

DDK2-16

## **KAWASAKI VULCAN 1500E2 CLASSIC 1500G NOMAD (1999 AND NEWER) DYNA 2000 IGNITION INSTALLATION INSTRUCTIONS**

**NOTE – THIS KIT WILL NOT WORK WITH THE 1500D OR 1500E1 MODELS. FOR THESE MODELS USE DYNATEK PART NUMBER DDK2-13.**

1. **REMOVE SEAT** – Remove the two seat retainer bolts. The bolts are located one on each side of the seat closest to the rear of the seat. Pull up on the front of the seat to remove.
2. **REMOVE THE GROUND CABLE FROM THE BATTERY.**
3. **REMOVE RIGHT BODY SIDE COVER** - This is the cover located just below the seat on the right side of the bike. Remove the Phillips screw retaining the cover and gently pull off the cover.
4. **REMOVE THE WARNING LIGHT PANEL FROM THE GAS TANK** – Remove the three hex bolts holding the warning light panel to the speedometer bezel. Pull the warning light panel up until you can access the electrical plug on the panel. Disconnect the warning light panel electrical plug and remove the panel from the bike.
5. **REMOVE SPEEDOMETER AND SPEEDO BEZEL** – Gently lift the rear of the speedo bezel revealing the underside of the bezel. Disconnect the speedo cable. Lift the speedo and bezel until the attached electrical plug is visible. Disconnect the electrical plug and remove the speedo and bezel assembly from the bike.
6. **REMOVE THE GAS TANK** – Remove the two gas tank retainer bolts, one forward and one rear on the tank. Move the fuel petcock to the OFF position and remove the fuel line from the fuel petcock. Lift the rear of the tank a few inches. Remove the rubber hoses from the bottom of the tank, noting their positions on the tank. Unplug the gas gauge sender wire from the gas tank. Lift the tank straight up and remove from the bike.
7. **REMOVE THE LEFT SIDE RUNNING BOARD AND SHIFT LEVERS** – Remove the two bolts retaining the running board and remove the running board from the bike. Remove both shift levers from the left side of the engine noting their installed height and position.
8. **REMOVE THE (DECORATIVE) LEFT SIDE ENGINE COVER** – Loosen the four Allen head bolts retaining the decorative left side engine cover until the cover can be removed from the engine and remove the cover.
9. **REMOVE THE BOLTS HOLDING THE COOLANT RECOVERY TANK** – The coolant recovery tank is located under the right body side cover. Remove the two retaining bolts on the recovery tank. Let the tank hang on it's hoses. It is not necessary to completely remove the tank.

10. REMOVE THE STOCK IGNITOR BOX – The ignitor box is located under the coolant recovery tank location under the right body side cover. Remove the two bolts retaining the ignitor box. Unplug the harness plugs from the ignitor box and remove the box from the bike.
11. REMOVE THE RETAINER NUTS FROM THE IGNITION COILS – The ignition coils are located behind the upper frame rails over the top of the front cylinder of the engine. Follow the spark plug wires to the coils if you can't see them. Remove the two retainer nuts that hold each coil to the frame. Move the coils down from their mounting position such that you can access the spade terminals on the back of each coil.
12. MATE THE DYNA 2000 MODULE TO ITS HARNESS – Locate the DYNA 2000 ignition module in your kit and the included main wiring harness. Plug the harness into the DYNA 2000 module. Position the DYNA 2000 module in the area where the stock ignitor box was mounted. Using the included mounting plate, bolt the DYNA 2000 module to the stock ignitor box location using the original ignitor box bolts.
13. ROUTE THE DYNA 2000 HARNESS – Locate the long three wire leg of the harness which has red, white, and blue wires. Route this leg of the harness along the stock harness routing up to the coil area.
14. CONNECT THE DYNA 2000 TO THE COILS – On the left side ignition coil (front cylinder), remove the BLACK wire from the spade terminal on the back of the coil. Plug the WHITE wire of the DYNA 2000 harness onto this terminal. Then plug the BLACK wire of the stock harness back onto the piggy back terminal of the WHITE wire. (SEE WIRING DIAGRAM). Now remove the stock RED wire from the other spade terminal of the left coil. Plug the RED wire of the DYNA 2000 harness onto this coil terminal and plug the stock RED wire back onto the piggy back terminal of the DYNA 2000 RED wire. Now on the right side coil (rear cylinder) unplug the BLACK/GREEN wire from the spade terminal on the back of the coil. Plug the BLUE wire of the DYNA 2000 harness onto this spade terminal of the coil. Plug the stock BLACK/GREEN wire back onto the piggy back terminal of the DYNA 2000 BLUE wire. Reinstall the coils into their original location. Bolt the coils back to the frame.
15. INSTALL THE DYNA 2000 GROUND WIRE - Locate the 12 inch BLACK ground wire with a ¼ inch ring terminal on the end on the DYNA 2000 harness. Install the ring terminal directly onto the negative post of the battery and reinstall the battery ground cable.
16. CONNECT THE DYNA HARNESS TO THE ENGINE PICKUPS - Find the three wire leg of the DYNA harness which has a GREEN wire, a BROWN, and a WHITE wire. Route this leg of the harness to the left side of the engine that was revealed when you removed the left side decorative engine cover. Under the left side engine cover you will find a four position pickup connector that matches the connector on the DYNA 2000 harness. Disconnect the four position pickup connector from the stock harness and plug it into the DYNA 2000 harness.
17. TACH OUTPUT – A tach output wire is available on the DYNA 2000 module. This is the 2 inch long YELLOW wire on the DYNA 2000 harness. This is a one pulse per revolution tach pulse that can be used to drive an aftermarket tachometer if one is added to the bike.
18. THROTTLE POSITION SENSOR – Locate the three wire leg of the DYNA harness that contains a YELLOW, BLUE and BLACK wire. Route this leg of the harness up to the throttle position sensor plug which is located on the top of the air box above the carburetor. Disconnect the triangular three position plug of the throttle position sensor from the stock harness. Plug the throttle position sensor plug into the mating plug on the DYNA harness.
19. REPLACE THE GAS TANK – Reconnect the hoses to the tank in the same order they were removed. Reconnect the gas gauge sender wire to the tank. Make sure the speedo drive cable and speedo and warning light plugs are accessible through the top of the gas tank. Bolt the gas tank into place. Make sure to reconnect the fuel line to the petcock and turn the petcock to the ON or RES position.

20. SET THE ADVANCE AND REV LIMIT MODES – Locate the two knobs on the end of the DYNA 2000 module. Start by selecting ADVANCE MODE #4 and a REV LIMIT of 6000. These settings will give you a good baseline to start with. Advance curve #4 will give you a little more advance on the top end and a little more advance in the mid range cruising speeds than the stock module. This should pep up a stock motor and give you more power in the cruising rpm range. Putting a jet kit in the carb will wake up the motor even more. With a jet kit, you may be able to run curve #3, #2 or #1 for even more power. But don't try these more aggressive curves without a jetting change and premium fuel.
21. REINSTALL THE COOLANT TANK - Reinstall the coolant recovery tank over the DYNA 2000 module.
22. REINSTALL THE LEFT ENGINE SIDE COVER
23. REINSTALL THE SHIFT LEVERS AND RUNNING BOARD
24. START THE BIKE – This is a good time to start the bike to make sure everything is working properly. You should notice that the bike starts almost instantaneously even if the motor is dead cold. The DYNA 2000 ignition requires much fewer rotations of the engine to start than the stock ignition.
25. REPLACE THE SPEEDO, SPEEDO BEZEL AND WARNING LIGHT PANEL – Replace these items in the reverse order you removed them.
26. REPLACE THE RIGHT BODY SIDE COVER
27. REPLACE THE SEAT

Your installation should be complete. If you have any trouble starting the bike, inspect all wiring connections. You should be able to see the LED on the DYNA 2000 module blink when the ignition key is turned on. If you don't, check your RUN/STOP switch and/ or the battery voltage.

#### THE ADVANCE CURVES

The DYNA 2000 ignition for the Kawasaki Vulcan has ten built-in advance curves. There are five curves which rise aggressively in the mid rpm range to give you better mid range power. These are curves 1 through 5. These curves give you a choice of final timing from 40 degrees with curve 1 to 32 degrees with curve 5. Most engines will work best with one of these curves. Curve 4 is most similar to the stock curve. Curve 4 is a good starting point if you are not sure what your engine will like best. The best way to optimize ignition timing is by putting your bike on a rear wheel dyno at a local shop to see which makes the best horsepower. Curves 6 through 10 are more conservative curves which rise more slowly across the rpm range. These curves are more appropriate for high revving, high compression engines which would detonate with too much low end advance. These curves are for extreme engines only. If your engine does not experience detonation with curves 1 through 5 then stay with them. If you do have a detonation problem try curves 6 through 10.

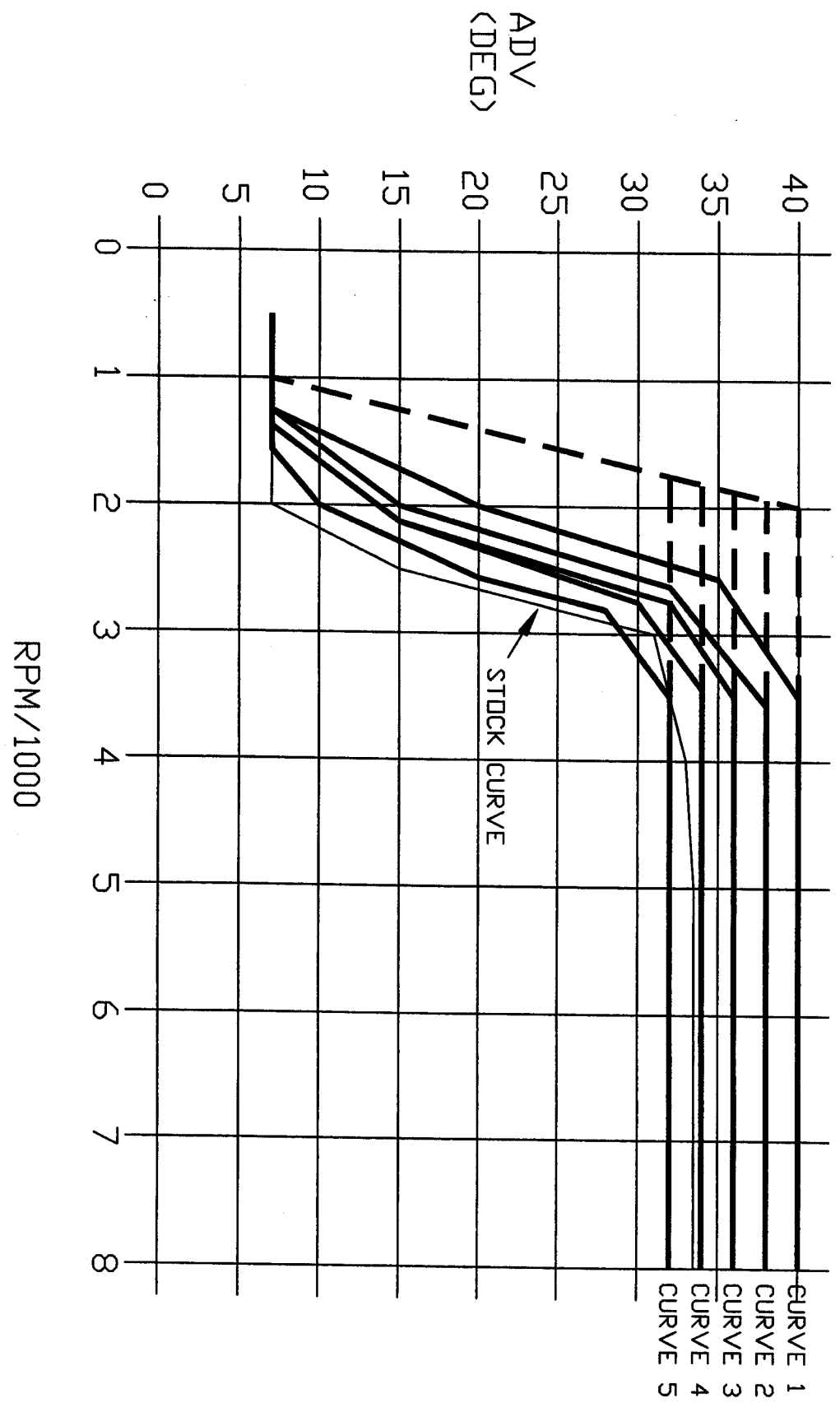
#### STATUS LED

There is a STATUS LED located between the mode knobs on the DYNA 2000 module. This LED is useful for giving you some diagnostic information about the operation of your ignition. The STATUS LED has two functions. When you first apply power to the DYNA 2000 module, the STATUS LED will blink indicating the module is on. This is a good verification that your power wiring and ignition switch are working. When the engine is cranking or running, the STATUS LED will pulse each time a signal is received from one of the magnetic pickups located in your engine. This function will allow you to see that the DYNA 2000 module is communicating with the pickups.

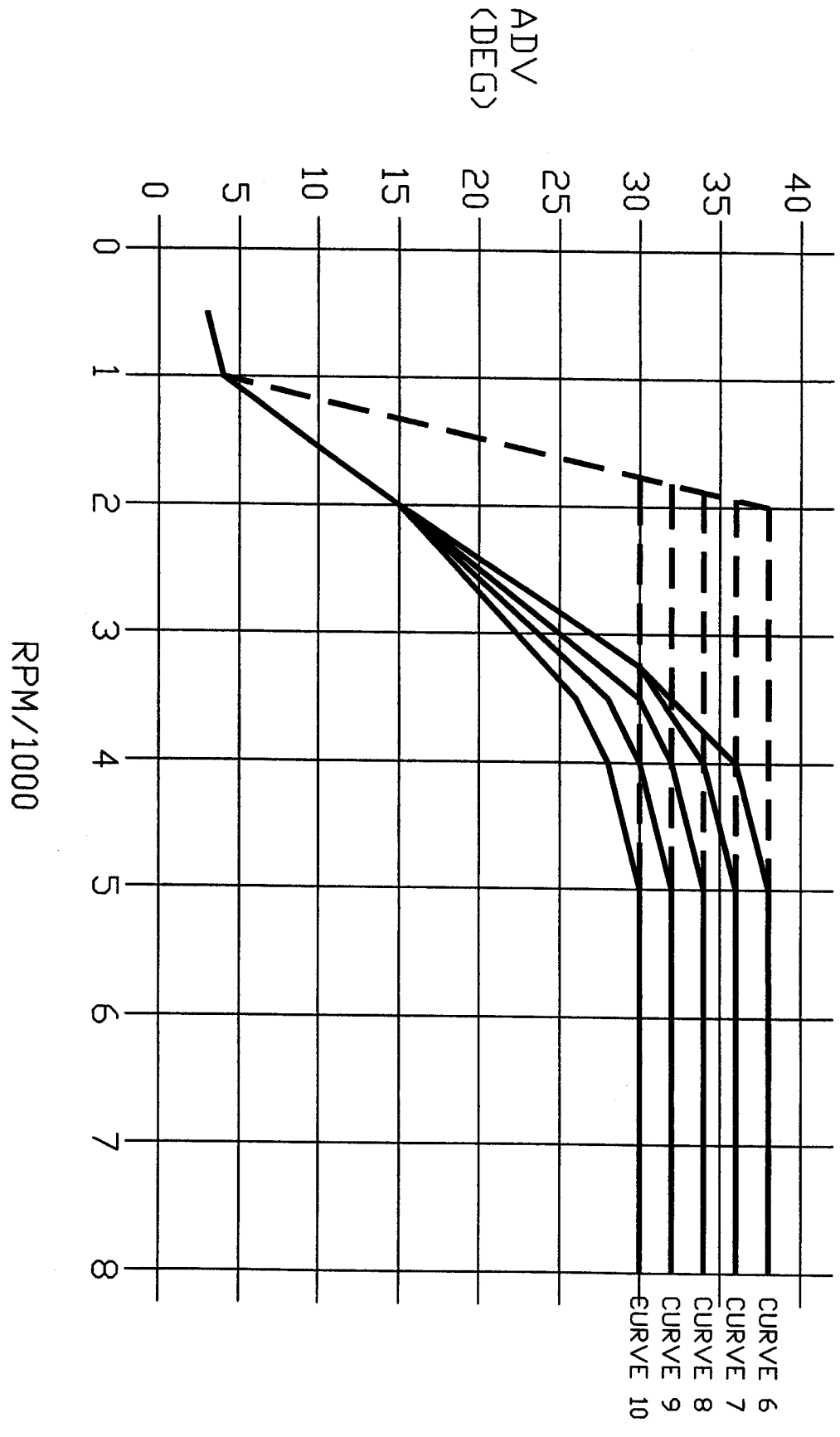
#### **SAFETY KILL INPUT**

The DYNA 2000 module has an input that can be used as a safety side stand kill. In order to use this function, locate the main DYNA harness plug that goes into the DYNA 2000 module. On this plug you will see an Orange wire and a BLACK wire leading to the ground terminal. Cut the ORANGE wire near the ground terminal and crimp on the supplied receptacle terminal. Locate the ORANGE extension wire included in your kit. Plug the ORANGE wires together. Locate the 8-position factory harness connector that you removed from the stock igniter box. Going to this connector, you will find a RED/WHT wire. This wire is the side stand safety kill wire. Splice the loose end of the ORANGE safety kill wire into the factory RED/WHT wire. This completes the safety kill installation. The ORANGE Safety Kill wire on the DYNA 2000 must be grounded for the ignition to run. This is why the BLACK wire was originally connected to the ORANGE wire in your kit. When the side stand is up or the transmission is in neutral or the clutch lever is pulled in, a ground will be supplied to the ORANGE wire through the stock harness and the ignition will run. When the side stand is down and the clutch lever is out and the transmission is in gear all at the same time, the ground is taken away from the ORANGE wire and the ignition shuts off. This is the same way that the stock ignition safety kill works.

NOTE - DASHED LINES INDICATE LIGHT THROTTLE CURVE WHEN USING TPS OR VACUUM SENSOR



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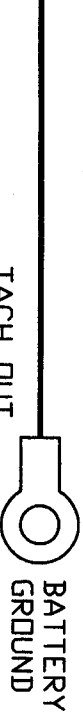


ADV  
(DEG)

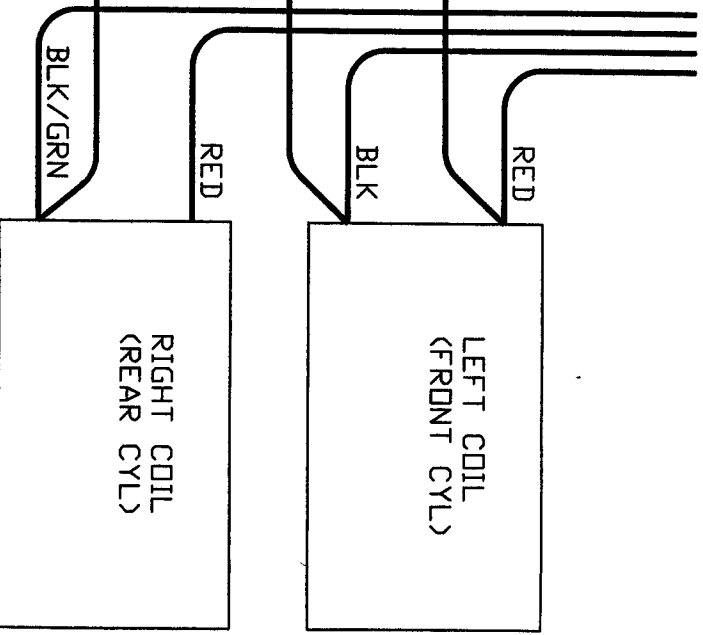
RPM/1000

FACTORY HARNESS

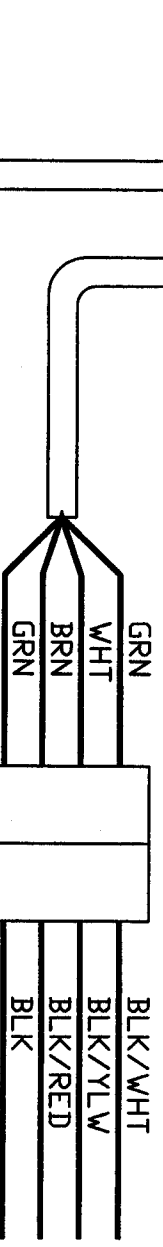
DYNA  
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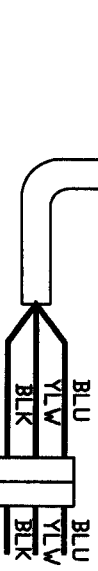
NOTE - TO USE SAFETY KILL  
1. CUT BLACK WIRE AT DYNA 2000 MODULE.  
2. SPLICE THE YELLOW/ SAFETY KILL  
EXTENSION WIRE TO THE RED/WHT WIRE  
ON THE 8 POSITION IGNITOR BOX PLUG.



8 POSITION CONN,  
IN FACTORY HARNESS  
AT IGNITOR BOX



FACTORY PICKUP  
HARNESS UNDER  
LEFT ENGINE  
SIDE COVER



FACTORY  
TPS  
HARNESS  
UNDER GAS TANK

DYNATEK	
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TITLE	KAW VULCAN 1500D, E, & G WIRING
DATE	4-7-99
DRAWING NO.	KAW 1500G VULCAN WIRING
REV	