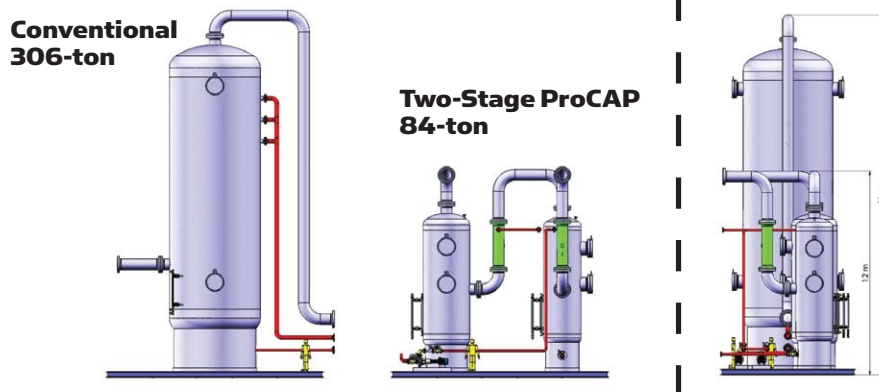


ProCAP SELECTIVE H₂S REMOVAL



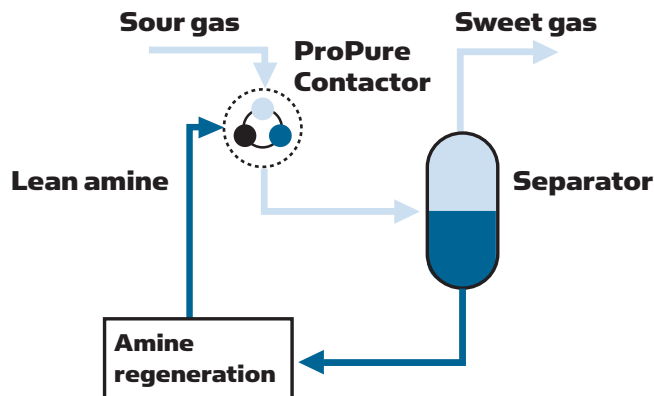
roCAP is a novel approach to amine plants that replaces the amine contactor tower with ProPure's highly efficient and compact gas-liquid contactor. This "one-shot" compact contactor utilizes the non-proprietary amine solvent (MDEA) very efficiently, thus reducing the overall solvent circulation rate. The weight and space saved by removing the contacting tower and the lower MDEA circulation rate translate into lower overall plant weight, footprint and heat duty. ProCAP's selectivity towards H₂S is achieved through a short retention time combined with high gas-solvent exposure area throughout the contactor, minimizing CO₂ co-absorption.

TWO-STAGE ProCAP vs. CONVENTIONAL COUNTER-CURRENT COLUMN (BUBBLE-TRAY COLUMN)



With a single-stage installation, ProCAP typically removes 80-90% of H₂S in the gas. The higher the CO₂ concentration, the more competitive ProCAP becomes. A multi-stage configuration extends the application range of the process to H₂S removal efficiencies close to 99%, while maintaining a comparatively low footprint.

Typically, the ProCAP approach reduces installed weight by 60% compared to conventional amine plants. This is mainly achieved by both a reduction in amine circulation rate of up to 70% and the reduction of vessel size. The reduced footprint requirement makes ProCAP ideal for new and retrofit offshore installation.



BENEFITS

- Reduced amine circulation rate of up to 70%
- Reduced chemical-related operating expenditure
- Lower heat duty
- Smaller footprint
- Lower weight



SELECTED APPLICATIONS

SELECTIVE H₂S REMOVAL FROM NATURAL GAS

For gas streams containing both CO₂ and H₂S where only the H₂S needs to be removed, ProCAP is a compact, cost-efficient contactor alternative to conventional amine plants. Compared to a conventional contacting tower, the ProCAP unit serves to considerably reduce the amine circulation rate and the plant's weight, footprint and heat duty.

INCREASED H₂S REMOVAL CAPACITY IN EXISTING AMINE PLANTS

A simple process modification such as routing some of the spent amine to the ProCAP installed upstream an existing contacting tower will boost the capacity of an existing amine plant. The overall increased H₂S-loading of the amine serves to increase the plant's H₂S removal

capacity or alternatively reduce the amine circulation rate.

COMBINED H₂S REMOVAL AND LPG FLASHING IN REFINERIES

ProCAP is well suited to debottleneck an off-gas treatment. By routing LPG-polluted amine to the



ProPure contactor, the LPG flashes out of the amine, and at the same time as H₂S is removed from the off-gas stream feeding the existing conventional contactor.

REFERENCES

Available upon request.

FOR MORE INFORMATION

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