

Federal Pacific Stab-lok Electrical Panels & Circuit Breakers

Federal Pacific Electric Stab-lok type (FPE Stab-lok®) residential circuit breakers are reported to pose a fire hazard. FPE Stab-lok® circuit breakers and load centers (electrical panels) can still be found in millions of homes. Even though FPE has not made a circuit breaker since 1986, the circuit breaker operations were acquired by other companies. In the United States, Stab-lok® circuit breakers are sold by the American Circuit Breaker Corporation.

The panels have two main problems:

- 1. Failure for breakers to trip when in overload. This can be related to mechanical failure of the breaker internally or because of the large odd size of the breaker handles.**
- 2. Failure at the breaker attachment at the bus bar related to the breaker and bus bar design.**

How to Identify FPE Electrical Panels

FPE panels are easy to identify. They usually display the FPE or the "Stab-Lok" brand. Look at the inside door of your electric for the markings. Because they have been installed in older homes, the markings may not be completely visible.

Federal Pacific Electrical Panels Information

Federal Pacific Electric (FPE, aka Stab-Lok) electric panels have a history of breakers not tripping when they should. The Problem Circuit breakers are supposed to shut off when current reaches levels that could start a fire or damage equipment.

Due to design and/or quality control problems, the FPE Stab-Lok circuit breakers do not always work reliably. Testing has shown that roughly 30% of the 2-pole circuit breakers fail to trip when they should. Virtually 100% of some lots of these breakers are defective. Fuses served the same safety function before we had circuit breakers. The situation with the FPE circuit breakers is the same as the old unsafe (but common) practice of over fusing or putting a penny in the fuse socket behind the fuse itself to deal with the nuisance of fuses frequently blowing... There isn't an inspector or electrical contractor (or even a realtor) who would not agree that these conditions should be corrected.

The difference is that overusing is easy to see, but there is usually no visual clue if the breaker is working correctly or not. "... the homeowner's perception is that 'the breakers work fine'." There is no way for an electrician to look at a panel and know if the breakers will trip when they should.

The Solution

Companies have started making replacement breakers for FPE panels. In most cases these are manufactured with the same problematic design of the original, and there is no data that they are more reliable. Also, replacing the breakers does not address problems with the buss bars in FPE panels that are not as well documented as the circuit breaker problem. The only solution that addresses all of these problems is to replace the entire panel. In closing, remember that any repair work should be performed by a licensed

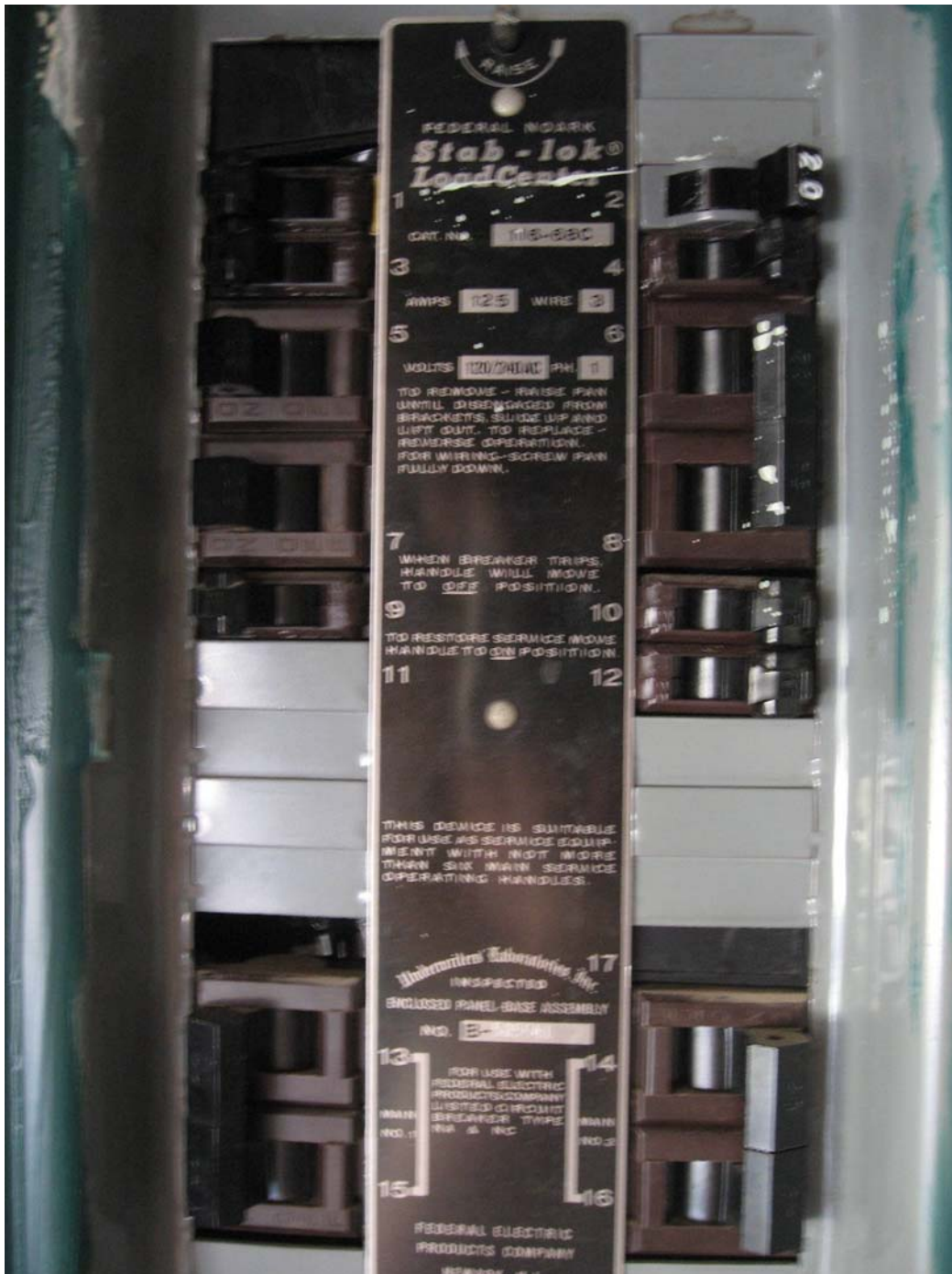
HOME INSPECTORS STAB-LOK Panels by Federal Pacific

This panel has had a long history of problems with improper tripping and loose breakers that cause arching and failure. One additional concern to the consumer is that the breakers are hard to locate for replacement.

One note to home inspectors is that it can be a hazard since we are required to remove the breaker panel cover.

Several accidents have occurred when the home inspector removed the panel cover, a breaker came out with the cover and the inspector was injured. Note if you decide to remove this panel cover, the breaker handles overlap the cover and can be pulled loose, since we recommend replacement we did not remove the covers. Two typical report statements are listed below.

- a.** The Federal Pacific STAB-LOK panel in the XXXX area is a panel that has been the subject of UL and consumer concern related to inadequate safety protection. I did not remove the inspection panel cover; because the breaker should be turned off before the panel can be safely removed. System evaluation and panel replacement by a licensed electrician is recommended.
- b.** The Federal Pacific STAB-LOK panel in the XXXX area is a panel that has been the subject of UL and consumer concern related to inadequate safety protection. A licensed electrician should be consulted for full evaluation and repair / replacement. The buyer should consult the Consumer Product Safety Commission and research the internet for more information concerning the Stab-Lok panel.



Federal Pacific Stab-Lok panel can clearly labeled. Breaker handles can be blue, black or red.



CATALOG

THIS DEVICE ACCOMMODATES
 POSITIONS: 1-3, 2-4, 9-11, 10-12, 4-6
 BREAKERS POSITIONS: 5-7, 6-8, 13-15
 8 TYPE NC OR 4 TWO POLE (SIMULTANEOUS)
 BREAKERS.

U. S. Patent No. 2,511,265

AFTER WIRING, ATTACH SUITABLE LABELS TO INDICATE APPROPRIATE CIRCUIT TRIM TO INDICATE APPROPRIATE BREAKER POSITIONS.

WIRE ALL BREAKERS PER TYPICAL WIRING DIAGRAMS.

REMOVAL OF PANEL FROM EQUIPMENT IS PERMITTED BY REMOVING THE PANEL FROM THE EQUIPMENT WITH THE BREAKERS REMAINING IN PLACE.

BREAKER INSTALLATION

CIRCUIT DIR

1 _____
 2 _____
 3 _____
 4 _____
 5 _____
 6 _____
 7 _____
 8 _____
 9 _____
 10 _____
 11 _____
 12 13-0 ORVER
 13 _____
 14 _____
 15 _____
 16 _____
 17 WASHOR
 18 _____

FEDERAL ELECTRIC PRODUCTS
 NEWARK, NEW JERSEY

This panel is to be removed from the main panel.



NOTE THAT THE BREAKER HANDLE OVERLAP THE PANEL COVER IN THE ON POSITION, THIS IS A HARZAD TO THE INSPECTOR BECAUSE IF THE BREAKERS ARE IN THE "ON" POSITION WHEN THE COVER IS REMOVED THE BREAKER CAN PULL OUT AND CAUSE SERIOUS INJURY.

The odd handle shape and poor condition to handles for 220 circuits are often the reason that breakers cannot physically trip when overloaded.

<http://www.cpsc.gov/CPSCPUB/PREREL/prhtml83/83008.html>

Note to the inspector: CPSC found that the breakers do fail, but they did not have enough funds to pursue the investigation because of time and the number of breakers in us.

FOR IMMEDIATE RELEASE

March 3, 1983

Release # 83-008

Commission Closes Investigation Of FPE Circuit Breakers And Provides Safety Information For Consumers

WASHINGTON, D.C. -- The Consumer Product Safety Commission announced today that it is closing its two year investigation into Federal Pacific Electric Stab-lok type residential circuit breakers. This action was taken because the data currently available to the Commission does not establish that the circuit breakers pose a serious risk of injury to consumers.

The Commission investigation into Federal Pacific Electric (FPE) circuit breakers began in June, 1980, when Reliance Electric Co., a subsidiary of Exxon Corporation and the parent to FPE, reported to the Commission that many FPE circuit breakers did not fully comply with Underwriters Laboratories, Inc. (UL) requirements. Commission testing confirmed that these breakers fail certain UL calibration test requirements. The Commission investigation focused primarily on 2 pole residential circuit breakers manufactured before Reliance acquired FPE in 1979.

To meet UL standards, residential circuit breakers must pass a number of so-called "calibration tests." The purpose of these tests is to determine whether the circuit breakers will hold the current for which they are rated and also automatically open or "trip" (shut off the current) within specified time limits if overloading of the circuit causes current levels in excess of the breaker's amperage rating. (Overloading can occur because a consumer plugs too many products into a circuit or due to the failure of a product or component connected to that circuit). While the Commission is concerned about the failure of these FPE breakers to meet UL calibration requirements, the Commission is unable at this time to link these failures to the development of a hazardous situation.

According to Reliance, failures of these FPE breakers to comply with certain UL calibration requirements do not create a hazard in the household environment. It is Reliance's position that FPE breakers will trip reliably at most overload levels unless the breakers have been operated in a repetitive, abusive manner that should not occur during residential use. Reliance maintains that, at those few overload levels where FPE breakers may fail to trip under realistic use conditions, currents will be too low to generate hazardous temperatures in household wiring. Reliance believes its position in this regard is supported by test data that it provided to the Commission.

The Commission staff believes that it currently has insufficient data to accept or refute Reliance's position.

The Commission staff estimates that it would cost several million dollars to gather the data necessary to assess fully whether those circuit breakers which are installed in homes but which may fail UL calibration tests present a risk to the public. Based on the Commission's limited budget (\$34 million for fiscal year 1983), the known hazards the Commission has identified and must address (involving products of other manufacturers) and the uncertainty of the results of such a costly investigation, the Commission has decided not to commit further resources to its investigation of FPE's circuit breakers. However, despite its decision to close this particular investigation, the Commission will continue its investigation of circuit breakers generally. The Commission can reopen its investigation of FPE circuit breakers if further information warrants.