

WHELEN[®]

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Installation Guide: FastTrax™ System Module FTF2

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.

- Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.
- 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 any 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.
- If this product uses a remote device to activate or control this product, make sure that this control is located in an area that allows both the vehicle and the control 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!**

For warranty information regarding this product, visit www.whelen.com/warranty

Mounting The Power Supply...

While the ISP4HS Strobe/Halogen power supply will be mounted in the vehicle's trunk, the installation technician should keep the following recommendations in mind:

- A) The unit should be mounted on a metal surface to aid heat dissipation. Be sure that this surface is not one that either generates or is exposed to excessive heat during normal operation of the vehicle.
- B) Do not select a location where the power supply will be exposed to potential damage from any unsecured or loose equipment in the vehicle.
- C) Be sure the area selected will not allow the ISP4HS to be exposed to water!
- D) When routing the wires, it is important to choose a path that will keep these wires away from excessive heat and from any vehicle equipment that could compromise the integrity of the wires (trunk lids, door jams, etc.).

With appropriately sized wires, connect the ISP4HS to the battery using the wiring diagram on page 7 as a guide. Be sure to include the specified size fuse, keeping in mind that there should not be more than two feet of wire between the fuse block and the positive battery terminal.

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 the load!

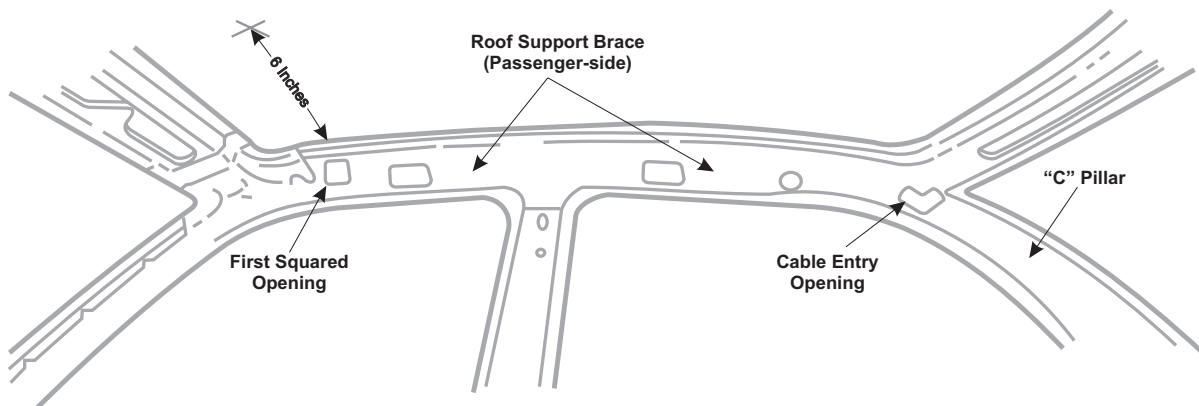
CAUTION: As it will be necessary to drill holes into the mounting surface, the installer **MUST** be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins!

Using the hardware provided, secure the power supply to its mounting surface.

Vehicle preparation...

Note: This section will outline the vehicle preparation procedures for installation of the Fast-Trax model FTF2 *without* the Fast-Trax model FTT1 Traffic Advisor™ module. If the FTT1 is present, please refer to the FTT1 installation manual included with the module.

1. Remove the rear seat back, C-pillar covers and headliner from the vehicle.
2. Locate the passenger-side roof support brace. This brace runs from front to back above both the front and rear doors on both sides of the vehicle. On this brace, locate the first "squared" opening from the front.



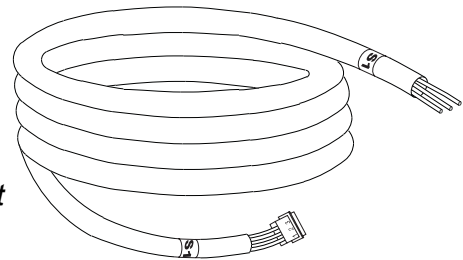
3. Measure a line perpendicular to the centerline of the vehicle from the middle of the top edge of this square, to a distance of 6" directly towards the centerline of the vehicle. Mark this point. Using a 1/8" (0.125") drill bit, drill a pilot hole up through the roof at this location.
4. Using this hole as a center point, cut a 1" hole down through the roof. De-burr this hole and install a grommet. This is to be used as the passenger-side cable passage hole.
5. Use steps 2 through 4 as a guide to creating a similar hole for the driver-side cable passage hole.

Be sure to de-burr the hole using a round (shown) or similar file before installing the grommet.



Cable preparation and routing...

Before the lighthouse cables can be routed through the vehicle, they must first be prepared. Tag the 4 cables to be used for the strobe lighthoods (3-conductor) with the tags numbered **S1** through **S4**, and the 4 cables to be used for the halogen lighthoods (2-conductor) with tags **H1** through **H4**. This will insure that the lighthoods are connected to their proper power supply port. A lighthouse's identity is determined by what power supply port they are to be connected to.

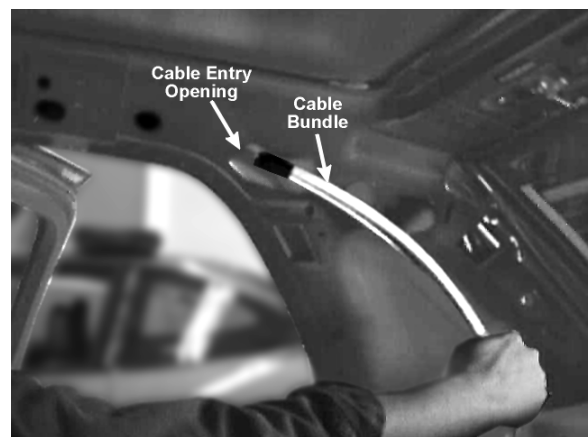


*An additional two halogen cables must be used to connect the Take-Down (T-D) lamps to a switched, 12VDC power source. Use a marker to identify these cables **T-D1** & **T-D2**.*

Note: Before the cables are routed, the installer may wish to apply a light coating of silicone spray to the cable's outer jacket. This allows the cables to be routed more easily.

The following section demonstrates how these cables should be routed. Locate the two, 3-conductor strobe cables tagged **S2**, and **S3** and the three, 2-conductor cables tagged **H2**, **H4** and **T-D1**. These cables (like all of the cables) have one end with pinned terminals on the wires and one end with socket terminals on the wires. Orient these cables so that all the pinned-ends of the cables are together and all the socketed-ends of the cables are together. Bundle the socketed-end of these cables securely together with electrical tape. Now locate the cable entry opening in the "C" pillar shown above.

Passenger-side cable entry opening



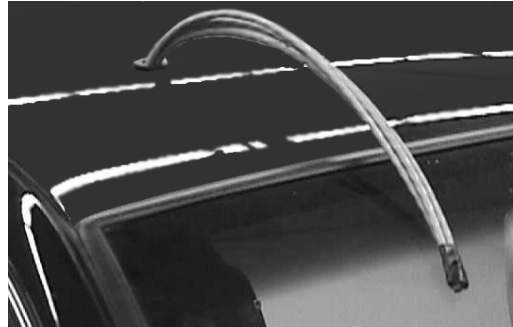
Feed this bundle thru the side brace cable entry opening in the "C" pillar and through the support brace until it exits out of the cable exit opening shown in this picture. Route the cable bundle up through the grommited hole. Be sure to pass a minimum of 18" of cable through this hole and out onto the roof.



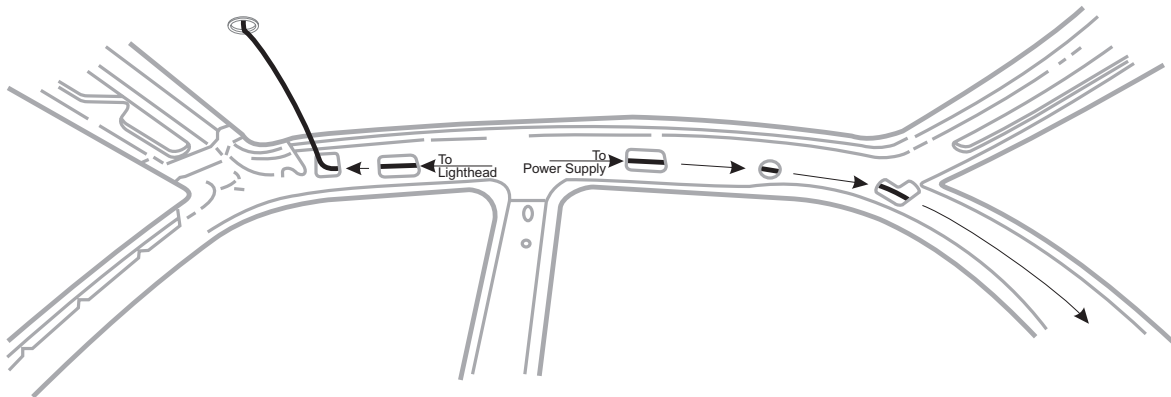
Cable bundle exiting passenger-side cable exit opening

Apply a generous amount of RTV to the grommet hole to completely water-proof this opening.

Cable bundle exiting passenger-side cable access hole



Insert the remaining pinned end of the cable bundle through the cable entry opening in the "C" pillar and down through the "C" pillar until it enters the trunk area of the vehicle. In the trunk, route the cable bundle towards the ISP8HS. The basic cable path is as shown.



Repeat this entire procedure using a cable bundle consisting of the remaining cables (**S1, S4, H1, H4** and **TD-2**) bundled together and routed along the driver-side support brace.

Insert the cable wire terminals into their plug connectors as follows:

Strobe Cable

- Pin #1 - **RED**
- Pin #2 - **BLACK**
- Pin #3 - **WHITE**

Halogen Cable

- Pin #1 - **WHITE**
- Pin #2 - **NO CONNECTION**
- Pin #3 - **BLACK**

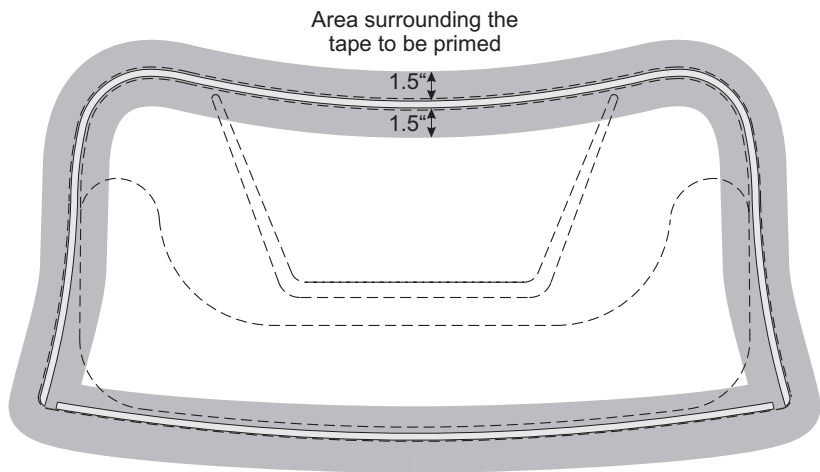
The Fast-Trax housing mounting surface will now be prepared.

Surface Preparation

IMPORTANT NOTICE!!!

The Fast-Trax system housing is secured to the vehicle using 3M™ VHB™ double-sided tape. This tape offers superior bond strength that allows the Fast-Trax™ to be exposed to inclement weather with no adhesion loss. However, the key to successful bonding lies in proper preparation of the mounting surface. The following section will outline the recommended procedure for mounting surface preparation. Your Fast-Trax™ system includes the 3M™ recommended preparation solution. **DO NOT USE ANY OTHER SOLUTIONS TO PREPARE THE MOUNTING SURFACE!** By following these procedures, your Fast-Trax™ installation will produce a successful bond with lasting adhesion. The outer surface of the vehicle must be at least 65°F before proceeding!

1. **Without** removing the protective backing from the mounting tape, position the Fast-Trax housing onto its mounting surface. The housing is properly positioned when it is centered on the vehicle roof with a 1/8" space between the leading edge of the housing and the windshield gasket.

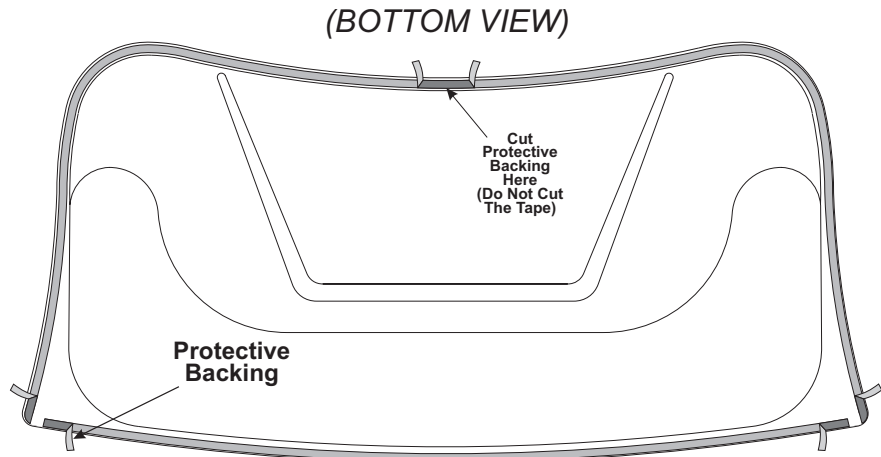


2. Any part of the vehicle that will be in contact with the adhesive tape PLUS an additional inch and a half (1½) wide area on either side of the tape will have to be prepared. This area is called the bonding surface. Remove the Fast-Trax housing from the vehicle.
3. The bonding surface must be completely clean and dry. Using a clean lint-free cloth, clean the bonding surface with an automotive wax and grease remover (ex:Prepsol®). Allow to dry thoroughly.
4. Shake the "3M Keel Primer" applicator (included) well before using. Following the instructions attached to the applicator, apply a thin uniform coating to the bonding surface using the minimum amount that will fully coat the surface. Allow the primer to dry thoroughly. This is usually accomplished in 5 minutes at room temperature. Be sure the primed surface remains free from contaminants.
5. Return the housing to the vehicle and connect the strobe/halogen cables to their respective lightheads. Remember that the cables must be connected correctly or the system will not function properly.
6. Locate the ends of the adhesive tape strips indicated below. Peel approximately an inch of the protective backing away from the tape. Now fold the backing so that it sticks out from under the Fast-Trax housing.
7. Carefully pull the protective backing tabs out from under the Fast-Trax housing. Make sure that the housing's position is not disturbed during this process.

1. With all of the protective backing strips removed, press down firmly along the edges of the housing to promote adhesion.

WARNING! The vehicle should not be driven for a minimum of 24 hours after installation. The adhesive used in this procedure must sit

for 24 hours at 65°F after installation before it is fully bonded. Caution should be used if the vehicle must be driven between 24 and 72 hours after installation.

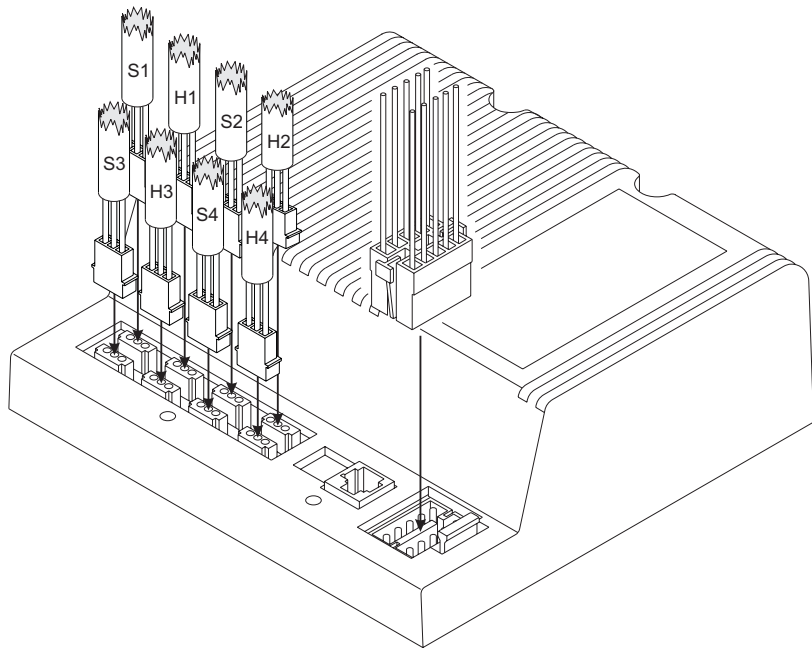
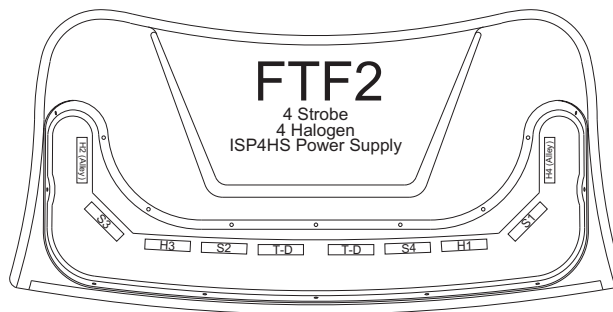


A Note On Painting the Fast-Trax Housing...

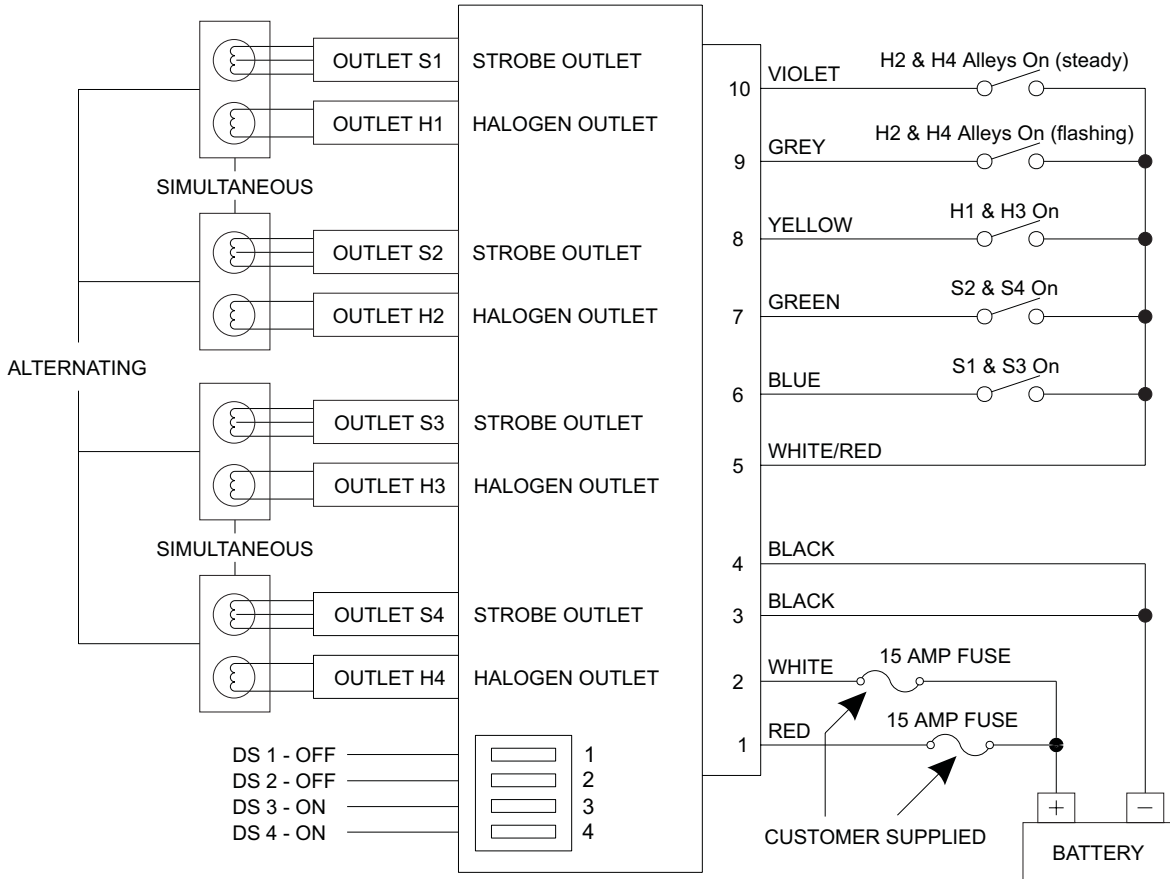
If painting or re-painting your Fast-Trax housing, it is important to keep in mind the following information:

- Do not apply paint or primer to any of the black-colored area immediately adjacent to the clear outer lens!
- Do not apply paint or primer to the underside of the housing.
- Make sure that all surfaces to be painted have been primed using primer that is suitable for ABS plastic.
- Be sure to include the leading edges (material thickness) in your painting surfaces.

The outer surfaces of this product may be cleaned with mild soap and water. Use of any other chemicals may void product warranty. Do not use a pressure washer.



WIRING DIAGRAM



STROBE SPECIFICATIONS

INPUT VOLTAGE ----- 12.8 VDC \pm 20%

INPUT CURRENT
 2 STROBES ----- 4.5 AMPS (TYP)
 4 STROBES ----- 9 AMPS (TYP)

INPUT POWER ----- 115 WATTS (TYP)

ANODE VOLTAGE ----- 450 VDC (MAX)

TRIG. VOLTAGE ----- 150 VDC (MIN)

ENERGY PER FLASH --- 7.9 / 3.8 / 3.8 / 3.8

FLASHRATE ----- 140 CFPM

OUTPUT POWER ----- 22.5 WATTS (TYP)
 (PER OUTLET)

HALOGEN SPECIFICATIONS

INPUT VOLTAGE ----- 12.8 VDC \pm 20%

INPUT CURRENT
 2 LAMPS ----- 4.5 AMPS (TYP)
 4 LAMPS ----- 9 AMPS (TYP)

INPUT POWER ----- 115 WATTS (TYP)

OUTPUT VOLTAGE ----- INPUT VOLTAGE - 1V

ON TIME ----- 125 mS (TYP)

OFF TIME ----- 125 mS (TYP)

FLASHRATE ----- 120 DFPM \pm 5%

OUTPUT POWER ----- 50 WATTS (MAX)
 (PER OUTLET)

QTY.	ITEM	PART NUMBER	DESCRIPTION
1	1	01-0662799-00	ELECTRONIC ASSY MODEL ISPH4HS
1	1	10-0742600-02	LABEL, CABLE I.D.
10	10	01-0415532-00	KIT, CABLE INSTALLATION (3 POS.)
.01	.01	66-0110008-00	ISOPROPYL ALCOHOL (CLEANER)
2	2	66-0716725-00	"3M" #94 PRIMER APPLICATOR
AIR	AIR	66-0416678-00	TAPE, "V"HEP DOUBLE STICK (BLACK)
4	4	46-0742172-20	ASSY, CABLE 3/C AUTO EXTENSION 20"
4	4	02-0363043-00	ASSY, REFLECTOR 14 SERIES STROBE
AIR	AIR	66-3162885-50	LENS, 14 SERIES (RED)
AIR	AIR	66-3162885-40	LENS, 14 SERIES (GREEN)
AIR	AIR	66-3162885-20	LENS, 14 SERIES (BLUE)
AIR	AIR	66-3162885-10	LENS, 14 SERIES (AMBER)
2	2	07-2428663-000	BRACKET, DUAL HALOGEN MOUNT
10	10	13-062540-16J	#6 SCREW GROMMET #242-160502-70
1	1	02-0342292-01	ASSY, REFLECTOR DUAL HALOGEN 12V-27H
50	50	15-085419-080	#6 X 1/2" PPH PLAST-L-LOC SCREW
6	6	46-0742574-20	ASSY, CABLE 2/C AUTO EXTENSION 20"
2	2	21-11263204-0	GROMMET, 1"
4	4	02-0342291-00	ASSY, REFLECTOR 20W-12VDC
8	8	07-2428662-000	BRACKET, SINGLE HALOGEN- FRONT MITG
17	17	21-12060905-1	#8 SCREW GROMMET
17	17	36-0122685-00	GASKET, SCREW GROMMET
17	17	16-08A192A-25	#8 CS'K WASHER SS (BLACK PHOSPHATE)
17	17	15-08121B-106	#8 X 5/8" PFHMS 100" (BLACK ZINC OXIDE)
1	1	10-0322504-02	LABEL, REGISTERED TRADE MARK
1	1	66-3162822-31	LENS, NON OPTIC (CLEAR)
AIR	AIR	36-0522686-00	GASKET, "D" SHAPE W/PSA
-	-	11-483241-001	HOUSING, (PAINTED)
-	-	11-483241-000	HOUSING, (AS MOLDED)
*	*	01-0683334-03	ASSY, 4 STROBE- 4 HAL. (PAINTED)
*	*	01-0683334-02	ASSY, 4 STROBE- 4 HAL. (RAW)

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Fast-Trax™
Model FTF2
 1998 Ford Crown Victoria

WARNING: DO NOT INSTALL HALOGEN BULBS EXCEEDING 27 WATTS

