



Flynn Refrigeration's guide to F-gas

2018

Refrigerant laws have changed. Are you prepared?

The **phase-out of refrigerants with high Global Warming Potential** is underway. **Limited availability** of popular replacement gases means that **costs are soaring**, and some suppliers are being forced to charge **more than double the price** as previous years.

Yet despite the increase in cost, many vessels are still using equipment that operate with these gases due to **unclear guidance**. Many do not know what is happening, and for those who do, there is a lack of understanding about how best to proceed.



"With every vessel using some form of onboard refrigeration or climate control, new laws by the Council of the EU to slash greenhouse gases mean the maritime industry must take action, fast." – Alex Flynn, Flynn Refrigeration Managing Director

We want to help. We can help.

With ship operators strongly advised to find alternative gases to retrofit or replace equipment with, we have increased our services to help comply with the mandatory changes in a cost-effective way.

We have an extensive network of fully-qualified and highly-experienced engineers in many ports around the world, and a team of dedicated specialists to assist and advise on a range of refrigeration services and enquiries.



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What you need to know

- In 2015, the Council of the EU announced its plans to drastically reduce the quantity of greenhouse gases
- Popular refrigerant R22 was banned after the revised Fluorinated Greenhouse gases (F-gas) regulation became law
- HFC blends such as R404A were introduced to replace the banned refrigerants
- Due to demand, there is limited availability and costs are drastically increasing for HFC replacements
- Despite popularity, these too have a high Global Warming Potential and are facing scrutiny
- Now is the time for operators to switch to low GWP gases on board

Our services

Choosing the right refrigerant isn't an easy decision. **Our team of specialists are on-hand to advise and support you through the decision-making process.**

We have experience converting vessels all over the world, and strong connections with manufacturers, so that you can be sure you are using the correct refrigerant for your vessel.

Here are our top three solutions:

1. **The 'drop-in'.** Simply replacing the existing refrigerant (e.g. R22, R404A) with another synthetic refrigerant. This is a small change that involves changing shaft seals and o-rings. However, this does have its risks including leakage and at worst, a complete break-down.
2. **The 'retrofit'.** This again involves replacing the gas. However, with this option, the lubricant, shaft seals, o-rings and other gaskets are replaced in order to seal the entire plant. Motors are recalculated, and pressure and control settings are checked. This option is time consuming but has minimal leak risk.
3. **The 'complete replacement'.** Replacing the equipment for new and using a natural refrigerant. This is the most environmentally friendly option. Despite its higher short-term investment, it's a long-term solution that provides optimal performance and lower operating costs.

We have monitored a number of trends over the past few years and understand that ultimately, the **replacement refrigerant should perform equally**, if not better, than the one previously used. The process should be **easy and cause no problems** to the existing equipment and the operation of the vessel.

It's our job to make the transition as simple as possible.

Contact our team of specialists for more information.



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