TECH TIP # 56
December 2002 Issue

Tech Tips #56
July 04, 2002

1998-2002 Radio Sound Ultra Upgrades

As of July 1, 2002 Radio Sound Inc. made a manufacturing process change. As a result of this change, Ultra style upgrades of 1998-2002 radios will be limited to 100 pieces. When the100 sets of upgrade components are gone the only upgrade alternative will be the purchase of a 2003 radio.

Missing Part/Shortage On York Vehicles

Information and forms to obtain any missing part from a York new vehicle shipment may be found on h-dnet.com in the "Service" section titled "Missing Part/Shortage On York Vehicles." For shortages on Kansas City vehicles use an RMA with code "T-Part Not Included With Vehicle."

Using these forms will ensure prompt, accurate attention on your order and help prevent future shortages.

Police Emergency Equipment

We periodically receive calls from concerned dealers regarding warranty or repair of Whelen emergency equipment. Here is the contact information for Whelen Engineering. They have a new area code.

Whelen Engineering Co.
Rte 145 Winthrop Road
Chester CT 06443

Ph: 860-526-9504 then follow prompts
Fx: 860-526-4786

e-mail: whelen@connix.com
Website: **www.whelen.com**

Please remember that Harley-Davidson at this time offers police emergency equipment such as the pole lamps, sirens, strobes and microphone kits through P&A.

No Start Condition

We have had reports of a no start condition on several motorcycles with Delphi fuel injection. The problem occurs one time and does not return, so is difficult to diagnose. When the condition occurs, a P1010 code - missing password, is normally set. There have been a few reports of a P1009 code - incorrect password also. We are still investigating the cause but it appears the turn signal module did not get a complete message from the ecm at ignition ON so the engine starts and stalls or cranks but will not start. If you receive a call from a customer with this condition, or have one in your service department, try removing the ecm and security fuses, wait a few seconds and reinstall the fuses. We have found this "reboots" the turn signal module and the motorcycle will then start from that point on. The historic codes will remain for 50 starts or until cleared.

SADDLEBAG LATCH SPRING (Part No. 90707-00) REPLACEMENT

REMOVAL

1. Lay clean pad or blanket on work bench to protect painted surfaces of saddlebag.
2. Remove saddlebag from motorcycle leaving lid open. See REMOVAL in this section.
3. Lay saddlebag flat on pad with the inboard side facing up and the lid closest to you.
4. Remove two T20 TORX screws to release check strap from lid.
5. Remove two T15 TORX screws to release check strap from saddlebag.
6. Remove two remaining T15 TORX screws to remove latch from saddlebag. Move saddlebag back and out of the way.

CAUTION

This procedure assumes that the latch is NOT removed from the saddlebag lid. If there is doubt as to whether the procedure can be accomplished without scratching painted surfaces of the lid, then remove the five remaining T15 TORX screws to completely remove latch.

7. Position lid right side up with latch closest to you.
8. Raise latch slightly and rotate hinge on inboard side so that it is topside with the two plastic rub bars pointed upward. See upper frame of Figure 1.
9. Rotate rub bar section of hinge to expose hinge pin and spring. Using a flat tip screwdriver, carefully bend crimped end link outward. See lower frame of Figure 1.

NOTE

The end link on opposite side of hinge has a weld spot that prevents pin removal.

10. Reposition lid so that it is upside down with the latch farthest from you. Rotate hinge so that plastic rub bars are positioned beneath latch and spring is topside.
11. Using a needle nose pliers, grasp pin through opening just outboard of the spring and push toward the crimped link side. Work pin in this manner until end can be seen exiting crimped link. See upper frame of Figure 2. If necessary, pry crimped link outward a little more to achieve the desired result.
12. Grasping end with needle nose pliers, slowly pull pin from links until spring can be slid off opposite end. Only pull pin as far as necessary to remove spring. See lower frame of Figure 2.

INSTALLATION

1. Slide **new** spring onto end of pin. Orient spring as shown in lower frame of Figure 2.

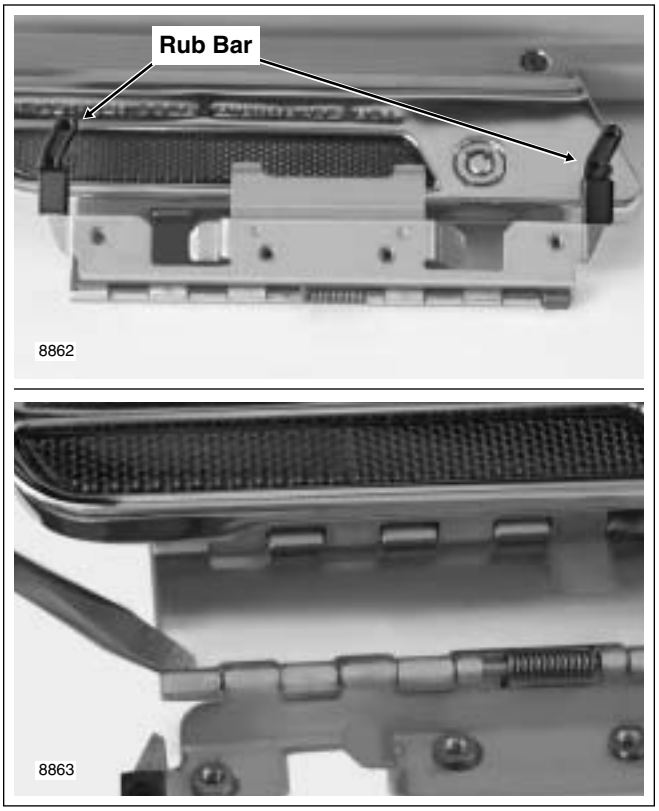


Figure 1. Lid Right Side Up With Latch on Near Side

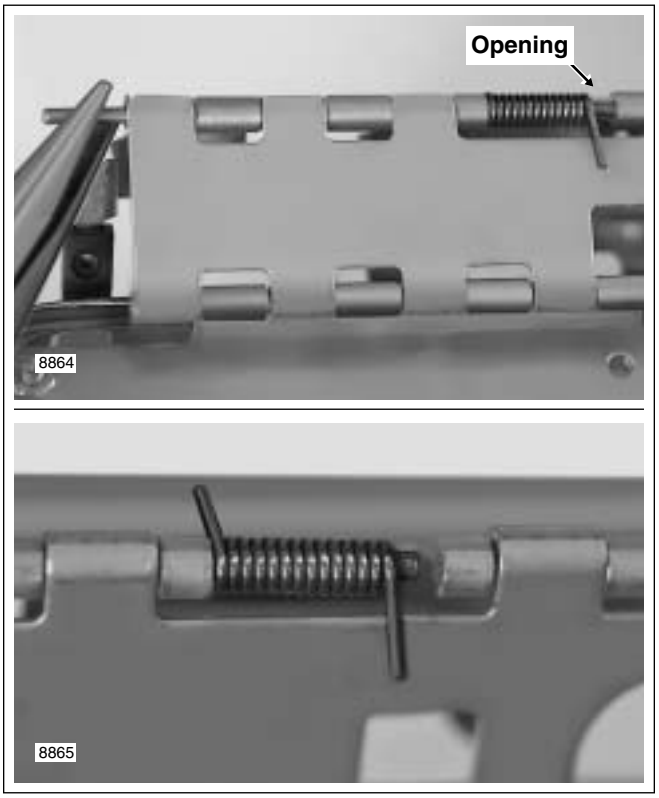


Figure 2. Lid Up Side Down With Latch on Far Side

2. Slide pin back through links. Using tapered end of needle nose pliers, push end of pin into crimped link.
3. Reposition lid so that it is right side up with latch closest to you. As before, raise latch slightly and rotate hinge on inboard side so that it is topside with plastic rub bars pointing upward. Now rotate rub bar section of hinge to expose hinge pin and spring. See Figure 1.
4. Holding lid down with elbow, if necessary, use a pliers to bend crimped link back into its original position, so that pin is captured and will not back out of hinge.
5. Reposition lid so that it is upside down with the latch farthest from you. Move saddlebag forward for reinstallation of lid. Align four holes in saddlebag with those in latch.
6. Install two inboard T15 TORX screws to fasten latch to saddlebag. Alternately tighten screws to 20-25 **in-lbs** (2.3-2.8 Nm).
7. Align holes in check strap with those in lid and saddlebag. Orient check strap so that logo is topside with the bottom of the bar and shield on the lid side.
8. Install two T15 TORX screws to fasten check strap and latch to saddlebag. Alternately tighten screws to 20-25 **in-lbs** (2.3-2.8 Nm).
9. Install two T20 TORX screws to fasten check strap to lid. Alternately tighten screws to 18-20 **in-lbs** (2.0-2.3 Nm).
10. Close saddlebag and install on motorcycle. See INSTALLATION in this section.

2003 FXSTDSE Metal Leaf Graphics

This article should be relied upon to help determine if a problem exists with the leaf graphics. If you believe a problem does exist, please call the Cruiser/Chassis service team of technical service for further help. For warranty purposes, some painted parts with leaf graphics will be available on a restricted order only by contacting the Cruiser/Chassis service team.

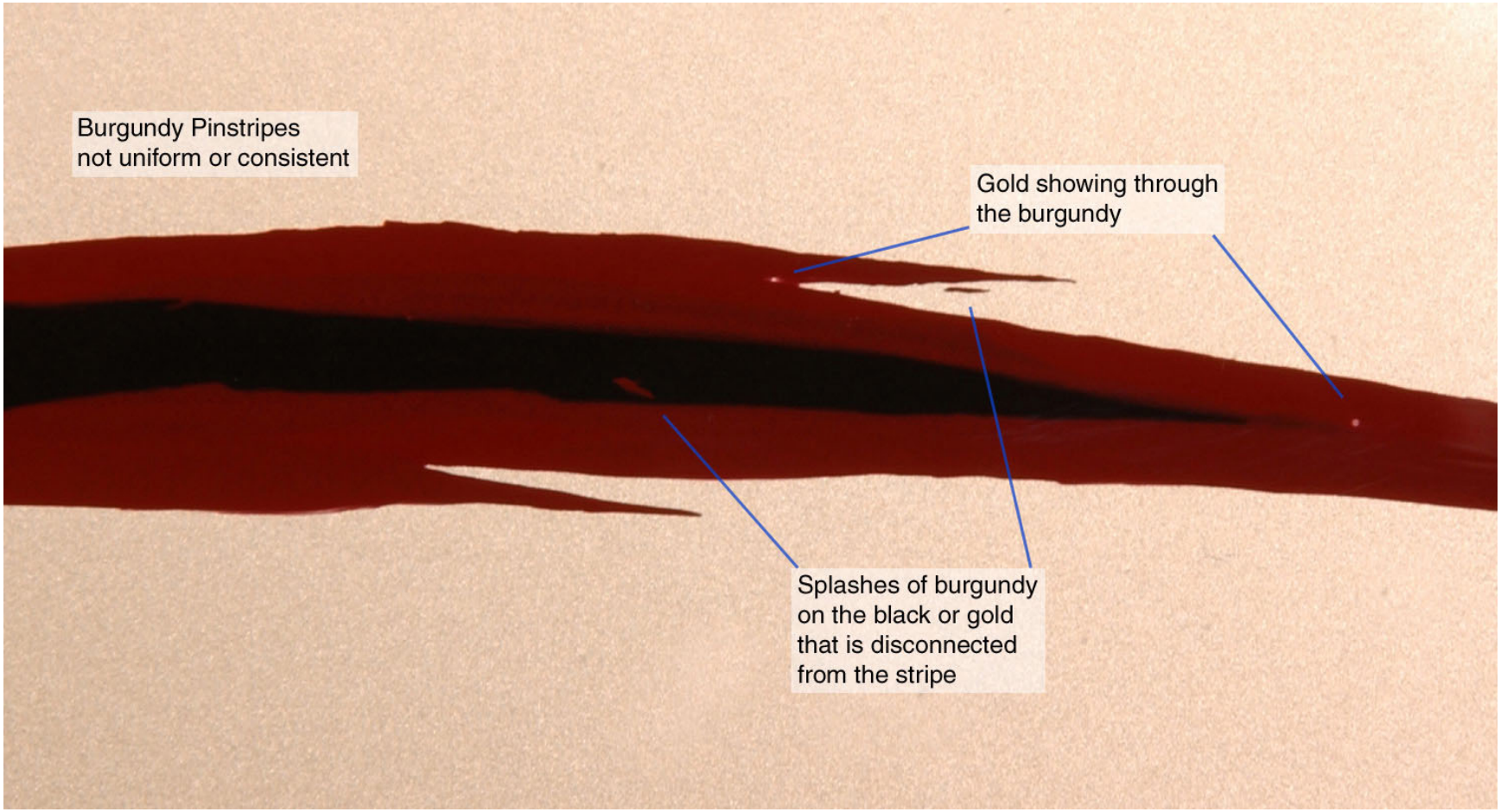
The flame graphics on the 2003 FXSTDSE are handcrafted from genuine metallic leaf. This unique technique, referred to as gilding, dates back at least 4,000 years. The leaf or sheets of metal used for gilding are produced by successive “beatings” that result in a sheet approximately 3" square and less than 1/200,000 of an inch thick. The value of precious metal, coupled with the delicate thin material and skill needed to apply it, make gilding a perfect embellishment for these unique, custom vehicles.

The handcrafted process of gilding yields a highly reflective surface that catches the eye as no other material does. Because metal leaf is a natural material, the individual sheets impart to the gilded surface unique characteristics. For example, a thin line will be visible where each sheet or leaf overlaps. The degree of visibility of this “line” will vary depending upon the luster of the adjoining leaves.

Additionally, upon close inspection, you may notice small “wrinkles”, variations in luster, or differences in reflectivity. To those not familiar with the gilding process these may be misinterpreted as defects. However, these recognizable “natural” characteristics are what set gilding apart from contemporary materials. The gilding process yields to each vehicle a unique, handcrafted set of graphics. These vehicles can not be compared to one another to determine quality or consistency of the graphics.

2003 FLHRSEI2 Paint

The burgundy pinstripes on this motorcycle are hand- painted with a brush. This makes each Screamin' Eagle Road King intentionally different, bike to bike, and even side to side on the individual parts. Be aware the pinstripes are not uniform or consistent. You may see gold paint showing through the burgundy. You may see splashes of burgundy on the black or gold. These variations in paint make each bike unique and are not to be considered a paint problem.



Tech Tips #56
August 19, 2002

New Battery Labels

There are two new battery labels, one for P&A batteries and the other for the original equipment batteries shipped in vehicles.

Previously the batteries had three labels, Warranty, Date Code, Prop 65. These three labels have been combined into one. There is no new verbiage or information. All warning labels remain the same.

Rotation of your battery inventory is important so an explanation of the battery date codes might be of interest. We use a Julian date code. Month of manufacture is indicated by a letter (the Letter I is not used).

January=A	April=D	July=G	October=K
February=B	May=E	August=H	November=L
March=C	June=F	September=J	December=M

Year of manufacture is indicated by a number signifying the last digit of the year; for example, 2002 is represented by a "2". If a battery was produced in September 2002, the Julian code would be "J2."

Our P&A battery warranty differs from OE so the label identifies the P&A batteries. The P&A battery labels have an orange letter "P" near the part number.

TSM/TSSM Diagnostic Cable

Injected Twin Cam and VRod motorcycles with the Delphi system allow communication between the TSM/TSSM and the Scanalyzer or Digital Technician system. TSM/TSSM motorcycles with carburetors and VDO ignition or the Magneti-Marelli fuel injection did not allow this communication.

The good news - you now have a new diagnostic cable, HD-44720, for TSM/TSSM equipped vehicles with the VDO ignition module or Magneti-Marelli ECM, that allows diagnosis of TSM/TSSM problems and/or TSSM customizations.

There is one problem however. In order to use this new diagnostic cable with the original Digital Technician interface cable, HD-42921-A, an adapter is required. All dealers will therefore receive a HD-46290 Adapter TSM/TSSM, no charge, in September. This adapter connects between the HD-42921-A and the new HD-44720. If you have recently replaced your interface cable for some reason you now have a HD-42921-B. The -B cable does not require the adapter.

Sounds confusing? This means the following cable combinations must be used to communicate between Digital Tech and TSM/TSSM modules on the VDO ignition or Magnetti-Marelli vehicles:

- Connect HD-42921-A Scanalyzer Interface Cable, to HD-46290 TSM/TSSM Adapter, to HD-44720 TSSM Diagnostic Cable, to TSM/TSSM.
- Connect HD-42921-B Scanalyzer Interface Cable to HD-44720 TSSM Diagnostic Cable, to TSM/TSSM (no adapter required).

Installation Instructions: HD-44720

1. Turn “OFF” the ignition to the vehicle.
2. Locate the TSM/TSSM Module.
3. Disconnect the TSM/TSSM connector from the TSM/TSSM Module.
4. Plug the TSM/TSSM connector that was disconnected in step 3, into the mating connector of the HD-44720 TSSM Diagnostic Cable.
5. Plug the “Module” connector of the HD-44720 TSSM Diagnostic Cable, into the TSM/TSSM Module of the vehicle.
6. The remaining connector of the HD-44720 TSSM Diagnostic Cable is to be used for data connection to either the adapter or the Interface cable.

Note: This applies to Digital Tech Versions after 6.05.

Missing Parts/Shortages On New Vehicles

Information and forms to obtain any missing part from a York new vehicle shipment may be found on h-dnet.com in the "Service" section titled "Dealer Hotline (Missing Parts Forms)". This is a website title change updating the July 8, 2002 Tech Tip.

For shortages on Kansas City vehicles use an RMA with code "T-Part Not Included With Vehicle."

Using these forms will ensure prompt, accurate attention on your order and help prevent future shortages.

Front Injector Harness On Touring Models

You may encounter an intermittent hesitation and historic front injector code, P0261, on Touring models. If so, the condition could be caused by broken wires in the ignition harness very close to the injector. Since the insulation is not damaged the break cannot be seen. Wiggle the harness to determine if the condition exists.

If you do find a broken wire, it is likely due to a mis-positioned tyrap causing the wires to the front injector to be pulled tight. The combination of insufficient slack and engine movement can cause wire flex leading to the breakage. When you repair the wire, be certain to allow slack in the ignition harness to prevent a recurrence.

Digital Technician "Bug"

We have discovered a "bug" in the Digital Technician software that may give an "injector timeout" message when doing the active diagnostic test for rear injector on the Marelli system. The message is not indicative of a wiring or injector problem. If you see that message ignore it. The issue is being investigated and when the solution is found it will be automatically downloaded into your system during the weekly autosync process.

Tech Tips #56
September 23, 2002

XB9R Clutch Adjustment

XB9R engines produced through 07/24/2002 may have left the Capitol Drive facility with the clutch improperly adjusted. Please verify clutch adjustment at Pre Delivery Inspection, the first service (1000 mi.) interval, and any time you are diagnosing a shifting anomaly. Please make all of the service staff aware of this possibility.

Race Kit Muffler Installation

When installing any XB muffler, care must be taken to insure that the clamp bolts are horizontal across the top of the muffler. The bolts could interfere with the idler pulley installation. This could cause the idler pulley to be installed at an angle and force the belt to track off the pulleys, which may damage the belt and guards.

Idle Speed On Delphi EFI

As you know, the Delphi EFI system uses the IAC to maintain the Idle Set Speed set in the ECM. Engine rpm at idle should be very close to the Idle Set Speed when the engine reaches full operating temperature. V Rod idles tend to fluctuate and a 100 rpm variation is normal. To determine if an idle is incorrect go to Data List and compare Engine Speed to Idle Set Speed. If they are within 100 rpm, and an idle speed change is desired, adjust it using the Calibrations, Idle Adjust feature.

If idle speed is several hundred rpm higher or lower than the Idle Set Speed the ECM may not respond to the above process and TP Voltage should be investigated. Why TP Voltage? The answer is that the ECM looks at two conditions to control idle: VSS voltage (speed signal) and TP Voltage (0% throttle position). If the TP Voltage with engine running is higher than with the engine not running, or if the TP Voltage is fluctuating while the engine is running, the ECM sees this higher voltage and assumes the bike is not stopped so will not attempt to control the idle. It is easy to check. Observe TP Voltage with ignition ON, then start the engine and observe it again. Voltage should be the same. Next, look for a fluctuating TP Voltage while the engine is running. If TP Voltage changes .02 volts or more, make sure battery voltage, ET and IAT voltages are not fluctuating due to a poor connection. Next, check TPS connections, if ok, replace the TPS.

Since the topic is idle speed, don't forget the importance of the speed signal for idle control discussed in Tech Tip 55.

New Password Learn Procedures

It was reported by dealers that they are sometimes experiencing problems with the Password Learn procedure after ECM or TSSM module replacement.

Our staff developed a new procedure to make this process easier and more reliable.

Please carefully follow the instructions in the tables below when performing Password Learn after module replacement.

In the near future we will make changes to the Digital Technician software to reflect the changes in the Password Learn Procedure.

Setting TSM/TSSM and ECM Password Without Scanalyzer (Manual Mode)

No.	Action	Confirmation	Notes
	Before beginning, the Scanalyzer should not be connected and the ignition must be turned off for at least 15 seconds.	With ignition turned off, Check Engine Lamp and Security Lamp will be off. If Security Lamp is illuminated, cycle IGN switch **ON-OFF**.	V-Rod Security Lamp is active with either TSM or TSSM. TSM (non-security modules) do not have a Security Lamp function on Twin Cam Vehicles. Steps 6, 8 and 10 of this procedure must be manually timed.
1	Install new TSM/TSSM or ECM. If vehicle has EFI, continue with Step 2. If vehicle is carbureted, Password Learn is not required. Perform all steps under **3.3 TSM/TSSM Vehicle Delivery**		
2	Set **Run/Off** switch to **Run**		
3	Turn **IGN** key **On**	Verify Check Engine Lamp and Security Lamp illuminate then turn off. Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	TSM/TSSM enables starter relay.
4	Attempt normal start one time.	Engine starts and stalls. Check Engine Lamp illuminates and stays on.	Password has not been learned. ECM sets DTC P1009. Fuel flow is stopped.
5	Wait ten seconds.	Security Lamp will illuminate and stay on for V-Rod and Twin Cam with TSSM Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	ECM enters Password Learning mode for ten minutes. Do not cycle ignition switch or interrupt vehicle power or Password Learn will be unsuccessful.
6	Wait until Security Lamp turns off or a minimum of ten minutes has passed.		
7	Quickly (within two seconds) turn **IGN** key OFF-**ON**.	Security Lamp will illuminate and stay on for V-Rod and Twin Cam with TSSM Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	
8	Wait until Security Lamp turns off or a minimum of ten minutes has passed.		
9	Quickly (within two seconds) turn **IGN** key OFF-**ON**.	Security Lamp will illuminate and stay on for V-Rod and Twin Cam with TSSM Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	
10	Wait until Security Lamp turns off or a minimum of ten minutes has passed.		
11	Quickly (within two seconds) turn **IGN** key OFF-**ON**.	Security Lamp will illuminate and then turn **off**. Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	
12	Turn ignition switch **OFF**. **Wait 15 seconds before turning Ignition on**. Turn ignition switch **ON** and start engine to confirm successful Password Learn procedure. Clear trouble codes.		
13	Perform all steps under **3.3 TSM/TSSM Vehicle Delivery**		

Setting TSM/TSSM and ECM Password Using Scanalyzer

No.	Action	Confirmation	Notes
	Before beginning, the Scanalyzer should not be connected and the ignition must be turned off for at least 15 seconds.	With ignition turned off, Check Engine Lamp and Security Lamp will be off. If Security Lamp is illuminated, cycle IGN switch **ON-OFF**.	V-Rod Security Lamp is active with either TSM or TSSM. TSM (non-security modules) do not have a Security Lamp function on Twin Cam Vehicles. Steps 5 and 7 of this procedure must be manually timed.
1	Install new TSM/TSSM or ECM. If vehicle has EFI, continue with Step 2. If vehicle is carbureted, Password Learn is not required. Perform all steps under **3.3 TSM/TSSM Vehicle Delivery**		
2	Set **Run/Off** switch to **Run**		
3	Turn **IGN** key **On**	Verify Check Engine Lamp and Security Lamp illuminate then turn off. Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	TSM/TSSM enables starter relay.
4	Attempt normal start one time.	Engine starts and stalls. Check Engine Lamp illuminates and stays on.	Password has not been learned. ECM sets DTC P1009. Fuel flow is stopped.
5	Wait ten seconds… Begin manual ten minute timing for Twin cam with TSM.	Security Lamp will illuminate and stay on for V-Rod and Twin Cam with TSSM. Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	ECM enters Password Learning mode for ten minutes. Do not cycle ignition switch or interrupt vehicle power or Password Learn will be unsuccessful.
6	Connect Scanalyzer to connector [91A]. After Scanalyzer initializes, verify ECM and TSSM part numbers using System ID. Check for trouble codes. Verify that ECM set DTC P1009. Return to main menu and select menu item 7 (calibrations) then select menu item 2 (module replacement). **Do not press Enter.**		
7	Wait until Security Lamp turns off or a minimum of ten minutes has passed.		
8	Press **Enter** on Scanalyzer key pad. Wait 5 seconds.		
9	Turn ignition switch **OFF**. **Wait 15 seconds before turning Ignition on**. Turn ignition switch **ON** and start engine to confirm successful Password Learn procedure. Clear trouble codes.		
10	Perform all steps under **3.3 TSM/TSSM Vehicle Delivery**		

Setting TSM/TSSM and ECM Password Using Digital Technician

No.	Action	Confirmation	Notes
	Before beginning, the Scanalyzer should not be connected and the ignition must be turned off for at least 15 seconds.	With ignition turned off, Check Engine Lamp and Security Lamp will be off. If Security Lamp is illuminated, cycle IGN switch **ON-OFF**.	V-Rod Security Lamp is active with either TSM or TSSM. TSM (non-security modules) do not have a Security Lamp function on Twin Cam Vehicles. Step 11 of this procedure must be manually timed.
1	Install new TSM/TSSM or ECM. If vehicle has EFI, continue with Step 2. If vehicle is carbureted, Password Learn is not required. Perform all steps under **3.3 TSM/TSSM Vehicle Delivery**		
2	Set **Run/Off** switch to **Run**		
3	Turn **IGN** key **On**	Verify Check Engine Lamp and Security Lamp illuminate then turn off. Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	TSM/TSSM enables starter relay.
4	Attempt normal start one time.	Engine starts and stalls. Check Engine Lamp illuminates and stays on.	Password has not been learned. ECM sets DTC P1009. Fuel flow is stopped.
5	Wait ten seconds. Begin manual timing for TSM replacement.	Security Lamp will illuminate and stay on. Note: Security Lamp will not illuminate with TSM on Twin Cam vehicles.	ECM enters Password Learning mode for ten minutes. Do not cycle ignition switch or interrupt vehicle power or Password Learn will be unsuccessful.
6	Connect Scanalyzer to connector [91A]. After Scanalyzer initializes, verify ECM and TSSM part numbers using System ID. Check for trouble codes. Verify that ECM set DTC P1009. Select tab for Module Replacement. Press the **BEGIN** button.		
7	Ignore screen “Make sure scanalyzer is connected and operational”. Click **OK**		
8	Ignore screen “Set Run/Stop switch to RUN position”. Click **OK**		
9	Ignore screen “Press starter button”. **Do not press starter button**. Click **OK**		
10	Ignore screen “Leave the ignition on. Wait for 10 seconds”. Click **OK**.		
11	Next screen will read “The ECM will remain in password learn for 10 minutes". **Wait until Security Lamp goes out (or a minimum of ten minutes for TSM replacement).** Then click **OK**.		
12	When first segment of timer bar fills in, turn IGN **OFF**. **Wait 15 seconds**, then turn IGN **ON** and start engine to verify Password Learn was successful.		

XL Speedometer

The 2001 through 2003 XL Parts Catalogs show P/N 67025-99A for 1200 XL models. This number is actually for FXD models. The correct P/N for all 1200 XL models is 67283-99A. Please change your catalogs.

Buell Vehicle Speed Sensor Change

All Buell tube frame models use a new vehicle speed sensor, 74431-01. The new sensor can be identified by shorter lead wires and a new grey connector. This new sensor P/N 74431-01 should be used in place of P/N 74402-95 on all Buell models, all years. Please make the parts department aware of this change along with all service staff.

Cruise Control Troubleshooting

Here's an idea for cruise controls that won't set. When the diagnostic chart is followed and it leads to a brake circuit issue - check to see if the vehicle has an aftermarket LED tail lamp bulb. The circuitry in these lamps will cause the cruise module to think the brake is applied so it will not set.

Tech Tips #56
November 18, 2002

V Rod Fuel Range Function

You may get a question from a VRSCA owner about the fuel range function available in the speedometer display window. The fuel range reading is a prediction. It is not a trip meter and there is not going to be a direct relationship with fuel level. The range is an estimation based on two things, the most recent riding style and the fuel remaining in the tank. To some riders the display may seem unstable, but the estimation of miles until empty is a very dynamic calculation influenced by the style of riding at any given moment during a trip. The system looks at injector flow rate, the amount of time injectors were on, then looks at miles traveled, then looks at percent of fuel remaining and calculates the range - and all of this is constantly changing.

Kent-Moore Special Tools Catalog Change

The Digital Technician PC data cable part numbers for Multiscope and Scanalyzer are swapped in the Kent-Moore Special Tools Catalog. The correct part numbers are as follows:
Multiscope Data Cable - HD-44750-12
Scanalyzer Data Cable - HD-44750-5

Tech Tips #56
December 02, 2002

Buell Oil Line Fittings

Any time the oil line fittings need to be removed from the engine cases on all Buell motorcycles, 242 Blue Loctite should be used on re-assembly for added sealing.

Tech Tips #56
December 09, 2002

Radio Antenna Issues

Radio Sound, Inc. has examined several recent radio returns and found a burned out circuit trace in the ground plane of the radio's main circuit board. This occurs when the antenna cable is allowed to contact the battery positive terminal or the main circuit breaker. To avoid an expensive radio replacement we have several recommendations for motorcycles that have the tour-pak removed or detached for any reason.

- Do not allow the antenna cable end, normally connected to the antenna base inside the tour-pak, to contact the battery positive or the main circuit breaker.
- Ensure the antenna cable end is routed away from any voltage source and can not move while under the seat of the motorcycle.

New Shift Lever

There is a running change to the shift lever on most 2003 Twin Cam models. The new shift lever has a larger hole to accept a 5/16" fastener. The larger fastener is easier to tighten properly and ensures adequate clampload. Torque specification on this 5/16" fastener is 18-22 ft lbs.

The new part numbers are:

Touring models	33835-03 shifter heel/toe, 3275 screw
Softail (BJ/M/R/W/X/Y)	33835-03 shift lever, 3275 screw

The new levers retrofit back to 1982 (kit number 33895-82B), but in some cases fastener interference with the earlier 33709-82 shift shaft may require filing burrs or sharp edges for proper fastener installation.

New Radio Sound Warranty Repair Rates

Effective January 15, 2003 Radio Sound Inc. will implement a small price increase for the repair and return of beyond warranty sound system components. This is a price increase. There is no change in warranty or beyond warranty policies or procedures.

Repair and Return Rates Effective 1/15/03

1986 - 1987 require Conversion Kit	$400 (promo price $325)
1988 through 1994 Radio, CB Chassis, Console Pod	$115 each
1995 and later Radio, CB Chassis, Console Pod	$85 each
Auxiliary amplifiers (speaker kits, sidecars)	$60 each
Hand microphones	$30 each
Headsets	$35 each

CD, cassette and cosmetic parts could require additional charges. If so, your dealership would be advised prior to repair.

Since this is an exchange program, the repaired components returned to you are not normally the same ones you send to RSI. Customers that desire repair and return of their specific components must request it and identify the item. Repair charges could be higher on these items if abuse, liquid intrusion or physical damage is found. If so, your dealership will be advised of alternative pricing prior to the repair.

Tech Tips #56
December 23, 2002

V-Rod Check Engine Light with No Codes Present

There have been reports of the V-Rod Check Engine Light coming back on after engine start. The operator assumes a historic code has been set, but no codes are present. In every case, this issue has been traced to low battery voltage or poor battery connections.

Under these conditions, during the start cycle, the battery voltage may drop to the point that the ECM goes off line very briefly, then comes back on. The ECM then performs normal ignition ON initialization and illuminates the CEL again for four seconds. Because the operator saw the light come on twice they assume a code is set. Be aware that if there is a **historic code the light comes on for eight seconds.**

To help prevent this occurrence, ensure that batteries are fully charged at PDI or upon replacement. Encourage your customers to use a Battery Tender if the motorcycle will not be ridden for extended periods.

Code 35 on Magnetti-Marelli EFI Systems

Normally a code 35 is set when there is a problem in the tachometer circuit. We have identified another possible cause for a code 35 not specifically covered in the Service Manuals. It pertains to a current or recurring historic code 35 (Tachometer) on 1995-2001 EFI Touring models including Road Kings not normally equipped with a tachometer. This code may be accompanied by codes 41, 42 or 56 and perhaps even hard starting, poor cold idle and driveability issues. The ECM is functional because it still has Key On power at pin 26.

Diagnosing this possible condition is relatively easy. Using the Scanalyzer, look for consistent battery voltage in the data monitor mode (you may have to perform a wiggle test while monitoring) because the Scanalyzer is monitoring voltage at pin 35 of the ECM (not battery voltage across the battery terminals). Closely inspect every connection from the Main Circuit breaker to the ECM for loose crimps or connections. Even a loose ECM fuse or intermittent ECM relay can cause this condition.