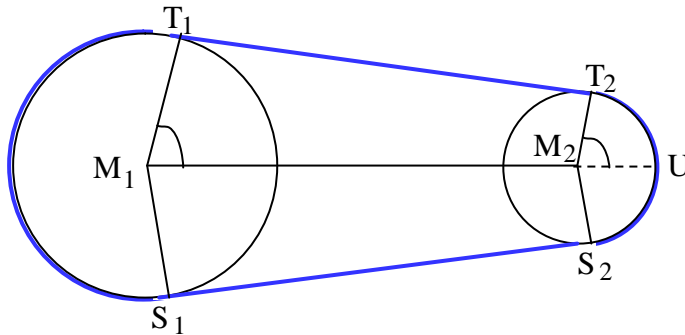


PANJANG SABUK LILITAN 2 LINGKARAN

A. Sabuk Lilitan Luar



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Perhatikan gambar!

T_1M_1 dan T_2M_2 tegak lurus TT_2 , sehingga TT_1 sejajar T_2M_2

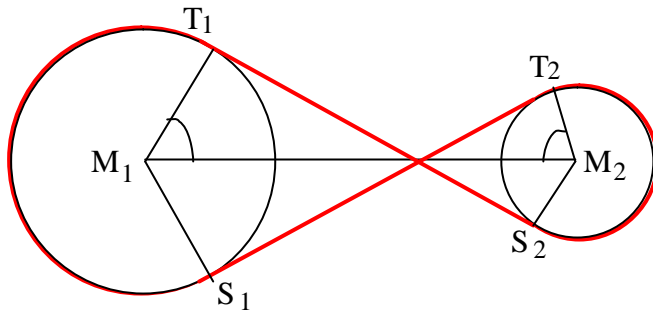
$$\angle T_1M_1M_2 = \angle T_2M_2U = \angle S_1M_1M_2 = \angle S_2M_2U = a$$

Panjang sabuk lilitan luarnya (LL) adalah:

$$\begin{aligned} LL &= (TT_2 + S_1S_2) + \text{Panjang busur } T_1S_1 + \text{Panjang busur } T_2S_2 \\ &= 2GS + \text{Panjang busur } T_1S_1 + \text{Panjang busur } T_2S_2 \\ &= 2\sqrt{d^2 - (r_1 - r_2)^2} + \left(\frac{360^\circ - 2a}{360^\circ} \cdot 2pr_1 \right) + \left(\frac{2a}{360^\circ} \cdot 2pr_2 \right) \\ &= 2\sqrt{d^2 - (r_1 - r_2)^2} + p \left(\frac{180^\circ - a}{90^\circ} \cdot r_1 + \frac{a}{90^\circ} \cdot r_2 \right) \end{aligned}$$

$$LL = 2\sqrt{d^2 - (r_1 - r_2)^2} + p \left(\frac{180^\circ - a}{90^\circ} \cdot r_1 + \frac{a}{90^\circ} \cdot r_2 \right)$$

B. Sabuk Lilitan Dalam



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Perhatikan gambar!

T_1M_1 dan S_2M_2 tegak lurus T_1S_2 , sehingga T_1M_1 sejajar S_2M_2 .

$$\angle T_1M_1M_2 = \angle S_2M_2M_1 = \angle S_1M_1M_2 = \angle T_2M_2M_1 = a$$

Panjang sabuk lilitan dalamnya (LD) adalah:

$$\begin{aligned} LD &= (T_1S_2 + S_1T_2) + \text{Panjang busur } T_1S_1 + \text{Panjang busur } T_2S_2 \\ &= 2GSD + \text{Panjang busur } T_1S_1 + \text{Panjang busur } T_2S_2 \\ &= 2\sqrt{d^2 - (r_1 + r_2)^2} + \left(\frac{360^\circ - 2a}{360^\circ} \cdot 2pr_1 \right) + \left(\frac{360^\circ - 2a}{360^\circ} \cdot 2pr_2 \right) \\ &= 2\sqrt{d^2 - (r_1 + r_2)^2} + p \left(\frac{180^\circ - a}{90^\circ} \cdot (r_1 + r_2) \right) \end{aligned}$$

$$LD = 2\sqrt{d^2 - (r_1 + r_2)^2} + p \left(\frac{180^\circ - a}{90^\circ} \cdot (r_1 + r_2) \right)$$