

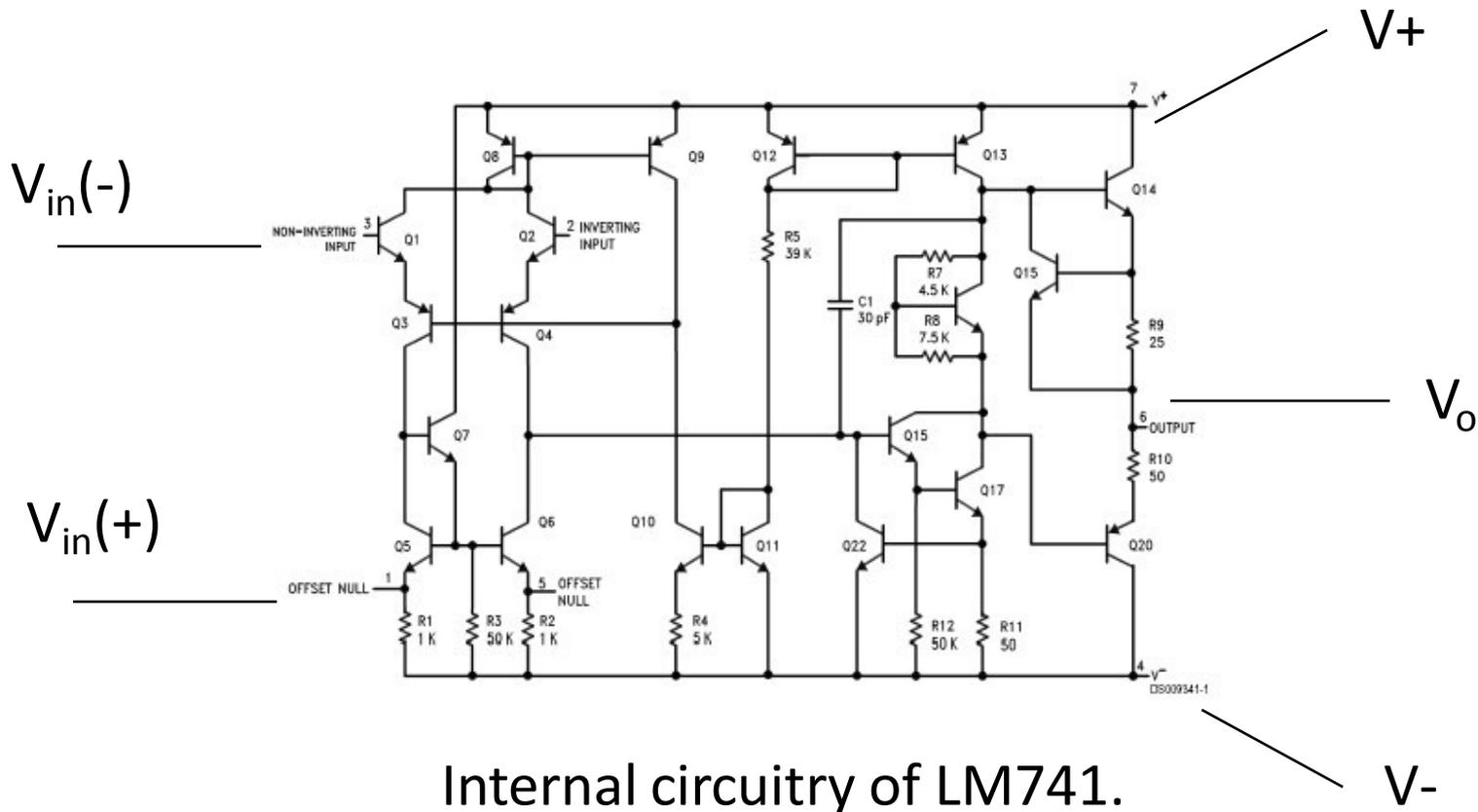
# UNIT-2

## Lecture-1

An Overview of Op-Amp (ideal and non ideal)  
based Circuits

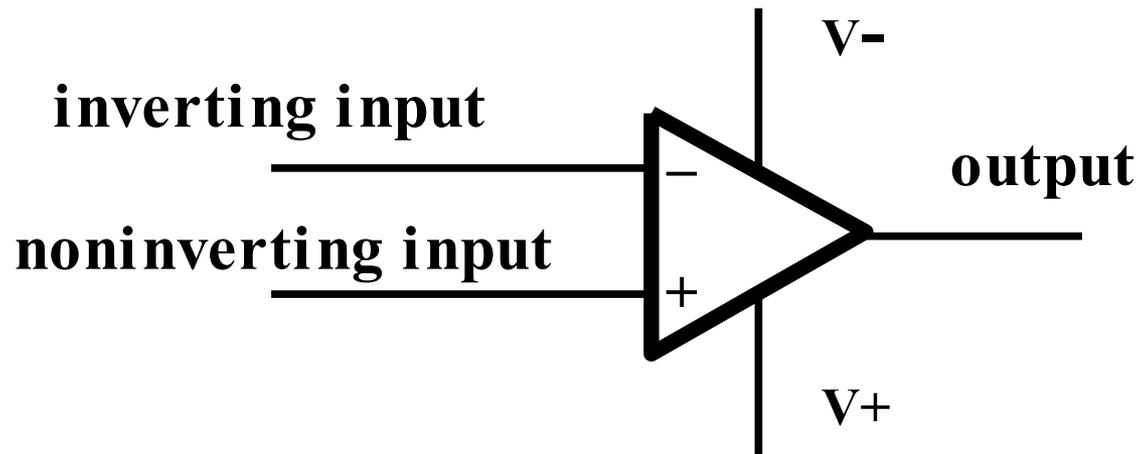
# Operational Amplifiers

The op amp is built using VLSI techniques. The circuit diagram of an LM 741 from National Semiconductor is shown below.



# Operational Amplifiers

The basic op amp with supply voltage included is shown in the diagram below.

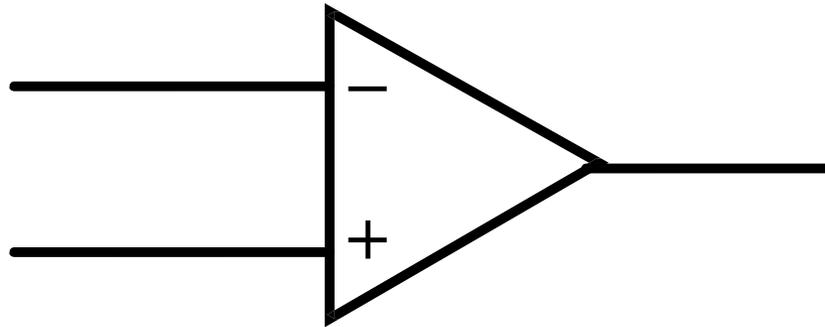


Basic op am diagram with supply voltage.

# Operational Amplifiers

In most cases only the two inputs and the output are shown for the op amp. However, one should keep in mind that supply voltage is required, and a ground.

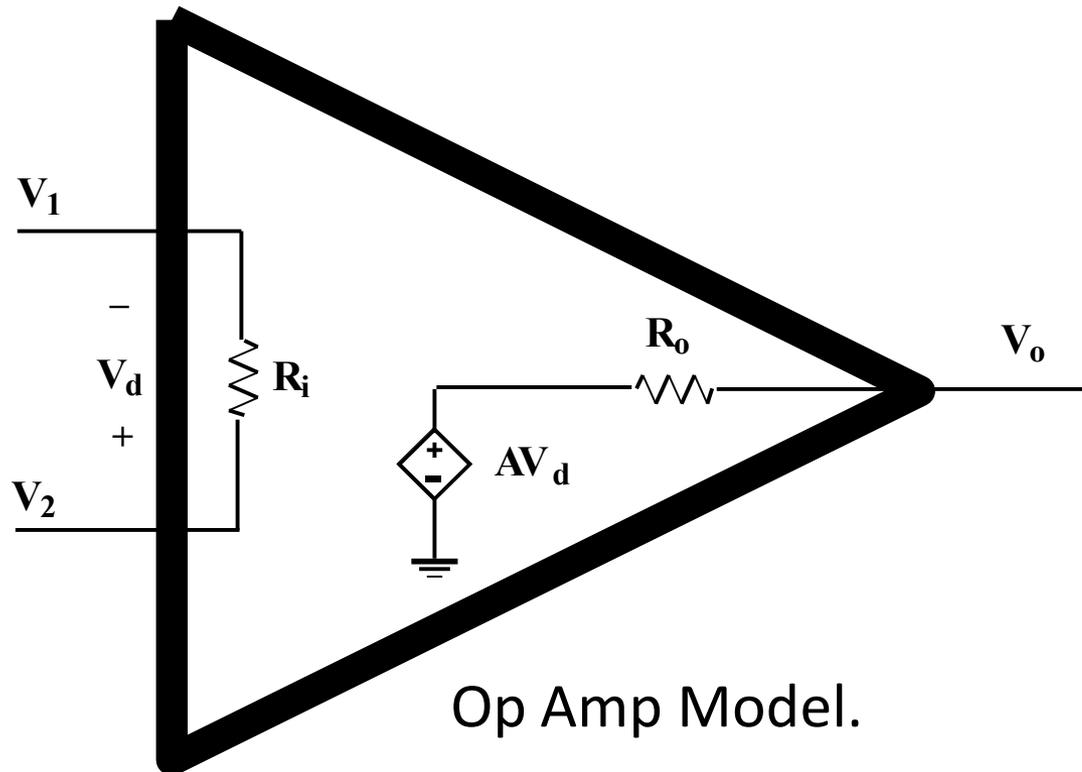
The basic op am without a ground is shown below.



Outer op am diagram.

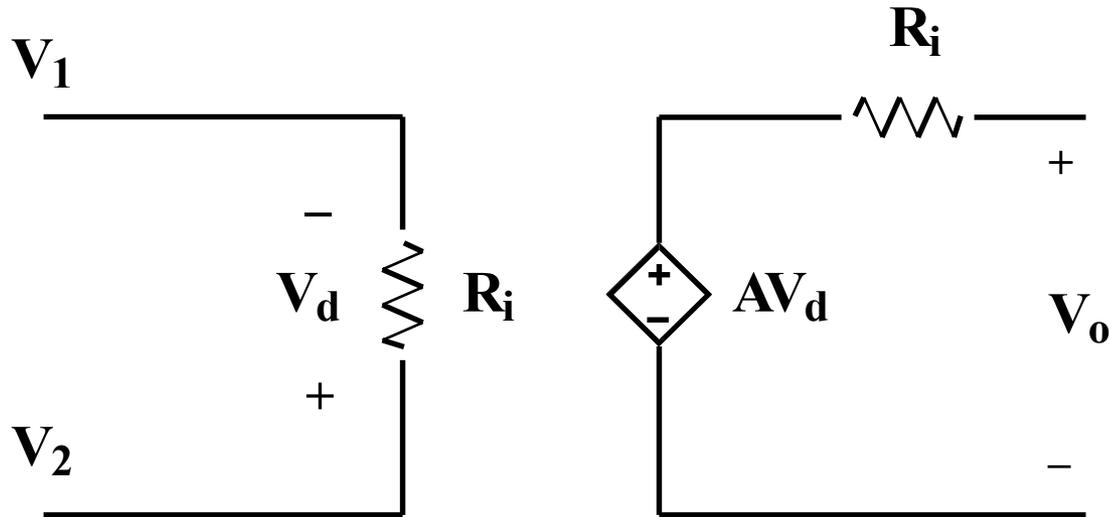
# Operational Amplifiers

A model of the op amp, with respect to the symbol, is shown below.



# Operational Amplifiers

The previous model is usually shown as follows:



Working circuit diagram of op amp.