www.mbsm.pro , when capacitor explodes , Pictures

Category: Pictures,Technologie,Tester ok
written by www.mbsm.pro | 11 April 2019

A capacitor is a device used to store an electric charge, consisting of one or more pairs of conductors separated by an insulator.
Unexpectedly the electrolytic capacitors explodes with huge sound and sometime it smoke.
Get started , how to explode a capacitor ???
All capacitors have a maximum voltage and their destruction depends upon the internal construction. Explosions are understood only by delving into the internal construction of electrolytic capacitors – the primary culprit.
Most small value capacitors are simple sandwiches of conductor and insulator and when the voltage exceeds the dielectric strength of the insulation, they short out and burn, crack, pop, open, or smoke. Explosions are rare for these. Popping open is more likely. Their failure is self evident either visually or by failure to function in the circuit.
Most large value capacitors in order to be as small in physical size as possible, have to get the conductive plates of the capacitor as close together as possible and at the same time not so small that the voltage rating is impractical.
It is for this reason that the family of electrolytic capacitors was developed. The trick they use to get high capacity with small separations and reasonable voltage is that they use the “anodizing” of chemical electrolysis on one surface and a water based electrolyte for the other surface. Take one apart and see. Notice that when a conductive metal is “anodized” by electrochemical process it turns into a dull film that is rather tough and is an insulator. This means that the actual conductive plate of the capacitor has this film entirely between itself and the other plate.
Then the other plate uses a trick too. There’s a water base solution soaked into a paper separator. Now if there was no water, the paper would be the dielectric of a normal capacitor separating the plates. But not here. Here the water has an alkali added to become a fair conductor. And as a liquid it soaks right into the surface structures of the capacitor. So it’s not the paper thickness at all – and not even the insulating surface on the other plate, but the inner recesses of the anodized surface that determine the dielectric distances.

So the operating voltage that a capacitor can tolerate depends upon how thick this anodized film is. And that is a function of it's manufacture. Now there is a most useful characteristic that tells us we are nearing the max voltage, called leakage.

Here is a way you can check this out. Put in series, a test electrolytic capacitor (polarize it correctly), a variable power supply, a microammeter, and a 1 meg resistor (to limit and protect the meter). From zero as you increase the voltage there will be no current initially, then as you approach the spec op voltage, there will start a small leakage current. Since you have a limiting resistor here, you can increase the voltage without damage. continuing to increase the voltage discovers an increasing leakage current. It is a matter of practice how much safety you apply between the rating and the actual voltage of the circuit.

You can now see how it is that an electrolytic capacitor fails, it is not a voltage breakdown of the dielectric material, but the increase of leakage current that is troublesome. A rising leakage means heat which will boil the water and make steam – that's the explosion process.

This is explosion as occasional failure of the few. But there is a more spectacular explosion process – it's explosion by mistake – namely being installed backward. In such a case, the anodizing chemistry is reversed and rather rapidly, the anodized film starts to reverse, and quickly thins out at a weak spot in the rather large effective film area of the capacitor. Then we have short circuit currents and steam generation rather quickly. This sort of explosion usually fills the space (the casing or the whole room if exposed) with little shreads of aluminum foil and alkali soaked paper.

This insightful solution is most successful to achieve capacitors with large values in small spaces, but has a lot of lesser characteristics as the price to pay.

The worst limit, is storage. Electrolytic capacitors store very poorly, and the voltage rating can reduce substantially as the internal chemistry deteriorates. Some equipment manufacturers recommend that capacitors stored for a few years have their inner anodizing conditions restored by simply putting them to the spec voltage for a day to restore full spec.

At the least, if you replace capacitors with old stock, and it didn't explode when power was restored, be aware that it may not reach it's spec capacity value for a few hours. A capacitor in use will always be maintained by the voltage in the circuit you use it in.

When electrolytics are used without the circuit supplying a maintenance voltage to keep the anodized film that all depends upon, such as in speaker cross over applications that have no sustaining DC, then the values of the capacitor will deteriorate at least at storage rates, and if AC currents are substantial, even faster.

mbsm-dot-pro-capacitor-explodes- Pictures-A.jpg (4 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-A.jpg (1 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-B.jpg (3 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-B.jpg (1 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-C.jpg (3 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-C.jpg (1 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-D.jpg (3 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-D.jpg (1 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-F.jpg (2 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-F.jpg (748 KB)

mbsm-dot-pro-capacitor-explodes- Pictures-E.jpg (3 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-E.jpg (1 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-G.jpg (2 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-G.jpg (856 KB)

mbsm-dot-pro-capacitor-explodes- Pictures-H.jpg (2 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-H.jpg (690 KB)

mbsm-dot-pro-capacitor-explodes- Pictures-I.jpg (2 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-I.jpg (1 MB)

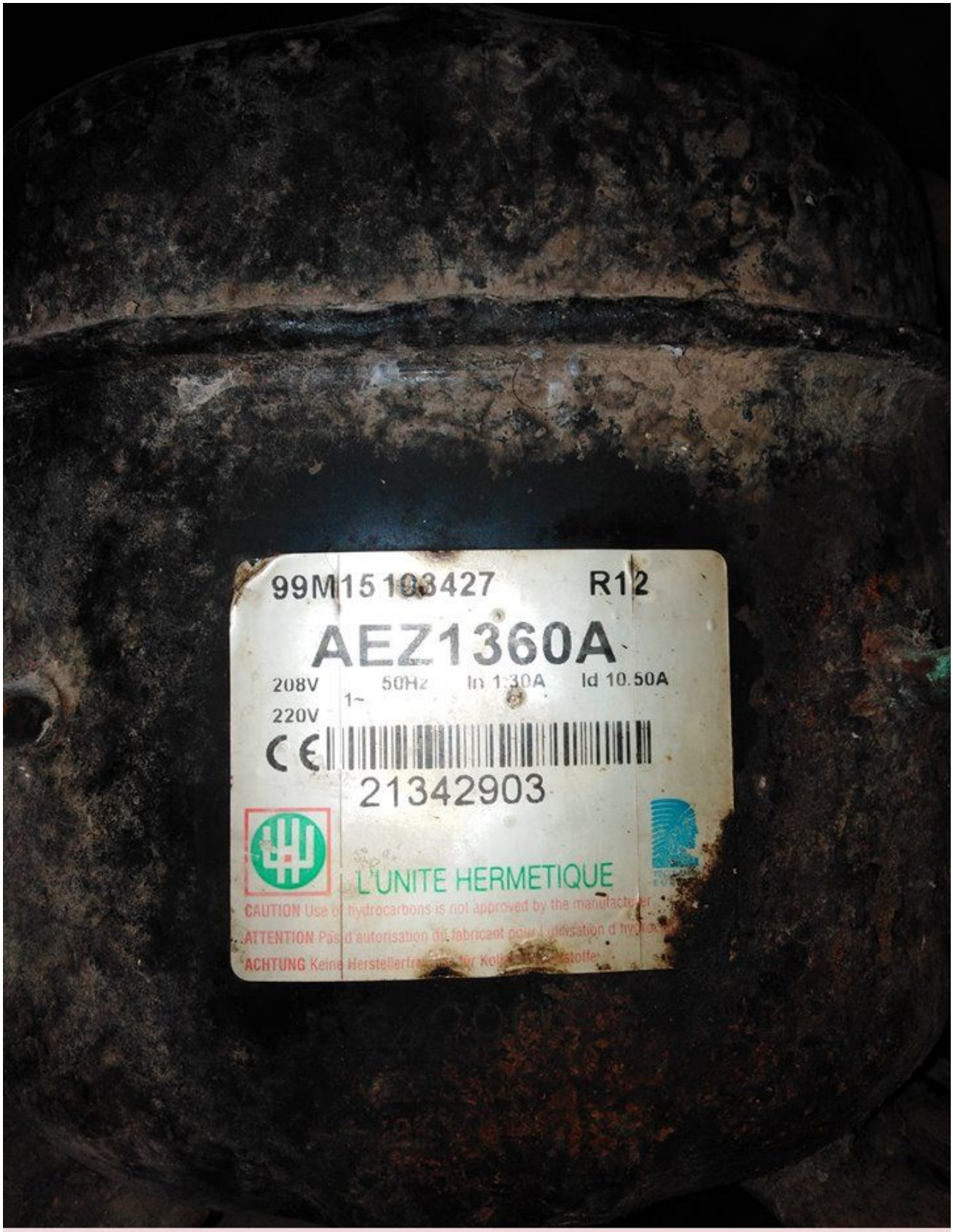
mbsm-dot-pro-capacitor-explodes- Pictures-J.jpg (2 MB)

mbsm-dot-pro-capacitor-explodes- Pictures-J.jpg (739 KB)

---

www.mbsm.pro, AEZ1360A, Kirby, Tecumseh, Compressors ,low back, pressure, models, 240v/50HT , 1PH , 1/5Hp , Gaz 12A

Category: Solutions,Technologie,Tester ok
written by www.mbsm.pro | 11 April 2019



Points forts : Compresseur aez1360a pour réfrigérateur fagor FAGOR MA-10CA562COMP-QZQAZ

www.mbsm.pro , Original New, ASD53K, Original New 1/6HP, R134a, LBP, Wanbao, Refrigerator, compressor, China, R134A, 220V/50Hz, 1PH, 144W, Huaguang, Refrigerator Reciprocating

Category: Solutions,Technologie,Tester ok
written by Jamila | 11 April 2019

www.mbsm.pro , Original New, ASD53K, Original New 1/6HP, R134a, LBP, Wanbao, Refrigerator, compressor,China, R134A, 220V/50Hz, 1PH, 144W, Huaguang, Refrigerator Reciprocating

www.mbsm.pro , Cold ,refrigeration ,compressor 1/4 hp, QD76HG ,HM Series , R134a ,HBP

Category: Solutions,Tester ok
written by www.mbsm.pro | 11 April 2019

www.mbsm.pro , Cold ,refrigeration ,compressor 1/4 hp, QD76HG ,HM Series , R134a

---

Mbsm.pro , L76AV ,Compresseur, 1/5 HP ,149W, R12 ,E80101 ,Zem ,HMBP ,Hermetic piston compressors , 220V/50 , 1PH(phase)

Category: Solutions,Tester ok
written by Jamila | 11 April 2019

Mbsm.pro , L76AV ,Compresseur, 1/5 HP ,149W, R12 ,E80101 ,Zem ,HMBP ,Hermetic piston compressors , 220V/50 , 1PH(phase)

MBSM.PRO , HYE69YL ,Compressor (LBP) , China R134a ,Huayi Compressor Co., Ltd, 69 YL ,1/4 Hp ,168Kcal , 220V

Category: Solutions,Tester ok
written by Jamila | 11 April 2019

MBSM.PRO , HYE69YL ,Compressor (LBP) , China R134a ,Huayi Compressor Co., Ltd, 69 YL ,1/4 Hp ,168Kcal , 220V

Test conditions	According to ASHRAE
Evaporating temperature	-23.3□
Condensing temperature	54.4□
Subcooling temperature	32.2□
Suction temperature	32.2□
Ambient temperature	32.2□
Working condition limit:R134a	
Max ambient temperature	43[□]
Evaporation temperature range	-35~-15[□]
Working voltage range.	187~254/98~127[V]
Max discharge pressure	2.0[Mpa](gauge pressure)
Max allowable housing temperature	95[□]
Max discharge temperature	125[□]
Max pressure housing endured	2.7[Mpa](gauge pressure)
Low voltage start	0.4/0.4Mpa(gauge pressure)187V/98V

Product model:HYE69YL
Cooling capacity:195W
COP□W/W□:1.15
Voltage□V□:220-240~
Frequency(Hz):50

Products

- R134a Compressor (LBP)
  - HYE Serie
  - HY Serie
  - HYB Serie
  - HYS Serie
- R600a Compressor (LBP)
  - HYE Serie
  - HY Serie
  - HYB Serie
  - HYS Serie
- R134a Compressor (MBP,HBP)
  - HY Serie
  - HYE Serie
- Newest Catalog Download

Product model:HYE69YL
Cooling capacity:195W
COP（W/W）:1.15
Voltage（V）:220-240~
Frequency(Hz):50

Test conditions	According to ASHRAE
Evaporating temperature	-23.3℃
Condensing temperature	54.4℃
Subcooling temperature	32.2℃
Suction temperature	32.2℃
Ambient temperature	32.2℃
Working condition limit:R134a	
Max ambient temperature	43[℃]
Evaporation temperature range	-35~-15[℃]
Working voltage range.	187~254/98~127[V]
Max discharge pressure	2.0[Mpa](gauge pressure)
Max allowable housing temperature	95[℃]
Max discharge temperature	125[℃]
Max pressure housing endured	2.7[Mpa](gauge pressure)
Low voltage start	0.4\0.4Mpa(gauge pressure)187V/98V

AE 1330 Y

1 / 12 HP

AE 1340 Y

1 / 6 HP

AE 1350 Y

1 / 6 HP

AE 1360 Y

1 / 5 HP

AE 1370 Y

1 / 4 HP

AE 1390 Y

1 / 4 HP

HY 81 Y

1 / 4 HP

HYE 55 YL 63

1 / 6 HP

HYE 60 YL 63

1 / 5 HP

HYE 69 YL

1 / 4 HP

HYE 125 MSU

1 / 4 HP

Huayi HYE 69 YL 1/4 Hp 168Kcal R134a 220V

Huayi - Huayi

Huayi HYE 55 YL 63 1/6 Hp 129Kcal R134a 220V

Huayi - Huayi

Huayi HYE 60 YL 63 1/5 Hp 146Kcal R134a 220V

Huayi - Huayi

Huavi HY 81 Y 1/4+ Hp 202Kcal R134a 220V

HYE 125 MSU

HYE 69 YL

HYE 60 YL 63

HYE 55 YL 63

HY 81 Y

AE 1390 Y

AE 1370 Y

AE 1360 Y

AE 1350 Y

AE 1340 Y

AE 1330 Y

Mbsm.pro, conséquence , de mal fixer ,un chauffe bain électrique 100L

Category: Solutions,Tester ok
written by Jamila | 11 April 2019

1. Il peut arriver que les fixations du nouveau chauffe-eau correspondent à celles de l’ancien, mais c’est assez rare.
Le plus souvent, vous devrez prendre les mesures des points d’accrochage du ballon, en fonction de la hauteur désirée. Un gabarit de perçage, souvent fourni par le fabricant, facilite le travail.

Mbsm.pro, Réfrigérateur, remplacement d’un moteur, R600a ,par un ,moteur R134a

Category: Solutions,Tester ok
written by Jamila | 11 April 2019

Bonsoir, MBSM.PRO
le remplacement d'un compresseur R600A par un compresseur R134A est possible a condition:
- de rincer le circuit frigorifique a l'azote ou R22 et pas avec l'air comprimer car il contient de humidité .
- remplacer bien evidement le deshydrateur (filtre)
- de charger correctement (ni plus, ni moins).
il est conseiller et préférable de remplacer le compresseur par un équivalemment (faute de trouver le même), fonctionnant au même gaz!

il faudrait mettre le double de r134a par rapport au r600a ,85/90 grammes,contrôler la pression (0.2 bars de r134a en fonctionnement stabilisé),mais ce n'est pas certain que cela fonctionne bien car le capillaire (longueur et diamètre intérieur) est différent suivant les fluides utilisés car la perte de charge n'est pas la même.

Il Faut changer le capillaire

La Température avec le capillaire de r600a ne dépassera 16 dégrée Celsius

Bonsoir, MBSM.PRO
le remplacement d’un compresseur R600A par un compresseur R134A est possible a condition: