on the following pages.

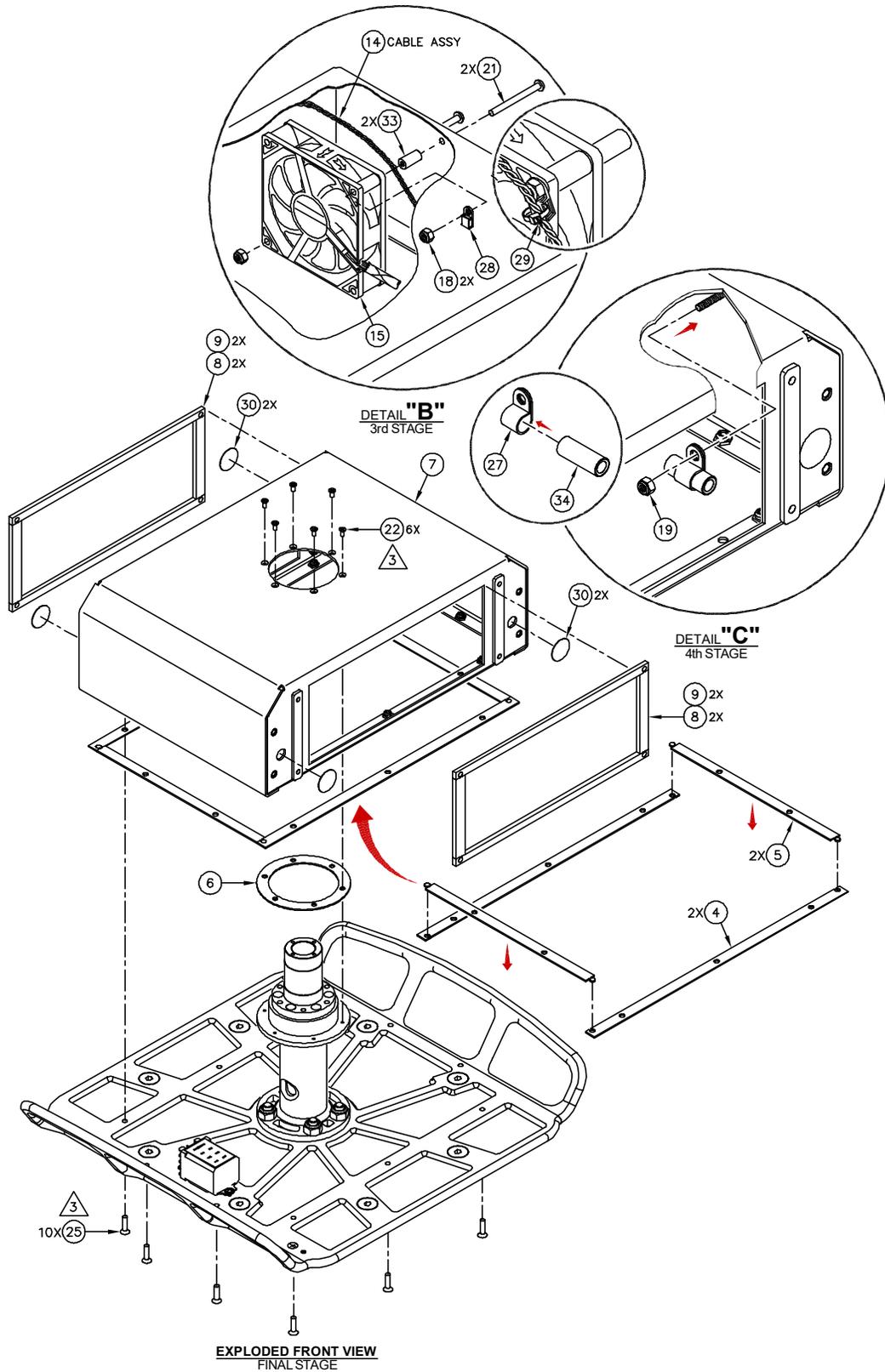
## Upper Enclosure Assembly (continued)

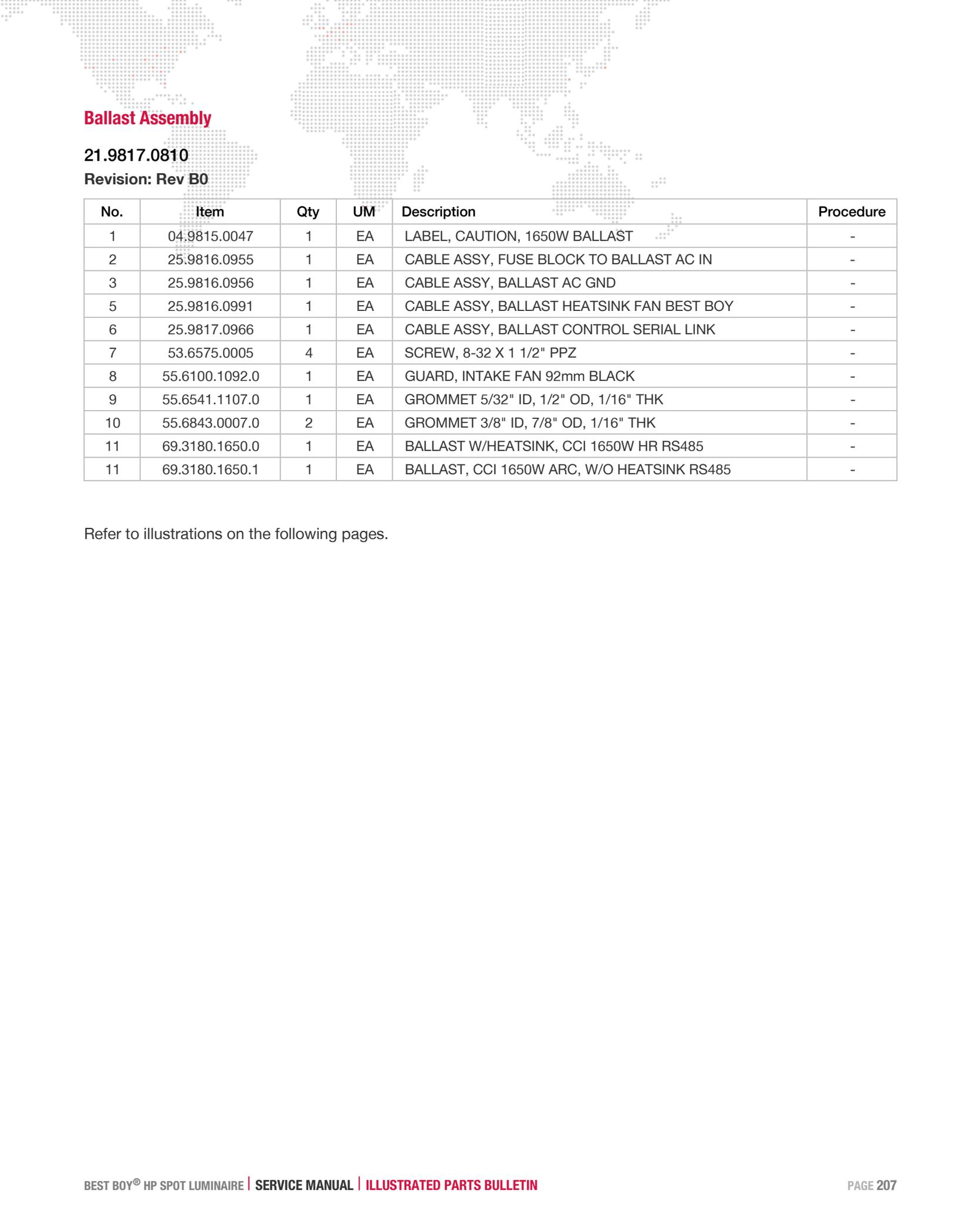
Refer to Parts List for "Upper Enclosure Assembly" on page 203.



## Upper Enclosure Assembly (continued)

Refer to Parts List for "Upper Enclosure Assembly" on page 203.





## Ballast Assembly

21.9817.0810

Revision: Rev B0

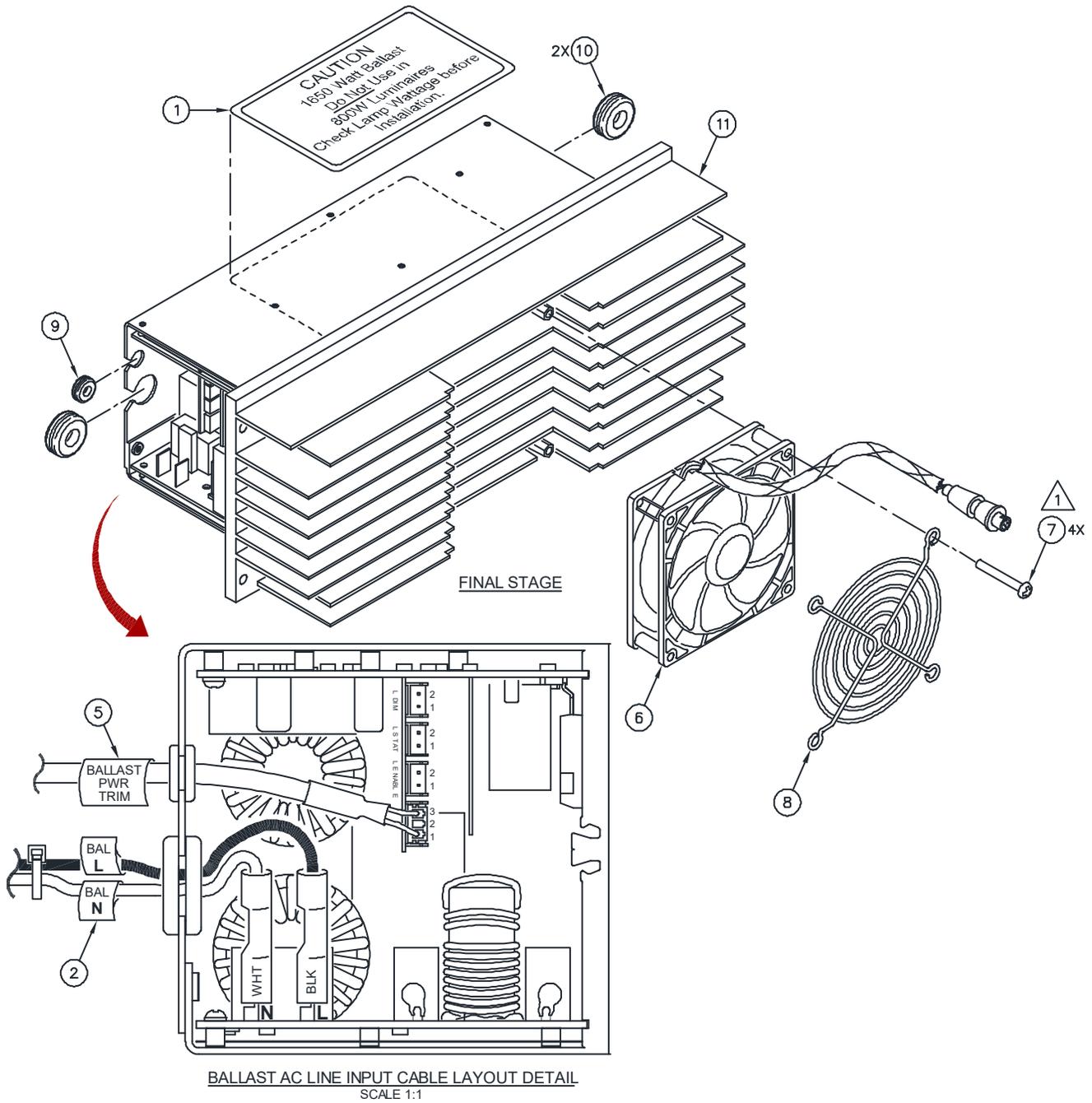
No.	Item	Qty	UM	Description	Procedure
1	04.9815.0047	1	EA	LABEL, CAUTION, 1650W BALLAST	-
2	25.9816.0955	1	EA	CABLE ASSY, FUSE BLOCK TO BALLAST AC IN	-
3	25.9816.0956	1	EA	CABLE ASSY, BALLAST AC GND	-
5	25.9816.0991	1	EA	CABLE ASSY, BALLAST HEATSINK FAN BEST BOY	-
6	25.9817.0966	1	EA	CABLE ASSY, BALLAST CONTROL SERIAL LINK	-
7	53.6575.0005	4	EA	SCREW, 8-32 X 1 1/2" PPZ	-
8	55.6100.1092.0	1	EA	GUARD, INTAKE FAN 92mm BLACK	-
9	55.6541.1107.0	1	EA	GROMMET 5/32" ID, 1/2" OD, 1/16" THK	-
10	55.6843.0007.0	2	EA	GROMMET 3/8" ID, 7/8" OD, 1/16" THK	-
11	69.3180.1650.0	1	EA	BALLAST W/HEATSINK, CCI 1650W HR RS485	-
11	69.3180.1650.1	1	EA	BALLAST, CCI 1650W ARC, W/O HEATSINK RS485	-

Refer to illustrations on the following pages.

## Ballast Assembly (continued)

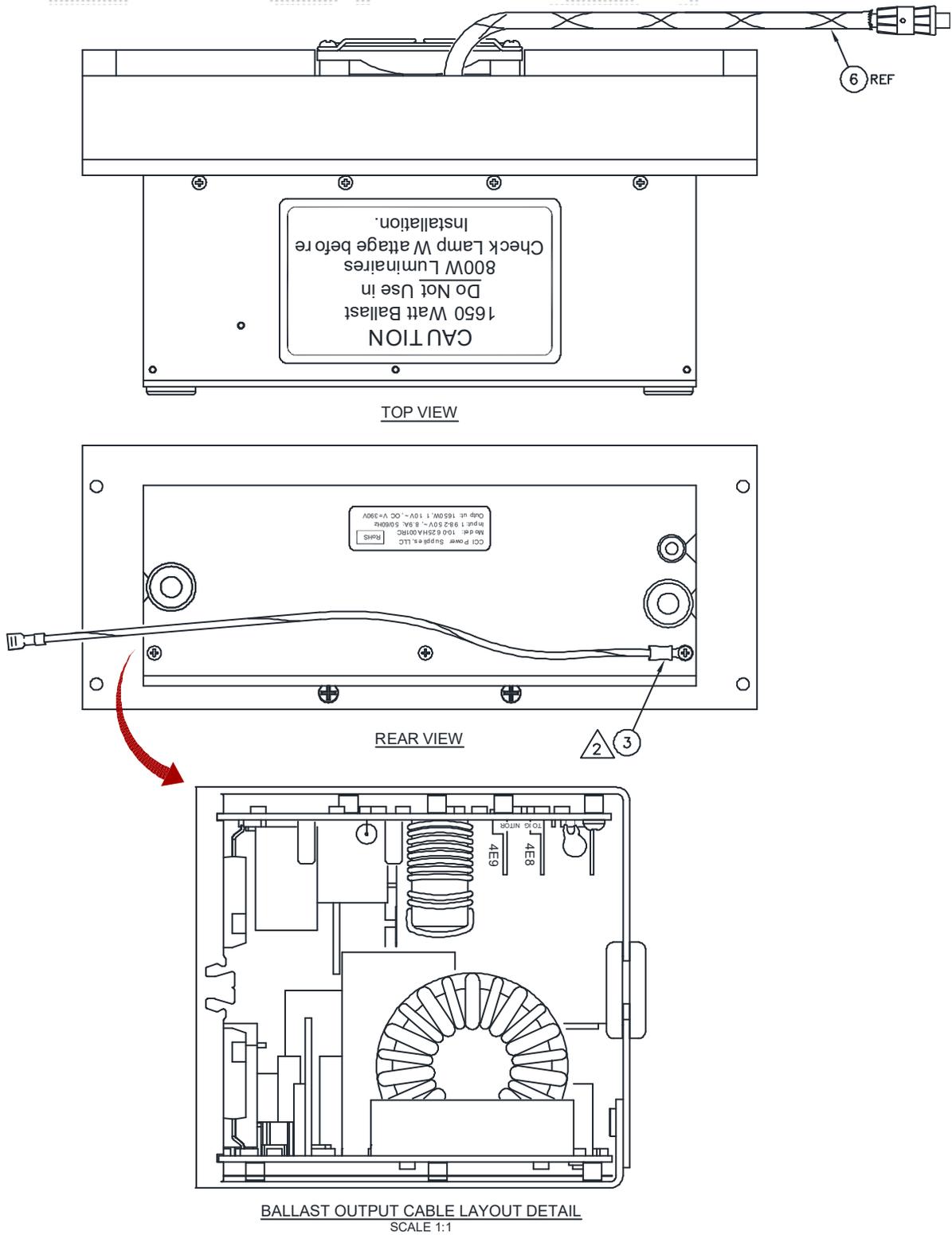
Refer to Parts List for "Ballast Assembly" on page 207.

- 1 APPLY LOCTITE #222 TO SCREWS.
- 2 REMOVE & REUSE EXISTING SCREW TO HOLD RING LUG TO BALLAST, AND APPLY LOCTITE #242 TO SCREW TO SECURE IN PLACE.



## Ballast Assembly (continued)

Refer to Parts List for "Ballast Assembly" on page 207.

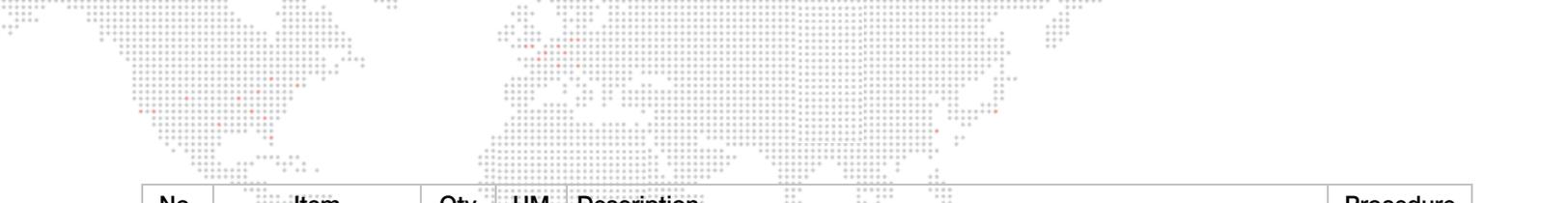


## Interface/LVS Assembly

21.9817.0811

Revision: Rev B0

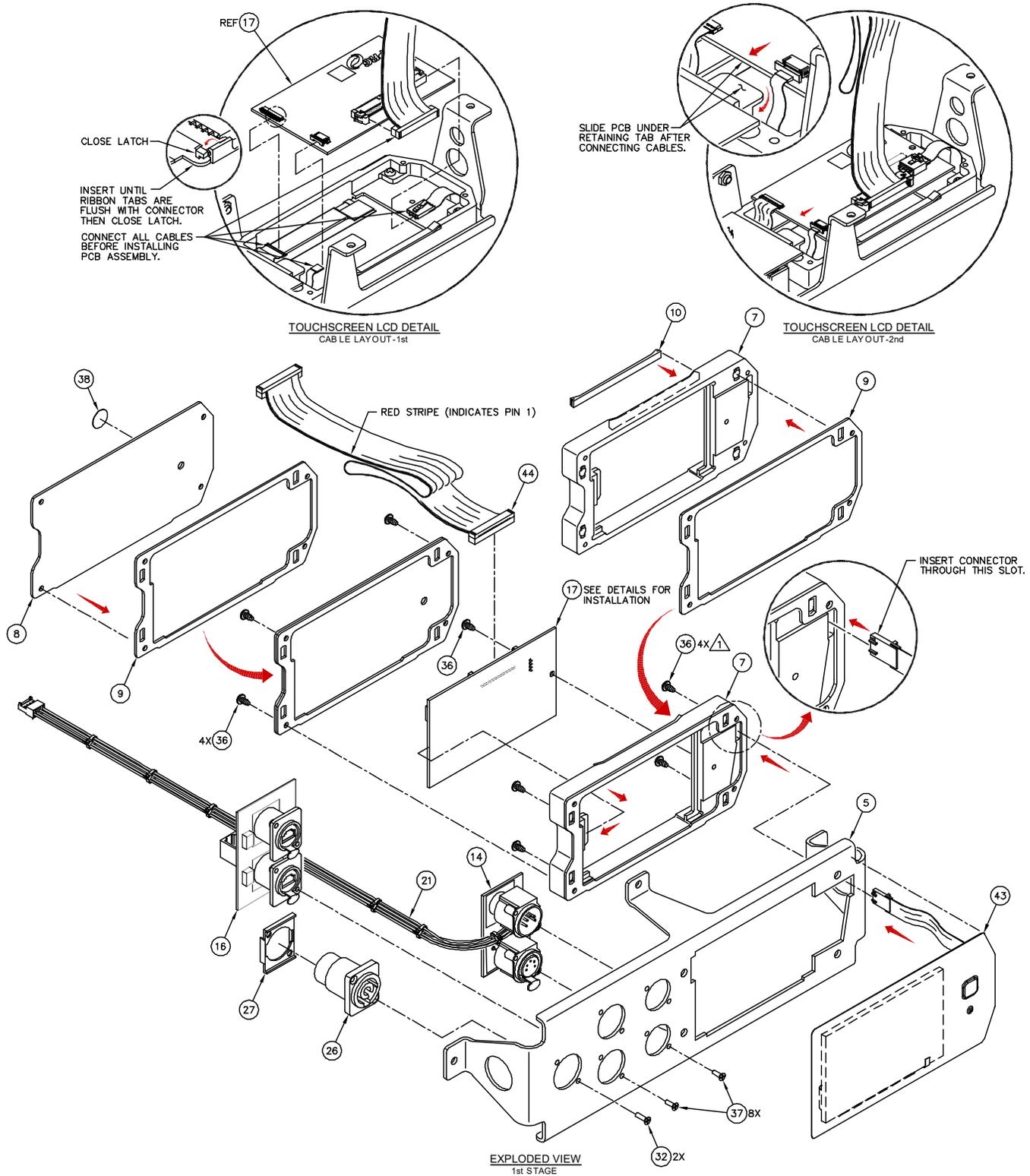
No.	Item	Qty	UM	Description	Procedure
1	06.6018.0002	0.125	FT	VELCRO HOOK, 1"W BLACK ADHESIVE BACK 200F	-
2	06.6018.0006	1.5	FT	VELCRO LOOP, 1"W BLACK ADHESIVE BACK 200F	-
3	10.9816.0654	1	EA	GROMMET, 3/4"ID, 1.1/8"OD, .08GRV, FOR 1" OPENING	-
4	10.9816.0812	1	EA	CHASSIS, INTERFACE BEST BOY	-
5	10.9816.0817	1	EA	INTERFACE FRONT PANEL, BEST BOY	-
6	10.9816.0851	1	EA	CHASSIS, LVPS, CPU, BEST BOY	-
7	10.9816.0853	1	EA	FRAME, LCD/PCB BEST BOY	-
8	10.9816.0854	1	EA	COVER, LCD/PCB, BEST BOY	-
9	10.9816.0855	2	EA	GASKET, LOWER, LCC FRAME, BEST BOY	-
10	10.9816.0857	1	EA	GASKET, RIBBON CABLE, BEST BOY	-
11	10.9816.0859	1	EA	COVER, WIRE INTERFACE, GASKET BEST BOY	-
12	10.9816.0860	2	EA	GASKET, WIRE INTERFACE, BEST BOY	-
13	10.9816.0861	2	EA	BRACKET, PROTECTION, CPU BEST BOY	-
14	24.9812.0842.0	1	EA	PCB ASSY, DMX INPUT	-
15	24.9816.0840.03	1	EA	PCB ASSY, MAIN CONTROLLER - BEST BOY HP SPOT	-
16	24.9816.0843	1	EA	PCB ASSEMBLY, ETHERNET	-
17	24.9816.0871	1	EA	PCB ASSY, BEST BOY DISPLAY INTERFACE	-
18	25.9817.0951	1	EA	CABLE ASSY, POWERCON TO FUSES & LVS, BEST BOY HP SPOT	-
19	25.9816.0952	1	EA	CABLE ASSY, POWERCON TO CHASSIS GND BEST BOY	-
20	25.9816.0959	1	EA	CABLE ASSY, ETHERNET POWER	-
21	25.9816.0960	1	EA	CABLE ASSY, DMX INPUT	-
22	25.9816.0961	2	EA	CABLE ASSEMBLY, ETHERCON INPUT BEST BOY	-
23	25.9816.0967	1	EA	CABLE ASSY, LVS STATUS	-
24	25.9816.0968	1	EA	CABLE ASSY, LVS DC OUTPUT TO MAIN CONTROL PCB DC INPUT	-
25	25.9816.0989	1	EA	CABLE ASSY, BACKUP BATTERY	-
26	52.6541.0003	1	EA	POWERCON, 20A PANEL POWER INLET BLUE NAC3MPA-1	-
27	52.6541.0568.0	1	EA	PLATE, M3 THREAD XLR D-SIZE (USE W/ NAC3MPA-1)	-
28	53.2202.0006	5	EA	NUT, 6-32 HEX SS NYLON INSERT	-
29	53.2202.0008	5	EA	NUT, 8-32 HEX SS NYLON INSERT	-
30	53.5508.0101.0	1	EA	SCREW, 8-32 X 3/8" PFSS	-
31	53.6558.0027.0	4	EA	SCREW, M3X5 PPSS	-
32	53.6513.0053.0	2	EA	SCREW, M3 X 10MM PFZ BLK	-
33	53.6558.0001	10	EA	SCREW, 6-32 X 3/8" PPZ	-
34	53.6558.0011	4	EA	SCREW, 6-32 X 1/2" PPZ SEMS EXT	-
35	55.2188.0001	2	EA	CABLE TIE, 12.0"L X 0.18"W BLACK T50I0M4 (1000 PER PKG)	-
36	53.5506.0250	13	EA	SCREW, 6-32 X 1/4" PPSS	-
37	53.6690.0001.0	8	EA	SCREW, PLASTITE 4-20 X 3/8" FLAT HD BLK	-
38	55.2315.8030.0	1	EA	VENT, GORE PROTECTIVE VE80308	-
39	55.6583.0001	4	EA	STANDOFF, 1/4 "HEX 6-32 .500"LG ALUM	-



No.	Item	Qty	UM	Description	Procedure
40	69.3132.0002.0	1	EA	POWER SUPPLY, 250W +24V/10.4A OUT +5V/0.5A AUX CCM250PS24	-
41	70.3772.0001.0	1	EA	FUSE BLOCK, 2-POLE .25 X 1.25" 0 DEG .250" FASTON S-8201-2-R	-
42	70.3773.0001.0	2	EA	FUSE, 15A 250V .25 X 1.25" SLO-BLO CERAMIC MDA-15-R	-
43	72.9816.0873	1	EA	LCD, W/TOUCHSCREEN OVERLAY, BEST BOY	-
44	73.7200.0018.0	1	EA	CABLE ASSY, 25 POS DOUBLE ROW, 18"L, DOUBLE END	-
45	53.6577.0016.0	4	EA	SCREW, M4 X 6MM PPSS SEMS EXT	-
46	04.9812.0380	1	EA	LABEL, DMX GROUND TB	-
56	04.9815.0817	1	EA	LABEL, INTERFACE PANEL BB WASH	-

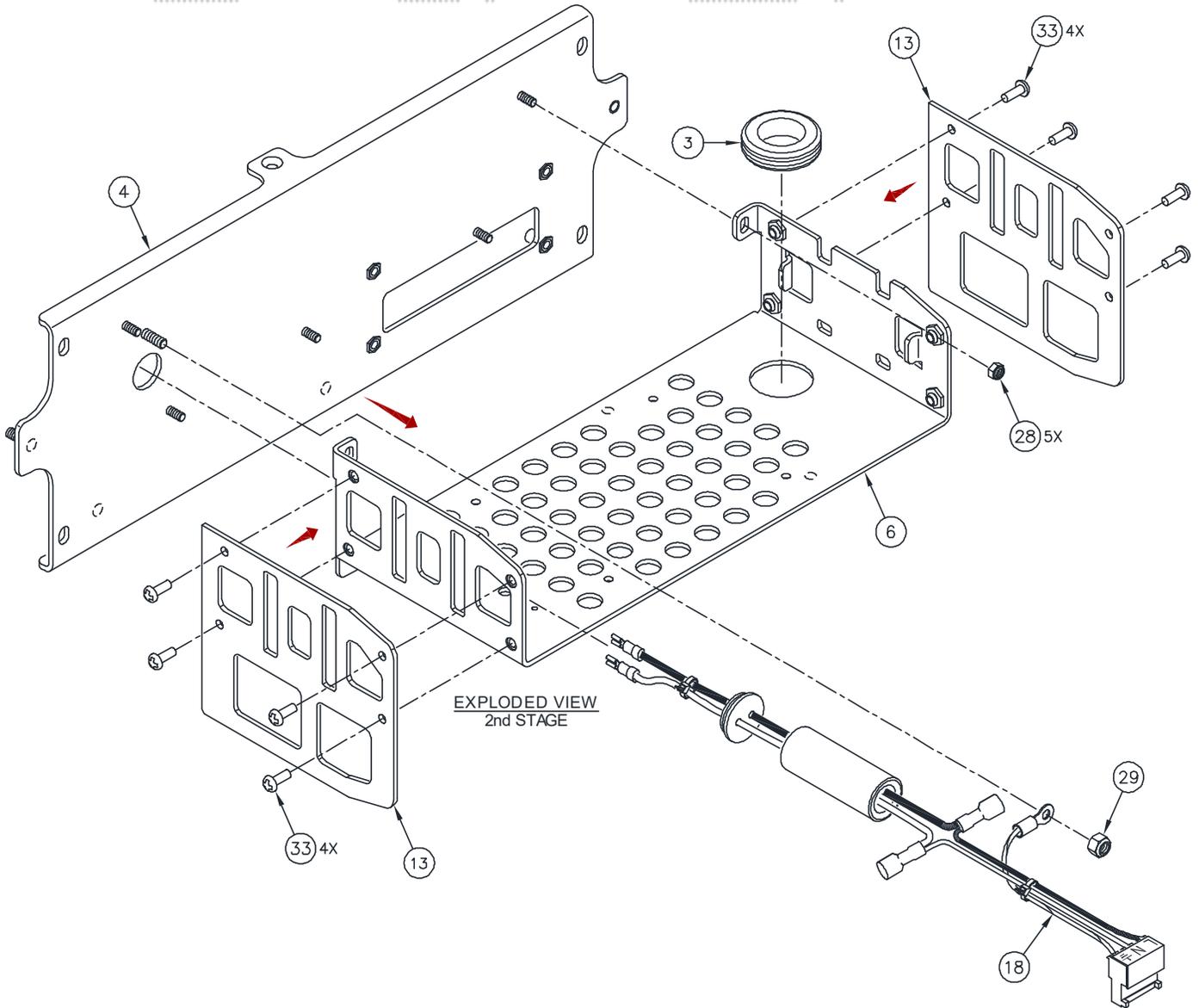
## Interface/LVS Assembly (continued)

Refer to Parts List for "Interface/LVS Assembly" on page 210.



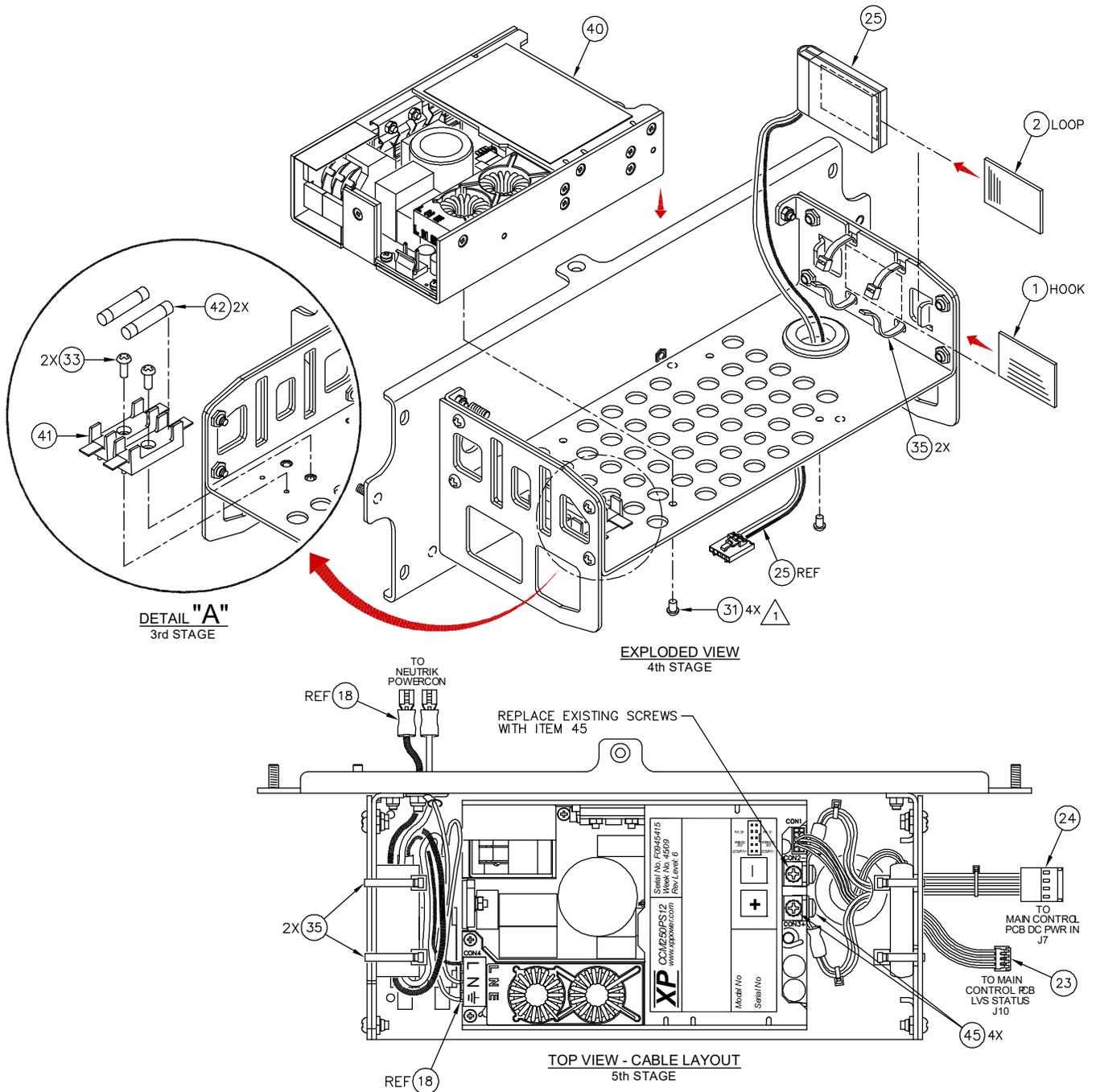
## Interface/LVS Assembly (continued)

Refer to Parts List for "Interface/LVS Assembly" on page 210.



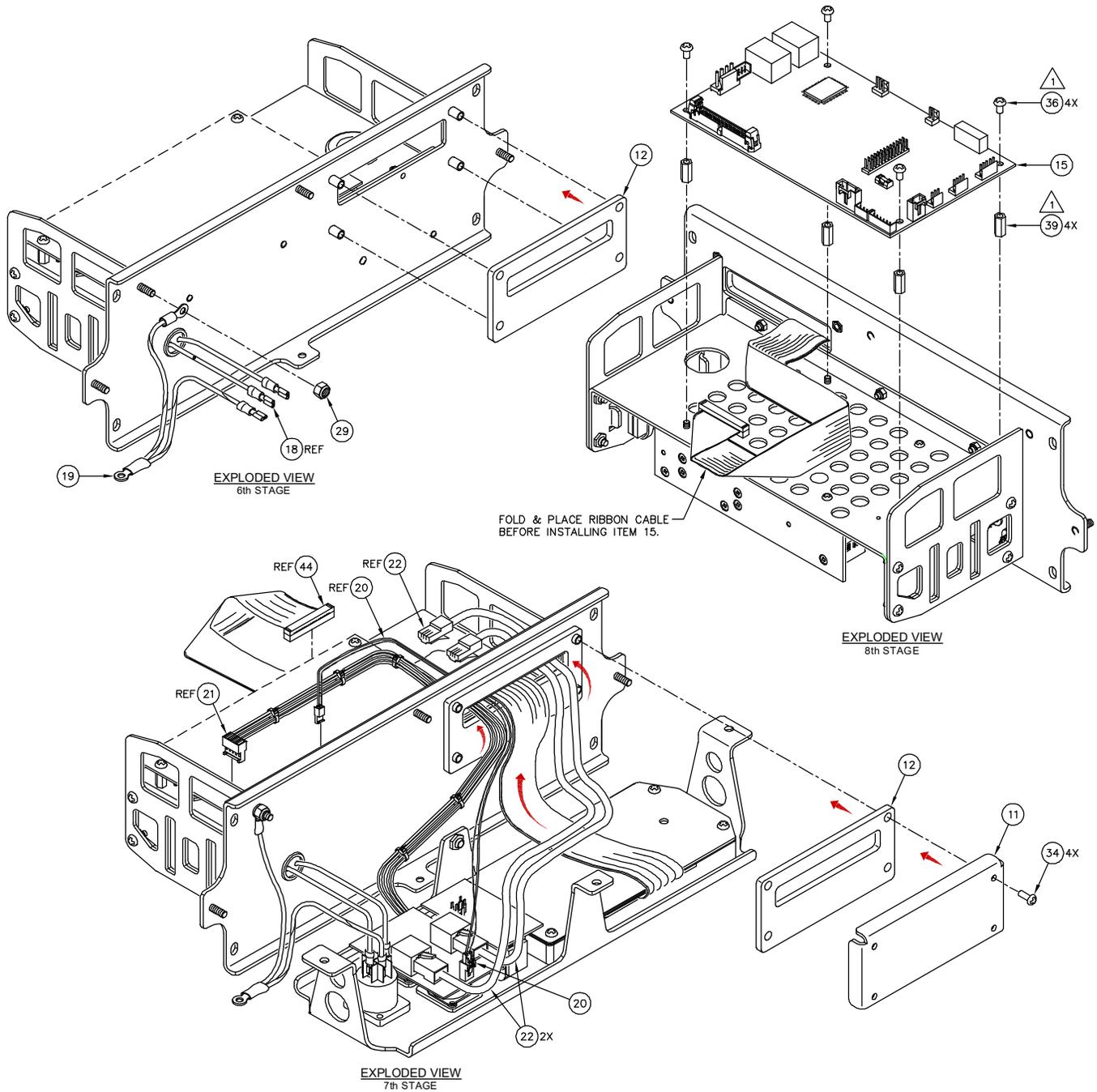
## Interface/LVS Assembly (continued)

Refer to Parts List for "Interface/LVS Assembly" on page 210.



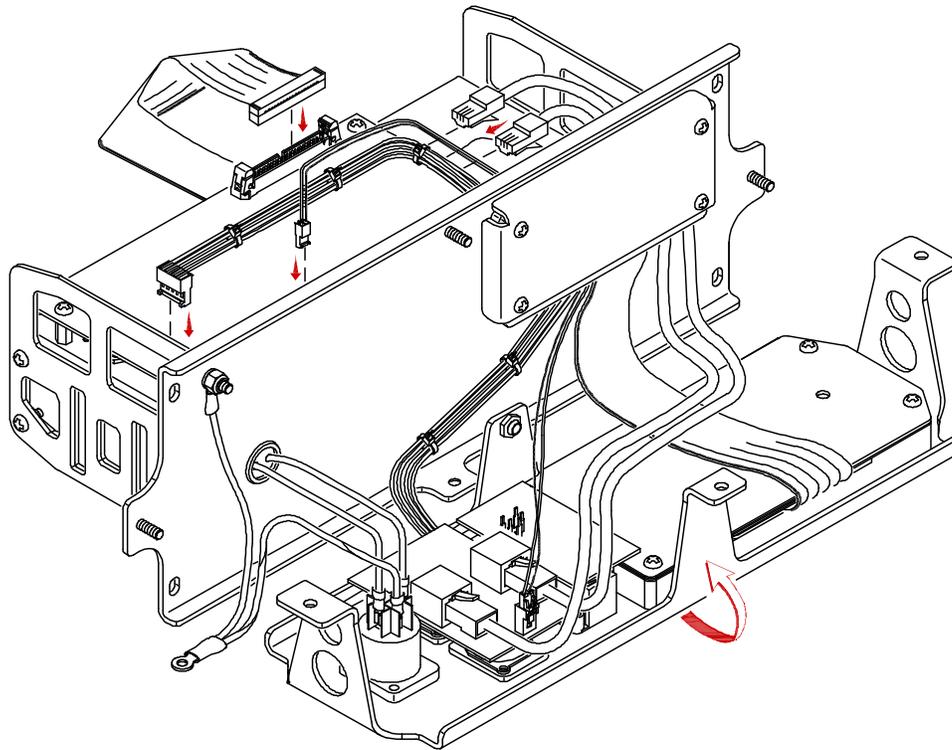
## Interface/LVS Assembly (continued)

Refer to Parts List for "Interface/LVS Assembly" on page 210.

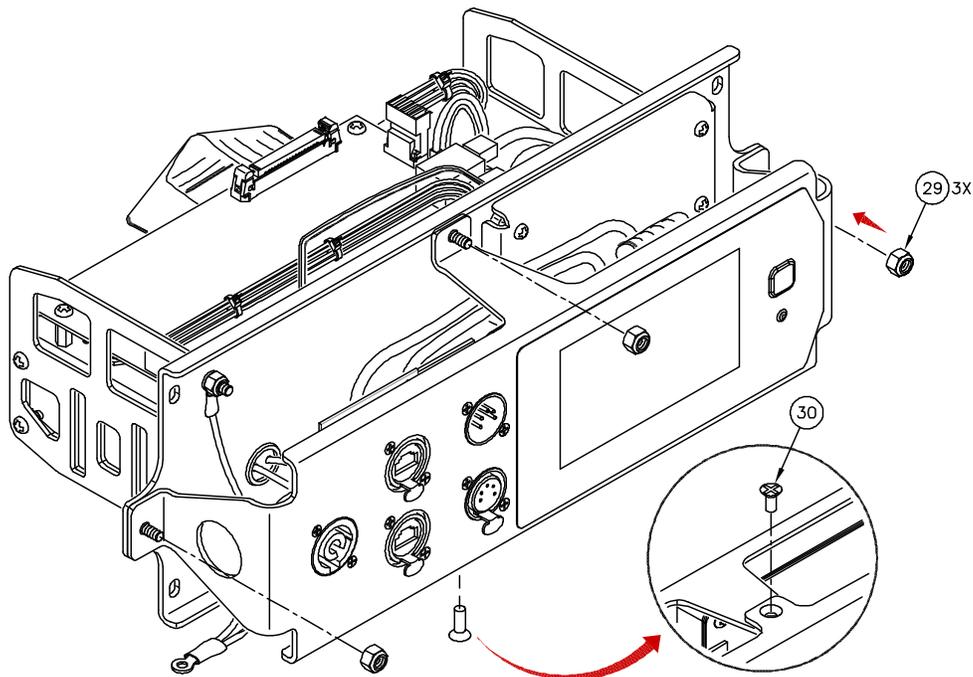


## Interface/LVS Assembly (continued)

Refer to Parts List for "Interface/LVS Assembly" on page 210.



**EXPLODED VIEW**  
9th STAGE

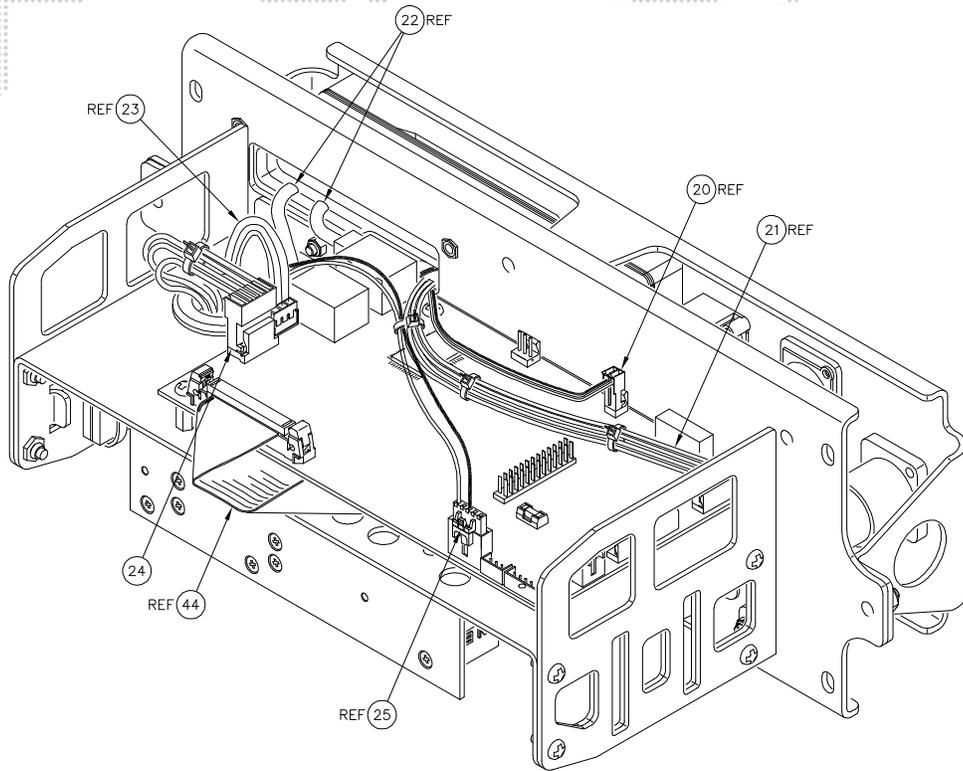


**EXPLODED VIEW**  
10th STAGE

**DETAIL "B"**  
11th STAGE

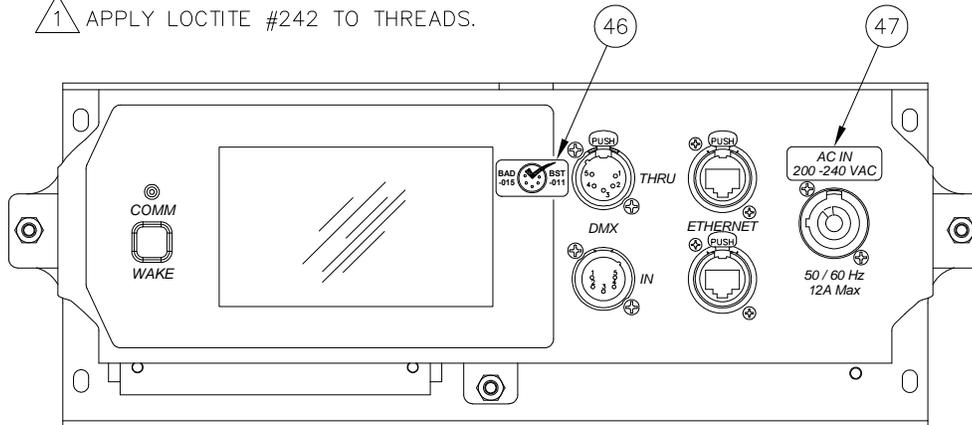
## Interface/LVS Assembly (continued)

Refer to Parts List for "Interface/LVS Assembly" on page 210.



ISOMETRIC VIEW  
FINAL STAGE

1 APPLY LOCTITE #242 TO THREADS.



FRONT VIEW

## BEST BOY HP SPARES LIST

### Quick Access Spares List

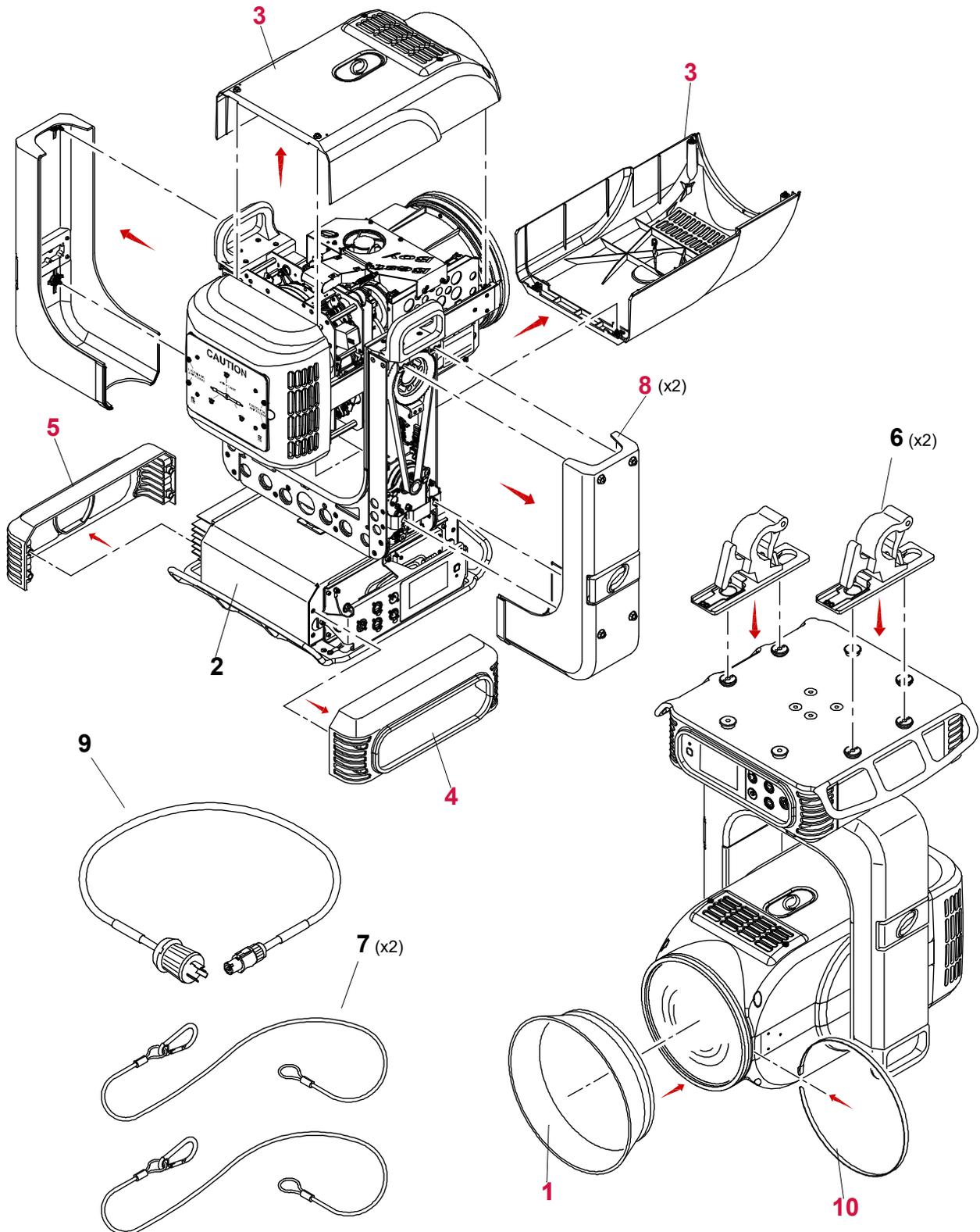
This section lists major common components for easy access in ordering replacements. See the images on the preceding pages for image details linked to this list.

No.	PRG P/N	TEAM Ecode	Qty	UM	Description	Procedure
1	10.9816.0029	2.37493-R20	1	EA	LENS HOOD, FLEXIBLE	<a href="#">page 55</a>
2	21.9817.0020	-	1	EA	SUB-ASSEMBLY, LUMINAIRE W/O COVERS	-
3	22.9817.0630	-	2	EA	ASSEMBLY, HEAD COVER	<a href="#">page 34</a>
4	21.9816.0820	-	1	EA	ASSEMBLY, INTERFACE COVER, UE	<a href="#">page 38</a>
5	21.9816.0830	-	1	EA	ASSEMBLY, BALLAST COVER, UE	<a href="#">page 38</a>
6	21.9816.0863	-	2	EA	ASSEMBLY, HOOK BRACKET	-
7	22.9816.0033	2.3749A-75	2	EA	ASSEMBLY, SAFETY CABLE HEAVY DUTY	-
8	22.9816.0716	-	2	EA	ASSEMBLY, YOKE ARM COVER	<a href="#">page 37</a>
9	25.9812.0902.5	-	1	EA	CABLE ASSEMBLY, AC LINE CORD 2.5' 14/3 L6	-
10	55.0078.1000.0	-	1	EA	BALL LOKT TIE, 316SS, .310" X .010"	<a href="#">page 55</a>
11	20.9816.1229	2.3749A-P05	1	EA	CASE, WHEEL STACK	<a href="#">page 33</a>
12	21.9817.0200	2.3749D-P01	1	EA	ASSY, WHEEL STACK	<a href="#">page 61</a>
13	21.9816.0718	2.3749A-P70	1	EA	ASSY, PAN DRIVE MECHANISM	<a href="#">page 104</a>
14	21.9816.0719	2.3749A-P75	1	EA	ASSY, TILT DRIVE MECHANISM	<a href="#">page 102</a>
15	21.9817.0810	2.3749D-P12	1	EA	ASSY, BALLAST, BEST BOY HP SPOT	<a href="#">page 95</a>
16	21.9816.0811	2.3749A-P15	1	EA	ASSY, INTERFACE/LVS, BEST BOY	<a href="#">page 91</a>
17	24.9816.0640	2.3749A-P50	1	EA	HEAD CONTROLLER, BEST BOY	<a href="#">page 59</a>
18	24.9816.0765	2.3749A-P55	1	EA	PCB ASSY, YOKE DRIVER	<a href="#">page 98</a>
19	25.9816.0996.A	2.3749A-P85	1	EA	CABLE ASSY, HEAD FAN	<a href="#">page 57</a>
20	25.9816.0991	2.3749A-R10	1	EA	CABLE ASSY, BALLAST HEATSINK FAN	<a href="#">page 97</a>
21	25.9816.0979	2.3749A-P30	1	EA	CABLE ASSY, TILT COT SENSOR, PCB	<a href="#">page 100</a>
22	24.9817.0640	2.3749D-P42	1	EA	PCB, FAN CONTROLLER, BEST BOY HP SPOT	<a href="#">page 90</a>
23	12.9815.0787	2.3749D-P36	1	EA	IGNITOR, MODIFIED	<a href="#">page 89</a>
24	23.9816.0530.01	2.3749A-R25	1	EA	MOTOR ASSY, ZOOM LENS GROUP 1	<a href="#">page 71</a>
25	23.9816.0530.02	2.3749A-R30	1	EA	MOTOR ASSY, ZOOM LENS GROUP 2	<a href="#">page 71</a>
26	23.9816.0530.03	2.3749A-R35	1	EA	MOTOR ASSY, ZOOM LENS GROUP 3	<a href="#">page 71</a>
27	24.9812.0510	2.3749A-P40	3	EA	PCB ASSY, ZOOM SENSOR	<a href="#">page 68</a>
28	25.9817.0992	2.3749D-P52	1	EA	CABLE ASSY, UE CHASSIS FAN	<a href="#">page 93</a>
29	71.2550.1500.0	2.3749D-11	1	EA	LAMP, 1500W/D7/60 DOUBLE ENDED OSRAM	<a href="#">page 44</a>
30	25.9815.0994	2.3749D-P87	4	EA	CABLE ASSY, HEAD FAN	<a href="#">page 57</a>
31	25.9816.0982	2.3749A-P45	1	EA	CABLE ASSY, GAG SENSOR	<a href="#">page 65</a>
32	42.9816.0170	2.3749D-P09	1	EA	REFLECTOR, STEPPED, 10 LUNES, COATED	<a href="#">page 85</a>
33	23.9816.0211.01	2.3749A-R15	1	EA	MOTOR ASSY, GOBO INDEX 1	<a href="#">page 63</a>
34	23.9816.0231.02	2.3749A-R20	1	EA	MOTOR ASSY, GOBO INDEX 2	<a href="#">page 64</a>

Refer to the illustrations on the preceding pages.

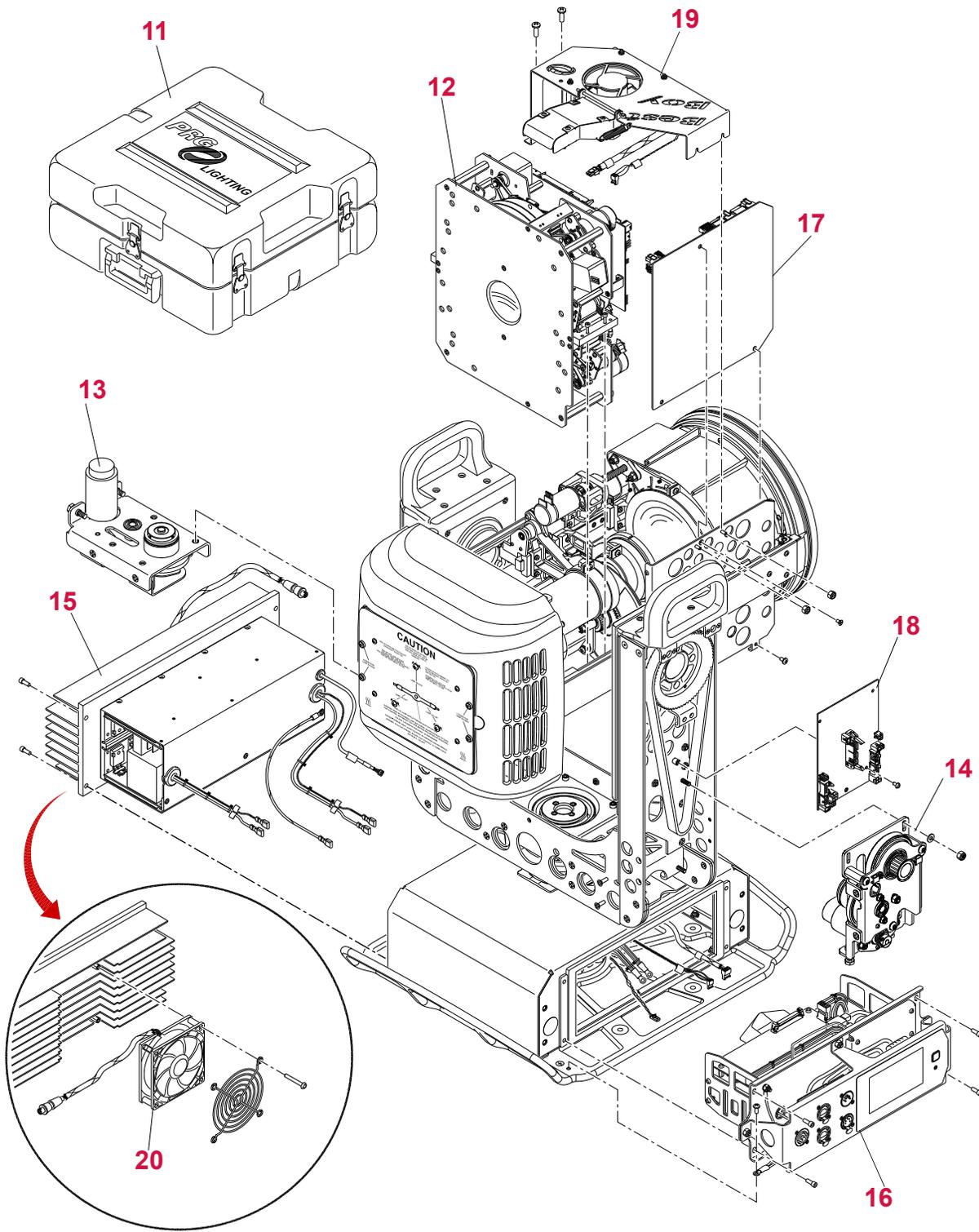
## Best Boy HP Quick Access Spares List, Con't

Refer to Parts List for "Quick Access Spares List" on page 218. Click a red callout number to go to that procedure.



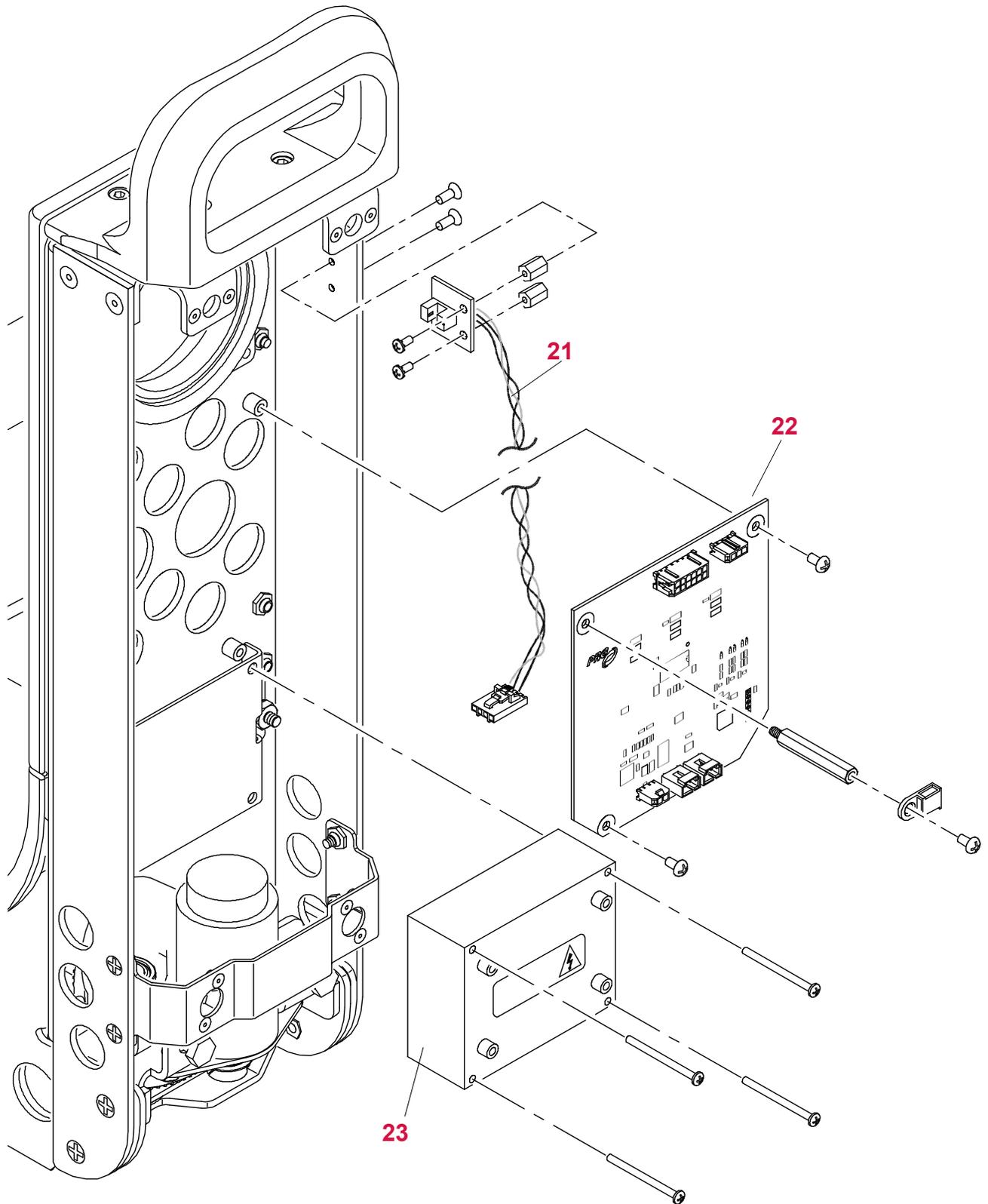
## Best Boy HP Quick Access Spares List, Con't

Refer to Parts List for "Quick Access Spares List" on page 218. Click a red callout number to go to that procedure.



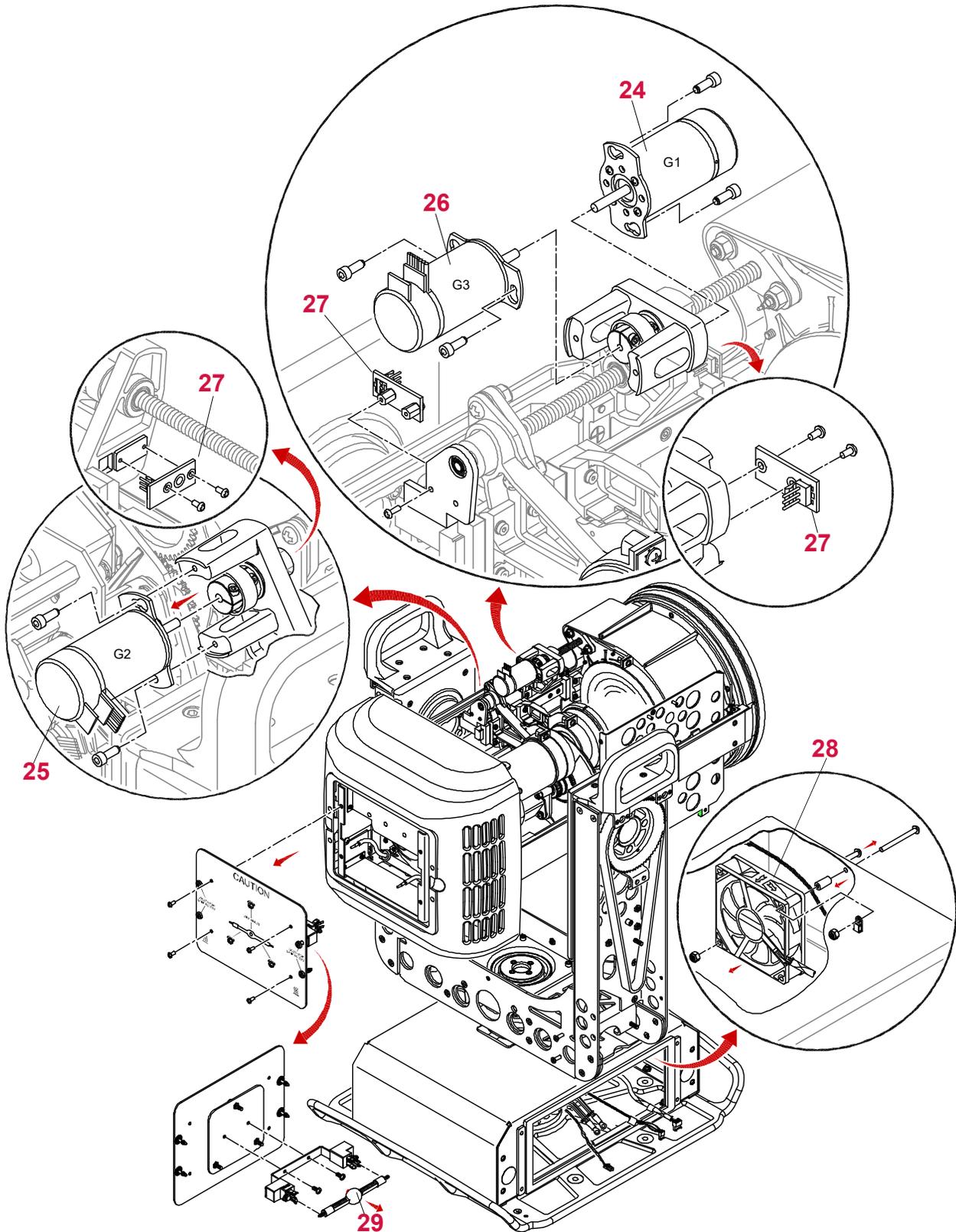
## Best Boy HP Quick Access Spares List, Con't

Refer to Parts List for "Quick Access Spares List" on page 218. Click a red callout number to go to that procedure.



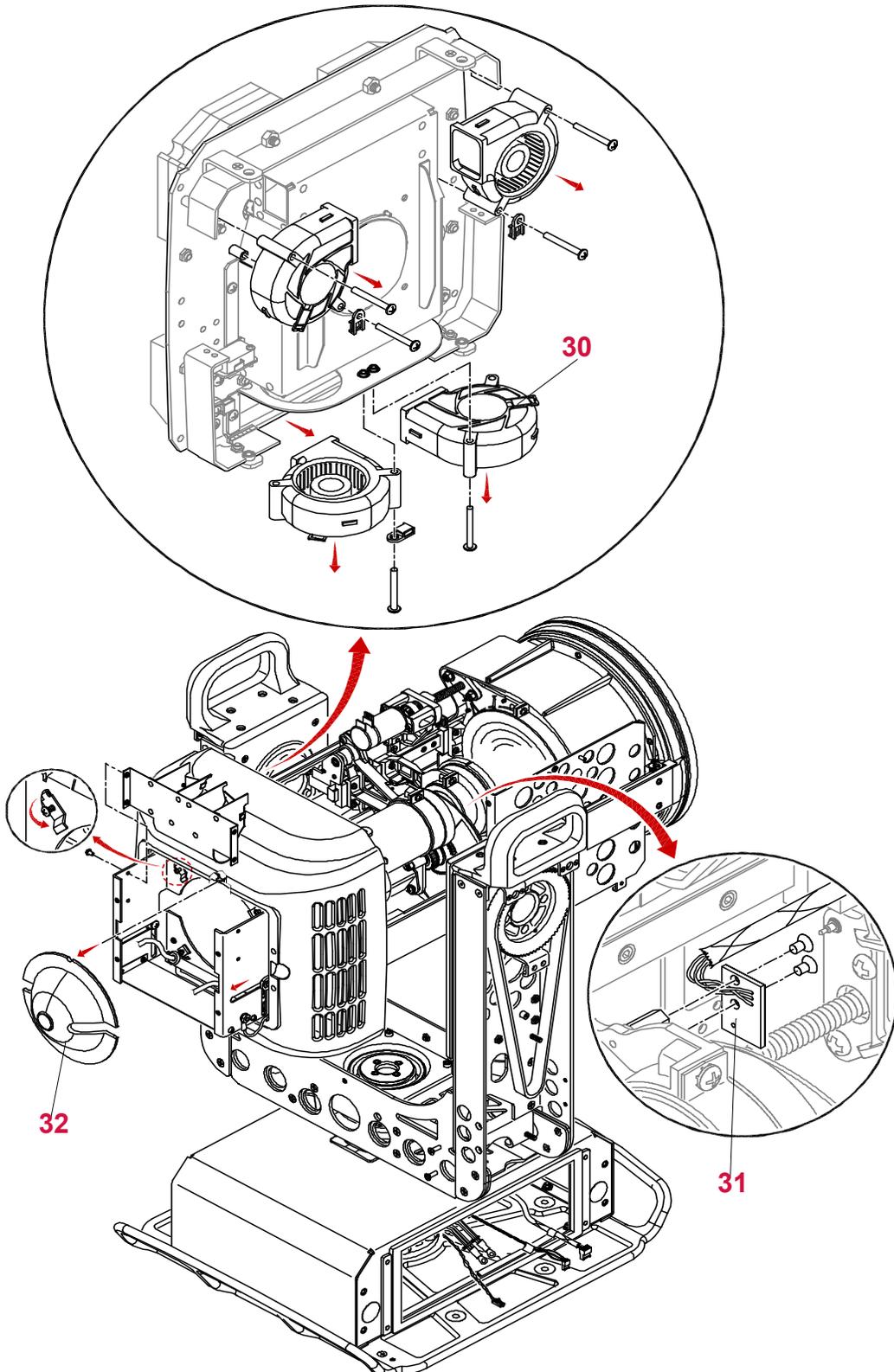
## Best Boy HP Quick Access Spares List, Con't

Refer to Parts List for "Quick Access Spares List" on page 218. Click a red callout number to go to that procedure.



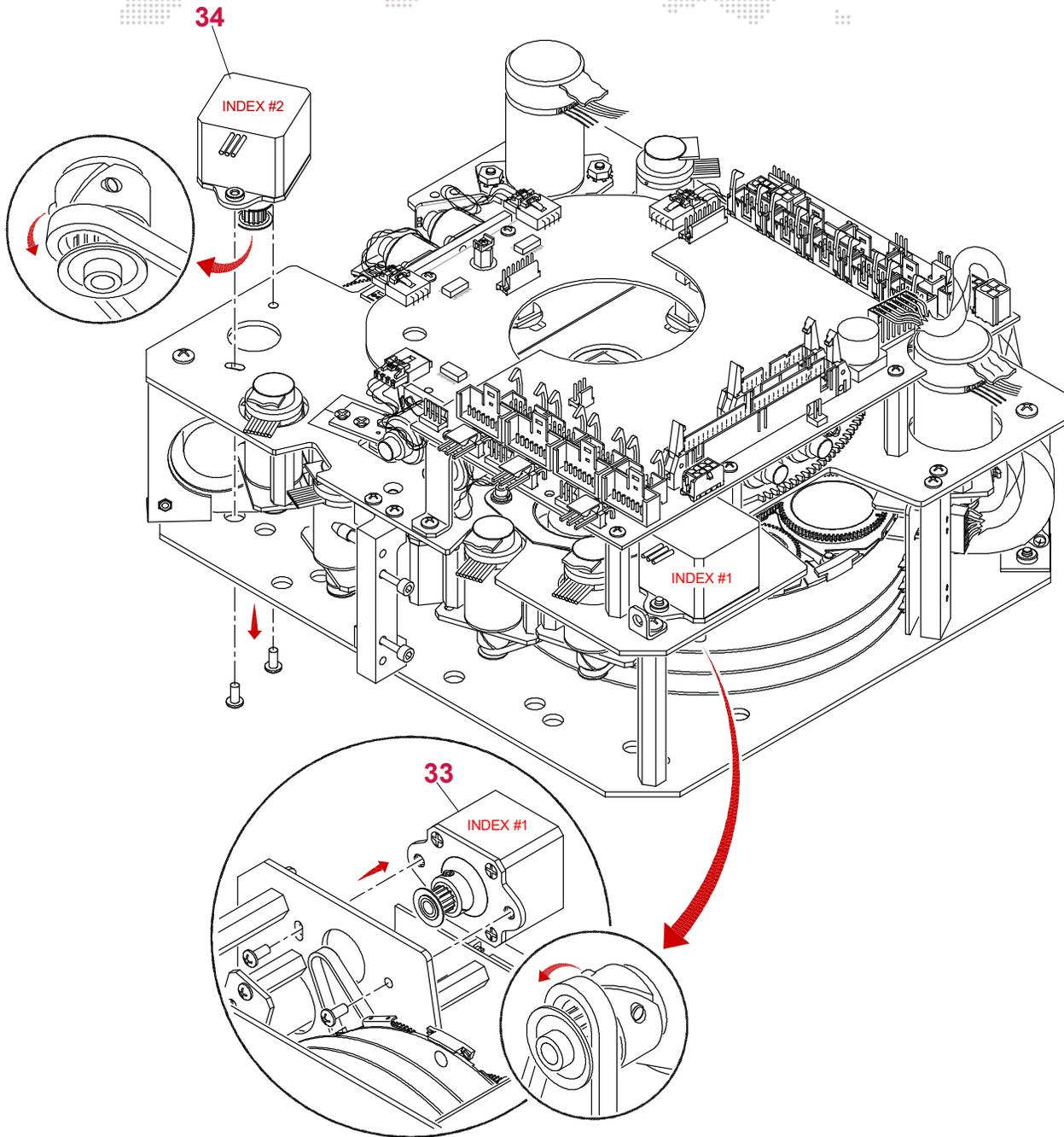
## Best Boy HP Quick Access Spares List, Con't

Refer to Parts List for "Quick Access Spares List" on page 218. Click a red callout number to go to that procedure.



## Best Boy HP Quick Access Spares List, Con't

Refer to Parts List for "Quick Access Spares List" on page 218. Click a red callout number to go to that procedure.

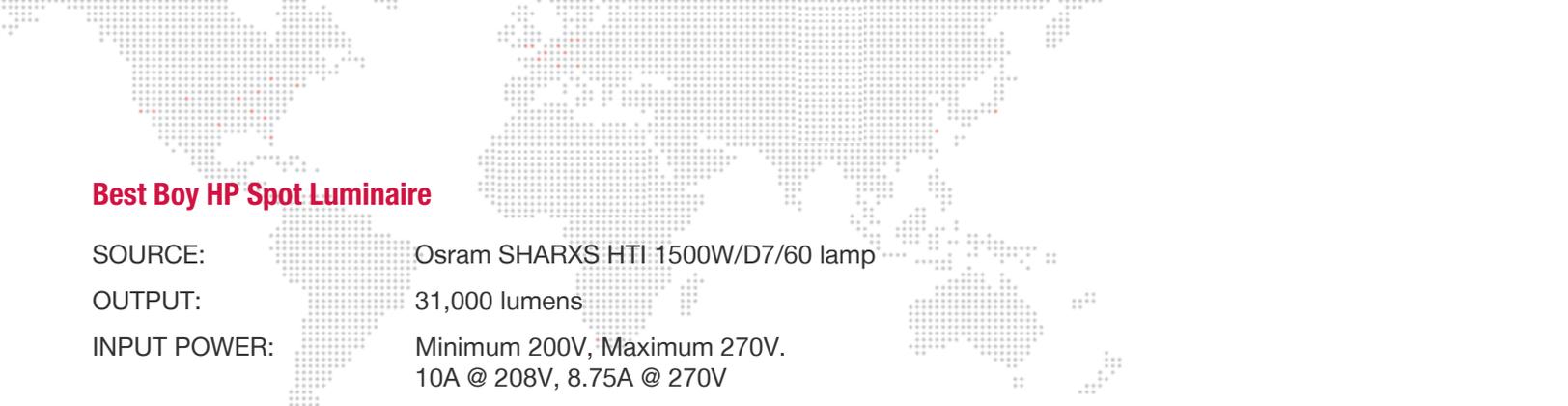




**A.**

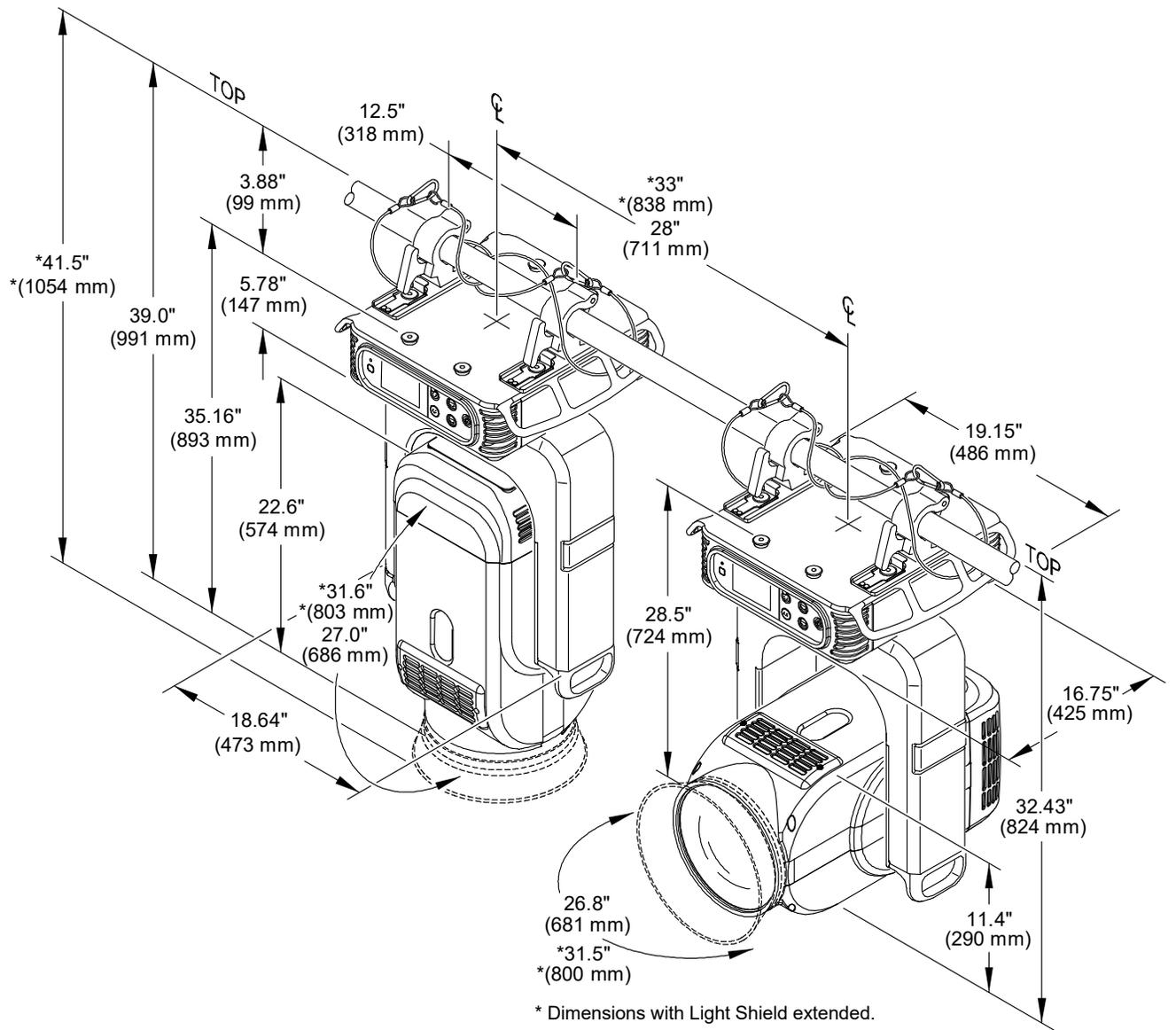
## **TECHNICAL SPECIFICATIONS**

- + BEST BOY HP SPOT LUMINAIRE
- + BEST BOY ROAD CASE



## Best Boy HP Spot Luminaire

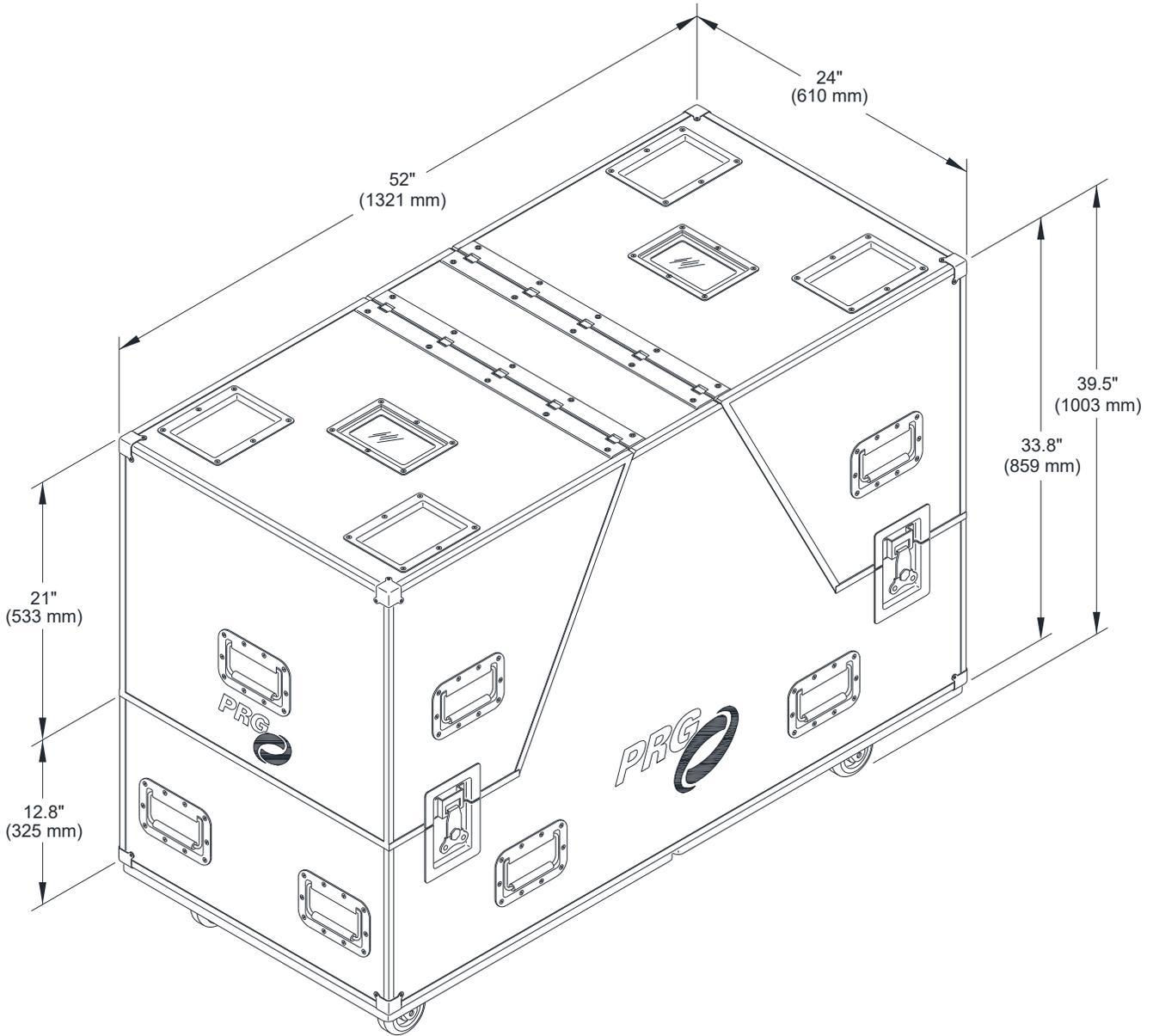
SOURCE:	Osram SHARXS HTI 1500W/D7/60 lamp
OUTPUT:	31,000 lumens
INPUT POWER:	Minimum 200V, Maximum 270V. 10A @ 208V, 8.75A @ 270V
REFLECTOR:	Precision glass reflector with cold mirror coating.
ZOOM RANGE:	8:1 from a tight spot of 8° to a very wide flood of 64° maintaining focus throughout.
BEAM SIZE CONTROL:	In addition to the zoom optics, a mechanical iris provides continuous beam size control for both rapid changes and smooth, timed beam angle changes.
FRAMING:	Four-blade framing system featuring four independent blades mounted in two planes. Each blade can be tilted +/- 30° and the entire frame system can be rotated +/- 60° for a total travel of 120°.
DIMMING:	Gray-scale glass dimmer for full-field dimming from 0% to 100% with accurate slow-speed control and fast bumps.
STROBE:	Servo-powered, lightning fast strobe wheel.
EFFECTS:	One (1) multiplying four-facet prism, two (2) glass effects, and variable frost.
COLOR:	CMY color system featuring three (3) crossfading color wheels of Cyan, Magenta, and Yellow, plus one (1) designer wheel with seven (7) user-changeable color filters.
COLOR TEMP CONTROL:	Adjustable color temperature wheel, range from 3,000K all the way up to 7,500K. Includes an integrated minus green filter.
ROTATING GOBOS:	Two (2) indexable, rotating gobo wheels with six (6) gobos per wheel. Gobos are individually calibrated so the unit will automatically index the orientation of each gobo regardless of initial placement. Both gobo wheels accept PRG Moiré Gobos™ for advanced gobo rotator effects.
OPERATING TEMP:	32° to 120°F (0° to 49°C)
CONTROL:	Compatible with DMX512A, RDM, Art-Net, and sACN sources.
DMX CHANNELS:	45 DMX512 channels required per unit.
ETHERNET BYPASS:	Ethernet signals pass through daisy-chained luminaires even if power is removed.
ON-BOARD CONTROL:	Built-in LCD touchscreen display allows for on-board fixture control and feedback. On-board battery power allows for the fixture address and configurations to be set without having to apply AC power to the luminaire.
PAN & TILT:	Three-phase, high-speed servomotors. Brakes are applied when off.
RANGE:	Pan - 615°, Tilt - 260°
POSITIONING:	Can be mounted in any orientation.
SPACING:	Hangs on 33 inch (838 mm) centers when Light Shield is extended. Hangs on 28 inch (711 mm) centers when Light Shield is not extended.
WEIGHT:	109 lbs (49.44 kg) without hooks. 2-point hang hardware adds 7.55 lbs (3.42 kg), 3-point adds 11.3 lbs (5.12 kg).



## Best Boy Road Case

EMPTY WEIGHT: 171 lbs (77.56 kg)

LOADED WEIGHT: 389 lbs (176.45 kg)





## FOR CUSTOMER SERVICE AND TECHNICAL SUPPORT:

### PRG Dallas (International Service)

Address 8617 Ambassador Row, Suite 120  
Dallas, Texas 75247 USA

Phone 214-630-1963

Fax 214-630-5867

Service Fax 214-638-2125

Service Email [orders@prg.com](mailto:orders@prg.com)

**BEST BOY**  
Direct Support

[bestboysupport@prg.com](mailto:bestboysupport@prg.com)



Best Boy® HP Spot Luminaire  
Service Manual

Version as of: September 1, 2019

Written by J. Hutchison

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**Production Resource Group, LLC**  
**Dallas Office**  
**8617 Ambassador Row, Suite 120**  
**Dallas, Texas 75247**  
[www.prg.com](http://www.prg.com)