

R1100 S CHIP INSTALLATION INSTRUCTIONS

TOOLS REQUIRED:

1. 3mm Hex key, ball end preferred;
2. 5mm Hex key, ball end preferred;
3. #2 Phillips® head screwdriver, long;
4. Small flat blade screwdriver, NON-MAGNETIC tip;
5. Medium flat blade screwdriver, suitable for use as pry bar;
6. T25 Torx™;
7. T30 Torx™, tamper-proof;
8. Adjustable fuel flow restriction clamps, qty: 3 though 2 will work, refer to photo in step 3;
9. Masking tape: useful for labeling fuel lines, vent hoses, screw locations;
10. Clear RTV silicone;
11. Medium wire ties, qty: 2, for fuel tank vent hoses @ fuel cell;

This instruction set provides a basic task list to follow, though presumes mechanical familiarity and confidence in disassembly of the bike. The following BMW service manual provides detailed instructions on fairing removal and bike disassembly.

R1100 S 01 51 7 652 719

Electrostatic discharge (ESD) mat and wrist ground strap are highly recommended.

EXTERIOR DISASSEMBLY

1. Remove seat.
2. Remove left & right side body panels: 8 screws per side. Rotate panel up from rear to separate clips at top tank panel seam or ridge, then pull front out. NOTE: Pin at rear of panel, aft of seat mount bar.
3. Remove air intake horn on left side of bike.
4. Remove fuel tank. **LESS FUEL IS BETTER!** Clamp off the fuel supply and return hoses, on tank side of splice connections. These are the hoses that are towards the front of the hose splice junction and **MUST** be clamped to avoid substantial fuel loss. For additional reduction in fuel spillage and loss, clamp off the fuel return hose (upper hose) on other side of hose-splice.



CONTROL UNIT REMOVAL

1. The control unit should be visible now that the tank has been removed. Remove the four Phillips® head control unit mounting screws, as shown below. Unplug the main harness from the control unit and pull the control unit away.
2. IF you are using an aftermarket free-flow exhaust system, remove plastic cover from left relay box and pull cat coding plug from socket shown.

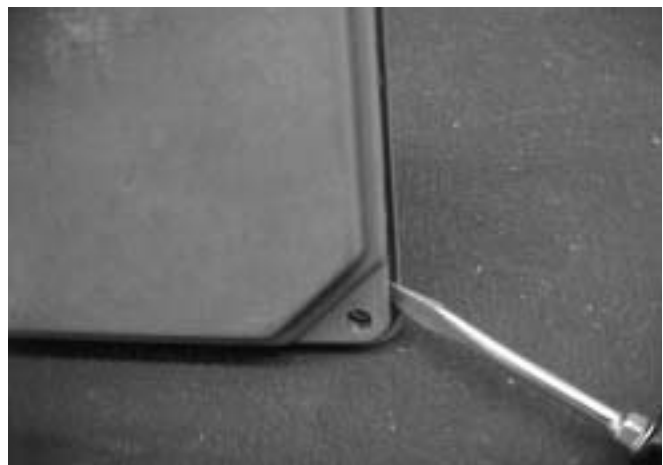


NOTE: DURING NEXT STAGES OF CHIP INSTALLATION AND REPLACEMENT, IT IS CRITICAL THAT THE POTENTIAL FOR STATIC DISCHARGE BE ELIMINATED OR REDUCED. GIVEN THE MEANS BY WHICH INFORMATION IS STORED ON THE EPROM, IT IS POSSIBLE TO ERASE, CORRUPT, OR DAMAGE THE FILE FOR EITHER STOCK OR PERFORMANCE MAPS, OR CONTROL UNIT WITH ANY FORM OF ELECTROSTATIC DISCHARGE. AN ESD MAT AND WRIST GROUND STRAP ARE HIGHLY RECOMMENDED!

3. Place the control unit face up on a clean, dust-free countertop or workspace with the BMW/Bosch label facing you. Remove four T-30 Torx™, tamper-proof screws as shown.



4. With non-magnetic slot-head screwdriver, gently pry the case-halves open from topside. **Remember! The top has the label.** NOTE: The factory silicone bead has high adhesion characteristics; two screwdrivers may be required to slowly break this bead, allowing some material to remain on both case-halves. The adhesive has a nasty tendency to pinch fingertips when the halves snap together, so BE CAREFUL!



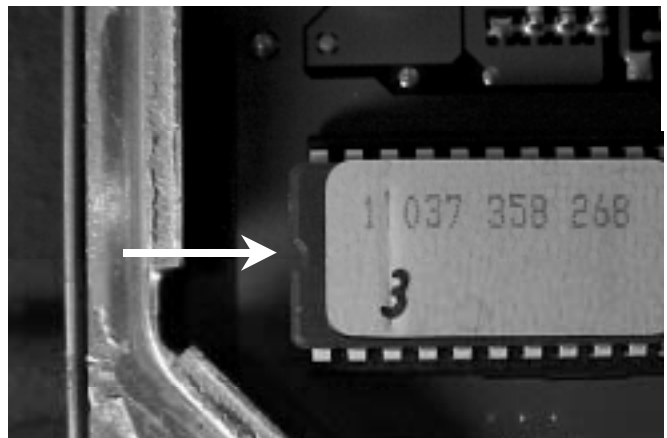
5. Lift cover off of the control unit from left-hand side as shown. **NOTE: Main printed circuit board should remain attached to the bottom cover.**



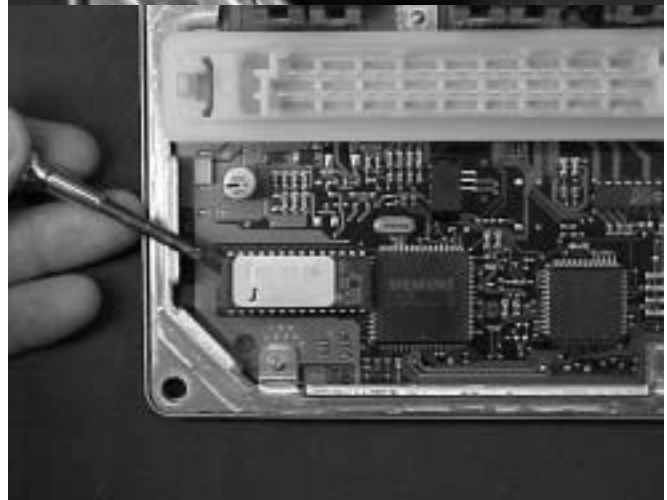
6. Locate the socketed chip on the printed circuit board; this can be easily identified by the white plastic "H" shaped retaining clip. Remove the H-clip using a NON-MAGNETIC thin blade screwdriver, inserted into one of the two small slots opposite each other, in the center of the clip. Gently pry the screwdriver up, away from the circuit board. This should pop the clip upwards and loose on this side. Use same procedure on the other side of the retaining clip.



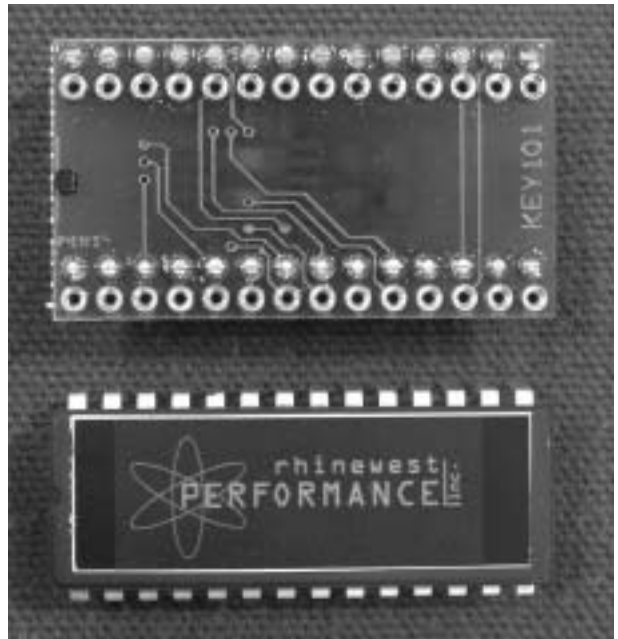
7. Note installation direction of the EPROM; this is designated by a notch formed in one end. As shown here, the notch goes to the outside edge of the control unit. Serious damage could result if a chip is installed backwards, so this is a critical step.



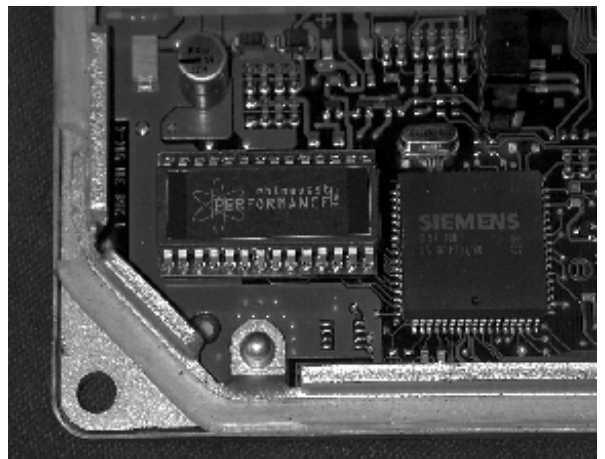
8. Remove the chip from its socket by inserting the NON-MAGNETIC thin blade screwdriver between the short end of the chip and the socket, as shown. Pry upwards gently. Work slowly and gently pry from alternating ends of the chip. **DO NOT pry the socket away from the printed circuit board!** Make sure that it is the EPROM that is being removed. Avoid skin contact with the legs or pins on the chip as well, holding the silicon wafer from the short ends. Set the original program chip in or on the anti-static plastic box to avoid possibility of static charge damage.



9. Photo shows new encryption board and EPROM to be installed. First, install the encryption board into the vacant socket on the circuit board. Note that the small black dot on the left-hand edge of the encryption board (with KEY 130 or KEY 101 legible at lower RH corner) will correspond to the notch on one edge of the e-prom orienting the pins to their correct addresses. Carefully inspect the alignment of the pins to their corresponding sockets. Only when certain of correct alignment, press the encryption board downward and into place gently. Avoid excessive circuit board deflection. Follow similar procedure for installation of performance chip into the encryption board: partially install the far row of legs or pins into the socket. Use thumbs and index fingers to gently compress and align the near side row of pins into the relevant sockets. Exercise caution to avoid bending the pins!



10. Store the stock EPROM in the black plastic box that the performance EPROM was shipped inside to avoid accidental erasure.
11. Reassemble control unit in reverse order. The H-clip will not be reinstalled. Also, run a thin bead of clear RTV silicone over the existing sealer. This will prevent moisture intrusion into the control unit.
12. Reinstall control unit, fuel tank, and remaining fairing trim pieces.



© All images copyright Rhine West Performance, Inc. 2002, 2003