

WHELEN[®]

ENGINEERING COMPANY INC.

51 Winthrop Road
Chester, Connecticut 06412-0684
Phone: (860) 526-9504
Internet: www.whelen.com
Sales e-mail: autosale@whelen.com
Customer Service e-mail: custserv@whelen.com

Installation Guide:
Freedom IV WeCan[®] Economy Lightbar
Model(s) MLR472A1
MLR460A

Warnings to Installers

Whelen's emergency vehicle warning devices must be properly mounted and wired in order to be effective and safe. Read and follow all of Whelen's written instructions when installing or using this device. Emergency vehicles are often operated under high speed stressful conditions which must be accounted for when installing all emergency warning devices. Controls should be placed within convenient reach of the operator so that they can operate the system without taking their eyes off the roadway. Emergency warning devices can require high electrical voltages and/or currents. Properly protect and use caution around live electrical connections. Grounding or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or vehicle damage, including fire. Many electronic devices used in emergency vehicles can create or be affected by electromagnetic interference. Therefore, after installation of any electronic device it is necessary to test all electronic equipment simultaneously to insure that they operate free of interference from other components within the vehicle. Never power emergency warning equipment from the same circuit or share the same grounding circuit with radio communication equipment. All devices should be mounted in accordance with the manufacturer's instructions and securely fastened to vehicle elements of sufficient strength to withstand the forces applied to the device. Driver and/or passenger air bags (SRS) will affect the way equipment should be mounted. This device should be mounted by permanent installation and within the zones specified by the vehicle manufacturer, if any. Any device mounted in the deployment area of an air bag will damage or reduce the effectiveness of the air bag and may damage or dislodge the device. Installer must be sure that this device, its mounting hardware and electrical supply wiring does not interfere with the air bag or the SRS wiring or sensors. Mounting the unit inside the vehicle by a method other than permanent installation is not recommended as unit may become dislodged during swerving; sudden braking or collision. Failure to follow instructions can result in personal injury. Whelen assumes no liability for any loss resulting from the use of this warning device. **PROPER INSTALLATION COMBINED WITH OPERATOR TRAINING IN THE PROPER USE OF EMERGENCY WARNING DEVICES IS ESSENTIAL TO INSURE THE SAFETY OF EMERGENCY PERSONNEL AND THE PUBLIC.**

Warnings to Users

Whelen's emergency vehicle warning devices are intended to alert other operators and pedestrians to the presence and operation of emergency vehicles and personnel. However, the use of this or any other Whelen emergency warning device does not guarantee that you will have the right-of-way or that other drivers and pedestrians will properly heed an emergency warning signal. Never assume you have the right-of-way. It is your responsibility to proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, or walking on or around traffic lanes. Emergency vehicle warning devices should be tested on a daily basis to ensure that they operate properly. When in actual use, the operator must ensure that both visual and audible warnings are not blocked by vehicle components (i.e.: open trunks or compartment doors), people, vehicles, or other obstructions. It is the user's responsibility to understand and obey all laws regarding emergency warning devices. The user should be familiar with all applicable laws and regulations prior to the use of any emergency vehicle warning device. Whelen's audible warning devices are designed to project sound in a forward direction away from the vehicle occupants. However, because sustained periodic exposure to loud sounds can cause hearing loss, all audible warning devices should be installed and operated in accordance with the standards established by the National Fire Protection Association.

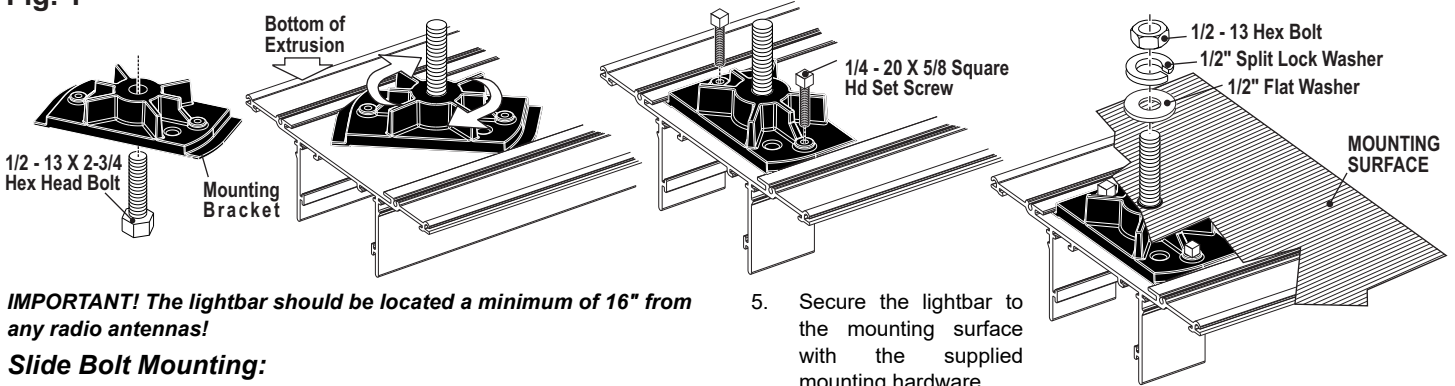
Safety First

This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

⚠ WARNING: This product can expose you to chemicals including Methylene Chloride which is known to the State of California to cause cancer, and Bisphenol A, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

- **Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.**
- **Whelen Engineering requires the use of waterproof butt splices and/or connectors if that connector could be exposed to moisture.**
- **Any holes, either created or utilized by this product, should be made both air- and watertight using a sealant recommended by your vehicle manufacturer.**
- **Failure to use specified installation parts and/or hardware will void the product warranty.**
- **If mounting this product requires drilling holes, the installer MUST be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins. Also de-burr the holes and remove any metal shards or remnants. Install grommets into all wire passage holes.**
- **If this manual states that this product may be mounted with suction cups, magnets, tape or Velcro[®], clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly.**
- **Do not install this product or route any wires in the deployment area of your air bag. Equipment mounted or located in the air bag deployment area will damage or reduce the effectiveness of the air bag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owner's manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.**
- **For this product to operate at optimum efficiency, a good electrical connection to chassis ground must be made. The recommended procedure requires the product ground wire to be connected directly to the NEGATIVE (-) battery post (this does not include products that use cigar power cords).**
- **If this product uses a remote device for activation or control, make sure that this device is located in an area that allows both the vehicle and the device to be operated safely in any driving condition.**
- **Do not attempt to activate or control this device in a hazardous driving situation.**
- **This product contains either strobe light(s), halogen light(s), high-intensity LEDs or a combination of these lights. Do not stare directly into these lights. Momentary blindness and/or eye damage could result.**
- **Use only soap and water to clean the outer lens. Use of other chemicals could result in premature lens cracking (crazing) and discoloration. Lenses in this condition have significantly reduced effectiveness and should be replaced immediately. Inspect and operate this product regularly to confirm its proper operation and mounting condition. Do not use a pressure washer to clean this product.**
- **It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.**
- **FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**

Fig. 1



IMPORTANT! The lightbar should be located a minimum of 16" from any radio antennas!

Slide Bolt Mounting:

1. Insert the three supplied 1/2 - 13 X 2-3/4 HEX HD BOLTS into the slide bolt brackets and twist the brackets into the bottom of the lightbar extrusion (Fig. 1).
2. With the slide bolt brackets in their mounting position, secure them to the lightbar with the supplied set screws.
3. Position the lightbar onto the vehicle and mark the location of the three mounting bolts off onto the mounting surface.
4. Remove the lightbar and drill the three mounting holes you marked off using a 1/2" drill bit.

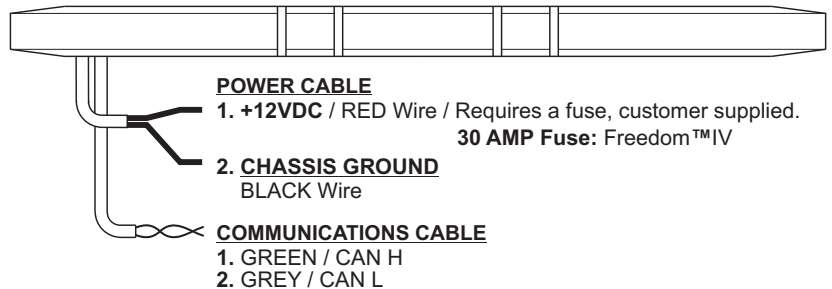
5. Secure the lightbar to the mounting surface with the supplied mounting hardware.
6. Extend wires to your switch panel and refer to the wiring diagram. Refer to the instructions included with your switches for switch wiring.

IMPORTANT! It is the responsibility of the installation technician to make sure that the installation and operation of this product will not interfere with or compromise the operation or efficiency of any vehicle equipment! Before returning the vehicle to active service, visually confirm the proper operation of this product, as well as all vehicle components/equipment.

Connecting the Power Cable:

WARNING! All customer supplied wires that connect to the positive terminal of the battery must be sized to supply at least 125% of the maximum operating current and FUSED at the battery to carry that load. DO NOT USE CIRCUIT BREAKERS WITH THIS PRODUCT!

1. Follow the factory wiring harness through the firewall. It may be necessary to drill a hole in the firewall. If so, be absolutely sure that there are no components that could be damaged by drilling. After the hole has been drilled, insert a grommet to protect the cable.
2. Route the cable along the factory wiring harness towards the battery. Install a 30 amp fuse block (customer supplied) on the end of the RED wire in the power cable.
NOTE: Remove the fuse from the fuse block before connecting any wires to the battery.
3. Connect the BLACK wire to Chassis Ground.



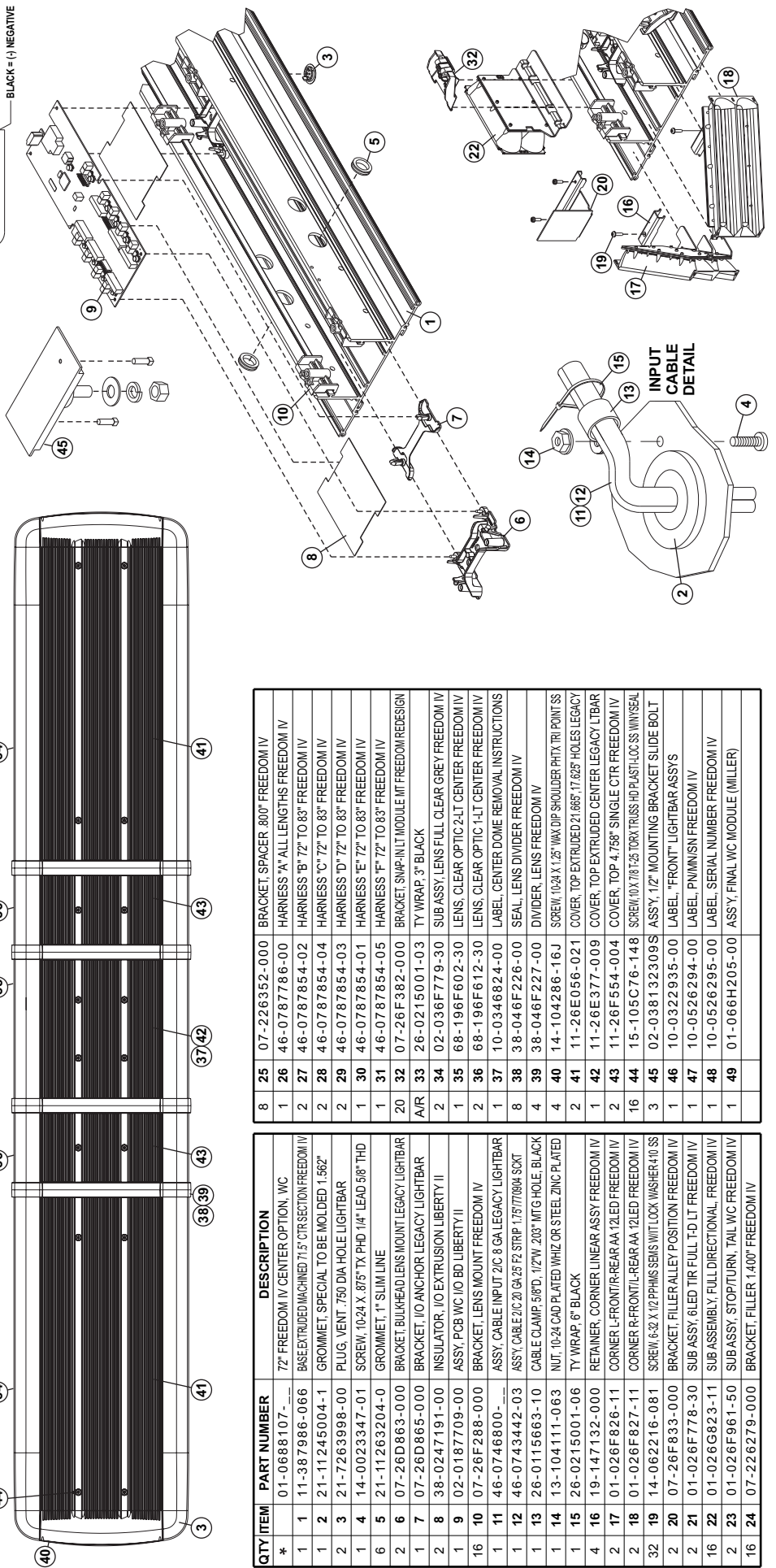
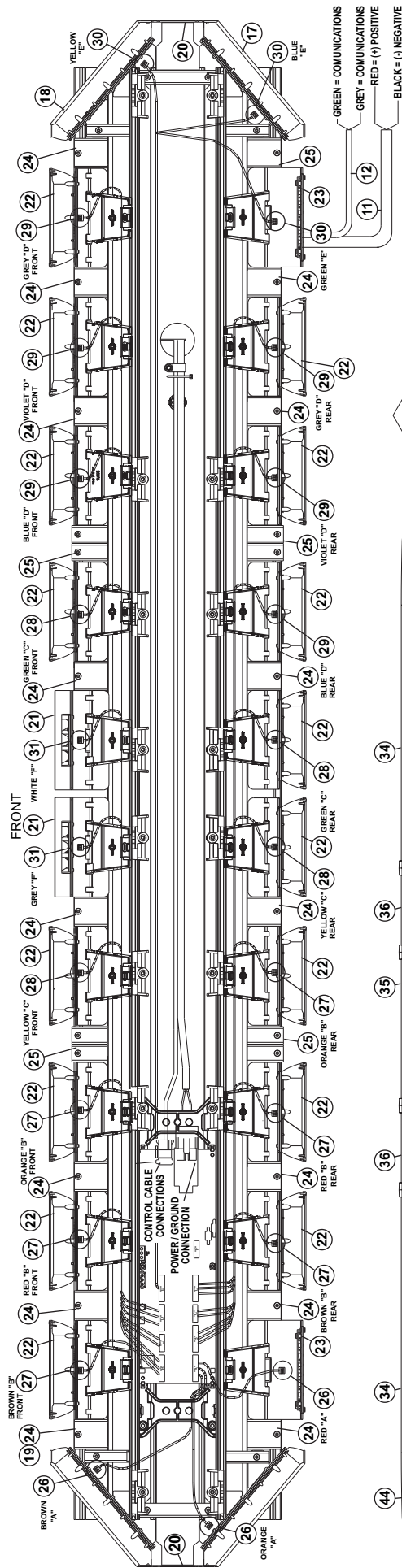
Connecting the Communication Cable:

Splice the GREEN and GREY wires from the lightbar to the GREEN and GREY wires from the Gateway.

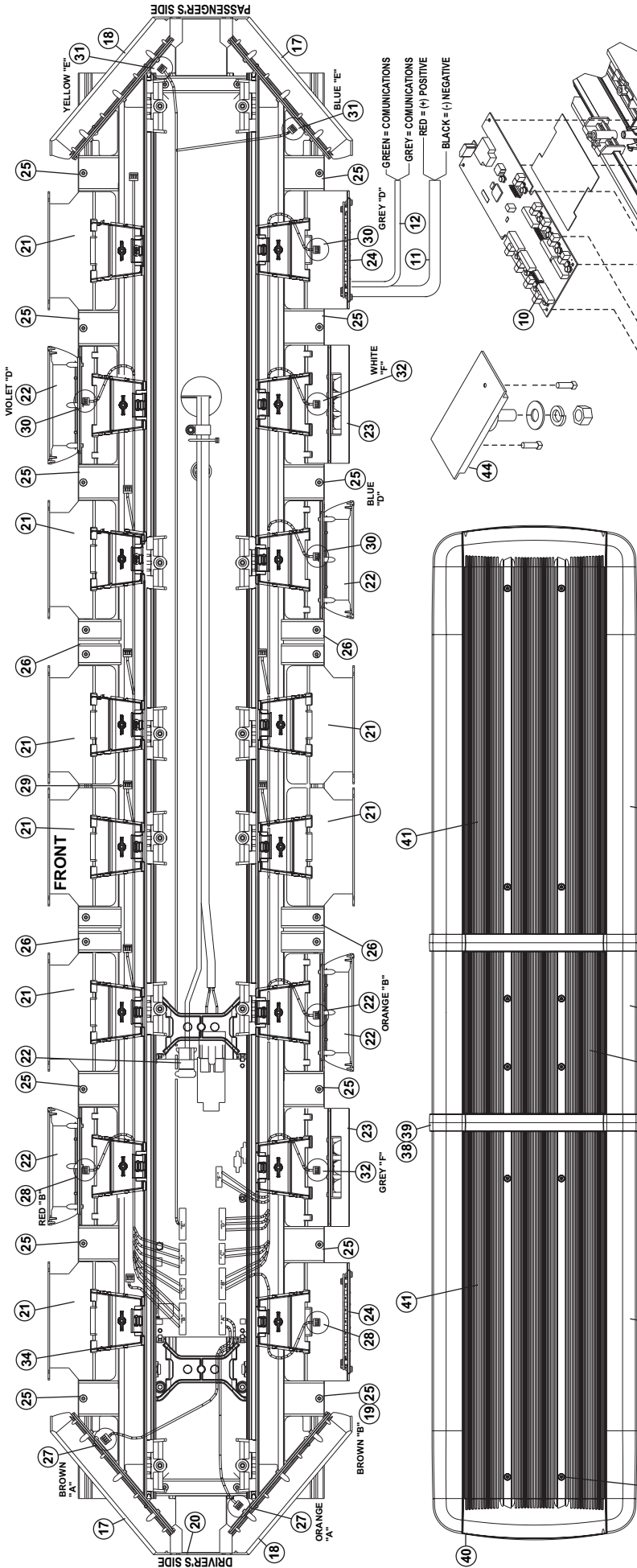
Troubleshooting:

If your lightbar is not functioning properly, check for the following:

- The positive wire (RED) is properly connected to the battery, by way of the user supplied fuse block.
- A working fuse of the correct amperage is installed in the fuse block (See illustration above, for the specific fuse rating for your lightbar).
- The ground wire (BLACK) is properly connected to the factory ground. Be sure that the wire is fully grounded to this location.
- The two communication wires (GREEN and GREY) are properly connected to their communication designations.



QTY	ITEM	PART NUMBER	DESCRIPTION
1	1	01-0688107-72	FREEDOM IV CENTER OPTION WC
1	1	11-387986-066	BASE EXTRUDED MACHINED 7.5" CTR SECTION FREEDOM IV
1	2	21-11245004-1	GROMMET SPECIAL TO BE MOLDED 1.562"
1	3	21-7263998-00	PLUG, VENT, .750 DIA HOLE LIGHTBAR
1	4	14-0023347-01	SCREW, 10-24 X .875 TX PHD 1/4" LEAD 5/8" THD
6	5	21-11263204-0	GROMMET, 1" SLIM LINE
2	6	07-26D863-000	BRACKET, BULKHEAD LENS MOUNT LEGACY LIGHTBAR
1	7	07-26D865-000	BRACKET, I/O ANCHOR LEGACY LIGHTBAR
2	8	38-0247191-00	INSULATOR, I/O EXTRUSION LIBERTY II
1	9	02-0187709-00	ASSY, PCB WC IO BD LIBERTY II
16	10	07-26F288-000	BRACKET, LENS MOUNT FREEDOM IV
1	11	46-0746800-00	ASSY, CABLE INPUT 2/C 8 GA LEGACY LIGHTBAR
1	12	46-0743442-03	ASSY, CABLE 2/C 20 GA 25 FZ STRIP 1.75/77894 SCKT
1	13	26-0115663-10	CABLE CLAMP, 5/8D, 1/2" W, 203" MTG HOLE, BLACK
1	14	13-1041111-063	NUT, 10-24 CAD PLATED WHIZ OR STEEL ZINC PLATED
1	15	26-0215001-06	TY WRAP, 6" BLACK
4	16	19-147132-000	RETAINER, CORNER LINEAR ASSY FREEDOM IV
2	17	01-026F826-11	CORNER L-FRONT/R-REAR AA 12LED FREEDOM IV
2	18	01-026F827-11	CORNER R-FRONT/L-REAR AA 12LED FREEDOM IV
32	19	14-062216-081	SCREW, 6-32 X 1/2 PHMS SEMI W/ LOCK WASHER 4/10 SS
2	20	07-26F833-000	BRACKET, FILLER ALLEY POSITION FREEDOM IV
2	21	01-026F778-30	SUB ASSY, 6LED IIR FULL T-D LT FREEDOM IV
16	22	01-026G823-11	SUB ASSEMBLY, FULL DIRECTIONAL, FREEDOM IV
2	23	01-026F9611-50	SUB ASSY, STOP/TURN, TAIL WC FREEDOM IV
16	24	07-226279-000	BRACKET, FILLER 1400" FREEDOM IV
8	25	07-226352-000	BRACKET, SPACER 800" FREEDOM IV
1	26	46-0787786-00	HARNESS "A" ALL LENGTHS FREEDOM IV
2	27	46-0787854-02	HARNESS "B" 72" TO 88" FREEDOM IV
2	28	46-0787854-04	HARNESS "C" 72" TO 83" FREEDOM IV
1	29	46-0787854-03	HARNESS "D" 72" TO 83" FREEDOM IV
1	30	46-0787854-01	HARNESS "E" 72" TO 83" FREEDOM IV
1	31	46-0787854-05	HARNESS "F" 72" TO 83" FREEDOM IV
20	32	07-26F382-000	BRACKET, SWAP-IN/IT MODULE MT FREEDOM REDESIGN
AVR	33	26-0215001-03	TY WRAP, 3" BLACK
2	34	02-036F779-30	SUB ASSY, LENS FULL CLEAR GREY FREEDOM IV
1	35	68-196F602-30	LENS, CLEAR OPTIC 2-LT CENTER FREEDOM IV
2	36	68-196F612-30	LENS, CLEAR OPTIC 1-LT CENTER FREEDOM IV
1	37	10-0346824-00	LABEL, CENTER DOME REMOVAL INSTRUCTIONS
8	38	38-046F226-00	SEAL, LENS DIVIDER FREEDOM IV
4	39	38-046F227-00	DIVIDER, LENS FREEDOM IV
4	40	14-104286-16J	SCREW, 10-24 X 1.25" WAX DIP SHOULDER PHX, TRI POINT SS
2	41	11-26E056-021	COVER, TOP EXTRUDED 21.688" 17.625" HOLES LEGACY
1	42	11-26E377-009	COVER, TOP EXTRUDED CENTER LEGACY LIGHTBAR
2	43	11-26F554-004	COVER, TOP 4.758" SINGLE CTR FREEDOM IV
16	44	15-105C76-148	SCREW, 10 X 1/8 1.25 TORX TRUSS HD RAST LOG SS W/ NY SEAL
3	45	02-038132309S	ASSY, 1/2" MOUNTING BRACKET SLIDE BOLT
1	46	10-0322935-00	LABEL, "FRONT" LIGHTBAR ASSYS
1	47	10-0526294-00	LABEL, P/NMIN/IN FREEDOM IV
1	48	10-0526295-00	LABEL, SERIAL NUMBER FREEDOM IV
1	49	01-066H205-00	ASSY, FINAL WC MODULE (MILLER)



2	01-026F961-50	SUB ASSY, STOPTURN, TAIL WC FREEDOM IV
12	07-226279-000	BRACKET, FILLER 1400" FREEDOM IV
8	07-226352-000	ASSY, SPACER, 800" FREEDOM IV
1	27-46-0787786-00	ASSY, HARNESS "A" ALL LENGTHS FREEDOM IV
2	28-46-0787786-02	ASSY, HARNESS "B" UP TO 60" FREEDOM IV
2	29-46-0787786-04	ASSY, HARNESS "C" UP TO 60" FREEDOM IV
1	30-46-0787786-03	ASSY, HARNESS "D" UP TO 60" FREEDOM IV
1	31-46-0787786-01	ASSY, HARNESS "E" UP TO 60" FREEDOM IV
1	32-46-0787786-05	ASSY, HARNESS "F" UP TO 60" FREEDOM IV
16	07-26F382-000	BRACKET, SNAP-IN LT MODULE MT
A/R	34-26-0215001-03	TY WRAP, 3" BLACK
2	35-02-036F779-30	SUBASSY, LENS FULL CLEAR FREEDOM IV
1	36-68-196F602-30	LENS, CLEAR OPTIC 2-LT CENTER FREEDOM IV
1	37-10-0346824-00	LABEL, CENTER DOME REMOVAL INSTRUCTIONS
4	38-046F226-00	SEAL, LENS DIVIDER FREEDOM IV
2	39-046F227-00	DIVIDER, LENS CLEAR FREEDOM IV
4	14-104286-16J	SCREW, 10-24 X 1.25" MAX. DIP SHOULDER PHX. TRI-POINT SS
2	41-11-26E056-021	COVER, TOP EXTRUDED 21.665" MACHINED 17.625" HOLES LEGACY
1	42-11-26E377-009	COVER, TOP EXTRUDED CENTER LEGACY LT BAR
12	43-15-105C76-148	SCREW, 10 X 7/8 1-25 TORX TRUSS HD PLAST-LOC. SS W/INSEAL
3	44-02-038132309S	ASSY, 1/2" MOUNTING BRACKET SLIDE BOLT
1	45-10-0322935-00	LABEL, "FRONT" LIGHTBAR ASSYS
1	46-10-0526294-00	LABEL, PN/MIN/IN FREEDOM IV
1	47-10-0526295-00	LABEL, SERIAL NUMBER FREEDOM IV

QTY	ITEM	PART NUMBER	DESCRIPTION
*	1	01-0688152-00	60" FREEDOM IV WC, MILLER
1	1	11-387701-055	BASE, EXTRUDED 55.020" MACHINED 60" FREEDOM IV
1	2	14-0023347-01	SCREW, 10-24 X .875" TX. PHD SWEDGE FORM 1/4" LEAD 3/8" THD
1	3	21-11245004-1	GROMMET, SPECIAL TO BE MOLDED 1.562"
2	4	21-7263998-00	PLUG, VENT, 750 DIA HOLE LIGHTBAR
8	5	21-11263204-0	GROMMET, 1" SLIM LINE
12	6	07-26F288-000	BRACKET, LENS MOUNT FREEDOM IV
2	7	07-26D863-000	BRACKET, BULKHEAD LENS MOUNT LEGACY LIGHTBAR
1	8	07-26D865-000	BRACKET, IO ANCHOR LEGACY LIGHTBAR
2	9	38-0247191-00	INSULATOR, IO EXTRUSION LIBERTY II
1	10	02-0187709-00	ASSY, PCB WC IO BOARD LIBERTY II
1	11	46-0746800-17	ASSY, CABLE INPUT 2/C 8 GA 17' LEGACY LIGHTBAR
1	12	46-0743442-02	ASSY, CABLE 2/C 20 GA 17' STRIP 1.75/77094 SCAT
1	13	26-01156663-10	CABLE CLAMP, 3/8" D, 1/2" W, .203" MTG HOLE, BLACK
1	14	13-104111-063	NUT, 10-24 CAD PLATED WHIZ
1	15	26-0215001-06	TY WRAP, 6" BLACK
4	16	19-147132-000	RETAINER, CORNER LINEAR ASSY FREEDOM IV
2	17	01-026F826-11	ASSY, CORNER L-FRONT/IR-REAR-AA12LED FREEDOM IV
2	18	01-026F827-11	ASSY, CORNER R-FRONT/L-REAR-AA12LED FREEDOM IV
28	19	14-062216-081	SCREW, 6-32 X 1/2" PPHMS SS/MS W/IT LOCK WASHER 4 W/SS
2	20	07-26F833-000	BRACKET, FILLER ALLEY POSITION FREEDOM IV
8	21	07-247177-000	BRACKET, FULL FILLER FREEDOM IV
4	22	01-026G823-11	SUB ASSY, FULL DIRECT AA 12V FREEDOM IV
2	23	01-026F778-30	SUB ASSY, 6LED TIR FULL T-DLT FREEDOM IV