Starting the Engine

9. Leave the throttle closed and allow the engine to idle. Idle speed will gradually slow to normal as the engine warms to operating temperature.

Tip: *Do not rev the engine or put the transmission in gear immediately after starting the engine. Allow the engine to idle for about 30 seconds after a warm start or at least one minute after a cold start (longer in cold weather). This will allow oil to reach all areas before the engine is put under load.*

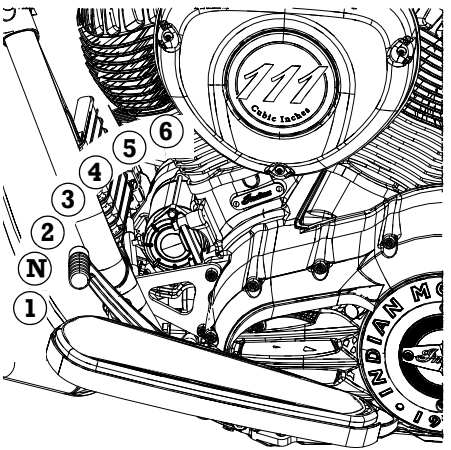
NOTICE: *Do not run the engine at high RPM with the clutch disengaged or the transmission in neutral. Maximum safe engine speed is 5400 RPM. Never exceed the maximum safe RPM as this could result in serious engine damage.*

NOTICE: *The engine is air-cooled and requires unrestricted air flow to ensure proper operating temperature. Long periods of idling or traveling at very low speeds (such as during a parade) may overheat the engine, resulting in serious engine damage.*

Operation
Shifting Gears

WARNING! *Forced shifting (with clutch engaged) could cause damage to the engine, transmission and drive train. Such damage could cause loss of control, which could result in serious injury or death. Always pull the clutch lever fully toward the handlebars to disengage the clutch before shifting gears.*

This motorcycle is equipped with a six-speed transmission. Neutral is located between first and second gear.



Press downward on the toe lever to shift to a lower gear. Lift upward on the toe lever to shift to a higher gear. Release the clutch lever after each gear shift.

Shifting to neutral is easiest if the motorcycle is rolling slowly. To shift from first gear to neutral, gently lift the toe lever a half stroke.

Tip: *The transmission is in neutral if you can move the motorcycle forward or rearward freely without disengaging the clutch. If the power switch is ON, the neutral indicator illuminates when the transmission is in neutral.*

Shifting Gears While Stationary

To locate neutral when the motorcycle is stationary, use one of the following techniques to load and unload the transmission shift dogs, which allows them to disengage:

1. With the clutch disengaged (lever pulled inward), shift into neutral while rocking the motorcycle forward and rearward.
2. With the transmission in first gear, gently release the clutch until it just begins to engage. Apply upward pressure on the toe lever and quickly pull the clutch inward.

To shift gears when the motorcycle is stationary (engine may be running or stopped), disengage the clutch and apply slight pressure on the shift lever while rocking the motorcycle forward and rearward.

Shifting Gears

Shifting Gears While Driving

1. Start the engine. See page 70.
2. With the engine at idle speed, apply the front brakes.
3. Disengage the clutch (pull the clutch lever fully toward the handlebar).
4. Push the toe lever downward until you feel it stop in first gear.
5. Release the brake lever.
6. Simultaneously release the clutch lever while opening the throttle (rolling the throttle control grip rearward) in one smooth motion. As the clutch begins to engage, the motorcycle will move forward.
7. To shift to a higher gear, accelerate smoothly to the recommended shift point. See *Recommended Shift Points* chart. With a quick motion, simultaneously close the throttle completely and disengage the clutch. Raise the toe shift lever until you feel it stop at the next gear. Simultaneously release the clutch lever and open the throttle in one smooth motion.

Tip: *Within the recommended speed ranges (see Recommended Shift Points chart), you can downshift to slow the motorcycle or to increase power. You may want to downshift when climbing a hill or passing. Downshifting also helps to decrease speed when combined with closing the throttle.*

8. To shift to a lower gear (downshift), simultaneously pull the clutch lever toward the handlebar and close the throttle. Move the toe shift lever downward until you feel it stop at the next gear. Simultaneously release the clutch lever while opening the throttle.

WARNING! *Downshifting improperly could cause transmission damage, loss of traction and loss of control, which could result in serious injury or death.*

- *Reduce speed before downshifting. Always downshift within the recommended shift points.*
- *Use extreme caution when downshifting on wet, slippery or other low traction surfaces. Release the clutch lever very gradually in these conditions.*
- *Avoid downshifting in a curve. Downshift before entering the curve.*

Shifting Gears

Recommended Shift Points

Upshifting (Accelerating)			Downshifting (Decelerating)	
Gear Change	**Recommended Speed**		**Gear Change**	**Recommended Speed**
1 to 2	15 MPH (24 km/h)		6 to 5	40 MPH (64 km/h)
2 to 3	25 MPH (40 km/h)		5 to 4	35 MPH (56 km/h)
3 to 4	35 MPH (56 km/h)		4 to 3	25 MPH (40 km/h)
4 to 5	45 MPH (72 km/h)		3 to 2	15 MPH (24 km/h)
5 to 6	50 MPH (80 km/h)		2 to 1	10 MPH (16 km/h)

Braking

Always allow sufficient stopping distance so that brakes can be applied gradually.

Tip: *Applying slightly more front brake than rear brake generally provides the best braking performance.*

1. To slow the motorcycle with the brakes, close the throttle and apply the front and rear brakes evenly and gradually.

Tip: *When the anti-lock brakes engage during a braking event, the rider will feel pulsing at the brake levers. Continue to apply steady pressure to the brakes for the best stopping performance.*

2. As the motorcycle slows, disengage the clutch, or downshift each time vehicle speed reaches a downshift point.

WARNING! *Braking improperly could result in loss of control, which could result in serious injury or death. Avoid braking abruptly. Always apply the brakes gradually, especially on wet, slippery or other low traction surfaces. Avoid braking in a curve or turn. Bring the motorcycle to the upright position before applying the brakes.*

Accelerating

Accelerate by opening the throttle (rolling the throttle control grip rearward). For even acceleration, open the throttle with a smooth, continuous motion. When you reach the recommended speed for upshifting, shift up one gear.

WARNING! *Accelerating abruptly could cause your body to shift rearward suddenly, which could result in loss of control. Accelerating abruptly could also cause loss of control on low traction surfaces. Loss of control could result in serious injury or death. Always accelerate gradually, especially on wet, slippery or other low traction surfaces.*

Stopping the Engine

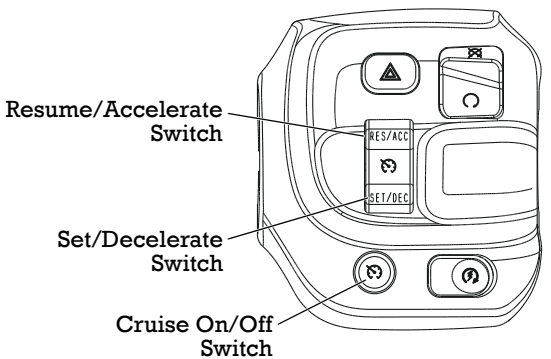
Before stopping the engine, bring the motorcycle to a complete stop. Shift to neutral or disengage the clutch.

WARNING! *Stopping the engine with the transmission in gear while the motorcycle is moving could cause loss of rear wheel traction or engine and transmission damage, which could cause loss of control and serious injury or death. Always stop the engine after the motorcycle is fully stopped and the transmission is in neutral. If the engine stops unexpectedly while the motorcycle is moving, guide the motorcycle to a safe location off the road and away from traffic. Turn the power switch off.*

1. When fully stopped, shift into neutral.
2. Move the engine stop/run switch to the STOP position.
3. Turn the power switch off.

Operation
Using Cruise Control

The cruise control switches are located on the right handlebar. Read this section and understand how to safely operate this feature before using the cruise control.



WARNING! *Improper operation of cruise control could cause loss of control and result in serious injury or death. Follow all cruise operation procedures carefully. Never use cruise control when roads are wet or slippery. Do not use cruise control when riding in heavy or congested traffic.*

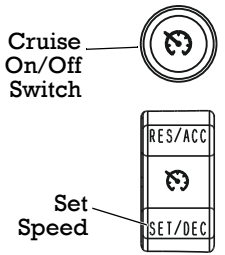
Cruise Control Tips

- *Cruise control can be set in gears 4-6.*
- *Vehicle speed must be above 20 MPH (32 km/h).*
- *Set speed will vary slightly in hilly terrain.*
- *Cruise control will not resume a pre-set speed if the resulting acceleration or deceleration rate is too high or too low. For example, resuming a set speed from 40 MPH (64 km/h) while in 6th gear may cause cruise to disengage.*
- *Cruise control will not engage if brake lights are not operating properly.*
- *The clutch or either brake must have been activated at least once since the engine was started for the cruise control to function.*

Using Cruise Control

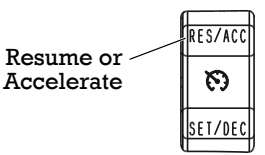
Set Speed

1. Press and release the cruise on/off switch. The amber cruise control indicator will illuminate in the instrument cluster. Cruise control is enabled, but not set.
2. Accelerate to the desired speed and press the SET/DEC switch. The green cruise control indicator lamp will illuminate. Cruise control is set to the desired speed.



Resume Speed

After disengaging the cruise control with the brake, throttle or clutch, press the RES/ACC switch to return to the set speed.



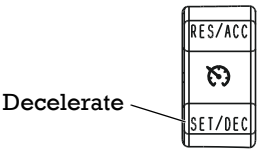
Accelerate

While cruise control is engaged, tap and release the RES/ACC switch to increase speed in approximately 1 MPH (1-2 km/h) increments. Press and hold the RES/ACC switch to accelerate to a new set speed (resets when switch is released).

Tip: *If you use the throttle to accelerate and then release it, the cruise control will resume the previously set speed.*

Decelerate

While cruise control is engaged, tap and release the SET/DEC switch to decrease speed in approximately 1 MPH (1-2 km/h) increments. Press and hold the SET/DEC switch to decelerate to a new set speed (resets when switch is released), or to the minimum cruise speed of 20 MPH (32 km/h).



Cancel Cruise Control

To temporarily cancel the cruise control and allow use of the resume feature:

- apply the brakes or
- close the throttle
- disengage the clutch

To cancel the cruise control and erase the set speed from memory, press the cruise on/off switch.

Parking

Choose a firm level surface to park the motorcycle.

1. When fully stopped, shift into neutral.
2. Stop the engine.
3. Fully extend the sidestand.
4. Turn the handlebars to the left and lean the motorcycle to the left until the sidestand firmly supports the motorcycle.
5. Turn the power switch off.

Parking on a Slope

If parking on a slope is unavoidable, park with the front wheel uphill from the rear wheel. Place the transmission in first gear and position the motorcycle so that it is stable when it rests on the sidestand.

Parking on a Soft Surface

If parking on a soft surface is unavoidable, place a sidestand footrest under the foot of the sidestand to provide a firm surface. The sidestand footrest must be strong enough and large enough to support the motorcycle's weight without sinking into the parking surface.

Asphalt becomes soft in hot weather. A sidestand can sink into soft asphalt and the motorcycle may fall. When parking on asphalt in hot weather, use a sidestand footrest.

CAUTION! *Hot engine and exhaust components can cause burns to skin and can ignite a fire if exposed to flammable materials. Always park the motorcycle clear of flammable materials and where people are not likely to contact hot components.*

Safety During Service Procedures

⚠ WARNING

Failure to follow all recommended precautions and procedures could result in severe injury or death. Always heed all safety precautions and follow all operation, inspection and maintenance procedures outlined in this manual.

- *Improperly installed or adjusted components can make the motorcycle unstable or hard to handle. Improperly installed electrical components can cause engine or electrical system failure. In either event, damage or serious injury could result. If you do not have the time, tools and expertise necessary to complete a procedure properly, please see your dealer for service.*
- *Review the safety-related maintenance information on page 15.*
- *Before beginning any maintenance procedure, read the instructions for the entire procedure.*
- *Always position the motorcycle on a firm level surface before performing service. Make sure the motorcycle will not tip or fall while elevated or while on the sidestand.* See page 116.
- *Hot engine and exhaust components can cause burns to skin and can ignite a fire if exposed to flammable materials. Always park the motorcycle clear of flammable materials and where people are not likely to contact hot components.*
- *Wear eye and face protection when using pressurized air.*
- *Never start the engine or let it run in an enclosed area. Engine exhaust fumes are poisonous and can cause loss of consciousness or death in a short time.*
- *During some procedures you may use potentially hazardous products such as oil or brake fluid. Always follow the instructions and warnings on the product packaging.*

Maintenance

Proper maintenance assures the highest level of safety, durability and dependability for your motorcycle. Break-in maintenance is required to ensure warranty coverage and proper emissions system operation.

- Perform the *break-in maintenance procedures* when the motorcycle's odometer registers 500 miles (800 km). Please see your authorized dealer for this service.
- Perform the recommended *periodic maintenance* at the intervals specified in the periodic maintenance table beginning on page 82.

Road Tests

Before returning the motorcycle to regular use after performing service, road test it in a safe environment. Pay special attention to the proper fit and operation of all serviced components. Make any corrections or additional adjustments necessary to ensure safe vehicle performance.

Break-In Maintenance

Perform the break-in maintenance procedures when the motorcycle's odometer registers 500 miles (800 km). Please see your authorized dealer for this service.

Performing the break-in maintenance will help ensure optimum engine performance for the entire service life of the engine. Your dealer will change engine oil, inspect all fluids and serviceable components, ensure that all fasteners are tightened and make other adjustments as needed.

Major Maintenance

Major repairs typically require technical skills and specially designed tools. Emission system service requires special tools and training and should be performed by your dealer. See the *INDIAN MOTORCYCLE Service Manual* or an authorized INDIAN MOTORCYCLE dealer.

Periodic Maintenance

Inspect, clean, lubricate, adjust and replace parts as necessary. When inspection reveals the need for replacement parts, use genuine INDIAN MOTORCYCLE parts available from your dealer. Record service and maintenance information in the Maintenance Log beginning on page 141.

NOTICE: *Use of non-recommended lubricants and components can result in damage to the motorcycle. Damage resulting from the use of non-recommended products is not covered by warranty.*

Perform maintenance at the intervals specified in the periodic maintenance table beginning on page 82. *Vehicles subjected to severe use must be inspected and serviced more frequently.*

Severe Use Definition

- high speed operation for extended periods
- low speed operation for extended periods
- operation in dusty or otherwise adverse conditions
- operation in cold weather (temperatures below freezing)

Maintenance
Periodic Maintenance Table

	Component See table key below	Page	Odometer Reading in Miles (Kilometers)																					
			500 (800)	2,500 (4,000) & every 5,000 (8,000) thereafter	5,000 (8,000)		10,000 (16,000)		15,000 (24,000)		20,000 (32,000)		25,000 (40,000)		30,000 (48,000)		35,000 (56,000)		40,000 (64,000)		45,000 (72,000)		50,000 (80,000)	
Engine	Key Fob Battery**	-	-	-	-		-		-		-		-		-		-		-		-		-	
	Engine Compression	116	I	-	-		I		-		I		-		I		-		I		-		I	
	Engine Oil & Filter*	84	R	-	R		R		R		R		R		R		R		R		R		R	
	Crankcase Vent	93	I	I	I		I		I		I		I		I		I		I		I		I	
	Engine Mount Fasteners	-	I	-	-		-		-		-		-		-		-		-		-		-	
	Oil Lines/Oil System Inspection	-	I	I	I		I		I		I		I		I		I		I		I		I	
	Air Filter	86	I	I	I		I		R		I		I		R		I		I		R		I	
	Exhaust System	116	I	I	I		I		I		I		I		I		I		I		I		I	
	Spark Plugs	105	I	-					I						R						I			
Chassis	Battery/Connections	110	I	I	I		I		I		I		I		I		I		I		I		I	
	Brake Fluid**	98-99	I	I	I		R		I		R		I		R		I		R		I		R	
	Brake Lines/Brake Pads	100	I	I	I		I		I		I		I		I		I		I		I		I	
	Clutch Cable	96	I	-	I		L		I		L		I		L		I		L		I		L	
	Clutch Lever (Mechanical)	95, 96	L	-	I		L		I		L		I		L		I		L		I		L	
	Diagnostic Codes	-	I	I	I		I		I		I		I		I		I		I		I		I	
	Drive Belt (Rear)	65, 87	I	I	I		I		I		I		I		R		I		I		I		I	
	Drive Belt Tension Adjustment	-	I	-	I	See dealer or service manual for adjustment at indicated intervals and with each tire change thereafter.																			
	Electrical Equipment/Switches	-	I	I	I		I		I		I		I		I		I		I		I		I	
	Evaporative Emission Control System (if equipped)	94	I	I	I		I		I		I		I		I		I		I		I		I	

Maintenance Key: I = Inspect, clean, adjust, correct or replace if necessary; **P** = Perform; **R** = Replace/Rebuild
L = Lubricate w/ proper lubricant; * = Replace at specified interval or annually; ** = Replace as specified or every 2 years

Periodic Maintenance Table

	Component See table key below	Page	500 (800)	2,500 (4,000) & every 5,000 (8,000) thereafter	5,000 (8,000)		10,000 (16,000)		15,000 (24,000)		20,000 (32,000)		25,000 (40,000)		30,000 (48,000)		35,000 (56,000)		40,000 (64,000)		45,000 (72,000)		50,000 (80,000)
Chassis	Fasteners	116	I	I	I		I		I		I		I		I		I		I		I		I
	Front Brake Lever	99	L	I	L		L		L		L		L		L		L		L		L		L
	ABS Components	101	I	I	I		I		I		I		I		I		I		I		I		I
	Front Fork Oil**	92	I		I		I		R		I		I		R		I		I		R		I
	Front Fork/Axle	92	I	I	I		I		I		I		I		I		I		I		I		I
	Fuel System/Lines/Fittings	94	I	I	I		I		I		I		I		I		I		I		I		I
	Fuel Filter	85	-	-	-		-		-		-		-		R		-		-		-		-
	Gear Shift Lever	-	I	I	I		I		I		I		I		I		I		I		I		I
	Headlamp	107	I	I	-		I		-		I		-		I		-		I		-		I
	Rear Suspension Rocker	-	I	I	I		I		L		I		I		L		I		I		L		I
	Rear Shock Unit	65, 88	I	I	I		I		I		I		I		I		I		I		I		R
	Rear Wheel Alignment	102	I	I	I		I		I		I		I		I		I		I		I		I
	Rear Brake Pedal	97	I	I	I		I		I		I		I		I		I		I		I		I
	Road Test	116	P	P	P		P		P		P		P		P		P		P		P		P
	Sidestand/Sidestand Safety Switch	66, 95	L	I	L		I		I		I		I		I		I		I		I		I
	Steering Bearings	93	I	I	I		I		I		I		I		I		I		I		I		I
	Suspension Linkage, Rear	-	I	I	I		I		I		I		I		I		I		I		I		I
	Swingarm/Rear Axle	91	I	I	I		I		I		I		I		I		I		I		I		I
	Throttle Body	-	I	I	I		I		I		I		I		I		I		I		I		I
	Throttle Control Grip	-	L	I	L		L		L		L		L		L		L		L		L		L
	Tires/Wheels/Spokes	102-104	I	I	I		I		I		I		I		I		I		I		I		I

Maintenance Key: I = Inspect, clean, adjust, correct or replace if necessary; **P** = Perform; **R** = Replace/Rebuild
L = Lubricate w/ proper lubricant; * = Replace at specified interval or annually; ** = Replace as specified or every 2 years

Maintenance
Engine Oil/Filter Change

Change the engine oil at the intervals specified in the periodic maintenance table beginning on page 82. Change the oil more frequently if the motorcycle is subjected to severe use, especially operation in cold weather. See page 81.

NOTICE: *Failure to perform frequent oil changes during cold weather operation can result in condensation forming. Freezing condensation can result in plugged oil lines and serious engine damage.*

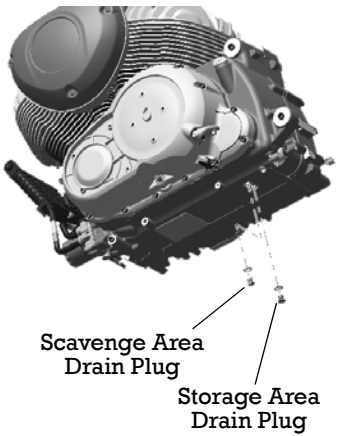
The total amount of oil required for the oil and filter change is approximately 5.5 qts. (5.2 l). Follow all instructions carefully. Do not overfill.

NOTICE: *After an oil change, the low oil pressure indicator may illuminate when the engine is started. If this occurs, do not increase RPM above idle speed until the indicator turns off. Operating above idle speed could result in damage to the engine.*

1. Change the oil and filter when the engine is warm. If the engine is cold, start the engine and allow it to run at idle for at least 5 minutes.
2. Park the motorcycle with the sidestand down on a firm, level surface. If using a service lift, the motorcycle should be centered.
3. Clean the area around the two drain plugs. Place a drain pan under both drain plugs.

CAUTION! *Hot oil can cause burns to skin. Do not allow hot oil to contact skin.*

4. Remove the drain plugs. Allow the oil to drain completely.
5. Install new sealing washers on the drain plugs. The sealing surfaces on drain plugs and engine should be clean and free of burrs, nicks or scratches.



6. Reinstall the drain plugs. Torque to 15 ft. lbs. (20 Nm).

CAUTION! *Hot oil can cause burns to skin. Do not allow hot oil to contact skin. Wear leather gloves when handling hot components.*

7. Place shop towels beneath the oil filter. Using an oil filter wrench, turn the filter counter-clockwise to remove it.

Engine Oil/Filter Change

8. Using a clean dry cloth, clean the filter sealing surface on the engine.
9. Lubricate the o-ring on the new filter with a film of fresh engine oil. Check to make sure the o-ring is in good condition.
10. Install the new filter and rotate it clockwise by hand until the filter gasket contacts the sealing surface, then turn it an additional 3/4 to one full turn.
11. Remove the dipstick. Add only 4.5 qts. (4.25 l) of the recommended oil at this step. *Do not overfill.*
12. Reinstall the dipstick securely.
13. With the motorcycle in an upright, centered position, start the engine and run it at varied speeds up to 2500 RPM for approximately 3 minutes.
14. Stop the engine and add an additional one quart (.95 l) of engine oil. Do not overfill. Overfilling can result in loss of engine performance and an oil-saturated air filter. Use a suction device to remove excess oil if overfilled.
15. To ensure the oil level is within the safe operating range, re-check the oil level as outlined on page 60.

NOTICE: *After an oil change, the low oil pressure indicator may illuminate when the engine is started. If this occurs, do not increase RPM above idle speed until the indicator turns off. Operating above idle speed could result in damage to the engine.*

16. Dispose of used filter and oil properly.
17. CHIEFTAIN: Reset the oil change life in the instrument gauge. See page 40.

Fuel Filter

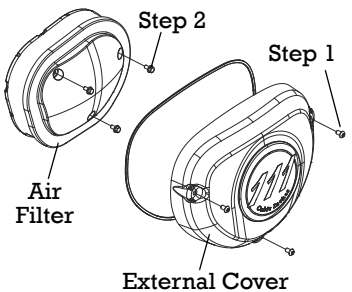
The fuel filter is attached to the electric fuel pump located inside the fuel tank. See your authorized INDIAN MOTORCYCLE dealer for replacement.

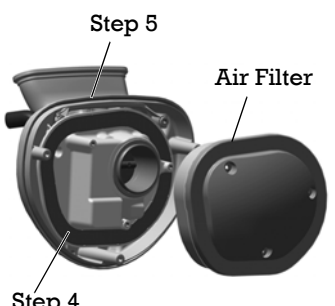
Maintenance

Air Filter

The air box is located on the left side of motorcycle. Inspect the air filter often if riding in unusually wet or dusty conditions. Replace the filter at the intervals specified in the periodic maintenance table beginning on page 82.

1. Remove the three air box cover screws and washers. Remove the cover.
2. Remove the three air filter screws and remove the air filter assembly.
3. Remove the air filter.
4. Clean the filter sealing surface on the backing plate.
5. Verify that the air box cover seal is properly seated in the groove around the outer edge of the air box backing plate.
6. Position the air filter assembly against the air box backing plate.





7. Reinstall the three screws. Torque to specification.

   Torque: 5 ft-lbs (7 Nm)

8. Reinstall the external air box cover and screws. Torque to specification.

   Torque: 7.4 ft-lbs (10 Nm)

NOTICE: *A loose fitting cover or improperly installed filter element may allow debris to enter the engine which may cause premature engine wear.*

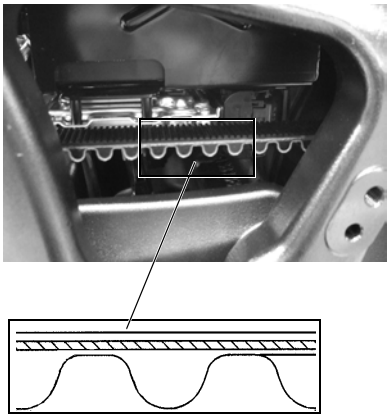
Rear Drive Belt Cleaning

Cleaning the drive belt will maximize belt and sprocket life and minimize drive line noise. Clean the belt at every tire change. Clean the belt more often if riding in dirty, dusty or high debris environments.

1. Mix a few drops of mild dish soap with a cup of warm water.
2. Use a soft nylon brush to clean the belt and sprocket teeth with the soapy water. Clean well in corner areas where road debris and belt dust can collect.
3. Rinse the belt with clear water, then dry thoroughly.

Tip: *Do not inspect or adjust drive belt tension when the belt or drive system is wet or hot. Improper adjustment will result.*

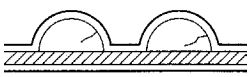
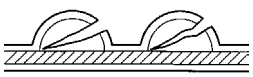
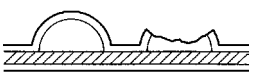
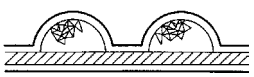
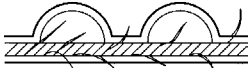
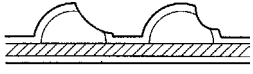
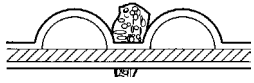
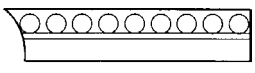
Rear Drive Belt Condition



Inspect the rear drive belt at the intervals specified in the periodic maintenance table beginning on page 82. Replace the drive belt if it is cracked or has broken teeth or frayed edges. No matter its condition, the drive belt should be replaced at periodic intervals. See the *INDIAN MOTORCYCLE Service Manual* or an authorized INDIAN MOTORCYCLE dealer.

DO NOT attempt to check belt tension if the belt has been exposed to rain or washing within a 24 hour period or if the vehicle has been run at operating temperature within the last four hours. Allow the vehicle to cool down to ambient temperature before measuring belt tension. Replace the drive belt and both sprockets as a set if the drive belt has over 5,000 miles (8,000 km) of service at the time of damage or failure.

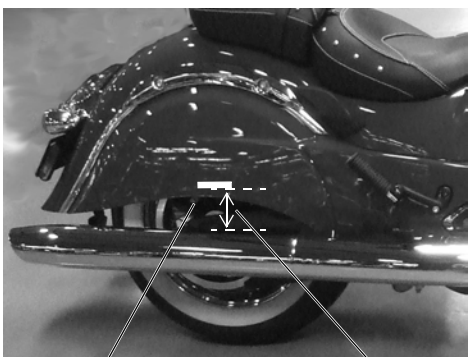
Rear Drive Belt Wear Analysis

			
Internal tooth cracks (hairline): OK to run, but monitor condition	External tooth cracks: Replace belt	Missing teeth: Replace belt	Chipping (not serious): OK to run, but monitor condition
			
Fuzzy edge cord: OK to run, but monitor condition	Hook wear: Replace belt	Stone damage: Replace belt if damage is on edge	Bevel wear (outboard edge only): OK to run, but monitor condition

Rear Shock Preload (Ride Height) Inspection

Periodically inspect rear shock preload. For the most comfortable ride and proper ground clearance, adjust preload if ride height is out of specification.

1. Verify that tire pressure is at specification. See page 104.
2. Secure the motorcycle in an upright position by clamping the front wheel in a wheel vise.
3. Remove the saddlebag (if equipped).
4. Apply a strip of tape to the rear fender directly over the center of the rear axle.



5. Using a suitable lift, raise the motorcycle until the rear shock is completely extended.
6. Measure the distance *(in millimeters)* from the center of the rear axle to the bottom of the tape. Record the results as measurement M1.
7. Lower the motorcycle and remove the lift.
8. Load the motorcycle with all intended cargo. Wearing your riding gear, bring the motorcycle to the upright position and sit on the operator's seat. If you plan to carry a passenger, have the passenger (with riding gear) sit on the passenger seat.
9. Have an assistant measure in the same location. Record the results as measurement M2.
10. Subtract measurement M2 from M1. The result is the measured rider sag. (M1-M2=Sag). Adjust preload as needed.

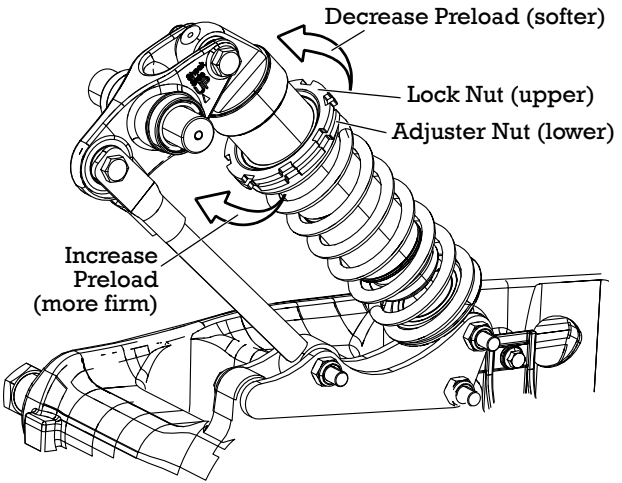
Recommended Suspension Sag		**Adjustment Procedure**
CHIEF	35mm	See page 89.
CHIEFTAIN	45mm	See page 90.

Rear Shock Preload (Ride Height) Adjustment (CHIEF)

1. Park the motorcycle with the sidestand down on a firm, level surface. Remove all riders and cargo.
2. Remove the seat. See page 106.

Tip: *Using the INDIAN MOTORCYCLE spanner wrench PV-46993 will make rear suspension adjustment significantly easier.*

3. The upper spanner nut on the shock is the lock nut. The lower spanner nut is the adjuster nut. Loosen the lock nut by turning it counter-clockwise (as viewed from the top of shock) with the spanner wrench.
4. Spray a light lubricant on the adjuster nut where it contacts the spring.
5. Adjust shock preload by rotating the adjuster clockwise (as viewed from the top of shock) to INCREASE preload (firm) or counter-clockwise to DECREASE preload (softer).
6. Recheck the preload measurement after adjusting.
7. Tighten the lock nut securely against the adjuster nut.
8. Reinstall the seat.



Shock Air Pressure (Ride Height) Adjustment (CHIEFTAIN)

For riding comfort and to ensure proper ground clearance, adjust rear shock air pressure. Refer to the label located on the inside of the left side cover. The label shows recommended pressures based on potential load weights. Always inspect and adjust shock preload (ride height) based on your actual load weight, in addition to adjusting shock air pressure. See page 88.

Follow these guidelines when adjusting:

- Park the motorcycle with the sidestand down on a firm, level surface. Remove all riders and cargo.
- DO NOT exceed 150 PSI (1034 kPa) in the shock.
- Use the INDIAN MOTORYCLE Air Pump and Gauge (P/N PV-48909). Follow the instructions on the following pages.

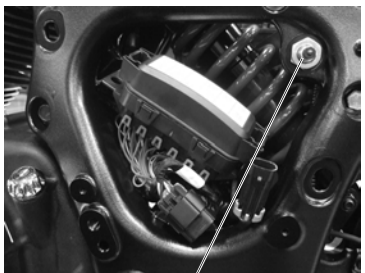
If the recommended air pump is not available, use a gauge and a pressurized air source with a maximum line and gauge pressure of 150 PSI (1034 kPa). After using the alternate gauge, remove it quickly to minimize leakage. Expect to lose up to 5 PSI (24 kPa) with each pressure check. *Use only a dry air source*, such as a system with a water separator or air line dryer, to prevent moisture from entering the shock.

CAUTION! *Air pressure increases VERY quickly when using pressurized air. Wear eye and face protection.*

Air Suspension Adjustment		
Total Cargo & Occupant Weight (lbs)	**Air Pressure (psi)**	**MAX PRESSURE: 150 PSI**
0	0	SELECT PRESSURE CORRESPONDING TO TOTAL CARGO AND OCCUPANT WEIGHT. REMOVE ALL PASSENGERS AND CARGO BEFORE SETTING/ CHECKING SHOCK PRESSURE. SET PRESSURE WITH BIKE ON SIDE STAND.
150	0	
175	0	
200	0	
225	10	
250	23	
275	30	
300	38	
325	48	
350	60	
375	71	
400	85	
425	100	
450	122	7179871
475	134	
500	145	

Shock Air Pressure (Ride Height) Adjustment (CHIEFTAIN)

1. Park the motorcycle with the sidestand down on a firm, level surface. Remove all riders and cargo.
2. Remove the left side cover. Remove the cap from the air fitting.
3. Determine the recommended rear shock air pressure. Refer to the label located on the inside of the left side cover.
4. Install the hose fitting of the recommended gauge securely onto the air fitting. Read the air pressure on the gauge.



Air Fitting

5. To *reduce* air pressure, push the bleed button on the gauge. Bleed pressure in small amounts until the desired pressure is attained.
6. To *increase* pressure, pump the handle until pressure increases to the desired amount.

CAUTION! *DO NOT exceed 150 PSI (1034 kPa) in the shock.*

7. Remove the hose from the air fitting and reinstall the cap.

Tip: *Expect to lose up to 5 PSI (24 kPa) with each pressure check.*

8. Repeat the preload inspection to verify proper preload. See page 88.

Swing Arm/Rear Axle Inspection

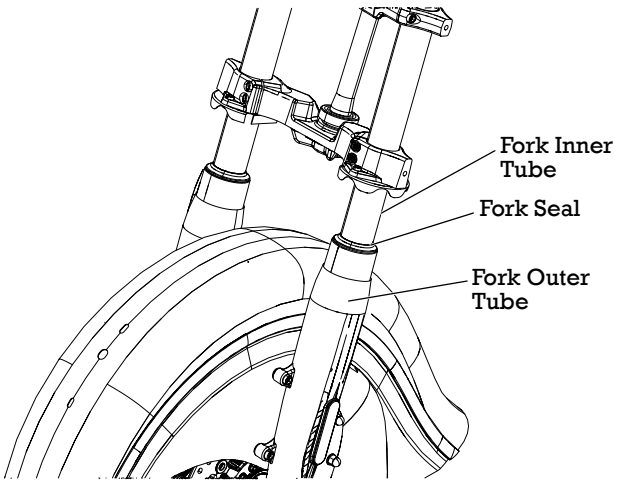
1. Sit in the operator's seat and slowly bounce the rear suspension a few times. Make sure the suspension moves freely without binding. Listen for abnormal noises.
2. Elevate and support the motorcycle with the rear tire slightly off the floor. See page 116.

CAUTION! *Make sure the motorcycle is stable when elevated. Injury may occur if the motorcycle tips or falls.*

3. Grasp the rear wheel and attempt to move the wheel side-to-side. If there is movement at the front of the swingarm or in the axle area, see your dealer for service.
4. With the transmission in neutral, slowly rotate the rear wheel. If the wheel does not rotate smoothly, see your dealer for service.

Front Fork/Suspension Inspection

1. Place the motorcycle on the sidestand and inspect the front forks. If fork oil is present on the outer tube, *do not ride the motorcycle.* See your dealer for service before operating. If fork oil is present around the fork seals or inner tubes, replace the fork seals.



2. Clean the fork tubes to remove bugs, tar or buildup which may cause seal wear or leakage. Inspect the outer surfaces of the inner fork tubes for scratches or damage from foreign objects.
3. Straddle the motorcycle and bring it to the fully upright position. Apply the front brake and push downward (hard) on the handlebars several times. The front suspension should operate smoothly and quietly.
4. Fork oil condition and level affects front suspension performance and internal component wear. Replace fork oil at the recommended intervals. Special tools are required to perform this procedure. See the *INDIAN MOTORCYCLE Service Manual* or an authorized INDIAN MOTORCYCLE dealer.

Steering Head Inspection

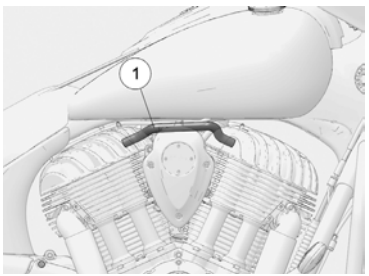
1. Elevate and support the motorcycle with the front tire slightly off the floor. See page 116.

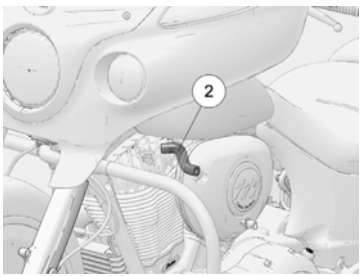
CAUTION! *Make sure the motorcycle is stable when elevated. Injury may occur if the motorcycle tips or falls.*

2. Turn the handlebars from stop to stop. The action should be smooth but not loose. Make sure wires, hoses and control cables do not interfere with smooth steering.
3. Position the front wheel straight ahead. Grasp the front forks near the front axle and attempt to move the wheel front-to-back. If there is front-to-back movement at the steering head, see your dealer for service.
4. If steering binds, feels rough or uneven, or if movement is detected at the steering stem, see your dealer for service.
5. Rotate the front wheel and inspect for smooth rotation of front wheel bearings. If roughness or unusual sounds are present, see your dealer for service.
6. Turn handle bars full right or left and hold against the fork stop. Attempt to move front wheel side-to-side. If movement is observed, see your dealer for service.

Crankcase Breather Hoses

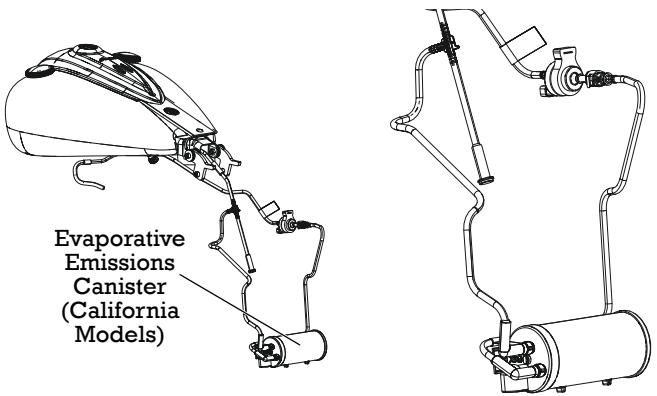
Inspect both breather hoses along their length and at both ends. Make sure hoses are not restricted, kinked, cracked or otherwise damaged. Replace any worn or damaged hoses.





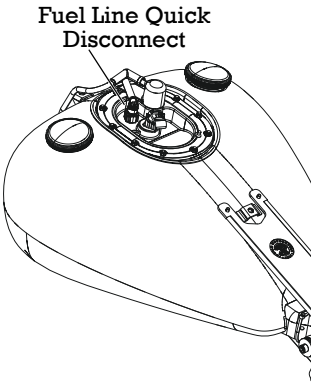
Evaporative Emission Control System (California Models)

1. Inspect all evaporative emission control system hoses and connections. Make sure all connections are tight and locked.
2. The canister is located under the rear fender. Make sure it is securely fastened to the mounting bracket.
3. Inspect connections at the evaporative emissions canister to be sure they are secure. The vent line coming from the tank should be connected to the black port. The purge line should be connected to the gray or natural-colored port.



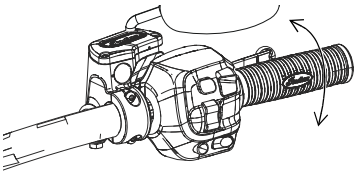
Fuel System Components

1. Inspect fuel hoses for cracks or damage.
2. Inspect hose connections at the fuel tank and at the fuel rail for dampness or stains from leaks. The tank connection for the fuel line is under the tank console.
3. The fuel system is under pressure and caution must be used when inspecting and servicing the fuel system. See the *INDIAN MOTORCYCLE Service Manual* or an authorized INDIAN MOTORCYCLE dealer.



Throttle Control Inspection

1. With the engine OFF, rotate the throttle control grip fully open and then release it. It should rotate smoothly from the rest position to the completely open position. It should return to the rest position quickly when released.



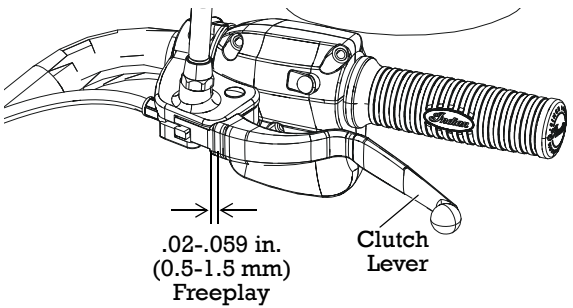
2. Repeat the twist and release process with the handlebars turned fully *right* and fully *left*.
3. Service the throttle system if throttle operation is not smooth or if throttle grip does not return properly. See the *INDIAN MOTORCYCLE Service Manual* or an authorized INDIAN MOTORCYCLE dealer.

Sidestand Lubrication

Periodically lubricate the sidestand bushing. See page 66 for sidestand inspections.

Mechanical Clutch Lever Freeplay

1. Hold the clutch cable. The clutch cable adjuster nut is located alongside the left down-tube. Slide the rubber protective cover away from the lock nut. Loosen the lock nut.
2. While holding the cable, turn the cable adjuster inward or outward until clutch lever freeplay is 0.5-1.5 mm.
3. While holding the cable, tighten the adjuster lock nut securely.

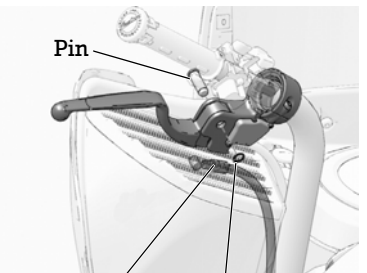


4. Verify that the safety switch activates properly. The engine should not start in gear with the clutch lever released.

Tip: *The starter interlock switch is dependent on the clutch lever freeplay being set correctly to ensure activation of the clutch safety switch.*

Mechanical Clutch Lever Lubrication

1. The clutch cable adjuster nut is located alongside the left down-tube. Slide the rubber protective cover away from the adjuster. Loosen the lock nut.
2. Turn the cable adjuster completely inward to provide maximum lever freeplay.
3. Remove the clutch lever c-clip and pin. Disconnect the clutch cable from the clutch lever.
4. Remove any old grease and dirt from the lever and housing. Lubricate the clutch lever and pin with moly assembly grease or all-purpose grease.
5. Reconnect the clutch cable. Reinstall the lever c-clip and pin.
6. Adjust clutch lever freeplay. See page 95.
7. Tighten the adjuster nut and slide the protective cover over the adjuster.



Mechanical Clutch Cable Lubrication

Lubricate control cable ends at the intervals recommended in the periodic maintenance table beginning on page 82.

NOTICE: *External casings are factory-lubricated. Additional lubrication could be detrimental to cable performance.*

Verify proper routing and smooth movement. Inspect for damage to the external casing, and inspect exposed cable wire for fraying, kinks or corrosion. Replace any damaged, sticky or sluggish cable.

1. Disconnect the cable at the clutch lever and at the primary cover.
2. Lubricate the barrel ends with all-purpose grease.
3. Reconnect the cable and adjust freeplay as needed.

Rear Brake Pedal

1. Lubricate the pivot bushing at the intervals recommended in the periodic maintenance table beginning on page 82. Also lubricate any time binding is evident. Use all-purpose grease.
2. Inspect brake pads as outlined on page 100.

Brake Hoses/Connections

Inspect all brake hoses and connections for dampness or stains from leaking or dried fluid. Tighten any leaking connections and replace components as necessary. See the *INDIAN MOTORCYCLE Service Manual* or an authorized INDIAN MOTORCYCLE dealer.

Brake Fluid Precautions

⚠ WARNING

Using the wrong fluid or allowing air or contaminants into the fluid system can damage the system seals or result in a malfunction that could lead to serious injury or death. Use only DOT 4 brake fluid from a sealed container.

Do not operate the front brake with the reservoir cover removed. Fluid could overflow from the reservoir and allow air to enter the system. Air in the brake system could cause the brakes to malfunction.

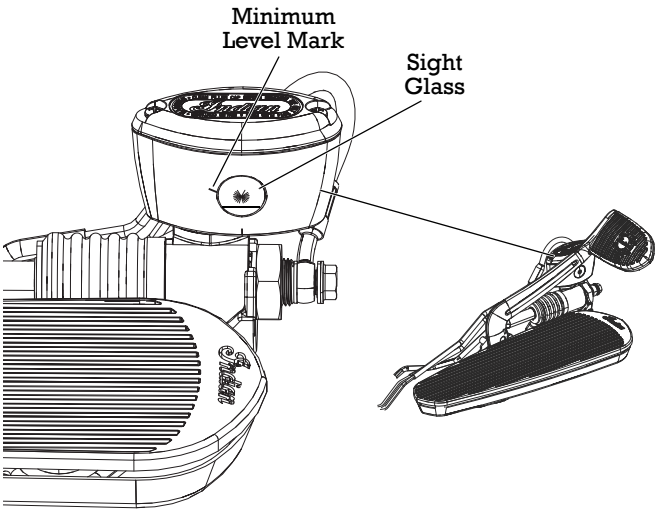
An over-full reservoir may cause brake drag or brake lock-up, which could result in serious injury or death. Maintain brake fluid at the recommended level. Do not overfill.

NOTICE: *Brake fluid will damage painted surfaces and plastic parts. Always clean spilled brake fluid immediately with water and a mild detergent.*

Rear Brake Fluid

Change the brake fluid at the intervals recommended in the periodic maintenance table beginning on page 82. Always add brake fluid from a new, unopened container. Always use the recommended fluid. See page 128.

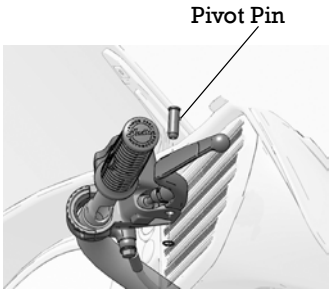
1. Position the motorcycle on level ground in the fully upright position.
2. The rear brake fluid reservoir is located near the rear brake pedal. View the reservoir from the right side of the vehicle.
3. Wipe the fluid container and the area around the reservoir cover with a clean cloth.
4. If the fluid level is low, inspect brake pads as outlined on page 100. If pads are not worn beyond the service limit, inspect the brake system for leaks.
5. Remove the cover and diaphragm. The fluid level should be above the minimum indicator mark on the reservoir body. Add brake fluid as needed. *Do not overfill.*



6. Reinstall the cover and diaphragm.
7. Wipe away any fluid spills. Check for signs of brake fluid leaks around hoses, fittings, reservoir, and brake calipers.

Front Brake Lever

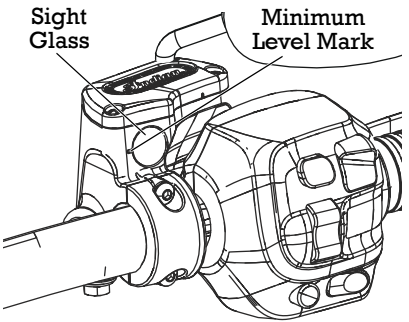
1. See page 55 for front brake lever reach adjustments.
2. Lubricate the pivot pin and brake lever hinge points at the intervals recommended in the periodic maintenance table beginning on page 82. Also lubricate any time binding is evident. Use all-purpose grease.
3. Inspect brake pads as outlined on page 100.



Front Brake Fluid

Change the brake fluid at the intervals recommended in the periodic maintenance table beginning on page 82. Do not attempt to change the anti-lock brake system fluid. Please see your dealer for this service. Always add brake fluid from a new, unopened container. Always use the recommended fluid. See page 128.

1. Position the motorcycle on level ground in the fully upright position. Position the handlebars so that the fluid reservoir is level. Wipe the fluid container and the area around the reservoir cover with a clean cloth.
2. If the fluid level is low, inspect brake pads as outlined on page 100. If pads are not worn beyond the service limit, inspect the brake system for leaks.
3. To add fluid, remove the reservoir cover screws. Remove the cover and diaphragm.
4. The fluid level should be above the minimum indicator mark in the sight glass. Add brake fluid as needed. *Do not overfill.*
5. Reinstall the diaphragm, cover and screws.

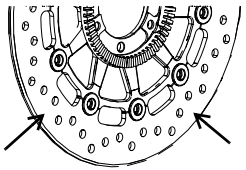


Torque: 13 in-lbs (1.4 Nm)

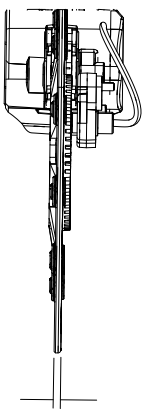
6. Wipe away any fluid spills. Check for signs of brake fluid leaks around hoses, fittings, reservoir and brake calipers. Check for deterioration of hoses.

Brake Disc Inspection/Cleaning

1. Inspect brake discs for nicks, scratches, cracks or other damage. Inspect the thickness of each brake disc at four or more locations around the disc. If any disc is worn to the minimum thickness at the thinnest point, or if a disc is damaged, see your dealer for replacement.
2. Clean discs if minor squeaks develop due to dirt or dust. Apply brake cleaner to a clean shop towel and wipe the discs. DO NOT allow brake cleaner to contact painted or plastic parts. Read all precautions on the label.



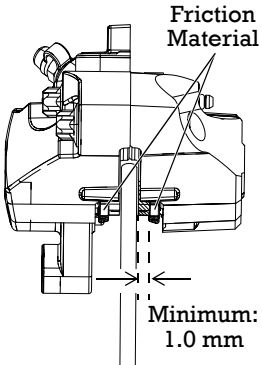
Inspect Surface



Minimum Thickness
Front: 4.5 mm
Rear: 6.5 mm

Brake Pads

Inspect each front brake pad on both sides of the front disc. Inspect each rear brake pad on both sides of the rear disc. Replace brake pads when the thinnest point of the friction material has worn to 1.0 mm. Please see your dealer for this service.



Tip: *After replacing pads, allow up to 250 miles (500 km) of operation in urban driving conditions (not highway cruising) to allow pads to mate with new rotors. Brakes should be used frequently. During this time brake performance will be less effective. Avoid using brakes harshly unless in an emergency. Brake efficiency will gradually increase during this seating period.*

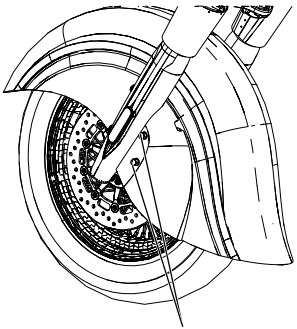
When checking brake pad friction material thickness, check each brake caliper for dampness or stains from leaking or dried brake fluid. If inspection reveals signs of fluid leakage, do not operate the vehicle. See your dealer for service.

Brake Pads

Front Brake Pad Inspection

1. Remove the two acorn nuts and one screw securing the protective caliper covers. Remove the covers.
2. Use an inspection mirror, positioned at the front side of the caliper, to view the friction material.
3. Reinstall the caliper covers.

Torque: 18 ft-lbs (24 Nm)



Front Caliper Cover Nuts

Rear Brake Pad Inspection

1. Position the motorcycle on the sidestand with the handlebars turned to the left.
2. Use an inspection mirror, positioned at the front side of the caliper, to view the friction material.

Anti-Lock Brake System (ABS) Tone Ring/Sensor Inspection

1. Visually inspect for damaged teeth on the front and rear ABS tone rings. Inspect for nicks and dents on the face of the teeth. The teeth edges should be consistent in appearance. If a tone ring is damaged, see your dealer for replacement as soon as possible.

2. Inspect for debris adhering to the end of the wheel speed sensors. If contamination is observed, or if you are unable to visually inspect, slide a thin towel across the face of the sensor between the sensor and the tone ring to remove any potential debris.

Wheel Spokes

Inspect both wheels for loose, bent, broken or missing spokes (if equipped). To identify loose spokes, grasp each spoke and try to move it side to side or up and down. All spokes should be equally tight and have the same amount of flex. Tighten loose spokes and replace bent, broken or missing spokes (see an authorized dealer).

WARNING! *Spokes adjusted or replaced improperly could distort the wheel, make the motorcycle difficult to handle, and cause loss of control.*

Wheel Inspection

Inspect both wheels for cracks or damage and replace damaged wheels promptly. Do not operate the motorcycle if wheels are damaged or cracked. See the *INDIAN MOTORCYCLE Service Manual* or an authorized INDIAN MOTORCYCLE dealer.

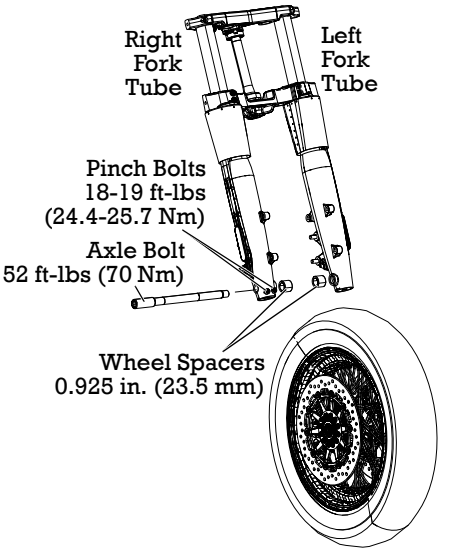
Wheel Alignment

Inspect rear wheel alignment at regular service intervals, whenever the rear wheel is removed and when the rear drive belt is adjusted. Please see your dealer for this service.

Front Wheel Installation

If the front wheel is removed for any reason, it must be reinstalled in the correct rotating direction.

Clean all wheel components before installation. Apply a light coat of all-purpose grease to the axle and both spacers.



Tires

⚠ WARNING

Operating the motorcycle with incorrect tires, incorrect tire pressure or excessively worn tires could cause loss of control or accident. Underinflation can cause a tire to overheat and result in a tire failure. *Always use the correct size and type of tires specified by INDIAN MOTORCYCLE for your vehicle. Always maintain proper tire pressure as recommended in the rider's manual and on safety labels.*

Tire Replacement

NOTICE: *On models equipped with a TPMS, the sensors are located 180° from the valve stem. Use caution when servicing tires. To avoid damaging a sensor, break the bead at the valve stem, then at 90° and 270° from the valve stem as required.*

Tires, rims, innertubes and air valves must be correctly matched to wheel rims. Use only the proper size tires specified with the same or higher load ratings. INDIAN MOTORYCLE-recommended tires provide proper clearance between fenders, swingarm, drive belts and other components. See the *Specifications* section beginning on page 124.

On models equipped with innertubes, innertubes MUST be replaced with new innertubes when tires are replaced. Use only the proper size innertubes.

WARNING! *Mismatched tires, rims and air valves may result in damage to the tire bead during mounting or may allow the tire to slip off the rim, possibly resulting in tire failure.*

Tire Condition

Inspect the tire sidewalls, road contact surface, and tread base for cuts, punctures, and cracking. Replace damaged tires immediately. See the *INDIAN MOTORCYCLE Service Manual* or an authorized INDIAN MOTORCYCLE dealer.

Tire Tread Depth

Replace any tire with a tread depth of less than 1/16 inch (1.6 mm).

Tread wear indicators are located in at least six places on the tread circumference and become visible at a tread depth of approximately 1/16 inch (1.6 mm). The tread wear indicators appear as a solid band across the tread.

You may also use a depth gauge or an accurate ruler to measure the depth of the center tire tread on both front and rear tires.

Maintenance

Tires

Tire Pressure

Always check and adjust tire pressure when tires are cold. Do not adjust tire pressure immediately after riding. Wait at least 3 hours after riding to check pressure. If pressure checked and adjusted while tires are warm, the pressure will drop as tires cool and result in underinflation.

Adjust tire pressure as recommended for the total weight of your intended load (see chart below). For more information, refer to the manufacturing information label located on the front frame downtube. See page 17.

WARNING! *Do not exceed the maximum recommended inflation pressure to seat the bead. Tire or rim failure may result.*

Location	Size	Brand	Type	Recommended Pressure	
				Loads up to 200 lbs. (91 kg)	Loads up to vehicle's maximum load capacity
Black Tires					
Front	130/90-B16 73H	Dunlop	Elite 3	36 psi (248 kPa)	36 psi (248 kPa)
Rear	180/60-R16 80H	Dunlop	Elite 3	41 psi (283 kPa)	41 psi (283 kPa)
White Wall Tires					
Front	130/90-B16 67H	Dunlop	American Elite	36 psi (248 kPa)	36 psi (248 kPa)
Rear	180/65-B16 81H	Dunlop	American Elite	40 psi (276 kPa)	40 psi (276 kPa)

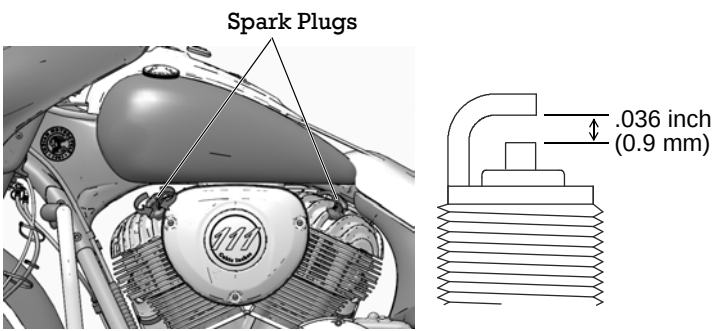
Spark Plugs

Inspect spark plugs after the break-in period and every 15,000 miles (24,000 km) thereafter. Replace spark plugs every 30,000 miles (48,000 km). Always replace spark plugs in pairs.

Spark Plug Specifications	
Spark Plug Type	NGK DCPR8E
Spark Plug Gap	.036 inch (.9 mm)
Spark Plug Torque	12 ft-lbs (16.3 Nm)

1. Make sure the engine has cooled to room temperature.
2. Turn the power switch off.
3. Pull upward on the spark plug boots (not the wires) to remove the boots.

CAUTION! *Wear eye and face protection when using pressurized air.*



4. To prevent debris from entering the spark plug holes, use compressed air to clean the area around the plugs before removing them.

   Tool: 12 mm plug socket

Tip: *Both spark plugs should have the same light or medium tan color deposits. The electrodes should be square with sharp edges.*

5. Reinstall the spark plugs or install new plugs.
6. Reinstall the spark plug boots.

Side Covers

Remove the left side cover to access the tool kit, shock air fitting (if equipped), fuse box and diagnostic connector.

Remove both side covers to access the seat mounting fasteners and the electrical connections for the saddlebags.

1. Pull outward at each corner of the side cover to disengage the three darts.
2. Remove the side cover from the motorcycle.
3. To reinstall the side cover, make sure each rubber grommet is properly positioned. Align each dart with the appropriate grommet and press inward firmly to secure each dart.

Maintenance

Seat Removal

Remove the seat to access the battery.

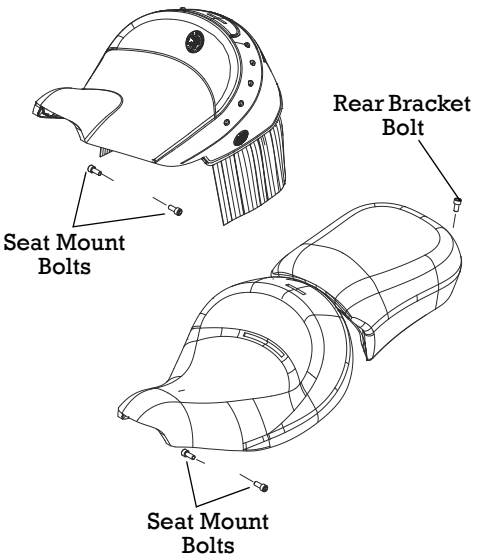
1. Remove the left side cover to access the tool kit.
2. Locate the seat mount brackets under the edge of the driver's seat. Remove the seat mount bolt from each side of the seat.
3. Remove the rear bracket bolt, washer and nylon grommet from the passenger portion of the seat (if equipped).
4. Lift the rear of the seat and pull rearward to disengage the front mounting tab of the seat from the frame mount. Do not allow the seat mount brackets to contact the rear fender.

Seat Installation

1. Position the seat by inserting the seat mounting tab from rear to front into the mount on the top of the frame.
2. Rotate the rear of the seat downward and position the side mount seat brackets onto the frame. Do not allow the seat mount brackets to contact the rear fender.
3. On each side, thread the seat mount bolt through the seat mount bracket and into the frame. Torque seat bolts to specification.

   Torque: 18 ft-lbs (13.5 Nm)
4. Gently raise the rear bracket and reinstall the nylon grommet. Thread the rear bracket bolt and washer through the bracket and nylon grommet. Torque the bolt to specification.

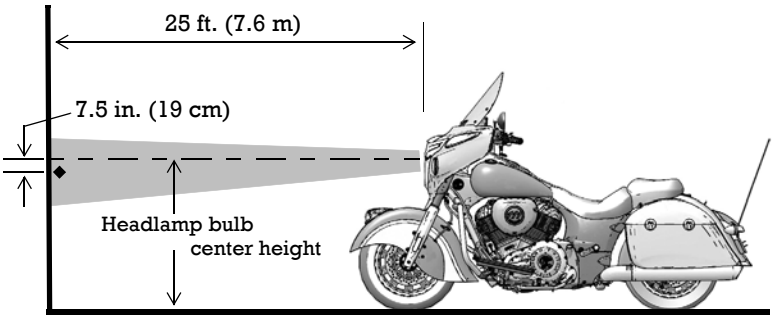
   Torque: 96 in-lbs (10.8 Nm)



Headlight Aim Inspection

On high beam, the center of highest intensity (appearing as a diamond shape) should be 7.5 in. (19 cm) lower than the headlamp bulb and centered straight ahead at 25 feet (7.6 m).

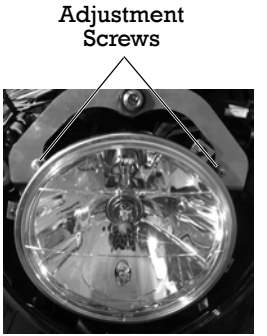
1. Verify that tire pressure is at specification. See page 104.
2. Verify that rear suspension ride height (preload) is at specification. See page 88.
3. Position the motorcycle on a level surface with the headlight 25 feet (7.6 m) from a wall.
4. With the operator and passenger (if applicable) on board, bring the motorcycle to the fully upright position.
5. Start the engine and switch the headlamp to high beam. Observe the headlight aim on the wall.
6. Make any necessary adjustments to headlight aim. See page 108.



Maintenance

Headlight Aim Adjustment

The headlamp adjustment screws are located inside the headlamp housing.



1. *CHIEFTAIN only:* Remove the two headlight bezel screws and remove the bezel from the fairing. Reinstall the bezel after adjusting the headlamp.

   Tool: M4 hex wrench or universal tool

2. To adjust the headlamp vertically, tighten both top adjustment screws equally to adjust the beam downward. Loosen both screws equally to adjust the beam upward.

   Tool: M4 hex wrench or universal tool

3. To adjust the headlamp horizontally, loosen the left side screw to adjust the beam to the left. Loosen the right side screw to adjust the beam to the right.

Headlight Lamp Replacement (CHIEF)

1. Remove the six bolts securing the front nacelle headlight shroud. Pull this piece forward to access the headlight.
2. Remove the sealing boot. Press the looped end of the wire bulb retainer clip and swing the end toward the center of the bulb to release it from the latch tab.
3. With the wire connector attached, pull the bulb out. Disconnect the wire harness.
4. Install the new bulb and secure the retainer.

Tip: *Avoid touching a halogen lamp with bare fingers. Oil from your skin leaves a residue, causing a hot spot that will shorten the life of the lamp. If a lamp is touched, clean it thoroughly with denatured alcohol.*

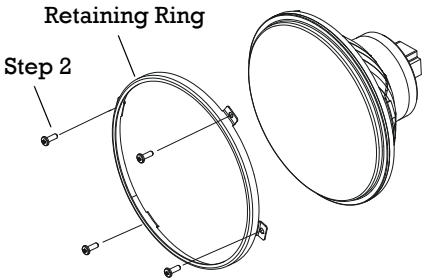
5. Reinstall the sealing boot. Make sure it seals tightly around the bulb base and lens to prevent condensation.
6. Reinstall the front nacelle headlight shroud.
7. Tighten the two (2) top bolts.

   Torque: 36 in-lbs (4 Nm)

8. Tighten the four (4) rear bolts.

   Torque: 84 in-lbs (9.5 Nm)

Headlight Lamp Replacement (CHIEFTAIN)



1. Remove the two bolts securing the front trim bezel to the fairing. Pull this piece forward to access the headlight.
2. Remove the four screws securing the headlamp retaining ring. Remove the retaining ring.

   Tool: Phillips screwdriver or universal tool
3. Remove the headlight assembly from the headlight carrier.
4. Remove the sealing boot. Press the looped end of the wire bulb retainer clip and swing the end toward the center of the bulb to release it from the latch tab.
5. With the wire connector attached, pull the bulb out. Disconnect the wire harness.
6. Install the new bulb and secure the retainer.

Tip: *Avoid touching a halogen lamp with bare fingers. Oil from your skin leaves a residue, causing a hot spot that will shorten the life of the lamp. If a lamp is touched, clean it thoroughly with denatured alcohol.*

7. Reinstall the sealing boot. Make sure it seals tightly around the bulb base and lens to prevent condensation.
8. Reinstall the headlight assembly into the carrier, being sure to index the assembly properly.
9. Reinstall the retaining ring with the four screws.

   Torque: 12 in-lbs (1.4 Nm)
10. Reinstall the front trim bezel and bolts.

    Torque: 36 in-lbs (4 Nm)

Maintenance

Battery

The motorcycle battery is a sealed, maintenance-free battery. Do not remove the battery cap strip for any reason. Keep the battery connections clean and tight at all times.

⚠ WARNING

Battery electrolyte is poisonous. It contains sulfuric acid. Serious burns can result from contact with skin, eyes or clothing.

Antidote:

External: Flush with water.

Internal: Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Call physician immediately.

Eyes: Flush with water for 15 minutes and get prompt medical attention.

Batteries may produce explosive gases.

- *Keep sparks, flame, cigarettes, etc. away.*
- *Ventilate when charging or using in an enclosed space.*
- *Always shield eyes when working near batteries*
- *KEEP OUT OF REACH OF CHILDREN.*

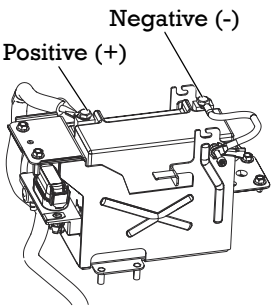
Battery Removal

1. Remove the seat. See page 106.

WARNING! *Improperly connecting or disconnecting battery cables can result in an explosion and cause serious injury or death. When removing the battery, always disconnect the negative (black) cable first. When reinstalling the battery, always connect the negative (black) cable last.*

2. Remove the fastener securing the battery cover to the frame crossmember.
3. Lift the cover, with the attached electronic module in place, folding the wires toward the fuel tank.

   Tool: 5 mm hex key wrench



4. Remove the negative (-) battery cable from the battery terminal. Position the cable well clear of the terminal.

   Tool: 10 mm wrench
5. Remove the rubber cover from the positive (+) battery cable and remove the cable from the terminal. Position the cable well clear of the terminal.
6. Remove the battery.

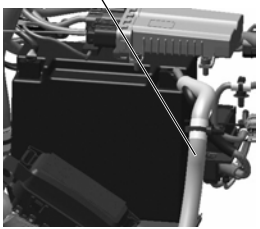
Battery Installation

WARNING! *Improperly connecting or disconnecting battery cables can result in an explosion and cause serious injury or death. When removing the battery, always disconnect the negative (black) cable first. When reinstalling the battery, always connect the negative (black) cable last.*

NOTICE: *Do not remove the battery cables while the engine is running. Doing so may damage the Electronic Control Unit (ECM). Take great care not to reverse the battery leads when installing the battery. Reverse power applied to the ECM will damage it instantly.*

1. Inspect the battery box and cover for damage. Be sure pads are in good condition and properly located.
2. Make sure cable ends and battery terminals are clean. Apply a light film of dielectric grease to the terminal bold threads.
3. Carefully position the battery into the battery box with the negative (-) terminal toward the front of the motorcycle.
4. Make sure the positive (+) cable is routed horizontally and perpendicular to the long side of the battery. Connect the positive (+) cable to the positive (+) battery terminal.

   Torque: 45 in-lbs (5 Nm)



5. Install the negative (-) cable last. Route the starter ground cable beneath the frame ground cable on the negative battery terminal.

   Torque: 45 in-lbs (5 Nm)
6. Reinstall the battery cover and fastener.

   Torque: 84 in-lbs (9.5 Nm)
7. Reinstall the seat. See page 106.

Maintenance

Battery Charging

If your motorcycle will not be used for a period of four (4) weeks or longer, a maintenance charger should be connected to the battery. A maintenance charger can be purchased through your authorized INDIAN MOTORCYCLE dealer.

1. Following the charger manufacturer's instructions, use a battery charger designed for use with 12-volt batteries. The charger should have a maximum charging rate of 1.8 amps. Charge the battery for approximately 10 hours at a rate of 1.8 amps. If you use a taper or trickle charger, it will take longer to charge the battery.
2. After charging the battery, allow the battery to sit 1-2 hours before checking the state of charge with a DC volt meter. The charge should be a minimum of 12.5 DC volts. Repeat the charging cycle if the charge is less than 12.5 DC volts. Replace the battery if it fails to reach 12.5 volts after the second charge.

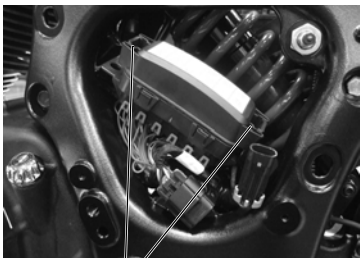
Fuse Replacement

NOTICE: *Use fuses with the recommended amperage to avoid damage to the electrical system.*

Standard Fuses

The standard fuse box is located under the left side cover. This fuse box houses all standard service fuses and the automatic circuit breakers. Fuse application and size are provided on a label on the fuse box cover.

Tip: *Use the fuse puller provided in the tool kit to remove a fuse.*



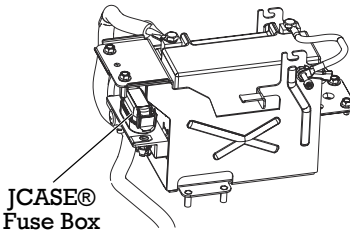
Fuse Box Cover Clips

1. Remove the left side cover. See page 105.
2. Release the locking tabs, then squeeze the upper and lower cover clips to remove the fuse box cover.
3. After replacing a fuse, reinstall the fuse box cover and side cover.

High-Current Fuses

The JCASE® fuse box contains the high-current fuses for the chassis, vehicle control module and anti-lock brake system. This fuse box is located next to the battery box.

Fuse application and size are provided on a label on the fuse box cover.



JCASE®
Fuse Box

Electrical Precautions

Be aware of the following precautions regarding the electrical system to avoid disruption of electrical signals and possible system malfunction.

- DO use ONLY genuine INDIAN MOTORYCLE parts and accessories designed for your model, and follow the instructions provided.
- DO use the accessory power jack provided (if equipped).
- If it is necessary to provide power to an item that does not use one of the previously mentioned power jacks, connect to the load side of the main circuit breaker (under the cover behind the oil cooler), and connect the ground wire to the engine ground at the front left side of the crankcase (near the circuit breaker).
- DO NOT splice or cut any wires.
- DO NOT tap in to any power or ground on the motorcycle unless specifically directed to do so by the INDIAN MOTORYCLE instructions that come with the kit.
- DO NOT back-probe electrical connectors on the vehicle unless directed to do so by the *INDIAN MOTORCYCLE Service Manual*.
- DO NOT power any accessories from the diagnostic connector (under left side cover).

Unlocking the Security System

If a key fob is not available, your personal identification number (PIN) can be entered using the turn signal switches to unlock the security system. Use the following guide to enter your valid PIN.

Digit to Enter	Turn Signal Feature Used	Procedure
The number "0"	CANCEL switch	Press and release
First digit (1-9)	LEFT turn switch	Move and release once per digit value. See example below.
Second digit (1-9)	RIGHT turn switch	
Third digit (1-9)	LEFT turn switch	
Fourth digit (1-9)	RIGHT turn switch	
Example for entering the number 1024: LEFT - CANCEL - LEFT - LEFT - RIGHT - RIGHT - RIGHT - RIGHT		

Changing Your Security System PIN

To change your PIN, you must have either the key fob or your existing valid PIN available to gain access to the security system. If the key fob is not detected or is not available and you cannot remember your PIN, please see your INDIAN MOTORCYCLE dealer.

Please read the entire procedure before beginning.

1. Turn the power switch on. Do NOT start the engine. The security light and/or power switch will turn on briefly until the key fob is detected or the valid PIN is entered.
2. When the key fob is detected, the security light and/or power switch will turn off. Proceed to step 4. If the key fob is not available or is not detected, enter your valid PIN within 20 seconds. See page 114.

Tip: *If the valid PIN is not entered within 20 seconds, the security light and/or power switch will flash for 10 seconds, then the system will shut down. Return to step 1 to try again.*

3. When the PIN is accepted, the security light and/or power switch will turn off. Proceed to step 4.
4. When the security light and/or power switch turns off, press and hold the turn signal CANCEL switch for 10 seconds. The security light and/or power switch will turn on to confirm access to the security system. Proceed to step 5 to enter your new PIN.

Entering Your New PIN

5. Enter your new 4-digit PIN.
6. If 4 digits are successfully entered, the security light and/or power switch will remain on and the horn will sound briefly. Proceed to step 7.

Tip: *If the 4-digit PIN is NOT successfully entered within 20 seconds, the security light and/or power switch will flash for 10 seconds, then the system exits the procedure. Return to step 1 to try again.*

7. Re-enter the new 4-digit PIN. If this entry matches the first entry, the security light and/or power switch will turn off and the horn will sound briefly. Your new PIN has been saved.

Tip: *If the second entry is not entered within 20 seconds or does not match the first entry, the security light and/or power switch will flash for 10 seconds, then the system exits the procedure. The new PIN was NOT saved. Continue to use your former valid PIN. Return to step 1 to try again.*

Engine Compression Test

An engine compression test can be performed to monitor general engine condition. See the *INDIAN MOTORCYCLE Service Manual* or an authorized INDIAN MOTORCYCLE dealer.

Exhaust System Inspection

Check the exhaust system for stains from leaking exhaust gasses. Replace damaged or leaking exhaust gaskets. Check all exhaust system fasteners. Tighten loose clamps and fasteners. Do not overtighten. See the *INDIAN MOTORCYCLE Service Manual* or an authorized INDIAN MOTORCYCLE dealer.

Elevating the Motorcycle

WARNING! *Serious injury or death can occur if the motorcycle tips or falls. Make sure the motorcycle will not tip or fall while elevated or while on the sidestand.*

Some procedures require raising the motorcycle to remove weight from the component being inspected. Elevate the motorcycle by placing a stable, flat platform jack or lift mechanism on a firm, flat surface and lifting under the engine crankcase. The platform should be a minimum of 12 inches (30 cm) square. DO NOT attempt to lift the motorcycle without proper equipment. Always secure the motorcycle properly before lifting so it cannot tip or fall when elevated.

Road Test

Before returning the motorcycle to regular use, perform a road test in a safe area. Pay special attention to the proper fit and operation of all serviced components.

Make any corrections or additional adjustments promptly to ensure safe, reliable and enjoyable vehicle performance.

Fastener Inspection

1. Inspect the entire motorcycle chassis and engine for loose, damaged or missing fasteners. Tighten loose fasteners to the proper torque. See the *INDIAN MOTORCYCLE Service Manual* or an authorized INDIAN MOTORCYCLE dealer.
2. Always replace stripped, damaged or broken fasteners before riding. Use genuine INDIAN MOTORCYCLE fasteners of equal size and strength.

Fastener Torques

Some procedures and fastener torques are not listed in this manual. See the *INDIAN MOTORCYCLE Service Manual* or an authorized INDIAN MOTORCYCLE dealer.

Troubleshooting

For your personal safety, do not attempt inspection or repairs not fully described in this rider's manual. Contact an authorized dealer for service if you cannot determine the cause of a problem or if the inspection/repair exceeds your mechanical ability or tool resources. Do not perform any inspection or repair with the engine running.

Engine Cranks But Will Not Start

Possible Cause	**Possible Remedy/Action**
Low Fuel	Verify fuel level
Fuel Pump Inoperative	Turn engine STOP switch to RUN. Turn the power switch on. The fuel pump should run momentarily and then stop. Check the fuel pump/ignition circuit breaker. See page 113.
Battery Voltage Too Low	Fully charge the battery. See page 112.
Spark Plug(s) Fouled	Inspect spark plugs. See page 105.
Spark Plug Wire(s) Disconnected or Loose	Be sure spark plug wires are securely fastened.
Low Compression	Please see your dealer for an engine compression test.

Starter Motor Clicks, Does Not Turn or Turns Slowly

Possible Cause	**Possible Remedy/Action**
Engine Stop/Run Switch in Stop Position	Place switch in RUN position.
Battery Discharged	Fully charge the battery. See page 112.
Battery Cables Loose or Corroded	Inspect battery cables.
Transmission In Gear	Shift transmission into neutral or pull the clutch lever in to disengage the clutch. See starting procedures on page 70.
Key Fob Not Authenticated	Make sure key fob is within range and that key fob battery voltage is not low.
Sidestand is Down With Transmission in Gear	Shift to neutral or retract the sidestand fully.

Troubleshooting

Engine Starts But Misses or Runs Poorly

Tip: *Turn engine OFF before inspecting any of these items.*

Possible Cause	Possible Remedy/Action
Battery Discharged	Fully charge the battery. See page 112.
Battery Cables Loose or Corroded	Inspect battery cables and connections.
Spark Plug(s) Fouled	Inspect spark plugs. See page 105.
Spark Plug Wire(s) Loose or Wet	Inspect spark plug wires, ensure dry/secure.
Contaminated Fuel	Inspect fuel for water/contamination. Please see your dealer.
Engine Oil Level Incorrect Or Wrong Type	Inspect level and quality of oil. See page 60.
Loose, Broken, Shorted Ignition Coil Wires	Inspect coil primary wires. Please see your dealer.
Air Intake Restricted	Inspect air filter. See page 86.
Intake Leaks	Inspect air box, throttle body and intake boot joints.

Shifting Difficulties or Hard to Find Neutral

Possible Cause	Possible Remedy/Action
Shift Linkage Bushings Dry Or Worn	Lubricate shift linkage.
Clutch Damage	Replace clutch.
Clutch Cable Not Adjusted Properly	Please see your dealer for inspection and adjustment.
Shift Linkage Not Adjusted Properly	Please see your dealer for inspection and adjustment.

Troubleshooting

Battery Charging Rate Low or Battery Discharges

Possible Cause	Possible Remedy/Action
Loose/Corroded Charging Circuit Connection	Check/clean battery cable connections. Check/clean charging circuit connections. Please see your dealer.
Accessory Load Exceeds Charge Rate	Limit accessory operation when the engine is off.
Improperly Wired Accessory (Current Draw)	Please see your dealer to check charging system output and current draw.

Brake Noise/Poor Brake Performance

Tip: *See your dealer if brake performance does not return after these inspections.*

Possible Cause	Possible Remedy/Action
Dust/Dirt On Brake Disc(s)	Clean disc. See page 100.
Worn Pads Or Disc/Brake Disc Damage	Inspect pads. See page 100.
Brake Fluid Level Low Or Fluid Contaminated	Inspect fluid level/fluid condition. See pages 62-63.

Anti-Lock Brake Light Remains Illuminated or Illuminates Intermittently

Possible Cause	Possible Remedy/Action
Blown fuse	Check the fuses. See page 113.
Loose or damaged pulse ring	Inspect pulse ring for looseness or chipped teeth.
Debris lodged in components	Inspect wheel speed sensor and pulse ring for debris.
Damage caused by debris	Inspect wheel speed sensor for cracked housing.
Damaged components	See service manual or authorized dealer.

Cleaning and Storage

Cleaning Products

This section provides tips on the very best way to clean, polish and preserve every surface of your beautiful new INDIAN motorcycle. We recommend the use of our new INDIAN MOTORCYCLE cleaning and polishing products and accessories, which have been specially designed to offer the best care possible for your INDIAN motorcycle.

In addition to the products recommended in this section for cleaning and polishing, INDIAN MOTORCYCLE also has specialty polishing products for:

- removing scratches, scuffs and swirls
- enhancing black and silver engines
- cleaning engines, tires and wheels
- removing brake dust

After cleaning the motorcycle, inspect for damage to the painted surfaces. Repair chips or scratches promptly by applying INDIAN MOTORCYCLE touch-up paint to prevent corrosion.

For more information, or for answers to your cleaning and detailing questions, please see your INDIAN MOTORCYCLE dealer.

Washing the Motorcycle

NOTICE: *Do not use pressurized water to wash the motorcycle. Water may seep in and deteriorate wheel bearings, brake caliper assemblies, brake master cylinders, electrical connectors, steering head bearings, and transmission seals. Do not direct any water stream at air intakes, exhaust outlets or electrical connectors.*

Electrical components may be damaged by water. Do not allow water to contact electrical components or connectors.

1. Before washing, make sure exhaust pipes are cool. Cover each pipe opening with a plastic bag secured with a strong rubber band. Check that the spark plugs, spark plug wire caps, oil fill cap and fuel caps are properly seated.
2. Do not use abrasive cleaners.
3. Rinse off as much dirt and mud as possible with water running at low pressure. Use as little water as possible when washing near the air intake or the exhaust pipe openings. Dry these components thoroughly before using the motorcycle.
4. Clean the front fork tubes thoroughly to reduce fork seal wear and leakage.
5. After washing, remove the rubber bands and plastic bags from the exhaust pipes. Start the engine and let it idle for a few minutes.
6. Make sure the brakes are functioning properly before riding.

Windshield Care

Rinse the windshield with clean water to remove loose dirt and dust.

NOTICE: *Do not use glass cleaners, water or soil repellents, and petroleum or alcohol based cleaners on the windshield, as these products can damage the windshield.*

Leather Care

Leather must be cleaned and treated to properly maintain its quality appearance and extended life. Clean and treat leather more often under adverse conditions.

Use only cleaners and conditioners specifically designed for leather use.

- Use INDIAN MOTORYCLE Leather Care products.
- Do not clean leather with household soap or cleaners.
- Use high quality saddle soap or leather cleaner.
- Use of some leather treatment oils will darken distressed leather. Try a small amount on a hidden area first.

If you will not operate the motorcycle for more than 60 days, store the motorcycle to prevent damage to the fuel system and the battery and to protect components from corrosion or deterioration. During storage preparation you might use products that are potentially hazardous; such as fuel stabilizer. When using any of these products, follow the instructions and warnings on the product packaging.

Storage Area Preparation

Choose a dry, well-ventilated storage location, inside a garage or other structure if possible. The location should have a firm, flat surface and allow enough space for the motorcycle.

WARNING! *Gasoline is highly flammable and explosive under certain conditions. Do not store the motorcycle in any area (in home or garage) where it could be near open flames, pilot lights, sparks or electric motors. Do not smoke in the storage area.*

To best preserve tire condition:

- The storage area should have a relatively constant and moderate temperature.
- The storage surface should be free of oil and gasoline.
- The motorcycle should not be near a radiator or other heat source, or any type of electric motor.

Cleaning and Storage

Clean and Protect the Motorcycle

To prepare the motorcycle for storage, begin by cleaning it as outlined beginning on page 120. Wax painted surfaces and polish chromed and other metal surfaces. Apply protectant to exposed rubber, vinyl, and plastic parts.

Do not apply rubber protectant to the tire tread surfaces.

Fuel Stabilizer

Add fresh fuel to fill the fuel tank and add fuel stabilizer. Do not overfill.

Ride the motorcycle or start and run the engine for 15 minutes in a well ventilated area to distribute the stabilizer throughout the fuel system.

Tire Inflation

Inflate the tires to normal pressure. See page 104.

Engine Protection

Change the engine oil. See page 84.

Battery Care

1. Remove the battery. See page 110.
2. Clean the battery terminals first with a wire brush to remove any loose deposits.
3. Wash the posts and the ends of the battery cables with a solution of one part baking soda to 16 parts water. Rinse with clean water and wipe dry.
4. Apply a thin film of dielectric grease to the posts and cable connectors.
5. Clean the outside of the battery with a solution of mild detergent and warm water.
6. Store the battery in a dry area with a temperature of 32° to 90° F (0° to 32° C).
7. While in storage, fully charge the battery once a month. See page 112.

Maintenance During Storage

During extended storage periods, maintain tire pressure and battery voltage at the recommended levels.

Rodents

Mice and other rodents are often the worst enemy of a stored motorcycle. If the motorcycle will be stored in an area where mice are a concern (particularly in rural areas, barns, sheds, etc.) be sure to take extra measures to deter their infestation. This may include placing a screen mesh over any intake or exhaust openings (just be sure to remember to remove them when you take the motorcycle from storage).

Park and Cover the Motorcycle

1. Park the motorcycle in its storage location. Block the frame to take some of the weight off the front and rear wheels.

Tip: *Starting the motorcycle periodically during storage is NOT recommended. Water vapor is a by-product of the combustion process, and corrosion may result unless the engine is operated long enough to bring the oil and exhaust system to normal operating temperature.*

2. Secure a plastic bag over the (cooled) exhaust outlets to prevent moisture from entering the exhaust system.
3. Cover the motorcycle with a cover made from a durable, breathable material designed for storage. Covering the motorcycle helps protect it from dust and other airborne materials. The cover must be of a breathable material to prevent moisture from building up on the motorcycle which can cause oxidation of metal surfaces.

Removal From Storage

1. Install a fully charged battery.
2. Check the oil level. If the motorcycle was stored in an area subject to wide swings in temperature and humidity (such as outdoors), change the engine oil before starting the engine.

NOTICE: *During storage, temperature and humidity changes can cause condensation to form in the crankcase and mix with engine oil. Running the engine with oil that contains condensation can cause engine damage.*

3. Inspect the storage area for signs of fluid leaks. Identify and perform service to any leaking components.
4. Remove any intake or exhaust mesh covers installed for rodent protection.
5. Install new spark plugs if necessary.
6. Perform the pre-ride inspections. See page 57.
7. Perform a road test. See page 116.
8. Wash and polish the motorcycle. Wax, polish or apply protectant to appropriate components.

Specifications

Model Year 2014	CHIEF	CHIEFTAIN
Dimensions (Dimensions and specifications may vary with features, options and accessories)		
Overall Length	102.7 in. (2609 mm) Classic 103.3 in. (2625 mm) Vintage	101.0 in. (2565 mm)
Overall Width	39.8 in. (1012 mm)	39.8 in. (1012 mm)
Overall Height	49.9 in. (1267 mm) Classic 60.6 in. (1539 mm) Vintage	60.2 in. (1530 mm)
Seat Height	26 in. (660 mm)	26 in. (660 mm)
Wheelbase	68.1 in. (1730 mm)	65.7 in. (1668 mm)
Ground Clearance	5.5 in. (140 mm)	5.6 in. (142 mm)
Rake (frame)/Trail	29°/6.1 in. (155 mm)	25°/5.9 in. (150 mm)
Weight		
Dry Weight (without fuel/fluids)	778 lbs. (354 kg) Classic 801 lbs. (364 kg) Vintage	815 lbs. (370 kg)
Wet Weight (with fuel/fluids)	812 lbs. (369 kg) Classic 835 lbs. (380 kg) Vintage	848 lbs. (385 kg)
Gross Vehicle Weight Rating (GVWR)	1260 lbs. (573 kg)	1385 lbs. (630 kg)
Gross Axle Weight Rating (GAWR)	Front 485 lbs. (220 kg) Rear 775 lbs. (352 kg)	Front 500 lbs. (227 kg) Rear 885 lbs. (402 kg)
Maximum Load Capacity (riders, cargo, accessories)	448 lbs. (204 kg) Classic 425 lbs. (193 kg) Vintage	537 lbs. (245 kg)

Model Year 2014	CHIEF	CHIEFTAIN
Capacities		
Engine Oil	5.5 qts. (5.2 l) with filter at oil change	5.5 qts. (5.2 l) with filter at oil change
Fuel	5.5 gal. (20.8 l)	5.5 gal. (20.8 l)
Fuel Reserve (fuel light on)	1.0 gal. (3.8 l)	1.0 gal. (3.8 l)
Fork Oil	20.3 oz. (599 cc)	18.8 oz. (557 cc)
Engine		
Engine Type	ThunderStroke 111, Air Cooled	
Configuration	V-Twin	
Displacement	111 cu. in. (1811 cc)	
Cooling System	Air / Oil Cooler	
Compression Ratio	9.5:1	
Valve Train	2 Valves Per Cylinder Hydraulic Lifters	
Bore and Stroke	3.976” x 4.449” (101mm x 113mm)	
Fuel System/Throttle Body Bore	Closed Loop Fuel Injection/54 mm	
Exhaust System	1 into 2 with Catalytic Converter	
Rev Limit	5400 RPM	
Idle RPM	800 +/- 50 RPM Fully Warm	
Lubrication System	Semi-Dry Sump	
Spark Plug/Gap	NGK DCPR8E/.034 inch (0.90 mm)	
Chassis		
Front Suspension Type/Travel	Telescopic Fork/4.68 in. (11.9 cm)	Telescopic Fork/4.68 in. (11.9 cm)
Front Fork Tube Diameter	46 mm	46 mm
Rear Suspension Type/Travel	Single Shock/94mm	Single Shock/114mm
Swingarm	Cast Aluminum	
Front Brakes	Dual/Floating Rotor	
Rear Brakes	Caliper/Floating Rotor	