Zodiac® Top Fuel Injection Controller Instructions



TOOLS REQUIRED

- This is about a 45-minute install time.
- The tools required for disconnecting the negative terminal of the battery (see owners manual).
- The tools required for removing your seat and/or side cover (see owners manual).
- The tools required for loosening and propping up the fuel tank (see owners manual).

Thank you for choosing the Zodiac Top Fuel Injection (TFI) Controller. The Zodiac TFI Controller is usable only for fuel injected Harley-Davidson's (except V-rod).

This product is a great fit for stock bikes with exhaust and intake mods.

This is an Electronic Jet Kit. Like jet kits in the past, the more you modify, the more responsibility you take in getting your fuel curve right. Going to www.zodiac.nl will help you obtain better high horsepower tuning.

Zodiac International B.V., Industrieweg 44, 3641 RM Mijdrecht **Phone**: +31 (0)297 28 86 21 **Fax**: +31 (0)297 28 82 26

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1. **Before installing the TFI you must first disconnect the negative lead from the battery.**

2. **Determine a location for the TFI. Suggested locations are as follows: Under the seat or behind the side cover.**

3. **Making sure that your motorcycle is cold, loosen and lift up the fuel tank (be sure to disconnect the fuel line using the quick disconnect feature on the fuel fitting, DO NOT UNSCREW THE FITTING) and remove the front and rear mounting bolts, you will need something to hold the fuel tank up (block of wood or a towel) from the frame to gain access to the injectors.**

4. **Underneath the fuel tank you will locate the fuel injectors. (For Touring see figure #5, for Softail figure #4 and Dyna figure #3).**

5. **Disconnect the factory injector connectors from the fuel injectors and replace with the TFI injector connectors from the TFI unit, it does not matter which order they are hooked up. (For Touring see figure #6,7,8, Softail figure #5,6,7, and Dyna figure #4,5,6). It is a good idea to make sure there is a little slack in the harness to prevent engine vibration from damaging/breaking a wire on the connectors.**

6. **Replace the fuel tank. (Making sure that all mounting bolts are in place and fuel connections are correct).**

7. **Connect the TFI ground lead to the negative terminal of the battery along with the factory ground lead. (For Touring see figure #4, Softail figure #3, and Dyna figure #7,#8).**

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1. **After connecting the box, check all the wire connections to ensure proper connection. To do this just pull on the connections to make sure they are *properly locked in*.**

2. **Be sure to check the wire harnesses are not in direct contact with any sharp edges, exhaust and/or other objects, which could result in long term wear or damage.**

3. **Start the bike up and in approximately seven seconds the LED's inside the Gen 3 will energize and be visible. With a proper installation, the Gen 3 will have a continuous LED sequence where the LED's come on from left to right and then back again. Then it will stop scrolling the LED's and go to a steady or slow flashing green LED to the far left (depending on programming). With an improper installation the LED display will consist of a flashing green and a flashing red LED. This occurs when the Gen 3 is not receiving a proper injector signal. Recheck the wire connections for any defects. *(The flashing green and flashing red LED's is "common" for a proper installation during deceleration because the stock fuel map shuts off the fuel injectors "on most models" during this process.)***

4. **At this point you are ready to adjust the Gen 3 to the base settings supplied with the unit. The first thing to do is ensure that the proper code was supplied by checking that the six programmable features are available. To begin this process press the MODE button and to enter each successive mode, just press the MODE button again. The unit comes with pre programmed settings these settings should match the recommended starting settings on pg 8.**

    a. **The first mode represents an additional amount of fuel added during light load steady throttle cruise. A flashing green LED should appear somewhere on the LED display.**
    b. **The second mode represents an additional amount of fuel added during acceleration. A flashing yellow LED should appear somewhere on the LED display.**
    c. **The third mode represents an additional amount of fuel added during full throttle conditions. A flashing red LED should appear somewhere on the LED display.**
    d. **The fourth mode represents an adjustment for when the yellow fuel comes in. A flashing yellow LED should appear somewhere on the display along with a solid blue LED on the right.**
    e. **The fifth mode represents an adjustment for when the red fuel comes in. A flashing red LED should appear somewhere on the display along with a solid blue LED on the right.**

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If each mode is present then the proper code exists and you are ready for making manual adjustments. If you failed to enter a mode, try going through the sequence again and be sure to only press the MODE button once quickly in between each step.

5. **You are now ready to manually program each mode. Consult the base settings supplied with the unit or you can look up the most up-to-date settings by going to our website www.zodiac.nl**

To program the TFI, the bike must be running in order to supply power to the box.

If at anytime you stay in an adjusting mode for longer than 4 seconds without pressing any buttons, TFI will exit adjusting mode and will return to the ready state.

To save settings at a particular mode press the MODE button which goes to the next adjustable mode or wait for the TFI to exit back to the ready state.

The settings are adjusted by pressing the plus and minus buttons located on the right and left side respectively of the mode button. When entering each mode for the first time, remember a light is flashing on the left side, which signifies a value of 0 for that particular mode if the unit isn't preset from the factory. To start adjusting press the plus button once and notice that the light which was flashing is now flashing at a faster rate. This signifies an increase of 0.5 for the mode value. Press the plus button again and the light to the right of the last flashing light will now begin flashing. This represents a value of 1 for the mode. Now if you press the plus button again you will notice the next light to the right begins flashing. You should now have two flashing lights and the current value is 1.5 for the mode. This process continues for all the lights across the light display until you reach the right most light. When the value is 7.5 you will have the second from the right light flashing in the color of the mode and the right most light will be flashing blue. Pressing the plus button will make the value 8 which is the max value and the right most light will flash a combination of the two colors. The range of values for each mode is 0 to 8. To see a visual display of adjusting values go online to www.zodiac.nl

6. **Your TFI should now be properly programmed and you are now ready to tune your bike.**

Always make sure your bike is at normal operating temperature when making tuning adjustments.

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Tuning for mode 1 – Fuel addition during cruise/steady throttle.

This adjustment deals with adding fuel during all steady throttle conditions.

Tuning for mode 2 – Fuel addition during acceleration

Tuning for this mode depends greatly upon your individual bike and can vary widely from the base setting. After market high flow exhaust systems and high flow air filters "MAY" cause you to tune differently from the base settings. This combination could have a setting difference as great as three yellow LED's. Note that this adjustment is only for hard acceleration.

Tuning for mode 3 – Fuel addition during full throttle

This adjustment deals with adding fuel for primarily 4000 RPM and up to red line. For example, running to red line in 1st, shifting, running to red line in 2nd, shifting, and continuing this all the way through the gear range, you would have been engaging the red LED all the time. Again this mode could vary widely from the base settings depending on the set up of your bike and could have a difference as great as three red LED's or more.

Tuning for mode 4 – Represents an adjustment for when the yellow fuel engages

This mode "MAY" vary from the base settings depending on the set up of your bike. The lowest LED setting (1) represents the lightest load to switch on the yellow fuel and the highest LED setting (8) represents the heaviest load to switch on the yellow fuel.

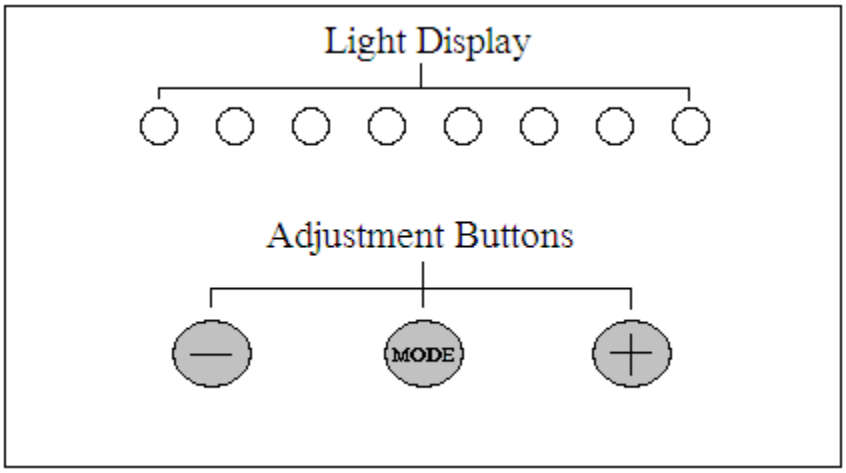
Tuning for mode 5 – Represents an adjustment for when the full throttle fuel engages

The base setting for this mode will rarely have to be changed. The red LED should be engaged during the full throttle period. The lowest LED setting (1) represents the lightest full throttle load to switch on the red fuel and the highest LED setting (8) represents the heaviest full throttle load to switch on the red fuel.

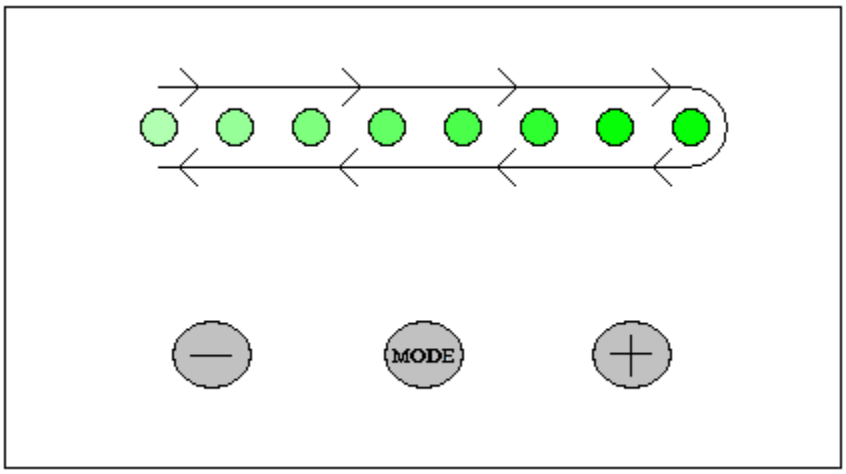
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General Layout



Start-Up Light Sequence

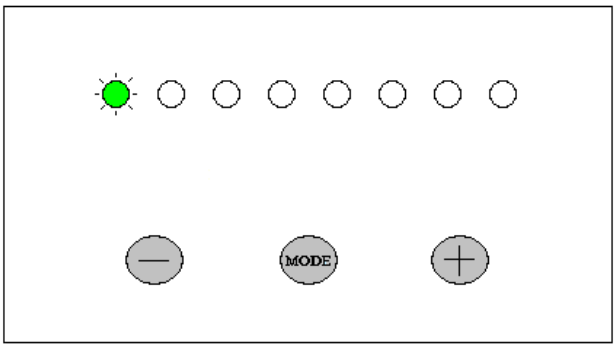


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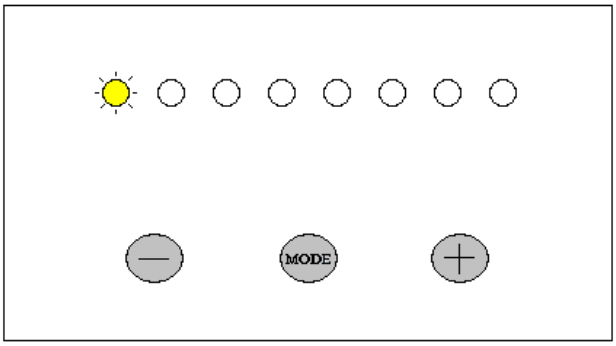
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Adjustment Modes

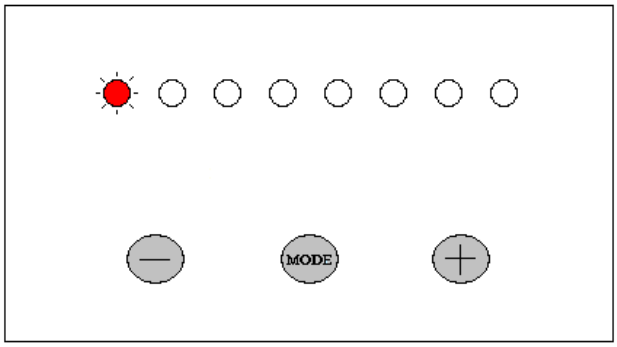
Mode 1 – Green



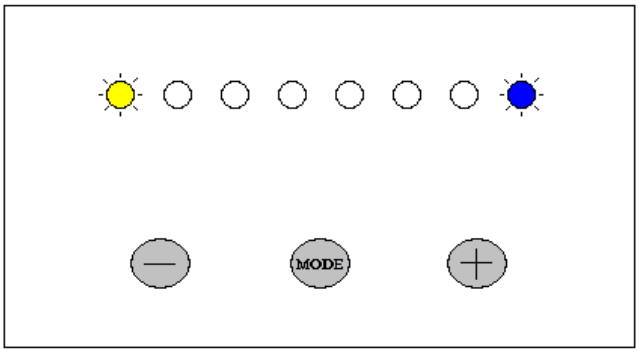
Mode 2 – Yellow



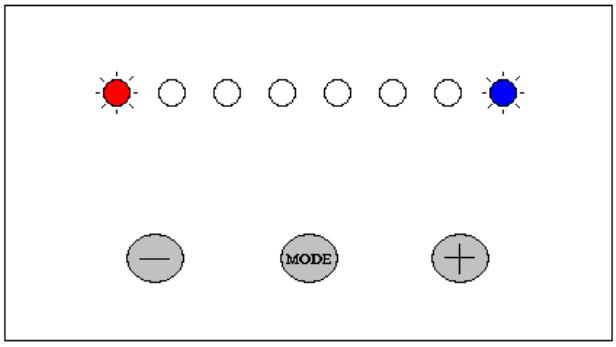
Mode 3 – Red



Mode 4 - Yellow/Blue



Mode 5- Red/Blue

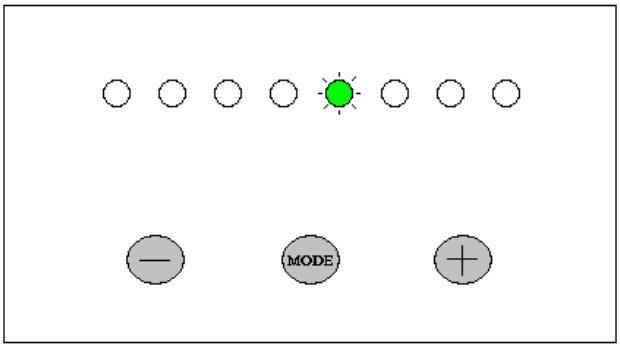


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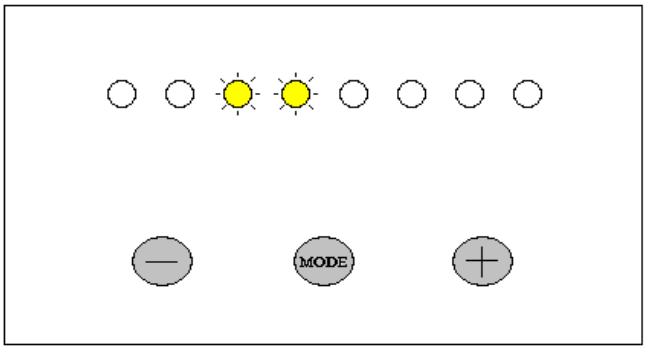
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Base Settings

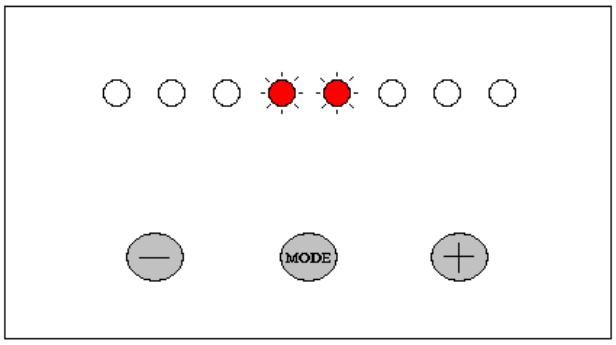
Mode 1



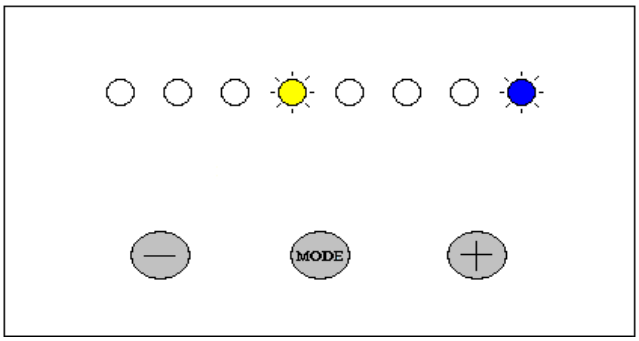
Mode 2



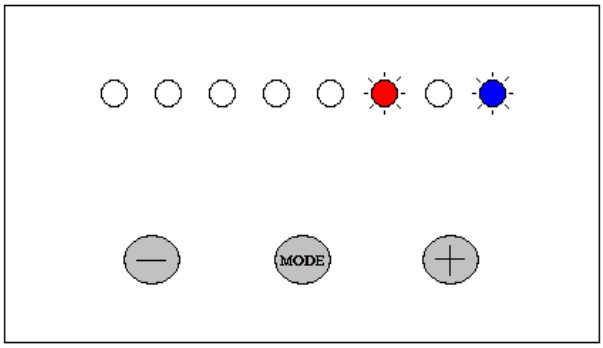
Mode 3



Mode 4

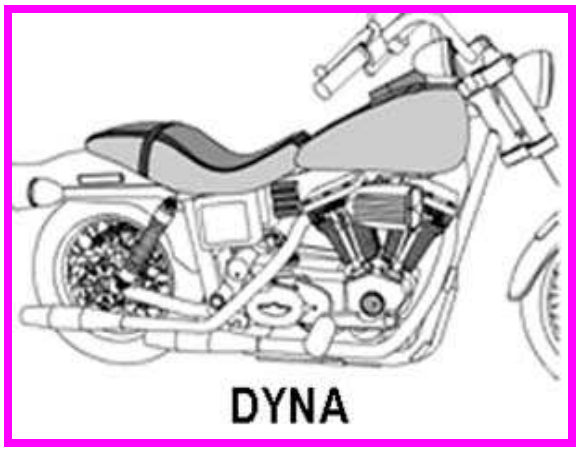


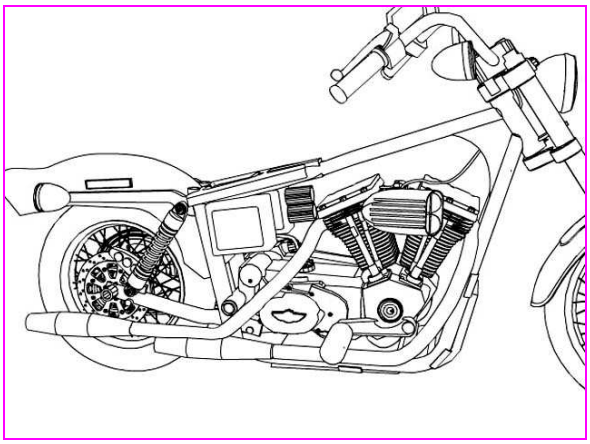
Mode 5



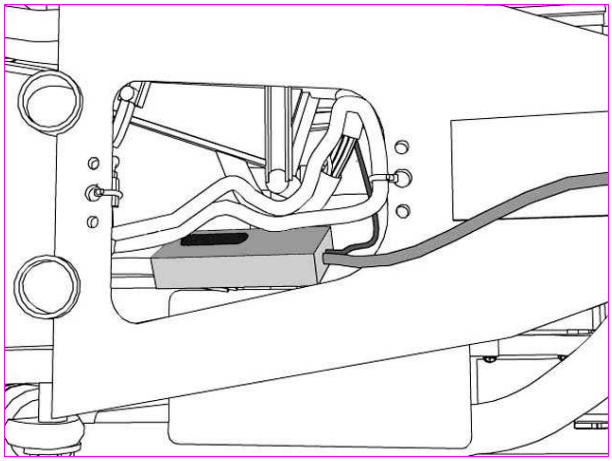
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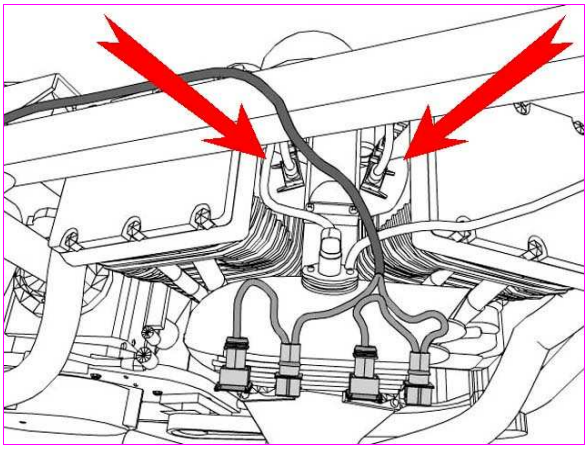




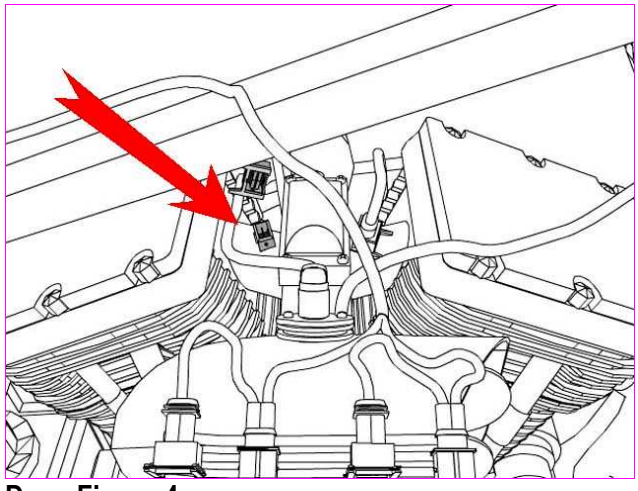
Dyna Figure 1



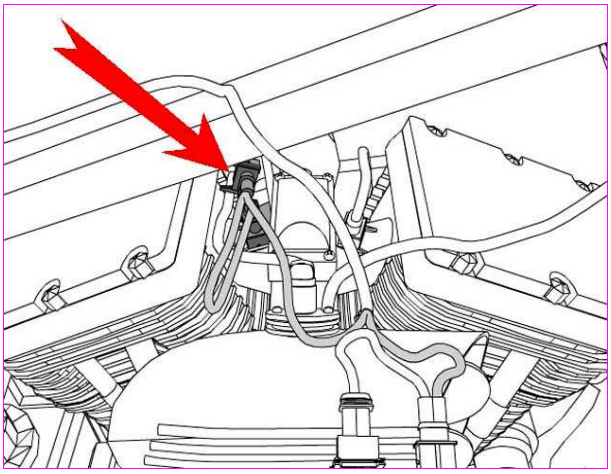
Dyna Figure 2



Dyna Figure 3



Dyna Figure 4

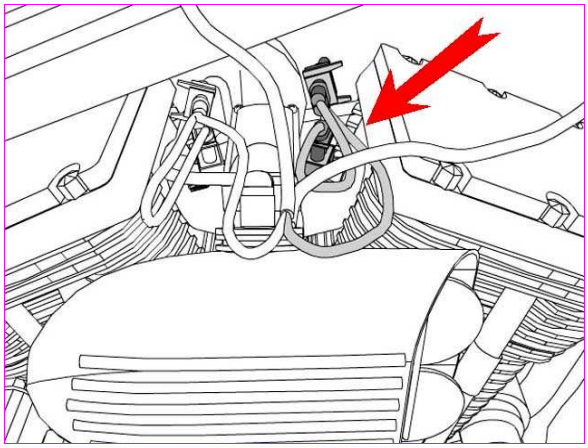


Dyna Figure 5

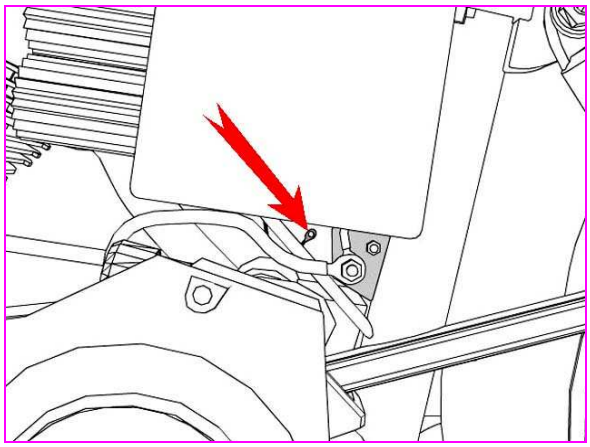
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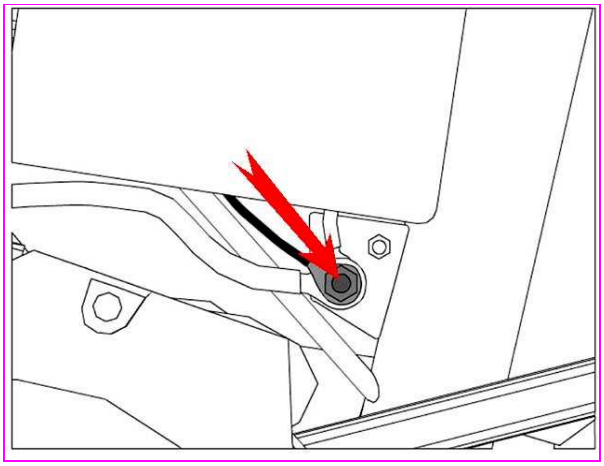
Dyna Continued



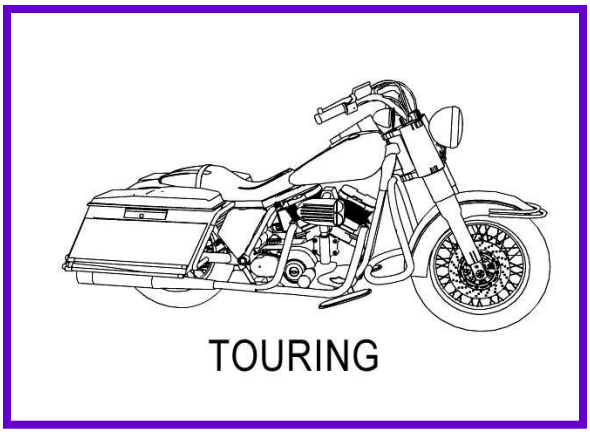
Dyna Figure 6

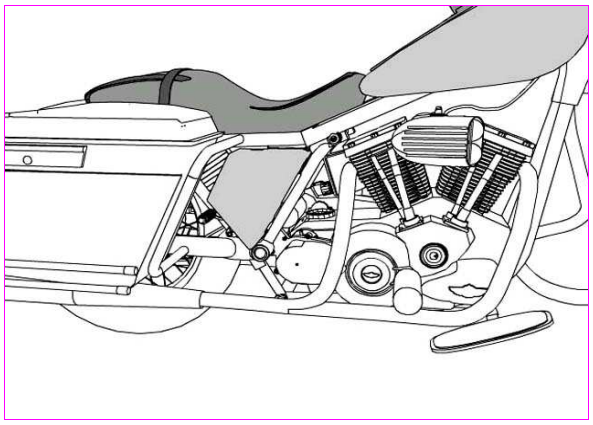


Dyna Figure 7

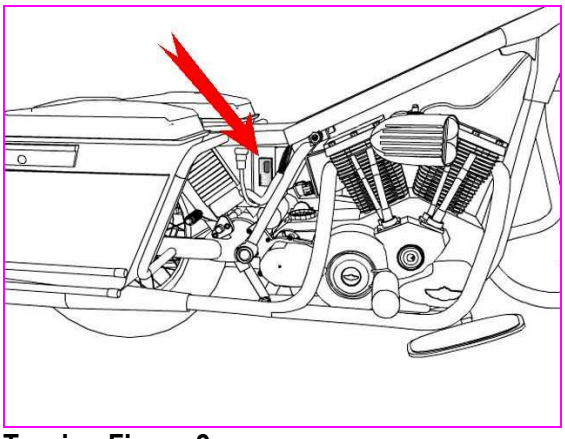


Dyna Figure 8





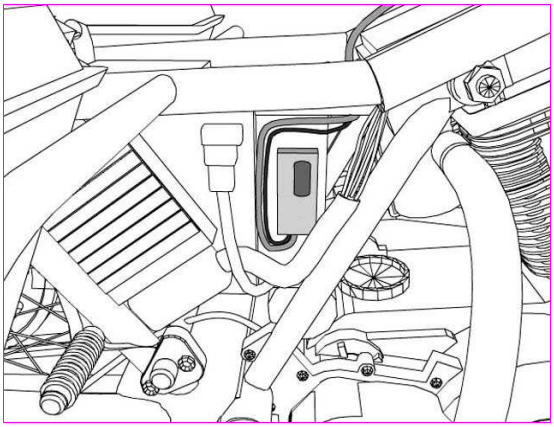
Touring Figure 1



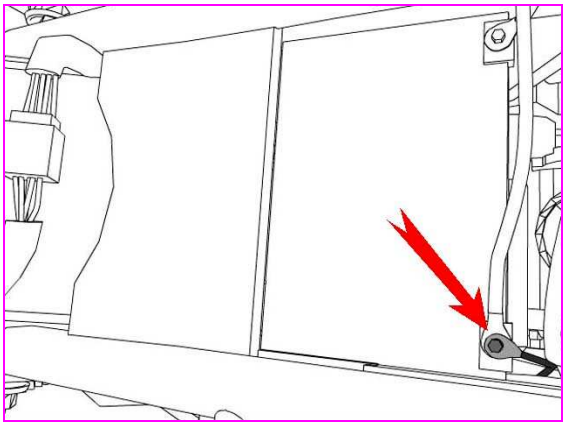
Touring Figure 2

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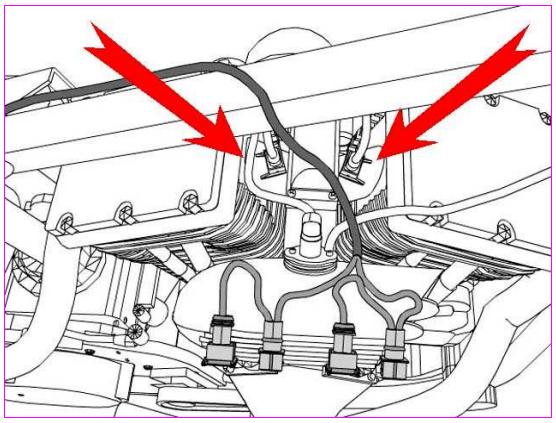
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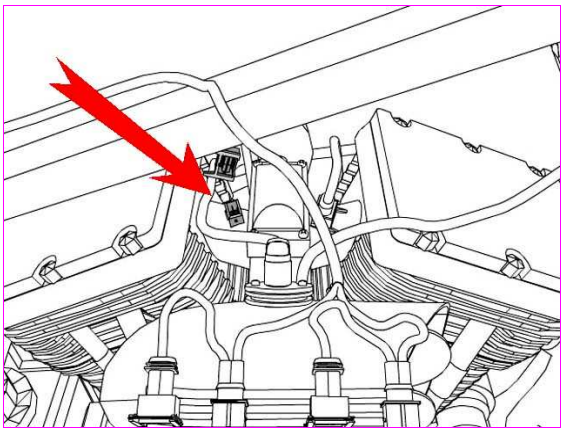
Touring Figure 3



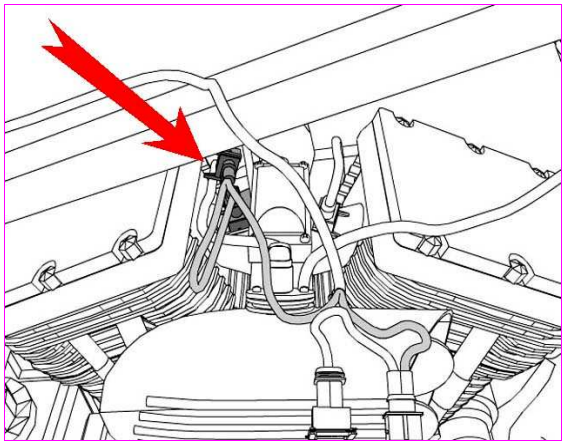
Touring Figure 4



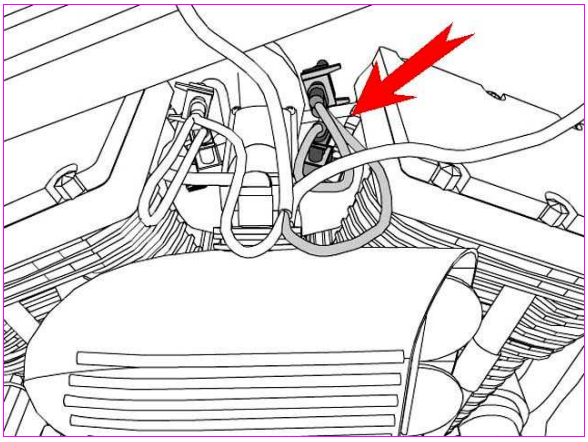
Touring Figure 5



Touring Figure 6



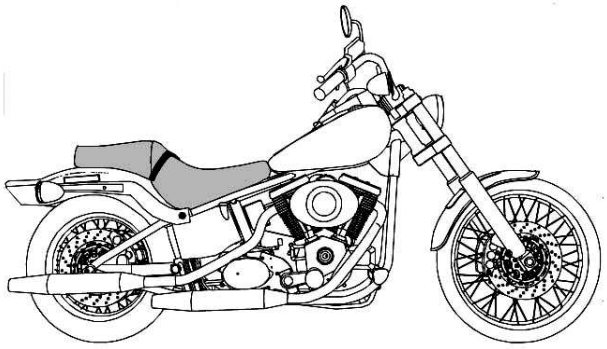
Touring Figure 7



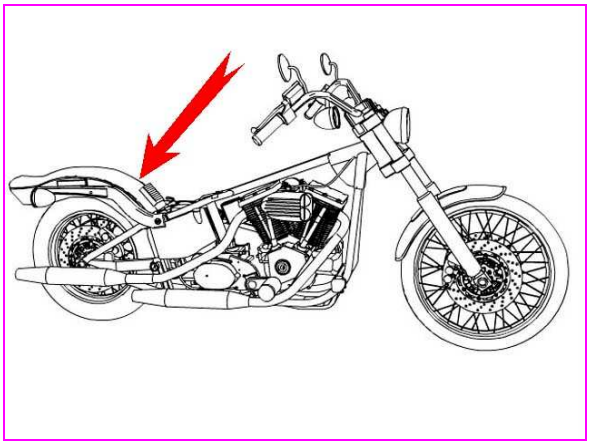
Touring Figure 8

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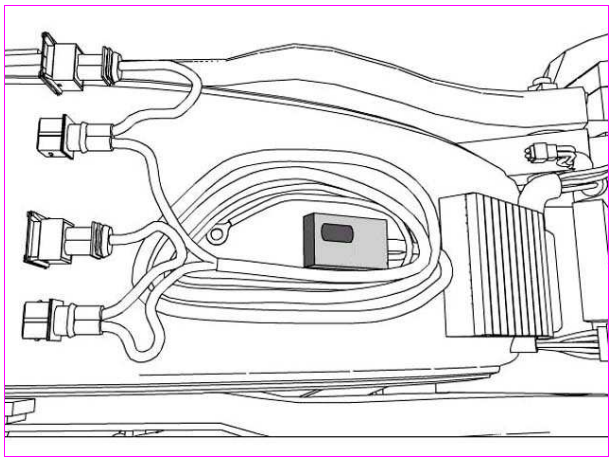
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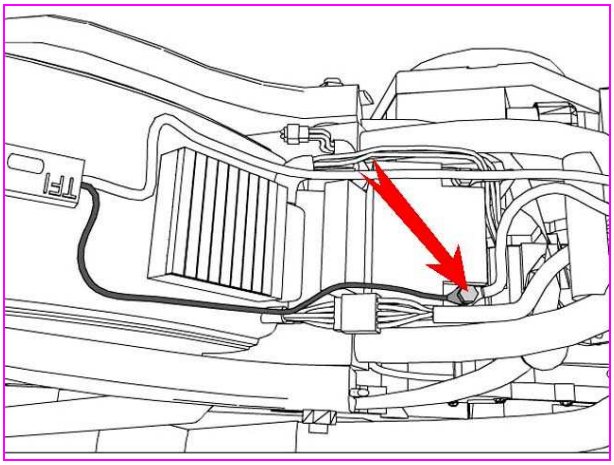
SOFTAIL



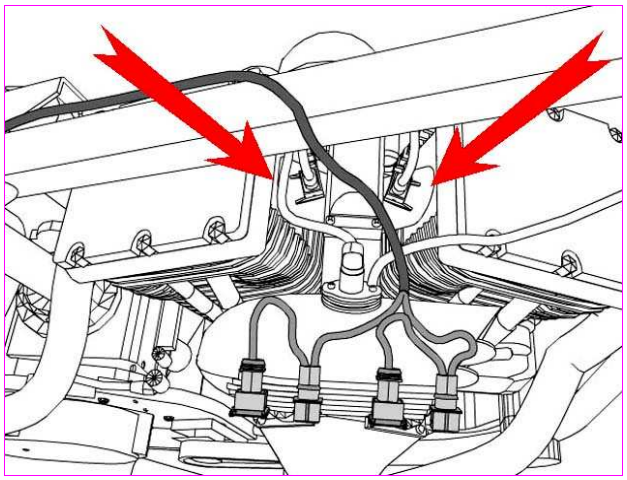
Softail Figure 1



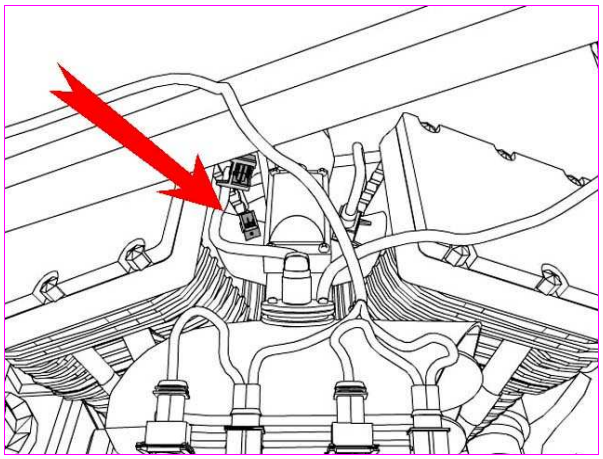
Softail Figure 2



Softail Figure 3



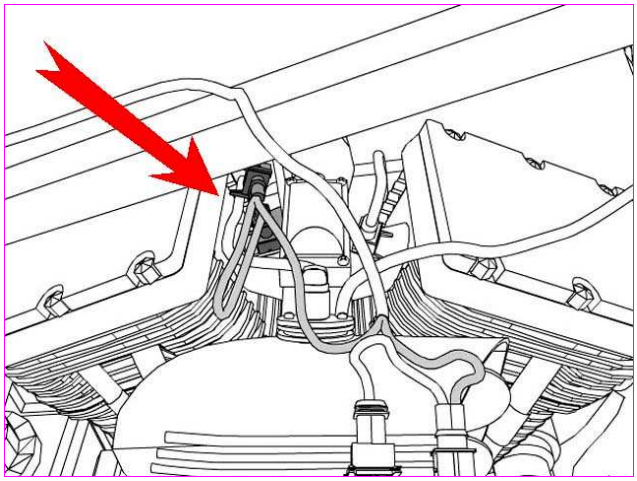
Softail Figure 4



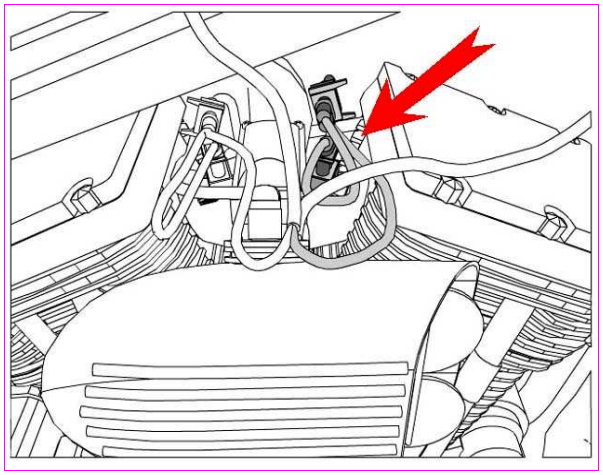
Softail Figure 5

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Softail Figure 6



Softail Figure 7

1 – Year Unlimited Mileage Warranty

Zodiac warrants that this product carries a warranty for 1 year from date of purchase against original defects in materials and workmanship. Should this product fail to perform for either of the above reasons, Zodiac will repair or replace it with an equivalent product at no charge, except for postage, to the original retail purchaser.

*** * Important * * Important * ***

To obtain the benefits of this warranty, the retail purchaser must send the product with proof of purchase and postage prepaid to:

Zodiac International B.V.
Industrieweg 44,
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