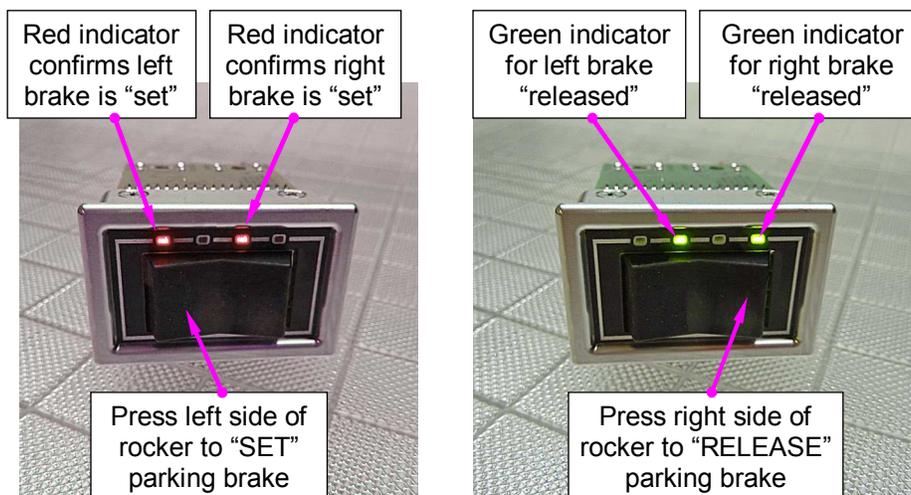

Pantera Electronics Electric Parking Brake Switch Installation Manual

Electric Parking Brake Switch Features and Operation

- > Designed to operate Tesla / Brembo calipers through the factory caliper connector.
- > Electric parking brake switch with integrated controller, no external box to mount and wire.
- > Independent monitor and control for left and right calipers with indicators for each side.
 - > Green indicators for “Release” and red indicators for “Set” parking brake.
 - > Automatically compensates for brake pad wear.
 - > LED lighting around rocker for night visibility, easily connects to auto lighting circuit.
 - > Mating connectors for the calipers and 4 wire cable available from Pantera Electronics.
 - > Easy maintenance by pressing the “Release” 3 to 4 times to open caliper to full extent. After servicing single press of “Set” restores caliper to normal operation.
 - > Removable aluminum bezel can be finished in a variety of styles and colors.



**THERE ARE NO INTERLOCKS TO PREVENT APPLYING THIS
PARKING BRAKE SWITCH AT ANYTIME.
DO NOT APPLY ELECTRIC PARKING BRAKE WHILE CAR IS IN
MOTION IN EXCESS OF 10 MILES PER HOUR.**

Disclaimer

The products from Pantera Electronics have been design and manufactured with the best quality components known to the engineer. The installation instructions have been written to assist the owner in the proper use and installation of the products. Pantera Electronics can not be held responsible or held liable for the interpretation or incorrect implementation of the products.

***Installation for Parking Brake Switch (PBS)
in the Pantera Auxiliary switch position.***

Disconnect the Battery by removing the negative (-) or ground cable from the battery terminal.

1. Unscrew the 3 thumb screws that retain the console gauge plate.
2. Disconnect the wires from the back of the factory switch and push the Auxiliary switch out of the panel, this may require rocking the switch in the hole.
3. Make sure the hole is free from the black surface material, it cannot be inside the hole or the PBS will not fit.
4. There are several different hole configurations of the openings in the console plates.
(1971 / 72) console plate may require the corners to be modified by filing the corner to remove the alignment corners. This can done with a sharp flat file or Dremel tool with a grinding disk for the metal console plates.

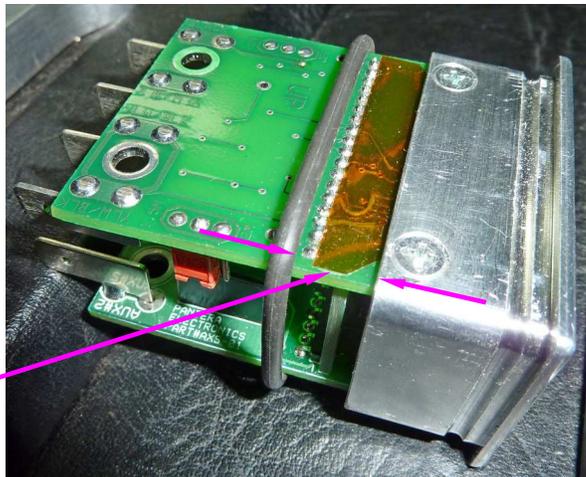
The (1973 / 74) plastic console plates can be easily cut with a knife and does not require use of a Dremel tool.

5. Check the fit of the switch in the hole, make sure that it can sit flat and even against the console plate.
6. Slide the O-ring over the back of the PBS until it's about 3/8" from the back of the aluminum mounting flange.
7. Insert the PBS in the hole by tilting the switch to allow the O-ring to fit through the hole. Then slide the O-ring into the groove on the flange. Use a long straight blade screwdriver to push the O-ring.

This alignment corner configuration needs to be removed.



Move the O-ring to this position for installation.
Approximately 3/8" space



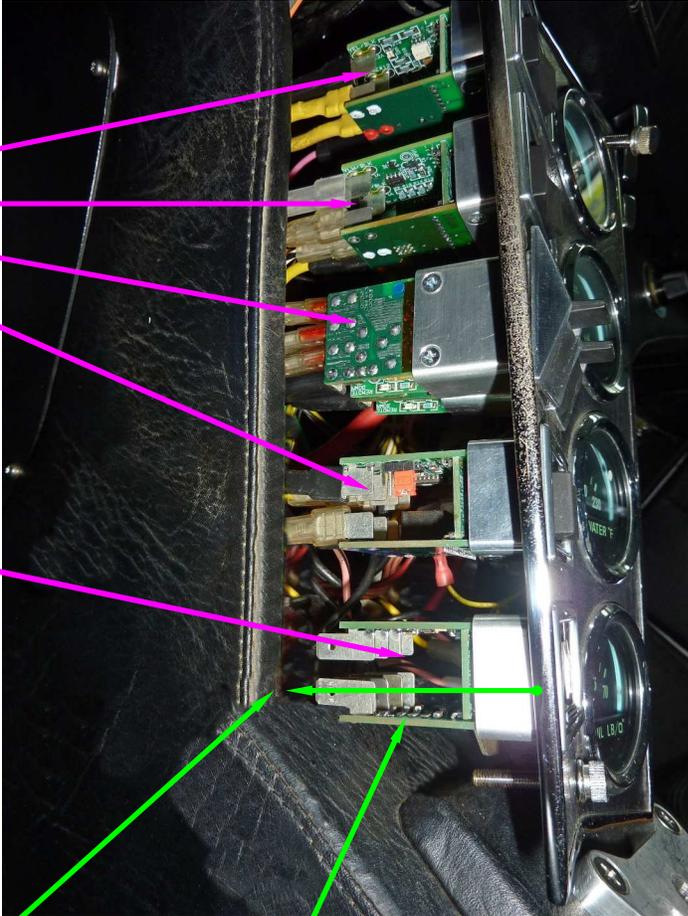
Tilt PBS in both directions to pass the O-ring through.



Mounting the PBS Switch in Pantera Auxiliary Switch Position, continued

Pantera Electronics
Rocker Switches
and Power
Window Switches

PBS installation
in lowest
location.



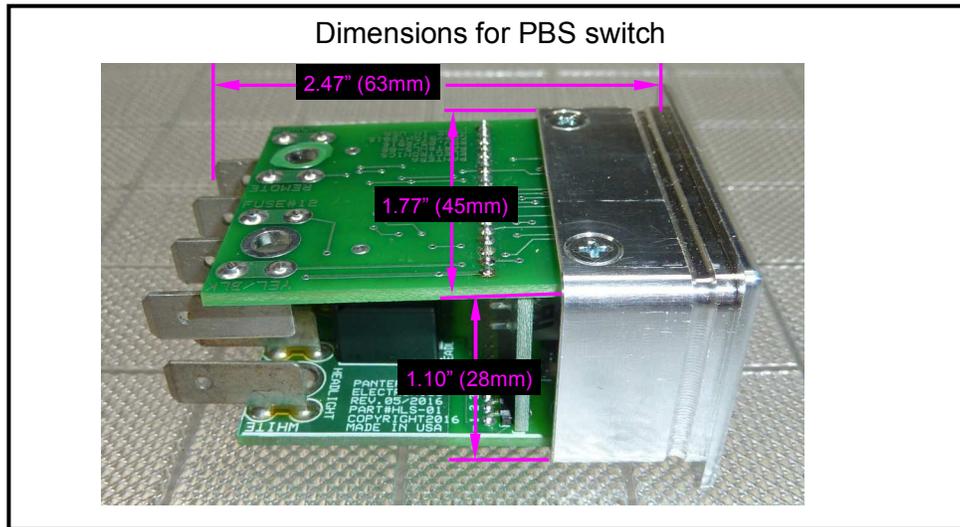
The console may need to have some of the fiberglass removed on the internal left hand side at the bottom of the console opening. (SEE GREEN ARROWS)

The lower edge of the PBS will be tight or in interference with the internal surface of the console. Use a half-round file or a Dremel tool with a sanding drum to remove a section for clearance. Generally a 1/8" to 3/16" deep clearance will be suitable.

Mounting the PBS in other locations

Mounting the PBS in other places can be accomplished by making a hole to the dimensions in the picture below. A little creativity in location is in order, an examples are pictured below.

There is a tendency to install the PBS in the console facing upwards but this will allow dirt to fall into the switch body. While this will not stop the PBS functioning it is not a preferred placement due to liquids falling into the switch which will cause the PBS to malfunction.

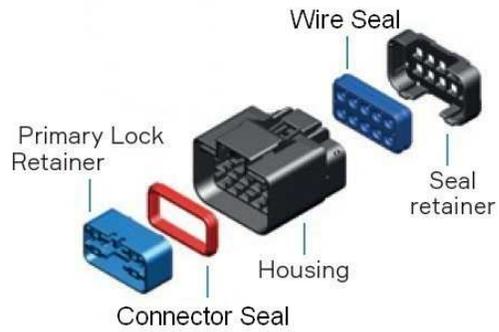


PBS installation in an alternate location.

PBS Caliper / Connector Wiring

The wire size between the PBS and the calipers **must be 16 AWG, not larger or smaller.**

Female terminal for Tesla / Brembo PBS caliper.



Female connector for Tesla/Brembo brake caliper

EPB Installation Kit

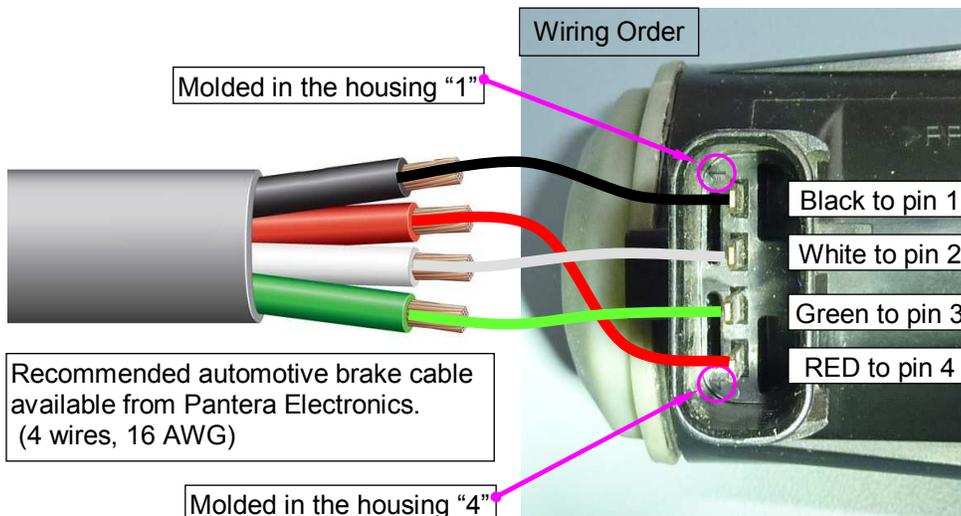
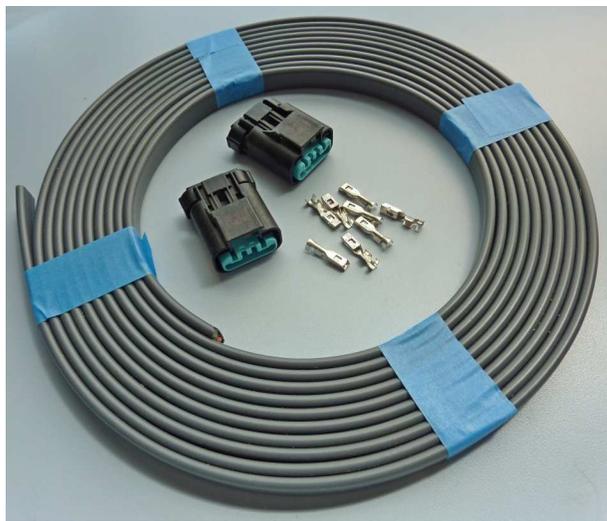
Part # EPB-01K

An installation kit from Pantera Electronics consists of the following:

(1 length) 4 conductor, 16 AWG wire brake cable, 25 feet long.

(2) Compatible connectors for the Tesla / Brembo caliper.

(8) Terminals for the caliper connectors.



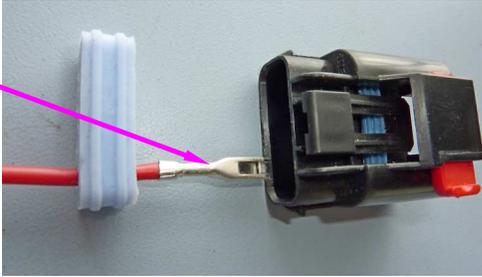
Installing Wires Into the Connector

Crimp a terminal on each wire of the cable. Insert the wire with terminal into the HOUSING. Note the correct origination of the terminal.

Do this for all 4 wires.

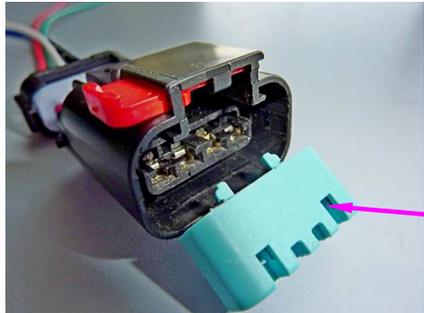
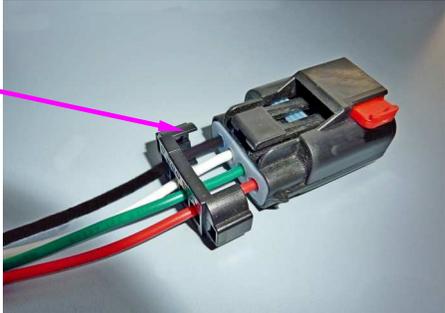
A click will be heard when the terminal seats properly.

Slide the WIRE SEAL over the wires.



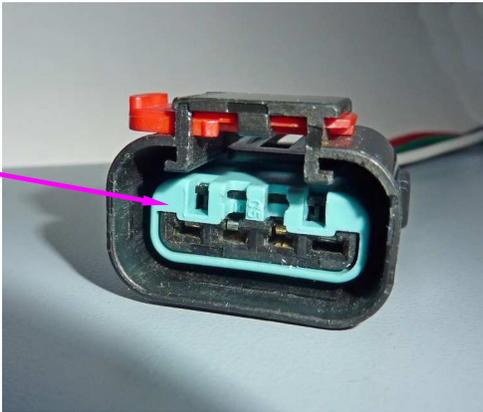
Slide the WIRE SEAL and press into the HOUSING.

Slide the SEAL RETAINER and press to the HOUSING, a click will be heard when the SEAL RETAINER is latched.



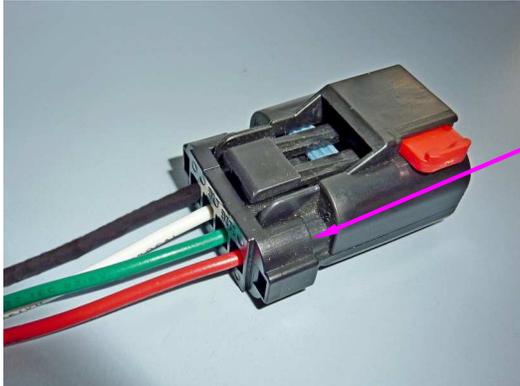
Position the Primary Lock Retainer as in picture.

Press the PRIMARY LOCK RETAINER over the Housing until it seats flush with the end of the HOUSING.

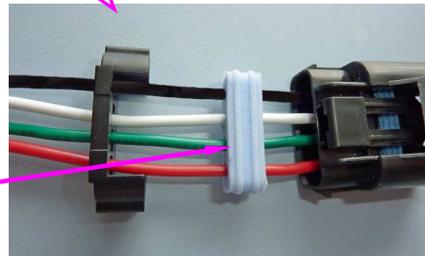


Disassembling the Connector or Removing Wires From the Connector

To disassemble the connector or if a wire with a terminal needs to be removed from the housing do the following.
Remove the WIRE SEAL by prying the end of the WIRE SEAL inserting a small screw driver in the place as indicated in picture.

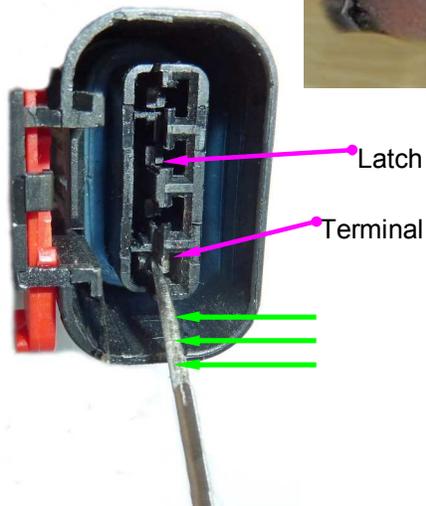
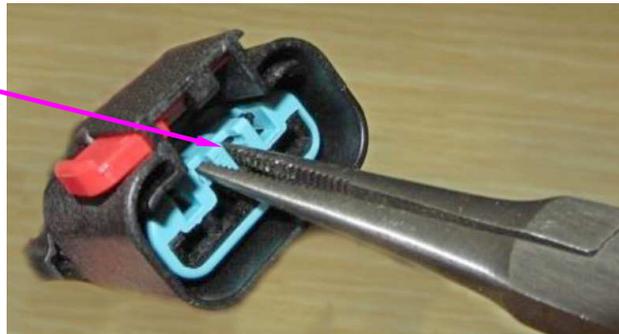


Pry outward from HOUSING.



Pry the WIRE SEAL out of the HOUSING and slide back.

Remove the PRIMARY LOCK RETAINER by grasping in the center as in picture. Gently rock the PRIMARY LOCK RETAINER while pulling.



The wire terminal is retained in the HOUSING by a latch that must be moved slightly. It can be gently pushed with a paper clip wire or a pick.

Push in the direction of the green arrows and pull the terminal from the backside.

PBS Wiring

The wiring between the PBS and the calipers must be 16 AWG, not larger or smaller. 4 wire cable. A 25 foot long brake cable and compatible connectors for the Tesla / Brembo calipers are available from Pantera Electronics in the Installation Kit.

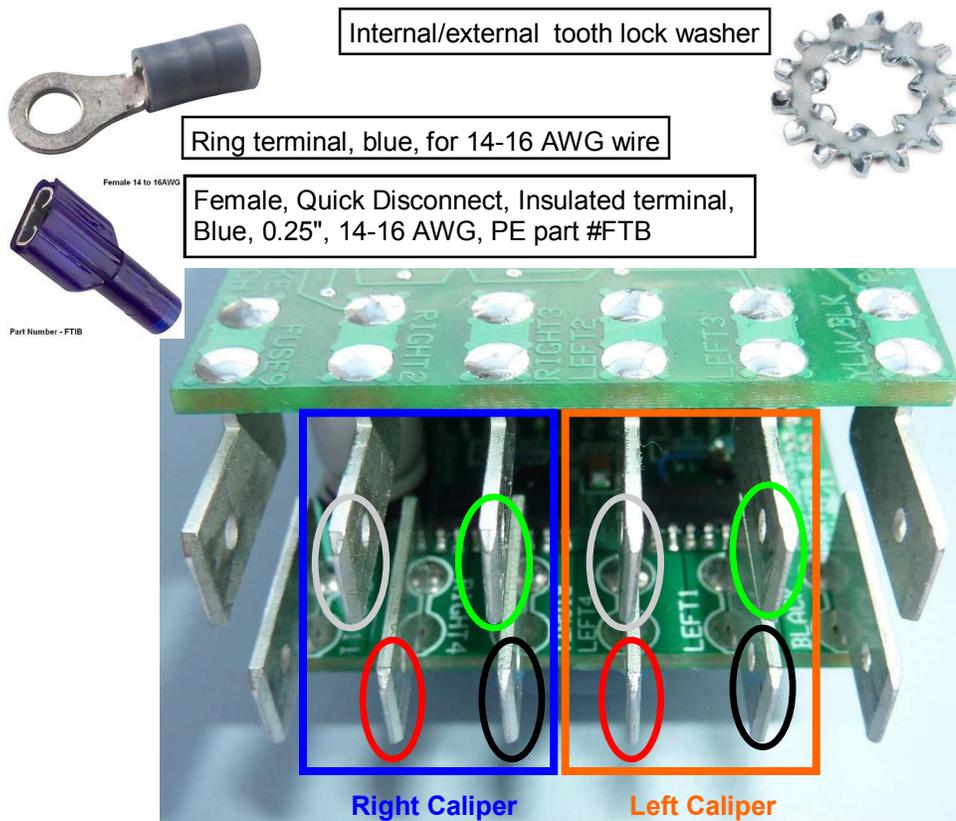
The wiring between the PBS and the power source to terminal “FUSE 11” should be 16 AWG with a 20 amp fuse in series with the PBS switch.

The ground wire, BLACK must be 16 AWG with a ring terminal and internal/external tooth lock washer mounted to the chassis on a paint free area.

The PBS terminals are arranged in a group to aid in wiring, note the terminal positions.

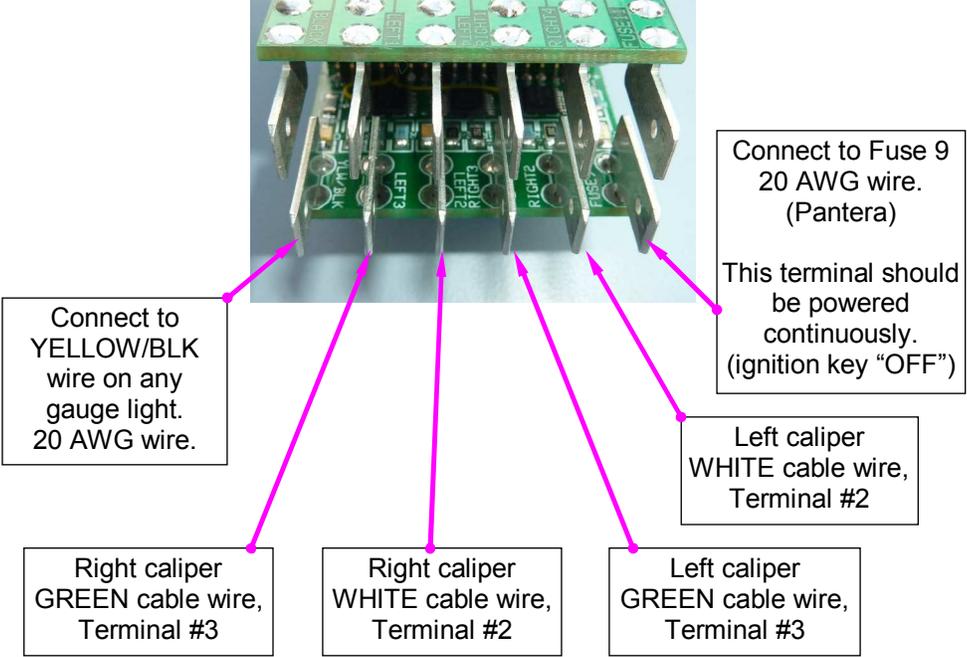
In the picture below the blue box contains the 4 connection to the right caliper and the orange box contains the 4 connections for the left caliper.

Use quick-disconnect female terminals for 14-16 AWG wire for connections.

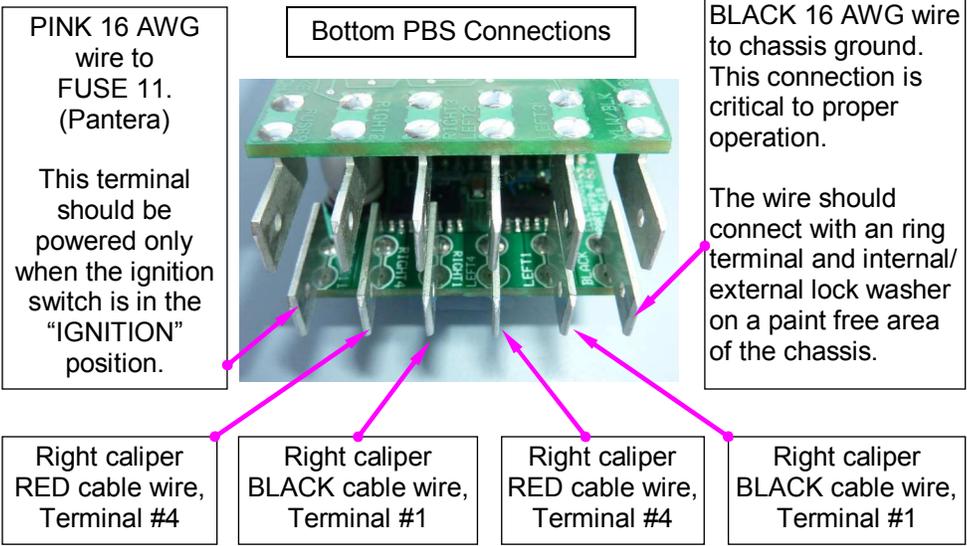


PBS Wiring, Continued, Detailed

Top PBS Connections



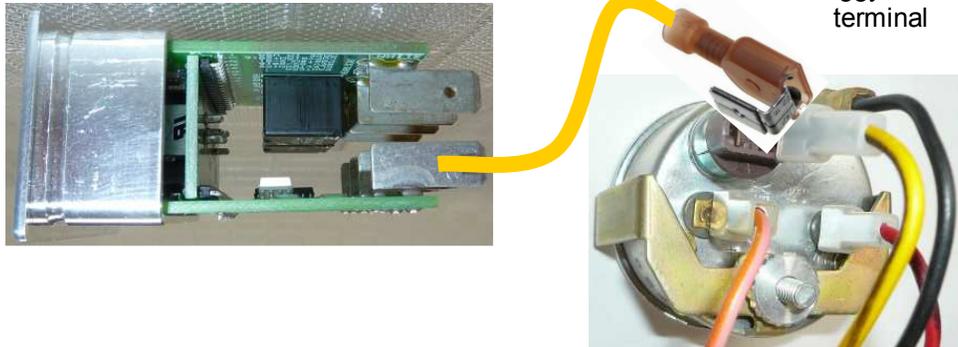
Bottom PBS Connections



Pantera Illumination Wiring for PBS.

The PBS terminal labeled “YLW/BLK” should be connected to a gauge dial illumination terminal. This is a YELLOW/BLACK 18 AWG wire connected to a gauge light.

Use a piggy-back terminal and connect to the YELLOW/BLACK 18 AWG wire from a gauge light near the PBS switch.



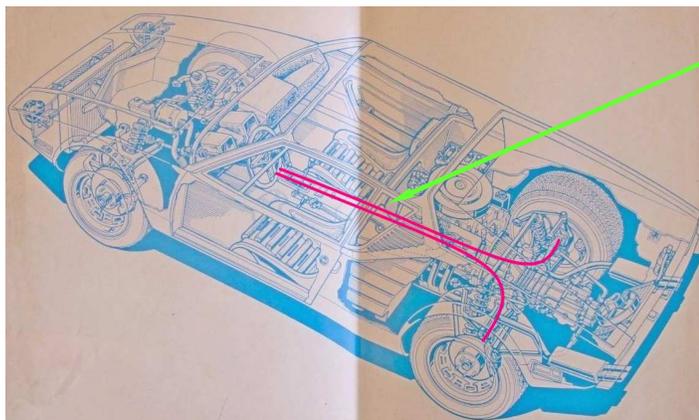
PBS Internal Indicators



Blue Light, Left caliper activity



Orange Light, Right caliper activity



Typical 4 wire cable layout from switch to calipers

PBS Testing

The calipers MUST be installed and disk rotor in place BEFORE testing the PBS.

1. Re-connect battery negative (-) or ground cable from the battery terminal.
2. When the PBS is first powered the indicators may be illuminated randomly, this will self-correct after the PBS is cycled.
3. There are 2 indicator lights inside the PBS, a BLUE indicator for the left caliper and an ORANGE indicator for the right caliper. (see page 9)
4. The blue and orange indicators flash when the caliper is in transition and can be used to verify operation.
5. Press the LEFT or “SET” side of the rocker switch, this should cause both calipers to move clamping the disk. When the brake pads contact the disk the motor will continue to operate until pressure is developed then stop. Verify that both blue and orange indicators flash until the caliper stops, this verifies both calipers are wired properly.
6. Press the RIGHT or “RELEASE” side of the rocker switch, this should cause both calipers to move away from the disk. The caliper will open a preset distance that should be enough to allow the disk to rotate freely. Verify that both blue and orange indicators flash until the caliper stops, this verifies both calipers are wired properly.
The GREEN indicators on the front of the switch illuminate when the caliper is released.
7. Press the LEFT or “SET” side of the rocker switch, the RED indicators on the front of the switch illuminate then the calipers have clamped the disk at the preset pressure.
8. Try to move the car by manual pushing or using the engine and first gear to over-come the PBS. If resistance is felt then the PBS is functioning properly.
9. Press the RIGHT or “RELEASE” side of the rocker switch, the GREEN indicators the front of the switch illuminate then the calipers have opened.
10. Try to move the car by manual pushing or using the engine and first gear to over-come the PBS. If resistance is no longer felt then the PBS is functioning properly.
11. Turn “ON” the parking lights to verify the edge illumination is functioning, then turn “OFF”
12. Testing complete.

Finishing the Bezel [to achieve a anodized appearance with paint]

1. Remove the 4 screws that retain the housing to the internal electronics.
2. Polish the bezel to the desired surface finish.
3. Use a motorized buffing wheel with rouge. Several grades of rouge may be required.
4. Clean well with lacquer thinner and do not touch the surface.
5. Use masking tape on all surfaces except the bezel contour edge.
6. Paint the bezel with DupliColor Metalcast paint, use several thin coats.
7. Allow paint to dry thoroughly before removing the masking tape.
8. Assemble electronics into the housing, make sure to aligned the rocker through the opening in the housing. It can only fit properly one way and install the 4 screws.
9. Remove the backing from the label, note where the indicator windows are and match to the bezel and insert the label.

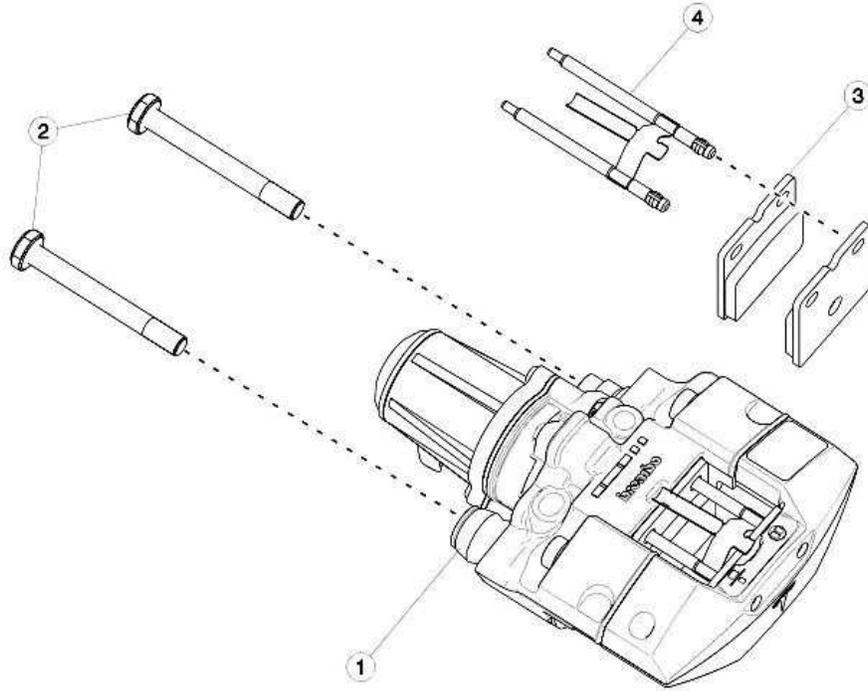
Dupli-Color METALCAST Paint Colors

- Red - MC200
- Blue - MC201
- Yellow - MC202
- Green - MC203
- Purple - MC204
- Orange - MC205
- Smoke - MC206



Tesla / Brembo Caliper Information

Tesla / Brembo calipers can readily be found on Ebay in various conditions. Many have broken connectors but if the damage is minimal it can still be utilized with the mating connector.



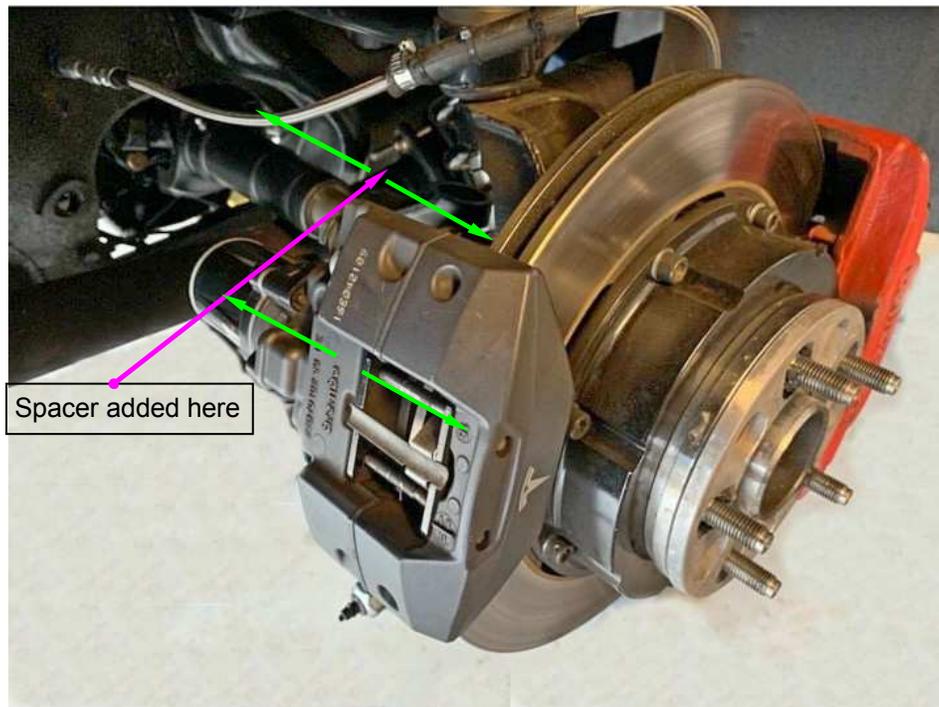
Drawing Number	Part Nomenclature	Description	Part Number	Quantity	Comments
4.	<u>PARKING BRAKE CALIPER SPRING and PIN KIT SERVICE KIT 1 KIT SERVICES 1 CALIPER</u>	PARKING BRAKE CALIPER SPRING and PIN KIT SERVICE KIT 1 KIT SERVICES 1 CALIPER	1013298-00-A	2	
1.	<u>PARKING BRAKE CALIPER BODY LH (WITHOUT PADS)</u>	PARKING BRAKE CALIPER BODY LH (WITHOUT PADS)	1021333-00-C	1	
1.	<u>PARKING BRAKE CALIPER BODY RH (WITHOUT PADS)</u>	PARKING BRAKE CALIPER BODY RH (WITHOUT PADS)	1021334-00-C	1	
5.	<u>PARKING BRAKE CALIPER ASSY LH</u>	PARKING BRAKE CALIPER ASSY LH	1021252-00-D	1	
5.	<u>PARKING BRAKE CALIPER ASSY RH</u>	PARKING BRAKE CALIPER ASSY RH	1021250-00-D	1	
3.	<u>PARKING BRAKE CALIPER BRAKE PAD KIT</u>	PARKING BRAKE CALIPER BRAKE PAD KIT	1003460-00-B	1	Services 2 calipers.
4.	<u>PARKING BRAKE CALIPER SPRING AND PIN KIT</u>	PARKING BRAKE CALIPER SPRING AND PIN KIT	1013298-00-A	2	1 kit per caliper.
2.	<u>PARKING BRAKE CALIPER MOUNTING BOLTS</u>	10mm x 1.5mm thrd x 86mm. Metric grade 10.9		2	

Tesla / Brembo Caliper Installation on de Tomaso Pantera

In order to have clearance for the motor on the Tesla / Brembo calipers the factory disk brake will need to be moved to the forward mounting ears on the upright. This can be readily done by utilizing a longer brake line. In the picture below a rubber hose is slid over the brake line to protect it from rubbing on the ball joint. Tie-raps are used to keep it position.

Maximum open distance for the Tesla / Brembo calipers is approximately 1.1" For thicker disk rotors the calipers can be disassembled and a spacer is added to separate the caliper halves. Another way is to grind the pads until the caliper fits.

Note: The calipers MUST have enough space between the rotor and the pads so when the caliper opens there is enough travel. If there is not enough travel the caliper could jam in the open position and the controller indicates it is closed. There needs to be at least 1/8" of space to open.



NOTE: It's important to keep this installation manual for future reference since revisions to this product change the contents of the installation manual.



***Tesla / Brembo
caliper part numbers
for left and right
hand side.***

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