

RANTAI / CHAIN

FUNGSI

- SEBAGAI PENARIK BEBAN
- MENERUSKAN DAYA DAN PUTARAN

KEUNTUNGAN

- DAPA MENAHAN BEBAN YANG RELATIF BESAR DIBANDING DENGAN TALI BAJA.
- DALAM PENYAMBUNGAN DENGAN PERALATAN LAIN LEBIH MUDAH SEBAB SUDAH ADA LOBANG MAUPU KAITAN

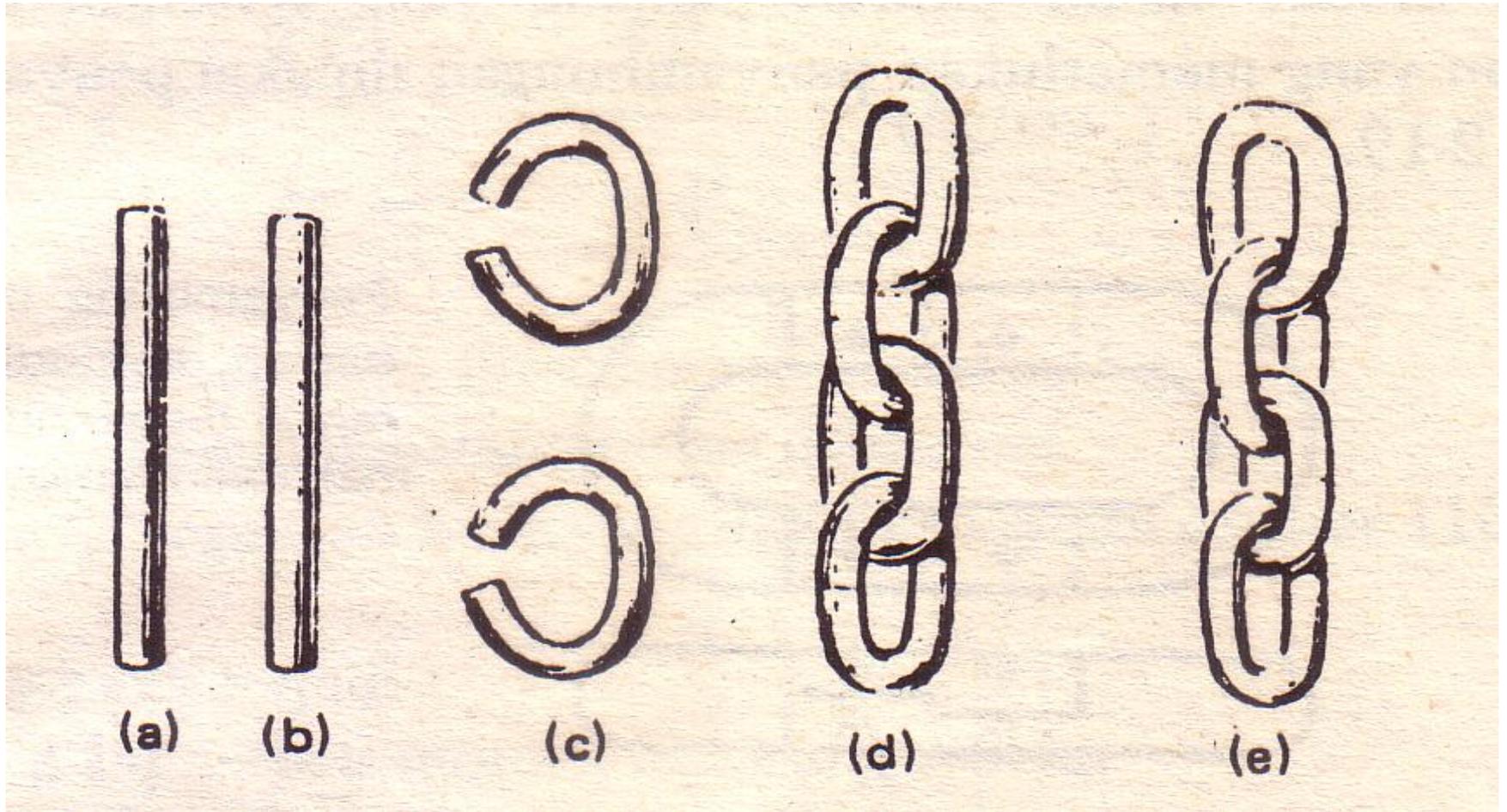
KERUGIAN

- KURANG FLEKSIBE DIBANDING DENGAN TALI BAJA
- MENIMBULKAN SUARA WAKTU BERGERAK
- KARENA UKURAN RELATIF BESAR, MEMBTUHKAN RUANGAN YANG CUKUP BANYAK.

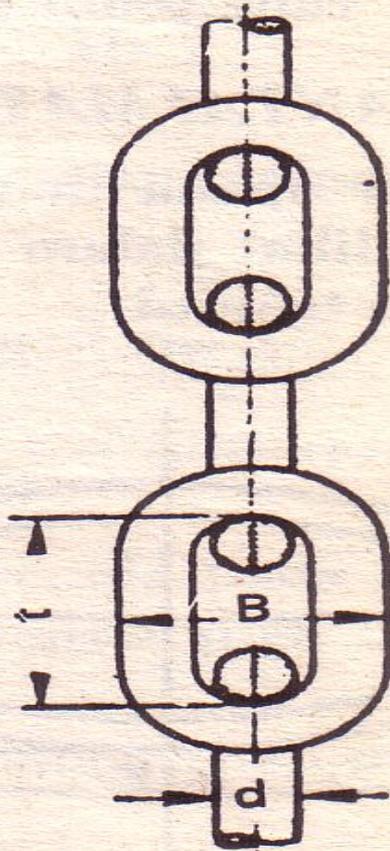
MACAM RANTAI

- RANTAI MATA
- RANTAI ROL

RANTAI MATA



BAGIAN RANTAI MATA



d = diameter batang rantai.

B = lebar rantai

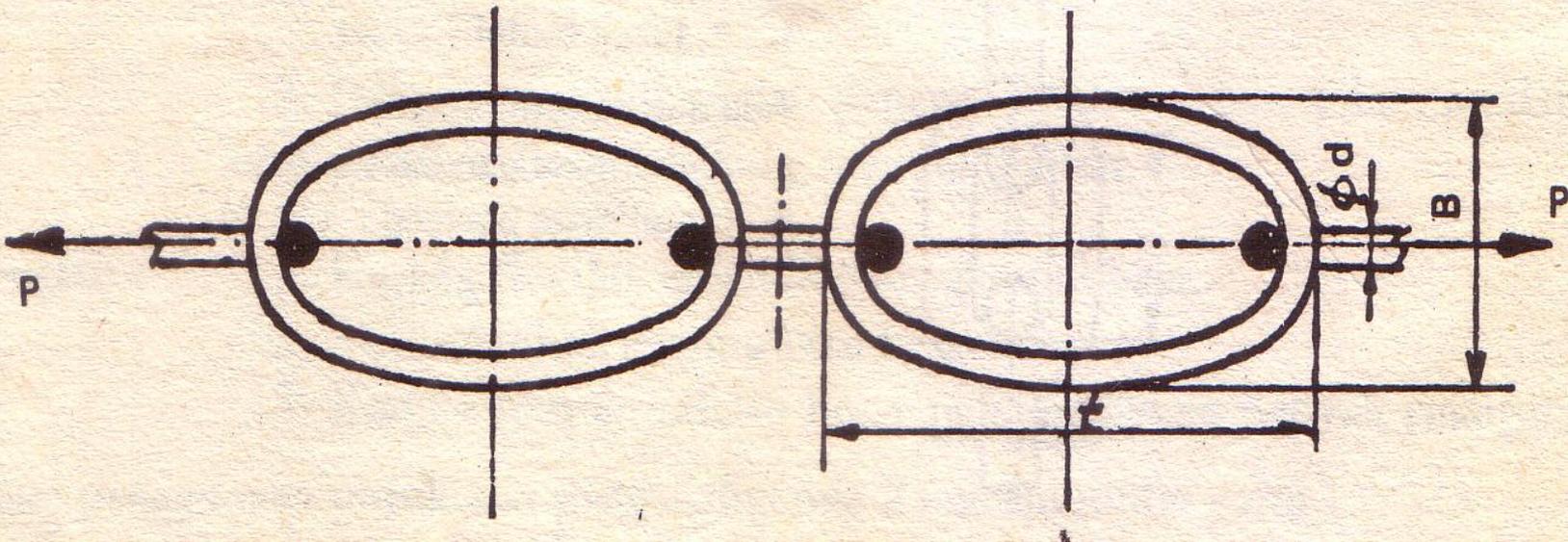
t = tusuk rantai

Ada dua macam rantai :

a. rantai mata pendek : $t \leq 3d$.

b. rantai mata panjang : $t \geq 3d$.

PEMBEBANAN PADA RANTAI MATA



$$M_b = P \cdot x \cdot 1/2(B - d)$$

PERHITUNGAN KEKUATAN

PADA PENAMPANG 1-1

A. TERJADI TARIKAN

$$\sigma_t = \frac{2P}{2\pi \frac{d^2}{4}}$$

B. TERJADI

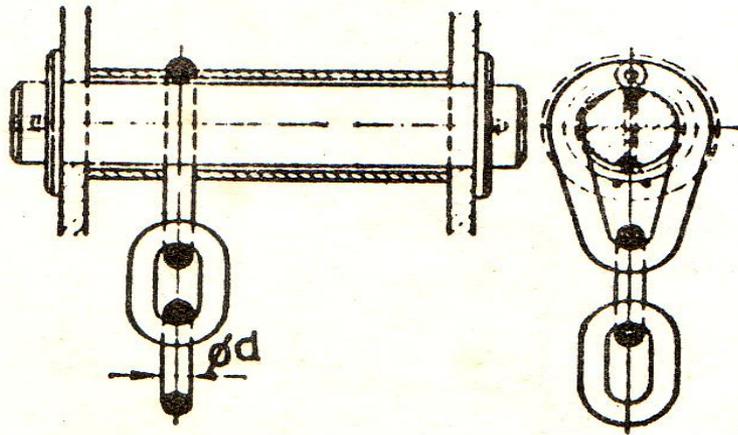
$$\sigma_b = \frac{M_b}{W_b}$$

$$M_b = P.x.1/2(B-d)$$

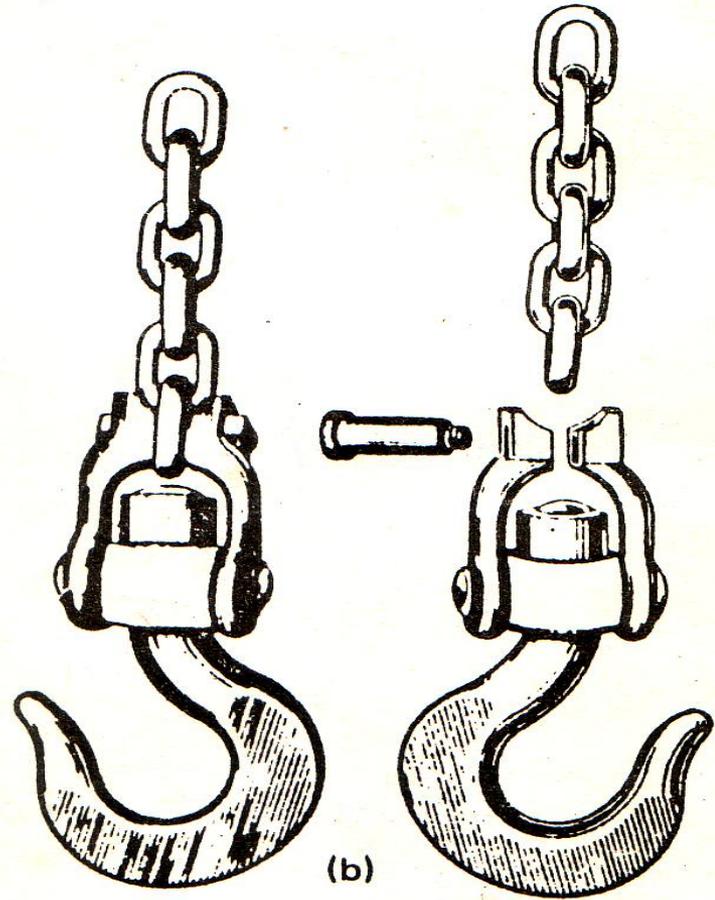
- PADA PENAMPANG 2-2
TERJADI GESERAN

$$\tau_s = \frac{P}{2\pi \frac{d^2}{4}}$$

CARA PENYAMBUNGAN

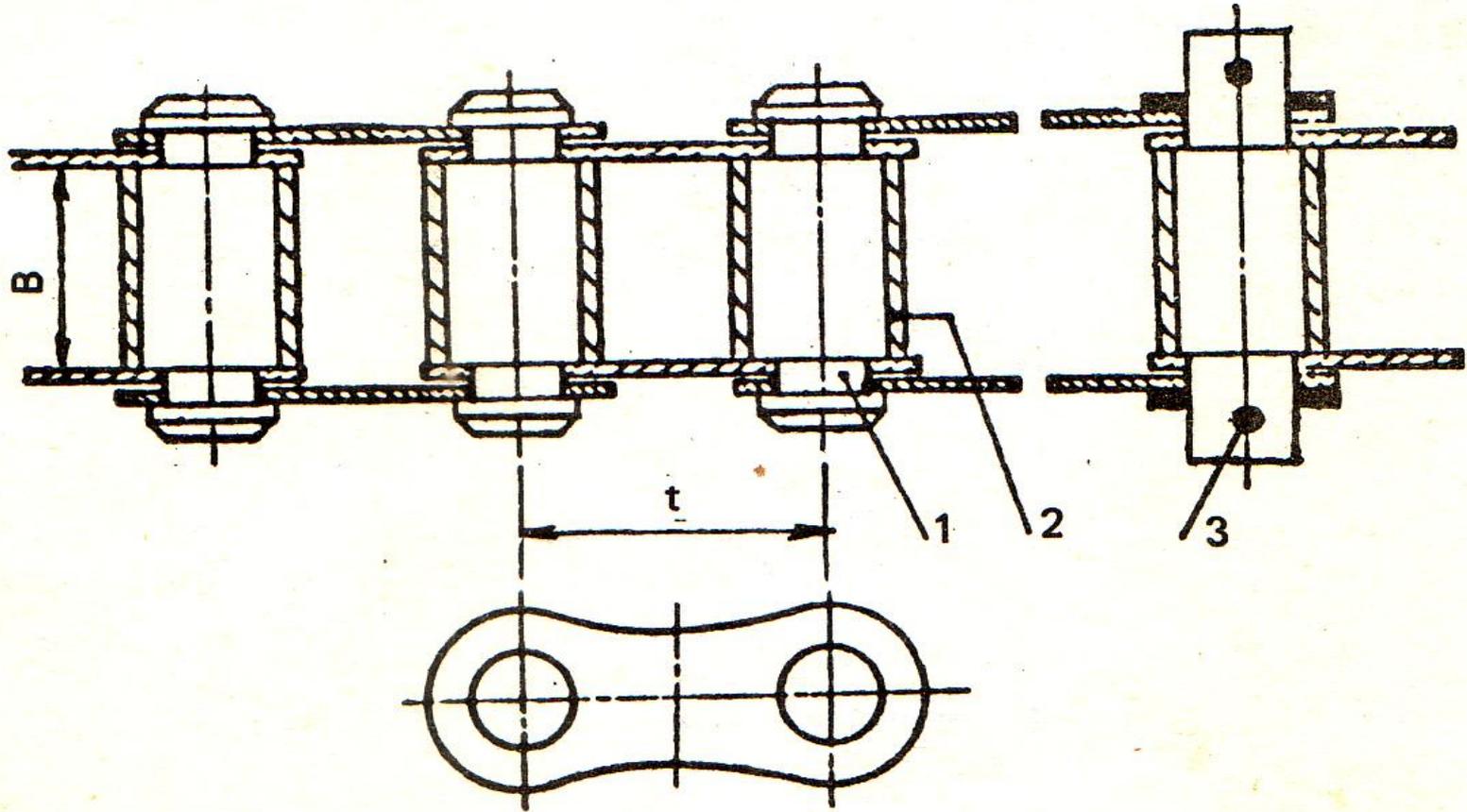


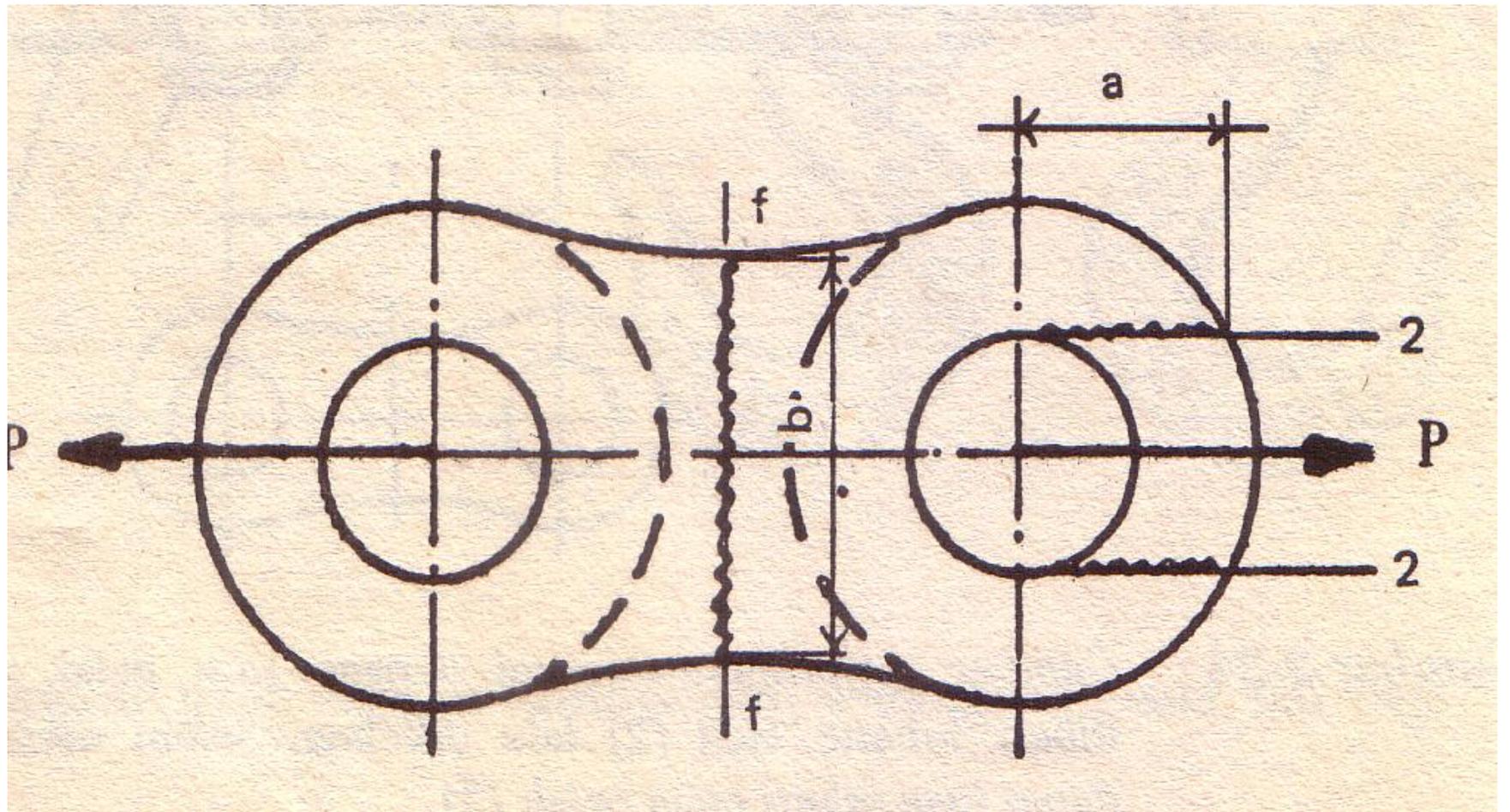
(a)



(b)

RANTAI ROL





PERHITUNGAN KEKUATAN RANTAI ROL

Dimana $A = b \cdot s$

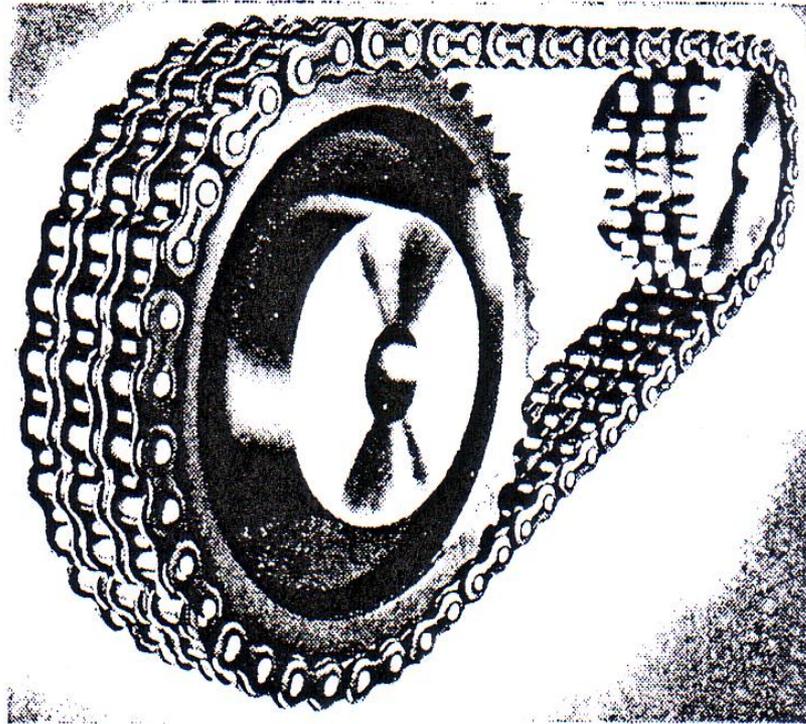
S = tebal pelat penyambung.

$$\sigma_t = \frac{P}{2A}$$

- Pada penampang 2 -2

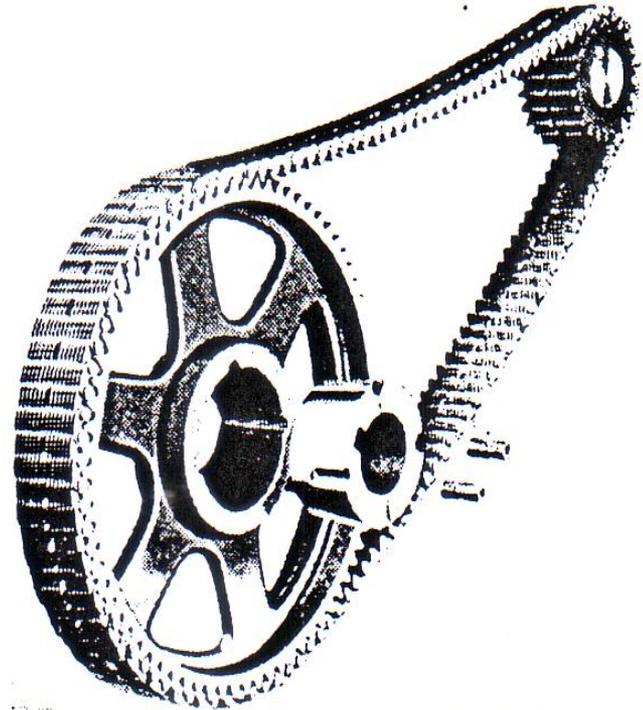
$$\tau_s = \frac{P}{2x2A}$$

dimana $A = a \times s$



Whitney Chain & Mfg. Co.

(a) Roller Chain



Link-Belt Co.

(b) Silent Chain



Leaf



"B"



"S"



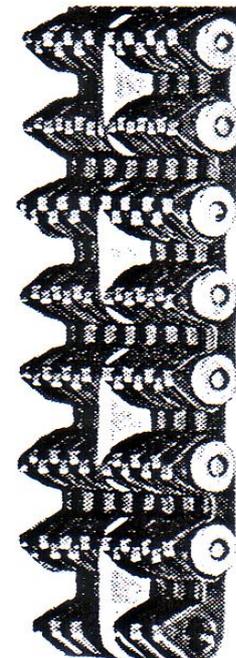
Twin
Roller



Single
Strand



Triple
Strand



Silent
Chain

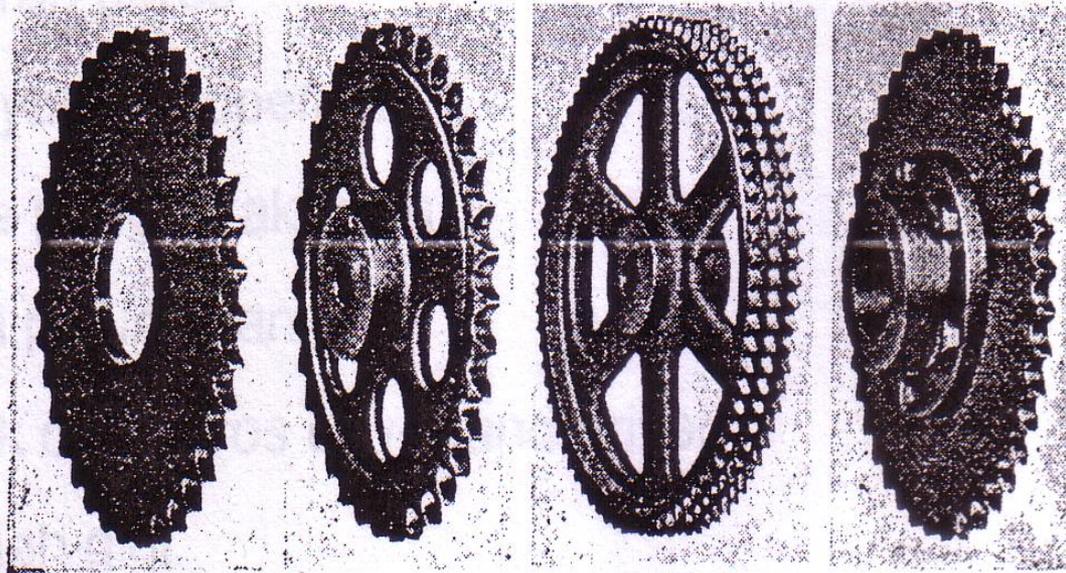
Block Chains

Roller Chains

Diamond Chain Co.

Link-Belt Co.

Gb. 4 - 9 Power Transmission Chains



Diamond Chain Co.

(a)

(b)

(c)

(d)

Gb. 4 - 10 Standard Roller Chain Sprockets