

Recovery of Flash Gas From Storage Tanks at an Offshore Production Platform Using Scroll Compression Technology

Presented by
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Case Study Background

- ◆ Major independent offshore GOM platform refurbishment

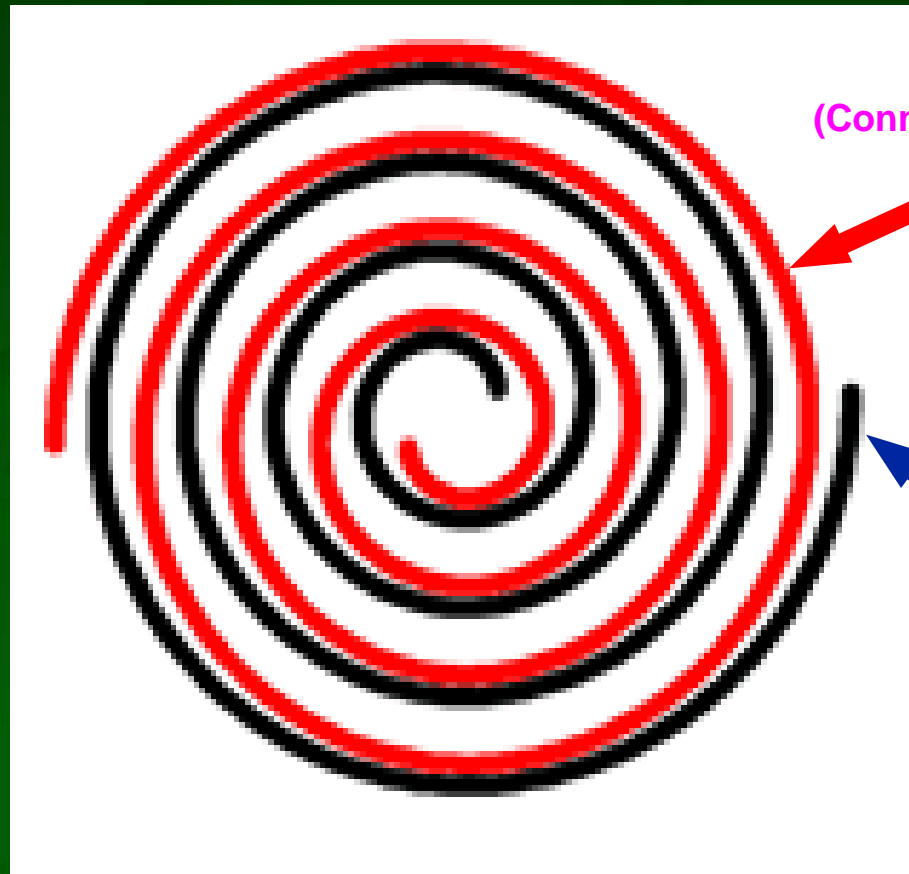


Scroll Compression Technology

- ◆ Typical A/C compressor
- ◆ Hermetically sealed positive displacement machine using two interleaved scrolls – electric driven
- ◆ In VRU applications since 2004



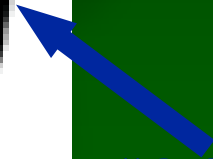
How does Scroll Compression work? ...continuous orbiting motion



“Fixed Scroll”
(Connected to compressor body)

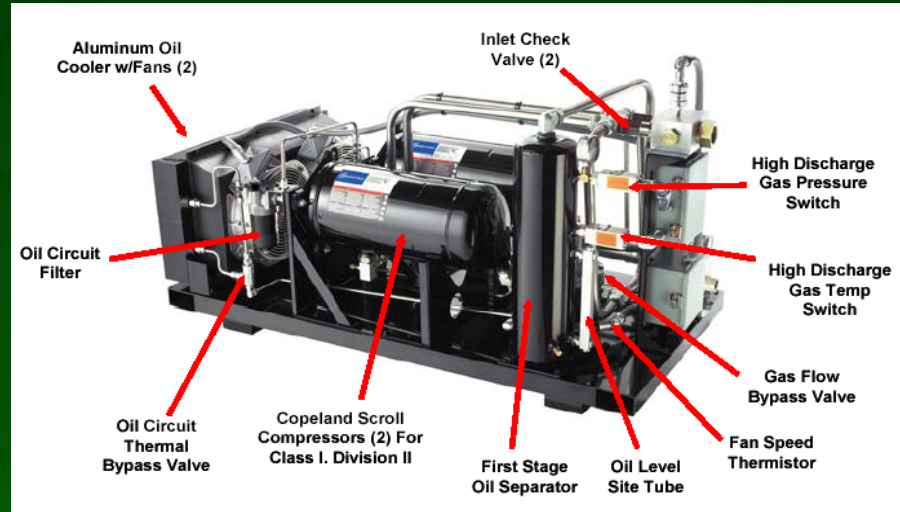
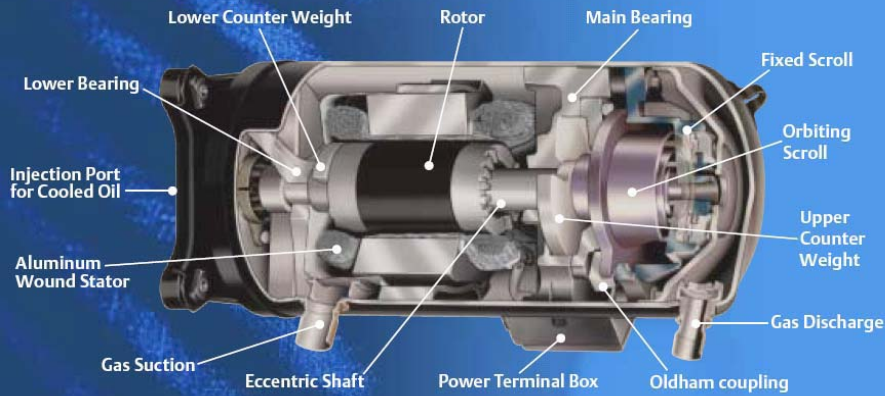


“Orbiting Scroll”
(Connected to crankshaft and orbits rather than rotates)

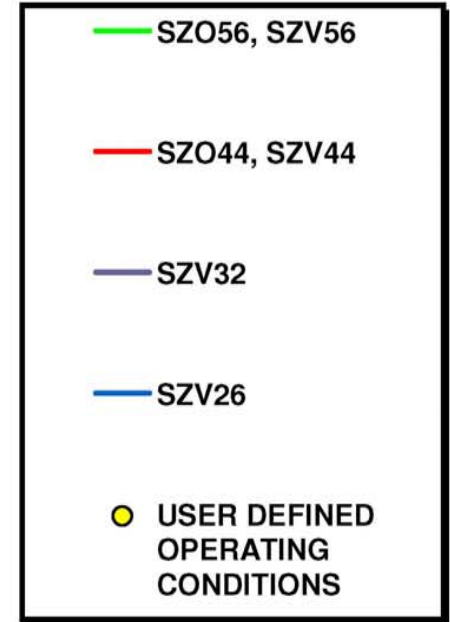
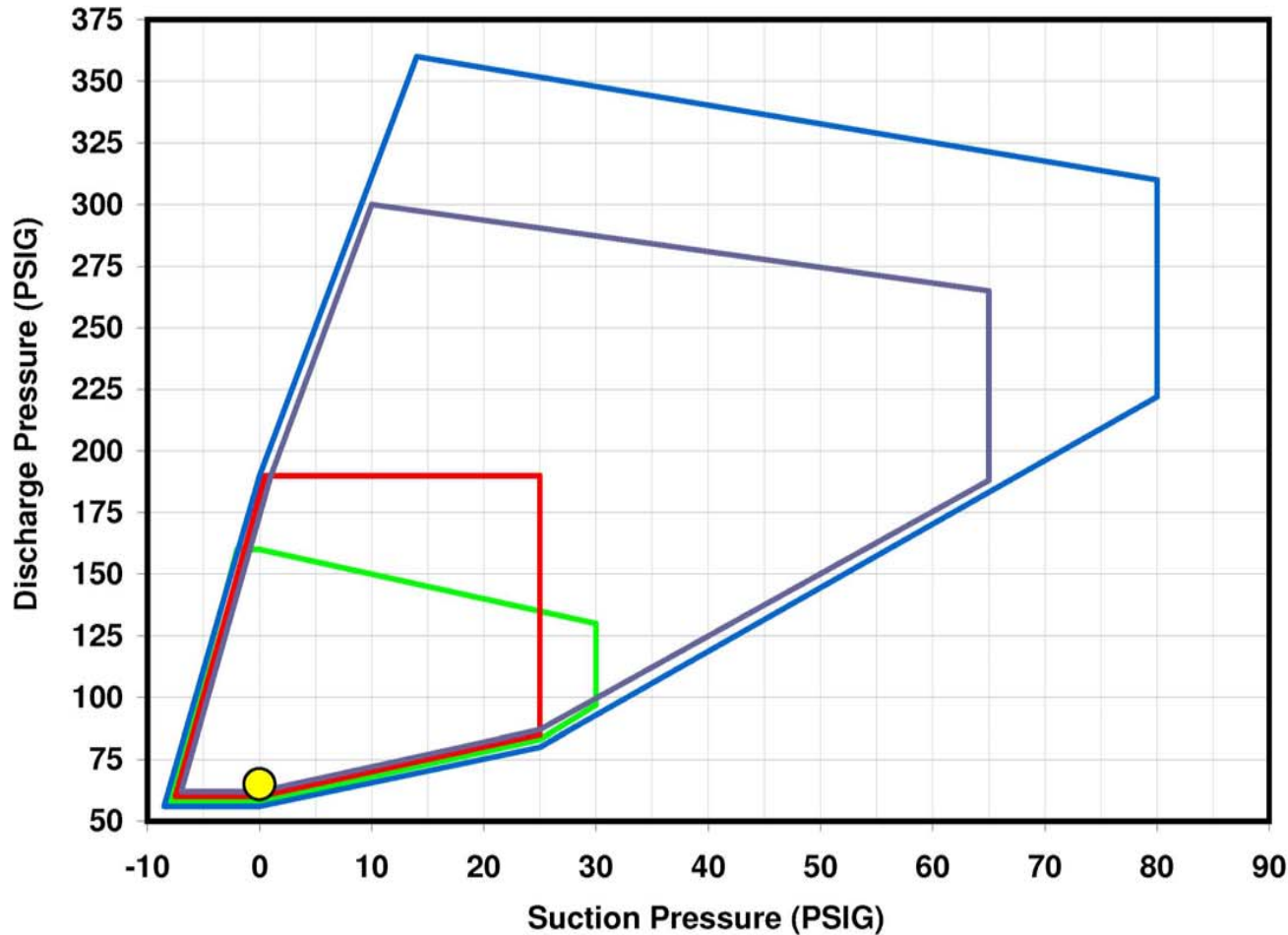


Copeland Scroll® Compressor

Copeland Scroll Compressor Technology



Operating Map for Dual Copeland Scroll[®] Gas Compression Modules



**NOTE: SZV44, SZV56
Suction Pressures >10 PSIG
Achievable by Replacing
Existing Low Pressure
Switch**

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Benefits of Scroll Compression for Vapor Recovery

- ◆ Hermetically sealed design
- ◆ Smaller footprint
- ◆ Less maintenance, more run time
- ◆ Low noise level
- ◆ Lower overall cost than typical VRU



Application of Scroll Technology

- ◆ Recovering gas from oil storage tanks and heater treater and discharging pressurized gas to larger compressor
- ◆ VRU system requires electrical power and purge gas for recycle
- ◆ High molecular weight gas recovery



COMM Scroll Compressor Package

- ◆ 4' wide x 8' long skid
- ◆ Inlet gas scrubber and aftercoolers
- ◆ Control panel with PLC and variable frequency drive (VFD)
- ◆ Volume capacity 200,000 scf per day



Offshore System Modifications (API RP 14C)

- ◆ Three part epoxy coating
- ◆ Safety system additions
 - Scrubber high level alarm
 - High discharge pressure alarm
 - Low suction pressure alarm
 - High pressure alarm on tanks
- ◆ Located control panels in MCC



Scroll Package Pictures



Investment Summary

Standard VRU package	\$135,000
Saltwater modifications	\$ 15,000
Safety modifications	\$ 5,000
Installation	\$ 40,000
Startup/Commissioning	<u>\$ 6,000</u>
Total Investment	\$201,000



Results

Average recovery – 58,000 scf per day

Peak recovery rate – 215,000 scf per day

Simple Payout – 15 months



Summary

- ◆ **Lowers emissions of VOCs and GHGs**
- ◆ **Lower maintenance costs**
- ◆ **Requires small footprint**
- ◆ **Cost effective and efficient VRU for offshore environment**





COMM ENGINEERING

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