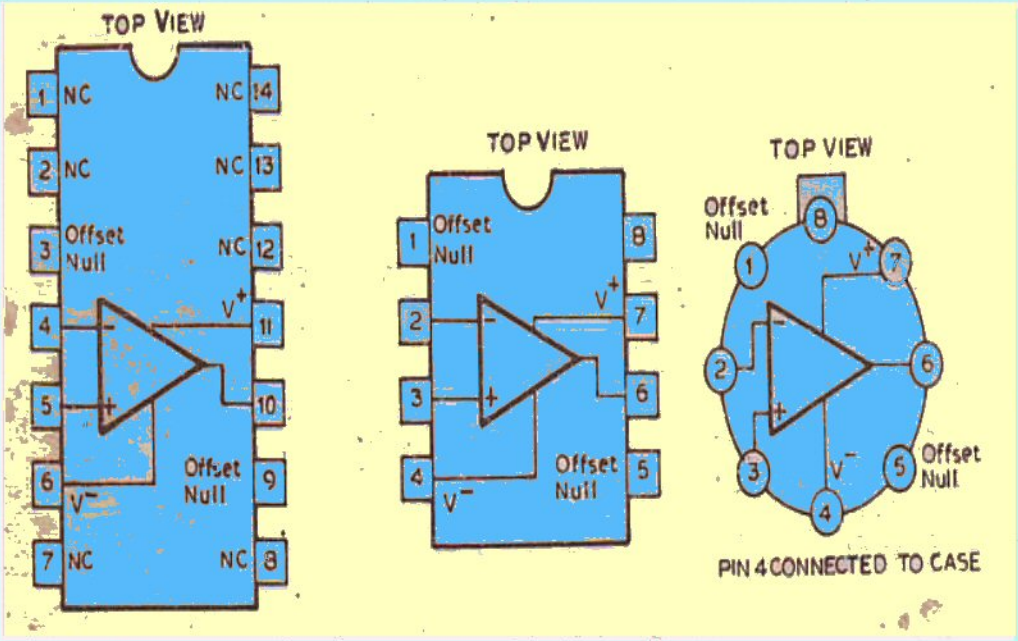
41 Projects using 741 OP Amp



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Publishers
Business Promotion Bureau
376, Lajpat Rai Market, Delhi-110006

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4794/23, Bharat Ram Road, Darya Ganj, NEW DELHI-110002.
8/1, Ritchie Street, Mount Road, MADRAS-600002.
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FIRST EDITION 1982.

Published by G.C. Jain for Business Promotion Bureau.
376, Lajpat Rai Market, DELHI-110006.
Phototypeset by N.K. ENTERPRISES, Daryaganj, New Delhi-110 002
Printed at Skylark Printers, 11355, Id-Gah Road, New Delhi-110055

PREFACE

The Operational Amplifier IC741 is perhaps one of the most inexpensive IC available in the market. Yet it is comparable to the best of such IC's in respect of versatility and superb performance. It is, therefore, natural that there is hardly any electronic magazine in the world which does not contain a project using this IC.

This book which is now in your hands contains 41 projects employing this IC. You will find the electrical details of this IC in the book itself, which make them so versatile.

These projects will provide the hobbyist, the experimenter and even the professional, practical experience in making these projects. In this connection, we would like to emphasise two aspects: firstly, good soldering and the use of IC Sockets. It is not proposed to go into the details of good soldering, but, please bear in mind badly-soldered joints will invariably disappoint you in the performance of the project, no matter how well the circuit is designed or how good are the individual components.

Secondly, it is always a good practice to use an IC socket, wire it up and then insert the IC in the socket in the CORRECT way.

At this stage, it will be appropriate to indicate that this IC741 is not capable of driving a loudspeaker directly. Its output is usually connected to an output amplifier stage. At times, however, this IC may be designed to actuate a pair of earphones.

The author Mr. M.C: Sharma is not new to our readers. Suggestions for improvement will be gratefully received by him as well as ourselves.

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1

INTRODUCTION

An operational amplifier, often referred to as an Op Amp, is a very high gain high performance amplifier designed to amplify ac and dc signal voltages. Modern integrated circuit technology and large scale production techniques have brought down the prices of such amplifiers within reach of all amateurs, experimenters and hobbyists. The Op Amp is now used as a basic gain element, like an elegant transistor, in electronic circuits.

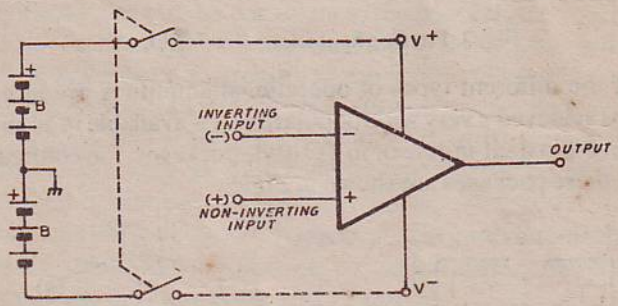

Fig. 1. Symbol for an Operational Amplifier.

A symbol used to represent an operational amplifier in schematics is shown in Fig. 1. The operational amplifier has two inputs and only one output. One input is called the **inverting** input and is denoted by a minus sign. A signal applied to this input appears as an amplified but phase inverted signal at the output. The second input is called a **non-inverting** input and is denoted by a plus sign. A signal applied to this input appears at the output as an amplified signal which has the same phase as that of the input signal.