

# Oreco's SafeTap®

## Safe and efficient cold tapping tool



### What is Oreco's SafeTap®?

SafeTap® is a unique mechanical tool that provides a safe, fast and effective method to perform circular perforations in tank roofs under cold conditions (cold tapping). Oreco has developed this tool in conjunction with its automated, non-man entry tank cleaning system, the BLABO® system. The tapping procedure allows the optimal placement of the appropriate number of tank cleaning nozzles as part of the tank cleaning and oil recovery process. SafeTap® is equally suitable for fixed or floating roofs; and single or double deck roofs.

### Why use SafeTap®?

SafeTap® is considerably faster and safer than most traditional cold tapping methods. With an efficient, few-step procedure a 10-12 inches Ø perforation is done in just a few minutes. The entire operation can easily be carried out in less than 10 minutes. The cold cutting procedure is completely safe. Prior to installation, any gas-filled void between the roof and the oil is inerted with nitrogen, or other inert

gas, to an oxygen level below 8%. Inertisation is not necessary on roofs that are floating on the stored product.

Normally, cutting in metal is associated with high temperatures and risk of ignition. With the SafeTap® this is not the case. Thanks to its special design, cold tapping can be done with the highest safety. All stages of the tapping process are performed under cold conditions preventing dangerous heat build-up. The procedure complies with API 650 and API 653. SafeTap® is approved by certified body and it available as ATEX-certified. Other international certifications await.

### Preparing for next tank cleaning

Once the tank cleaning has been completed and the tank is cleared for hot work, the trunk may be removed and the hole sealed with blind flanges. This method will not affect the mechanical integrity of the tank roof. This last option gives you the benefit of being ready for future cleaning projects without having to cut new holes in your tank.

# Oreco's SafeTap®

## Safe and efficient cold tapping tool

### Safety features

- If needed, nitrogen, or other inert gas, is injected into the tank before installing the SafeTap®.
- Constant monitoring of LEL and oxygen level in the tank can be monitored from the BLABO® system or by a certified stand-alone gas sensor.
- Temperature never exceeds 61°C which is far below the definition level of cold work (100°C) set by Energy of Institute and API.
- The roof plate is retained by a magnet, instead of falling into the tank. This eliminates the risk of sparks and blockage at the suction point.
- SafeTap® is a mechanical, hydraulic driven tool, eliminating usage of electricity inside hazardous zones.
- The installation of the SafeTap® complies with API 650 and API 653. ATEX-certification can be provided upon request.

This is approved by a third party certification body.

### Benefits

- The entire process takes less than 10 minutes. Cutting the perforation only takes a few minutes.
- The cold tapping procedure is completely safe.
- Hydraulic drive minimises both time and manual labour.
- Ensures the most effective cleaning result due to optimal placement of cleaning nozzles.
- Upon completion of tank cleaning, permanent blind flanges can be installed according to API 653, thus leaving the tank roof ready for the next cleaning job.
- The mechanical integrity of the roof is maintained at all times.

### How the SafeTap® works



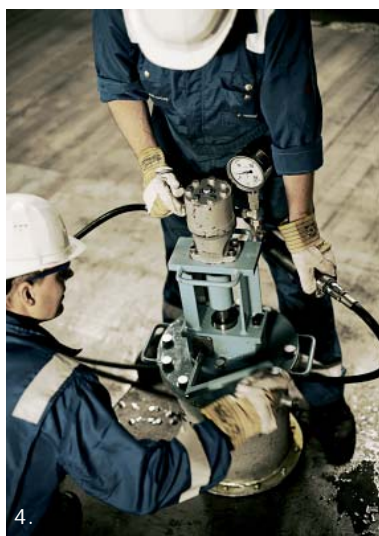
Oreco's SafeTap® consists of two main components: a trunk and a cutting instrument. The trunk is placed on a non-permeable gasket on the roof of the tank.



The trunk is securely fastened by self-drilling screws. Water-based cutting oil both inside and outside the trunk cools and lubricates during drilling and cutting.



The cutting instrument is placed inside the trunk. Once the trunk, gear and drive are in place the cutting can begin.



A hydraulic drive operates the cutting process thereby minimising both time and manual labour. A hole is cut in just a few minutes.



[5] Four specially designed bits ensure an even and efficient cutting process. [6] During cutting, operators adjust the tension on the bits via a pressure gauge.



A powerful magnet on the cutting instrument prevents the roof plate from dropping into the tank. A tank cleaning nozzle can now be inserted and the tank cleaning process begins.