

TECHNICAL TIPS # 31
AUGUST 1992

1993 MODEL FEATURES/ CHANGES

Technical Tips # 31 summarizes the features, benefits and service related changes on the 1993 models.

**** FL FAMILY SADDLEBAGS ****

- ** The 1993 saddlebag design allows greater storage volume because the battery is now located under the seat. It also eliminates the possibility of lid loss and allows for one hand opening and closing. Along with this new design comes new saddlebag rails designed to resolve past misalignment problems.
- ** Saddlebag latches incorporate both locking and pivoting functions. We suggest dealers emphasize the "slant latch" operation to riders during new vehicle delivery.
- ** Saddlebag mounting brackets are slotted for bag adjustment to ensure secure fit and rattle free operation.

**** ROUND KEYS ****

- ** All round key locks on the motorcycle are keyed alike. The round key locks will require periodic lubrication with dry graphite to maintain smooth operation.
- ** The round key number can be found beneath the black protective key grip.
- ** Key numbers are also imprinted on the removable tab connected to the keys in production. The tab should be saved or the number recorded by the customer in case of key loss.

**** FL MODEL OILING SYSTEM CHANGES ****

- ** FL model oil tanks have been redesigned and located beneath the transmission similar to the Dyna models. This provides a lower center of gravity, improved oil cooling and transmission noise reduction.
- ** Engine oil should be checked at normal operating temperature and with the motorcycle on the side stand. Cap plug should be inserted completely into the tank, then removed to properly check level.
- ** Oil hoses are pre-formed to eliminate restrictions and improve appearance.
- ** The FL oil pan incorporates both engine and transmission drain plugs. Engine oil is the forward plug, transmission the rearward plug. Frame cross-member has been inverted for oil pan clearance and all FL replacement frames will also have this feature.

**** ULTRA ANTENNA/ TOUR PAK CHANGES ****

- ** Dual antennas on Ultra models will improve CB transmission and reception as well as improved AM reception.
- ** Each antenna spring must be covered with the rubber boots shipped with the motorcycle before delivery.
- ** There are two metric set screws used on the antenna base. The lower set screw locks the antenna to the tour pak. The upper set screw secures the antenna mast once the SWR has been adjusted.
- ** The loading coil was relocated from the antenna mast to the tour pak to solve breakage problems.
- ** The 1993 Ultra tour pak pouch area is narrower. The narrower 1993 pouch can be used to resolve poor pouch fitment on late 1992 Ultras.

**** 1993 TRANSCIEVERS ****

****** Prior to 1993, we experienced some moisture and vibration induced connection problems with the transceiver. The redesigned transceiver for 1993 features:

- consistent 4 watt output
- noise blanking
- waterproof connectors

These improvements will resolve known electrical connection problems and the transceiver is retrofittable to earlier Ultras.

**** CRUISE CONTROL ****

****** There is a totally new Ultra cruise control system for 1993. It features:

- more accurate speed control
- fewer components
- redesigned harness reduces the number of connections and connection problems
- digital design allows self-diagnostic capability

****** The new fuse/filterboard cover will further reduce water and dirt contamination problems.

****** The new cruise cable adjuster provides fast and easy cable adjustment for the service technician.

****** The red "Cruise Control - On" indicator light remains for 1993. In addition, there is a green "Cruise Control Engaged" indicator light in the instrument panel. This green light also serves as part of the self diagnostic system.

**** FL PASSENGER FLOORBOARDS ****

****** The new adjustable passenger footboards can be secured in any one of three positions by the owner using a standard SAE socket.

**** SOFTAIL MODEL CHANGES ****

- ** All FX models will now feature the smaller rear belt sprocket and shorter belt for reduced vibration at cruising speeds.
- ** Owners of the new FLST-N should be advised that only mild soap and warm water, or saddle soap, be used to clean the seat insert.
- ** The new Springer fender mounting enhances the beauty of the motorcycle, but there are also some technical changes that need to be noted; the front fender mounting system on 1993 FXSTS vehicles will require the same maintenance checks as previous models. In addition, the fender link bushings must also be included in these checks.
- ** The new Dunlop 21-inch front tire improves performance under various road conditions. Remember, only factory approved tires should be used on Harley-Davidson motorcycles.

**** DYNAGLIDE MODELS ****

- ** Both front and rear Dynaglide engine mounts are new for 1993. The new front mount is visually identical to its predecessor and can be identified only by its 90-B part number. (Stiffness has been reduced.)
The rear Dynaglide mounts are more resilient also and can be identified by the additional ribs. Both front and rear mounts are retrofitable and will reduce mid-range vibration. It should be noted that engine movement at idle will be increased.

**** 1993 BIG TWIN BREATHING SYSTEM CHANGES ****

- ** Our new 1340 breathing system starts deep in the right crankcase. The breather tube has been eliminated which also eliminates external plumbing to the air cleaner.

- ** The breather trap evacuation passage to the breather valve hole no longer exists. This also eliminates any possibility of oil leakage at the bottom welch plug.
- ** The gear cover no longer has a breather tube and drilled air passages. The baffle plate is eliminated also. This changes the gear cover gasket design. These changes were made to eliminate oil carryover.
- ** Internal crankcase pressures and oil mist will flow up the push rod covers into the rocker box area where oil and air are separated. The positive pressure opens a rubber one-way valve and allows air pressure to flow out.
- ** After passing the one-way valve, air is routed through the lower rocker box to the cylinder head, then through the hollow air cleaner mounting bolt and elbows to the intake air flow.

** PRODUCT IMPROVEMENTS **

- ** The wire exit location in the headlight housing has been changed on FXD models to improve headlight adjustability.
- ** There have been several changes to the 1340 flywheel assembly which make it unique and not retrofittable:
 - 1340 pinion gear and oil pump drive gears have been lengthened to provide more contact with the pinion shaft key. A spacer between the gears is no longer required.
 - The new hexagon pinion gear nut is now a right-hand thread. The larger contact area provides additional clamp to secure the pinion gear and reduce pinion gear runout. This will reduce noise complaints.
 - The pinion bearing outer race on 1340 engines has been changed to improve oil supply and support for the outboard roller bearings.
 - The new race will be retrofittable to earlier engines.
- ** A starter jackshaft assembly change was made to eliminate oil leakage at the jackshaft seal. This is a retrofittable improvement as a complete assembly.

**** FLYWHEEL PINION RACE SERVICING ****

** Pinion bearing inner race removal and replacement can be difficult for technicians to perform in the field. The interference fit of the race makes it hard to remove without damaging the flywheels. After installation, the new race must be final ground to a very specific size and surface finish. This requires equipment and facilities that may be difficult to locate, even in large metropolitan areas.

Factory replacement and refurbishing will now be available directly through Harley-Davidson.

**** 1993 HARLEY-DAVIDSON/ KENT-MOORE ESSENTIAL TOOLS ****

** There are four tools in this year's Essential Tool package.

- 1) HD 39458 - Timken race installation tool
- 2) HD 39618 - Transmission linkage adjuster
- 3) HD 39448-3 - CB transceiver tool adapter
- 4) HD 39754 - Springer front fender installation tool

** Kent-Moore is making it easier for international dealers to order specialty service tools. A new ordering system is now in place which will allow dealers to choose between two methods of tool shipments depending on your needs.