2011 Model Year Technical Forum



HARLEY EUB SEMINAR

2012 MY New Model Technical Forum

2012 MY Key Features

- 1. 2012 MY Powertrain
- 2. Tubeless Profile Laced Wheels
- 3. Sportster®
- 4. Softail®
- 5. Dyna®
- 6. Touring®
- 7. VRSC®
- 8. Trike
- 9. CVO™
- 10. P&A
- 11. Tools

POWERTRAIN

Twin Cam 103™ engine

In response to continual customer demand for more power, all DOM, CAL, CAN Big Twin motorcycles (with the exception of the Street Bob® and Super Glide® Custom) will receive the Twin Cam 103[™] powertrain for MY2012.

The 103 engine features Automatic Compression Release (ACR) and additional 103 engine identifiers on the derby cover, timer cover and air cleaner trim ring.

Clutch will have stronger diaphragm spring on 103 models.

Service Changes:

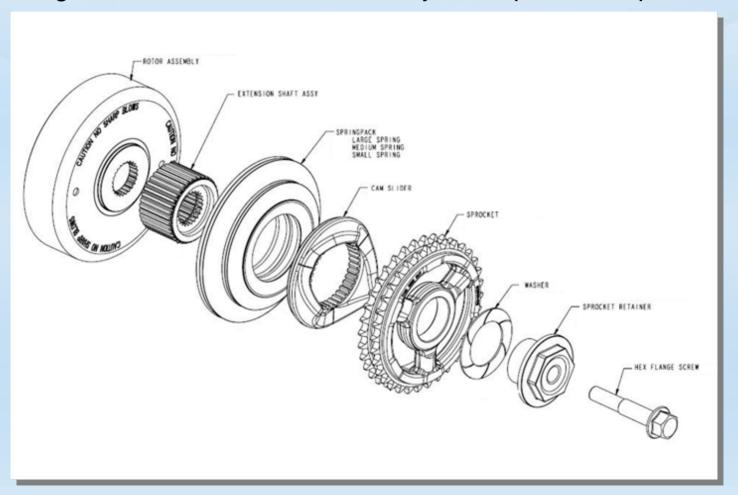
Service interval change for spark plugs for all models (30K or every 2 yr.)

Fuel filter change interval changed to 100,000 miles for all models.



POWERTRAIN - FL, Trike, Dyna®, Softail®, CVO™

All big Twin Models use the same style compensator sprocket.



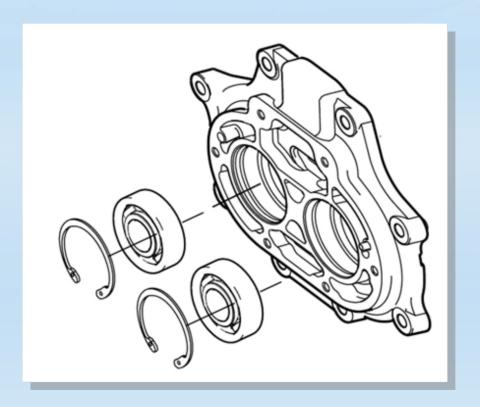
POWERTRAIN - FL, Trike, Dyna®

New "easy to grip" dipstick top PN 62700026 - part will retrofit.



POWERTRAIN – Six Speed Transmissions

Radial tolerance of transmission shaft bearings reduced. Part number changed to 8970A - part will retrofit.



New aluminum rim with unique inner profile

Inner tube replaced with new rim seal with molded valve stem

• Requires the use of a rim strip like other laced wheels

Outer rim profile the same as current profile rim

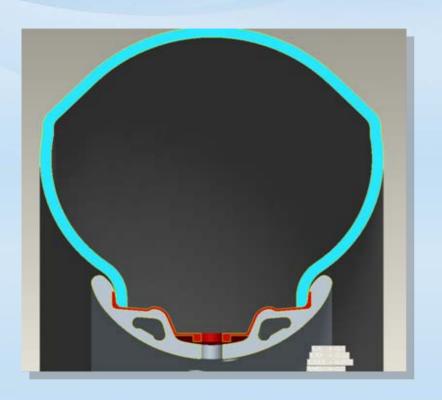
Chrome finish

Added "Tubeless" and "MTM" rim profile identification

Not all profile laced wheels are tubeless. Example: FXS black profile laced wheels are not tubeless, it is important to look at the MT versus MTM label on the rim to verify tube type versus tubeless.

Available Sizes

Size	Style	Platform
16 X 3	Front Profile Laced	Touring
17 X 3	Front Profile Laced	Touring
18 X 3.5	Front Profile Laced	Touring
16 X 5	Rear Profile Laced	Touring
16 X 3	Front Profile Laced (chrome)	Softail [®]
16 X 3	Rear Profile Laced (chrome)	Softail [®]





Tire pressure is used to create the seal between tire, rim seal and rim. A rim strip is used between spoke nipples and rim seal to help protect seal from damage.

Both the rim strip and the rim seal are replaced when servicing the tire.



Sportster®



Sportster®

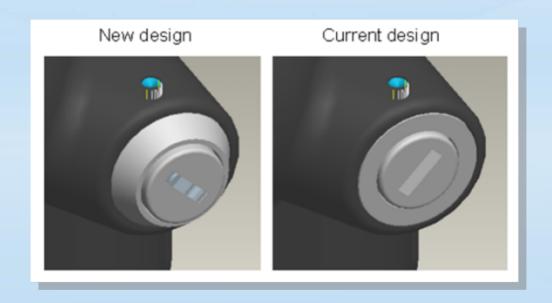
All XL's will feature Michelin® Scorcher™ tires

Michelin[®] Scorcher[™] "11" tires new on XR1200X, also featured on the SuperLow[™] Michelin[®] Scorcher[™] "31" tires featured on all other Sportsters

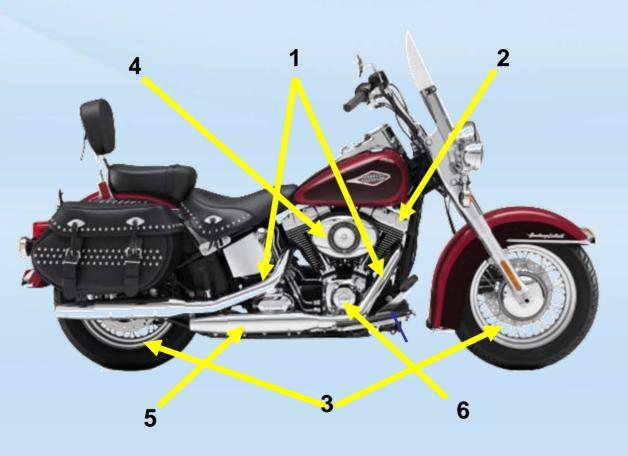
- New graphic for the fuel tank on the Forty-Eight™.
- XL883R updated with one piece handlebar / speedometer bracket.
- Side covers will be gloss black or denim black to better compliment the finish of the tank and fender.

Sportster®

New fork and ignition locks introduced to increase the number of potential key codes.







- 4-pin O2 sensor and new exhaust pipe sensor mount.
- Twin Cam 103™ engine with
 Automatic Compression
 Release. Most markets.
- Available tubeless laced profile wheels (FLSTN and FLSTC)
- 4 New air filter element for all oval air cleaners

Mufflers

- Dom stamp change only
 - HDI internals change
- 6 Unique trim for all Twin Cam 103™ engines.

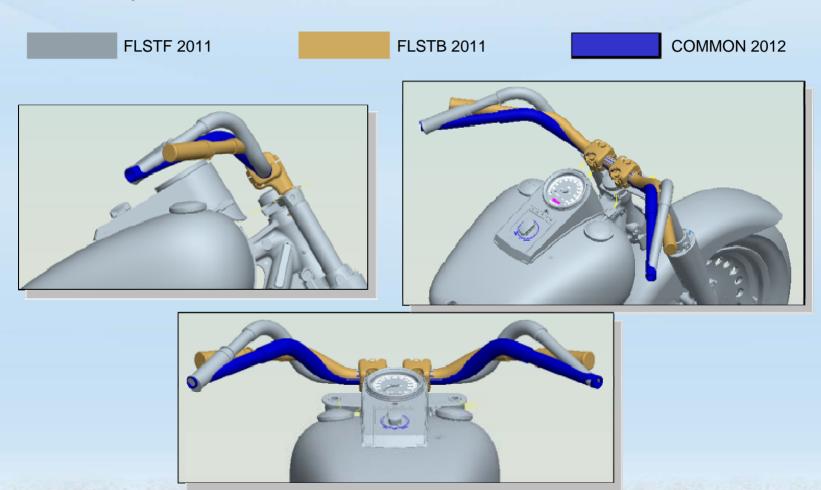


- 1 24mm Drive Belt on 103in³ models.
- 2 Stronger clutch spring for 103in³ engines.
- 3 Smaller ECM with new fender mounting panel.
- 4 accommodate ACR connectors.
- 5 Compensator sprocket common to all Twin Cam powertrains.

Engine Matrix by Configuration

Market			96	103	96	103	96	103	96	103	96	103	96	103	96	103		
NA	EUR	AP	LA	FLS		STC	FL	STF	FLSTFB		FLSTN		FLS		FXST		FXS	
Х		Х	Х	DOM		Х		Х		Х		Х		Х				Х
Х				CAL		Х		Х		Х		Х		Х				Х
X	Х		Х	CAN		Х		Х		Х		Х		Х				Х
			Х	BRZ	Х		Х		Х		Х							
		Х		AUS		Х		Х		Х		Х				Х		Х
		Х		INDIA		Х		Х		Х								
	Х	Х	Х	HDI		Х		Х		Х		Х		Х				Х
		Х		APC	Х		Х		Х		Х		Х		Х		Х	
	Х			ENG		Х		Х		Х		Х		Х				Х
		Х		JPN	Х		Х		Х		Х		Х		Х		Х	

New common handlebar on Fat Boy® and Fat Boy® Lo. Internally wired.



All 103in³ engines will use a 24mm drive belt – except Japan

Heated O2 sensor added to all exhaust systems

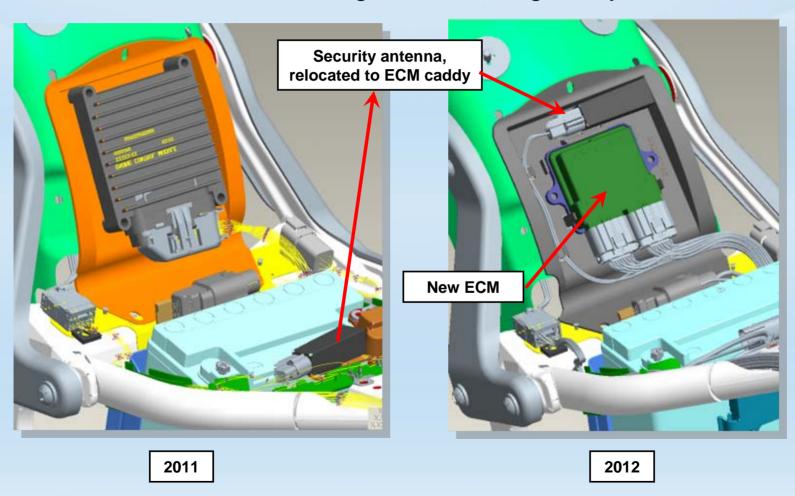
4-pin connector used in place of 2011's 2-pin

Stamped O2 Bosses Replaces the Screw Machined Boss





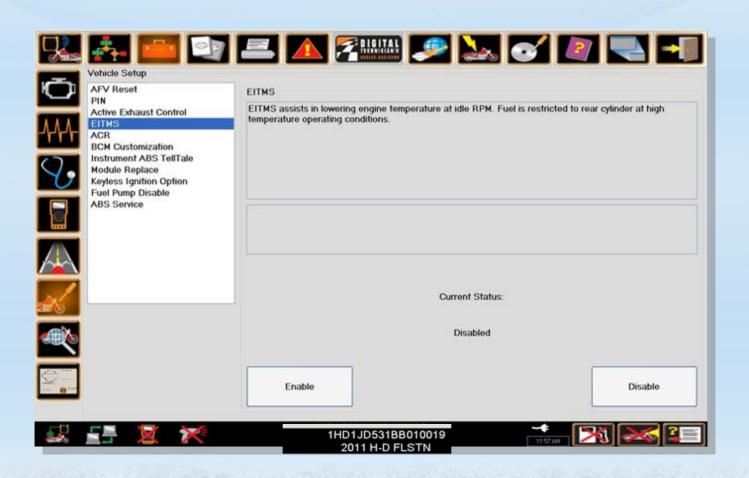
New smaller ECM and changes to mounting caddy.



18

Softail® - Electrical System

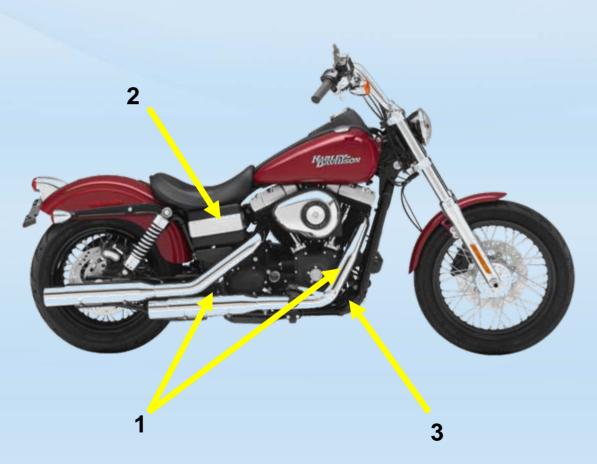
Softail® models can now be setup to utilize the Engine Idle Temperature Management Strategy. The system is enabled or disabled using the Vehicle Setup selection of the Tool Box menu.



DYNA®



DYNA®



4-pin heated O2 sensor and new exhaust pipe mount.

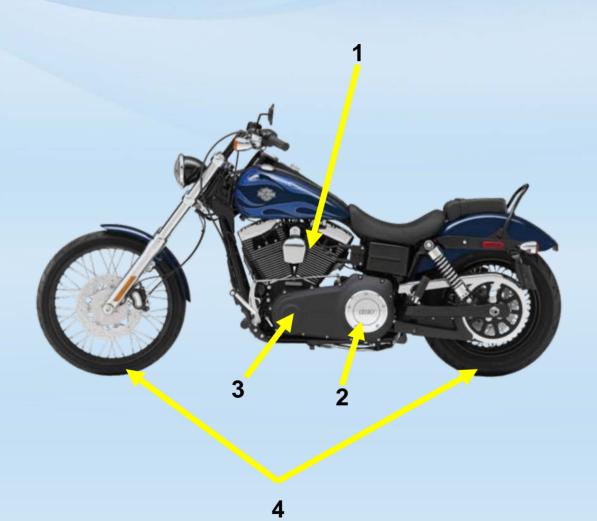
HDLAN based electrical system

- New hand controls
- Body Control Module
 - ABS and security option
 - Expanded diagnostics

Carbon Canister

- Similar to FLT & VRSC
 - New fresh air intake hose

DYNA®



- Twin Cam 103[™] engine with 1 Automatic Compression Release on FXS, FXDB and FXWG in most markets.
- Stronger clutch spring and engine trim unique on 103in³ engines.
- 3 Compensator sprocket common to all powertrains.
- Wheels & Tires:
 - FX models use Michelin® tires (except FXDF)

New front and rear tires on Fat Bob® and Wide Glide®

-new wheel assembly part numbers

DYNA® - Electrical System

Anti-Lock Braking System (ABS) option

Sealed hand control switches with new functions.

- Use HDLAN (CAN) bus technology
- Trip function selection control moved to hand controls
- Hazard light control moved to hand controls

Body Control Module (BCM)

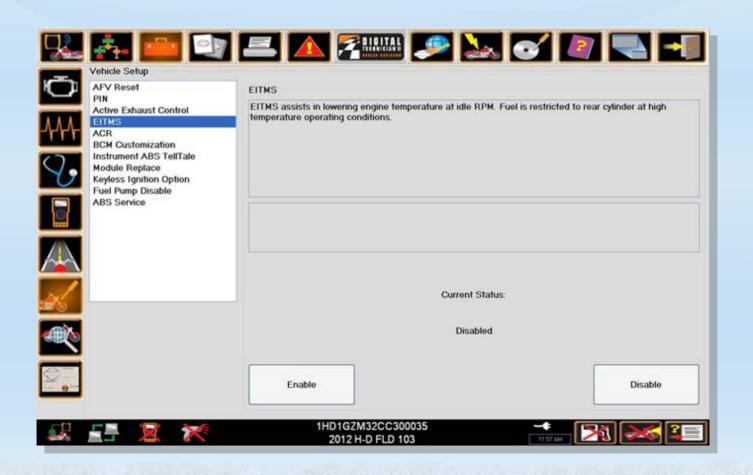
- Replaces most fuses and relays and TSM or HSFM
- Eliminates high current loads on ignition and other switches
- Reduces wire gauge and harness bundle size
- · Permits the use of LED turn signals without extra module
- Integrates security system and all lighting system functions

6th gear indicator eliminated

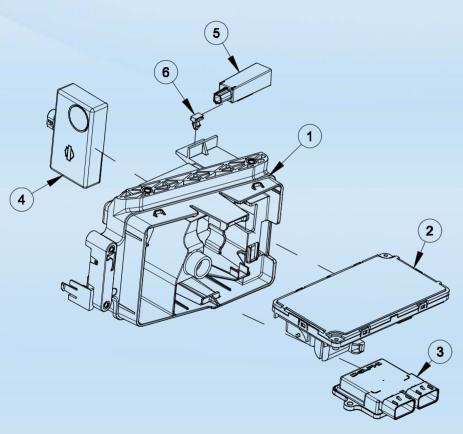
• Gear selection (1–6) and tachometer are selectable displays in odometer window

DYNA® - Electrical System

Dyna® models can now be setup to utilize the Engine Idle Temperature Management Strategy. The system is enabled or disabled using the Vehicle Setup selection of the Tool Box menu.



DYNA® - Electrical System

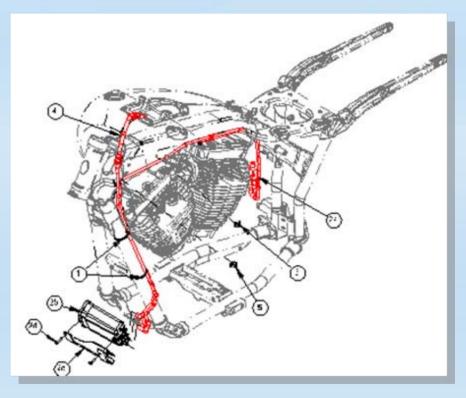


- 1 ELECTRICAL CADDY
- 2 BCM
- 3 ECM
- 4 SIREN
- **5 ANTENNA MODULE**
- **6 CLIP, CONNECTOR ANTENNA**

DYNA® - Evaporative Canister

Change to mounting position and operation changed to an active purge. The line is now controlled by a solenoid purge valve assembly.





DYNA® - Body Control Module

Automatic solid state short circuit protection eliminates the need for most fuses and relays while reducing wire mass and wire count.

Incorporates all functionality of current TSM / TSSM including turn signal control, tip-over shut-down; clutch / neutral interlock; security system.



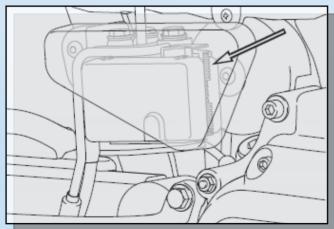
BCM directly controls; Horn, Head Light, Starter Solenoid, P&A Power.

Caution!

Special procedure used for replacement, refer to service manual.

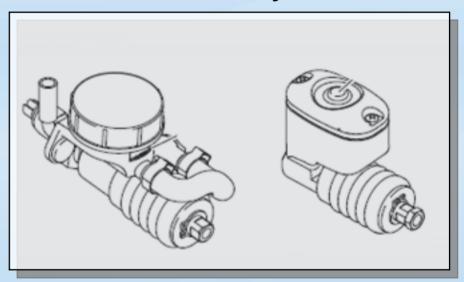
DYNA® - optional ABS components





ABS ECU module and hydraulic control unit are located behind cover on right side of the Motorcycle.

Rear Master Cylinder



ABS Except FLD **Non-ABS**

ABS / Security package standard on models in HDI, APC, AUS, BRZ, END and IND markets

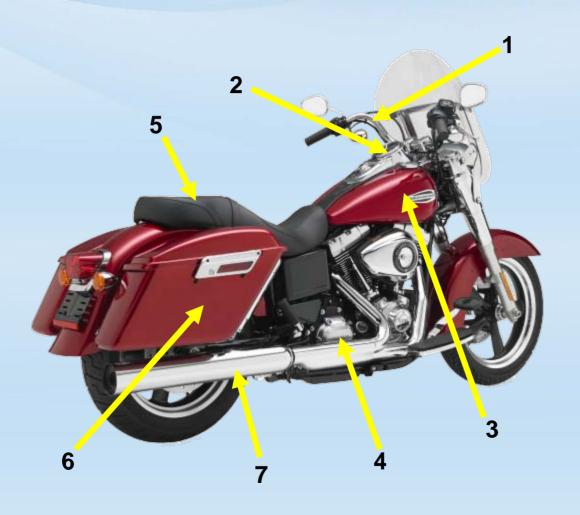


2012 MY tire fitment

MODEL	MOUNT	SIZE	SPECIFIED TIRE	PRESSURE (COLD)		
		(in)		psi	kPa	
FXDB, FXDC,	Front	19	Michelin Scorcher "31" 100/90B19	30	206	
FXDL	Rear	17	Michelin Scorcher "31" 160/70B17	40	276	
FXDF	Front	16	Dunlop D427F 130/90B16	36	248	
	Rear	16	Dunlop D427 180/70B16	40	276	
FXDWG	Front	21	Michelin Scorcher "31" 80/90-21	38	262	
	Rear	17	Michelin Scorcher "31" 180/60B17	40	276	
FLD	Front	18	Dunlop D402F 130/70B18	36	248	
	Rear	17	Dunlop D401 160/70B17	40	276	



- 1 Detachable Windshield
- 2 Chrome nacelle with large head lamp
- 3 Chrome fork covers
- 41.3 mm front forks with4 cartridge style damping in left fork
- 5 Full coverage fender and low profile front tire
- Custom 5-spoke wheels with highlighted rim 18" front – 17" rear
- 7 Rider floorboards
- 8 Chrome "cigar" tube, fully covered shock and spring
- 9 Twin Cam 103[™] engine (in most markets)



- Stainless steel mini-ape 1 handlebar and chrome pullback isolated risers
- 5 inch speedometer with chrome console and barrel key ignition
- 3 4.7 gallon fuel tank
- 4 Transmission case changes for exhaust mounting support
- One piece seat with custom stitching 26.1" seat height
- 6 Detachable injection molded saddle bags
- 7 2 into1 exhaust system

International Differences

Unique Windshield for International Markets – (.75" shorter due to regulations)

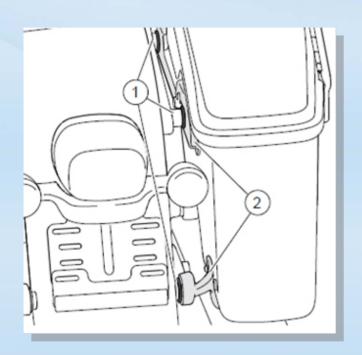
Unique muffler – quieter and lower power output due to noise regulations

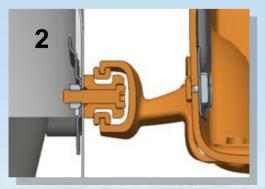
Reflector color

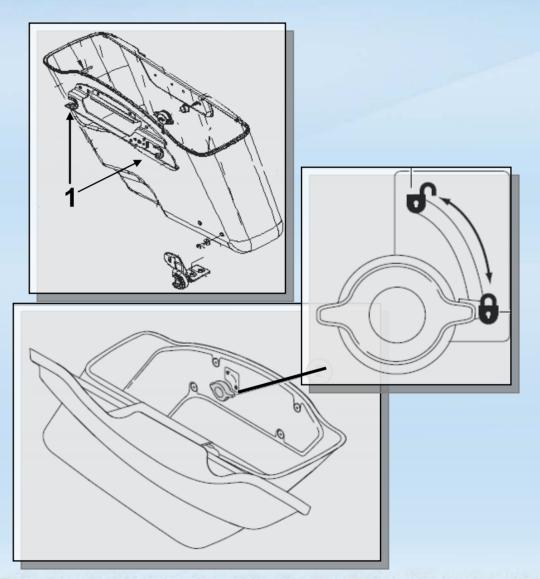
Engine Matrix by Configuration

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NA	EUR	AP	LA		FXDB		FXDC		F	FXDL FX		DWG F		(DF	F	LD
Х		Х	Х	DOM	Х		Х					Х		Х		Х
Х				CAL	Х		Х					Х		Х		Х
Х	Х		Х	CAN	Х		Х					Х		Х		Х
			Х	BRZ			Х									
		Х		AUS	Х		Х					Х		Х		Х
		Х		INDIA	Х		Х							Х		
	Х	Х	Х	HDI	Х		Х				Х		Х	Х		Х
		Х		APC	Х		Х				Х		Х		Х	
	Х			ENG	Х		Х				Х		Х			Х
		Х		JPN	Х		Х		Х		X		Х		Х	

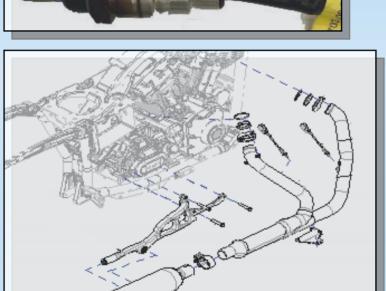
DYNA®-FLD











Heated O2 sensors

Formed sensor boss

Muffler support with VRSC style muffler isolator



TOURING



TOURING

NEW FOR 2012 MODEL YEAR

Rubber-mounted, 1690cc Twin Cam 103™ engine with Automatic Compression Release (ACR) and oil cooler, standard across all FL models to provide more power.

Tubeless Chrome Profile Laced Aluminum wheel option for all models. (except Limited)

Redesigned engine compensator reduces powertrain vibration and noise.

FLTRU air deflector improves aero comfort of the rider

(reducing head buffeting).

Service Changes:

Dipstick cap redesigned for easy removal. Rear belt tension specification changed to:

0.24" - 0.44" 6.4 mm – 11.1 mm



TRIKE

Content:

- Trunk door hinges manufacturing changes (part will retrofit)
- Rear Wheel manufacturing changes (part will retrofit)
- Carbon Canister- manufacturing changes (part will retrofit)



- **Service Changes:**
- Transmission oil level check procedure changing for Trike, dipstick threaded in rather than resting on threads.
- Rear frame alignment procedure added to service manual.

V-Rod®

V-Rod® 10th ANIVERSARY EDITION







VRSCF - V-Rod Muscle®

VRSC - All Models

10th VRSC Anniversary graphics

Updates to Main Wire Harness

Heated O2 Sensors

Common Brake line Segments

- · Silver and Black lines
- Commonize segment lengths for all VRSC models
- Allows use of VRSCF silver lines on VRSCDX ANV models

V-POP Cypans

MAP Sensor



VRSCDX - Night Rod®

Tapered Rear Tail Section Changes

- Flush-mount LED taillight.
- Splash Guard (AUS Only)
- LED Brake Light
- Stop / Tail / Turn Converter-DOM
- Center Mount license plate (HDI & DOM)
- Two-up seat with custom stitching
- Heated O2 Sensors
- 10th VRSC Anniversary graphics

Front end assembly changes

- Inverted forks (black anodized)
- Black triple clamps
- Black speed screen visor
- Light weight wheels (3 pounds lighter)

Ergonomics changes

- Pull back handlebar (3 inches closer)
- Reduced reach foot pegs (1 inch closer)
- Revised foot peg mounts
- Retuned rear suspension



V-Rod® 10th ANIVERSARY EDITION

ANVERSARY Finishes

- Chrome powertrain with platinum crankcase and heads
- Frame (Leafy Aluminum)
- Light weight wheels (Silver with machined highlights)
- Retuned rear suspension
- Chrome mufflers
- Chrome Upper AUX Volume Heat Shield
- Chrome speed screen visor
- Heated O2 Sensors
- 10th VRSC Anniversary graphics





CVO









FLTRXSE FLSTSE3

CVO - FLHXSE3

Vehicle Features:

- •Premium 200W amplified sound system in fairing and lowers. 2 5" X 7" speakers and (1) 200w amplifier in saddlebags.
- I-Pod® interface (8GB mount in bag)
- Tweeters in place of temp and fuel gage, diamond black gages.
- New custom slammed SOLO seat and matching detachable pillion with imprint leather inserts.









CVO - FLHXSE3

Vehicle Features:

- Taller windshield 7" for better wind protection and audio.
- Chrome FLHX mirrors
- New 19" front, 18" rear, mirror chrome Agitator wheels and chrome inner ring on rotor
- Chrome billet end caps highlighted with black slots
- Chrome Slipstream collection hand and foot controls
- Granite and chrome engine
- Chrome fairing skirt and upper fork covers
- Slipstream Collection; grips, pegs, brake pedal pad, floorboards, windshield trim.
- Slammed console, lighted CVO insert, Road King® tank. (flush mount gages and fill)

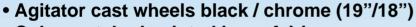




CVO - FLTRXSE

Vehicle Features:

- Heavy Breather intake with new SE cover
- 5"x7" oval speaker with integral tweeter in fairing
- Gloss black powertrain
- Black handlebars
- Color coordinated seat / backrest pad
- Lighted Bar & Shield fuel tank console
- Windsplitter tinted windscreen (common HDI / DOM)
- New fuel tank and fairing cast skull medallions



Color matched painted inner fairingColor matched upper fork covers

Rumble Collection hand & foot controls

iPod included





CVO - FLHTCUSE7

Vehicle Features:

- 1. Dual control Leather Seat & matching components
- 2. Boom! Audio High Performance Speakers (front & rear)
- 3. Boom! Audio Bass Booster Ports
- 4. Chisel Chrome Wheel (17" Front, 16" Rear)
- 5. Chrome floating front brake rotor
- 6.8GB iPod









CVO - FLSTSE3

Vehicle Features:

Increased wind protection by improving on 2011MY Softail CVO detachable fairing

- Modifications based on wind tunnel results
- Increased windshield surface profile area by 2"
- Added pressure relief duct to reduce head buffeting
- Added fixed position Willie Wings and rear air deflectors to direct air







Windshield mounted Garmin® 660 GPS Navigator

Built-in mp3 player and now handles the music playing as well as the navigation. It pauses the music and plays the commands over the built-in sound system, then resumes the music when the navigation command is complete. Fixed on windshield and detaches from bike with fairing assembly Powered through current fairing pigtail Output through two 3.5" speakers

- MY2012 DTII Software and Translations
- Enhancements
- Tips: Cable, Techlink II AC Power
- New Hardware

SPECIAL TOOLS -DTII Software DVD

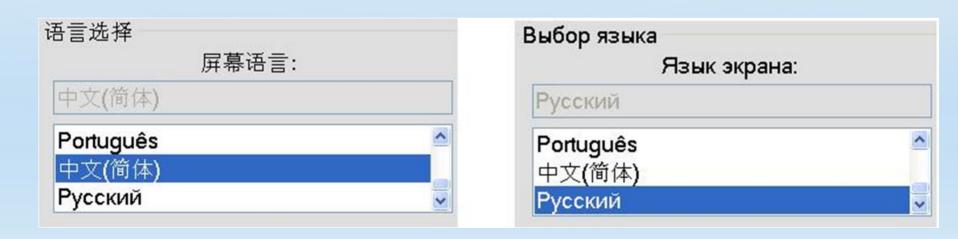
Laptop version 5.000.000x, HD-48650-150 DTMobile version: 5.000.100x Shipping week of 7/20/2011

1. Windows 7 Support for new Laptops.

-Existing laptops cannot be upgraded to Windows 7.



2. Language support for Simplified Chinese and Russian.



- 3. Added support for new Dyna ABS and ECM systems (Reflash, Service, etc).
- 4. Updated Animated wiring diagrams for MY2011 Softails.

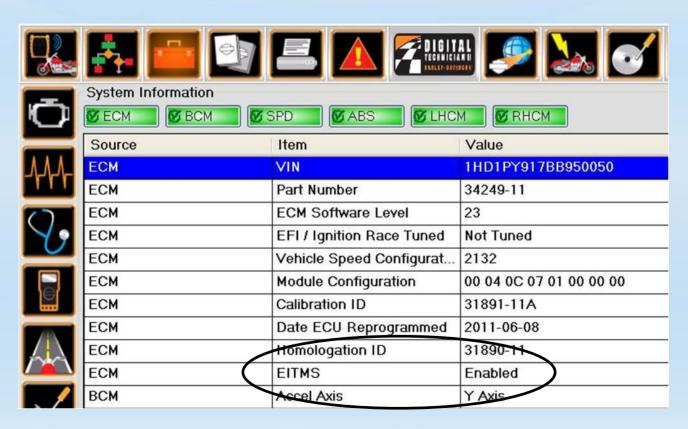
SOFTAIL Vehicle System Index	
Anti-lock Brake System (ABS)	Electronic Control Module (ECM)
Body Control Module (BCM)	Turn Signals
Controller Area Network (CAN) bus	

- 5. Integrated ABS install question to be part of password learn procedure.
 - After the HDLAN Softail or Dyna password learn, a screen informs user to select the ABS option in the BCM setup.

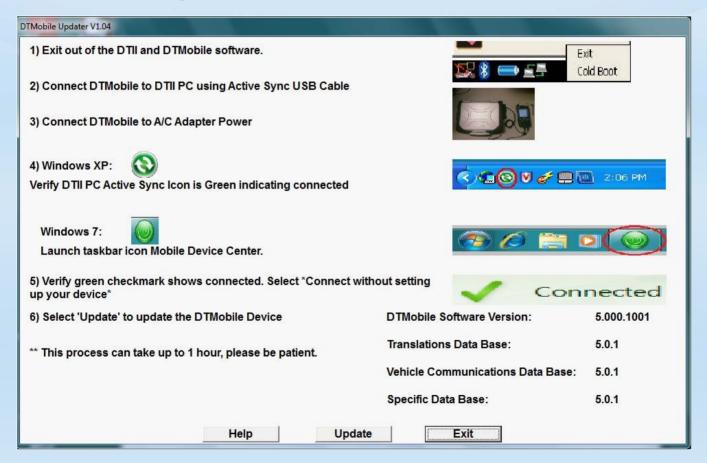
6. Updated Radio Speaker options.



- 7. MY2012 Manuals included on DVD: HD-48650-SMD7 Rev A.
- 8. Added EITM status to System Info screen for MY08 or later Touring models.



9. Revised DTMobile Updater Screen.



Lower right screen shows the DTMobile Software version being installed on the DTMobile when an update is performed.

10. DTMobile connection to DTII Windows 7 Laptops

Windows 7 uses 'Windows Mobile Device Center' vs. 'Active Sync.'

Launch the taskbar icon



Verify the green checkmarks shows connected.

Select the "Connect without setting up your device"

This is required when Authorizing or Updating DTMobile from DTII Windows 7 Laptop.



Enhancements:

1. DTII Application: Launches quicker

2. Techlink II: Communication improvements

3. Guided Diagnostics: Improvements to screen text, labor code, information, and pictures

4. Adding electronic User Guide on DVD

MY2012 DTII Electronic Update – Calibration Updates

Laptop version: 5.001.000x

DTMobile version: 5.001.100x.

Released globally on 7/25/2011.

Content of electronic release:

MY2012 Software and calibration updates.

MY2012 DTII Summary:

1. Electronic Update – Early Vehicle Support:

Laptop version: 4.004.0000, DTMobile version: 4.004.1000.

Released globally on 5/25/2011.

2. DVD disk Update

Laptop version: 5.000.000x, DTMobile version: 5.000.100x.

Deliver globally on 7/20/2011.

3. Electronic Update – For Calibrations:

Laptop version: 5.001.000x, DTMobile version: 5.001.100x.

Release globally on 7/25/2011.

Tips:

Vehicle Diagnostic Cable, HD-48650-9

Shipped last year 2010 SDM.

Has a second connector for use on 2011, 2012 Softail® models.
2012 Dyna® Models.



Tips:

Techlink™ II AC power:

Use with:

- 1. Guided Diagnostics
 - HDLAN Motorcycles
- 2. Buell 1125 Reflash
- 3. Fuel Pump Disable
 - Vehicle Setup

Disconnect when changing

Techlink™ II to different motorcycle.





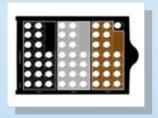
Tips:

DO NOT SWAP MODULES from other motorcycles to use as replacement parts. Modules have features to recognize other modules in the motorcycle. Swapping modules to other motorcycles could cause errors or DTC's, which may result in malfunctions.

New Hardware

HD-50390-4 ECM Interface Cable (September 2011)

- Interface cable used for new ECM used for 2012 Softail and Dyna.
- Cable has 3 connectors but the 2012 ECM will only use 2 of them. Designing the cable this way allowed us to avoid making another cable for future applications.
- · Cable will include a new panel overlay.





HD-50390-6 ABS Interface Cable (September 2011)

- Cable used for new ABS module on 2012 Dyna.
- This cable does not require the use of an overlay.
- This cable will be shipped with the -4 cable in September, 2011.



SPECIAL TOOLS -

- Fork stem nut socket FLD, but can be used on other models
- O2 sensor tool used to remove and torque heated O2 sensors; other tools may be used including Snap-on FRX181 flare nut socket (used on passing lamps) and previous tool for FL
- 2 Crimp dies to service new ECM and ABS connector terminals

Coming via Launch Kit



Dunlop® Motorcycle Load Limit Card

July 12, 2011

Dear Dealer:

The purpose of this letter is to introduce you to the Motorcycle Load Limit Card included in this kit. The Motorcycle Load Limit Card is another tool to aid you in educating your customers on the Gross Vehicle Weight Rating (GVWR) of their motorcycles and how to calculate the load limit. This card can be used in conjunction with the existing Owner's Manual warnings and instructions, the warning labels on the motorcycles, the warnings on the tires, and the other written materials related to safe operation of the motorcycles.

These cards can be used by your sales, rental and service personnel to further help your customers understand if they are overloading their motorcycle.

Six cards have been included in the MY 2012 Launch Kit. To order more Dunlop® Motorcycle Load Limit Cards, free of charge, please email deborah_klopp@goodyear.com and include the card part number, LLC-100, in the subject line. You may specify a quantity or you will be sent a default quantity of 25 cards.

Sincerely,

Nathan A. Boyd, P.E. Director, Product Integrity

Motorcycle Load Limit Card

Are you OVERLOADED?

For example, depending on your bike, if you exceed 425 pounds of rider, passenger and cargo weight, you may be OVERLOADING your motorcycle. See weight calculator below.

1.		
1.		
2 lbs.]	
lbs.	<u> </u>	
-	, <u> </u>	
		bs.
5. Ibs.	.]	
6. lbs.	.]	
7. Ibs.	.]	
	a	llos.
	bs bs	bs.

- Checking tire pressure frequently and always before extended trips is the most important tire maintenance you can perform.
- For every 4 psi a tire is underinflated, you could lose up to 80 pounds of load-carrying capacity.

Complete tire selection, safety, care and maintenance information is available in Dunlop's motorcycle tire brochure and on the web at dunlopmotorcycle.com—or call Dunlop at 800-845-8378.



