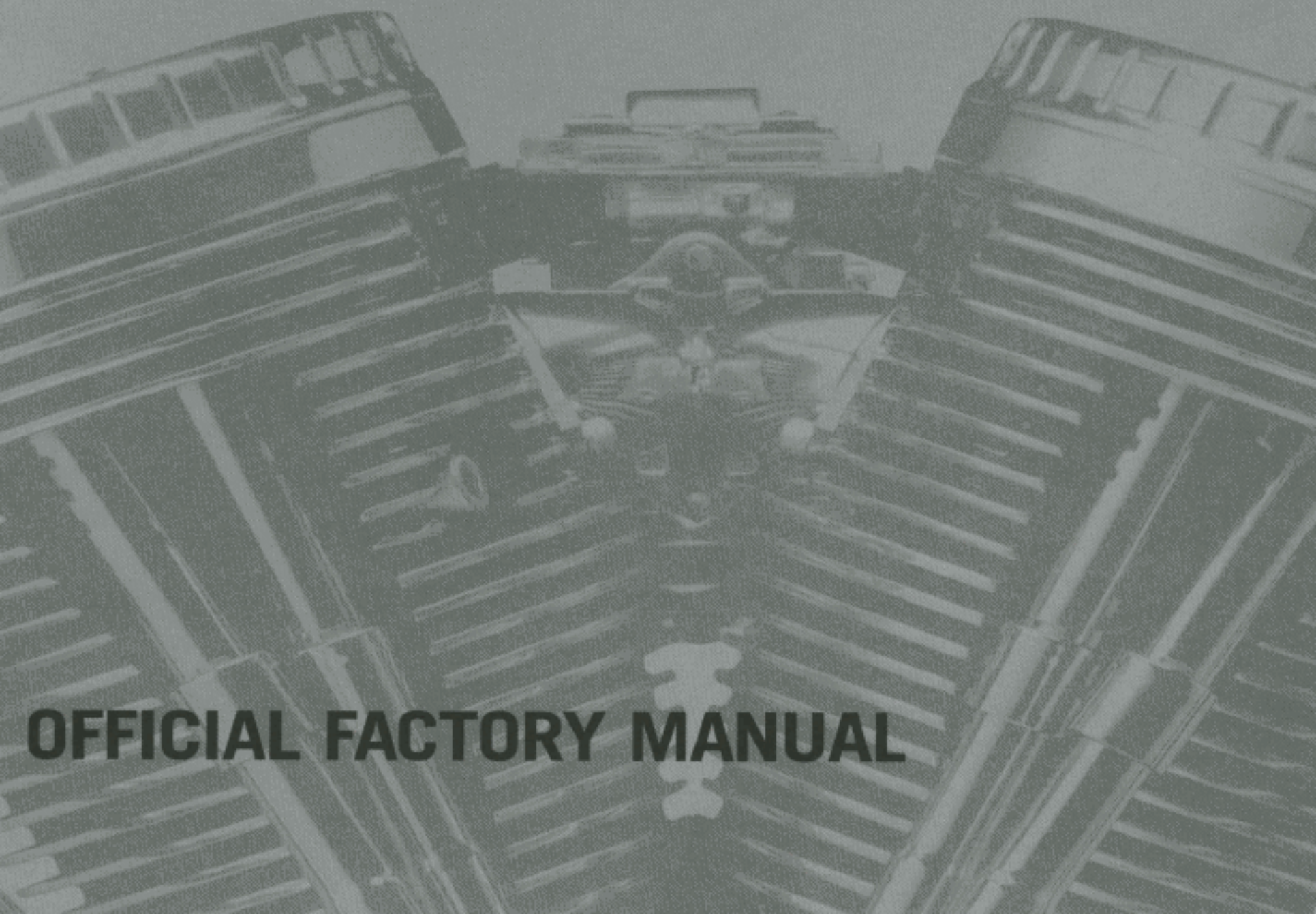
Classic Cycles Technical Resources

SINCE 1901
Indian
MOTORCYCLE

POWERPLUS™ 100 ENGINE SERVICE MANUAL



OFFICIAL FACTORY MANUAL

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INDIAN POWERPLUS™ 100 ENGINE SERVICE PROCEDURES

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Introduction

This manual provides service procedures for the Indian POWERPLUS® 100 engine. There are nine sections including sections that cover Troubleshooting and Maintenance in addition to Engine Disassembly and Assembly.

The Engine Removal and Installation section contains sub-sections that concentrate on removing chassis components and engine accessory items in preparation for performing in-chassis repairs from rocker box to cylinder and piston replacement. If a complete rebuild is required, the remaining sub-sections provide procedures for removing the complete engine assembly from the chassis and reinstalling it.

At the back of the manual are sections covering specifications and special tool requirements. The Specifications section provides assembly clearances and wear limits as well as fastener torque values and specified sealants. The Required Tools section identifies special tools that are readily available from JIMS® Machining. In addition, there are drawings for fabricating or modifying tools for use in servicing the engine.

Component and Systems Description

The Indian POWERPLUS® 100 engine is a four-cycle two-cylinder engine with a 45-degree "V" configuration. Its large bore and stroke give it a displacement of 100 cubic inches. The design is also traditional, carrying forward the characteristic "round" cylinders found in early Indian Chief motorcycles.

The engine is standard equipped with a carburetor and electronic ignition system.

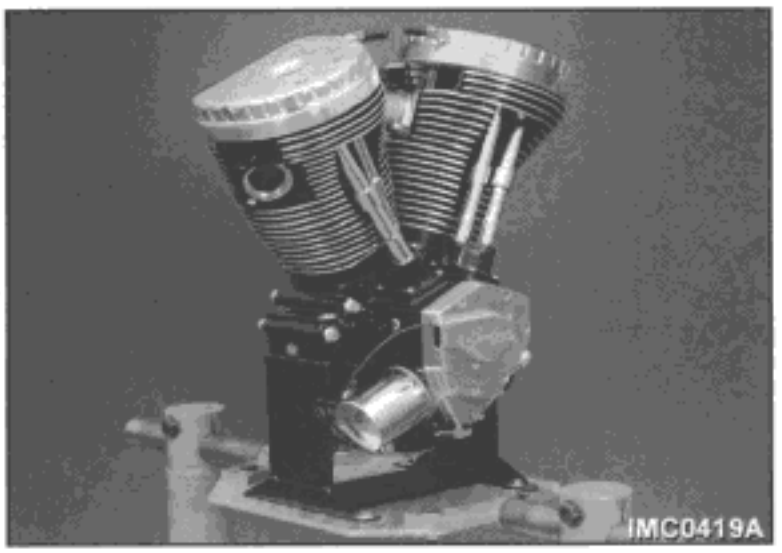

Figure 1— Indian POWERPLUS™ engine

The piston connecting rods are a fork-and-blade style connected to a common crank pin joining two flywheels. The crank pin is set between the pinion shaft flywheel to the right and the sprocket shaft flywheel to the left. The sprocket shaft drives the compensator sprocket in the primary case at the left side of the motorcycle. The sprocket shaft carries the alternator rotor, between the engine crankcase and the compensator. The pinion shaft drives the camshaft, oil pump and breather valve through gearing at the right side of the engine.

The camshaft actuates the intake and exhaust valves through a valve train that includes roller lifters, pushrods and rocker shaft assemblies. The roller lifters, following the cam lobes, raise the pushrods and rocker arms to open the intake and exhaust valves at the appropriate times in the intake and exhaust cycles.

The lubrication system incorporates a gerotor-type oil pump located at the front of the cam housing. The pump, which is driven by a worm gear fitted on the pinion shaft, provides positive lubrication to the engine. At the rear of the cam housing is a full-flow spin-on type filter to screen the lubricating oil as it circulates through the system.

The ignition system with an electronic module and timing sensor controls output to the spark plugs in the cylinders. The ignition rotor, attached to the end of the pinion shaft, in combination with the sensor in the ignition cover, provides the "trigger" signal for the electronic ignition system.

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Component Locations

The following views identify the location of major chassis and engine-related parts and accessories referenced in this manual.

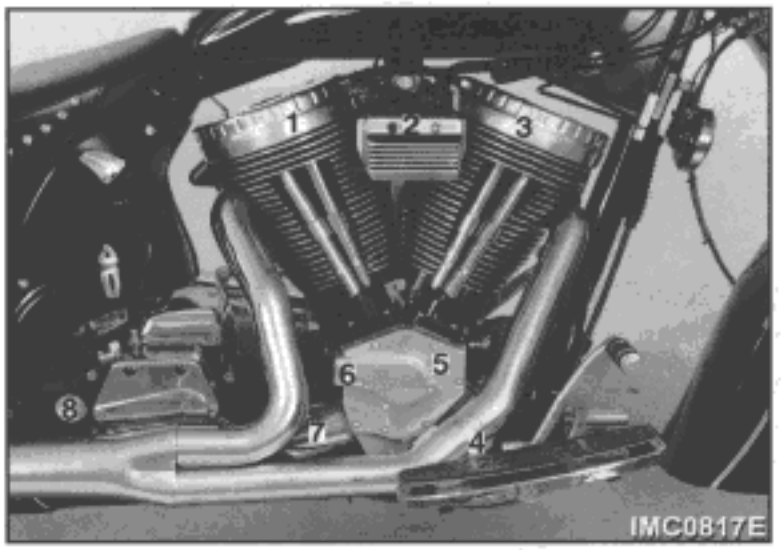

Figure 2 — Indian Chief Motorcycle (right side)

1. Rear cylinder
2. Ignition coil and upper engine support
3. Front cylinder
4. Oil pump
5. Cam cover
6. Ignition cover
7. Oil filter
8. Oil filler and dipstick

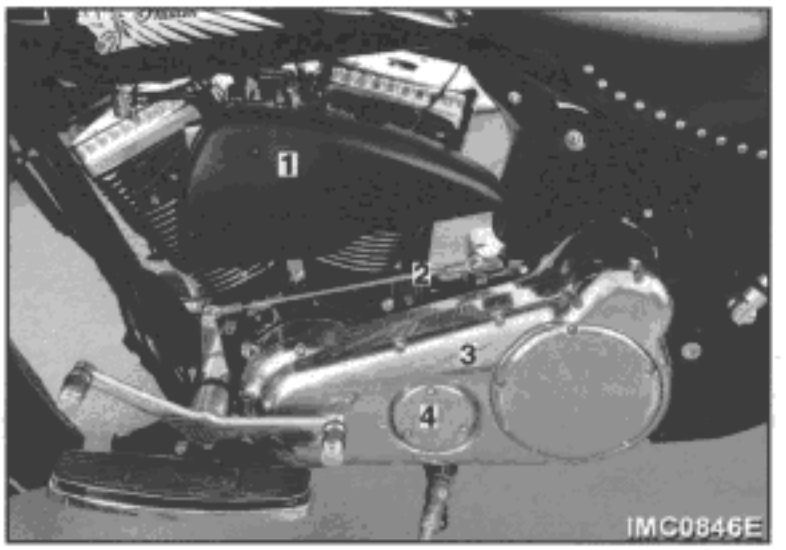

Figure 3 — Indian Chief Motorcycle (left side)

1. Air cleaner housing
2. Transmission shift control
3. Outer primary housing
4. Access cover