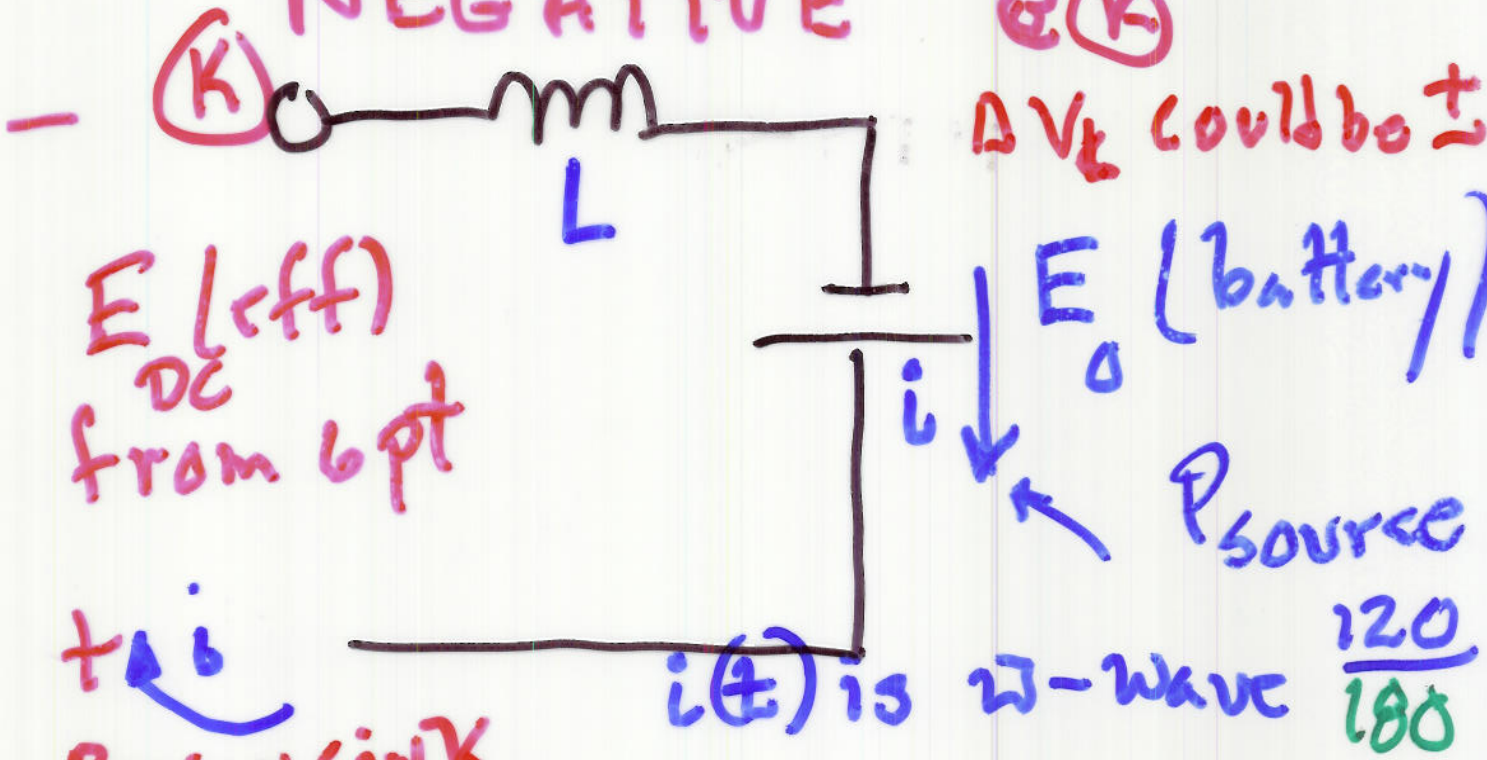
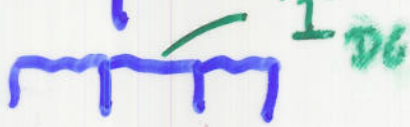
for $\alpha > 90°$ $E_{DC}(eff)$ is NEGATIVE @ (K)

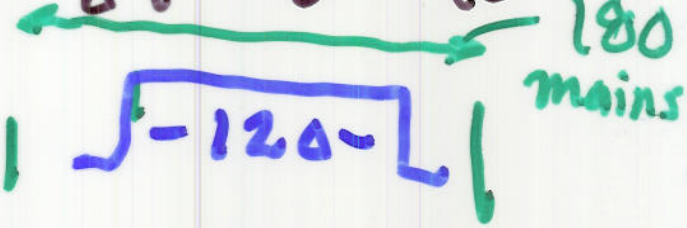


For power flow from E_0 to $E_{DC}(eff)$ requires ? 6point

diodes steer (3) $\frac{120}{180}$



If satisfied we deliver square waves of i to the mains!



Diode switching

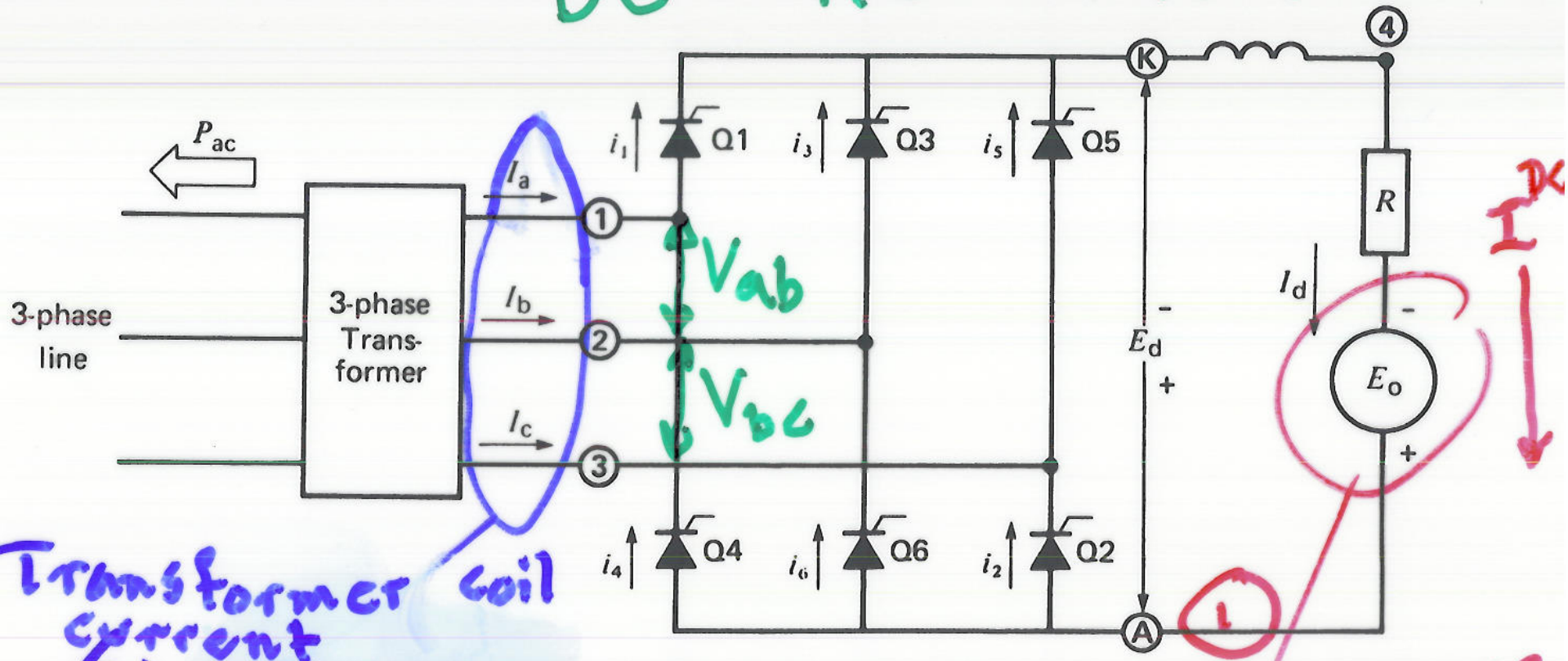
∴ Delivers AC power to mains

Transformer i:

Figure 21-41 Three-phase, 6-pulse converter in the inverter mode.

"Old" made "New"

DC - AC Inverter

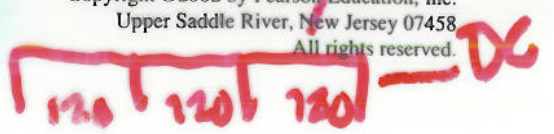


Transformer coil current

(3)

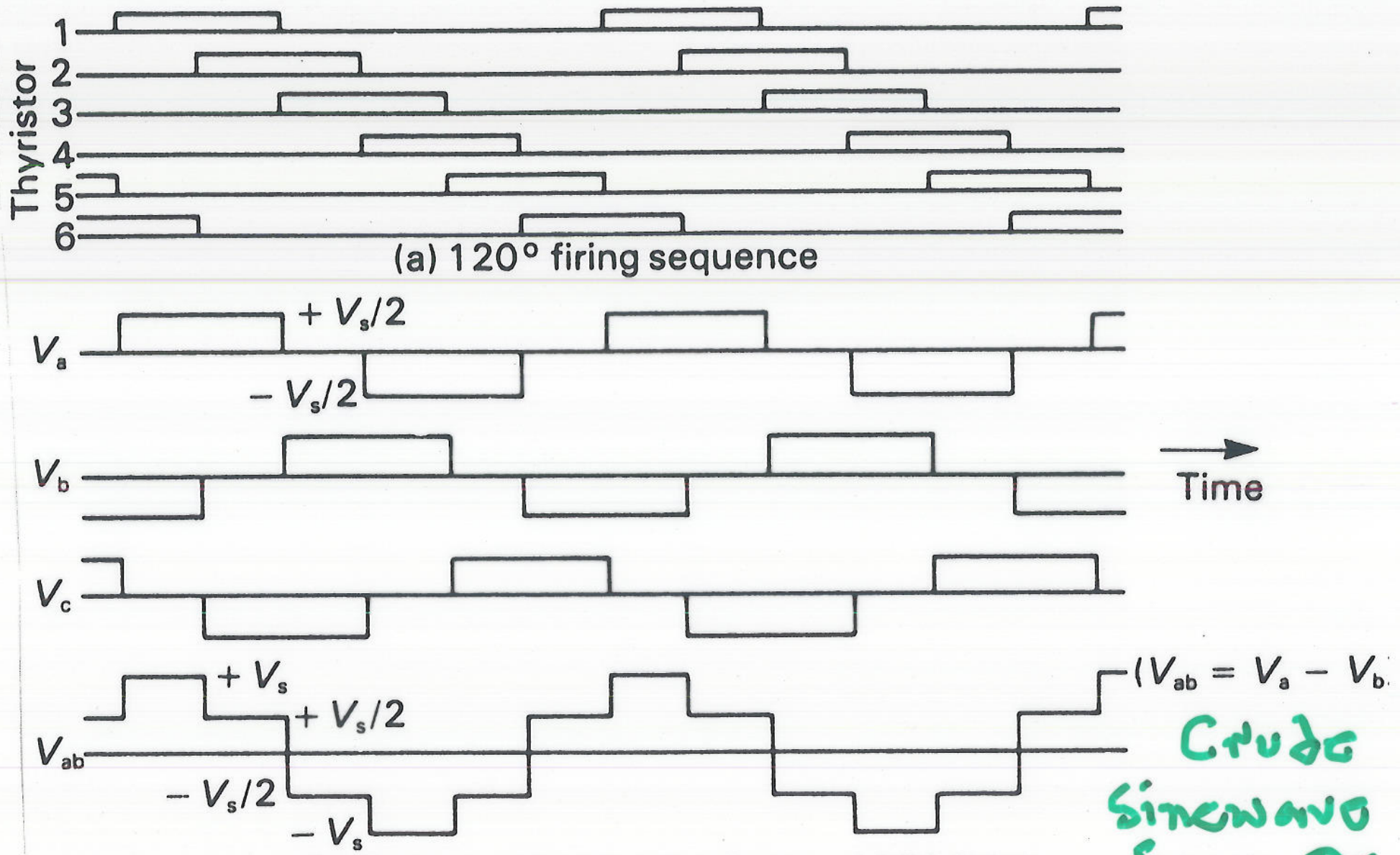
(2) Diode i

(1) DC source Polarity Key



Theodore Wildi
Electrical Machines, Drives, and Power Systems, 5e

Copyright ©2002 by Pearson Education, Inc.
Upper Saddle River, New Jersey 07458.
All rights reserved.



Crude sinewave from DC source

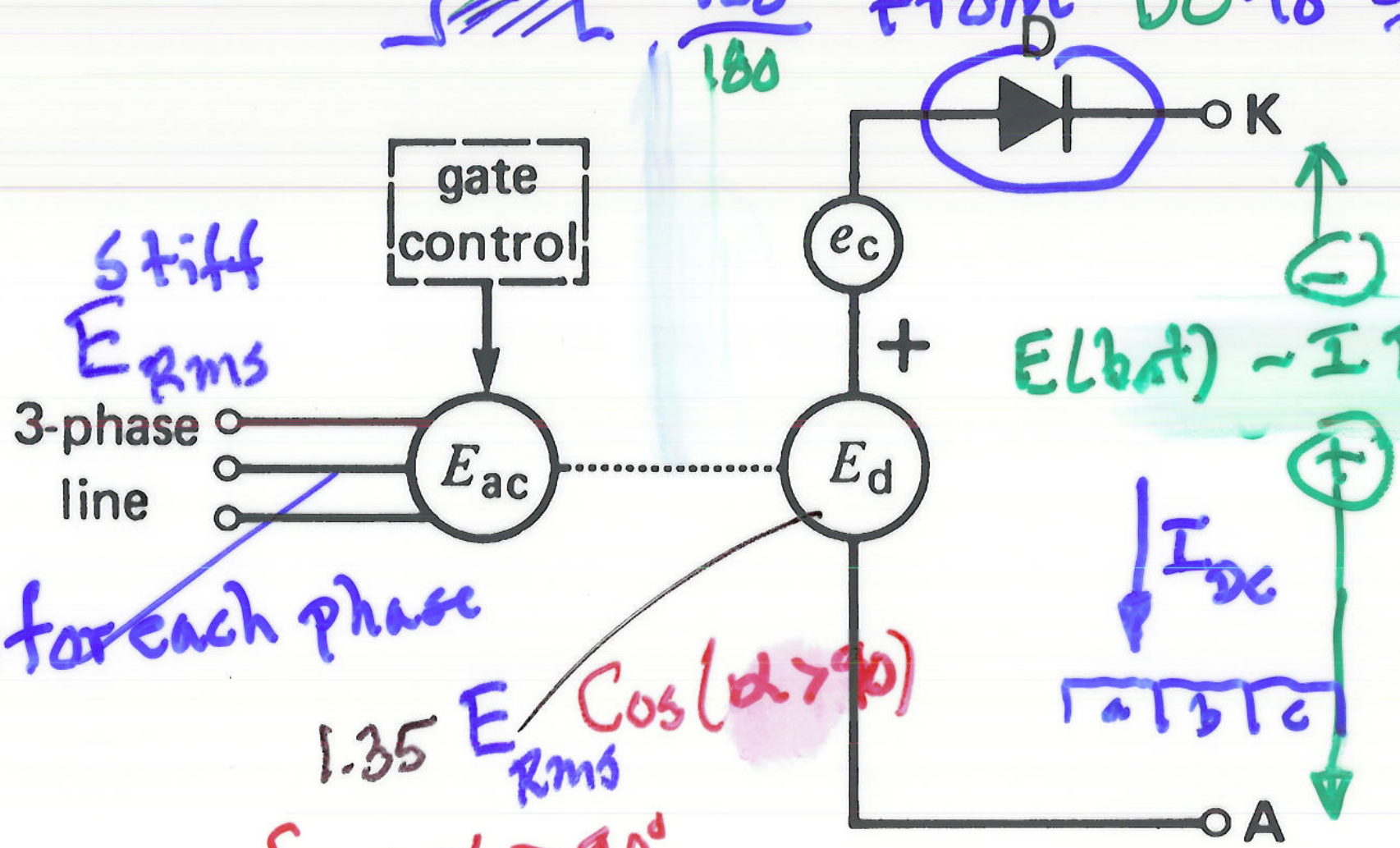
Fig. 3.15 Three-phase inverter with a 120° switching sequence.

$|\cos\alpha| = |\cos(180-\alpha)|$

Figure 21-44 Equivalent circuit of a thyristor converter.

i(t) of ω-waves of diodes from DC to E_{Rms}

$\frac{120}{180}$



$\frac{120}{180}$

for $\alpha > 90°$

E_d polarity is ? Only −

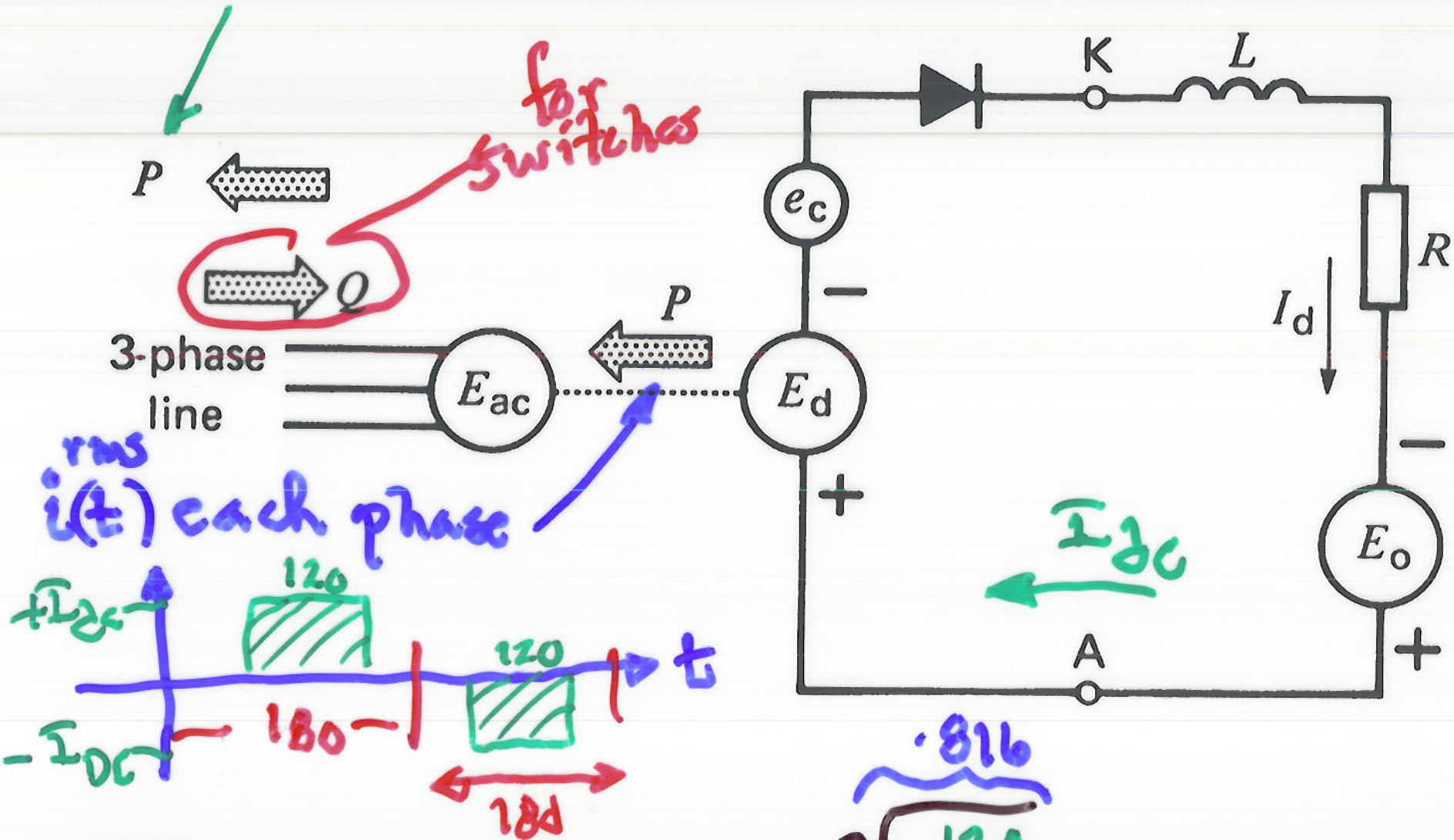
$\frac{120}{180}$

Theodore Wildi
Electrical Machines, Drives, and Power Systems, 5e

Copyright ©2002 by Pearson Education, Inc.
Upper Saddle River, New Jersey 07458
All rights reserved.

Figure 21-46 Equivalent circuit of a 3-phase thyristor converter in the inverter mode.

DC-AC Conversion



$$I(rms) = I_{DC}\sqrt{\frac{120}{180}} \quad (.816)$$

Theodore Wildi
Electrical Machines, Drives, and Power Systems, 5e

Copyright ©2002 by Pearson Education, Inc.
Upper Saddle River, New Jersey 07458
All rights reserved.