



Refrigerated Vapour Recovery System

IPCO Power provides the shipping, power and petrochemical industry with environmental solutions.



PURGIT Refrigerated Vapour Recovery System (RVRS)

The storage and loading of (petro)chemical products leads to the generation of hazardous vapours. These vapours are harmful to the environment and mankind. In the past, these vapours have been released into the atmosphere in an uncontrolled way, resulting in atmospheric pollution and product losses. Emissions that occur during the loading, discharging and storage of (petro)chemical liquids contain 'Volatile Organic Compounds' (VOC). Some of these VOC emissions from petrochemical are classified as toxic, carcinogenic or teratogenic. These emissions represent a significant contribution to air pollution especially in and around urban areas. Throughout the world legislative authorities are increasingly focusing on the detrimental effect of these VOC emissions.

The **Refrigerated Vapour Recovery System (RVRS)** is a flexible solution to reduce the VOC emissions and is available in mobile and fixed version. The system recovers clean product from the vapours without reportable emissions. PURGIT RVRS uses a proprietary system that condenses and recovers tank vapours. Depending on the application PURGIT's condensers are capable to **recover over 99% of the VOC**. The RVRS is able to cool down the vapours to approximately -120°C.



RVRS setting up

With the RVRS system VOC compounds are easily recovered. There is no combustion. Using non polluting nitrogen as the refrigerant, this system is capable of the very low temperatures necessary to condense a wide range of products*. The RVRS's vapour recovery unit have been thoroughly tested in the field with a wide variety of products and have established a long track record of reliability and success.

*) including chlorinated products

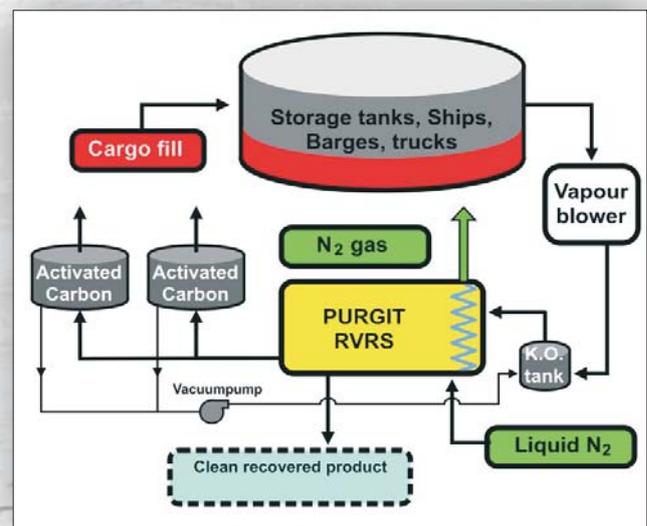
Tank loading/discharging

For tank loading/discharging the PURGIT system can be geared to draw displaced vapours out of the tank with a blower and then push them through condensers.

The VOC 's are condensed back to their liquid phase and transferred to a holding tank or inserted right back into the cargo fill line. Final treatment of the vapours is achieved with re-usable active carbon. There is no combustion during the process which allows this system to operate in a larger number of areas than any other system.

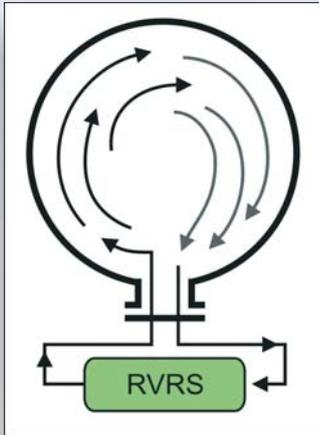
The working of the PURGIT RVRS.

PURGIT RVRS uses a proprietary system that condenses and recovers tank vapours. This system draws the vapours out of the tank with a blower and then pushes them through a series of condensers. The VOC vapours are condensed back to their liquid phase and transferred to a holding tank or inserted right back into the cargo fill line. Depending on the application PURGIT's condensers are capable of recovering over 99% of the VOC. With few moving parts and stainless steel construction, these units are designed to operate for many



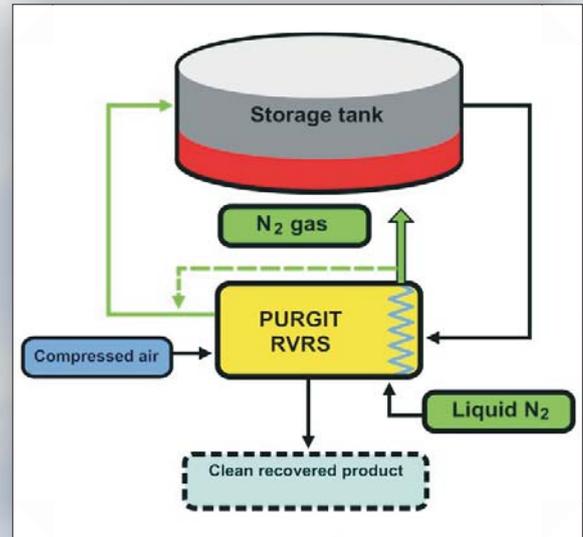
Close Loop Tank Degassing

The PURGIT RVRs system is designed to degas atmospheric or inert tanks and barges (low or zero O₂) and keep it inert throughout the operation. Drawing VOC vapours out of the tank, the PURGIT system condenses and removes the hydrocarbons from the vapour stream, returning only the non-condensables to the tank.



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Close Loop Tank degassing with the RVRs is completely safe and the tank can be inerted during the process. Condensing and removal of the VOC in the tank or barge will continue until the required LEL level is reached.



Benefits:

Environmental

- 99% VOC reduction
- Clean product recovery
- Zero recordable emissions from tank degassing events
- Zero NO_x – no combustion in process

Operational

- No ignition sources (inert process)
- 100% control efficiency
- Safe in hazardous areas

Economics

- Low operation costs
- Uses liquid Nitrogen = non polluting (20% cheaper than comparable combustion devices)
- Patented process

Flexibility

- Tank degassing/cleaning
- For tank loading/discharging
- Process is compatible with wide variety of hydrocarbon vapour, including chlorinated product vapours
- Fixed and mobile units available for different applications
- Available in different sizes, 100m³/h - 4500 m³/h



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ISO 9001
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Certification

