



Above License Plate Backup Camera w/Black Metal Housing Universal Fit

KIT COMPONENTS

• A) Camera and wiring • B & C) Camera views



KIT FEATURES

- High-quality metal housing
- 1/4" CMOS camera
- AHD & CVBS Compatible
- Defeatable parking lines
- 110-degree viewing angle
- 0.5 lux night vision
- IP68 Rating (water-resistant & dust proof)
- Wire length

Camera Cable: 0.61m / 2ft

Extension Cable: 6.7m / 22ft

TABLE OF CONTENTS

Installation Tools & Accessories Required	2
Installation	
Camera Mounting	2
Above License Plate Mounting	3
Wiring Connections	4
Resolution and Wiring Functions	4
Wiring The Camera (diagram)	5
Harness Installation	6
Specifications	7

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ATTENTION: With the key out of the ignition, disconnect the negative battery terminal before installing this product. Ensure that all installation connections, especially the air bag indicator lights, are plugged in before reconnecting the battery or cycling the ignition to test this product.

NOTE: Refer also to the instructions included with the aftermarket accessory before installing this device.

INSTALLATION

Camera Mounting:

1. Find a suitable location for mounting the camera.

Note: The TE-LPBC is an Angled Stud Mount design and works best when mounted to the horizontal area of the car body that holds the tag light above most license plates.

2. For this installation, there needs to be at least 1" of depth above the mounting location free of obstructions, wiring and components to allow for the mounting stud's clearance.

Always check for clearance before marking or drilling.

Continued on next page

Installation Tips:

- The TE-LPBC displays a mirrored image and is designed for rear view applications only.
- If used as a front view camera, the display will need mirroring capabilities.

BEST PRACTICE is to make connections before drilling or mounting to allow viewing the camera on your screen, verifying proper operation with optimum angle and a view free of obstructions.

INSTALLATION TOOLS & ACCESSORIES REQUIRED

- 1/8", 1/4" twist drill bit
- Drill
- Double sided adhesive tape or modelling clay
- 10mm open end wrench
- Corrosion preventative (optional for protecting holes drilled in metal)
- Wire loom (convoluted plastic 1/4" or Techflex braided)
- Electrical tape
- Zip ties
- Solder and soldering iron or solderless connectors for wire splicing
- Misc. panel removal and hand tools for vehicle disassembly
- Felt tip marker
- Blue painter's tape
- Rubber grommets/sealant

Above License Plate Mounting:

Survey the area above the license plate for clearance. Often, the lights that illuminate the plate can temporarily be removed to better evaluate clearance and to help with routing cabling.

1. After a mounting location is determined, apply several layers of blue painter's tape to the area to protect the paint or finish. To evaluate placement, the camera mounting stud can be temporarily removed and the camera can be temporarily mounted using two-sided tape or modelling clay.
2. When the ideal placement is determined, trace the camera's outline onto the painter's tape with a fine tip felt marker. Remove the camera and mark the center point of the mounting stud hole within the traced outline.
3. Drill a pilot hole with a 1/8" drill bit. Use a 1/4" drill bit or step drill to enlarge the pilot hole to the mounting stud's diameter. Use slow speed and gentle pressure to avoid melting a plastic surface or blistering the paint.
4. Holes in metal body surfaces should be protected from corrosion with automotive primer or other corrosion preventing materials. After corrosion protection is applied, the blue tape can be removed.
5. Do not brush away the drilling debris as this may scratch finished surfaces. Use air pressure, vacuum or sticky tape to lift debris. Remember that blowing metal dust into cracks and crevices will allow it to rust there.
6. Clean the mounting surface with an alcohol prep pad or glass cleaner.
7. Remove the pre-punched hole in the adhesive foam camera mounting tape, peel off the protective tape from one side and apply the pad to the camera.
8. Route the camera connector and mounting stud through the mounting hole and slip the supplied locking washer over the cable.
9. Peel the second piece of protective tape, plug in the camera being careful to align the stamped arrows on the connectors and slip the mounting stud into the hole.
10. Fully close the trunk or hatch. Before it is fully inserted, view the camera on your display or monitor (engine off and parking brake engaged for safety) to ensure the view is parallel to the ground and centered left/right. It will be difficult to remove once fully seated.
11. Press the camera firmly into the mounting surface to adhere the foam pad.
12. Install the mounting nut by slipping the camera cable through the slot in the nut and tighten with a 10mm open end wrench. Tie up any loose wiring and reinstall hatch trim panels.

WIRING CONNECTIONS

RED WIRE

1. The **RED** wire connects to +12-volt switched voltage to power the camera. It runs through the length of the video cable, and can be connected at either end of the cable.
2. If the **RED** wire is connected to the +12-volt reverse light wire in the back of the vehicle, the other side of the **RED** wire exiting the **YELLOW RCA** connector at the opposite end of the video cable will be supplied 12-volts that can be used to trigger the reverse input of the aftermarket in-dash radio.
3. If a stable +12 reverse voltage is NOT available at the camera location, it can be supplied at the opposite end of the cable to the **RED** wire at the **YELLOW RCA** connector.
NOTE: Some vehicles with LED lighting use an unsuitable pulsed DC voltage on reverse lights.
4. It can be supplied at the opposite end of the cable to the **RED** wire at the **Yellow RCA** connector. If the display has the ability to display the camera while in forward motion, 12 volts switched accessory power

may be connected to either end of the red wire, but the radio will need a separate +12volt reverse wire connected to activate its reverse screen.

NOTE: Many aftermarket radio installation data interface harnesses can supply both 12V reverse and switched accessory power.

5. The **BLACK** wire connects to ground (a metal, non-painted surface or factory ground wire) If the ground is made outside the vehicle, paint, undercoating or dielectric grease should be applied over the ground connection for corrosion resistance.
6. The **WHITE** loop controls parking guide lines. Its behavior is affected by the **GREEN** loop. (See table at right)
7. The **GREEN** loop enables AHD (Analog HD) video output. This higher resolution method of transmission gives superior quality images, but is only compatible with AHD capable monitors and displays. **Uncut**, the camera displays standard NTSC video at 480i resolution. **Cut**, the camera transmits at 720p resolution.

Table A: Resolution and Wiring Functions

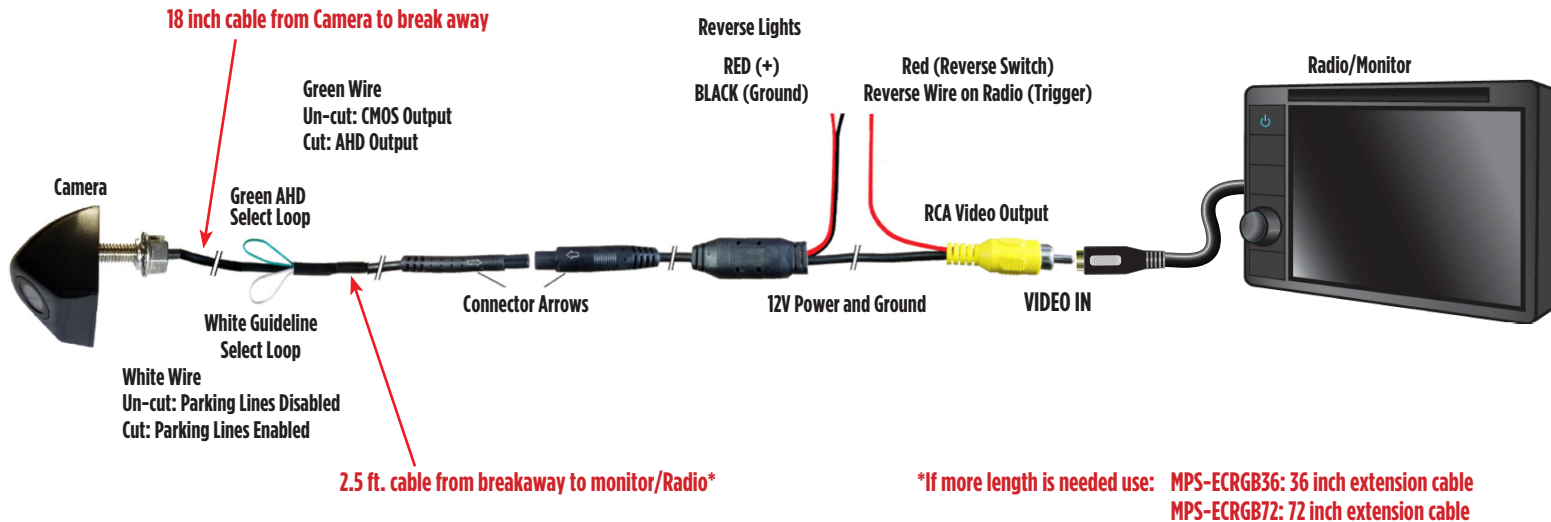
Resolution	Parking Guide Lines	White Loop	Green Loop
480i (CVBS NTSC)	Off	Uncut	Uncut
480i (CVBS NTSC)	On	Cut	Uncut
720p (AHD)	Off	Cut	Cut
720p (AHD)	On	Uncut	Cut

Note: The camera must have 12V removed and reapplied before any loop function changes are recognized. (See page 6 for Harness Installation steps)

If AHD or Parking guideline adjustments are necessary, cut the white and green loops according to desired functions desired. (Outlined in Table A, above)

1. **WHITE** loop controls parking guide lines. Its behavior is affected by the **GREEN** loop.
2. **GREEN** loop enables AHD (Analog HD) video output. The higher resolution method of transmission gives superior quality images, but is only compatible with AHD capable monitors and displays.
3. **UNCUT**, the camera displays standard NTSC video at 480i resolution.
4. **CUT**, the camera transmits at 720p resolution. (See Table A).

WIRING THE CAMERA



HARNESS INSTALLATION

1. The 21.5' video cable is run between the radio or video display and the camera. It may be easier to run the cable from the front of the car towards the rear as the camera connector is more compact.
2. Avoid placing the video cable where it can get pinched, damaged or caught up in moving parts under the dash and seating areas. Do not run the cable close to existing wiring as noise could be introduced resulting in a poor image.
3. At the rear of the car where the cable may be exposed to weather, use protective wire loom and route the cable away from hot exhaust.
5. Tie up any excess cable with zip ties. Best practice is to use existing wire paths and grommets when routing new cables. Any holes drilled to the exterior of the vehicle should have appropriate grommets and weatherproofing applied.
6. In hatchbacks and SUV's where the license plate is mounted to a liftgate, it will be necessary to route the cable through the interior of the gate and through the existing wire management chases between car body and gate.
7. The interior trim panel of the liftgate will need to be removed. It is typically attached with combinations of panel clips and screws. Research the disassembly process to avoid damaging the panel on removal.
8. Remove the grommets attaching the wire boot to the car's body and lift gate. Use a long zip tie or plastic wire fish tool to fish the camera's 4-pin cable through the boot from the car body to the gate.
9. Use electrical tape to attach the cable in line with the fish tool lubricated with glass cleaner or soapy water to ease the task.
10. Run the video cable through the lift gate and attach to existing harnesses with zip ties.
11. Reinstall the wire boot in its original condition. Be sure to seat the grommets correctly.
12. Do not run the video cable around the body and the boot's grommets as cable damage and water leaks will occur.
13. In this type of installation, it is often easiest to run the camera cable through the headliner. It can be tucked behind interior trim panels and run along the headliner by gently pulling down the door seals for clearance.

YELLOW RCA

The **Yellow RCA** connects to the reverse or video input of the radio or display.

The **4-Pin Black camera** and cable connectors mate with arrows and keyway matching. Connect firmly but do not force.

BEST PRACTICE is to use existing wire paths and grommets when routing new cables. Any holes drilled to the exterior of the vehicle should have appropriate grommets and weatherproofing applied.

SPECIFICATIONS

TE-LPBC	Reverse Camera
Sensor	H63 CMOS
Resolution NTSC (CVBS)	720H x 480V
Resolution (AHD)	1280H x 720V
Viewing Angle	110°(H) / 170°(Diagonal)
Video Output	AHD/CVBS (Composite Video)
Minimum Lux	.05 Lux
Power Supply	DC 12V
Video Output Voltage	3.3V
Connector	Mini 4PIN with Guideline/AHD Loops
Video Cable	6.5 meters (21.5 feet)
Working Current	90mA
S/N Ratio	>52dB
Warranty	3 years
Water Resistance	IP68 (dustproof/water tight 1.5M)
Operating Temperature	-22°F - 158°F



TE-LPBC INSTALLATION INSTRUCTIONS



Having difficulties? We're here to help.



Contact our Tech Support line at:

386-257-1187



Or via email at:

techsupport@metra-autosound.com

Tech Support Hours (Eastern Standard Time)

Monday - Friday: 9:00 AM - 7:00 PM

Saturday: 10:00 AM - 5:00 PM

Sunday: 10:00 AM - 4:00 PM



**Metra recommends MECP
certified technicians**