Séminaire de formation des techniciens des hôpitaux
Sur l'entretien des systèmes d'alimentation électrique d'urgence

Organisé dans le cadre du Projet d'Amélioration des Infrastructures de Santé en Haïti (IHFI) financé par l'USAID et mis en œuvre par Tetra Tech

8 – 12 Avril 2013
Centre de formation UGP, Port-au-Prince, Haïti

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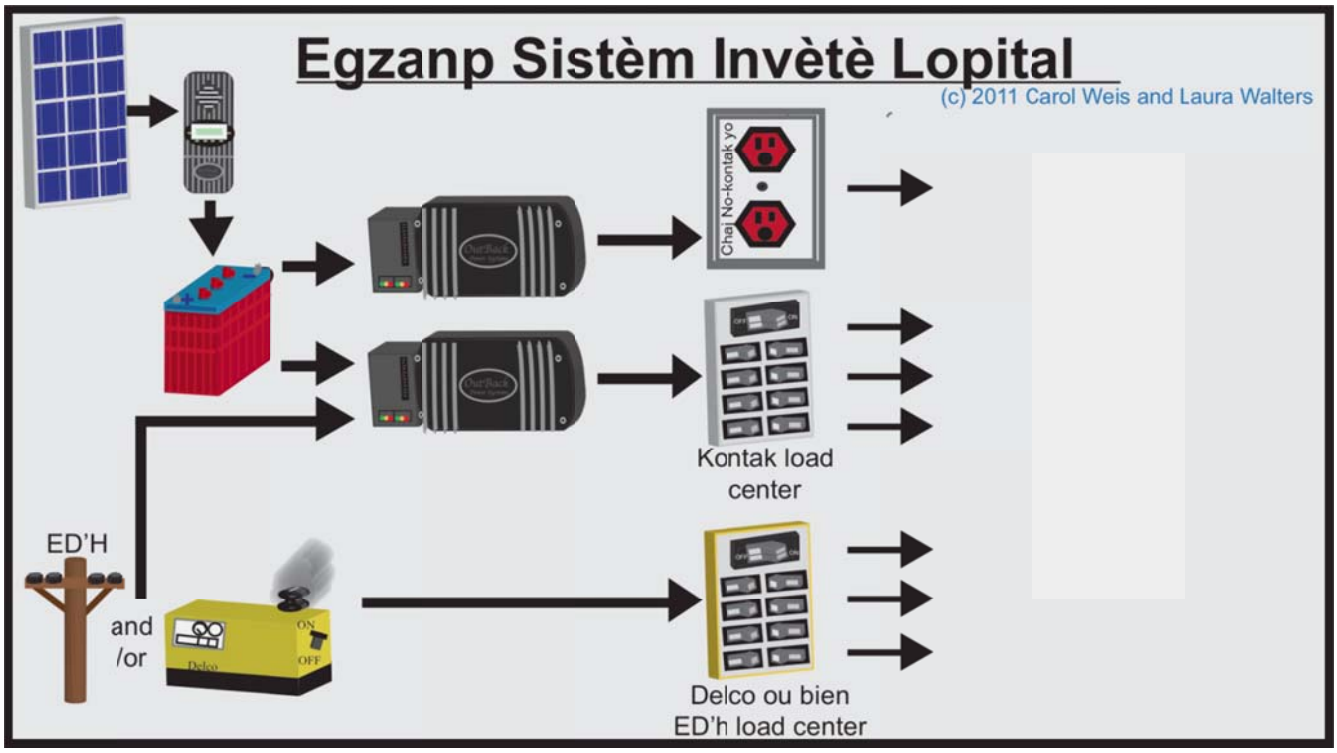
Day 1 Review Quiz

Non: lopital:

Eleman:



1. Ki kalite chaj oubyen aparèy yo ka branche nan priz no Kontak yo
2. Ki kalite chaj oubyen aparèy yo ka branche nan priz Kontak yo
3. Ki kalite chaj oubyen aparèy yo ka branche sou delko
4. Pou ki sa yo rele chaj yo no kontak oubyen kontak
5. ki sa yon envètè fè

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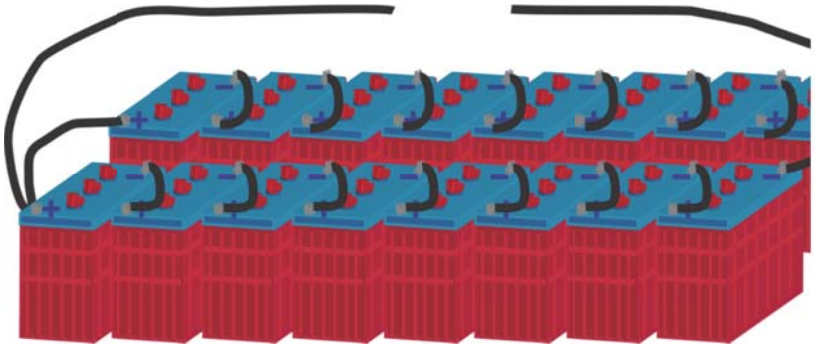
Batri:



Chak Batri: 400 Amp-hours

1. Ki voltaj chak batri nan desen sa …

2. Ki voltaj total ban batri a nan desen sa

3. Ki total ampè-è ban batri a nan desen sa

4. Avek kisa yo fe plak batri yo?

5. ak kisa elektwolit la fèt

6. Lè electrolit lan ba, ak kisa nou replen batri yo

7. Si batri a manke elektwolit ak kisa nou dwe replen l

8. Si lopital la pa gen dlo distiye (pwop)eske ou ka itilize lot kalite dlo pou mete nan batri

9. Bay omwen 5 pwosedi ou ta dwe swiv chak mwa lè nap fe antretyen nan batri yo
   1.
   2.
   3.
   4.
   5.

10. Bay omwen 5 mezi sekirite teknicien an ta dwe pran lè li nan batri yo
   1.
   2.
   3.
   4.
   5.

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11. Ki kantite dlo ou mete nan ban batri lopital la chak mwa ?Eske katite a varye ?

12. Chak kilè ou ta dwe tcheke batri yo, pou wè si yo manke dlo?

Chaj

non chaj yo	kantite	X	Watts	X	Hours/ day	=	Wh/day
Corning Heater	1	X	1043	X	2	=	2,086
Water Bath	1	X	600	X	2	=	1,200
Centrifuge (Macrosant)	1	X	104	X	4	=	416
Odinatè	1	X	115	X	4	=	460
Frijidè elektrik	1	X	50	X	4	=	200
Lamp iltravyolè	1	X	36	X	4	=	144
limyè	2	X	26	X	2	=	104
ventilatè	1	X	85	X	4	=	340
Point Care	1	X	300	X	3	=	900
Sysmex	1	X	200	X	2	=	400
Reflotron	1	X	70	X	2	=	140
vantilatè	2	X	85	X	4	=	680
Lamp	5	X	13	X	4	=	260
Computers PC/ Odinatè	3	X	115	x	4	=	1,380
Hospital Total Wh/day							8,710

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1. Ki kantite watt-hours clinik lan bezwen chak jou?

2. Nan ban batri ki nan desen anlè a ki gen 38,400 watt-hours, kombyen jou chaj yo kapab kembe avan yo desann a 50%SOC pou alam lan deklanche?

3. Ki aranjman ke yo ta dwe fè nan chaj yo pou kembe batri yo nan limit 50% SOC?

Klaxon:

1. Si limyè wouj limen e klaxon lan deklanche ki pousantay chaj nou gen nan batri yo ?

2. ki 3 bagay ou dwe fè lè alam lan declanche ?
   1.
   2.
   3.

3. Kisa teknisyen dwe fè pou klaxon nan kampe pou yon ti tan?

4. Aprè delko a fin pati e ke klaxon nan etèn. ak ki pousantaj chaj limyè wouj la dwe etèn ?

5. Aprè konbyen tan ou ta dwe etèn delco lè klaxon nan fin koupe ?

Envètè:

6. Ki kantite voltaj yon envètè Outback kapab bay?

7. Ki kantite envètè ou genyen nan lopital ou a ?

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8. Kisa Chak ti limyè(LED) nan envètè outback yo endike?

9. Ki 2 faswon ou ka itilize pou etèn. yon envètè outback ?

Erè e pwoblèm ki ka presante:

1. Koman teknisyen konnen ke gen erè nan envètè a?

2. Ki sa tecnisyen dwe fè pou retire erè nan envètè a ?

3. Koman teknisyen fe konnen ke yon avetisman na envete

4. Ak ki enstriman teknisyen kap sèvi pou.l konnen ki erè oubyen ki avètisman ki parèt nan mate lan?

MATE & HUB:

1. Bay 3 enfomasyon ke teknisyen ka jwen nan mate la

2. Sa wol Mate la fè ?

3. Ki wol ou byen ki fonksyon hub la

Logging:

1. Bay 3 enfomasyoin ke teknisyen bezwen pwan nan mate chak jou

2. Bay 3 enfomasyon ke teknisyen bezwen pwan nan mate la chak mwa

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Generators:

3. kisa teknisyen dwe techke nan yon bel ko chak jou

4. Eske se chak mwa yo dwe fe sevis nan yon delko

Why systems fail:

5. Bay 3 koz ki ka fe system envete /batri pa fonksyone byen si konsepsyon an mal fet
    1.
    2.
    3.

6. Bay 3 koz ki ka fe system envete/ batri fonksyone mal si enstalasyon pa bon
    1.
    2.
    3.

7. Bay 3 koz ki ka fe system envete/batri fonsyone mal si antret pa fetyen
    1.
    2.
    3.

8. Bay 3 koz ki ka fe system envete /batri
    1.
    2.
    3.

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Analiz chaj yo

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non chaj yo	Qty	x	Watts	x	Hours/ day	=	Wh/day
Microscope		x		x		=	
Centrifuge		x		x		=	
Desktop computer		x		x		=	
Refrigerator		x		x		=	
UV Lights		x		x		=	
Lights		x		x		=	
Fan		x		x		=	
FACS Count		x		x		=	
Reflotron		x		x		=	
Autoclave		x		x		=	

Mikroskòp

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50 W 50 W 50 W 50 W

Yo itilize ~ 6 Lè/Jou

Non chaj yo	Kantite	x	Watts	x	Èd tan/Jou	=	Wh/ jou
Mikroskòp		x		x		=	

Centrifuges

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Yo itilize ~ 4 Lè/Jou

Load Name	Kantite	x	Watts	x	Èd tan/Jou	=	Wh/ jou
Centrifuges		x		x		=	

Odinatè

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Yo itilize ~ 8 Lè/Jou

Non chaj yome	Kantite	x	Watts	x	Èd tan/Jou	=	Wh/ jou
Odinatè		x		x		=	

Frijidè

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Yo itilize 24 Lè/Jou

50 W

Non chaj yo	Kantite	x	Watts	x	Èd tan/Jou	=	Wh/ jou
Frijidè		x		x		=	

Lanp

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Lamp iltravyolè + **CF Lamp**

Yo itilize ~ 24 Lè/Jou

75 W

Yo itilize ~ 10 Lè/Jou

20 W

Non chaj yo	Kantite	x	Watts	x	Èd tan/Jou	=	Wh/ jou
Lanp iltravyolè		x		x		=	
limyè		x		x		=	

Vantilatè

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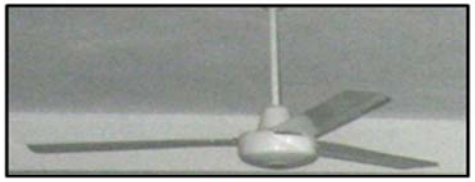

75 W

Yo itilize ~ 10 Lè/Jou

Non chaj yo	Kantite	x	Watts	x	Lè/Jou	=	Wh/ jou
Vantilatè						=	

FACS Count – Flow Cytometer

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Yo itilize ~ 1 Lè/Jou

160 W

Non chaj yo	Kantite	x	Watts	x	Èd tan/Jou	=	Wh/ jou
FACS Count		x		x		=	

Reflotron

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Yo itilize ~ 3 Lè/Jou

70 W

Non chaj yo	Kantite	x	Watts	x	Èd tan/Jou	=	Wh/jou
Reflotron		x		x		=	

Autoclave Sterilizer

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Yo itilize ~ 2 Lè/Jou

1,350 W

Load Name	Kantite	x	Watts	x	Èd tan/Jou	=	Wh/jou
Autoclave		x		x		=	

Enèji yo boule chak jou

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non chaj yo	Kantite	x	Watts	x	Hours/day	=	Wh/day
Microscope	4	x	50	x	6	=	1200
Centrifuge	2	x	200	x	4	=	1600
Desktop computer	1	x	150	x	8	=	1200
Refrigerator	1	x	50	x	24	=	1200
UV Lights	1	x	75	x	24	=	1800
Lights	2	x	20	x	10	=	400
Fan	1	x	75	x	10	=	750
FACS Count	1	x	160	x	1	=	160
Reflotron	1	x	70	x	3	=	210
Autoclave	1	x	1,350	x	2	=	2700
Lopital Total Wh/jou							**11220**

Diminye sou chaj yo Limyè natirel ak frechè

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Analiz chaj laboratwa yo

non chaj yo	Qty	x	Watts	x	Hours/day	=	Wh/day
Microscop		x		x		=	
santrifij		x		x		=	
Odinate		x		x		=	
Frijide		x		x		=	
Lamp iltravyole		x		x		=	
Lamp		x		x		=	
Ventilate		x		x		=	
FACS Count		x		x		=	
Reflotron		x		x		=	
Autoclave		x		x		=	
Total Watts		=					
	Enèji total yo itilize a					=	

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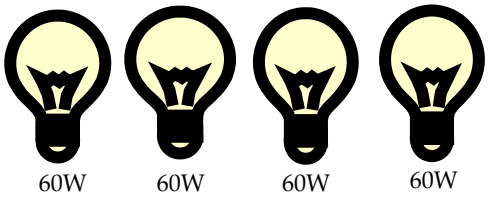
Efisyans ak chaj zombi

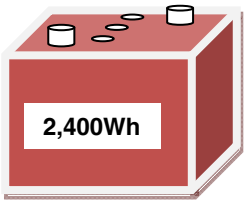
Limyè

1. Yon lopital itilize 5 ampoul inkandesan 60w. kombyen enèji lopital la boule si limyè sa yo limen pandan 5èd tan pa jou ?



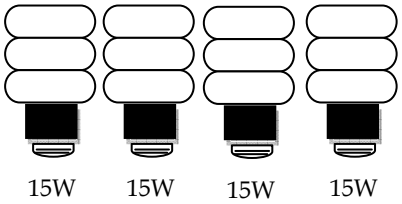
Pisans(Watts) ---------- Watts
Enèji (watt-è) _____ Watt-è/ jou

2. Konbyen jou limyè yo ka rete limen sou batri yo anvan klaxon nan deklanche(ann sipoze ke batri yo pat ap chaje)



Repons: _____

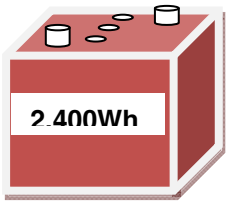
2. Yon teknisyen vini li ranplase tout lamp inkandesan yo pa enèji savè ki kantite enèji koulye lopital la ap boule chak jou ak nouvo limye sa yo (ann sipoze menm 5è tan pa jou a)



Pisans(watts) _____watts
Enèji (watts-e) _____ watt-è /chak jou

4. Konbyen jou lamp enèji sevè say o ka fè sou yon ban batri de 2400 wh anvan'l rive a 50% (sipoze ke batri yo patap chaje)

Repons: _____



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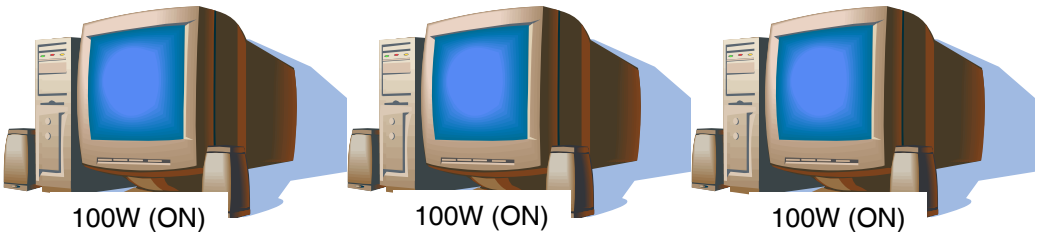
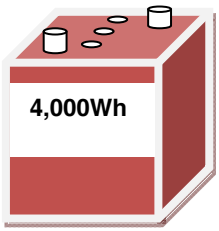
Odinatè:

5. Yon lopital ap itilize 3 odinatè pandan 10 èd tan chak jou



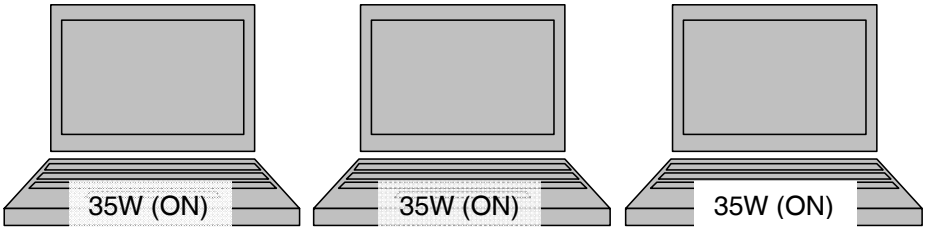
Pisans(watts) ---------- watts
Enèji (watt-è) _____watt-è/jou

6. Konbyen jou odinatè sa yo ka fè ap mache sou ban batri sa de 4000wk Anvan'l rive a 50% (sipoze ke batri yo patap chaje)



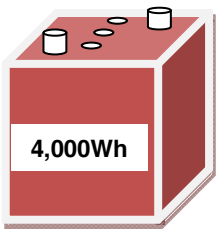
Repons _____

7. Nan lopital la yo ranplase odinatè sa yo pa laptop e yo fè yo mache pandan 10 èd tan
Pa bliye ke chak laptop ap rale 35 w .



Pisans(watts) _____watts
Enèji (watt-è) _____watt-è /chak jou

8. Pandan konbyen jou laptop sa yo ka mache sou ban batri sa Ki gen yon kapasite de 4000wh anvan li rive a 50%(sipoze Ke batri yo patap chaje)



Repons _____

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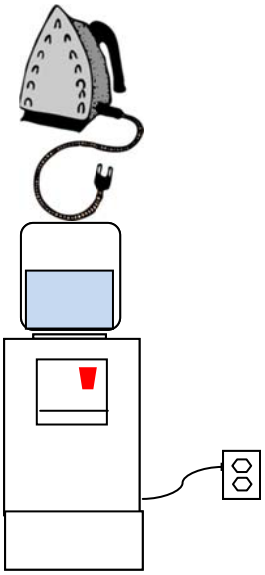
Gwo chaj

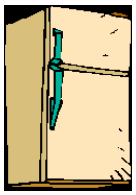


9. Yon fè a repase konekte nan rezidans lopital la pandan 8 èd tan pa jou (Fè a repase a mache mwatye tan pandan tan an)
Ki kantite enèji (Wh) lap boule lè yap sèvi ave'l_____

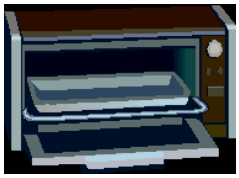
10. Yon water cooler nan lopital la ap rale 60 w lè li konekte pandan 24 èd tan/pa jou.(Water cooler a mache mwatye tan pandan jounen an)

Ki kantite enèji lap konsome chak jou _____

11. Yon frijidè nan kwizi'n lopital la rale 200w li konekte 24/24
(Fujidè a mache mwatye tan pandan jounen an)
Enèji (wh)boule chak jou_____



12. Yon tostè nan kwizi'n lopital la rale 1200w

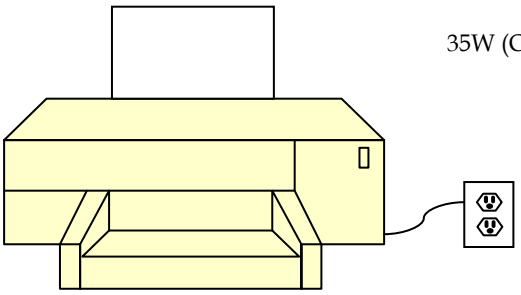


Ki kantite enèji (wh) li boule lè lap mache pandan 1 èd tan _____

Ki kantite enèji (wh) li boule si li tap mache pandan 15 minit _____

Chaj zombi

13. **Yon enprimant mache pandan demi èd tan chak jou men li rete konekte san travay pandan res 23.5 èd tan**.



35W (ON) 4W (Standby)

Enèji (wh) boule lè li limen _____-
Enèji (Wh) boule lè li an standby =_____
Enèji en tou (Wh) li boule chak jou _____

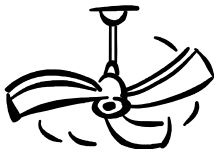
14. Yon televizyon nan sal datant ouvè pandan 4 èd tan chak jou Pandan res 20 èd tan an li rete konekte men li pap mache

Enèji (Wh) boule lè li louvri_____
Enèji (wh) boule lè li pap mache _____
Total enèji (wh) boule chak jou _____

200W (ON)
4W (OFF)

15. Yon ventilatè plafon 150w rete ouvè tout lajounen tout lannwit

Ki kantite enèji li boule ?_____



16. Chak fwa miss yo ap kite chanm yo, yo etèn vantilatè plafon yo. Nan jounen an vantilate a mache Selman pandan 5 èd tan.

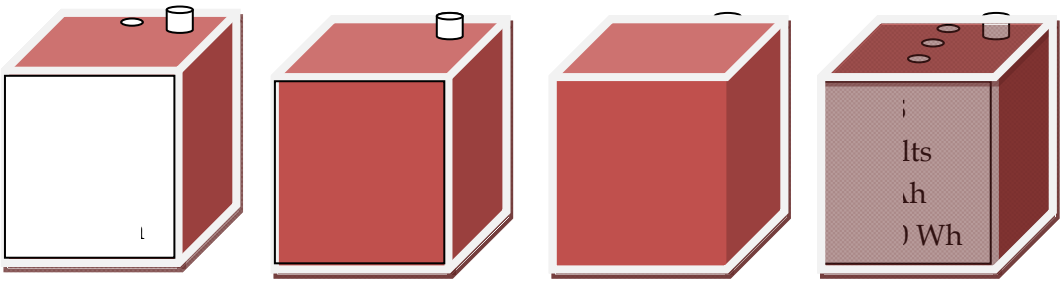
Ki kantite enèji li boule _____

Analiz chaj zonbi yo

non chaj yo	kantite	X	Watts	X	Lè/jou	=	Wh/jou
Televisyon	1	X	7	X	20	=	
Video	1	X	4	X	20	=	
enprimant ki konekte men ki pap mache	2	X	10	X	23	=	
Ekran odinatè	3	X	8	X	16	=	
Laptop	4	X	4	X	16	=	
Total Wh/Jou lopital lan							

1. *Ki enèji an tou chaj zombie yo boule chak jou nan lopital sa ?*

2. Konbyen batri nap bezwen pou fè mache tout aparèy sa yo lè li konekte men li pap mache ?



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Enstalasyon batri e Antretyen

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Elektrolit

- ~ 25% asid silfirik, 75% dlo
- Mete dlo distile sèlman
- Si asid silfirik la soti, reaksyon chimik la pap kapab fèt byen
- Kenbe yo lwen de tout sa ki ka kontamine yo

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Netwayaj kouvèt batri yo

- Kenbe yo pwòp, lwen ak salte, pousyè ak tout sa ki ka kontamine yo
- Pa netwoye kouvèt batri yo ak bikabonat
- Gwo salte ka lakoz yo dechaje pou kont yo

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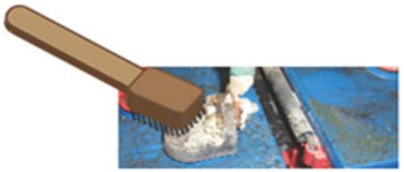
Netwayaj Korozyon

- Netwaye tèminal yo ak bròs fil
- Pa netwaye kouvèt batri yo ak bikabonat.



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Source: USAID

Tchèk Dlo

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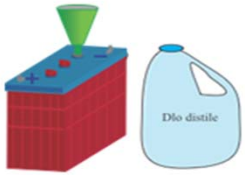
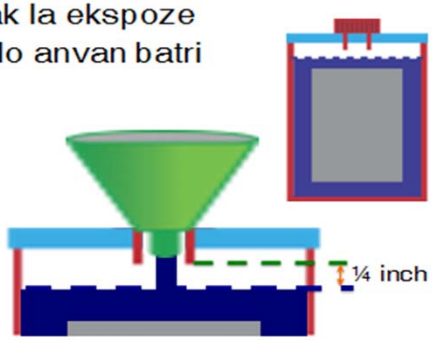
- Chaje twòp ou dechaje twòp ka lakoz gaz la pa degaje
- Pa janm kite plak la ekspoze
- Pa mete twòp dlo anvan batri a chaje





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Kontwòl Kaptè tanperati

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- Yon tanperati cho anpil kapab chaje batri a twòp
- Batri yo ta dwe omwen yon pous youn ak lòt
- Mete kaptè a nan mitan ban batri a

Source: www.outbackpower.com

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Metòd Fil elektrik

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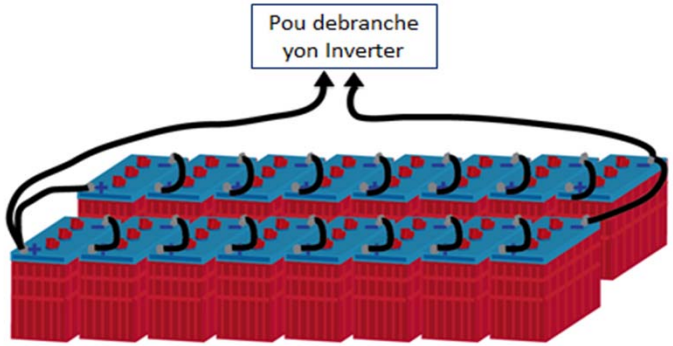

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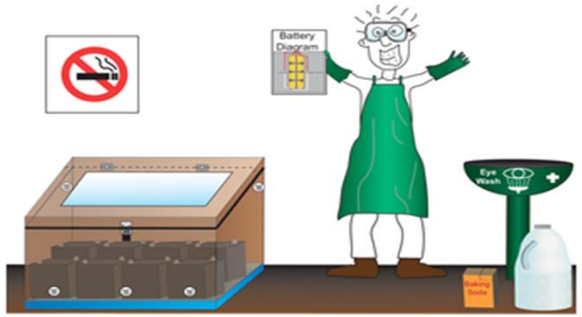
Anvan w manyen oubyen Pase fil elektrik nan batri



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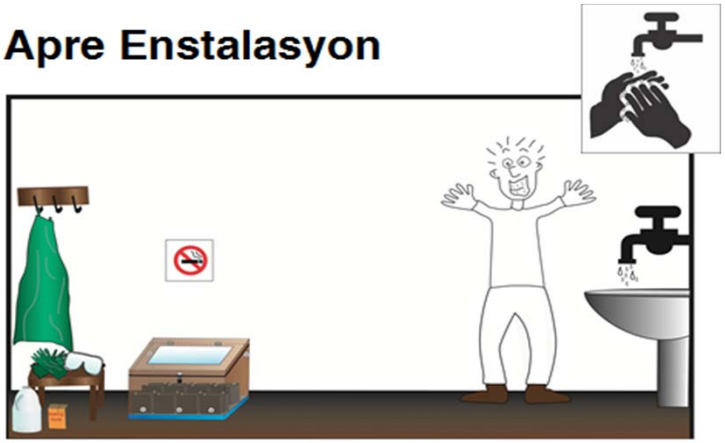
Apre Enstalasyon



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Ki jan batri a konplè?

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Tcheke 3 paramèt sa yo:

- Eta chaj la
- Vòltaj batri a
- Jou depi li plen

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Eta chaj la (% S.O.C.)

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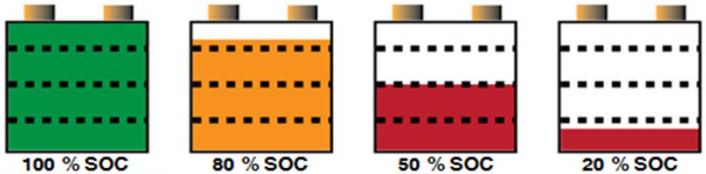
- Konsistan, lekti estab
- Li pa chanje byen vit lè w mete chaj oubyen lè li ap chaje
- Li kalkile lè w mete oubyen retire ampè- è nan batri a
- Li disponib sèlman lè FNCD monitè a enkli nan sistèm nan



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Lekti SOC OutBack yo

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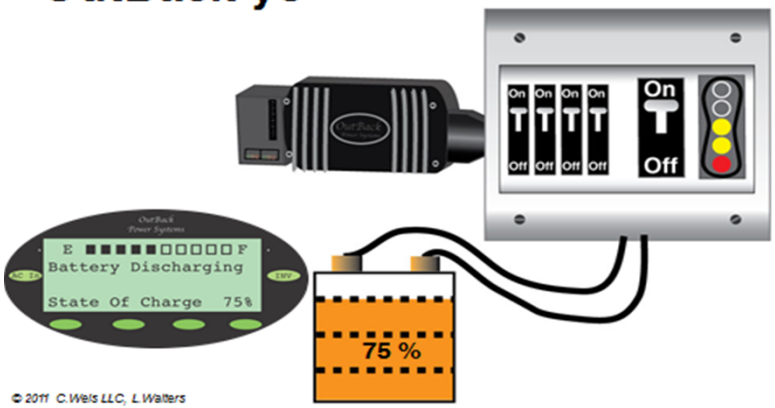

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Problèm nan Lekti SOC OutBack yo

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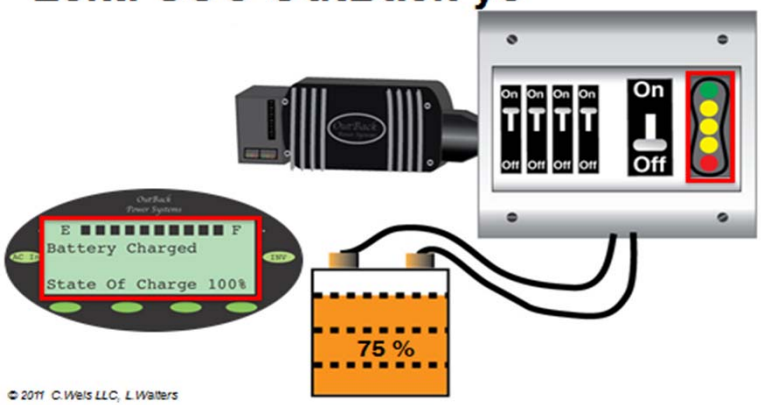

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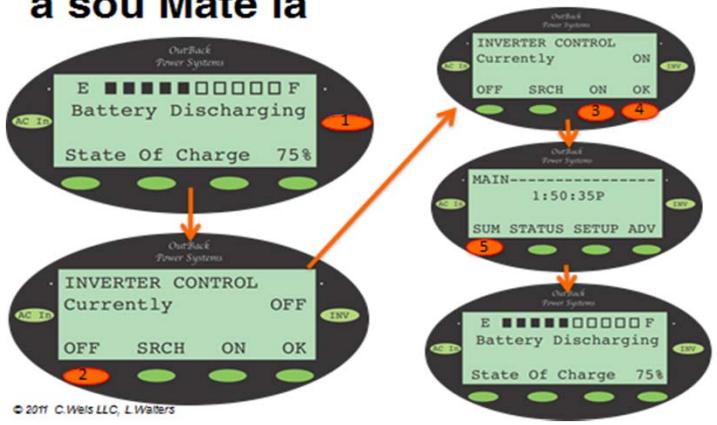
Fèmen inverter a sou Mate la



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Sistèm Operasyon

Ki lè inverter a dwe fèmen sou Mate la?

- Pou reyajiste yon paramèt
- Lè w ap travay nan fil elektrik AC yo oubyen nan chaj yo
- Lè batri yo ba anpil (pou anpeche yo dechaje plis)

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Sistèm Operasyon

Ki lè brekè inverter a Dwe fèmen?

- Lè w ap dekonekte fil elektrik yo nan batri a
- Lè w ap retire yon inverter pou repare
- Lè w ap travay nan fil elektrik sou sistèm DC a

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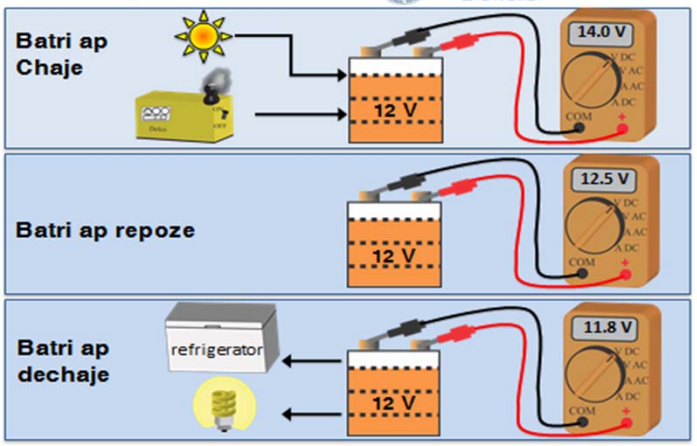
Vòltaj Batri



Jou depi li plen

FNDC Paramèt "Chaj"	Konsiy tipik
Amps (mwens pase)	2% nan kapasite batri a
Volts (plis pase)	Jis anba vòltaj absòbe a
Tan (pi lontan pase)	Pou plis pase 2 èdtan

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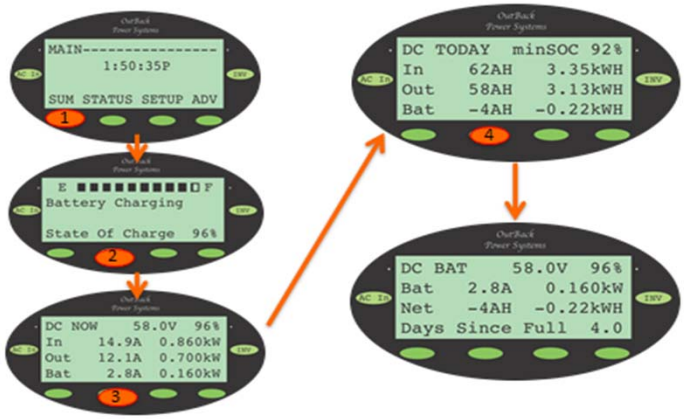
Jou depi li plen



Days Since Full (DSF)

Ti limyè a limen lè Amps & volts rankontre

Lè Ti limyè a limen, → etèn dèlko la

Si ti limyè a pa limen & DSF la pa li 0 jou apre li finn chaje:

→Li ka bezwen chaje plis

→Se kapab yon fo siyal

→Se kapab yon problèm nan sistèm nan oubyen batri yo

→Rele Tetra Tech

MATE Summary Screens

Source: SunEPI.org

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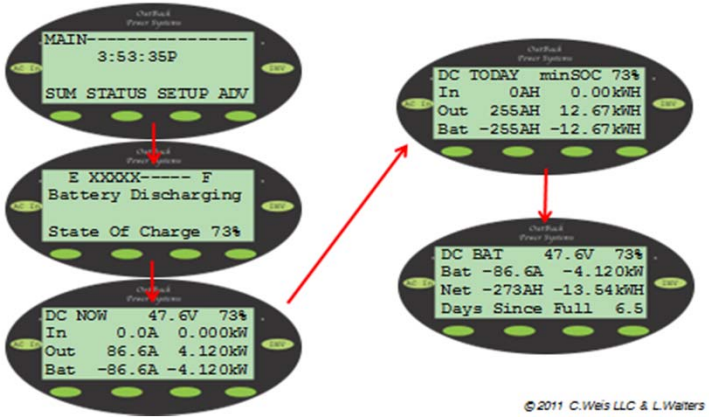
Day 1, 3:53PM



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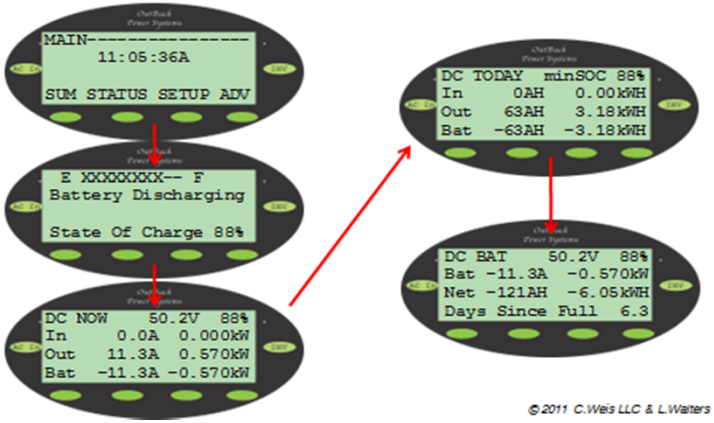
Day 1, 11:05AM



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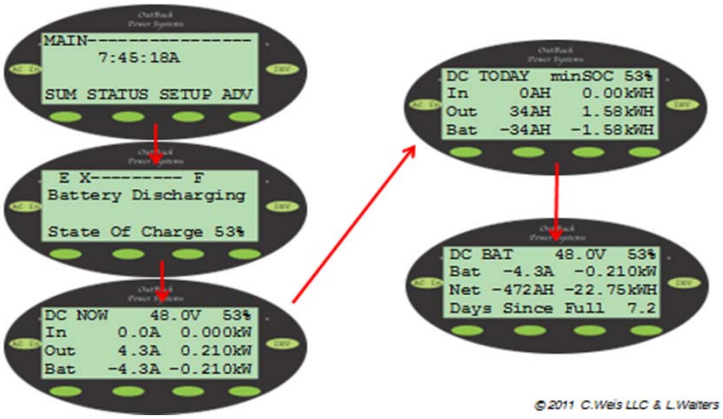
Day 2, 7:45AM



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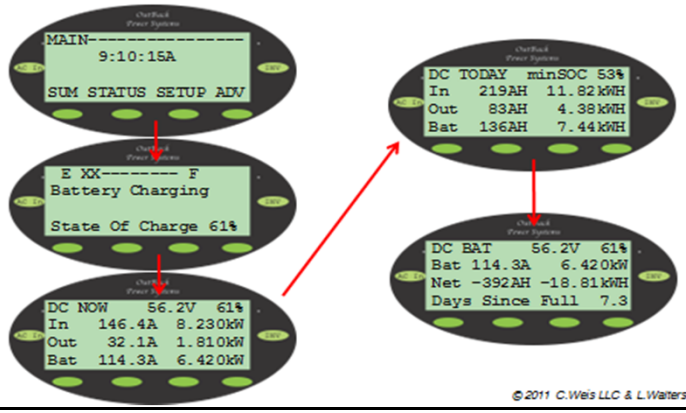
Day 2, 9:10 AM



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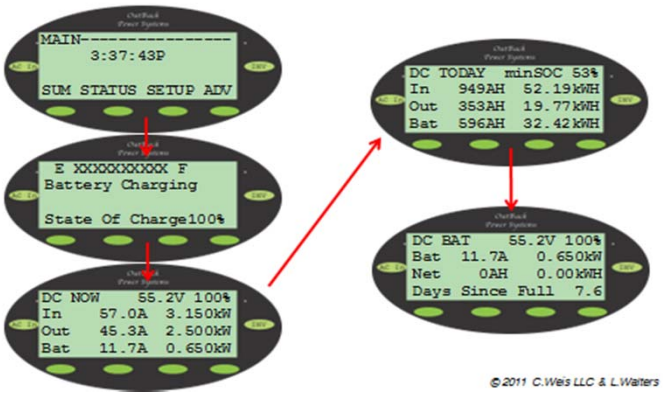
Day 2, 3:37PM



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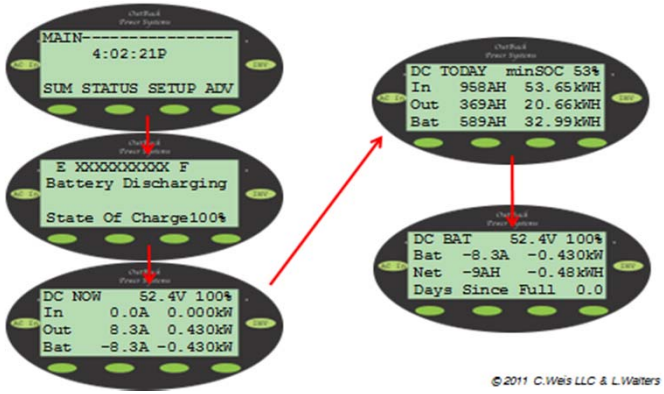
Day 2, 4:02PM



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Example 1

1. Ki lè ki make nan mate la?
2. Ki voltaj batri yo ye koulye la?
3. Ki vale SOC batri yo ye?
4. Eske batri yo chaje ou byen yo dechaje?
5. Ki kantite anpè ki genyen nan batri yo?
6. Ki kantite anpè kap soti nan batri yo?
7. Eske batri yo recevwa plis chaj key o bay?
8. Eske batri yo recevwa plis chaj key o bay pandan jounen an?
9. Ki vale minSOC ye Jodi a?
10. Konbye jou ki pase depi ke batri yo te chaje?

Pase fil Kouran

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Bwat Brekè

- Lòd
- Kòd koulè
- Kanal
- Kite fil siplemantè

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Koneksyon Fil kouran

- Fè rakò nan yon bwat
- Sekirize tout koneksyon yo
- Pa kite tèminal yo ekspoze

Source: Solar Energy International

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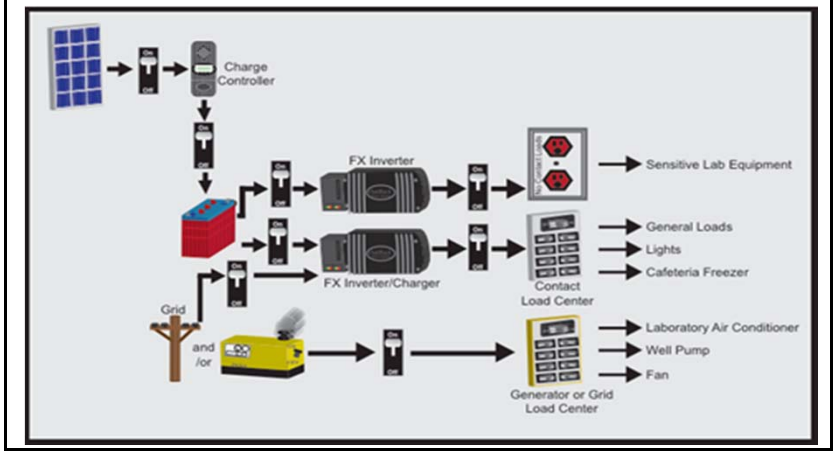
Dekoneksyon



Dekoneksyon & Brekè yon OutBack

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Brekè pwoteksyon kont gwo kouran

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Source: www.buildmyowncabin.com

Source: www.globalindustrial.com

Source: www.directindustry.com

Source: www.grainger.com

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Proteksyon kont gwo kouran

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Source: NEC 2011 310.15(B)17

Gwosè Fil kouran	Amps (at 75°F)	Brekè estanda/ gwosè fizib
14	20	15
12	25	20
10	35	30
8	50	50
6	65	60
4	85	80
2	115	110
1/0	150	150
2/0	175	175
4/0	230	225, 250

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Prekosyon

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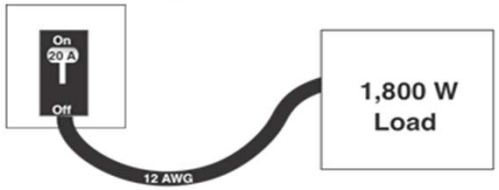
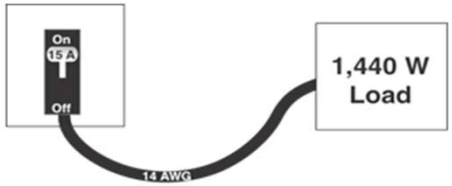


1,800W = 15A x 120V
15A x 1.25 = 20 A



1,440W = 12A x 120V
12A x 1.25 = 15 A

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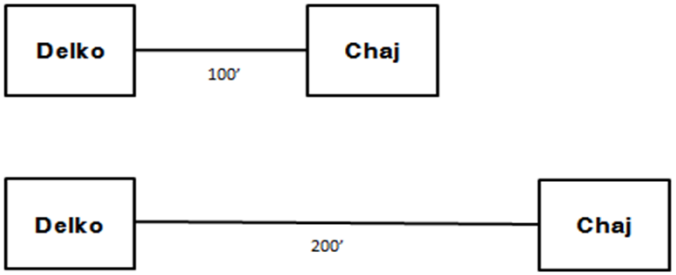
Lè vòltaj bese



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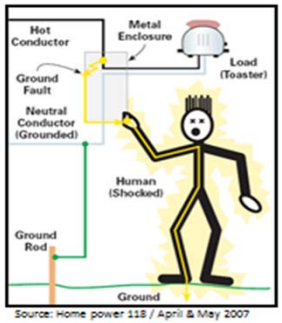
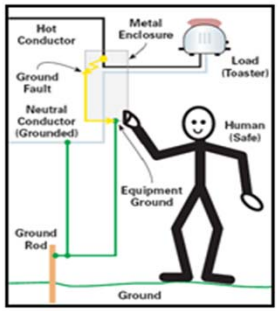
Move grawon

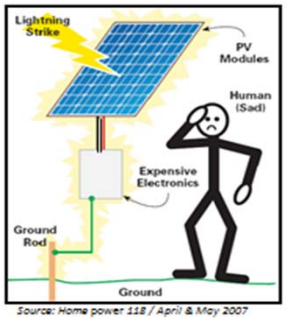


Source: Home power 118 / April & May 2007

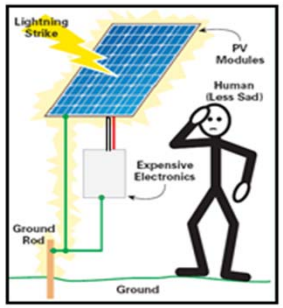


Source: Solar Energy International

Kout zèklè

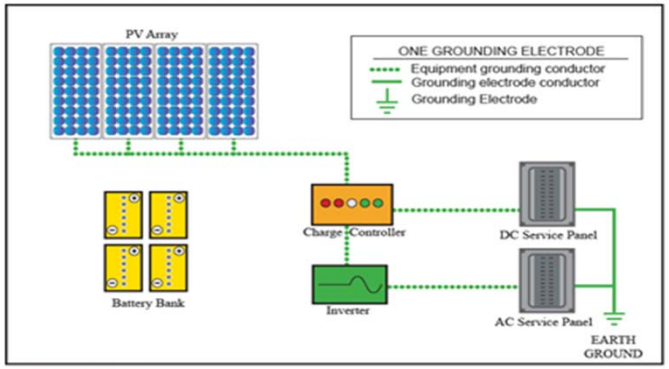


Source: Home power 118 / April & May 2007



Source: Solar Energy International

Ekipman nan yon sistèm grawon



Source: Solar Energy International

Ekipman nan yon sistèm grawon

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Source: Solar Energy International

"sistèm grawon "

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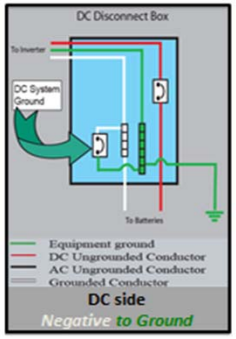
Connect negative to ground at only one point on DC side



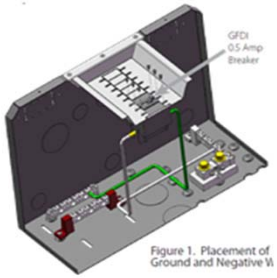
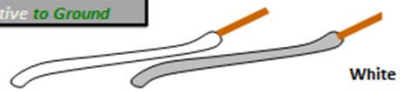


Figure 1. Placement of Ground and Negative W



White or Gray

Source: Solar Energy International

"sistèm grawon "

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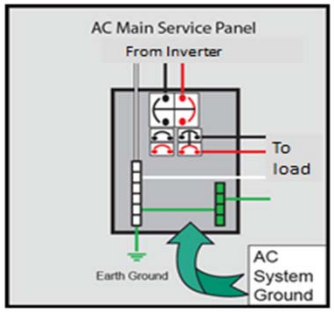
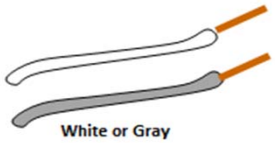
Connect white wire to ground at only one point on AC side/



AC side
Neutral to Ground

AC Grounded Conductor



White or Gray

Source: Solar Energy International

Fil kouran AC yo

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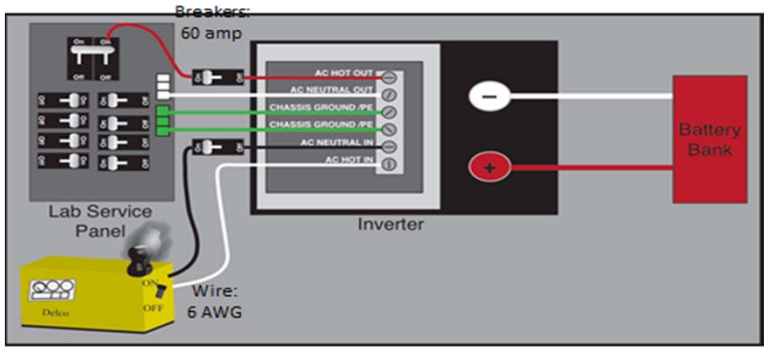

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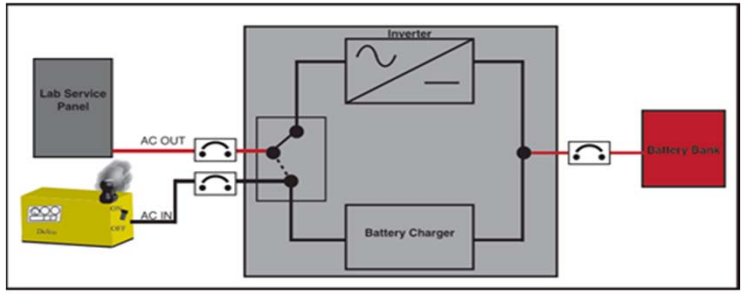
Jan envètè a transfere



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kominikasyon ant envètè yo

Source: OutBack Power Systems

Yon mesaj **avètisman** parèt sou ekran Mate la

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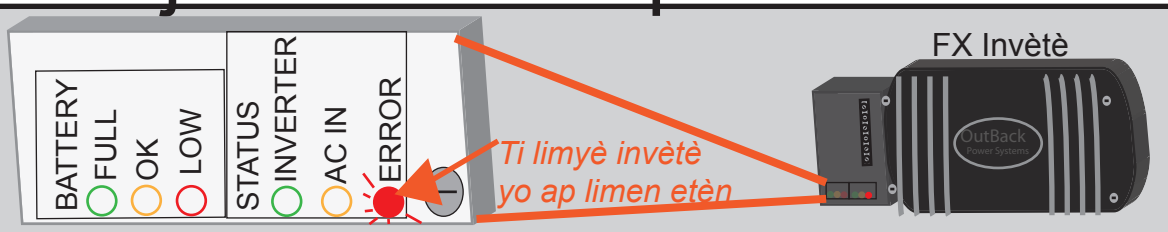
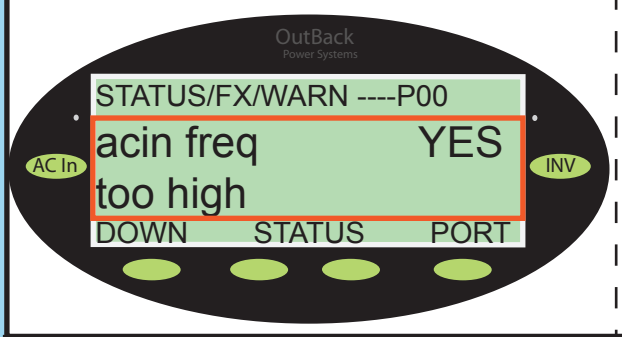
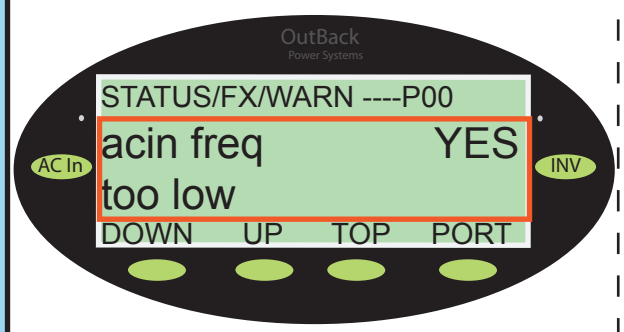
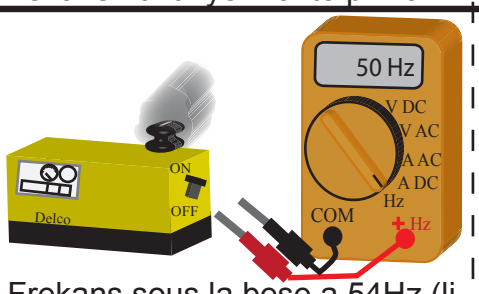
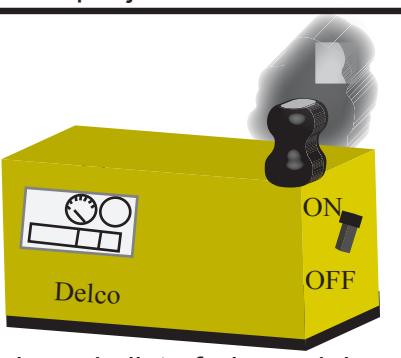
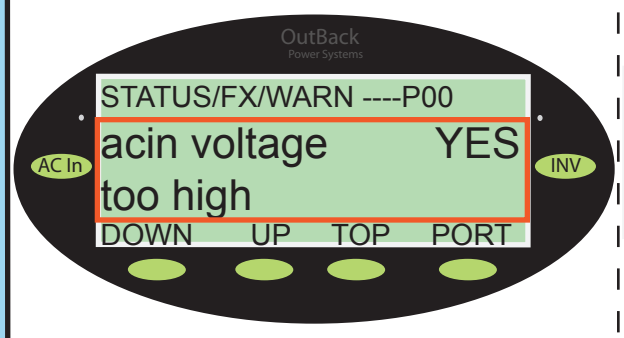
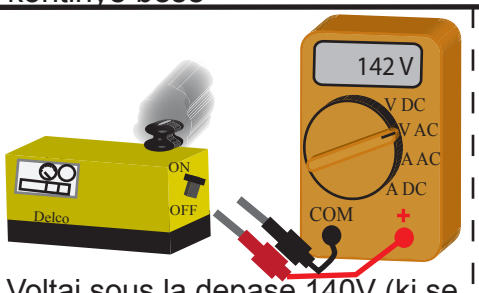
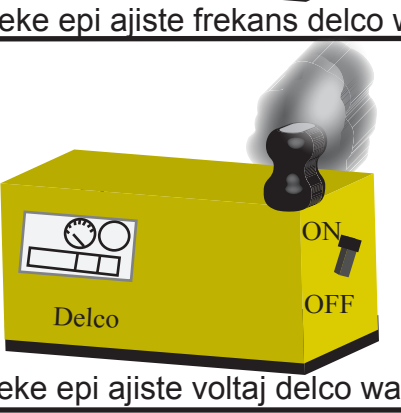
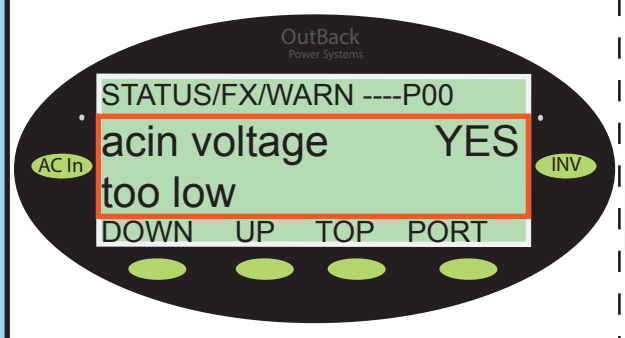
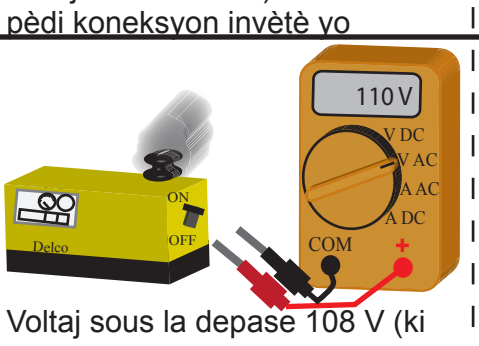
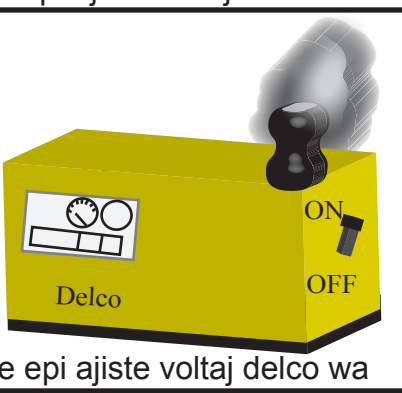
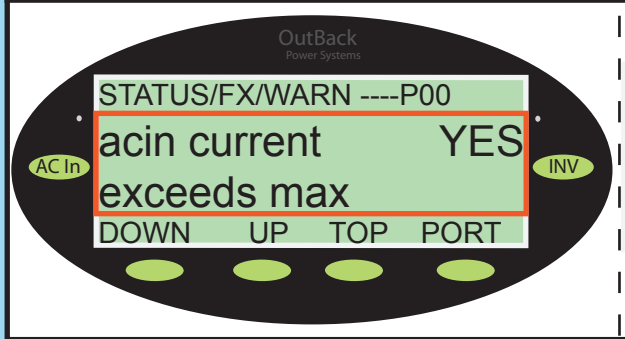
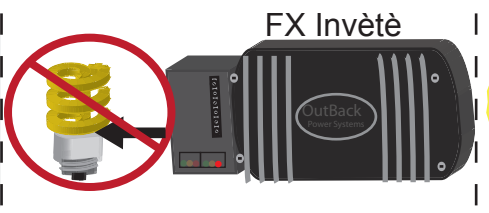
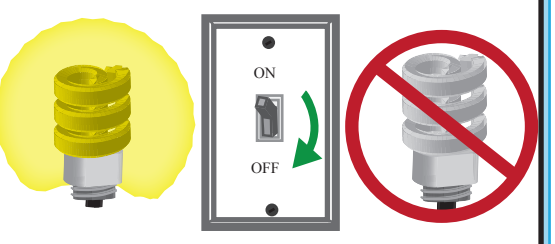
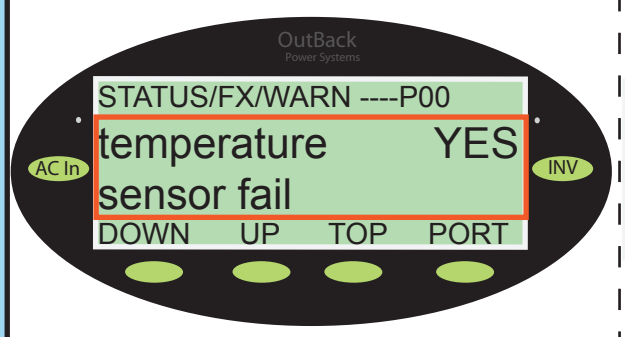
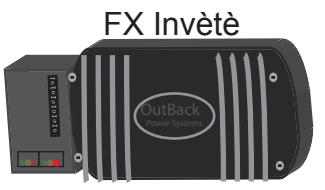
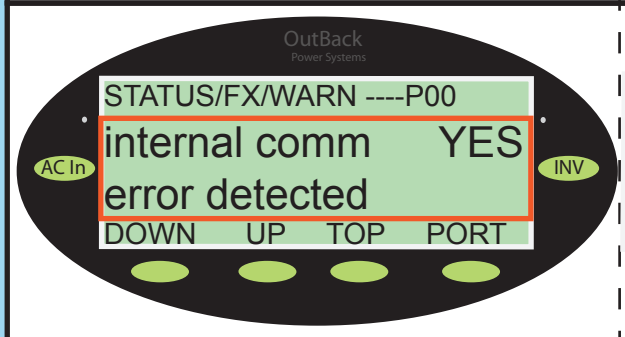
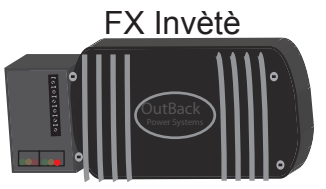
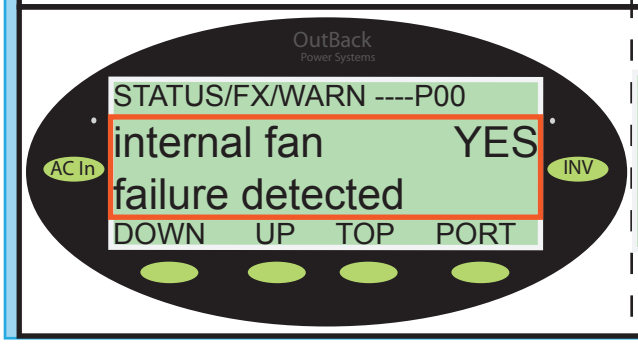
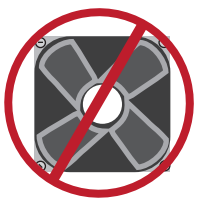
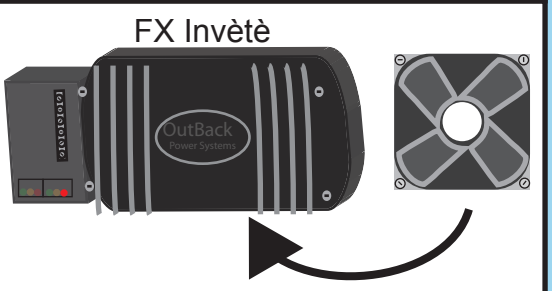
www.poweringhealth.org



Invètè a kontinye ap mache

Avètisman Mesaj	Avètisman Mesaj - Kreyol	Explikasyon	Solisyon
	ETA / FX / AVÈTISMAN ----P00 Frekans lan OUI wo anpil ANBA ETA PORT	Frekans sous la rive a 66Hz (lap depace limit li) li ka en pan si frekans kontinye monte pi wo	Tcheke epi ajiste frekans delco wa
	ETA / FX / AVÈTISMAN ----P00 Frekans la OUI ba anpil ANBA ANWO ANLÈ PORT	 Frekans sous la bese a 54Hz (li two ba) li ka en pan si frekans kontinye bese	 Tcheke epi ajiste frekans delco wa
	ETA / FX / AVÈTISMAN ----P00 voltaj la OUI wo anpil ANBA ANWO ANLÈ PORT	 Voltaj sous la depase 140V (ki se voltaj defo invètè a) e nou riske pèdi koneksyon invètè yo	 Tcheke epi ajiste voltaj delco wa
	ETA / FX / AVÈTISMAN ----P00 voltaj la OUI ba anpil ANBA ANWO ANLÈ PORT	 Voltaj sous la depase 108 V (ki se voltaj defo invètè a) e nou riske pèdi koneksyon invètè yo	 Tcheke epi ajiste voltaj delco wa
	ETA / FX / AVÈTISMAN ----P00 kouran soti a OUI depace pi wo vale l' ANBA ANWO ANLÈ PORT	 Chaj yo ap rale pli kouran ke invètè yo ka bay	 Diminye nan chaj yo
	ETA / FX / AVÈTISMAN ----P00 tanperati OUI sensor la pa bon ANBA ANWO ANLÈ PORT	 Gen yon tanperati sensor ki pa bon	Circuit board kin an invètè a beswen ranplasman. Rele yon distributè Outback
	ETA / FX / AVÈTISMAN ----P00 Erè kominikasyon OUI nan invètè a ANBA ANWO ANLÈ PORT	 Erè kominikasyon nan invètè a	Circuit board kin an invètè a beswen ranplasman. Rele yon distributè Outback
	ETA / FX / AVÈTISMAN ----P00 ventilatè andan OUI invètè a anpàn ANBA ANWO ANLÈ PORT	 Vantilatè ki pou rafredi invètè yo pa mache byen	 Ranplase ventilatè invètè a

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Yon erè parèt sou ekran Mate la

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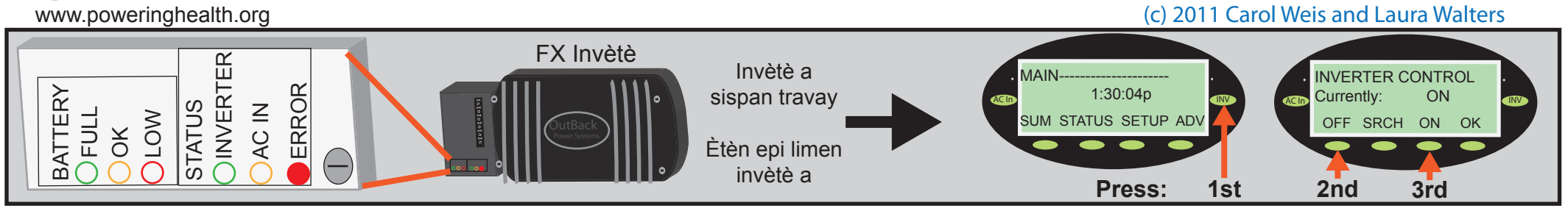
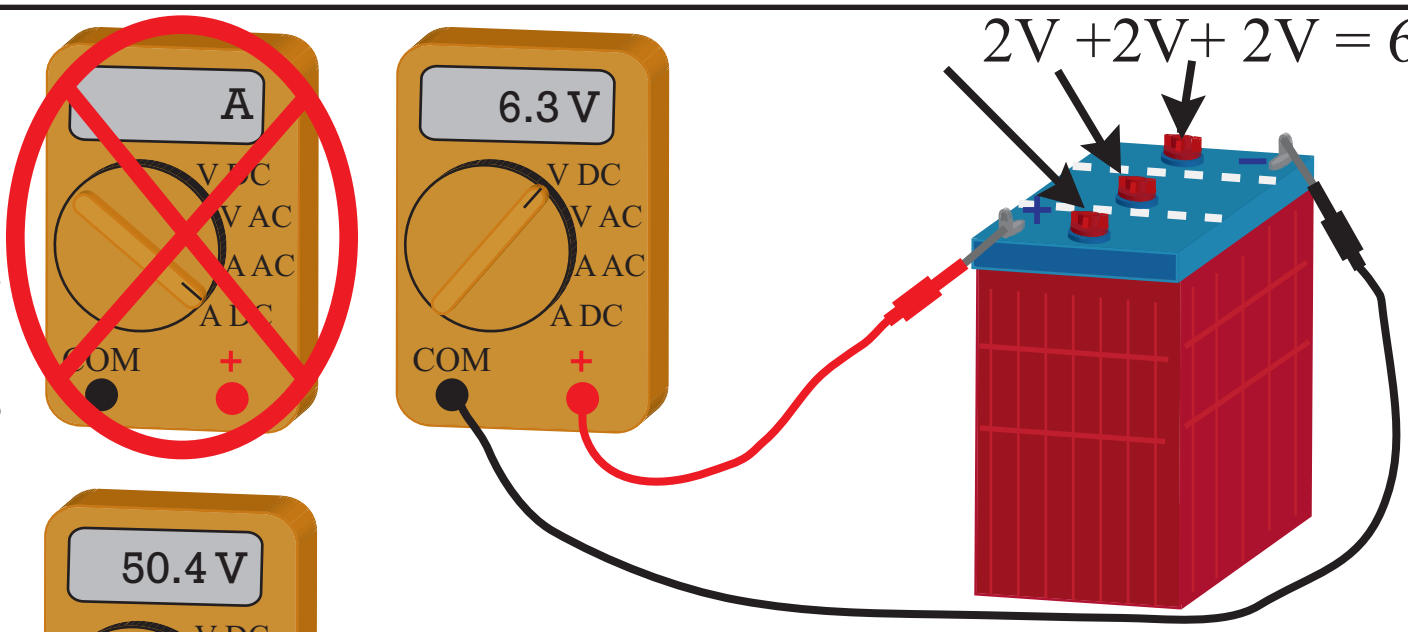
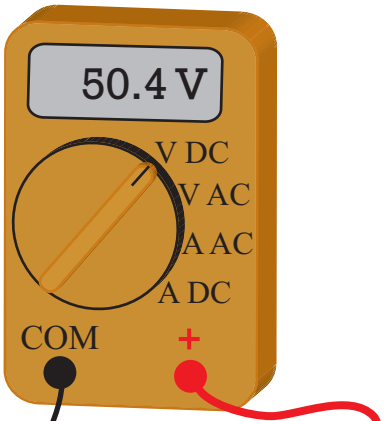


Erè Mesaj	Erè Mesaj - Kreyol	Explikasyon	Solisyon
STATUS/FX/ERROR ----P00 low ac output voltage YES DOWN STATUS PORT	ETA / FX / ERÈ ----------P00 voltaj la ba nan soti sous la OUI ANBA ETA PORT	FX Invètè Invètè pa ka bay ase voltaj pou chaj la	Diminye sou chaj yo
STATUS/FX/ERROR ----P00 stacking error detected YES DOWN UP TOP PORT	ETA / FX / ERÈ ----------P00 erè pwogramasyon kouplaj OUI ANBA ANWO ANLÈ PORT	Pwoblèm kominikasyon nan pami invètè yo	1. Pwogramasyon Mate la 2. Tcheke HUB ak kab yo wè si pa gen erè
STATUS/FX/ERROR ----P00 inverter overtemp YES DOWN UP TOP PORT	ETA / FX / ERÈ ----------P00 invètè chofe OUI ANBA ANWO ANLÈ PORT	FX Invètè Invètè depase maksimòm tanperati yo ka travay	1. Diminye sou chaj yo 2. Invètè yo manke ayere
STATUS/FX/ERROR ----P00 low battery voltage YES DOWN UP TOP PORT	ETA / FX / ERÈ ----------P00 voltaj batri yo ba OUI ANBA ANWO ANLÈ PORT	FX Invètè Voltaj batri yo anba “Low battery cut-out voltage” setpoint.	1. Diminye sou chaj yo 2. Chaje batri yo ak kouran delco a
STATUS/FX/ERROR ----P00 high battery voltage YES DOWN UP TOP PORT	ETA / FX / ERÈ ----------P00 voltaj batri yo wo OUI ANBA ANWO ANLÈ PORT	Voltaj batri a monte pi wo ke voltaj maksimòm lan pandan 10S	Tcheke Charge Controller ki pou system sole a avek lot sous yo
STATUS/FX/ERROR ----P00 ac output shorted YES DOWN UP TOP PORT	ETA / FX / ERÈ ----------P00 soti kouran an koupe OUI ANBA ANWO ANLÈ PORT	FX Invètè Invètè yo depace kapasite maksimòm, yo etèn	1. Diminye sou chaj yo 2. Tcheke fil kouran yo, pou wè si pa gen kousikwi
STATUS/FX/ERROR ----P00 ac output backfeed YES DOWN UP TOP PORT	ETA / FX / ERÈ ----------P00 soti kouran an jwen ak rantre kouran an OUI ANBA ANWO ANLÈ PORT	FX Invètè Kouran soti a Kouran antre a Yo konekte yon lot sous nan soti invètè yo	FX Invètè Kouran soti a Kouran antre a Tcheke fil kouran yo

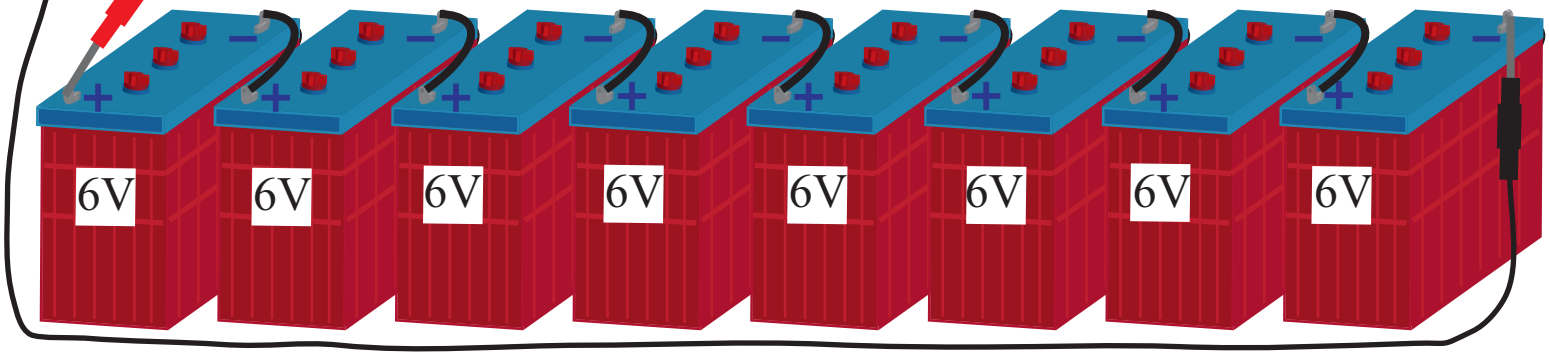
Entretyen Batri Yo

Fason pou nou teste voltaj batri yo

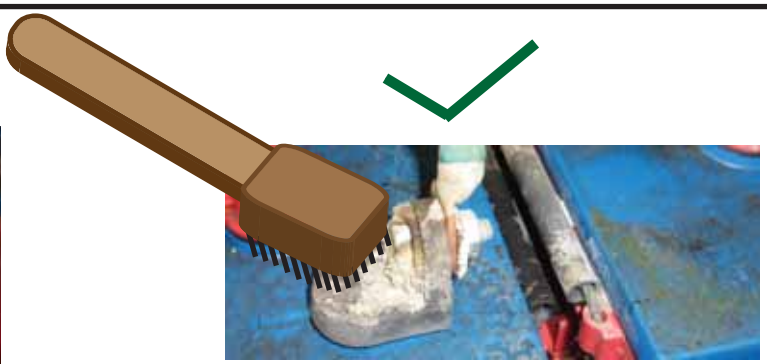




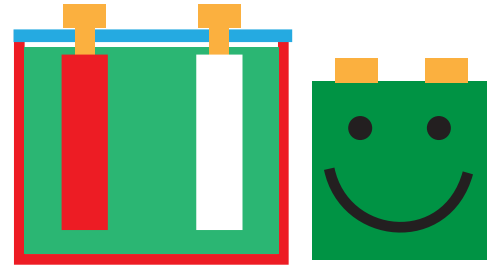
Nivo chaj batri yo	Voltaj					
	2V	**4V**	**6V**	**12V**	**24V**	**48 V**
100 %	2.1	4.2	6.3	12.6	25.2	50.4
75 %	2.07	4.14	6.2	12.4	24.8	49.6
50%	2.03	4.06	6.1	12.2	24.4	48.8
25%	2	4	6	12	24	48
0%	1.97	3.94	5.9	11.8	23.6	47.2

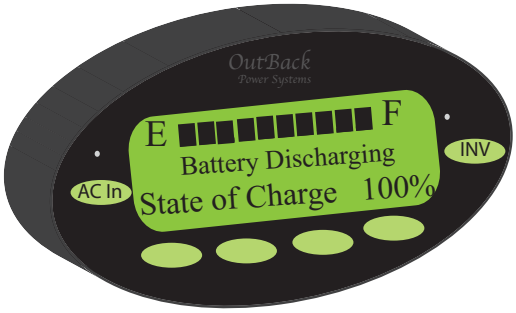


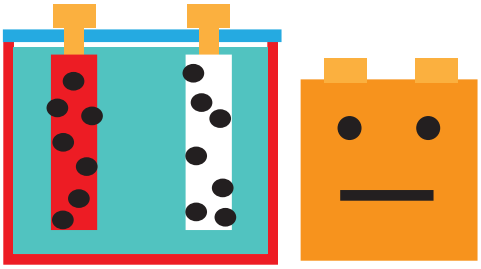
Fason pou retire vè de gri sou bòn batri yo

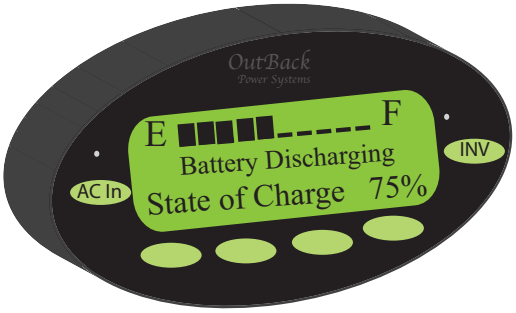


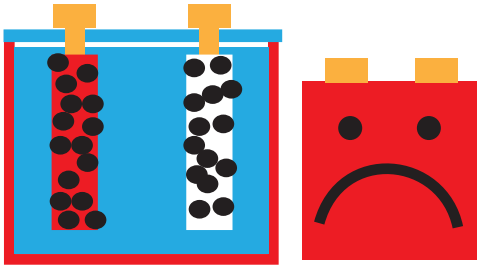
Nivo chaj batri yo

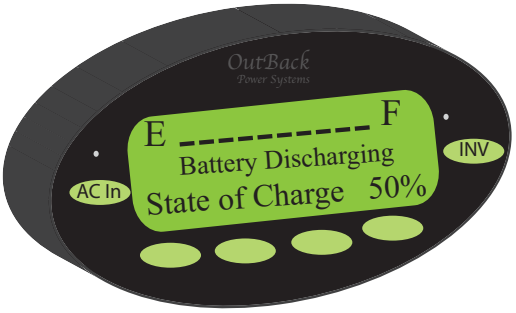


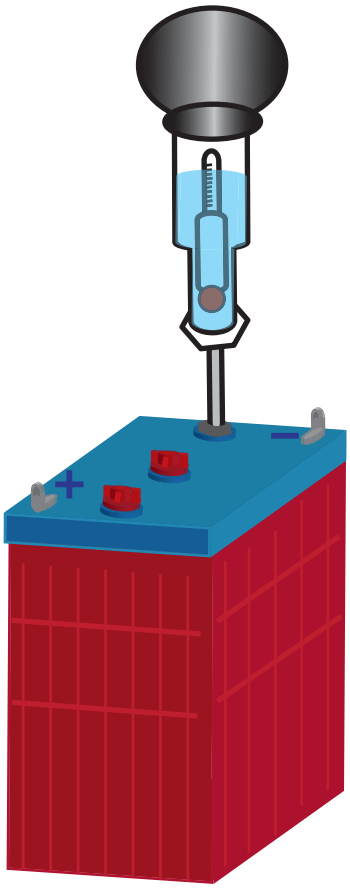


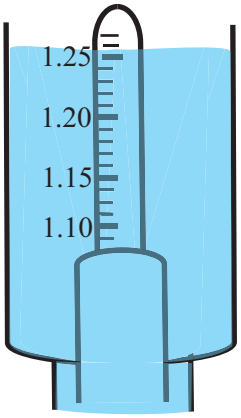




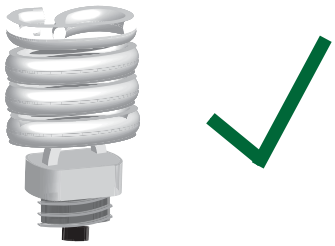




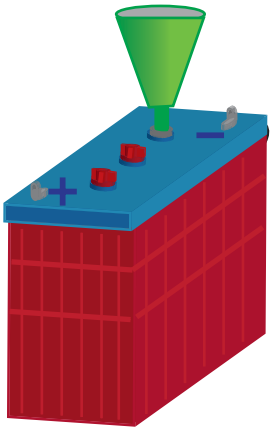


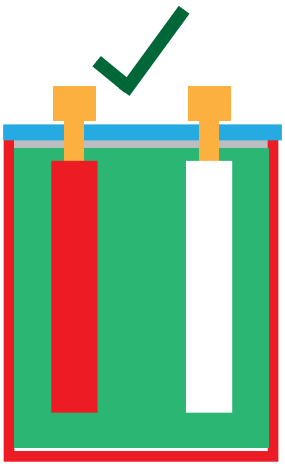


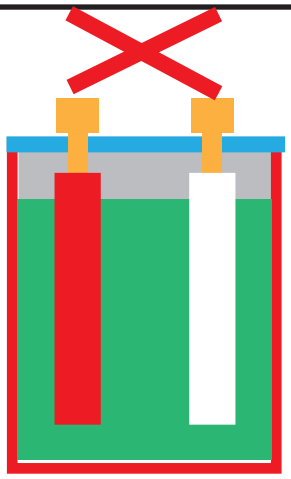
Nivo chaj batri yo	Nivo Acid
100 %	1.255-1.275
75 %	1.215-1.235
50%	1.200-1.180
25%	1.165-1.155
0%	1.130-1.110



Koman pou mete dlo nan bateri yo







Egzanp Sistèm Invètè Lopital

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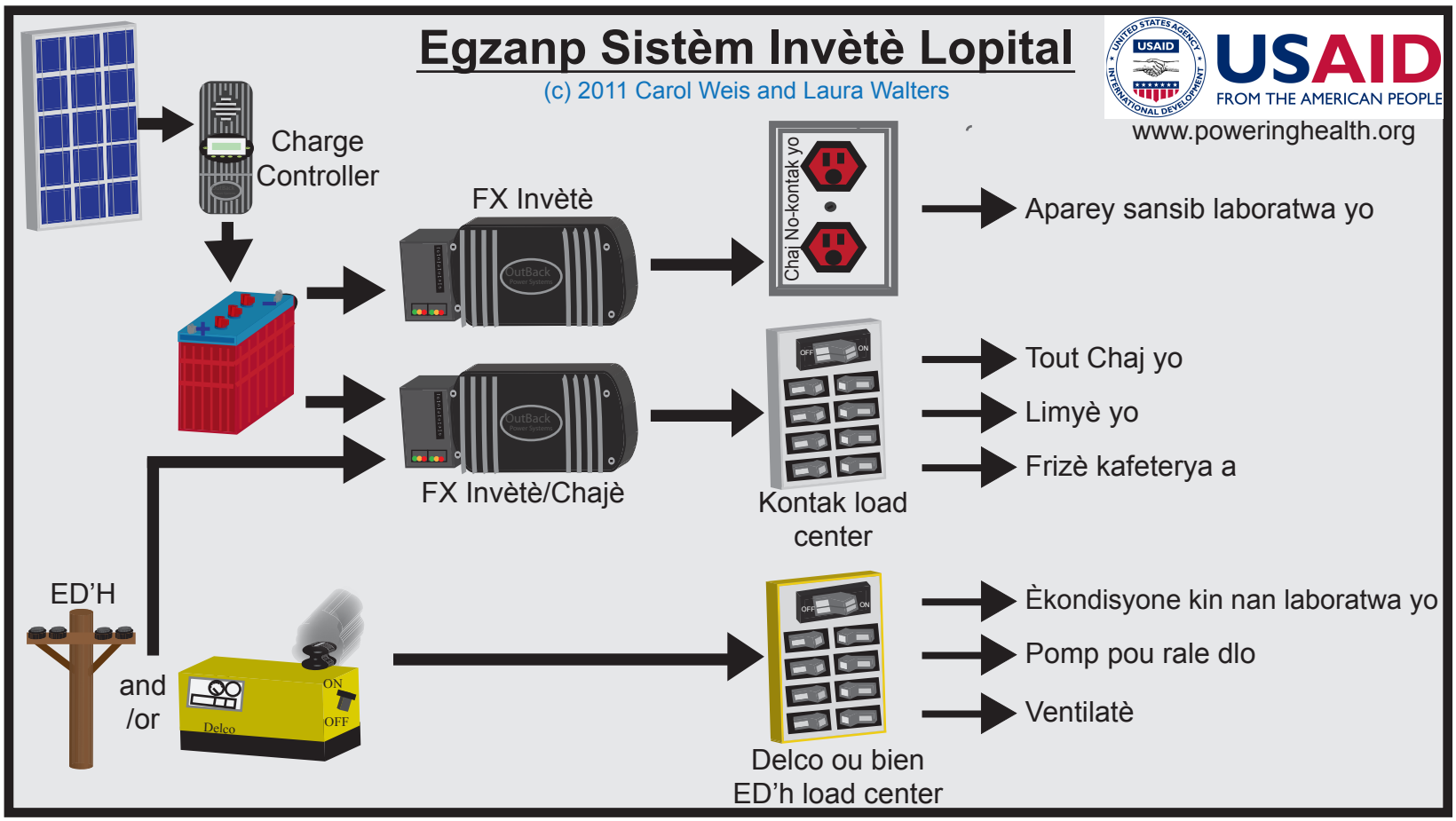
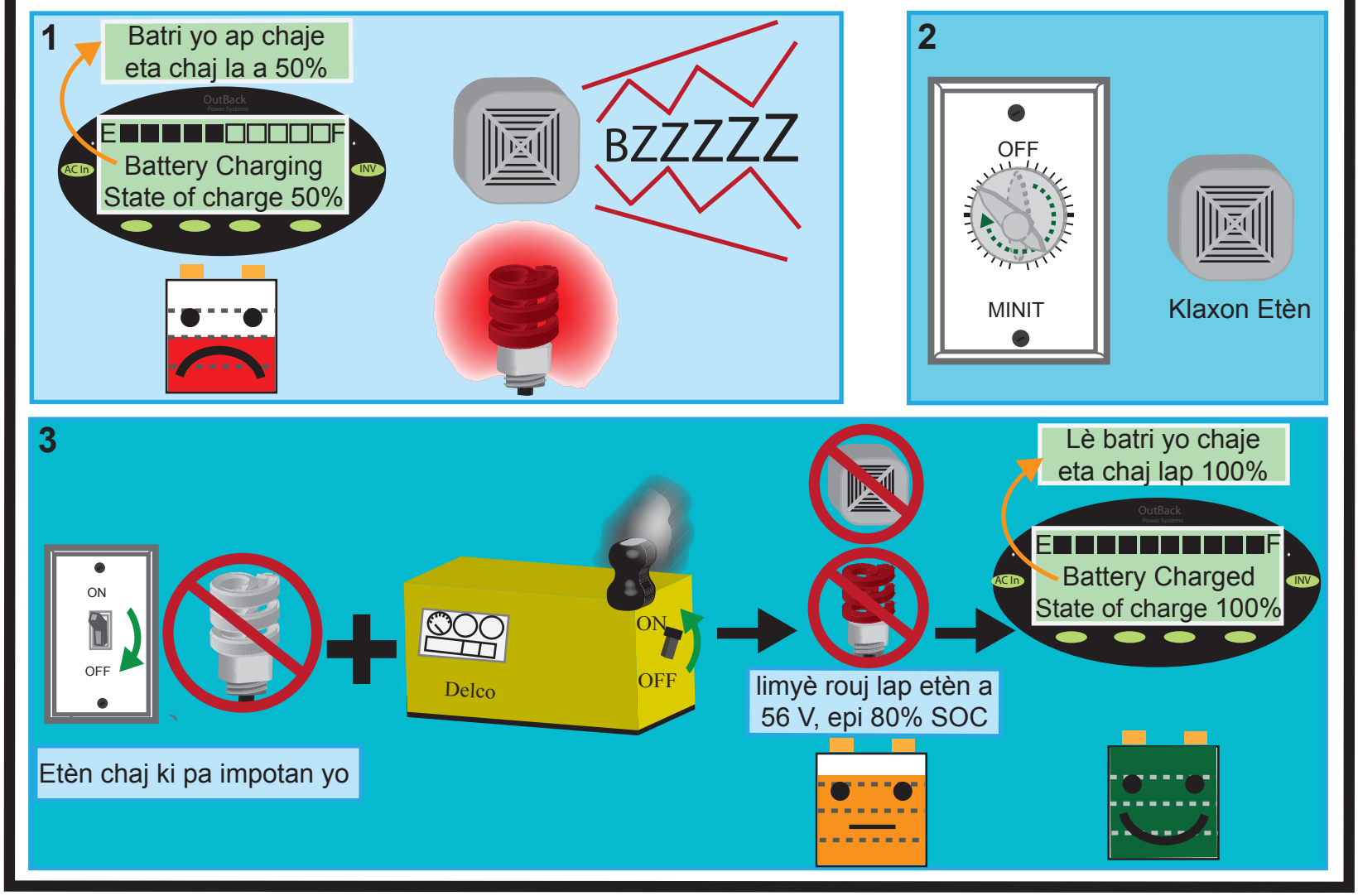


Kijan pou nou ranje alam lan lè batri yo desann



Dèlko

Ki sa yon Dèlko fè?

- Wòl yon dèlko se prodwi kouran ou byen nou ka pi byen di, transfòme enèji mekanik an kalorifik epi kalorifik an elektrik.

Dèlko dizèl ki pi popilè yo

1- SDMO

2- FGWilson

3-Kholer

4- Olympian

5- Himoinsa

6- Broadcrown

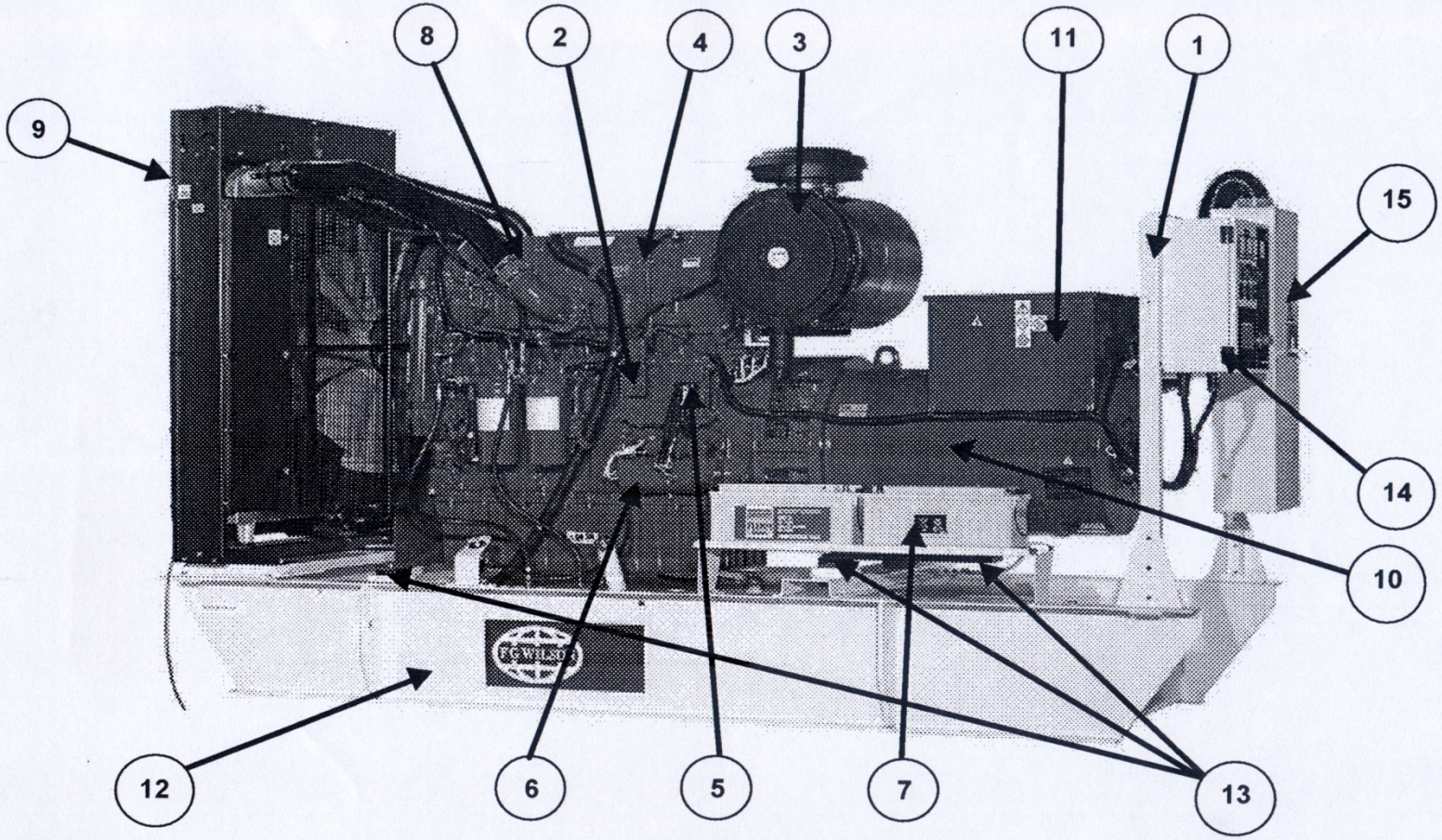
7-Onan

Foto kèk Dèlko dizèl ki popilè yo

Ki pati esansyèl yon Dèlko

- Yon Dèlko genyen yon motè a gaz ki atache ak yon altènatè(dinamo) (Fig. 1 e 5)

Figure 1. Dèlko ak konpzan’l yo



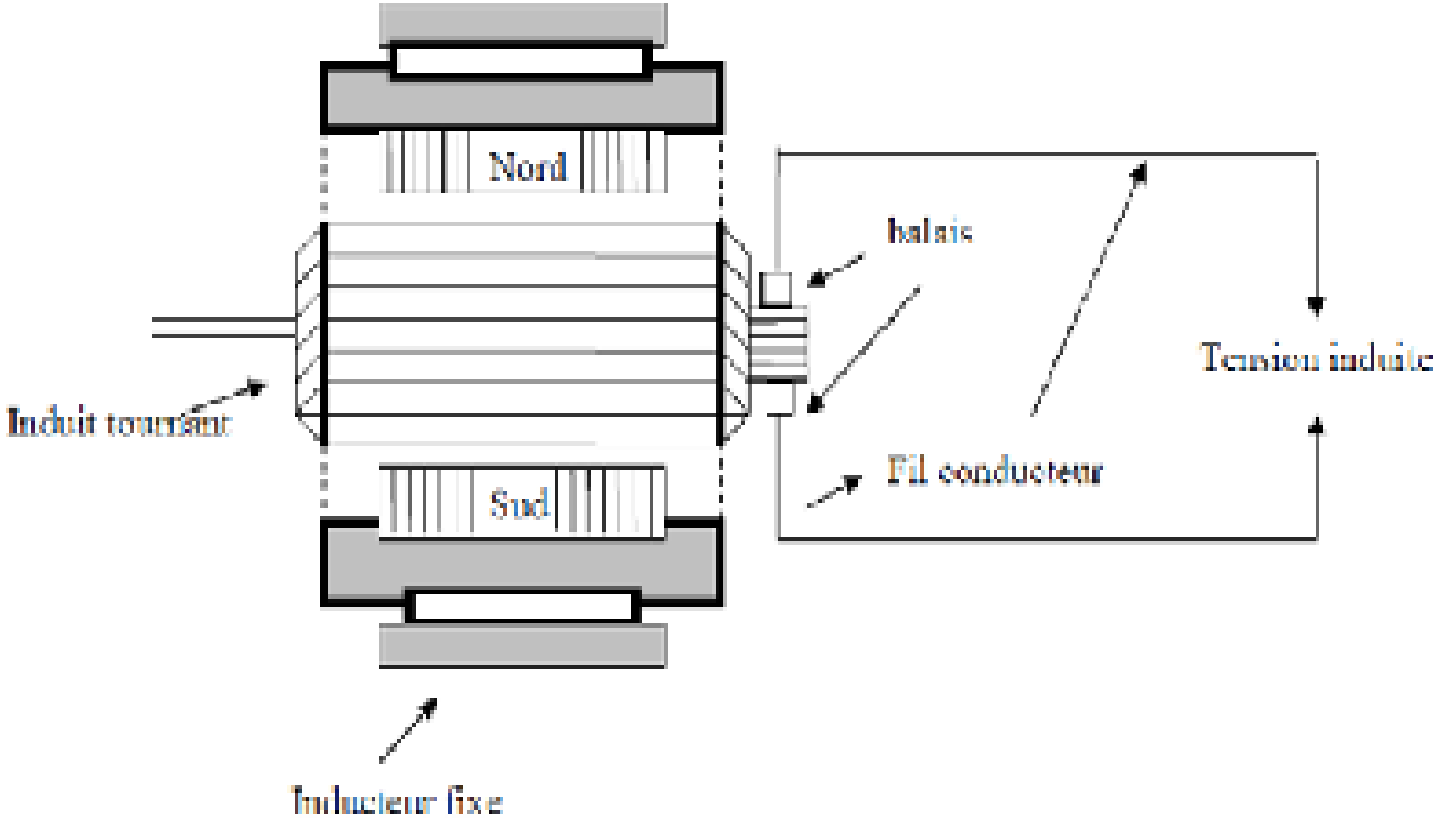
Item	Description
1.	Generating Set Rating Label (generally affixed on rear of panel stand)
2.	Diesel Engine
3.	Air Filter
4.	Turbo Charger (if equipped)
5.	Engine Governor

Item	Description
6.	Starter Motor
7.	Battery/Battery Rack
8.	Battery Charging Alternator(located on reverse side)
9.	Radiator
10.	Alternator

Item	Description
11.	Terminal Box
12.	Baseframe and Fuel Tank
13.	Vibration Isolators
14.	Control Panel
15.	Output Circuit Breaker

Figure 3.1: Typical Generating Set Configuration

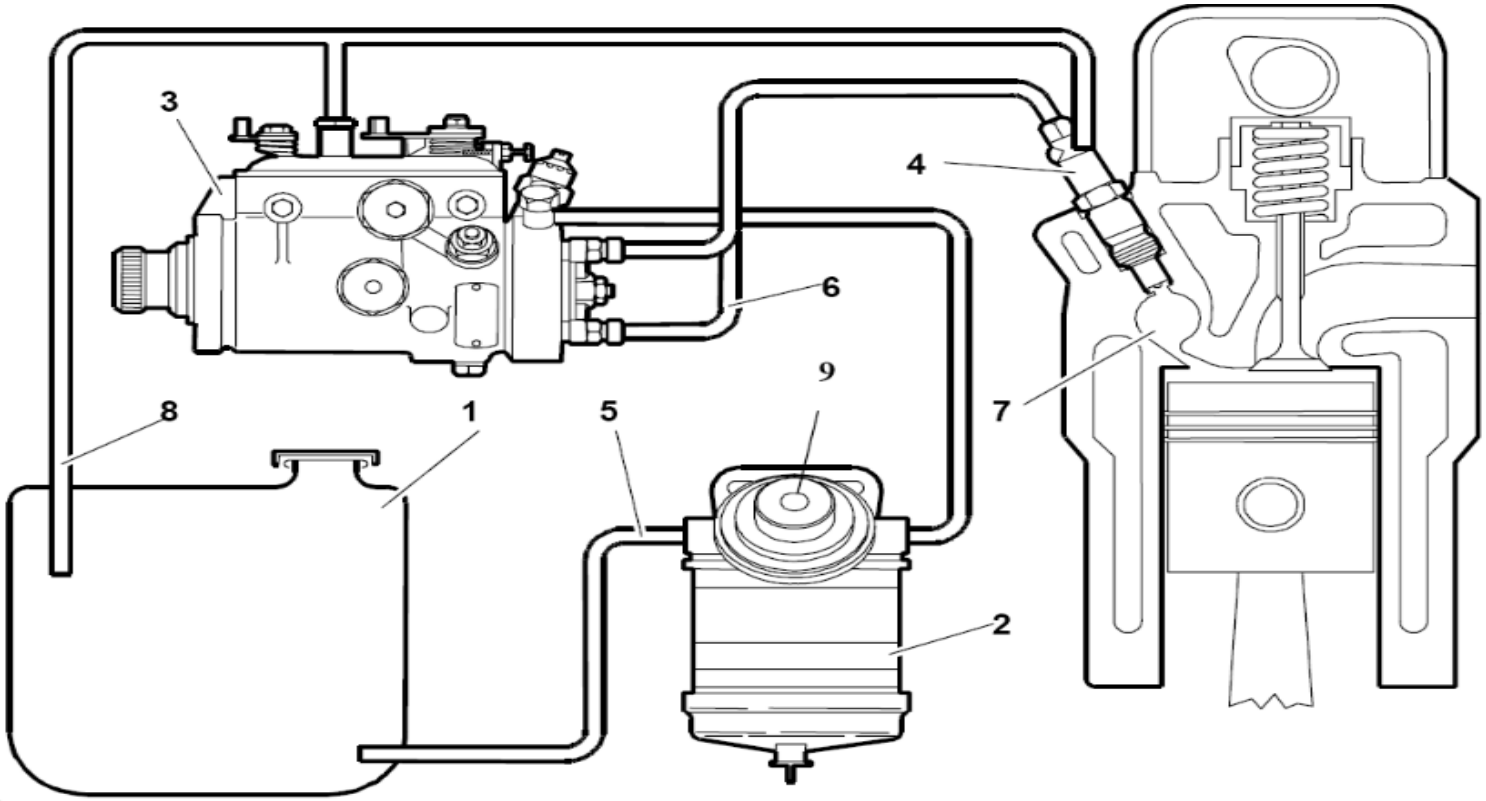
Figure 2.Dinamo oubyen Altènatè



Diferan sikwi alimantasyon yo

- Sikwi alimantasyon lè
- Sikwi alimantasyon gaz
- Sikwi alimantasyon lwil
- Sikwi refwadisman

Figure 3.Sikwi alimantasyon gaz



1- Reservoir
2- Filtre a carburant
3- Pompe d’injection
4- Injecteur
5- Alimentation
6- Canalisation HP

Figure 4.Sikwi Refwadisman

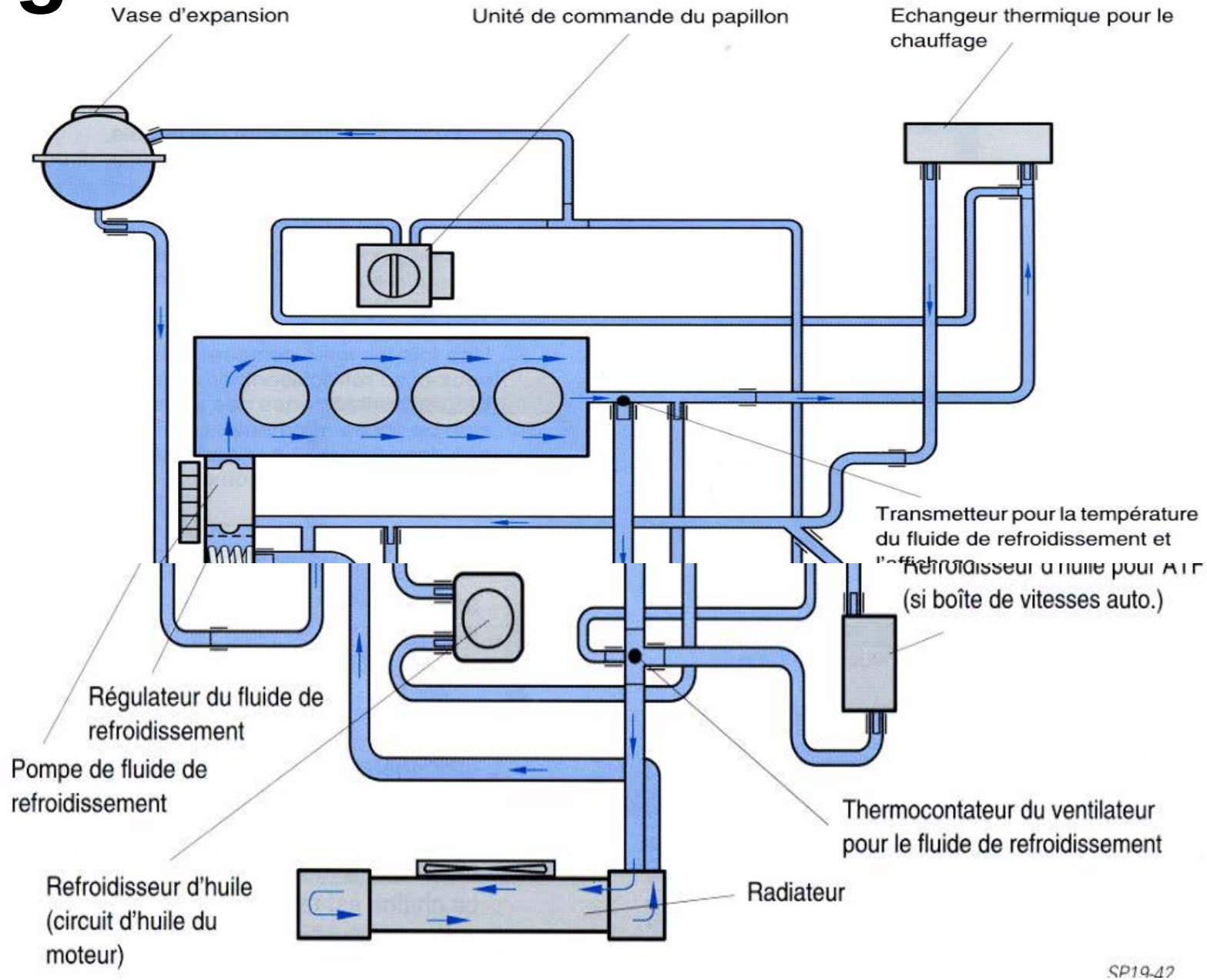
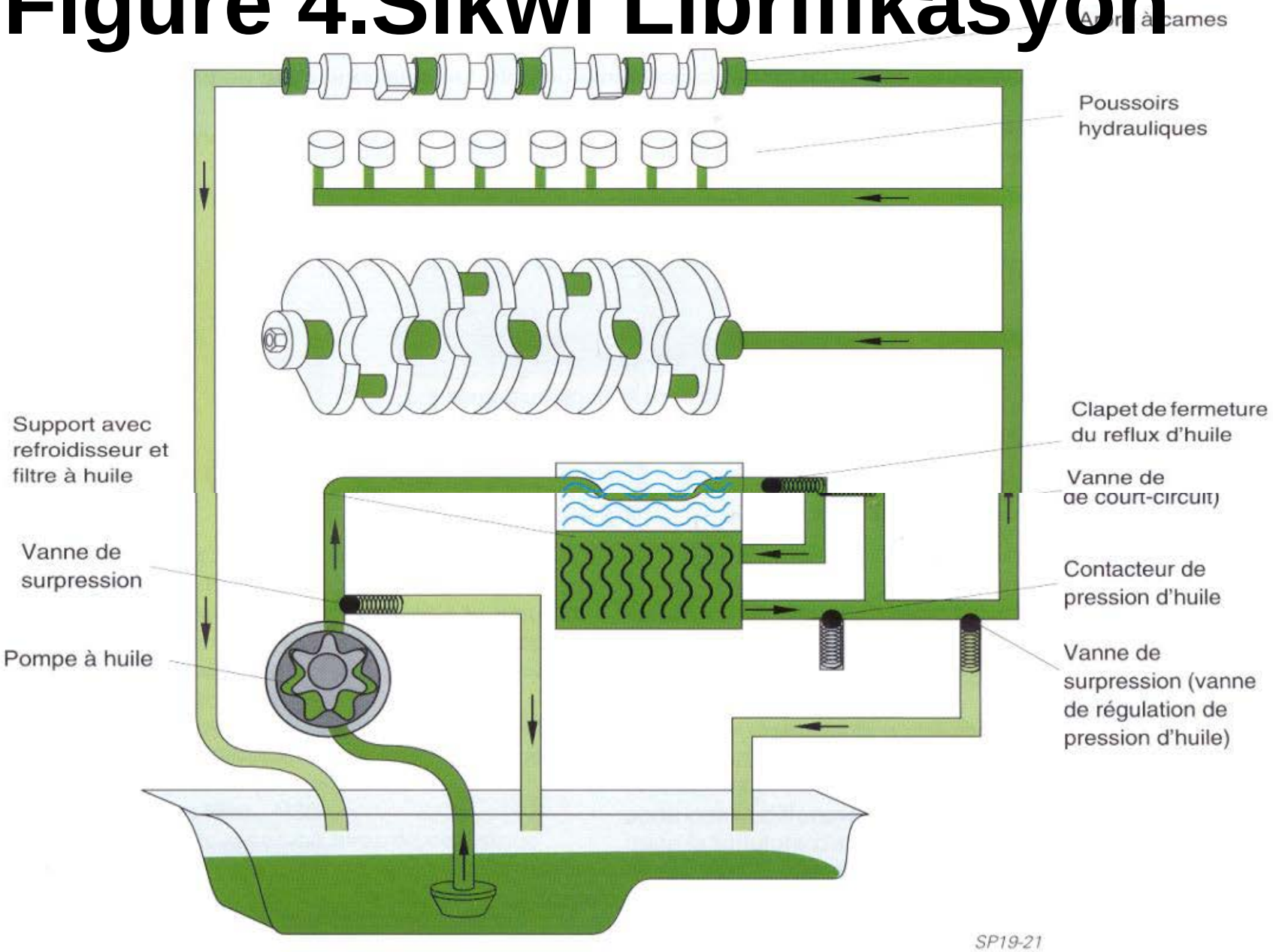


Figure 4.Sikwi Librifikasyon



Le support du filtre à huile est placé sur le devant des moteurs.
Le refroidisseur d'huile se trouve sur le support, le filtre est en dessous.

Sa ou dwe verifye anvan w demare yon Dèlko

- Nivo Lwil
- Nivo dlo nan radyatè a
- Nivo gaz la
- Eta batri

Pwosedi demaraj

- Demaraj analog (avèk kle)
- Demaraj dijitalize(avèk Tablo kòmand)

NB: Nan tou 2 fason sa yo, ou dwe kite Dèlko a mache pandan 3 minit ak 5 minit anvan ou branche chaj yo .

Paramèt ou dwe verifye apre ou fin demare yon Dèlko

- Verifye si pa gen alam ki aktive
- Verifye vòltaj chak faz yo(L1, L2) pou dèlko yon sèl faz yo epi (L1, L2, L3) dèlko ki gen twa faz yo.
- Verifye Vòltaj liy yo tankou (L1-L2) pou dèlko 1ф epi (L1-L2, L2-L3, L1-L3) pou dèlko 3ф

- Verifye frekans la(59-61Hz).
- Verifye tanperati a (80°C-85).
- Verifikasyon presyon lwil
- Verifikasyon vòltaj batri a (13- 14VDC)

Pwosedi pou’w kanpe yon Dèlko

- Analog (ak Kle)
- Dijitalize(Ak tablo kòmand)

NB: Nan tou 2 fason sa yo, ou dwe kite delko mache pandan 3 a 5 minit apre ou fin debranche chaj la.

Tip tablo lekti paramèt yo

- Power Wizard
- Nexis
- Boad 2001
- Kholer PC boad
- Deepsi

Problèm ki pi frekan yo

1- Batri dechaje

Ki sa ki ka lakoz batri a dechaje?

a) Altènatè anpann

b) Batri a ka pa bon

c) Regilatè DC a ka pa bon

d) Bòd sòti Kouran eksitatris 12V

2- Dèlko a sichofe

Ki sak ka koz yon dèlko sichofe?

a) Radyatè a ka sal

b) Radyatè a koule

c) Tiyo sikwi dlo a ka koule

d) Kouwa a ka kase

e) Ponp dlo a ka pa bon

f) Tèmosta ka pa bon

3-Faz yo pa balanse

Ki sak ka koz faz yo pa balanse?

- Move konsepsyon sikwi yo
- Mete chaj sou sikwi yo san kontwòl

4- Pwoblèm vye gaz

Enpotans antretyen an

•Antretyen an pèmèt ou kenbe dèlko a pwòp epi asire bòn mach li.

Kilè epi kisa ou dwe chanje lè w ap fè antretyen?

Ou ta dwe fè antretyen nan dèlko chak 200-250 èdtan epi ou dwe chanje:

- Filtè gaz
- Filtè lwil
- Filtè lè
- Lwil

Fomilè jounalye e mansyèl

Anvan demaraj						Aprè demaraj								
									Voltaj			Amperaj		
Dat	Lè	Voltaj Batri	Nivo dlo Radyatè	Nivo lwil	Nivo Gaz (Kantite galon ajoute)	Frekans	Tanperati	Presyon lwil	L1	L2	L3	L1	L2	L3

Fè sèvis nan Dèlko				SA DWE RANPLI APRE CHAK 250 EDTAN DE MACH
Dat	11/ 04/12			
Non teknisyen	Jean Ronick Dieudonné			**Kòmantè**
	Chanje	**Netwaye**	**Kantite/gls**	Mwen jije dèlko a konsome yon kantite lwil kip anòmal (mwen oblije ajoute 2 a 3 ka lwil chak jou)
Filtè lwil	✓			
Filtè gaz	✓			
È Filtè		✓		
Lwil motè			3	
Lè ki sou dèlko a	750 è			
Lè pwochèn sèvis la	1000 è			

Fè sèvis nan Dèlko				SA DWE RANPLI APRE CHAK 250 EDTAN DE MACH
Dat				
Non teknisyen				**Kòmantè**
	Chanje	**Netwaye**	**kantite**	
Filtè lwil				
Filtè gaz				
È Filtè				
Lwil motè				
.è ki sou dèlko a				
pwochèn sèvis la				

Fè sèvis nan Dèlko				SA DWE RANPLI APRE CHAK 250 EDTAN DE MACH		
Dat						
Non teknisyen						
	Chanje	**Netwaye**	**kantite**			
Filtè lwil						
Filtè gaz						
È Filtè						
Lwil motè						
.è ki sou dèlko a						
pwochèn sèvis la						