



**Torolalana momban`ny fanamboarana sy fampiasana ny  
FIKOROROHANA na (VANNEUSE)  
(Grain Manual Winower GMW-400)**



**MINISTERAN`NY FAMBOLENA REPOBLIKAN`NY MADAGASIKARA  
DIRECTION REGIONALE DU DEVELOPPEMENT RURAL (DRDR)  
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)  
CENTRE DE FORMATION ET D`APPLICATION DU MACHINISME AGRICOLE  
MINISTRY OF AGRICULTURAL REPUBLIC OF INDONESIA**



**2010**

# . Tanjona

- Mora ampiasaina –olona iray na roa no mampiditra ny vary ho diovina sy manodina ny milina.
- Mahavita betsaka – hatramin'ny akotry 500 kg insan'ora
- Mora amboarina – amboarina amin'ny hazo na contre-plaqué.

# Ny momban'ny milina;

- **mora ampiasana** : olona iray manodina ny milina ary ny olona faharoa mandrotsaka ny vary ho diovina.
- **Vary voadio** : manodidina ny 500 kg / h
- **Tsotra ary mora amboarina** : vita amin'ny hazo sy contre plaqué

# FIKOROROHANA (GWM-400)

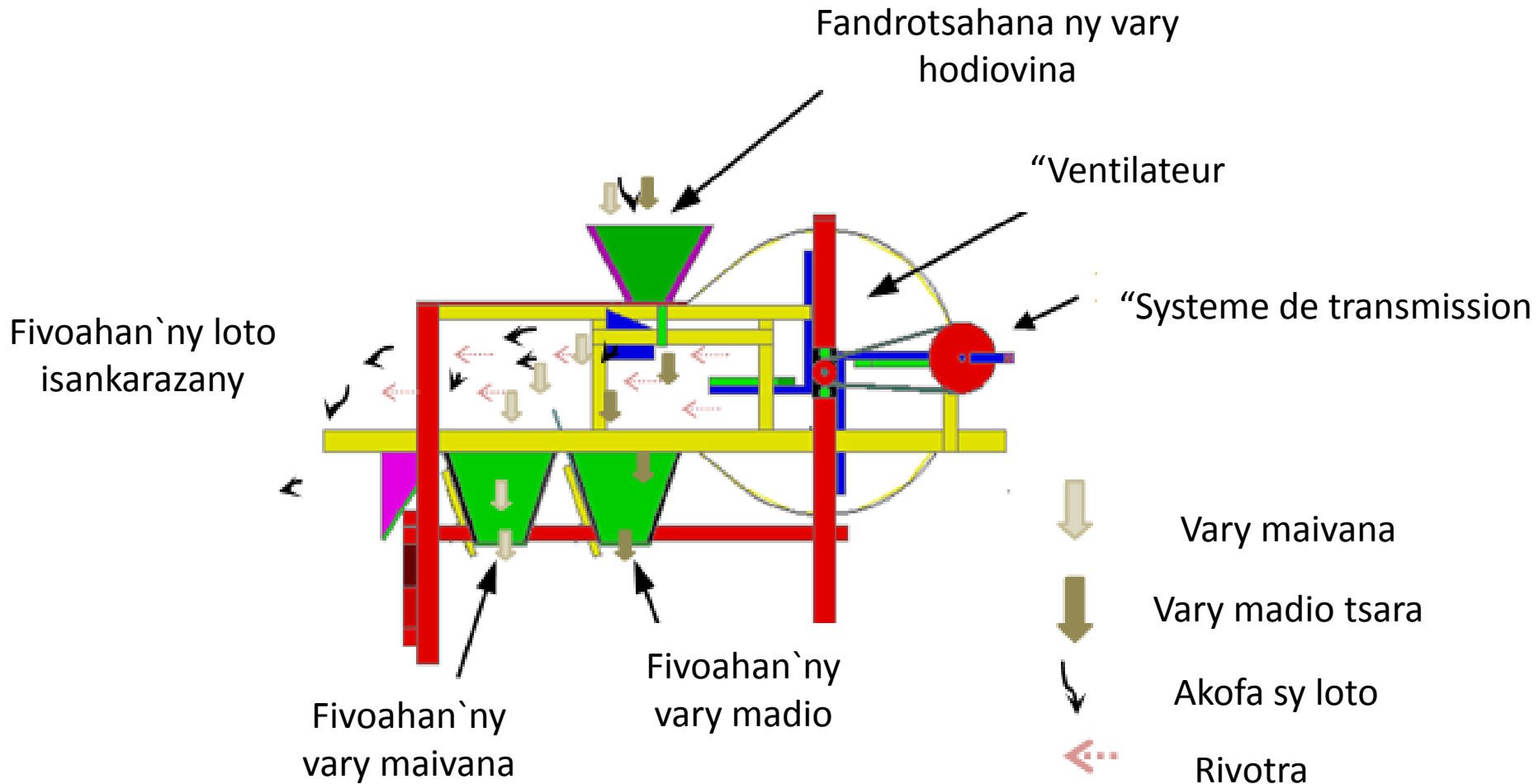
**Ny milina fikororohana GWM-400 dia mirafitra toy izao :**

- ✓ Ny vatany na “bati”
- ✓ Ny fandrotshana ny vary na “tremis”
- ✓ Ny “ventilateur”
- ✓ Ny “vanne réglable”
- ✓ Ny marimpamantarana ny herin`ny rivotra
- ✓ Ny fivoahan`ny vary voadio sy ny loto
- ✓ Ny “systeme de transmission”

## Misy roa ny fivoahan'ny vary :

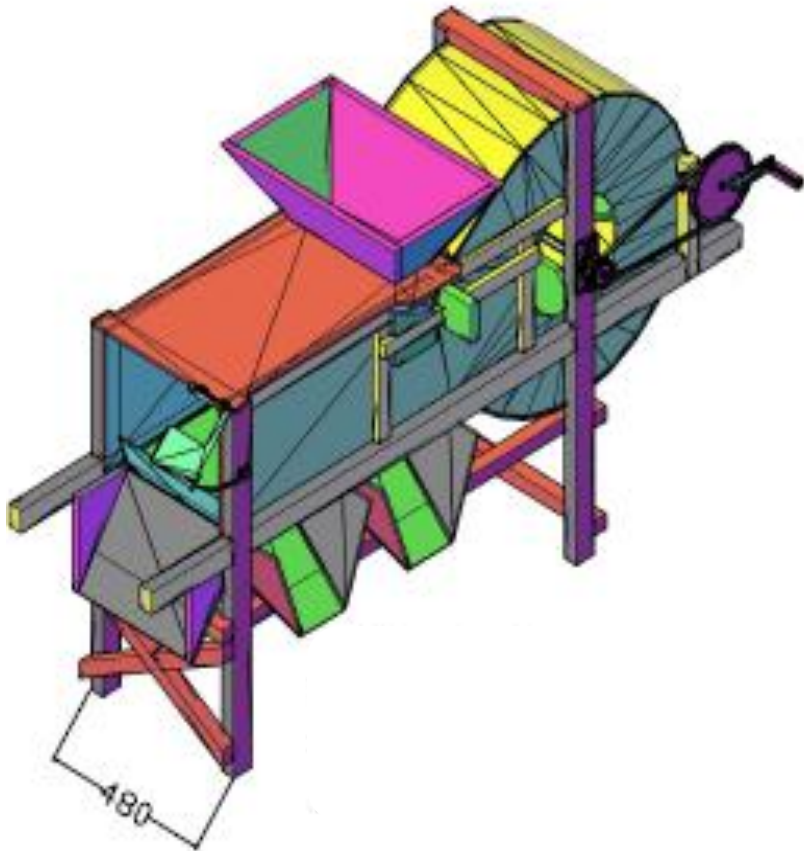
- ny iray manakaiky ny “ventilateur” no itantazana ny vary madio tsara (1ère qualité)
- ny faharoa dia ivoahan'ny vary maivana sy ny loto mavesatra (2ème qualité)

# Ary iray ny fivoahan'ny akofa sy ny fakofako isan-karazany



Ny fanamboarana ny Fikororohana

# Fikororohana

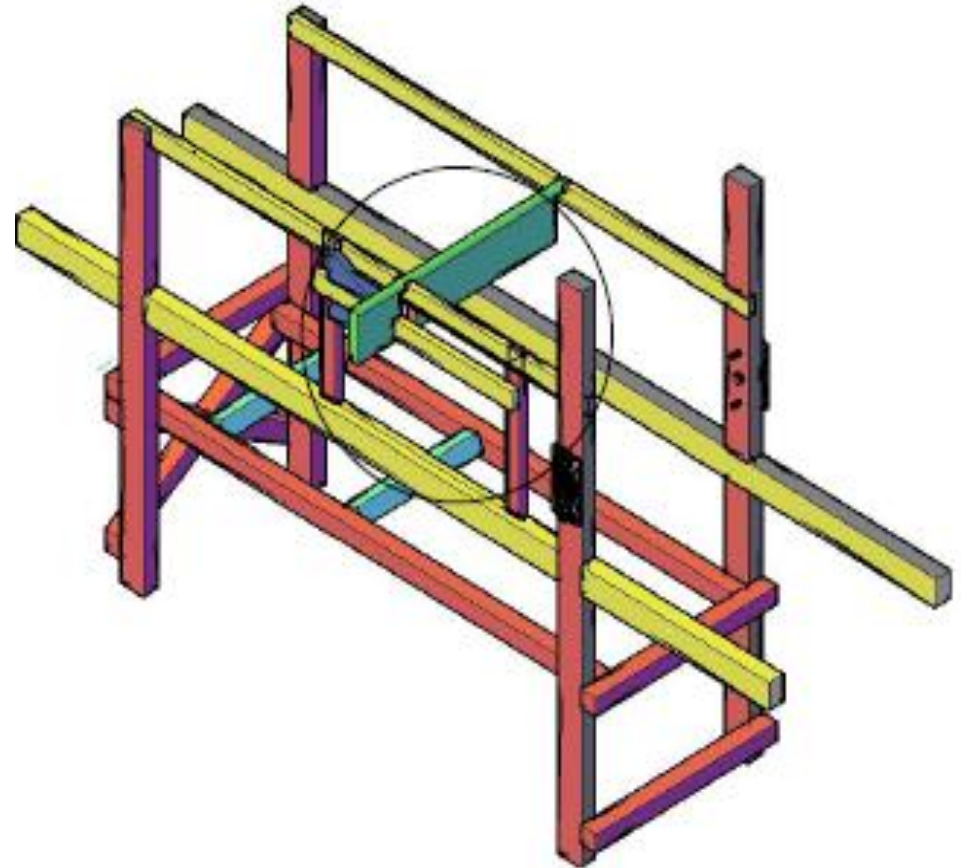


N°	Anarana
1.	Tanjany na « Bati »
2.	Vatany
3.	Fivoahan`ny vary voadio
4.	Fandrotsahana ny vary ho diovina na « Tremis »
5	Vanne de reglage
6.	« Ventilateur »
7.	« Poulie »
8.	Mari-pamantarana ny herin`ny rivotra



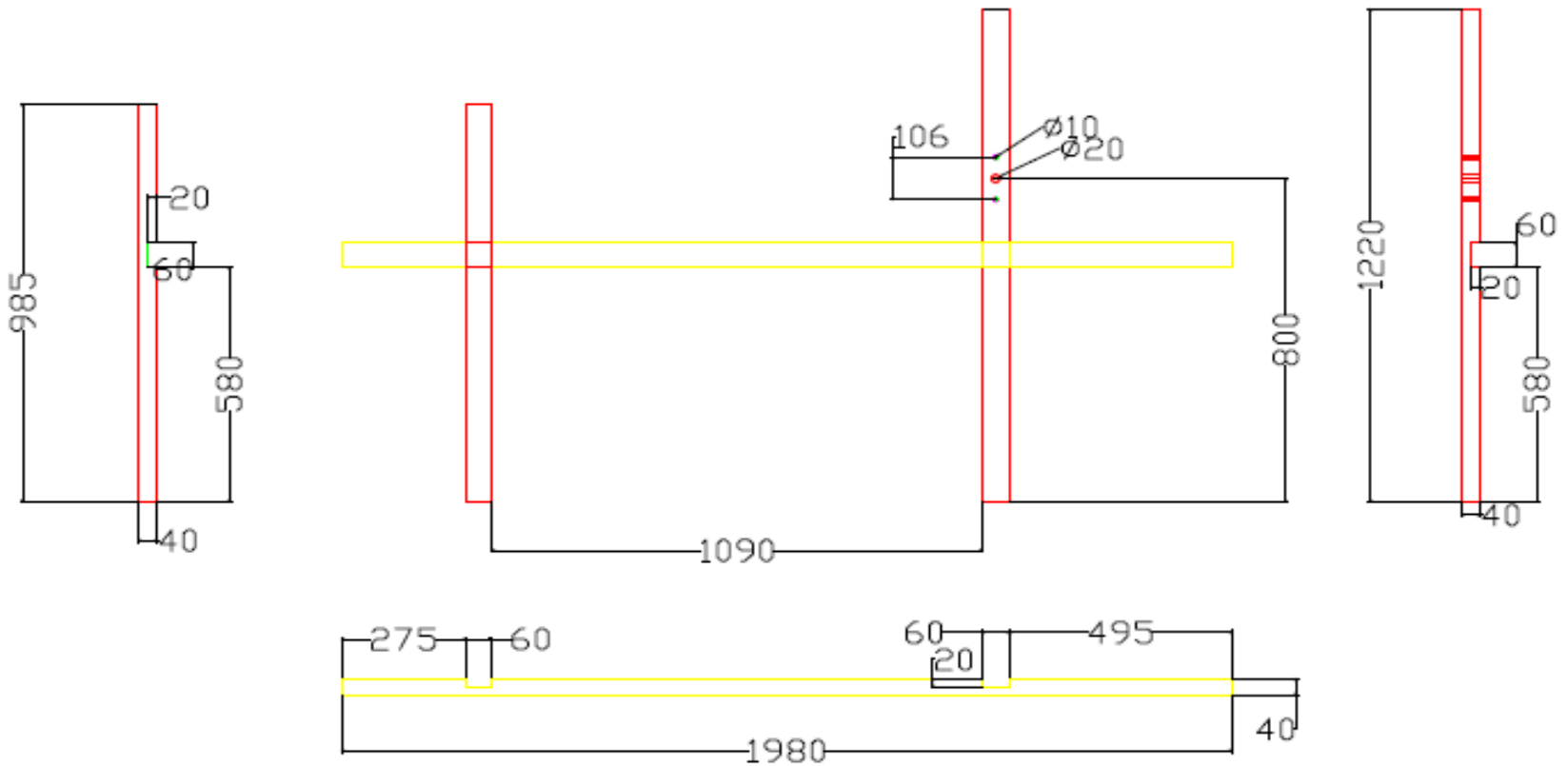
## Tanjany na « Bati »

Ny mombamomba  
ny zavatra rehetra ao  
anatin'ny dia zavatra  
azo tamin'ny hazo  
daholo

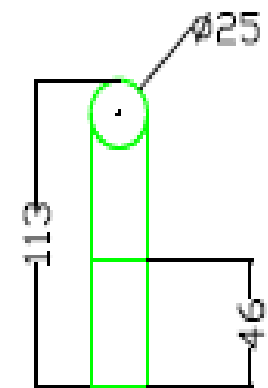
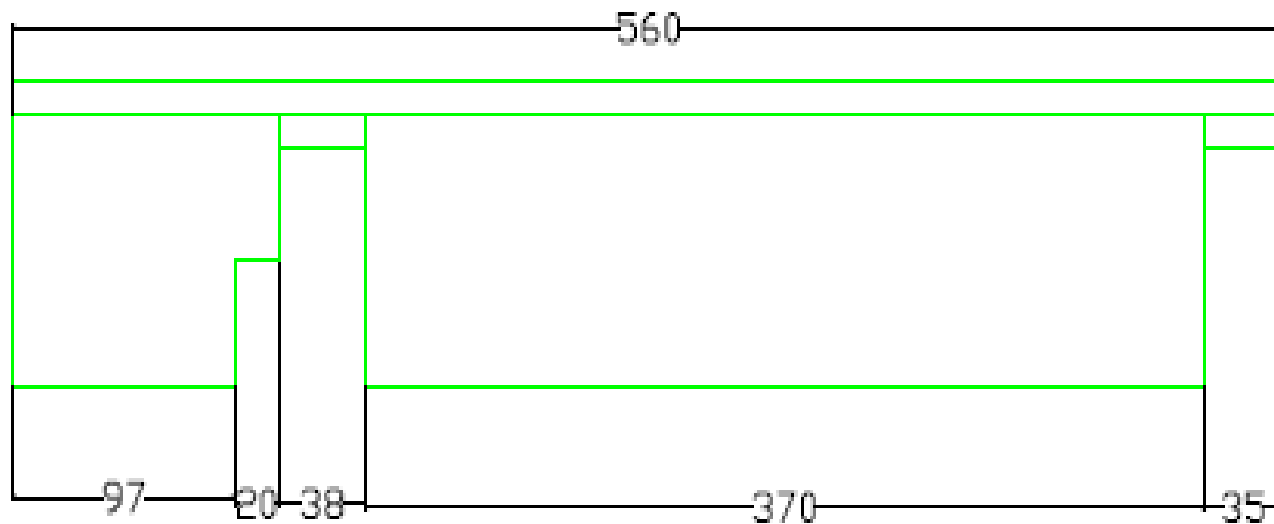


# Ny « Bati »

Refy sy toeran`ny hazo tsirairay



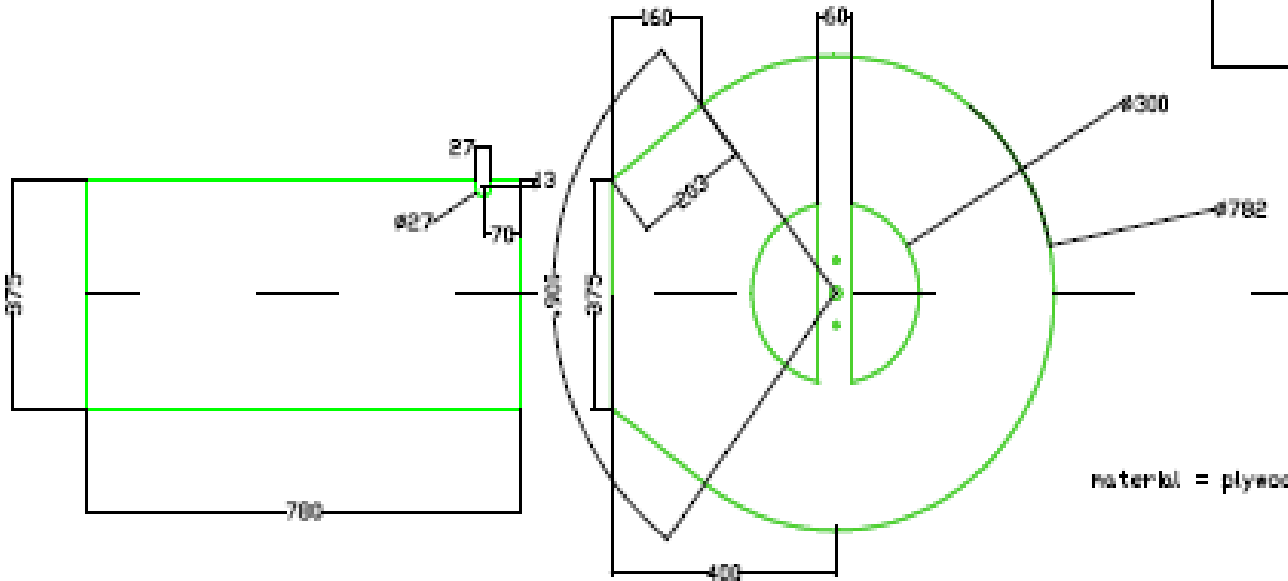
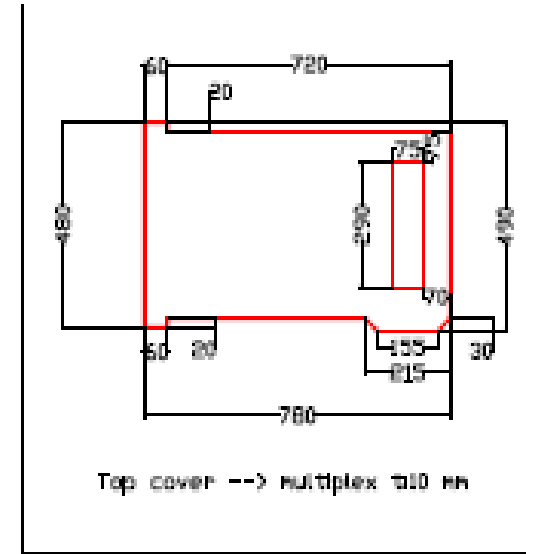
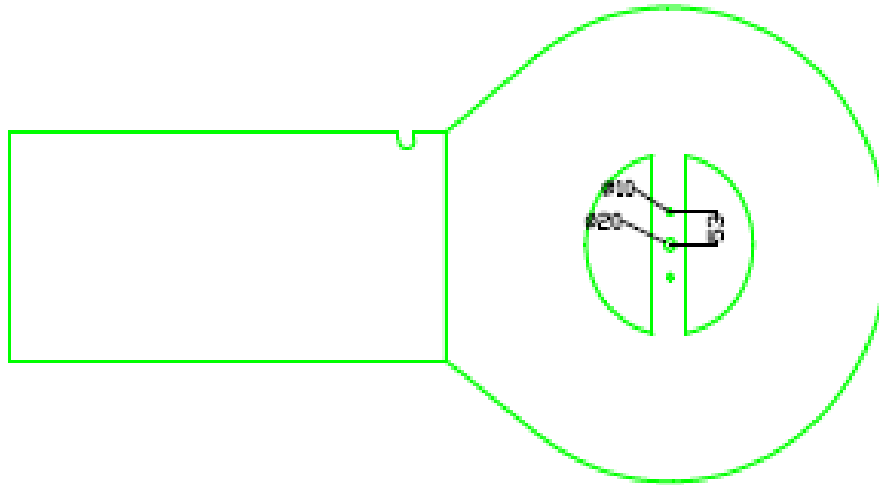
# Ny « Vanne de réglage »-n`ny Tremis



Gate device

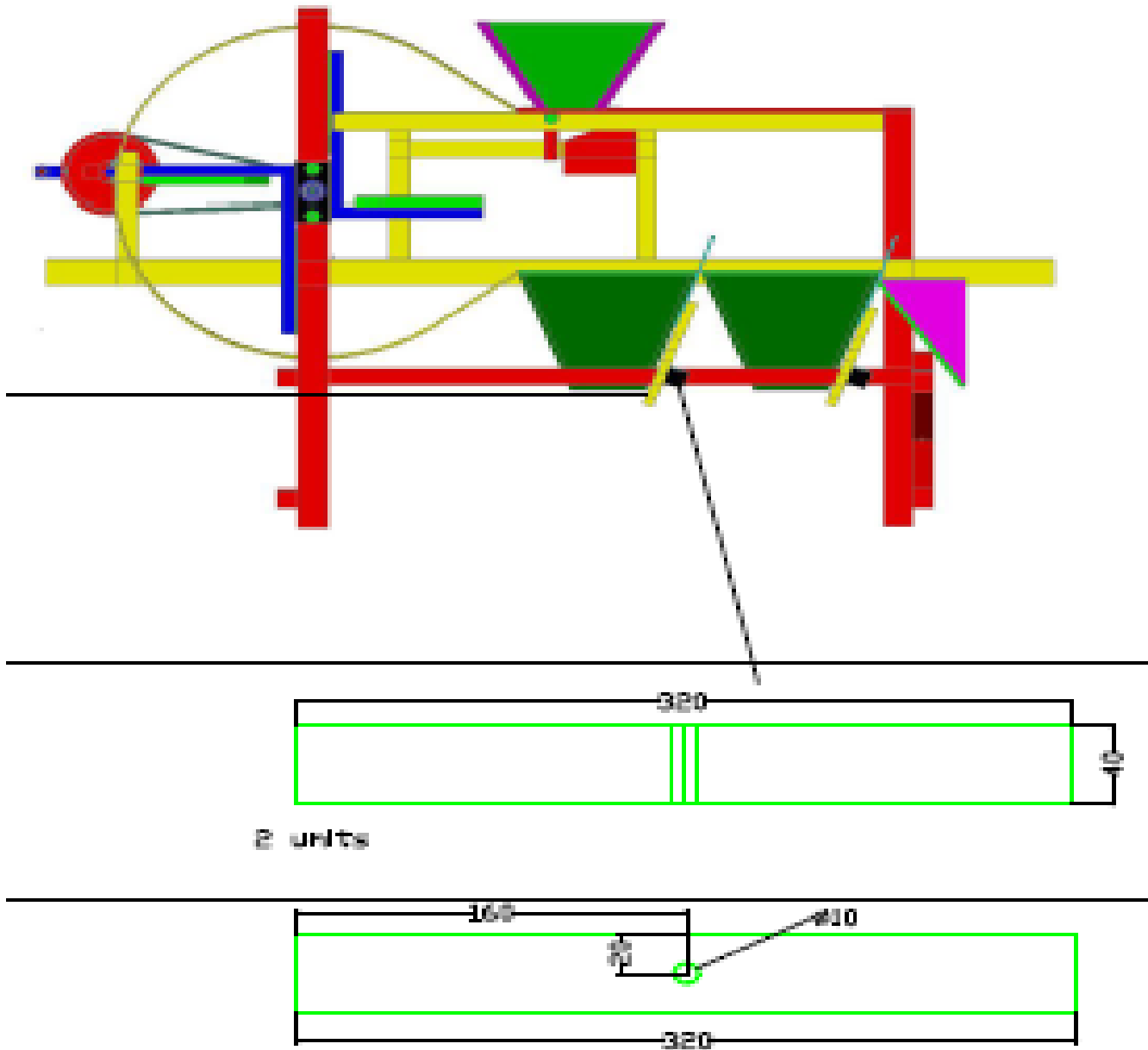
# Ny Vatany

Ity kosa dia ahitatsika ireo sisiny sy ny tapony

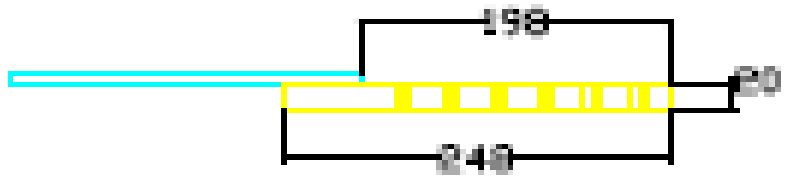
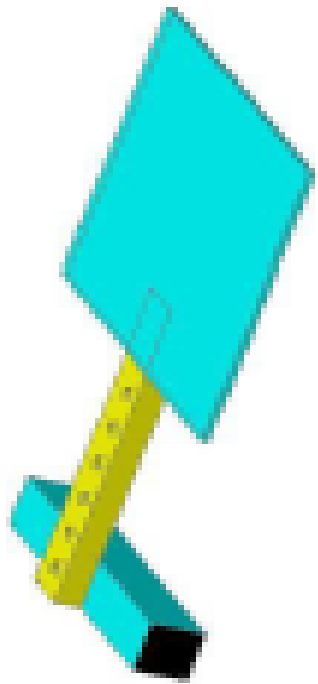
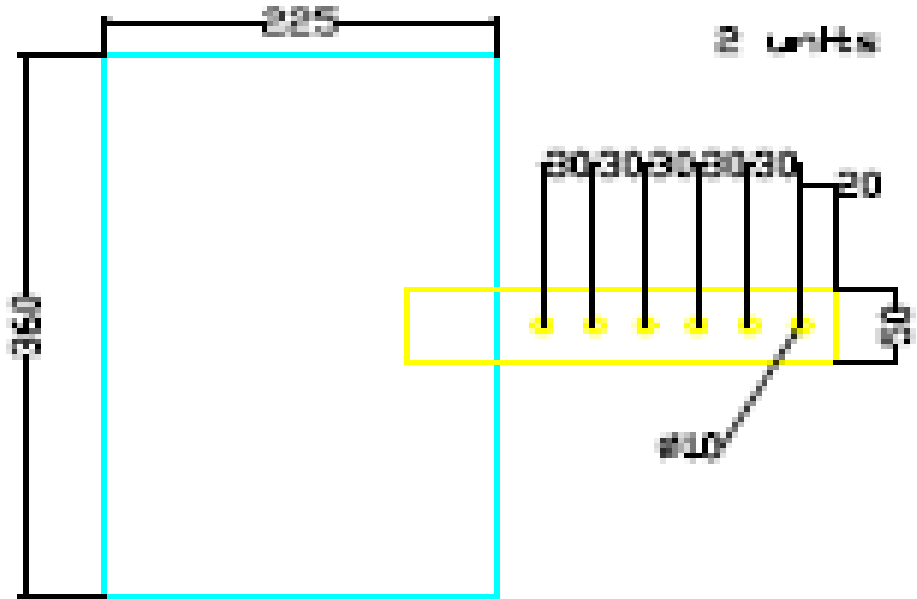


material = plywood + 10 mm

# Vavahadin`ny fivoahan`ny vary voadio



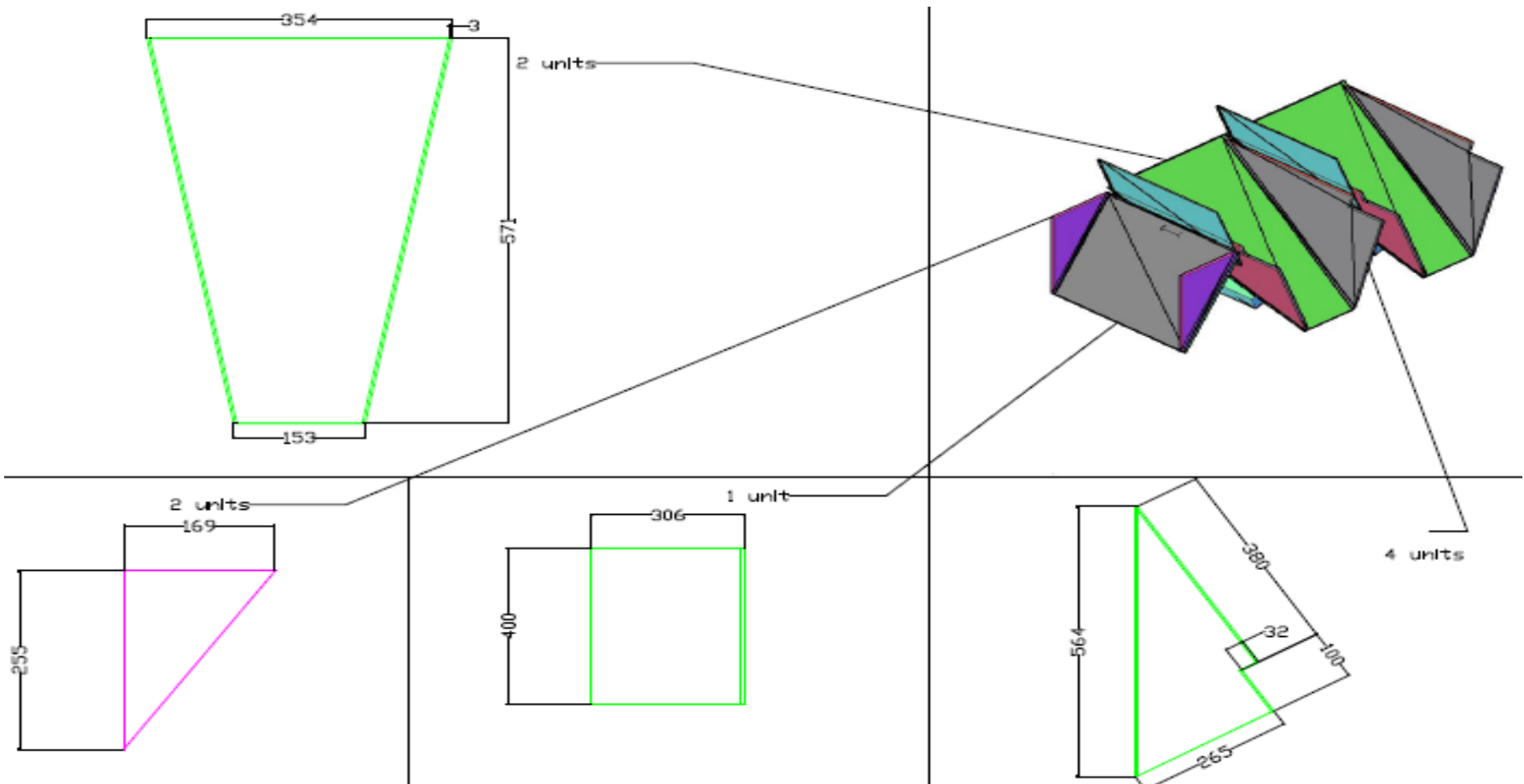
# Vavahadin`ny fivoahan`ny vary voadio



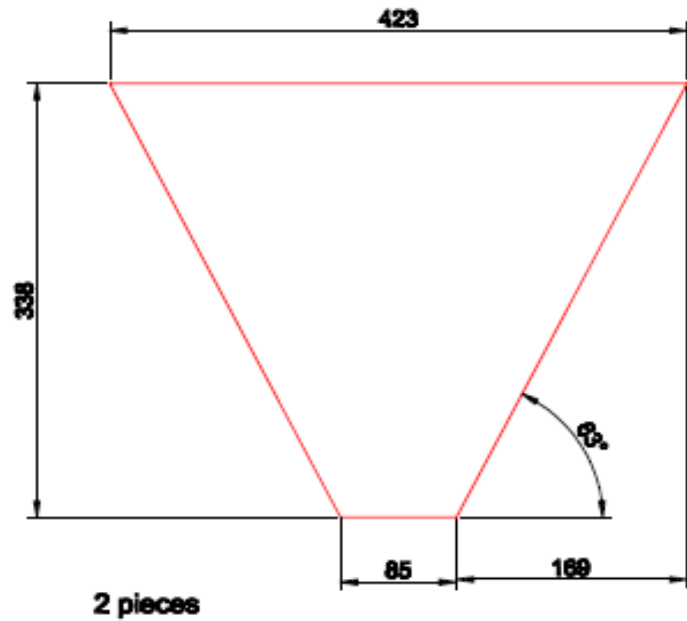
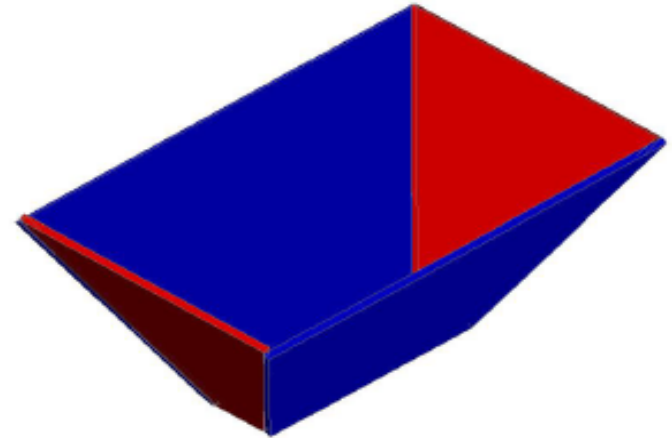
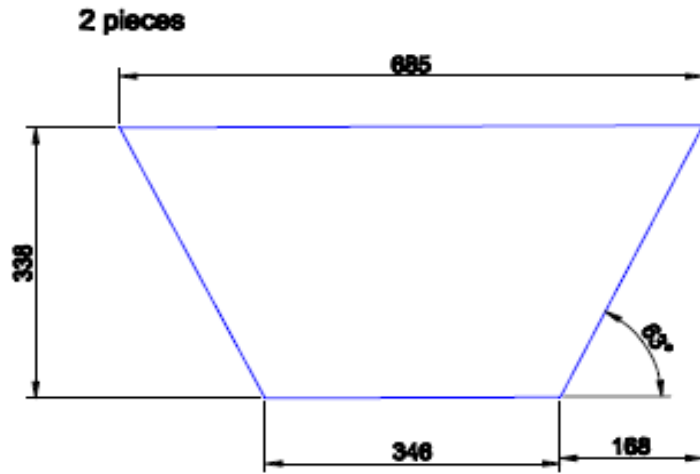
# Fivoahana telo samihafa

- Misy karazany telo ny fivoahany vary ato amin'ny ity fotoavana ity:

- ✓ voalohany
- ✓ faharoa



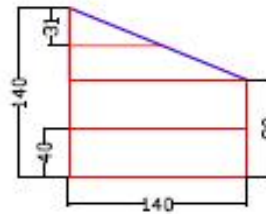
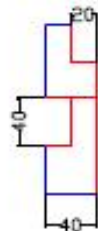
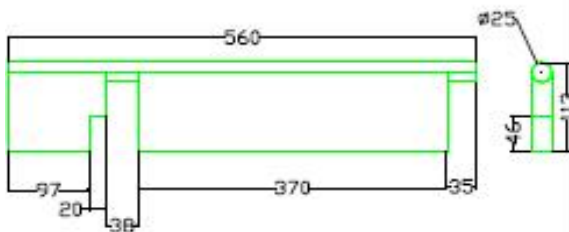
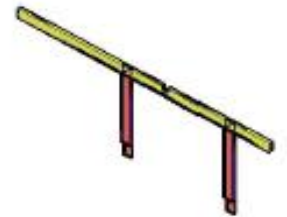
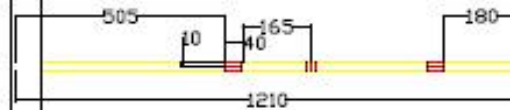
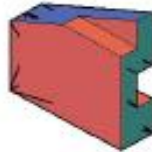
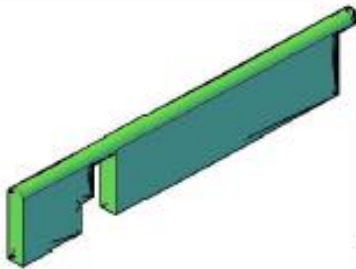
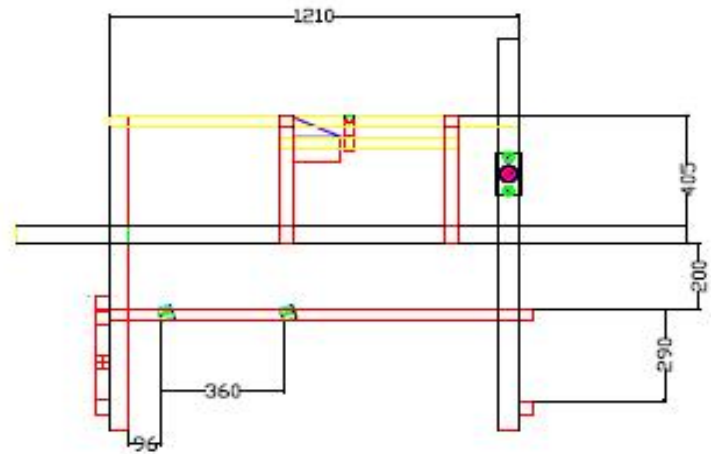
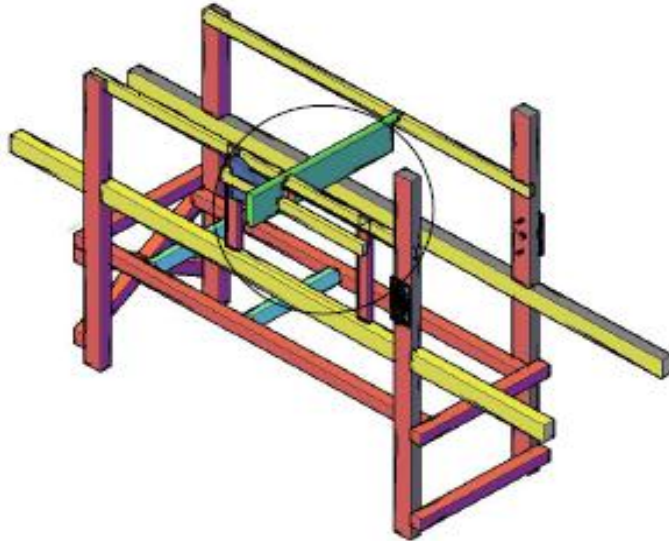
# « Ny Tremis »



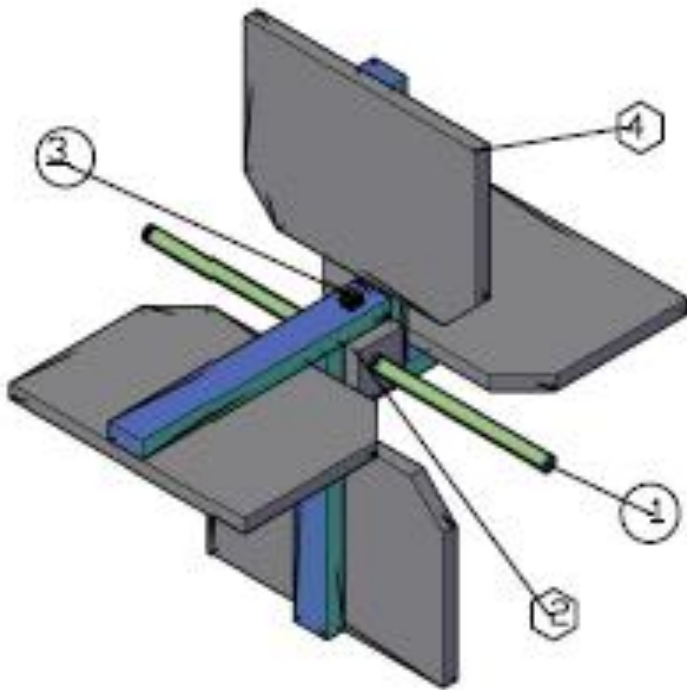
FIKOROROHANA  
(VANNEUSE)



# Vanne de la tremis

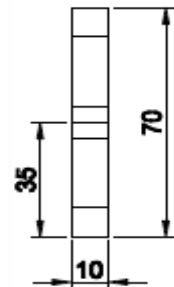
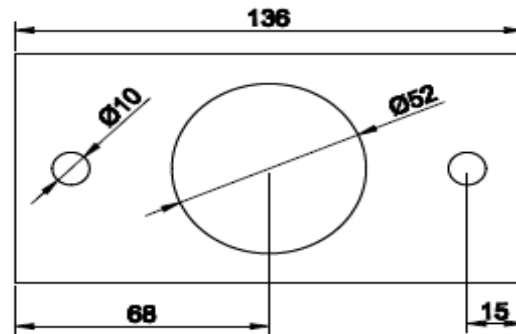
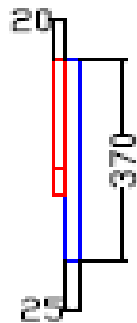
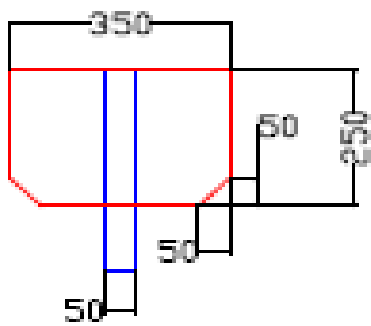
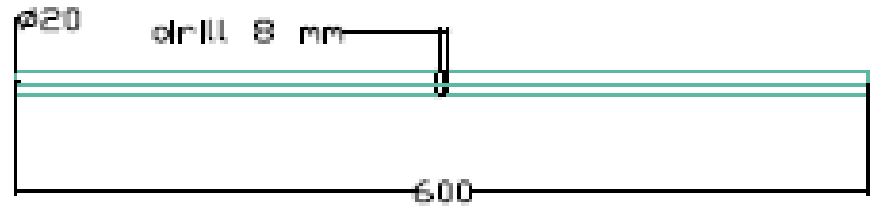
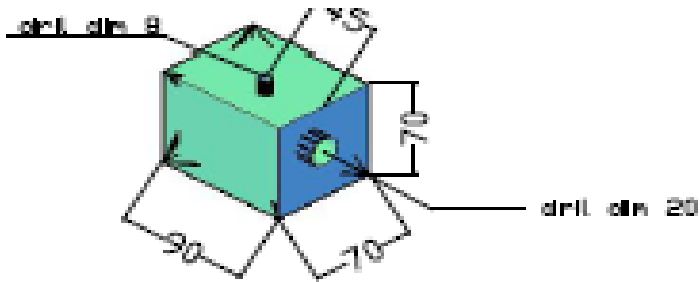
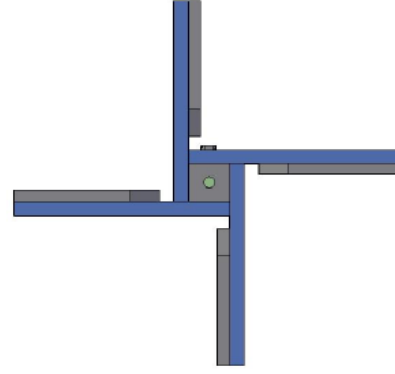
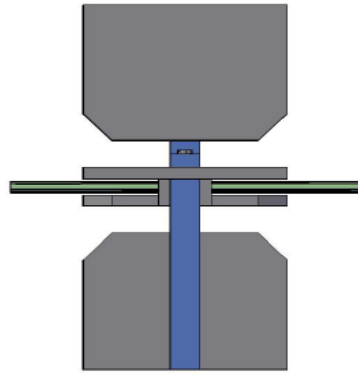


# « Ventilateur »



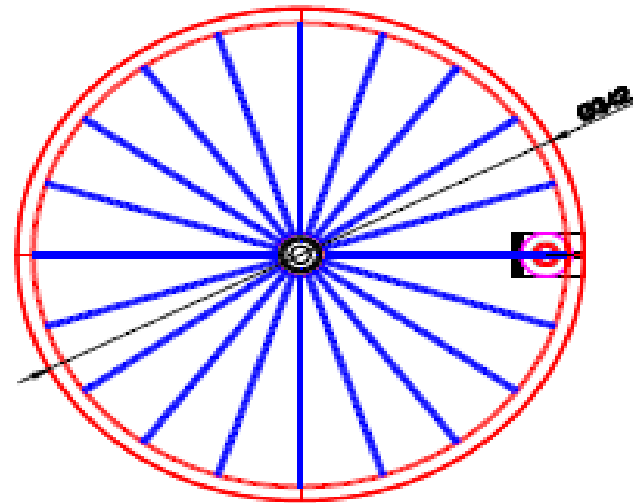
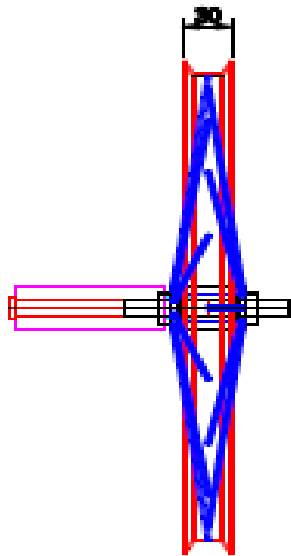
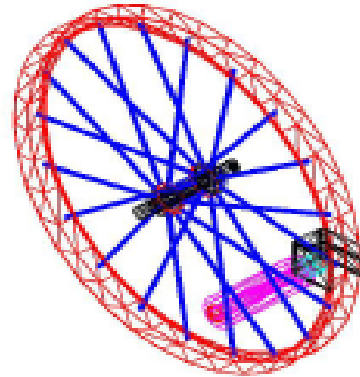
N <sup>o</sup>	Anarana
1.	Aksa na « Axe »
2.	Tanjaky ny « pale »
3.	Blaos manambatra ny « pale » amin'ny aksa
4.	« Pales »

# Ny "Pale"

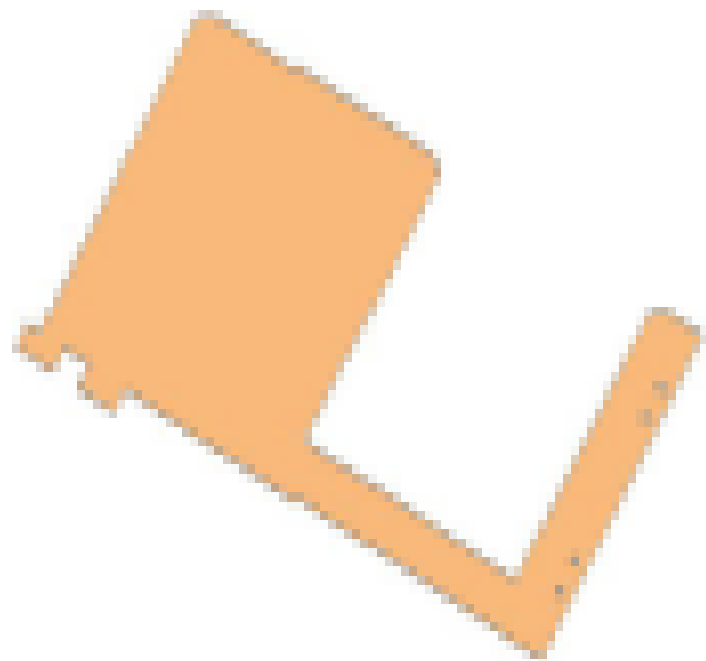
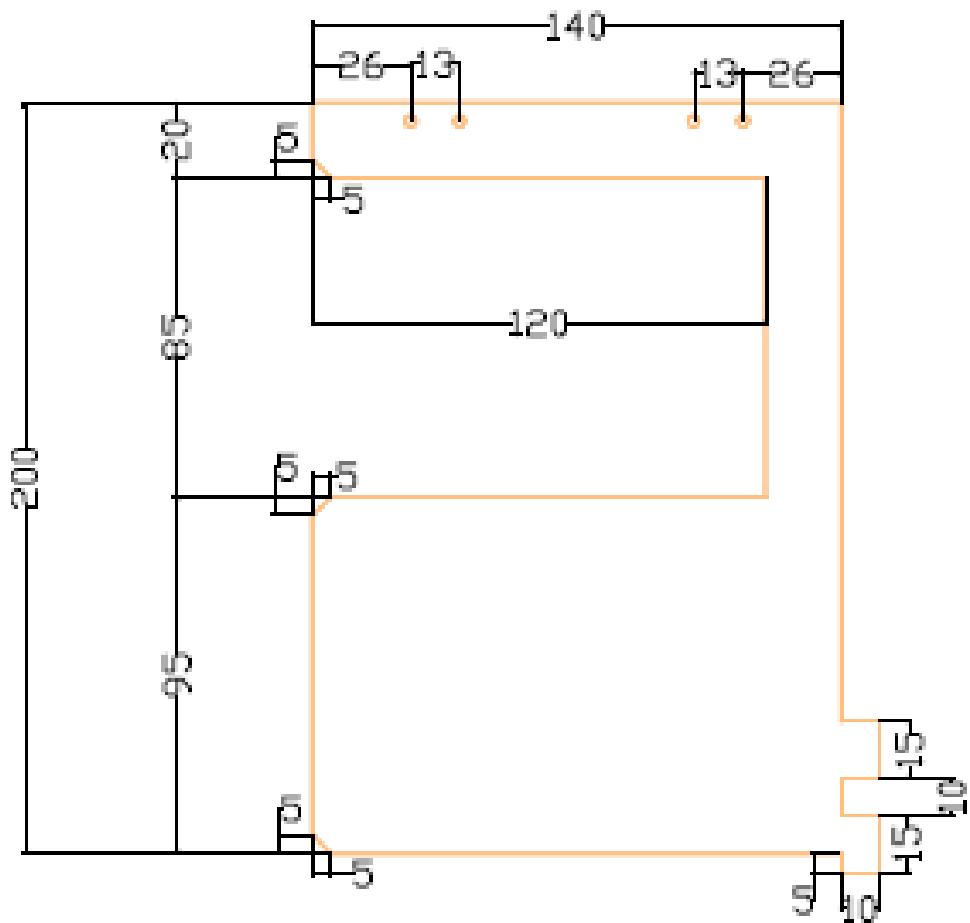


# Ny « Poulie »

« Jente bicyclette » : savaivo: 32 cm



# Mari-pamantarana ny herin`ny rivotra



Vy fotsy : 0,4mm

**FAMPIASANA NY FIKOROROHANA**

# alohan'ny hanadio vary

- diovo tsara ny milina mba ialana amin'ny fahasimban'ny vary vokatry ny loto mety mitondra aretina
- jereo ny toerana hametrahana ny milina ary kendreo mba tsy hifanohitra amin'ny rivotra ny fitodiky ny milina
- amelarana karipetra (tapis) eo ambanin'ny fivoahan telo mba hahamora ny fanangonana
- omano ny sobika na gony hasiana ny vary

# rehefa mikororoka vary

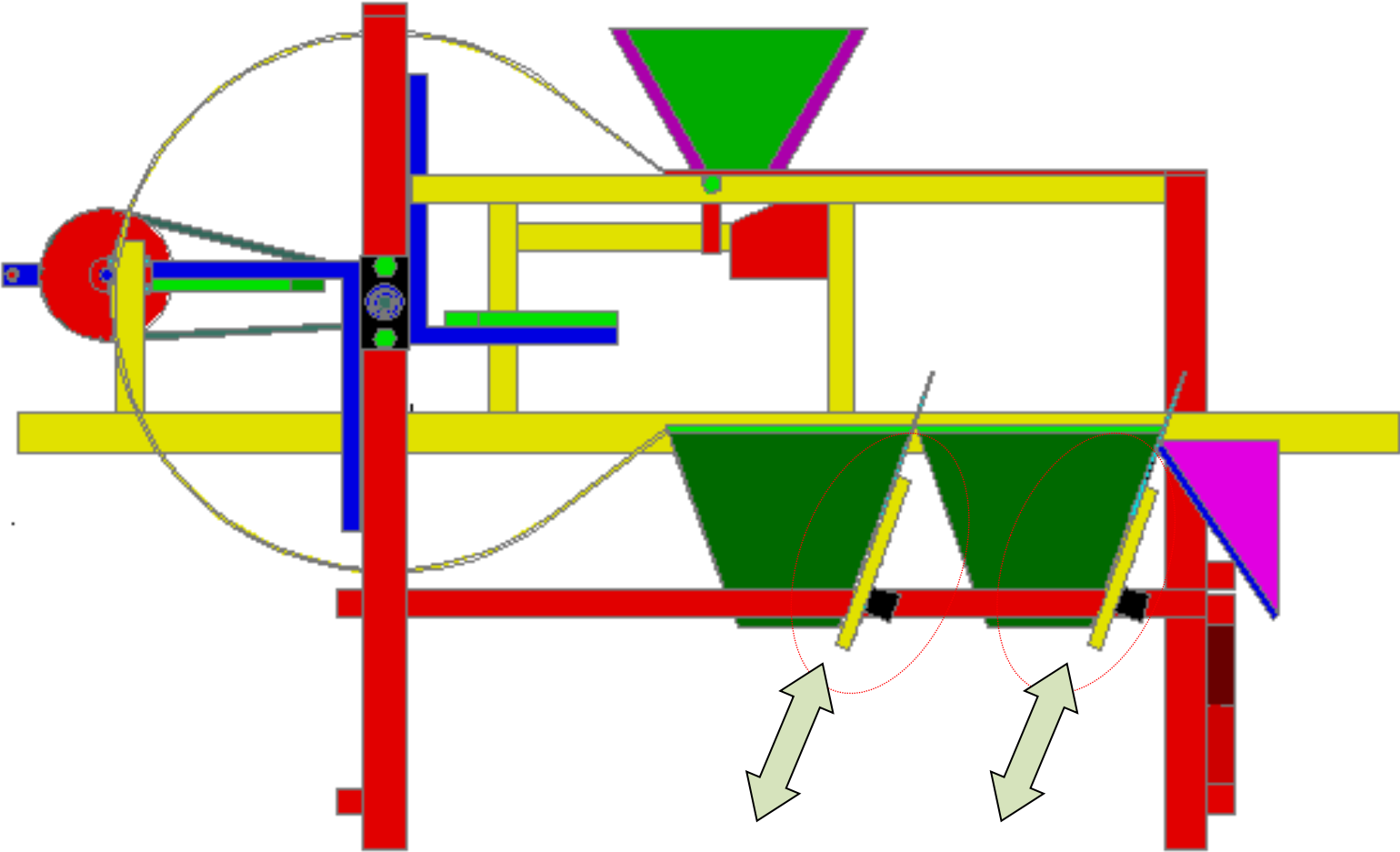
- akatony ny vanne d'alimentation
- arotsahy ny vary hodiovina
- ahodino amin'ny manivelle ny ventilateur ary rehefa mahazo fihodinana eo amin'ny 230-250t /mn(ezahina tsy hiovaova ny hamafin'ny fitsokan'ny rivotra), dia sokafo tsikelikely eo amin'ny  $1/4$  - $1/2$  ,avy an-kavy miankavanana, ny “vane” ary ahodina foana ny ventilateur (ny marika momba ny tsoka'ny rivotra dia tokony amin'ny 30 deg).



Ny marika momba ny tso-rivotra dia tokony eo amin'ny 30 deg

Fihodinan'ny “Ventilateur” (Tour /mn)	Hafainganam- pandehan'ny Rivotra ao anaty milina ( m / s)	Toeran'ny marika momba ny Tso- drivotra
200-215	4.5-4.7	25 deg
215-230	4.7-4.9	30 deg
203-250	4.9-5.1	40 deg

# Vavahadin`ny fivoahan`ny vary voadio



Fivoahana faharoa

Fivoahana voalohany

# **Fampiasana ny milina fikororohana raha hanadio voa hatao masomboly**

Ny asan'ity milina fikororohana ity dia manadio ny voa, raha hatao ambioka ny vary voadio dia mbola misy toromarika hafa arahina. Ny vary mavesatra no tsara atao ambioka.

# Fanitsiana (Reglage)

<b>Vokatra</b>	<b>Asa atao</b>
<p>Mihoatra ny 65 ny isan'ny voam-bary mitsingevana (&gt;65 voa) avy ao amin'ny filatsahan'ny voa voalohany (1ère qualité)</p>	<ul style="list-style-type: none"><li>● ampidinina ny grille de récupération voalohany.</li><li>● ampidinina ihany koa ny grille de récupération faharoa</li></ul>
<p>Raha kely ny vary tsara mivoaka avy ao amin'ny filatsahan'ny voa voalohany, nefa betsaka no lasa ao amin'ny filatsahan'ny voa faharoa</p>	<ul style="list-style-type: none"><li>● ampiakarina ny grille de récupération voalohany.</li><li>● ampiakarina ihany koa ny grille de récupération faharoa</li></ul>

# Ny Kajy ara-economique

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## A. TYPE /KIND OF TOOL (MACHINE)

1. Thresher

2. Pedal

3. Decision

a. Time works / days = 8 hours

b.  $\frac{\text{Time works}}{\text{month}}$  = 28 days = 224 hours

c. Time works / seasons = 2 month = 448 hours

d. Time works / years = 1 season = 448 hours

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## B. TECHNICAL DATA

1. Purchase price	(P)	=	Ar	275.000	
2. Salve price 10 % of purchase price after 5 years	(S)	=		10	%
3. Technical age limit	(N)	=		5	th
4. Capacity	(C)	=	#	400	kg/h
5. Capital rate of interest	(R)	=		12	%/th
6. Tax and insurance	(T)	=		2	%
7. Repair and maintenance cost	(M)	=		5	%
8. Wharehouse/garage	(W)	=		2	%
9. Labour (person)	(Ps)	=		3	prs
10. Labour fee/person	(F)	=	Ar	3.000	/day
11. Lubricant	(Lb)	=		0,1	%

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B. Cost

1. Fixed Cost

a. Depreciation

$$275.000 \times \frac{27.500}{5} \div 448 = \text{Ar. } 110,4911 \text{ /h}$$

b. Capital rate of interest

$$275.000 \times \frac{27.500}{2} \times \frac{12}{100} \div 448 = \text{Ar. } 3,68 \text{ /h}$$

b. Repair and maintenance cost

$$300.000 \times \frac{5}{100} \div 448 = \text{Ar. } 33,48 \text{ /h}$$

c. Tax and insurance

$$275.000 \times \frac{2}{100} \div 448 = \text{Ar. } 15,31 \text{ /h}$$

d. Warehouse/garage

$$275.000 \times \frac{2}{100} \div 448 = \text{Ar. } 12,28 \text{ /h}$$

Fixed cost (B.1) = Ar. 175,24 /jam

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## 2. Variabel Cost

### a. Labour

$$\begin{array}{l} \text{Ps} \\ 3 \end{array} \times \frac{\text{F}}{\text{h}} = \text{Ar.} \quad 2,51/\text{h}$$
$$3 \times \frac{3000}{8} / 448$$

### b. Lubricant

$$\begin{array}{l} \text{P} \\ 300.000 \end{array} \times \frac{\text{Ps}}{100} = \text{Ar.} \quad 0,67 / \text{h}$$
$$300.000 \times \frac{0,1}{100} / 448$$

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$$\text{Variable cost (B.2)} = \text{Ar.} \quad \mathbf{3,18/\text{h}}$$

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4. Operating cost /kg (total cost/tool capacity)

178,42 / 370 kg/h Ar. 0,48/kg

5 Winnower cost

Ar 3.000/day

Yield 1.224 kg/day

Cost/kg 3.000 / 1.224 kg/day Ar. 2,45/kg

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