

MOUNTING & WIRING INSTRUCTIONS

FOR

WILWOOD ELECTRONIC PARKING BRAKE (EPB) DUAL CALIPER SYSTEM

**FOR USE WITH WILWOOD REAR EPB CALIPER
PARKING BRAKE KITS**

**DISC BRAKES SHOULD ONLY BE INSTALLED BY SOMEONE
EXPERIENCED AND COMPETENT IN THE INSTALLATION AND
MAINTENANCE OF DISC BRAKES
READ ALL WARNINGS**

WARNING

IT IS THE RESPONSIBILITY OF THE PERSON INSTALLING ANY BRAKE COMPONENT OR KIT TO DETERMINE THE SUITABILITY OF THE COMPONENT OR KIT FOR THAT PARTICULAR APPLICATION. IF YOU ARE NOT SURE HOW TO SAFELY USE THIS BRAKE COMPONENT OR KIT, YOU SHOULD NOT INSTALL OR USE IT. DO NOT ASSUME ANYTHING. IMPROPERLY INSTALLED OR MAINTAINED BRAKES ARE DANGEROUS. IF YOU ARE NOT SURE, GET HELP OR RETURN THE PRODUCT. YOU MAY OBTAIN ADDITIONAL INFORMATION AND TECHNICAL SUPPORT BY CALLING WILWOOD AT (805) 388-1188, OR VISIT OUR WEB SITE AT WWW.WILWOOD.COM. USE OF WILWOOD TECHNICAL SUPPORT DOES NOT GUARANTEE PROPER INSTALLATION. **YOU**, OR THE PERSON WHO DOES THE INSTALLATION MUST KNOW HOW TO PROPERLY USE THIS PRODUCT. IT IS NOT POSSIBLE OVER THE PHONE TO UNDERSTAND OR FORESEE ALL THE ISSUES THAT MIGHT ARISE IN YOUR INSTALLATION.

RACING EQUIPMENT AND BRAKES MUST BE MAINTAINED AND SHOULD BE CHECKED REGULARLY FOR FATIGUE, DAMAGE, AND WEAR.



Need Additional Information? Use Your
SmartPhone and Jump to Our Technical
Tips Section on Our Web Site.

DISC BRAKES **wilwood**

WARNING

DO NOT OPERATE ANY VEHICLE ON UNTESTED BRAKES!
SEE MINIMUM TEST PROCEDURE WITHIN

ALWAYS UTILIZE SAFETY RESTRAINT SYSTEMS AND ALL OTHER AVAILABLE SAFETY EQUIPMENT WHILE OPERATING THE VEHICLE

IMPORTANT • READ THE DISCLAIMER OF WARRANTY INCLUDED IN THE KIT

NOTE: Some cleaners may stain or remove the finish on brake system components. Test the cleaner on a hidden portion of the component before general use.

Important Notice - Read This First

Before any tear-down or disassembly begins, review the following information:

- **Warning:** *This electronic parking brake system is intended to function as a parking brake and not as an emergency stop brake. However, it is possible to actuate the EPB at any time and speed. Actuating the EPB while the vehicle is moving may cause the rear wheels to lock up and skid which may lead to a reduction in vehicle control.*
- Installation of this kit should only be performed by individuals experienced in the installation and proper operation of disc brake systems.
- Due to OEM production differences and other variations from vehicle to vehicle, the fastener hardware and other components in this kit may not be suitable for a specific application or vehicle.
- It is the responsibility of the purchaser and installer of this kit to verify suitability / fitment of all components and ensure all fasteners and hardware achieve complete and proper engagement. Improper or inadequate engagement can lead to component failure.

Photographic Tip

Important and highly recommended: Take photos of brake system before disassembly and during the disassembly process. In the event, trouble-shooting photos can be life savers. Many vehicles have undocumented variations, photos will make it much simpler for Wilwood to assist you if you have a problem.

Parts List

<u>ITEM NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
1	EPB Caliper Assembly (Right and Left)	2
2	EPB Control Unit (ECU)	1
3	Switch	1
4	Switch Face Plate	1
5	Switch Connector, Pig Tail (wires)	1
6	Wiring Harness	1



Photo 1. (Numbered items refer to the parts list above)

Installation Instructions

Component Mounting

- Determine mounting locations for the EPB control unit, EPB control switch, and EPB calipers. The wiring harness routing should be taken into account when determining the component mounting locations.
- **EPB CONTROL UNIT (ECU)** - Securely mount the EPB control unit in a suitable location inside the vehicle, such as under the dash. Be sure to allow adequate access to the control unit cable connector. See Figure 1 for mounting dimensions.
- **EPB CONTROL SWITCH** - Mount the EPB switch in an easily accessible location within arm's reach of the driver. The switch mounts to a panel with a .875" diameter hole. See Figure 2 for mounting dimensions.
- **EPB CALIPER** - Mount the EPB calipers per the installation instructions included with your specific Wilwood brake kit, reference Figure 3. EPB calipers are left and right handed, however they can be used on either side of the vehicle to best suit your specific application.
- **EPB WIRING HARNESS** - All wiring harness leads are labeled – refer to wiring diagram, Figure 4. Carefully route harness cables/wires to prevent contact with moving or rotating components and away from heat sources and pinch points. **NOTE:** *Wilwood EPB harness is designed for use in many different vehicle applications and it is the installer's responsibility to properly route cables/wires and ensure adequate clearance and retention for EPB components.*

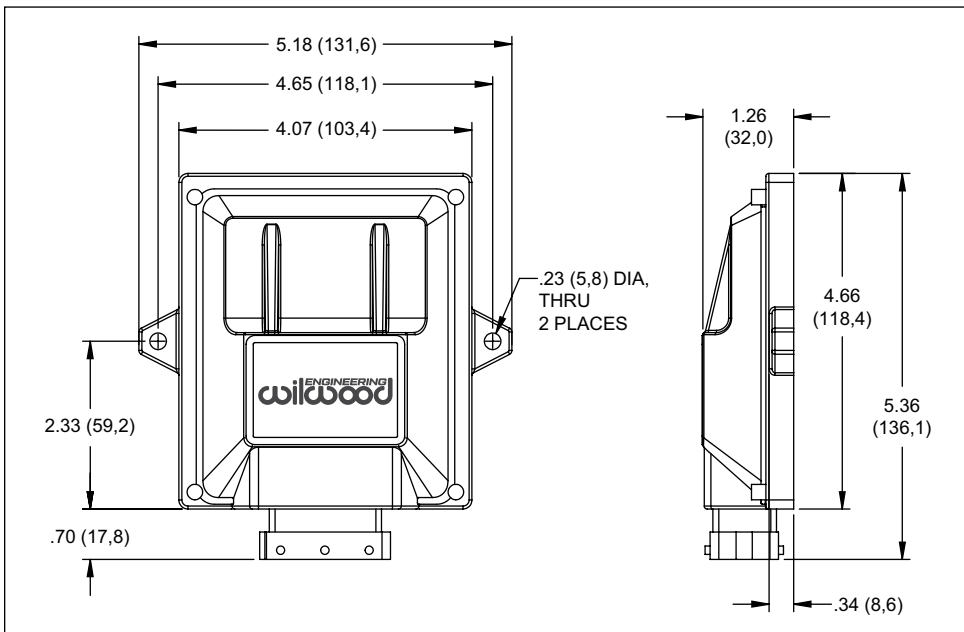


Figure 1. EPB Control Unit

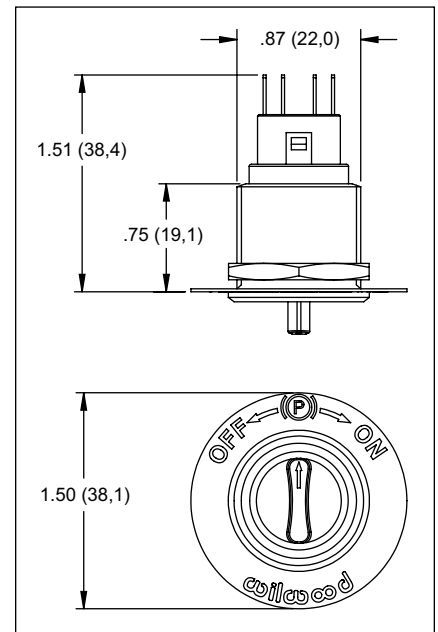


Figure 2. Control Switch

Wiring Installation - Refer to wiring diagram, Figure 4

- Disconnect negative (ground) cable from the battery.
- **NOTE:** *Most wires in the EPB harness may be shortened or lengthened if needed to suit a specific application. Avoid lengthening the BATTERY (+) and GND (ground) wires. Use good practices. All wire splices should be soldered and covered with shrink tubing. When lengthening wires, always match the gauge of the new wire to the existing harness wire gauge.*
- Connect the RIGHT-MOTOR connector to the EPB caliper motor mounted on the right hand side of the vehicle, and the LEFT-MOTOR connector to the left side. This will assure the correct caliper can be identified in the event of a caliper related fault code from the ECU.
- Carefully connect the large ECU connector to the EPB control unit.
- Connect the ACC lead to an ignition ON or Accessory power source, usually at the fuse panel. Do **NOT** connect this lead directly to battery power.
- The EPB switch connector must be indexed to the back of the switch by aligning the connector lock tab with the mating feature on the switch, as shown in Photo 2.

Installation Instructions (Continued)

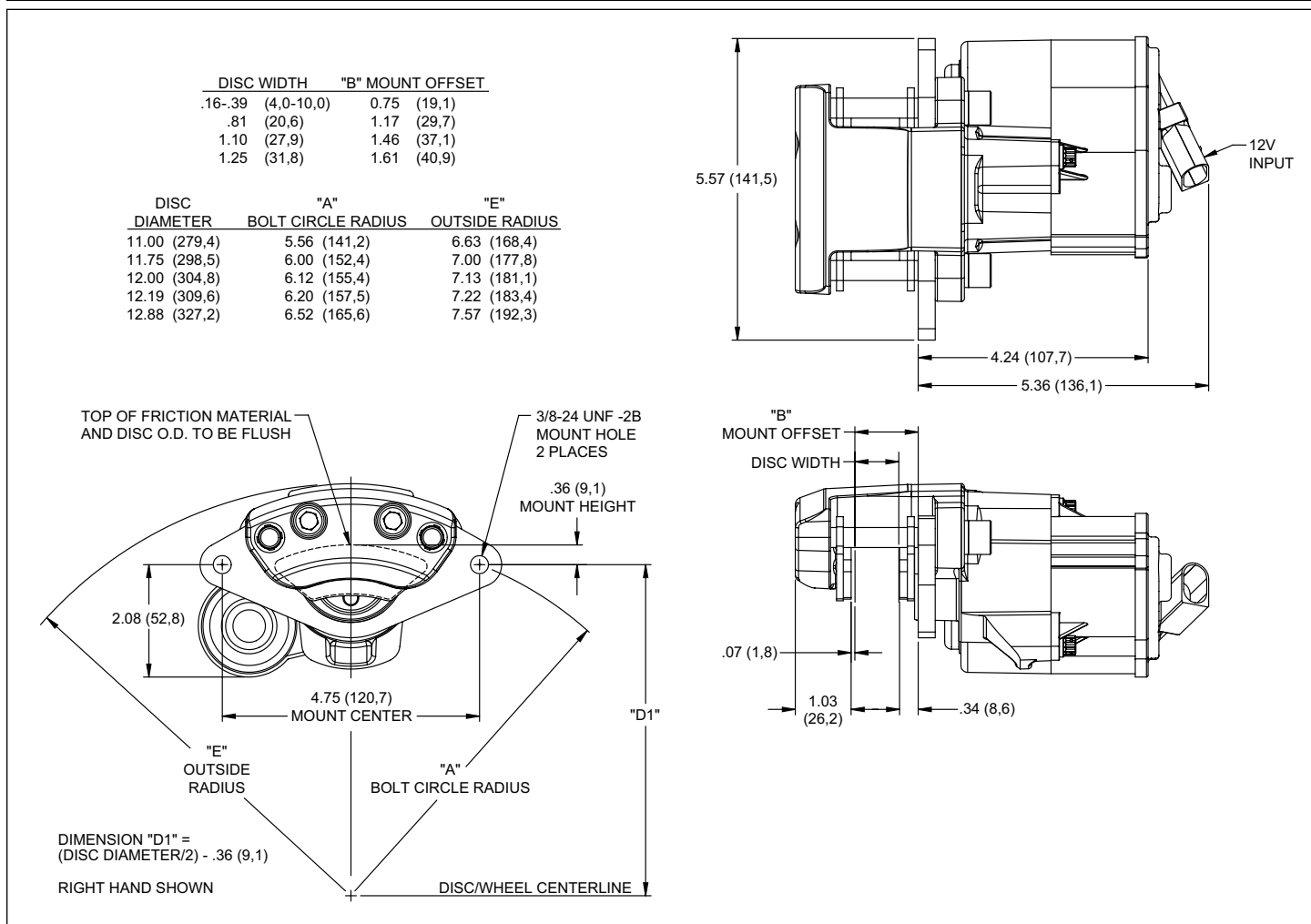


Figure 3. EPB Caliper

- Match the 6 harness wires for the switch to the corresponding 8 pigtail wires on the switch connector, as shown in the wiring diagram.
NOTE: The three red/white wires on the switch pigtail are to be connected to the single red/white wire in the harness. Solder all connections and cover with shrink tubing.
- Attach the GND (ground) wire to a clean solid ground point location or post. A good ground is necessary for proper operation of this EPB system as all of the EPB motor amperage must travel through this ground point.
- The BATTERY (+) wire must be attached directly to the positive (+) terminal on the battery or to a primary 12V+ power post that is directly fed by a heavy gauge battery cable, such as the starter solenoid battery terminal.
- **Caution:** The 40 amp fuse included in the new wiring harness must remain in the 12V+ circuit. Do not bypass or remove this fuse from the circuit.
- Reconnect negative cable to the battery and test EPB function per the following instructions.
- If desired, an existing instrument cluster parking brake dash light may be utilized by adding a new customer supplied solid state relay as described in the "Parking Brake Dash Light Relay" section on page 6.

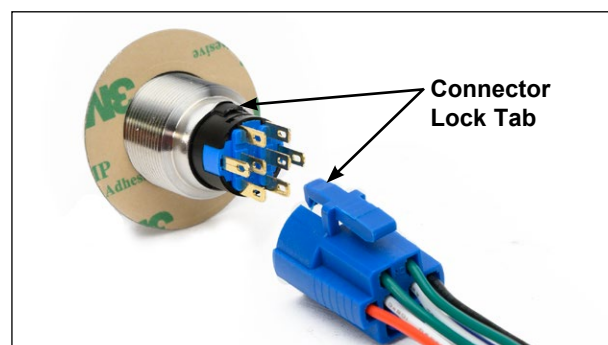


Photo 2. Switch Installation Alignment

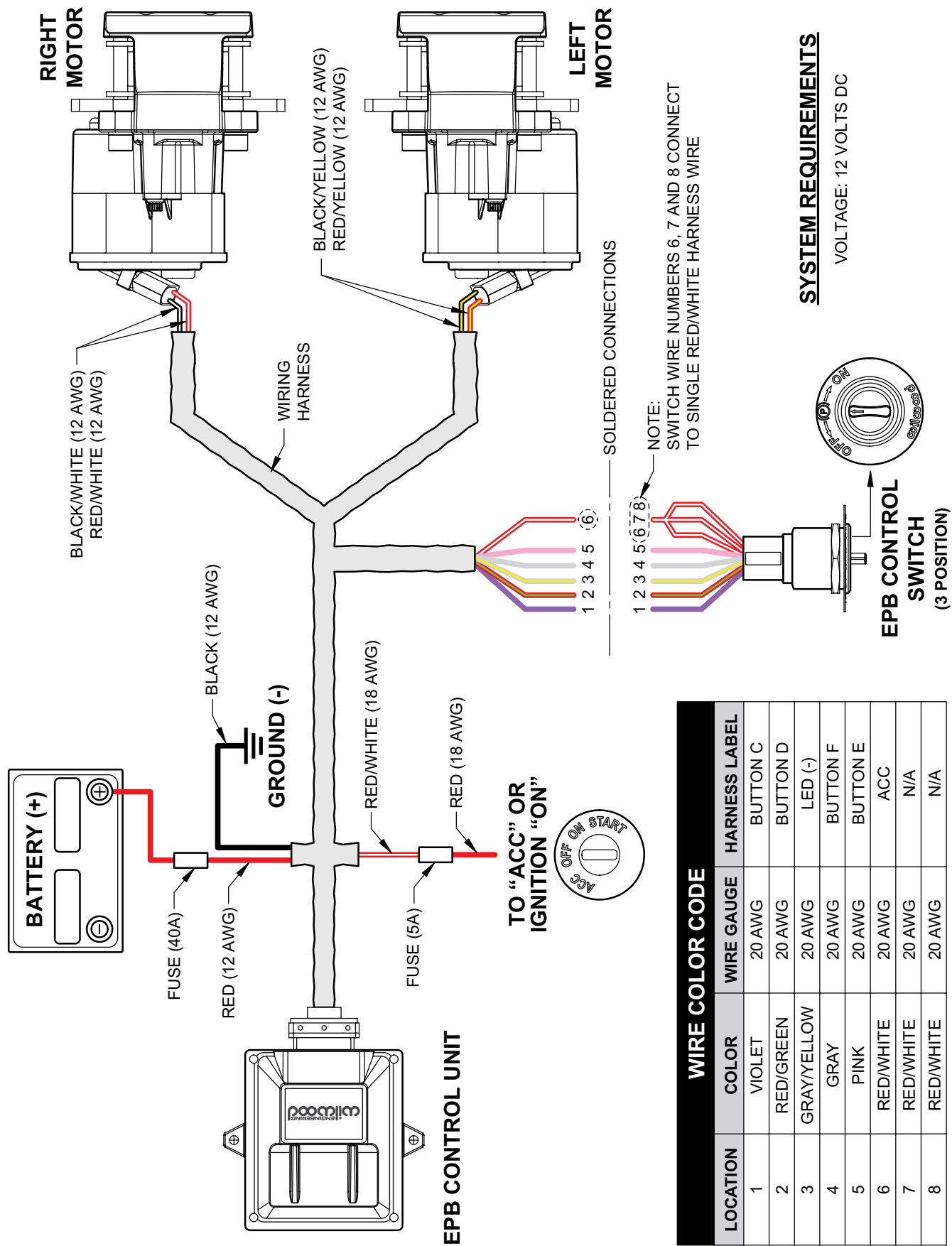


Figure 4. EPB Wiring Diagram

Installation Instructions (Continued)

EPB Operation

- The EPB control switch is momentary – there is no need to hold the switch in position to operate the EPB. Rotate the switch clockwise to engage parking brake and counter-clockwise to release.
- The red indicator light on the EPB control switch will illuminate when the EPB is engaged, but only while the ignition is ON. The light will go out once when the EPB is released. If the indicator light flashes, there is a fault in the system. Refer to the troubleshooting section below.
- Complete brake kit installation per the instructions included with your specific Wilwood brake kit.
- Once the installation is complete, test parking brake in a safe area, first on a flat surface by pushing on the vehicle, then on a slight incline, followed by a steeper incline.

Troubleshooting

- In the event of a fault in the EPB system, the indicator light on the switch will flash out a two-digit diagnostic trouble code. Reference Table 1 below, determine the cause of the fault based on the two-digit fault code. **NOTE:** *Fault codes are not stored and are reset after the ignition is turned OFF.* If a fault code appears (flashing light), turn ignition OFF and back ON. If flashing continues, count flashes to read faulty code.
- If you still are having problems with the installation, contact your Wilwood retailer where the product was purchased. Additional technical support is available by calling Wilwood Sales and Technical department at (805) 388-1188 or e-mail additional assistance at: info@wilwood.com.

Table 1. Troubleshooting

DIAGNOSTIC TROUBLE CODES (FLASHING LIGHT)					
FIRST DIGIT		SECOND DIGIT			
TIMES	FAILURE	1	2	3	4
1	EPB ECU FAILURE	INTERNAL ECU FAILURE 1	INTERNAL ECU FAILURE 2		
2	VOLTAGE FAILURE			BATTERY TOO HIGH	BATTERY TOO LOW
3	NOT APPLICABLE				
4	NOT APPLICABLE				
5	FUNCTION OR MOTOR FAILURE	LEFT CALIPER DID NOT ENGAGE (TARGET AMP DID NOT GET ACHIEVED)	RIGHT CALIPER DID NOT ENGAGE (TARGET AMP DID NOT GET ACHIEVED)	LEFT CALIPER DID NOT RELEASE CORRECTLY	RIGHT CALIPER DID NOT RELEASE CORRECTLY

Parking Brake Dash Light Relay

- To utilize an existing instrument cluster parking brake dash light, a customer supplied solid state relay circuit may be wired in, triggered by the Wilwood EPB gray/yellow switch wire labeled "LED (-)". **Caution:** *The LED (-) wire does not supply 12V power, it only completes a ground when activated, so the relay will need 12V power supplied from another source.*
- A solid state relay such as **Hella p/n 4RA 931 773-98** must be used.
- Wire in the solid state relay and dash light as shown in Figure 5, page 7.

Installation Instructions (Continued)

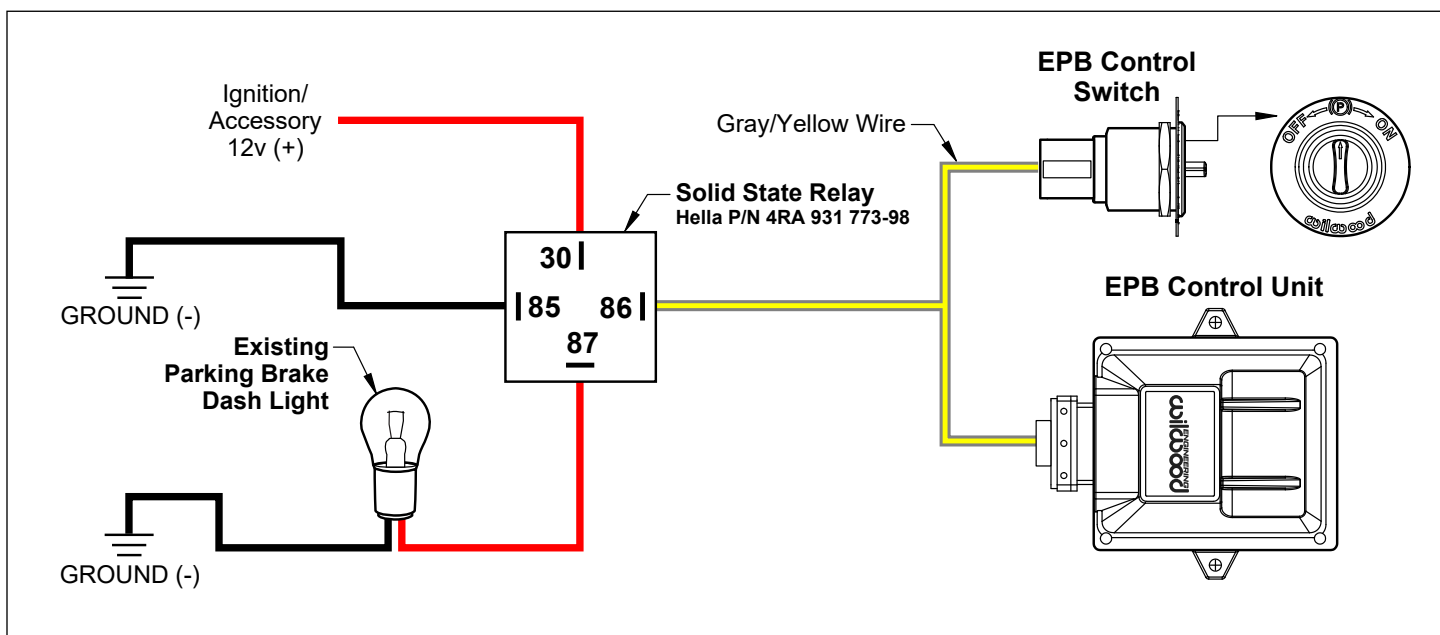


Figure 5. EPB/Parking Brake Dash Light Wiring Diagram

Parking Brake

WARNING • PARKING BRAKE

- The holding ability of the brake should be tested by stopping on a sloping surface and applying the parking brake while holding car with the hydraulic foot brake. This should be accomplished both facing up and down hill.
- Do not rely exclusively on the parking brake to hold the car; Curb wheels as recommended by the applicable diagram and put gear selector in park, or shift into first gear or reverse with a manual transmission.

- Diagram A - When parking facing downhill, turn front wheels towards the curb or right shoulder. This will keep from rolling into traffic if the brakes become disengaged.
- Diagram B - Turn the steering wheel to the left so the wheels are turned towards the road if you are facing uphill with a curb. The tires will catch the curb if the car rolls backward.
- Diagram C - When facing uphill without a curb, turn the wheels sharply to the right. If the vehicle rolls, it will go off the road rather than into traffic.
- When parking on a hill, always set the parking brake and move the gear selector into park, or shift into first or reverse gear if your vehicle has a manual transmission.

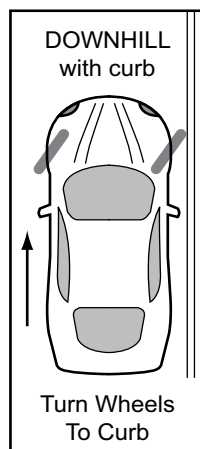


Diagram A

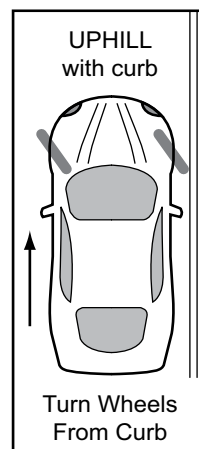


Diagram B

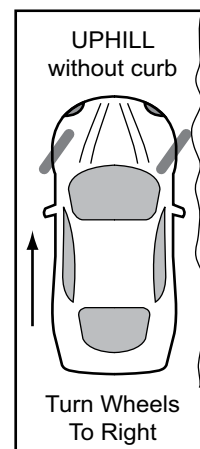


Diagram C

Brake Testing

WARNING • DO NOT DRIVE ON UNTESTED BRAKES BRAKES MUST BE TESTED AFTER INSTALLATION OR MAINTENANCE MINIMUM TEST PROCEDURE

- Make sure pedal is firm: Hold firm pressure on pedal for several minutes, it should remain in position without sinking. If pedal sinks toward floor, check system for fluid leaks. DO NOT drive vehicle if pedal does not stay firm or can be pushed to the floor with normal pressure.
- At very low speed (2-5 mph) apply brakes hard several times while turning steering from full left to full right, repeat several times. Remove the wheels and check that components are not touching, rubbing, or leaking.
- Carefully examine all brake components, brake lines, and fittings for leaks and interference.
- Make sure there is no interference with wheels or suspension components.
- Drive vehicle at low speed (15-20 mph) making moderate and hard stops. Brakes should feel normal and positive. Again check for leaks and interference.
- Always test vehicle in a safe place where there is no danger to (or from) other people or vehicles.
- Always wear seat belts and make use of all safety equipment.

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Associated Components

<u>PART NO.</u>	<u>DESCRIPTION</u>
260-13706	Wilwood Residual Pressure Valve (2 lb for disc brakes)
260-13707	Wilwood Residual Pressure Valve (10 lb for drum brakes)
260-8419	Wilwood Proportioning Valve, Knob Style
260-8420	Wilwood Proportioning Valve, Lever Style
260-11179	Wilwood Combination Proportioning Valve with Brake Light Switch
290-0632	Wilwood Racing Brake Fluid (Hi-Temp° 570) (12 oz)
290-6209	Wilwood Racing Brake Fluid (EXP 600 Plus) (16.9 oz)
340-13831	Wilwood Floor Mount Brake Pedal (with balance bar)
340-13832	Wilwood Swing Mount Brake Pedal (with balance bar)
260-6764	Wilwood 3/4 inch High Volume Aluminum Master Cylinder
260-6765	Wilwood 7/8 inch High Volume Aluminum Master Cylinder
260-6766	Wilwood 1 inch High Volume Aluminum Master Cylinder
260-4893	1-1/16 inch Tandem Master Cylinder (aluminum housing)
260-8555	Wilwood 1 inch Aluminum Tandem Chamber Master Cylinder
260-8556	Wilwood 1-1/8 inch Aluminum Tandem Chamber Master Cylinder
220-7056	Stainless Steel Braided Flexline Kit, Universal, 14 Inch, Domestic, 3/8-24 IF
220-7699	Stainless Steel Braided Flexline Kit, Universal, 16 Inch, Domestic, 3/8-24 IF
220-8307	Stainless Steel Braided Flexline Kit, Universal, 18 Inch, Domestic, 3/8-24 IF