

Dr. KIRPAL SINGH

**VOL  
II**

# AUTOMOBILE ENGINEERING

The illustration features a yellow spark plug and a yellow piston, both rendered in a stylized, wireframe-like manner. They are positioned diagonally across the center of the cover. A large, irregular white splatter or cloud-like shape overlaps the parts and the text, creating a sense of motion or impact. The background is a solid dark red color with some faint white speckles.

STANDARD PUBLISHERS DISTRIBUTORS  
1705-B, NAI SARAK, DELHI-6

# AUTOMOBILE ENGINEERING

(Vol. II)

Automobile Engines  
including  
Electrical Equipment

**Dr. KIRPAL SINGH**

*B.Sc. Engg. (Mech). Hons., M.Sc. (Engg.), Ph.D.,*

*Adv. Dip. (German), Cert. E.T.T. (Russian), M.I.E. (India)*

Professor of Mechanical Engineering  
Punjab Engineering College, Chandigarh

**Standard Publishers Distributors**

1705-B, Nai Sarak, DELHI-110006

PHONE : 262700

POST BOX : 1066

# Contents

<i>Chapter</i>		<i>Page</i>
<b>1. INTRODUCTION</b>	Components of an automobile, basic engine terminology, types of engines, numbering of engine cylinders, firing order, square engine, Wankel engine, automotive gas turbine, electric car, hybrid car, special characteristics of sports car engines, R.A.C rating, S.A.E. rating, DIN rating, Theory questions, questions for viva.	<b>1—28</b>
<b>2. CONSTRUCTIONAL DETAILS</b>	Main parts, cylinder block, cylinder head, oil pan, manifolds, gaskets, cylinder liners, pistons, piston rings, connecting rod, piston pin, crank shaft, vibration damper, main bearings, engine valves, poppet valves, valve actuating mechanisms, overhead valve mechanism, side valve mechanism, overhead inlet and side exhaust valve mechanism, valve rotators, valve timing, valve troubles, sleeve valves, rotary valves, mufflers, comparative engine data, theory questions, questions for viva.	<b>29—148</b>
<b>3. ENGINE SERVICE</b>	Introduction, cylinder head, valves and valve mechanisms, piston-connecting rod assembly, cylinder, reinstalling the assembly in the cylinder, crankshaft and main bearings, engine reassembly, theory questions, questions for viva.	<b>149—189</b>
<b>4. COOLING SYSTEM</b>	Necessity, methods of cooling, air cooling, water cooling, components of water cooling	<b>190—218</b>

