2009 Softail Models Service Manual

99482-09

MAINTENANCE

1.1 FASTENER TORQUE VALUES

Fastener Torque Values in this Chapter....1-1

1.2 GENERAL

Servicing a New Motorcycle....1-4
Safe Operating Maintenance....1-4
Shop Practices....1-4
- Repair Notes....1-4
- Safety....1-4
- Removing Parts....1-4
- Cleaning....1-4
- Disassembly and Assembly....1-5
- Checking Torques on Fasteners....1-5
- Magnetic Parts Trays....1-5

Repair and Replacement Procedures....1-5
- Hardware and Threaded Parts....1-5
- Threadlocking Agents....1-5
- Wiring, Hoses and Lines....1-5
- Instruments and Gauges....1-5
- Bearings....1-5
- Bushings....1-5
- Gaskets....1-5
- Lip Type Seals....1-5
- O-Rings (Preformed Packings)....1-6
- Gears....1-6
- Shafts....1-6
- Part Replacement....1-6
- Exhaust System Leakage....1-6

Cleaning....1-6
- Part Protection....1-6
- Cleaning Process....1-6
- Rust or Corrosion Removal....1-6
- Bearings....1-6

Tool Safety....1-6
- Air Tools....1-6
- Wrenches....1-6
- Pliers/Cutters/Pry bars....1-6
- Hammers....1-7
- Punches/Chisels....1-7
- Screwdrivers....1-7
- Ratchets and Handles....1-7
- Sockets....1-7
- Storage Units....1-7

1.3 MAINTENANCE SCHEDULE

General....1-8

1.4 FUEL AND OIL

Fuel....1-12
Gasoline Blends....1-12
Engine Lubrication....1-12
Winter Lubrication....1-13

1.5 BULB REQUIREMENTS

General....1-14

1.6 ENGINE OIL AND FILTER

Checking and Adding Oil....1-15
- Type of Oil....1-15
- Checking Oil Level....1-15

Changing Oil and Filter....1-15

1.7 BRAKES

Fluid Inspection....1-17
Rear Brake Pedal....1-17
- Pedal Height....1-17
- Pedal Lubrication....1-17
- Pedal Pad....1-17

1.8 AIR CLEANER AND EXHAUST SYSTEM

Removal....1-19
Installation....1-20
Exhaust System Leak Check....1-21

1.9 TIRES AND WHEELS

Tires....1-22
Tire Replacement....1-23
- Inspection....1-23
- When To Replace Tires....1-23

Wheel Bearings....1-23
Wheel Spokes....1-23

1.10 PRIMARY CHAIN

General....1-25
Changing Primary Chaincase Lubricant....1-25

1.11 TRANSMISSION LUBRICANT

Changing Transmission Lubricant....1-27

1.12 CLUTCH

Adjustment....1-29

1.13 REAR BELT AND SPROCKETS

General....1-31
Cleaning....1-31
Inspection....1-31
- Sprockets....1-31
- Rear Belt....1-31

1.14 REAR BELT DEFLECTION

Inspection....1-33
Adjustment....1-33

1.15 THROTTLE CABLES

Cable Inspection, Lubrication and Adjustment....1-35
- Inspection and Lubrication....1-35
- Adjustment....1-35

1.16 BLEEDING BRAKES

General....1-36
Procedure....1-36

1.17 BRAKE PADS AND DISCS

Inspection....1-37
- Brake Pads....1-37
- Brake Disc....1-37

Brake Pad Replacement....1-37
- Rear Brake Caliper....1-37
- Front Brake Caliper....1-39

1.18 BATTERY MAINTENANCE

General....1-41
Cleaning and Inspection....1-42
Voltmeter Test....1-42
- Voltmeter Test....1-42

Charging Battery....1-42

TABLE OF CONTENTS

Safety Precautions....1-42
Using a Battery Charger....1-42
Disconnection and Removal....1-43
Storage....1-44
Installation and Connection....1-45

1.19 SUSPENSION ADJUSTMENTS

Shock Absorbers: Softail Models....1-47
Adjustment....1-47

1.20 SPARK PLUGS

Inspection....1-48
Spark Plug Cable Inspection....1-48

1.21 STEERING HEAD BEARINGS: ALL BUT FLSTSB

Adjustment: FLST, FLSTC, FLSTF, FLSTN....1-50
Bearing Adjustment (Fall-away)....1-50
Adjustment: FXST, FXSTB, FXSTC, FXCW/C....1-51
Bearing Adjustment (Fall-away)....1-51
Lubrication....1-52

1.22 STEERING HEAD BEARINGS: FLSTSB

General....1-53
Lubrication....1-53
Adjustment: FLSTSB....1-53
Bearing Adjustment (Fall-away)....1-53

1.23 ROCKER BEARINGS: FLSTSB

Inspection....1-55

1.24 FRONT FORK OIL

Replacing Fork Oil....1-57

1.25 CABLE AND CHASSIS LUBRICATION

General....1-58
Cables and Hand Levers....1-58
Jiffy Stand....1-58
Steering Head Bearings....1-58

1.26 HEADLAMP ALIGNMENT

Headlamp Alignment....1-59
Headlamp Adjustment....1-59

1.27 CRITICAL FASTENERS

Inspection....1-61
Checking Torques on Fasteners....1-61

1.28 ENGINE MOUNTS

Inspection....1-62

1.29 STORAGE

General....1-63
Placing in Storage....1-63
Removal from Storage....1-63

1.30 TROUBLESHOOTING

General....1-65
Engine....1-65
Starter Motor Does Not Operate or Does Not Turn Engine Over....1-65
Engine Turns Over But Does Not Start....1-65
Starts Hard....1-65
Starts But Runs Irregularly or Misses....1-65
A Spark Plug Fouls Repeatedly....1-66
Pre-Ignition or Detonation (Knocks or Pings)....1-66
Overheating....1-66
Valve Train Noise....1-66
Excessive Vibration....1-66
Check Engine Light Illuminates During Operation....1-66
Lubrication System....1-66
Oil Does Not Return To Oil Tank....1-66
Engine Uses Too Much Oil Or Smokes Excessively....1-66
Engine Leaks Oil From Cases, Push Rods, Hoses, Etc....1-66
Low Oil Pressure....1-67
High Oil Pressure....1-67
Electrical System....1-67
Alternator Does Not Charge....1-67
Alternator Charge Rate Is Below Normal....1-67
Speedometer Operates Erratically....1-67
Transmission....1-67
Shifts Hard....1-67
Jumps Out Of Gear....1-67
Clutch Slips....1-67
Clutch Drags Or Does Not Release....1-67
Clutch Chatters....1-67
Handling....1-67
Irregularities....1-67
Brakes....1-68
Brake Does Not Hold Normally....1-68

CHASSIS

2.1 FASTENER TORQUE VALUES

Fastener Torque Values in this Chapter....2-1

2.2 SPECIFICATIONS

Specifications....2-5
Chassis Specifications....2-5
Tire Specifications....2-6

2.3 VEHICLE IDENTIFICATION NUMBER (V.I.N.)

Vehicle Identification Number....2-8

2.4 FRONT WHEEL: ALL BUT FLSTSB

Removal....2-10
Disassembly....2-10
Disc Wheel....2-10
Laced Wheel....2-10
Cleaning and Inspection....2-12
Assembly....2-12
Disc Wheel....2-12
Laced Wheel....2-12
Installation....2-13

2.5 FRONT WHEEL: FLSTSB

Removal....2-14
Disassembly....2-14

Cleaning and Inspection....2-14
Assembly....2-14
Installation....2-15

2.6 REAR WHEEL

Removal....2-16
Disassembly....2-16
Cleaning and Inspection....2-17
Assembly....2-17
Installation....2-18

2.7 SEALED WHEEL BEARINGS

Inspection....2-19
Removal....2-19
Installation....2-20

2.8 WHEEL LACING: 16 INCH RIM

General....2-22
Procedure....2-22

2.9 WHEEL LACING: 17 INCH RIM

General....2-25
Procedure....2-25

2.10 WHEEL LACING: 21 INCH RIM

General....2-28
Procedure....2-28

2.11 TRUING LACED WHEELS

General....2-31
Lateral Truing....2-31
Radial Truing....2-32

2.12 CHECKING CAST WHEEL RUNOUT

General....2-34
Lateral Runout....2-34
Radial Runout....2-34

2.13 VEHICLE ALIGNMENT

Inspection....2-35

2.14 FRONT BRAKE MASTER CYLINDER

General....2-36
Removal and Disassembly....2-36
Cleaning and Inspection....2-38
Assembly and Installation....2-38

2.15 FRONT BRAKE CALIPER: ALL BUT FLSTSB

Removal....2-40
Disassembly....2-40
Cleaning, Inspection and Repair....2-42
Assembly....2-43
Installation....2-43

2.16 FRONT BRAKE CALIPER: FLSTSB

Removal....2-45
Disassembly....2-46
Cleaning and Inspection....2-47
Assembly....2-48
Installation....2-49

2.17 REAR BRAKE MASTER CYLINDER

General....2-51
Removal....2-51
Installation....2-51
Disassembly....2-53
Cleaning and Inspection....2-54
Assembly....2-54

2.18 REAR BRAKE CALIPER

Removal....2-56
Disassembly....2-56
Cleaning, Inspection and Repair....2-58
Assembly....2-59
Installation....2-59

2.19 TIRES

General....2-61
Removal....2-61
Cleaning, Inspection and Repair....2-62
Installation....2-62
- Tube Type Tires....2-62
- Tubeless Tires....2-63

2.20 FRONT FORK: TELESCOPIC

General....2-64
Removal....2-64
Disassembly....2-64
Cleaning and Inspection....2-64
Assembly....2-68
Installation....2-68

2.21 FRONT FORK: SPRINGER

General....2-69
Front Shock Absorber....2-69
- Removal....2-69
- Installation....2-69

Rigid Fork....2-69
- Removal....2-69
- Installation....2-70

Spring Fork....2-70
- Disassembly....2-70
- Assembly....2-72

Fork Rockers....2-74
- Removal....2-74
- Installation....2-74

Fork Stem Bearings....2-75
- Removal and Installation....2-75

2.22 STEERING HEAD

Removal....2-76
- FLST, FLSTC, FLSTF, FLSTN Models....2-76
- FXST, FXSTC, FXSTB Models....2-76
- FXCW/C Models....2-77
- FLSTSB Models....2-77

Inspection....2-77
- All Models....2-77

Disassembly....2-77
- Removing Lower Bearings From Fork Stem....2-77
- Steering Head Bearing Race Removal....2-78

TABLE OF CONTENTS

Assembly....2-78
Installation....2-79
FLST, FLSTC, FLSTF, FLSTN Models....2-79
FXST, FXSTC, FXSTB Models....2-79
FXCW/C Models....2-79
FLSTSB Models....2-79

2.23 BELT GUARD AND DEBRIS DEFLECTOR

Removal....2-80
Belt Guard....2-80
Debris Deflector....2-80
Installation....2-80
Belt Guard....2-80
Debris Deflector....2-80

2.24 REAR SHOCK ABSORBERS

General....2-81
Removal....2-81
Installation....2-81

2.25 REAR FORK

Removal....2-83
Cleaning and Inspection....2-84
Installation....2-84

2.26 THROTTLE CONTROL

Removal/Disassembly....2-86
Cleaning and Inspection....2-86
Assembly/Installation....2-86
Cable Routing....2-87

2.27 CLUTCH CONTROL

Removal....2-88
Installation....2-88

2.28 HANDLEBARS: ALL BUT FLSTF/FLSTSB/FXCW/FXCWC

Removal....2-90
Installation....2-91

2.29 HANDLEBARS: FLSTF

Removal....2-92
Installation....2-93

2.30 HANDLEBARS: FLSTSB

Removal....2-95
Installation....2-95

2.31 HANDLEBARS: FXCW/FXCWC

Removal....2-97
Installation....2-98

2.32 FRONT FENDER: ALL BUT FLSTSB

Removal....2-101
Installation....2-101

2.33 FRONT FENDER: FLSTSB

Removal....2-102
Installation....2-103

2.34 REAR FENDER: FLST/FLSTC

Removal....2-104
Installation....2-104

2.35 REAR FENDER: FLSTF

Removal....2-106
Installation....2-106

2.36 REAR FENDER: FXST/FXSTB/FXSTC/FLSTSB

Removal....2-108
Installation....2-108

2.37 REAR FENDER: FXCW/FXCWC

Removal....2-110
Installation....2-110

2.38 REAR FENDER: FLSTN

Removal....2-112
Disassembly....2-112
Assembly....2-114
Installation....2-114

2.39 REAR FENDER WIRE CONDUIT

Installation....2-115

2.40 JIFFY STAND

Cleaning....2-117
Sensor (HDI Models)....2-117
Removal....2-118
Installation....2-118

2.41 FORK LOCK

Removal....2-119
Installation....2-119

2.42 SEAT AND STRAP RETENTION NUT

Replacement....2-120

2.43 SEAT: FXST/FXSTB

Removal and Installation....2-121
Seat Strap....2-121
Seat....2-121

2.44 SEAT: FXSTC

Removal and Installation....2-122
Seat Strap....2-122
Seat....2-122

2.45 SEAT: FXCW/FXCWC

Removal and Installation....2-123
Solo Seat: FXCW....2-123
Rider Seat: FXCWC....2-123
Passenger Seat Support: FXCWC....2-123

2.46 SEAT: FLSTN/FLSTF/FLST/FLSTC

Removal and Installation....2-125

2.47 SEAT: FLSTSB

Seat: FLSTSB....2-126
- Removal....2-126
- Installation....2-126
- Adjusting Seat Position....2-126

2.48 LUGGAGE RACK: FLSTN

Removal and Installation....2-128

2.49 SADDLEBAGS: FLSTC

Removal....2-129
Installation....2-129

2.50 WINDSHIELD: FLSTC

Removal....2-130
Installation....2-130

ENGINE

3.1 FASTENER TORQUE VALUES

Fastener Torque Values in this Chapter....3-1

3.2 SPECIFICATIONS

Specifications....3-3

3.3 SERVICE WEAR LIMITS

General....3-5

3.4 ENGINE OIL FLOW

Oil Feed....3-7
Top End....3-8
Bottom End....3-9
Chain Guide Bracket....3-11
Oil Return....3-12

3.5 OIL PUMP OPERATION

General....3-13
Operation....3-13

3.6 BREATHER OPERATION

General....3-15

3.7 OIL PRESSURE

Oil Pressure Indicator Lamp....3-16
Checking Oil Pressure....3-16

3.8 TROUBLESHOOTING

Diagnosing Valve Train Noise....3-17
Compression Test....3-17
Cylinder Leakdown Test....3-17
Diagnosing Smoking Engine or High Oil Consumption....3-18
- Check Prior To Cylinder Head Removal....3-18
- Check After Cylinder Head Removal....3-18

3.9 HOW TO USE THIS SECTION

Top End Repair....3-19
Bottom End Repair....3-19
Typical Symptoms....3-19

3.10 TOP END SERVICE

Engine in Chassis....3-20
Engine Removed from Chassis....3-21

3.11 BOTTOM END SERVICE

Engine in Chassis....3-22
Engine Removed From Chassis....3-23

3.12 STRIPPING MOTORCYCLE FOR SERVICE

Procedure....3-24

3.13 ASSEMBLING MOTORCYCLE AFTER SERVICE

Procedure....3-25

3.14 REMOVING ENGINE FROM CHASSIS

Procedure....3-26

3.15 INSTALLING ENGINE IN CHASSIS

Procedure....3-27

3.16 TOP END OVERHAUL: DISASSEMBLY

General....3-29
Rocker Covers....3-29
Rocker Arm Support Plate....3-29
Push Rods, Lifters and Covers....3-31
Cylinder Head....3-32
Cylinder....3-33
Piston....3-33

3.17 TOP END OVERHAUL: ASSEMBLY

General....3-35
Piston....3-35
Cylinder....3-36
Cylinder Head....3-38
Push Rods, Lifters and Covers....3-42
Rocker Arm Support Plate....3-43
Breather Assembly....3-44

3.18 BOTTOM END OVERHAUL: DISASSEMBLY

General....3-46
Cam Support Plate and Cover....3-46
- Prepare Engine....3-46
- Cam Chain and Sprockets....3-46
- Cam Support Plate....3-47

Crankcase....3-48
Counterbalancer Assembly....3-49

3.19 BOTTOM END OVERHAUL: ASSEMBLY

General....3-52
Counterbalancer Assembly....3-52
Crankcase....3-55
Cam Support Plate and Cover....3-59

3.20 BREATHER ASSEMBLY

Removal Overview....3-64
Disassembly....3-64

TABLE OF CONTENTS

Cleaning and Inspection....3-64
Assembly....3-64
Installation Overview....3-64

3.21 ROCKER ARM SUPPORT PLATE

Removal Overview....3-65
Disassembly....3-65
Cleaning and Inspection....3-65
Inspection....3-65
Rocker Shaft Fit....3-65
Rocker Arm Shaft to Bushing....3-66
Replace Rocker Arm Bushings....3-66
Assembly....3-67
Installation Overview....3-67

3.22 PUSH RODS, LIFTERS AND COVERS

Removal Overview....3-68
Disassembly....3-68
Cleaning and Inspection....3-68
Lifter Inspection....3-69
Assembly....3-69
Installation Overview....3-70

3.23 CYLINDER HEAD

Removal Overview....3-71
Disassembly....3-71
Cleaning....3-72
Inspection....3-73
Cylinder Head....3-73
Valve Guides....3-73
Valves....3-73
Valve Springs....3-73
Tapered Keepers....3-74
Valve Seats....3-74
Valve Guide Replacement....3-74
Removal....3-74
Installation....3-75
Valve and Seat Refacing....3-78
Assembly....3-80
Installation Overview....3-81

3.24 CYLINDER

Removal Overview....3-82
Cleaning....3-82
Inspection....3-83
Deglazing Cylinder....3-84
Boring and Honing Cylinder....3-85
Installation Overview....3-85

3.25 PISTON

Removal Overview....3-86
Disassembly....3-86
Piston Rings....3-86
Cleaning....3-86
Inspection....3-87
Assembly....3-88
Checking Piston Ring Gap....3-88
Installing Piston Rings....3-89
Installation Overview....3-90

3.26 CAM SUPPORT PLATE AND COVER

Removal Overview....3-91
Camshafts....3-91
Removal....3-91
Assembly....3-91
Oil Pressure Relief Valve....3-93
Removal....3-93
Installation....3-93
Inspection....3-93
Cam Needle Bearings....3-93
Removal....3-93
Installation....3-95
Cleaning and Inspection....3-96
Oil Pressure Valve....3-96
Cam Support Plate....3-96
Installation Overview....3-96

3.27 OIL PUMP

Removal Overview....3-97
Cleaning and Inspection....3-97
Installation Overview....3-97

3.28 CRANKCASE

Removal Overview....3-98
Right Crankcase Half....3-98
Chain Guide Screen....3-98
Crankshaft (Roller) Bearing Removal....3-98
Crankshaft (Roller) Bearing Installation....3-99
Piston Jets Removal....3-99
Piston Jets Installation....3-99
Left Crankcase Half....3-100
Main Bearing Removal....3-100
Main Bearing Installation....3-102
Sprocket Shaft Bearing Inner Race....3-102
Removal....3-102
Installation....3-104
Cylinder Studs....3-105
Removal....3-105
Installation....3-105
Pipe Plugs and Oil Fittings....3-105
Removal/Installation....3-105
Cleaning and Inspection....3-106
Installation Overview....3-106

3.29 FLYWHEEL AND CONNECTING RODS

Removal Overview....3-107
Inspection....3-107
Installation Overview....3-107

3.30 COUNTERBALANCER ASSEMBLY

Removal Overview....3-108
Cleaning, Inspection, and Repair....3-108
General....3-108
Balance Shaft Removal....3-108
Balance Shaft Installation....3-109
Balance Shaft Support Bearings Removal....3-110
Balance Shaft Support Bearings Installation....3-110
Front and Rear Balance Sprockets....3-110
Hydraulic Tensioners....3-111
Chain Tensioner Guides....3-111
Chain Guide Bracket....3-111

Balance Chain....3-111
Installation Overview....3-111

3.31 OIL TANK: ALL BUT FXCW/C

Removal and Disassembly....3-112
Oil Tank....3-112
Oil Line Fittings/Retainers....3-114
Installation....3-115

3.32 OIL TANK: FXCW/C

Removal and Disassembly....3-116
Oil Tank....3-116
Oil Line Fittings/Retainers....3-118
Installation....3-119

FUEL SYSTEM

4.1 FASTENER TORQUE VALUES

Fastener Torque Values in this Chapter....4-1

4.2 SPECIFICATIONS: FUEL SYSTEM

Specifications....4-3

4.3 ELECTRONIC FUEL INJECTION (EFI)

Troubleshooting....4-4

4.4 IDLE SPEED

General....4-5

4.5 AIR CLEANER ASSEMBLY

Removal....4-6
Installation....4-6
Backplate Assembly: HDI Models....4-7

4.6 FUEL TANK

General....4-8
Removal....4-8
Cleaning and Inspection....4-12
Installation....4-12
All But FXCW/C....4-12
FXCW/C....4-12

4.7 THROTTLE POSITION SENSOR (TPS)

General....4-14
Removal....4-14
Installation....4-14

4.8 INTAKE AIR TEMPERATURE SENSOR (IAT)

General....4-15
Removal....4-15
Installation....4-15

4.9 ENGINE TEMPERATURE SENSOR (ET)

General....4-16
Removal....4-16
Installation....4-16

4.10 INDUCTION MODULE

Removal....4-18
Installation....4-19

4.11 IDLE AIR CONTROL (IAC)

General....4-20
Removal....4-20
Installation....4-20

4.12 MANIFOLD ABSOLUTE PRESSURE SENSOR (MAP)

General....4-21
Removal....4-21
Installation....4-21

4.13 OXYGEN SENSOR

General....4-22
Removal....4-22
Installation....4-22

4.14 FUEL INJECTORS

General....4-24
Removal....4-24
Installation....4-24

4.15 FUEL PUMP AND FUEL GAUGE SENDING UNIT

General....4-26
Removal....4-26
Disassembly/Assembly....4-28
Fuel Filter....4-28
Regulator....4-28
Inlet sock....4-29
Fuel Pump....4-30
Installation....4-30

4.16 FUEL PRESSURE TEST

General....4-32
Testing....4-32

4.17 EXHAUST SYSTEM: ALL BUT FLSTF/FLSTN/FLSTSB

Mufflers....4-35
Removal....4-35
Assembly....4-35
System....4-35
Removal....4-35
Installation....4-35

4.18 EXHAUST SYSTEM: FLSTF/FLSTN/FLSTSB

Mufflers....4-37
Removal....4-37
Assembly....4-37
System....4-37
Removal....4-37
Installation....4-37

TABLE OF CONTENTS

4.19 INTAKE LEAK TEST

General....4-39
Leak Tester....4-39
Parts List....4-39
Tester Assembly....4-39
Tester Adjustment....4-39
Procedure....4-39

4.20 EVAPORATIVE EMISSIONS CONTROL (CA MODELS)

General....4-41
Charcoal Canister....4-41
Removal....4-41
Installation....4-42
Hose Routing/Replacement....4-42

DRIVE

5.1 FASTENER TORQUE VALUES

Fastener Torque Values in this Chapter....5-1

5.2 SPECIFICATIONS: DRIVE

Specifications....5-2

5.3 PRIMARY CHAINCASE COVER

General....5-3
Removal....5-3
Installation....5-3

5.4 DRIVE COMPONENTS

Removal....5-4
Installation....5-6

5.5 PRIMARY CHAINCASE HOUSING

Removal....5-10
Inspection....5-10
Mainshaft Bearing and Lip Seal....5-10
Removal....5-10
Installation....5-10
Mainshaft Bearing Inner Race....5-11
Removal....5-11
Installation....5-12
Installation....5-12

5.6 CLUTCH

Removal and Installation....5-14
Clutch Pack Only....5-14
Partial Disassembly....5-14
Cleaning And Inspection....5-14
Assembly....5-16
Clutch Pack and Bearing....5-16
Complete Disassembly....5-16
Assembly....5-17

5.7 TRANSMISSION SPROCKET

Removal....5-19
Cleaning and Inspection....5-20
Installation....5-20

5.8 DRIVE BELT

Removal....5-22
Inspection....5-22
Installation....5-22

TRANSMISSION

6.1 FASTENER TORQUE VALUES

Fastener Torque Values in this Chapter....6-1

6.2 SPECIFICATIONS: TRANSMISSION

Specifications....6-2
Service Wear Limits....6-2

6.3 TRANSMISSION

Power Flow....6-3
Neutral....6-3
1st Gear....6-3
2nd Gear....6-3
3rd Gear....6-3
4th Gear....6-3
5th Gear....6-3
6th Gear....6-3

6.4 SHIFTER LINKAGE

Adjustment....6-5
Shifter Rod....6-5

6.5 CLUTCH RELEASE COVER

Removal and Disassembly....6-6
Cleaning and Inspection....6-7
Assembly and Installation....6-7

6.6 TRANSMISSION ASSEMBLY

Removal....6-8
Disassembly....6-9
Shifter Cam/Shifter Forks....6-9
Mainshaft....6-11
Countershaft....6-14
Replacing Side Door Bearings....6-15
Cleaning and Inspection....6-16
Assembly....6-16
Installing Side Door Bearings....6-16
Countershaft....6-17
Mainshaft....6-17
Shifter Cam/Shifter Forks....6-18
Installation....6-20

6.7 MAIN DRIVE GEAR AND BEARING

Removal....6-21
Cleaning and Inspection....6-22
Needle Bearing Replacement....6-23
Installation....6-24
Installing Main Drive Gear Bearing....6-24
Installing Main Drive Gear....6-25
Installing Main Drive Gear Large Seal....6-25

6.8 TRANSMISSION CASE

Removal....6-28
Installation....6-28

Disassembly....6-29
Shifter Arm Assembly....6-29
Cleaning and Inspection....6-29
Assembly....6-30
Countershaft Needle Bearing Replacement....6-30
Shifter Pawl Lever Assembly....6-30

ELECTRICAL

7.1 FASTENER TORQUE VALUES

Fastener Torque Values in this Chapter....7-1

7.2 SPECIFICATIONS: ELECTRICAL

Specifications....7-4

7.3 ELECTRICAL PANEL

General....7-5
Removal: All But FXCW/C....7-5
Installation: All But FXCW/C....7-5
Removal: FXCW/C....7-5
Installation: FXCW/C....7-6

7.4 ELECTRONIC CONTROL MODULE (ECM)

General....7-7
Removal: All But FXCW/C....7-7
Installation: All But FXCW/C....7-7
Removal: FXCW/FXCWC....7-8
Installation: FXCW/FXCWC....7-8

7.5 VOLTAGE REGULATOR

General....7-9

7.6 FRONT ELECTRICAL CADDY

General....7-10
Disassembly....7-10
Assembly....7-10

7.7 FUSES

General....7-11
Removal....7-11
Installation....7-11

7.8 RELAYS

General....7-12
Removal....7-12
Installation....7-12

7.9 MAIN FUSE

Removal....7-13
Installation....7-13

7.10 IGNITION AND LIGHT SWITCH

General....7-14
Removal and Installation: All But FXCW/C....7-14
Removal and Installation: FXCW/C....7-15

7.11 BATTERY CABLES

Routing Procedure....7-16

7.12 STARTER

General....7-18
Wiring Diagrams....7-18
Paint Touch-Up....7-18
Removal....7-18
Field Coil Assembly....7-18
Disassembly....7-18
Inspection....7-18
Assembly....7-19
Drive Assembly....7-20
Disassembly....7-20
Inspection....7-20
Assembly....7-20
Installation....7-21

7.13 STARTER SOLENOID

Solenoid Assembly....7-22
Disassembly....7-22
Assembly....7-22
Solenoid Plunger....7-22
Disassembly....7-22
Assembly....7-22
Solenoid Contacts....7-22
Disassembly....7-22
Assembly....7-23

7.14 HEADLAMP

General....7-25
Removal and Installation....7-25
FXSTC Models....7-25
FXCW/C Models....7-25
FXST, FXSTB, and FLSTSB Models....7-25
FLST, FLSTC, FLSTF, and FLSTN Models....7-25

7.15 TAIL LAMP: ALL BUT FLSTN

General....7-29
Bulb Replacement....7-29
Base Replacement....7-29

7.16 TAIL LAMP: FLSTN

Bulb Replacement....7-31
Tail Lamp Replacement....7-31

7.17 AUXILIARY LAMPS: FLST/FLSTC/FLSTN

Auxiliary Lamp Bulb....7-34
Removal....7-34
Installation....7-34
FLST and FLSTC Models....7-34
Auxiliary Lamp Bracket Removal....7-34
Auxiliary Lamp Bracket Installation....7-35
Auxiliary Lamp Housing Removal....7-35
Auxiliary Lamp Housing Installation....7-35
FLSTN Models....7-37
Auxiliary Lamp Bracket Removal....7-37
Auxiliary Lamp Bracket Installation....7-37
Auxiliary Lamp Housing Removal....7-38
Auxiliary Lamp Housing Installation....7-38
Adjustment: FLST/FLSTC/FLSTN Models....7-39

TABLE OF CONTENTS

7.18 TURN SIGNALS AND RUNNING LIGHTS

Bulb Replacement: Bullet Style....7-41
Bulb Replacement: Flat Lens Style....7-41
Lamp Replacement....7-41
- All Models....7-41
- Front Turn Signals: All But FLST, FLSTC, FLSTN....7-42
- Front Turn Signals: FLST, FLSTC, FLSTN....7-43
- Rear Turn Signals: All But FXCW/C, FLSTN....7-43
- Rear Turn Signals: FXCW/C....7-43
- Rear Turn Signals: FLSTN....7-45

7.19 TURN SIGNAL AND SECURITY MODULE (TSM/TSSM/HFSM)

General....7-46
TSM/HFSM/TSSM Configuration....7-46
Removal....7-46
Installation....7-46

7.20 CRANK POSITION SENSOR (CKP)

General....7-47
Removal....7-47
Installation....7-47

7.21 IGNITION COIL

Removal....7-49
- All Except FXCW/C....7-49
- FXCW/C Only....7-49

Installation....7-49
- All Except FXCW/C....7-49
- FXCW/C Only....7-49

7.22 SPARK PLUG CABLES

General....7-51
Removal....7-51
Installation....7-51

7.23 ALTERNATOR

Removal....7-52
Cleaning and Inspection....7-52
Installation....7-52

7.24 FUEL GAUGE

General....7-54
Removal....7-54
Installation....7-54

7.25 INSTRUMENT CONSOLE: FXCW/C

Removal....7-56
Installation....7-56

7.26 SPEEDOMETER: ALL BUT FXCW/C

Removal....7-57
Installation....7-57

7.27 SPEEDOMETER: FXCW/C

Removal....7-58
Installation....7-58

7.28 VEHICLE SPEED SENSOR (VSS)

General....7-59
Removal....7-59
Installation....7-59

7.29 INDICATOR LAMPS: ALL BUT FXCW/C

General....7-60
Removal....7-60
Installation....7-60

7.30 INDICATOR LAMPS: FXCW/C

Removal....7-62
Installation....7-62

7.31 NEUTRAL SWITCH

General....7-63
Removal....7-63
Installation....7-63

7.32 OIL PRESSURE SWITCH

General....7-64
Removal....7-64
Installation....7-64

7.33 REAR STOPLIGHT SWITCH

General....7-65
Removal....7-65
Installation....7-65

7.34 HORN

Inspection....7-66
Removal and Installation: All But FXCW/C....7-66
Removal and Installation: FXCW/C....7-67

7.35 ACTIVE EXHAUST

General....7-68
Removal....7-68
Repair....7-68
Installation....7-68

7.36 MAIN WIRING HARNESS

Removal....7-69
Installation....7-70

7.37 HANDLEBAR SWITCH ASSEMBLIES

General....7-72
Repair Procedures....7-72

7.38 RIGHT HANDLEBAR SWITCH

Removal....7-73
Installation....7-73
Switch Repair/Replacement....7-75
- Upper Housing Repair....7-75
- Lower Housing Repair....7-76
- Turn-Right Signal Switch....7-76
- Front Stoplight Switch....7-76

Assembly....7-77

7.39 LEFT HANDLEBAR SWITCH

Removal....7-79
Installation....7-79
Switch Repair/Replacement....7-80

Upper Housing Repair....7-80
Lower Housing Repair....7-81
Turn-Left Signal Switch....7-81
Clutch Interlock Switch....7-81
Assembly....7-81

APPENDIX A CONNECTOR REPAIR

A.1 AMP MULTILOCK CONNECTORS

AMP Multilock Connector Repair....A-1
General....A-1
Separating Pin and Socket Housings....A-1
Mating Pin and Socket Housings....A-1
Removing Terminals from Housing....A-1
Inserting Terminals into Housing....A-2
Preparing Wire Leads for Crimping....A-2
Crimping Terminals to Leads....A-3
Inspecting Crimped Terminals....A-4

A.2 AUTOFUSE ELECTRICAL CONNECTORS

Autofuse Connector Repair....A-5
General....A-5
Disassembly....A-5
Assembly....A-5

A.3 DELPHI CONNECTORS

Delphi Connector Repair....A-6
General....A-6
Separating Pin and Socket Housings....A-6
Mating Pin and Socket Housings....A-6
Removing Socket Terminals....A-6
Installing Socket Terminals....A-6

A.4 DELPHI MAXI FUSE HOUSING

Delphi Main Fuse Housing Repair....A-8
General....A-8
Removing Main Fuse....A-8
Installing Main Fuse....A-8
Removing Socket Terminals....A-8
Installing Socket Terminals....A-8

A.5 DEUTSCH ELECTRICAL CONNECTORS

Deutsch Connector Repair....A-10
General....A-10
Separating Pin and Socket Housings....A-10
Mating Pin and Socket Housings....A-10
Removing Socket Terminals....A-10
Installing Socket Terminals....A-10
Removing Pin Terminals....A-12
Installing Pin Terminals....A-12
Crimping Terminals....A-13

A.6 DEUTSCH STANDARD TERMINAL REPAIR

Deutsch Standard Terminal Crimps....A-14
Preparing Wire Leads for Crimping....A-14
Crimping Terminal to Lead....A-14
Inspecting Crimps....A-14

A.7 DEUTSCH SOLID BARREL MINI TERMINAL REPAIR

Deutsch Solid Barrel Terminal Crimps....A-15
Preparing Wire Leads For Crimping....A-15
Adjusting Crimper Tool....A-15
Crimping a Barrel Contact To Wire Lead....A-15
Inspecting Crimps....A-15

A.8 DEUTSCH MINI TERMINAL REPAIR

Deutsch Mini Terminal Crimps....A-17
Preparing Wire Leads for Crimping....A-17
Crimping a Mini Terminal to Wire Lead....A-17
Inspecting Crimps....A-17

A.9 MOLEX CONNECTORS

Molex Connector Repair....A-18
Separating Pin and Socket Housings....A-18
Mating Pin and Socket Housings....A-18
Removing Terminals....A-18
Installing Terminals....A-18
Crimp Terminal to Lead....A-19
Prepare Lead....A-19
Prepare Tool....A-19
Position Terminal in the Punch/Die....A-20
Insert Stripped Lead....A-20
Crimp Terminal to Lead....A-21
Inspect Crimp....A-21

A.10 PACKARD 150 METRI-PACK CONNECTORS

150 Metri-Pack Connector Repair....A-22
General....A-22
Separating Pin and Socket Housings....A-22
Mating Pin and Socket Housings....A-22
Removing Socket Terminal....A-22
Inserting Socket Terminal....A-22

A.11 PACKARD 280 METRI-PACK RELAY AND FUSE BLOCK CONNECTORS

Fuse Block Repair....A-24
Removing Socket Terminals....A-24
Installing Socket Terminals....A-24
Crimping Terminals....A-24

A.12 PACKARD 480 METRI-PACK CONNECTORS

480 Metri-Pack Connector Repair....A-25
General....A-25
Separating Pin and Socket Housings....A-25
Mating Pin and Socket Housings....A-25
Removing Socket Terminals....A-25
Installing Socket Terminals....A-25

A.13 PACKARD 630 METRI-PACK CONNECTORS

630 Metri-Pack Connector Repair....A-26
General....A-26
Separating Pin and Socket Housings....A-26
Mating Pin and Socket Housings....A-26

TABLE OF CONTENTS

Removing Socket Terminal....A-26
Installing Socket Terminal....A-26

A.14 PACKARD METRI-PACK TERMINALS

Metri-Pack Terminal Crimps....A-27
Matching Terminal To Crimper....A-27
Preparing Wire Lead....A-27
Crimping Wire Core....A-27
Crimping Insulation/Seal....A-27
Inspecting Crimps....A-28

A.15 PACKARD ECM CONNECTOR

Packard 100W Connector Repair....A-29
General....A-29
Separating Socket Housing From ECM....A-29
Mating Socket Housing To ECM....A-29
Removing Socket Terminal....A-29
Installing Socket Terminal....A-29
Crimping Terminals....A-29

A.16 PACKARD MICRO-64 CONNECTORS

Packard Micro-64 Connector Repair....A-31
General....A-31
Separating Pin and Socket Housings....A-31
Mating Pin and Socket Housings....A-31
Removing Terminal....A-31
Installing Terminal....A-32
Preparing Wire Leads for Crimping....A-32
Crimping Terminals....A-32
Inspecting Crimps....A-32

A.17 SEALED SPLICE CONNECTORS

Sealed Splice Connector Repair....A-34
General....A-34
Preparing Wire Leads....A-34
Splicing Wire Leads....A-34
Inspecting Seals....A-34

APPENDIX B WIRING

B.1 CONNECTORS

Connector Locations....B-1
Function/Location....B-1
Place and Color....B-1
Connector Number....B-1
Repair Instructions....B-1

B.2 WIRING DIAGRAMS

Wiring Diagram Information....B-3
Wire Color Codes....B-3
Wiring Diagram Symbols....B-3
2009 Softail Wiring Diagrams....B-4

APPENDIX C CONVERSIONS

C.1 METRIC CONVERSION

Conversion Table....C-1

C.2 FLUID CONVERSIONS

United States System....C-2
Metric System....C-2
British Imperial System....C-2

C.3 TORQUE CONVERSIONS

United States System....C-3
Metric System....C-3

APPENDIX D GLOSSARY

D.1 GLOSSARY

Acronyms and Abbreviations....D-1

REFERENCE MATERIAL

TOOLS....I

TORQUE VALUES....VII

INDEX....XIX

TABLE OF CONTENTS

SUBJECT	PAGE NO.
1.1 FASTENER TORQUE VALUES	1-1
1.2 GENERAL	1-4
1.3 MAINTENANCE SCHEDULE	1-8
1.4 FUEL AND OIL	1-12
1.5 BULB REQUIREMENTS	1-14
1.6 ENGINE OIL AND FILTER	1-15
1.7 BRAKES	1-17
1.8 AIR CLEANER AND EXHAUST SYSTEM	1-19
1.9 TIRES AND WHEELS	1-22
1.10 PRIMARY CHAIN	1-25
1.11 TRANSMISSION LUBRICANT	1-27
1.12 CLUTCH	1-29
1.13 REAR BELT AND SPROCKETS	1-31
1.14 REAR BELT DEFLECTION	1-33
1.15 THROTTLE CABLES	1-35
1.16 BLEEDING BRAKES	1-36
1.17 BRAKE PADS AND DISCS	1-37
1.18 BATTERY MAINTENANCE	1-41
1.19 SUSPENSION ADJUSTMENTS	1-47
1.20 SPARK PLUGS	1-48
1.21 STEERING HEAD BEARINGS: ALL BUT FLSTSB	1-50
1.22 STEERING HEAD BEARINGS: FLSTSB	1-53
1.23 ROCKER BEARINGS: FLSTSB	1-55
1.24 FRONT FORK OIL	1-57
1.25 CABLE AND CHASSIS LUBRICATION	1-58
1.26 HEADLAMP ALIGNMENT	1-59
1.27 CRITICAL FASTENERS	1-61
1.28 ENGINE MOUNTS	1-62
1.29 STORAGE	1-63
1.30 TROUBLESHOOTING	1-65

NOTES

FASTENER TORQUE VALUES 1.1

FASTENER TORQUE VALUES IN THIS CHAPTER

The table below lists torque values for all fasteners presented in this chapter.

FASTENER	TORQUE VALUE		NOTES
Adjuster screw locknut	72-120 **in-lbs**	8.1-13.6 Nm	1.12 CLUTCH, Adjustment
Air cleaner bracket screws	40-60 **in-lbs**	4.5-6.8 Nm	1.8 AIR CLEANER AND EXHAUST SYSTEM, Installation
Air cleaner cover bracket screw	40-60 **in-lbs**	4.5-6.8 Nm	1.3 MAINTENANCE SCHEDULE, General
Air cleaner cover screw	36-60 **in-lbs**	4.1-6.8 Nm	1.3 MAINTENANCE SCHEDULE, General
Air cleaner cover screw	36-60 **in-lbs**	4.1-6.8 Nm	1.8 AIR CLEANER AND EXHAUST SYSTEM, Installation
Battery cable to battery fasteners	60-72 **in-lbs**	6.8-8.1 Nm	1.18 BATTERY MAINTENANCE, Installation and Connection
Battery cable to battery fasteners	60-72 **in-lbs**	6.8-8.1 Nm	1.18 BATTERY MAINTENANCE, Installation and Connection
Battery terminal fastener	60-72 **in-lbs**	6.8-8.1 Nm	1.3 MAINTENANCE SCHEDULE, General
Bearing retainer	25-35 **in-lbs**	2.8-4.0 Nm	1.23 ROCKER BEARINGS: FLSTSB, Inspection
Bearing retainer	25-35 **in-lbs**	2.8-4.0 Nm	1.23 ROCKER BEARINGS: FLSTSB, Inspection
Bearing retainer jam nut	95-105 ft-lbs	128.8-142.4 Nm	1.23 ROCKER BEARINGS: FLSTSB, Inspection
Bleeder valve	80-100 **in-lbs**	9.0-11.3 Nm	1.16 BLEEDING BRAKES, Procedure
Brake bridge bolt/pad pin, front caliper	15-16 ft-lbs	20.3-22.6 Nm	1.17 BRAKE PADS AND DISCS, Brake Pad Replacement
Chrome aluminum laced wheel spoke nipple	55 **in-lbs**	6.2 Nm	1.3 MAINTENANCE SCHEDULE, General
Clutch adjustment screw locknut	72-120 **in-lbs**	8-14 Nm	1.3 MAINTENANCE SCHEDULE, General
Clutch cover screws	84-108 **in-lbs**	9.5-12.2 Nm	1.12 CLUTCH, Adjustment
Clutch inspection cover fastener torque	84-108 **in-lbs**	10-12 Nm	1.3 MAINTENANCE SCHEDULE, General
Clutch inspection cover screw	84-108 **in-lbs**	9.5-12.2 Nm	1.10 PRIMARY CHAIN, Changing Primary Chain-case Lubricant
Drain plug	14-21 ft-lbs	19.0-28.5 Nm	1.6 ENGINE OIL AND FILTER, Changing Oil and Filter
Engine oil drain plug	14-21 ft-lbs	19-28 Nm	1.3 MAINTENANCE SCHEDULE, General
Fork drain screw, all models but FXCW/C	52-78 **in-lbs**	5.9-8.9 Nm	1.24 FRONT FORK OIL, Replacing Fork Oil
Fork drain screw, FXCW/C	12-18 **in-lbs**	1.4-2.0 Nm	1.24 FRONT FORK OIL, Replacing Fork Oil
Fork stem nut	70-80 ft-lbs	94.9-108.4 Nm	1.21 STEERING HEAD BEARINGS: ALL BUT FLSTSB, Adjustment: FXST, FXSTB, FXSTC, FXCW/C
Fork stem nut	70-80 ft-lbs	94.9-108.4 Nm	1.21 STEERING HEAD BEARINGS: ALL BUT FLSTSB, Adjustment: FXST, FXSTB, FXSTC, FXCW/C
Fork tube cap	40-60 ft-lbs	54.2-81.3 Nm	1.24 FRONT FORK OIL, Replacing Fork Oil
Front caliper mounting bolt	28-38 ft-lbs	38.0-51.5 Nm	1.17 BRAKE PADS AND DISCS, Brake Pad Replacement
Front caliper mounting bolt	28-38 ft-lbs	38.0-51.5 Nm	1.17 BRAKE PADS AND DISCS, Brake Pad Replacement

FASTENER	TORQUE VALUE		NOTES
Front engine mounting nuts	70-80 ft-lbs	94.9-108.5 Nm	1.28 ENGINE MOUNTS, Inspection
Handlebar clamp screw torque	12-15 ft-lbs	16.3-20.3 Nm	1.3 MAINTENANCE SCHEDULE, General
Handlebar switch housing screw	35-45 **in-lbs**	4-5 Nm	1.3 MAINTENANCE SCHEDULE, General
Handlebar switch housing screw	35-45 **in-lbs**	4.0-5.1 Nm	1.15 THROTTLE CABLES, Cable Inspection, Lubrication and Adjustment
Headlamp horizontal adjustment fastener	30-35 ft-lbs	40.7-47.5 Nm	1.26 HEADLAMP ALIGNMENT, Headlamp Adjustment
Headlamp vertical adjusting bolt	25-30 ft-lbs	33.9-40.7 Nm	1.26 HEADLAMP ALIGNMENT, Headlamp Adjustment/FXSTC, FXCW/C
Headlamp vertical adjusting bolt	25-35 ft-lbs	33.9-47.5 Nm	1.26 HEADLAMP ALIGNMENT, Headlamp Adjustment/FLSTSB
Headlamp vertical adjusting bolt	35-45 ft-lbs	47.5-61.0 Nm	1.26 HEADLAMP ALIGNMENT, Headlamp Adjustment/All but FLSTSB, FXSTC, FXCW/C
Lower fork stem pinch bolts	30-35 ft-lbs	40.7-47.5 Nm	1.21 STEERING HEAD BEARINGS: ALL BUT FLSTSB, Adjustment: FLST, FLSTC, FLSTF, FLSTN
Lower fork stem pinch bolts	30-35 ft-lbs	40.7-47.5 Nm	1.21 STEERING HEAD BEARINGS: ALL BUT FLSTSB, Adjustment: FLST, FLSTC, FLSTF, FLSTN
Lower triple tree pinch bolt	30-35 ft-lbs	40.7-47.5 Nm	1.21 STEERING HEAD BEARINGS: ALL BUT FLSTSB, Adjustment: FXST, FXSTB, FXSTC, FXCW/C
Lower triple tree pinch bolt	30-35 ft-lbs	40.7-47.5 Nm	1.21 STEERING HEAD BEARINGS: ALL BUT FLSTSB, Adjustment: FXST, FXSTB, FXSTC, FXCW/C
Master cylinder reservoir cover fastener	6-8 **in-lbs**	0.7-0.9 Nm	1.3 MAINTENANCE SCHEDULE, General
Master cylinder reservoir cover screw	6-8 **in-lbs**	0.7-0.9 Nm	1.7 BRAKES, Fluid Inspection
Master cylinder reservoir cover screw	6-8 **in-lbs**	0.7-0.9 Nm	1.17 BRAKE PADS AND DISCS, Brake Pad Replacement
Master cylinder reservoir cover screw	6-8 **in-lbs**	0.7-0.9 Nm	1.17 BRAKE PADS AND DISCS, Brake Pad Replacement
Master Cylinder Reservoir Cover Screw	6-8 **in-lbs**	0.7-0.9 Nm	1.16 BLEEDING BRAKES, Procedure
Mounting bolt and slider pin, rear caliper	10-14 ft-lbs	13.6-18.9 Nm	1.17 BRAKE PADS AND DISCS, Brake Pad Replacement
Pad pin, rear caliper	80-120 **in-lbs**	9.0-13.6 Nm	1.17 BRAKE PADS AND DISCS, Brake Pad Replacement
Primary chaincase drain plug	14-21 ft-lbs	19-28 Nm	1.3 MAINTENANCE SCHEDULE, General
Primary chaincase drain plug	14-21 ft-lbs	19.0-28.5 Nm	1.10 PRIMARY CHAIN, Changing Primary Chain-case Lubricant
Rear axle nut	95-105 ft-lbs	128.8-142.4 Nm	1.14 REAR BELT DEFLECTION, Adjustment
Rear fork pivot nut	90-110 ft-lbs	122.0-149.1 Nm	1.28 ENGINE MOUNTS, Inspection
Rigid fork pivot stud	25-35 **in-lbs**	2.8-4.0 Nm	1.23 ROCKER BEARINGS: FLSTSB, Inspection
Rocker pivot stud acorn nut	45-50 ft-lbs	61.0-67.8 Nm	1.23 ROCKER BEARINGS: FLSTSB, Inspection
Spark plug	12-18 ft-lbs	16-24 Nm	1.3 MAINTENANCE SCHEDULE, General
Spark plug	12-18 ft-lbs	16.3-24.4 Nm	1.20 SPARK PLUGS, Inspection
Spoke nipple	55 **in-lbs**	6.2 Nm	1.9 TIRES AND WHEELS, Wheel Spokes
Starter nut	70-90 **in-lbs**	7.9-10.2 Nm	1.18 BATTERY MAINTENANCE, Installation and Connection
Steel laced wheel spoke nipple	55 **in-lbs**	6.2 Nm	1.3 MAINTENANCE SCHEDULE, General
Transmission drain plug	14-21 ft-lbs	19-28 Nm	1.3 MAINTENANCE SCHEDULE, General

FASTENER	TORQUE VALUE		NOTES
Transmission drain plug	14-21 ft-lbs	19.0-28.5 Nm	1.11 TRANSMISSION LUBRICANT, Changing Transmission Lubricant
Transmission filler plug	25-75 **in-lbs**	2.8-8.5 Nm	1.11 TRANSMISSION LUBRICANT, Changing Transmission Lubricant
Transmission filler plug torque	25-75 **in-lbs**	3-9 Nm	1.3 MAINTENANCE SCHEDULE, General
Upper engine mounting to cylinder head bolts	35-40 ft-lbs	47.5-54.3 Nm	1.28 ENGINE MOUNTS, Inspection
Upper engine to frame mounting bolt	45-50 ft-lbs	61.0-67.8 Nm	1.28 ENGINE MOUNTS, Inspection
Upper fork stem pinch bolt	25-30 ft-lbs	33.9-40.7 Nm	1.21 STEERING HEAD BEARINGS: ALL BUT FLSTSB, Adjustment: FLST, FLSTC, FLSTF, FLSTN
Upper fork stem pinch bolt	25-30 ft-lbs	33.9-40.7 Nm	1.21 STEERING HEAD BEARINGS: ALL BUT FLSTSB, Adjustment: FLST, FLSTC, FLSTF, FLSTN
Upper fork stem pinch bolt	25-30 ft-lbs	33.9-40.7 Nm	1.22 STEERING HEAD BEARINGS: FLSTSB, Adjustment: FLSTSB
Upper fork stem pinch bolt	25-30 ft-lbs	33.9-40.7 Nm	1.22 STEERING HEAD BEARINGS: FLSTSB, Adjustment: FLSTSB
Upper triple tree pinch bolt	25-30 ft-lbs	33.9-40.7 Nm	1.21 STEERING HEAD BEARINGS: ALL BUT FLSTSB, Adjustment: FXST, FXSTB, FXSTC, FXCW/C
Upper triple tree pinch bolt	25-30 ft-lbs	33.9-40.7 Nm	1.21 STEERING HEAD BEARINGS: ALL BUT FLSTSB, Adjustment: FXST, FXSTB, FXSTC, FXCW/C

SERVICING A NEW MOTORCYCLE

⚠WARNING

Perform the service and maintenance operations as indicated in the regular service interval table. Lack of regular maintenance at the recommended intervals can affect the safe operation of your motorcycle, which could result in death or serious injury. (00010a)

Service operations to be performed before customer delivery are specified in the applicable model year predelivery and set-up instructions.

The performance of new motorcycle initial service is required to keep warranty in force and to verify proper emissions systems operation. See 1.3 MAINTENANCE SCHEDULE.

SAFE OPERATING MAINTENANCE

NOTES

- *Do not attempt to retighten engine head bolts. Retightening can cause engine damage.*
- *During the initial break-in period, use only Harley-Davidson 20W50 engine oil. Failure to use the recommended oil will result in improper break-in of the engine cylinders and piston rings.*

A careful check of certain equipment is necessary after periods of storage, and frequently between regular service intervals, to determine if additional maintenance is required.

Check:

1. Tires for abrasions, cuts and correct pressure.
2. Secondary drive belt for proper tension and condition.
3. Brakes, steering and throttle for responsiveness.
4. Brake fluid level and condition. Hydraulic lines and fittings for leaks. Also, check brake pads and rotors for wear.
5. Cables for fraying, crimping and free operation.
6. Engine oil and transmission fluid levels.
7. Headlamp, auxiliary lamp, tail lamp, brake lamp, horn and turn signal operation.

SHOP PRACTICES

Repair Notes

General maintenance practices are given in this section.

NOTES

- *Repair = Disassembly/Assembly.*
- *Replacement = Substitute a **new** part for existing component.*

All special tools and torque values are noted at the point of use.

All required parts or materials can be found in the appropriate PARTS CATALOG.

Safety

Safety is always the most important consideration when performing any job. Be sure you have a complete understanding of the task to be performed. Use common sense. Use the proper tools. Protect yourself and bystanders with approved eye protection. Don't just do the job - do the job safely.

Removing Parts

Always consider the weight of a part when lifting. Use a hoist whenever necessary. Do not lift heavy parts by hand. A hoist and adjustable lifting beam or sling are needed to remove some parts. The lengths of chains or cables from the hoist to the part should be equal and parallel and should be positioned directly over the center of the part. Be sure that no obstructions will interfere with the lifting operation. Never leave a part suspended in mid-air.

⚠WARNING

Be sure to check capacity rating and condition of hoists, slings, chains and cables before use. Exceeding capacity ratings or using lifting devices that are in poor condition can lead to an accident, which could result in death or serious injury. (00466c)

Always use blocking or proper stands to support the part that has been hoisted. If a part cannot be removed, verify that all bolts and attaching hardware have been removed. Check to see if any parts are in the way of the part being removed.

When removing hoses, wiring or tubes, always tag each part to verify proper installation.

Cleaning

If you intend to reuse parts, follow good shop practice and thoroughly clean the parts before assembly. Keep all dirt out of parts; the unit will perform better and last longer. Seals, filters and covers are used in this vehicle to keep out environmental dirt and dust. These items must be kept in good condition to guarantee satisfactory operation.

When you are instructed in a step to clean fastener threads or threaded holes, proceed as follows: Clean all LOCTITE material from fastener threads and threaded holes. Use a wire brush to clean fastener threads. Use a thread chaser or other suitable tool to clean threaded holes. Use PJ-1 cleaner or equivalent to remove all traces of oil and contaminants from threads. Blow out all threaded holes with low pressure compressed air.

Clean and inspect all parts as they are removed. Be sure all holes and passages are clean and open. After cleaning, cover all parts with clean lint-free cloth, paper or other material. Be sure the part is clean when it is installed.

Always clean around lines or covers before they are removed. Plug, tape or cap holes and openings to keep out dirt, dust and debris.

Always verify cleanliness of blind holes before assembly. Tightening a screw with dirt, water or oil in the hole can cause castings to crack or break.

Disassembly and Assembly

Always assemble or disassemble one part at a time. Do not work on two assemblies simultaneously. Be sure to make all necessary adjustments. Recheck your work when finished. Be sure that everything is done.

Operate the vehicle to perform any final check or adjustments. If all is correct, the vehicle is ready to go back to the customer.

Checking Torques on Fasteners

Attempt to turn the fastener using a torque wrench set to the minimum torque specification for that fastener. If the fastener does not rotate, the fastener torque has been maintained. If the fastener rotates, remove it to determine if it is a lock-patch type.

If it has a locking agent, clean all locking material from the threaded hole. Replace the fastener with a new one or clean the original fastener threads and apply the appropriate Loctite product (see appropriate procedure). Install and tighten the fastener to specification.

If the fastener is not lock-patch type, install and tighten to specification.

Magnetic Parts Trays

Magnetic parts trays are becoming common in the service facility because they are convenient and can keep parts from becoming lost during a repair procedure.

However, hardened steel parts can become magnetized when held in magnetic parts trays. Metal fragments that would ordinarily be washed away in the oil and trapped in the oil filter or magnetic drain plug during vehicle operation could be captured by magnetized parts in the engine, potentially causing accelerated engine wear and damage.

Parts that will be returned to service inside the vehicle's powertrain such as gears, thrust washers and especially bearings should never be kept in magnetic parts trays.

REPAIR AND REPLACEMENT PROCEDURES

Hardware and Threaded Parts

Install helical thread inserts when inside threads in castings are stripped, damaged or not capable of withstanding specified torque.

Replace bolts, nuts, studs, washers, spacers and small common hardware if missing or in any way damaged. Clean up or repair minor thread damage with a suitable tap or die.

Replace all damaged or missing lubrication fittings.

Use Teflon pipe sealant or LOCTITE 565 THREAD SEALANT on pipe fitting threads.

Threadlocking Agents

Always follow specific service manual procedures when working with fasteners containing preapplied threadlocking agents when fastener replacement is recommended. When re-using fasteners containing threadlocking agents, be sure to completely remove all existing threadlocking agent from fastener threads with a wire brush or wire wheel. Also, be sure to remove residual threadlocking agent from fastener hole using an appropriate thread chasing device and compressed air when using new or existing fasteners. Always use the recommended threadlocking agent for your specific procedure.

Wiring, Hoses and Lines

Hoses, clamps, electrical wiring, electrical switches or fuel lines if they do not meet specifications.

Instruments and Gauges

Replace broken or defective instruments and gauges. Replace dials and glass that are so scratched or discolored that reading is difficult.

Bearings

Anti-friction bearings must be handled in a special way. To keep out dirt and abrasives, cover the bearings as soon as they are removed from the package.

Wash bearings in a non-flammable cleaning solution. Knock out packed lubricant inside by tapping the bearing against a wooden block. Wash bearings again. Cover bearings with clean material after setting them down to dry. Never use compressed air to dry bearings.

Coat bearings with clean oil. Wrap bearings in clean paper.

When bearings are installed against shoulders, be sure that the chamfered side of the bearing always faces the shoulder. Lubricate bearings and all metal contact surfaces before pressing into place. Only apply pressure on the part of the bearing that makes direct contact with the mating part. Install bearings with numbered side facing out.

Always use the proper tools and fixtures for removing and installing bearings.

Bearings do not usually need to be removed. Only remove bearings if necessary.

Bushings

Do not remove a bushing unless damaged, excessively worn or loose in its bore. Press out bushings that must be replaced.

When pressing or driving bushings, be sure to apply pressure in line with the bushing bore. Use a bearing/bushing driver or a bar with a smooth, flat end. Never use a hammer to drive bushings.

Inspect the bushing and the mated part for oil holes. Be sure all oil holes are properly aligned.

Gaskets

Always discard gaskets after removal. Replace with **new** gaskets. Never use the same gasket twice. Be sure that gasket holes match up with holes in the mating part. But be aware that sections of a gasket may be used to seal passages.

If a gasket must be made, be sure to cut holes that match up with the mating part. Serious damage can occur if any flange holes are blocked by the gasket. Use material that is the right type and thickness.

Lip Type Seals

Lip seals are used to seal oil or grease and are usually installed with the sealing lip facing the contained lubricant. Seal orientation, however, may vary under different applications.

Seals should not be removed unless necessary. Only remove seals if required to gain access to other parts or if seal damage or wear dictates replacement.

Leaking oil or grease usually means that a seal is damaged. Replace leaking seals to prevent overheated bearings.

Always discard seals after removal. Do not use the same seal twice.

O-Rings (Preformed Packings)

Always discard o-rings after removal. Replace with **new** o-rings. To prevent leaks, lubricate the o-rings before installation. Apply the same type of lubricant as that being sealed. Be sure that all gasket, o-ring and seal mating surfaces are thoroughly clean before installation.

Gears

Always check gears for damaged or worn teeth.

Remove burrs and rough spots with a honing stone or crocus cloth before installation.

Lubricate mating surfaces before pressing gears on shafts.

Shafts

If a shaft does not come out easily, check that all nuts, bolts or retaining rings have been removed. Check to see if other parts are in the way before using force.

Shafts fitted to tapered splines should be very tight. If shafts are not tight, disassemble and inspect tapered splines. Discard parts that are worn. Be sure tapered splines are clean, dry and free of burrs before putting them in place. Press mating parts together tightly.

Clean all rust from the machined surfaces of new parts.

Part Replacement

Always replace worn or damaged parts with **new** parts.

Exhaust System Leakage

In the event of an exhaust system leak at a muffler or header pipe connection location, disassemble and clean all mating surfaces. Replace any damaged components. If leak still exists, disassemble and repair the leak by applying a bead of Harley-Davidson High-Performance Sealant (Part No. 99650-02) (or an equivalent 02 Sensor/Catalyst-safe alternative). Reassemble components, wipe off any excess sealant and allow adequate curing time following sealant product instructions before operating vehicle.

CLEANING

Part Protection

Before cleaning, protect rubber parts (such as hoses, boots and electrical insulation) from cleaning solutions. Use a grease-proof barrier material. Remove the rubber part if it cannot be properly protected.

Cleaning Process

Any cleaning method may be used as long as it does not result in parts damage. Thorough cleaning is necessary for proper parts inspection. Strip rusted paint areas to bare metal before priming and repainting.

Rust or Corrosion Removal

Remove rust and corrosion with a wire brush, abrasive cloth, sand blasting, vapor blasting or rust remover. Use buffing crocus cloth on highly polished parts that are rusted.

Bearings

Remove shields and seals from bearings before cleaning. Clean bearings with permanent shields and seals in solution.

⚠WARNING

Using compressed air to "spin dry" bearings can cause bearing to fly apart, which could result in death or serious injury. (00505b)

Clean open bearings by soaking them in a petroleum cleaning solution. Never use a solution that contains chlorine.

Let bearings stand and dry. Do not dry with compressed air. Do not spin bearings while they are drying.

TOOL SAFETY

Air Tools

- Always use approved eye protection equipment when performing any task using air-operated tools.
- On all power tools, use only recommended accessories with proper capacity ratings.
- Do not exceed air pressure ratings of any power tools.
- Bits should be placed against work surface before air hammers are operated.
- Disconnect the air supply line to an air hammer before attaching a bit.
- Never point an air tool at yourself or another person.
- Protect bystanders with approved eye protection.

Wrenches

- Never use an extension on a wrench handle.
- If possible, always pull on a wrench handle and adjust your stance to prevent a fall if something lets go.
- Never cock a wrench.
- Never use a hammer on any wrench other than a STRIKING FACE wrench.
- Discard any wrench with broken or battered points.
- Never use a pipe wrench to bend, raise or lift a pipe.

Pliers/Cutters/Pry bars

- Plastic- or vinyl-covered pliers handles are not intended to act as insulation. Do not use on live electrical circuits.
- Do not use pliers or cutters for cutting hardened wire unless they were designed for that purpose.
- Always cut at right angles.
- Do not use any pry bar as a chisel, punch or hammer.

Hammers

- Never strike a hammer against a hardened object, such as another hammer.
- Always grasp a hammer handle firmly, close to the end.
- Strike the object with the full face of the hammer.
- Never work with a hammer which has a loose head.
- Discard hammer if face is chipped or mushroomed.
- Wear approved eye protection when using striking tools.
- Protect bystanders with approved eye protection.

Punches/Chisels

- Never use a punch or chisel with a chipped or mushroomed end; dress mushroomed chisels and punches with a file.
- Hold a chisel or a punch with a tool holder if possible.
- When using a chisel on a small piece, clamp the piece firmly in a vise and chip toward the stationary jaw.
- Wear approved eye protection when using these tools.
- Protect bystanders with approved eye protection.

Screwdrivers

- Do not use a screwdriver for prying, punching, chiseling, scoring or scraping.
- Use the right type of screwdriver for the job; match the tip to the fastener.
- Do not interchange POZIDRIV, PHILLIPS or REED AND PRINCE screwdrivers.
- Screwdriver handles are not intended to act as insulation. Do not use on live electrical circuits.
- Do not use a screwdriver with rounded edges because it will slip. Redress with a file.

Ratchets and Handles

- Periodically clean and lubricate ratchet mechanisms with a light grade oil. Do not replace parts individually; ratchets should be rebuilt with the entire contents of service kit.
- Never hammer or put a pipe extension on a ratchet or handle for added leverage.
- Always support the ratchet head when using socket extensions, but do not put your hand on the head or you may interfere with the action of its reversing mechanism.
- When breaking loose a fastener, apply a small amount of pressure as a test to be sure the ratchet's gear wheel is engaged with the pawl.

Sockets

- Never use hand sockets on power or impact wrenches.
- Select the right size socket for the job.
- Never cock any wrench or socket.
- Select only impact sockets for use with air or electric impact wrenches.
- Replace sockets showing cracks or wear.
- Keep sockets clean.
- Always use approved eye protection when using power or impact sockets.

Storage Units

- Do not open more than one loaded drawer at a time. Close each drawer before opening up another.
- Close lids and lock drawers and doors before moving storage units.
- Do not pull on a tool cabinet; push it in front of you.
- Set the brakes on the locking casters after the cabinet has been rolled to your workspace.

MAINTENANCE SCHEDULE 1.3

GENERAL

The table below lists the periodic maintenance requirements for Softail model motorcycles. If you are familiar with the procedures, just refer to the table for the recommended service interval. If necessary, see the quick reference table (Table 1-2) for the required specifications.

If more detailed information is needed, turn to the sections which follow for step-by-step instructions.

Also, throughout this manual, you will be instructed to use various lubricants, greases and sealants. Refer to Table 1-3. for the correct part numbers of these items.

Table 1-1. Regular Service Intervals: 2009 Softail Models

ITEM SERVICED	PROCEDURE	1000 MI. 1600 KM	5000 MI. 8000 KM	10,000 MI. 16,000 KM	15,000 MI. 24,000 KM	20,000 MI. 32,000 KM	25,000 MI. 40,000 KM	NOTES
Engine oil and filter	Replace	X	X	X	X	X	X	
Oil lines and brake system	Inspect for leaks	X	X	X	X	X	X	1
Air cleaner	Inspect, service as required	X	X	X	X	X	X	
Tires	Check pressure, inspect tread	X	X	X	X	X	X	
Wheel spokes	Check tightness	X	X			X		1, 4
Primary chaincase lubricant	Replace	X		X		X		
Transmission lubricant	Replace	X				X		
Clutch	Check adjustment	X	X	X	X	X	X	1
Rear belt and sprockets	Inspect, adjust belt	X	X	X	X	X	X	1
Throttle, brake, and clutch controls	Check, adjust and lubricate	X	X	X	X	X	X	1
Jiffy stand	Inspect and lubricate	X		X		X		1
Fuel lines and fittings	Inspect for leaks	X	X	X	X	X	X	1
Fuel filter in fuel tank	Replace						X	1
Brake fluid	Check levels and condition	X	X	X	X	X	X	6
Brake pads and discs	Inspect for wear	X	X	X	X	X	X	
Spark plugs	Inspect	X	X	X	X	X	X	
	Replace					X		
Electrical equipment and switches	Check operation	X	X	X	X	X	X	
Engine idle speed	Check adjustment	X	X	X	X	X	X	1
Front fork oil	Replace	Replace at 50,000 miles (80,000 kilometers).						1
Steering head bearings (Softail models)	Adjust	X		X		X		1
	Lubricate			X		X		2
Steering head bearings (Springer models)	Adjust	Adjust and lubricate every 2500 miles (4000 kilometers).						1, 5
Windshield bushings	Inspect			X		X		1
Springer rocker bearings	Adjust	X		X		X		1, 7
Critical fasteners	Check tightness	X		X		X		1
Battery	Check battery and clean connections							3
Exhaust system	Inspect for leaks, cracks, and loose or missing fasteners or heat shields	X	X	X	X	X	X	3
Road test	Verify component and system functions	X	X	X	X	X	X	
NOTES:	1. Should be performed by an authorized Harley-Davidson dealer, unless you have the proper tools, service data and are mechanically qualified. 2. Disassemble, lubricate and inspect every 30,000 miles (48,000 kilometers). 3. Perform annually. 4. Not all vehicles are equipped with spoke wheels. Consult appropriate topic in service manual. 5. Disassemble, lubricate and inspect every 20,000 miles (32,000 kilometers). 6. Change D.O.T. 4 fluid and flush brake system every two years. 7. Adjust at 500 miles (800 kilometers).							

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