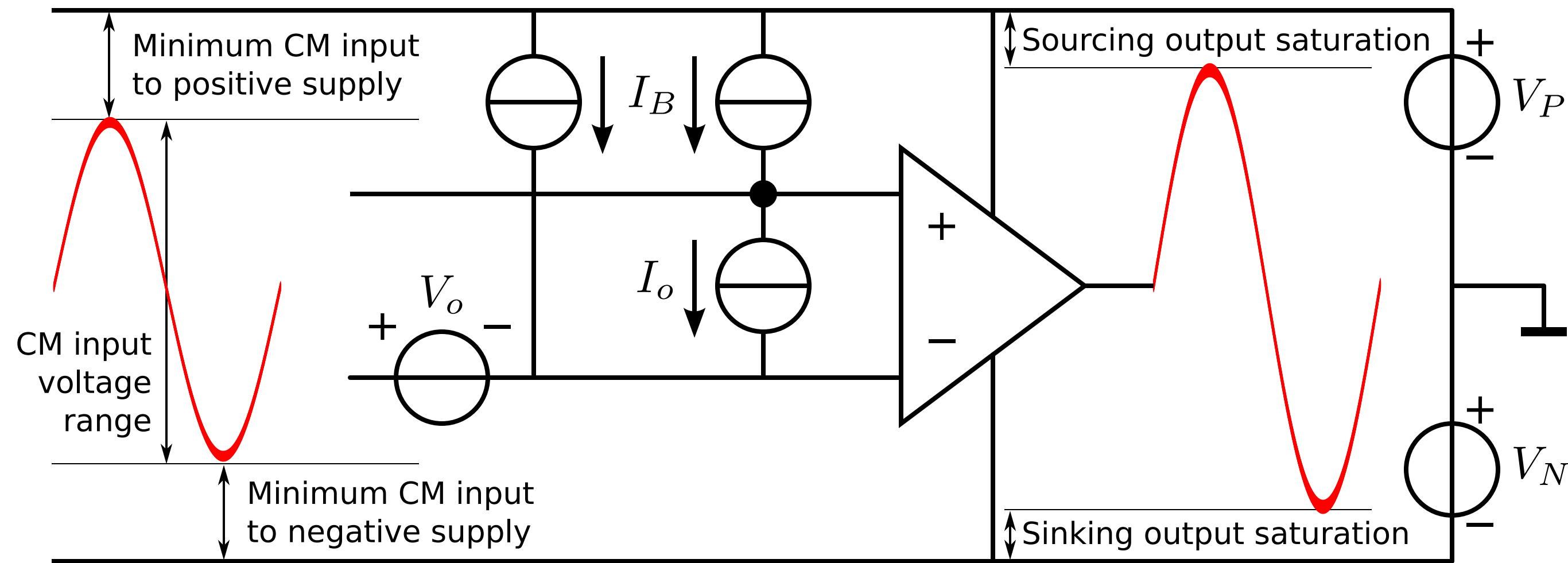


# **Structured Electronic Design**

## Biasing of operational Amplifier Circuits

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# Biasing of Operational Amplifiers



## Input port:

- Bias currents cannot be tuned to zero
- Offset current cannot be tuned to zero
- Offset voltage cannot be tuned to zero
- Input common-mode voltage operating range:
  - Limited by saturation or breakdown mechanisms in input devices
  - May exceed supply voltage (R2R input devices)

## Output port:

- Output voltage swing less than peak-to-peak supply voltage:
  - Depends on output current