# PrecisionRectifier -- Overview

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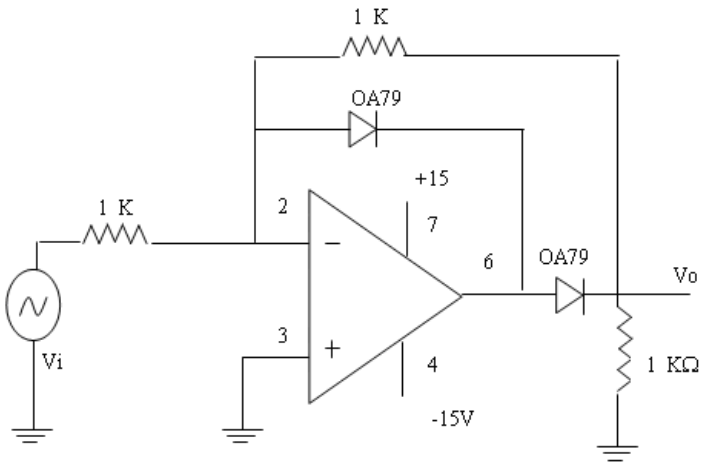
**Objectives**:
To design half wave precision rectifier using op-amps.

**Pre lab questions**:
1. What is the difference between an ordinary rectifier and a precision rectifier using op-amps?
2. Identify the diode which will be ON during the positive half cycle in the half wave rectifier circuit below.
3. Identify the diode/diodes which will be ON during the positive half cycle in the full wave rectifier circuit below.

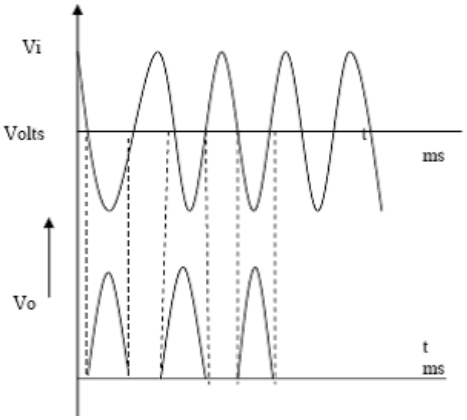
**Components & Equipments required:**
1. Operational amplifier - µA 741
2. Resistors
3. Diodes
4. Signal generator
5. CRO
6. Bread board
7. Power supply
8. Connecting wires

**Half wave rectifier:**

**Circuit and Design**:



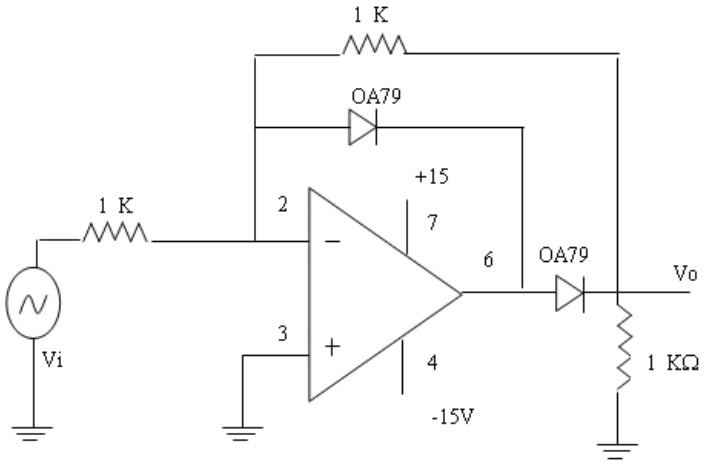

**Model Graph:**



# PrecisionRectifier -- Procedures

# Step 1

Connect the circuit as shown below.

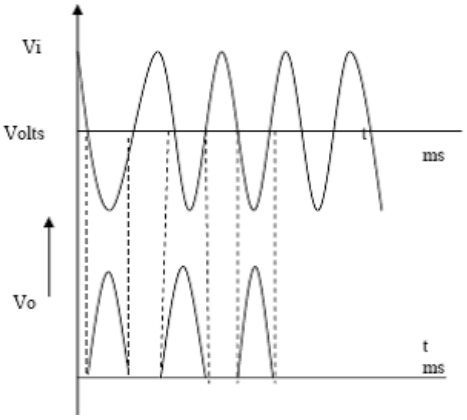



# Step 2

Apply a small signal say 500mV, 1 kHz sine signal as Vi

# Step 3

Observe the output Vo and input Vi simultaneously in the two channels of CRO. Verify if the negative cycle of the input signal is getting rectified as shown below




# Step 4

Plot your observations in a graph sheet.

# Step 5

**Post lab questions:**
1. Apply triangular / square wave as inputs to the rectifier circuits and observe the outputs.
2. Does your full wave rectifier rectify ac signals of amplitude less than 1 volt?

# Step 6

**Inference/Result:**