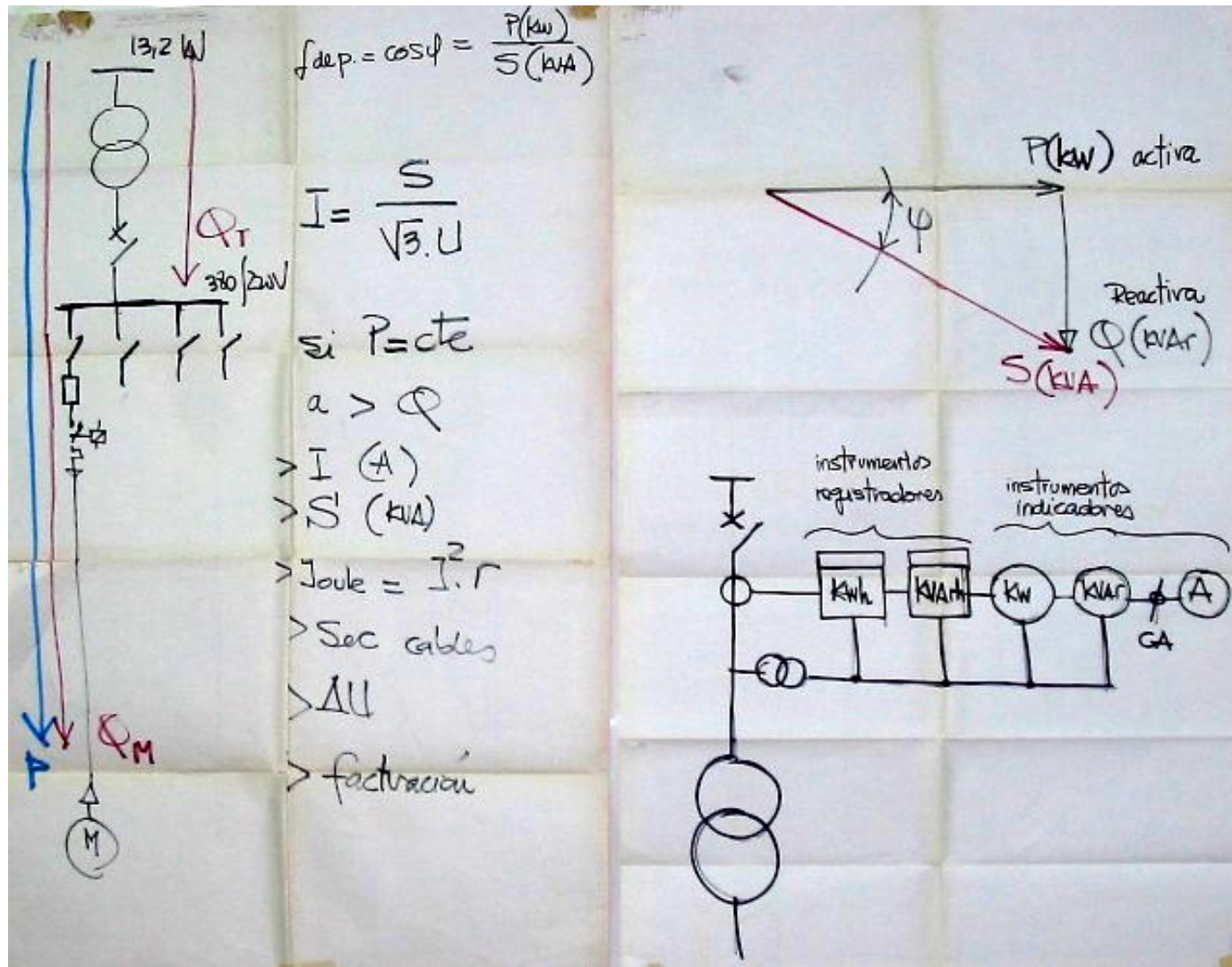


IE-11cof - MEJORA DEL FACTOR DE POTENCIA

Norberto I. Sirabonian - Alfredo Rifaldi

[csf53.jpg](#)



[csf54.jpg](#)

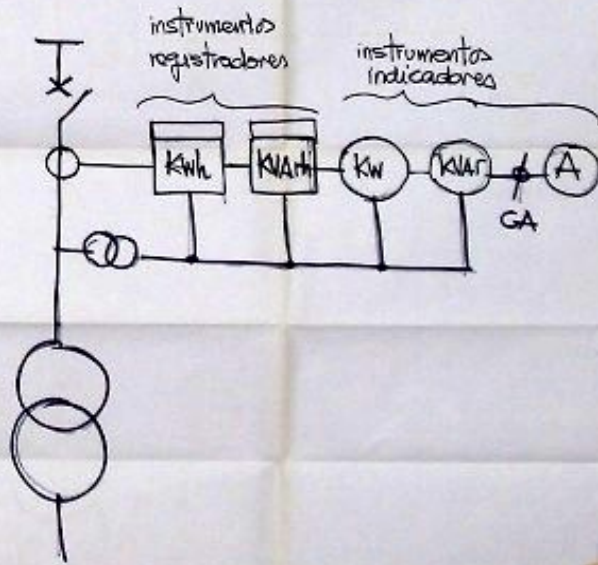
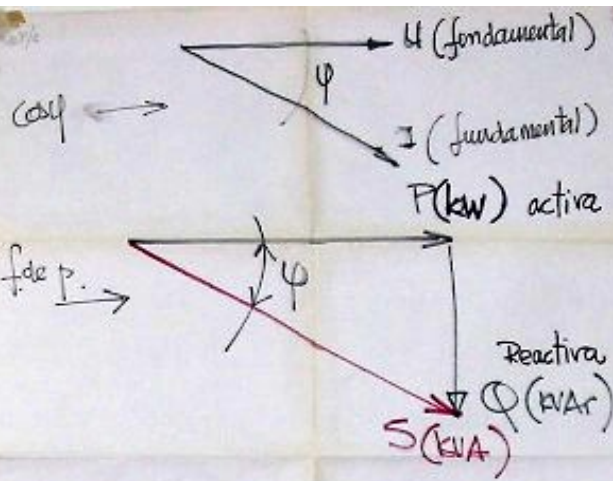
$$I = \frac{S}{\sqrt{3} \cdot U}$$

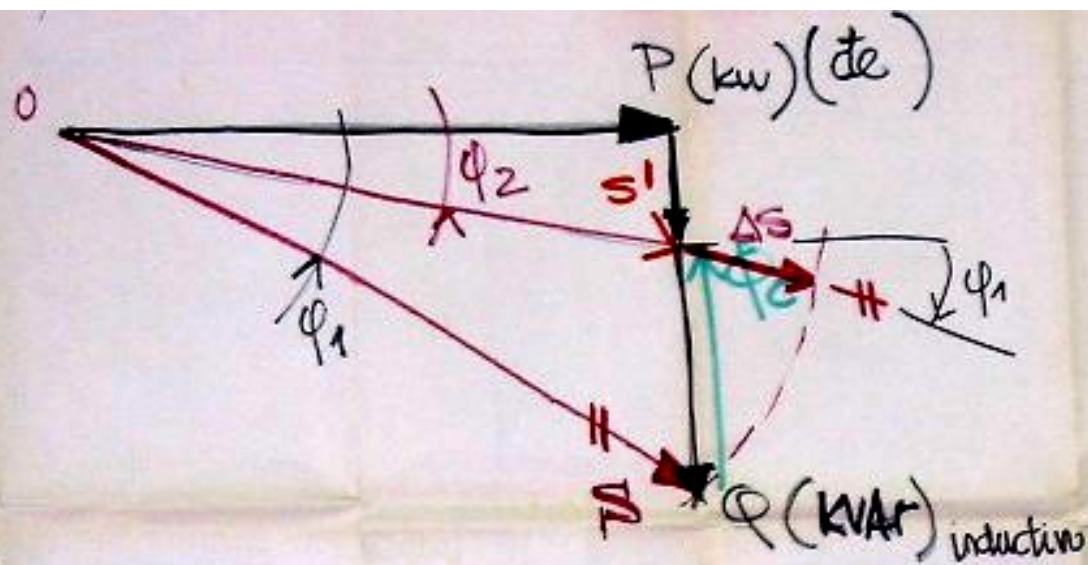
$$a \in \mathbb{Q}$$
$$V_{S2} \text{ (KVA)}$$
$$> \text{Joule} = I^2 r$$

> Sec cables

 ΔU

> facturación



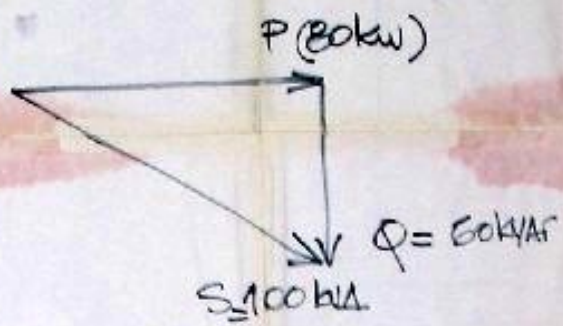


Ventajas

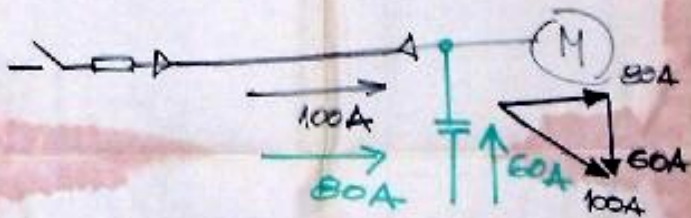
- Potencia disponible del Trafo
- reducción de la facturación y tarifa
- Mayor tensión en la instalación ($< \Delta U$)
- Menor pérdidas en la instalación ($I^2 R$)

[csf56.jpg](#)

$$\text{factor de potencia} = \frac{\text{kW}}{\text{kVA}}$$



$$\text{f.d.p.} = \frac{80 \text{ kW}}{100 \text{ kVA}} = 0,8$$



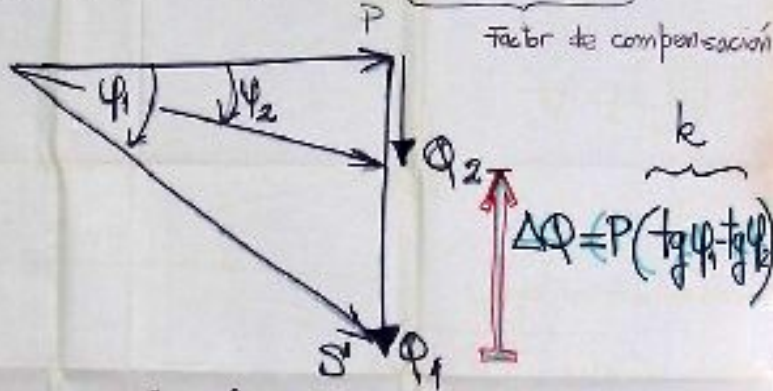
$$\text{tg } \varphi = \frac{Q}{P}$$

[csf57.jpg](#)

$$Q_1 = P \cdot \tan \varphi_1 \quad \text{kVA reactivos antes de la comp.}$$

$$Q_2 = P \cdot \tan \varphi_2 \quad \text{kVar. react. luego de la comp.}$$

$$Q_1 - Q_2 = \Delta Q = P (\tan \varphi_1 - \tan \varphi_2)$$

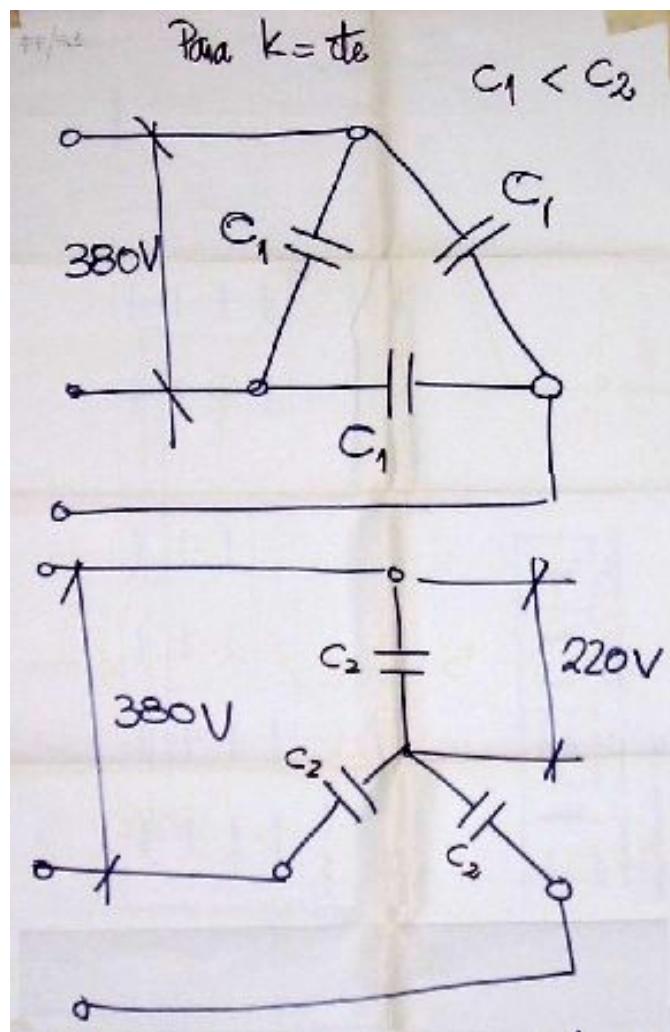


$$\Delta Q = \omega \cdot C \cdot U^2 \cdot 10^{-9} \text{ (kVAr)}_c$$

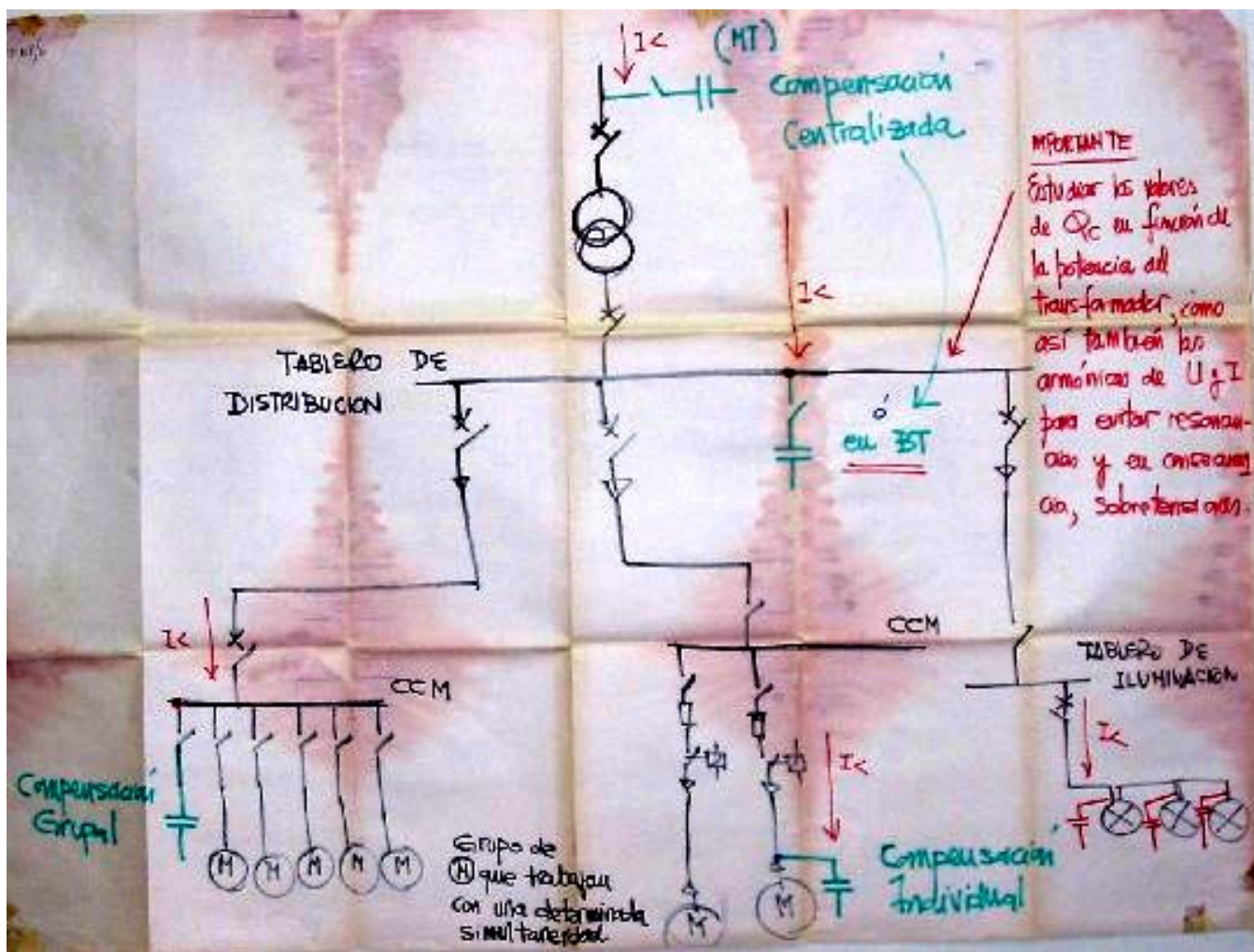
$$C = \frac{\Delta Q \cdot 10^9 \text{ (}\mu\text{F)}}{\omega \cdot U^2} = \frac{P (\tan \varphi_1 - \tan \varphi_2) \cdot 10^9 \text{ (}\mu\text{F)}}{2\pi f \cdot U^2}$$

$$C = \frac{P \cdot k \cdot 10^9 \text{ (}\mu\text{F)}}{2\pi f \cdot U^2}$$

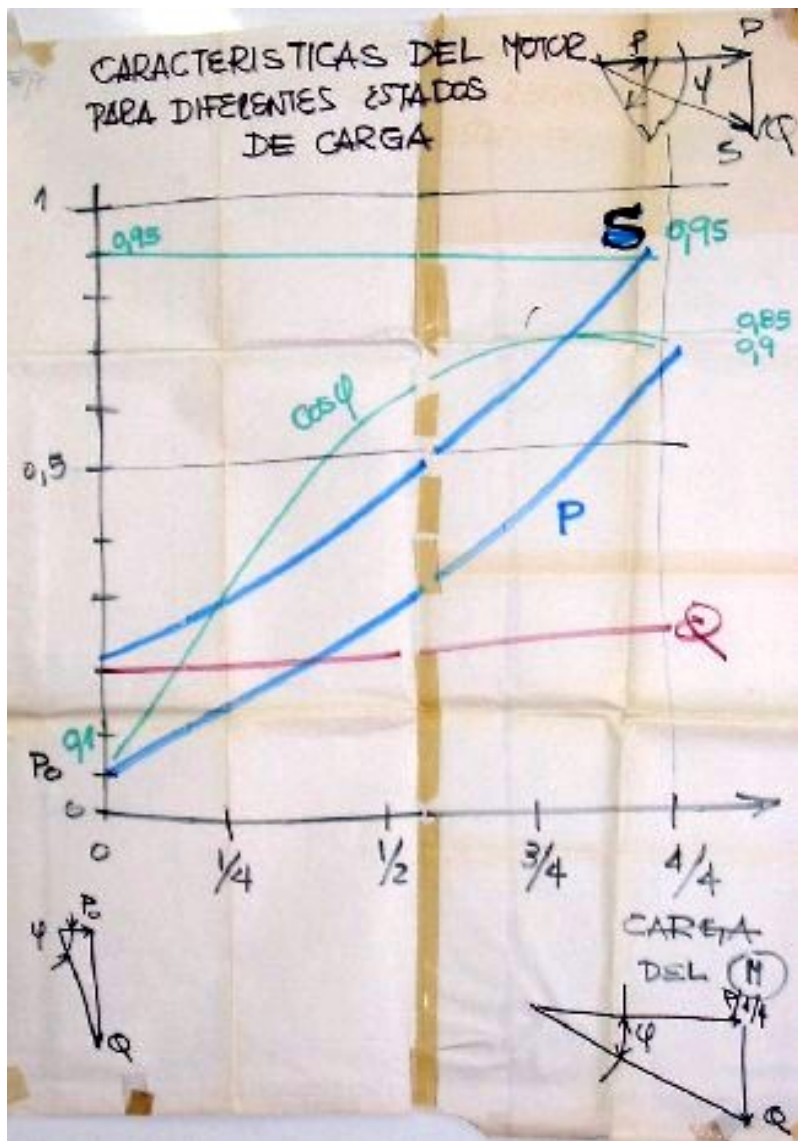
[csf58.jpg](#)



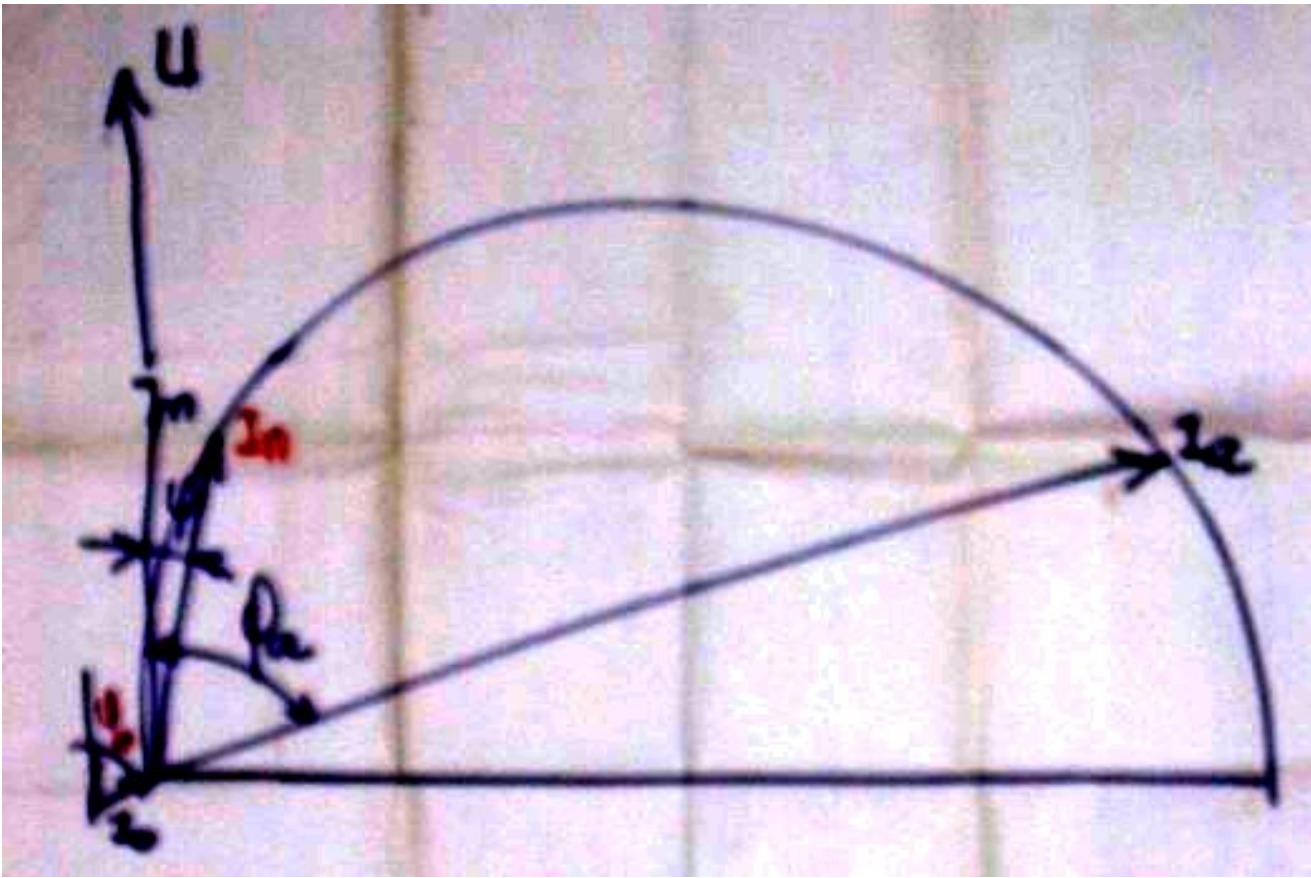
[csf59.jpg](#)



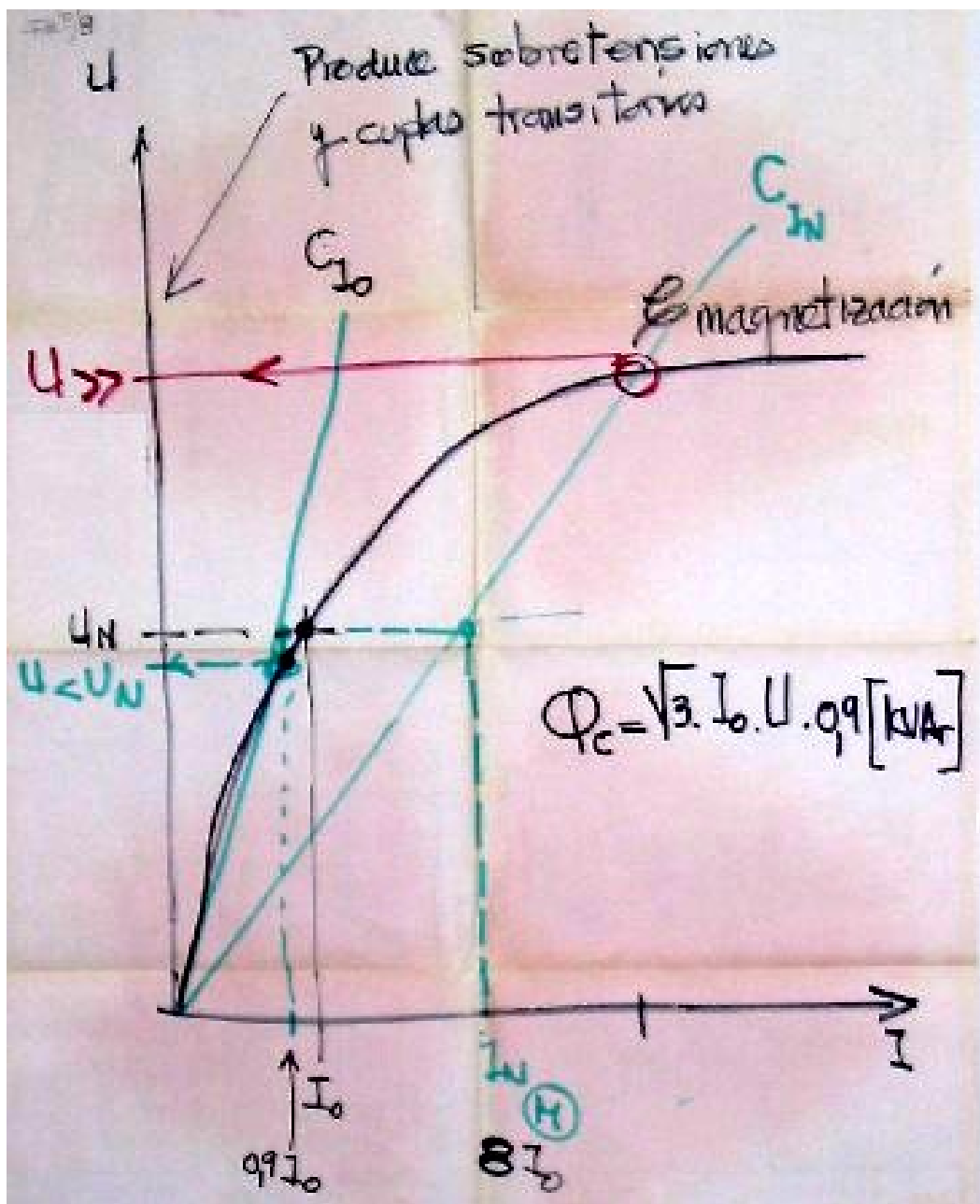
[csf60.jpg](#)



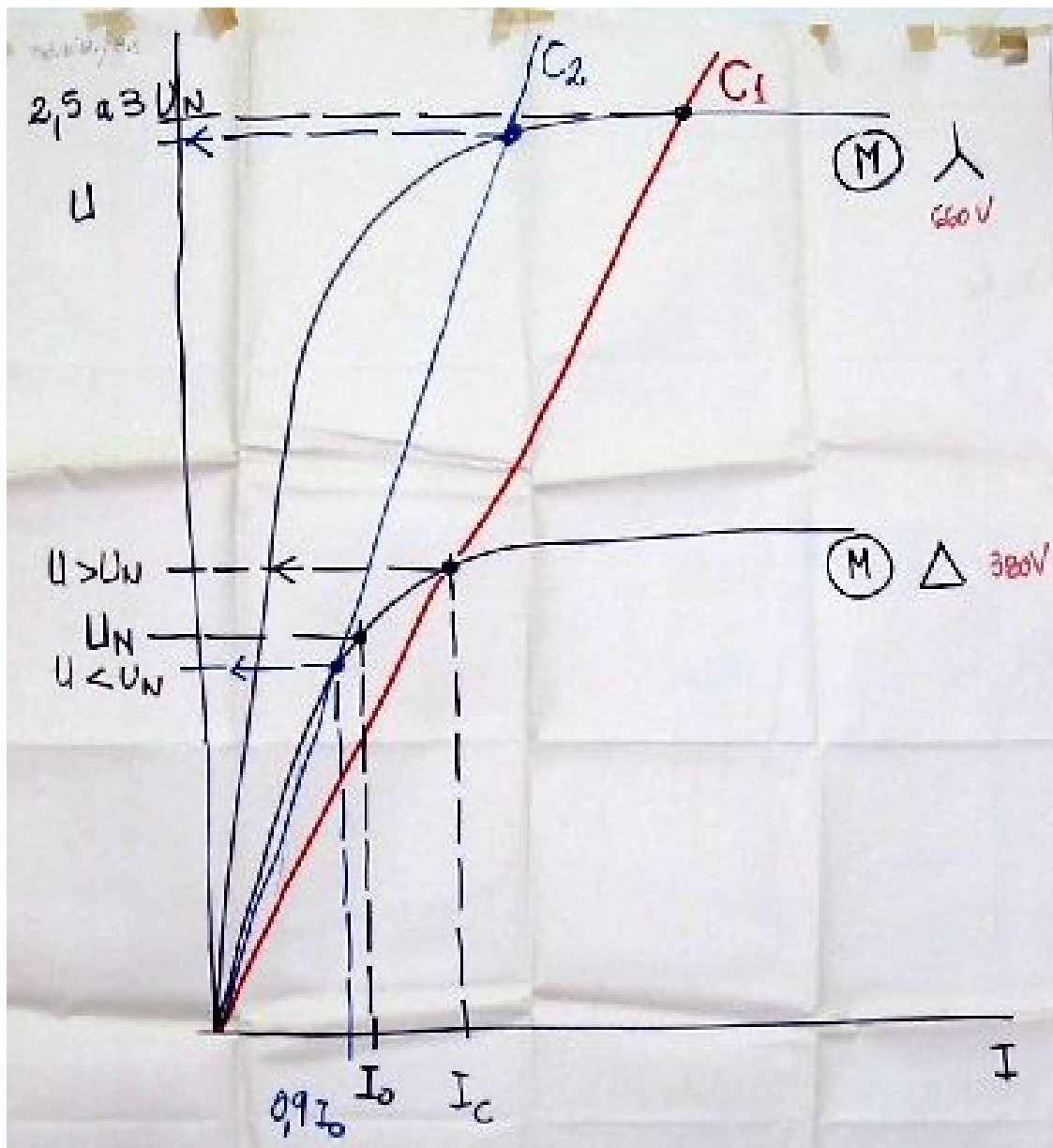
[csf61.jpg](#)



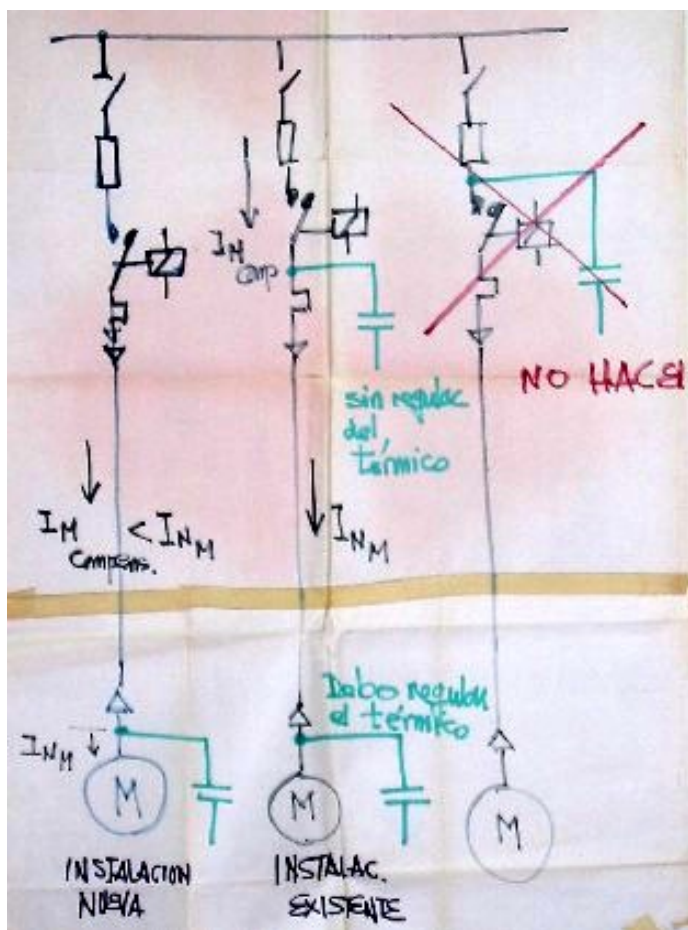
[csf62.jpg](#)



[csf63.jpg](#)



[csf64.jpg](#)



[csf65.jpg](#)

