

COMPEX **MOBILE** COMPRESSOR SYSTEMS

For Gas Upstream Redevelopment



ABOUT COMPANY

BPC Engineering manufactures and supplies gas screw compressors based on proprietary air ends. The equipment is produced under brand COMPEX at the Company's factory (Tutaev, Yaroslavl Region, Russia). All equipment passes in-house quality control and comprehensive testing and is certified in accordance with international standards as well as local standards in the countries of destination.

Solid experience in oil&gas applications allows BPC Engineering to design and manufacture compressors that meet key demands of oil&gas companies and feature high reliability, efficiency and availability.



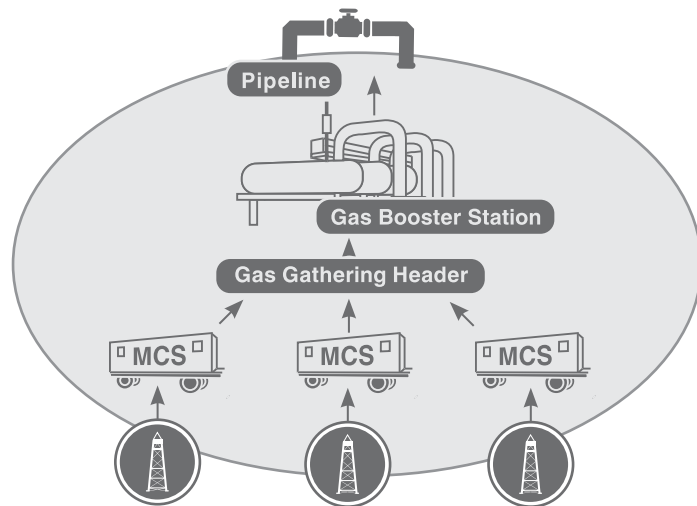
MCS COMPEX feature high reliability even handling wet gases and low-quality gases with high H₂S and CO₂ contents.

Production of depleting fields is characterized by the low rate of stranded gas reserves due to intensive formation pressure drop and constant wellbore pressure drop.

COMPEX modular mobile screw compressors are designed for wellhead compression to optimize gas production, boost extraction efficiency and reduce costs. Integrated mobile solution features full automation and high availability even in harsh environmental conditions.

FLOW CHART OF DISTRIBUTED COMPRESSION:

Distributed compression concept implies operation of COMPEX MCS (Mobile Compressor System) at separate wellheads acting as a first compression stage for preliminary natural gas compression. Then, the gas flows through a common gas gathering header and is finally compressed in a gas booster station. This cycle allows increasing capacity of gas pipeline from wellhead to gas gathering header, reducing wellhead pressure and increasing well yield.



PURPOSES

- Gas conditioning and maintenance of production rates under conditions of intensive formation pressure drop
- Boost production of depleting gas wells
- Gas production optimization, gas recovery ratio increase
- Well life extension and profitable operation of depleting gas fields
- Low-pressure gas treatment and compression
- Gas and gas condensate fields' formation fluid removal



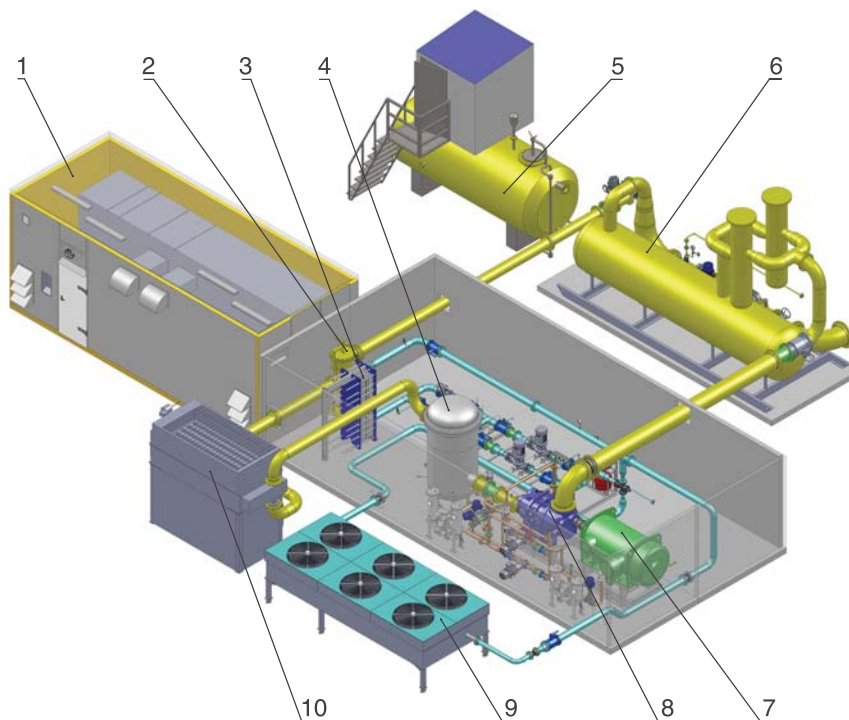
COMPEX SCREW COMPRESSOR

PROPRIETARY DESIGN AND MANUFACTURE BY BPC ENGINEERING

SPECIFICATIONS

Compressor Type	Rotary screw, oil-flooded, optional separated oil lubrication circuit for bearings
Driver Type	Gas reciprocating or electric
Driver Power	From 4 kW to 2 MW
Flow capacity	From 20 m ³ /h to 15000 m ³ /h (depending on suction conditions)
Operating temperature range	From -60 °C to +50 °C
Cooling	Air or liquid
Maintenance intervals	Up to 8000 hours
Overhaul life	Up to 40000 hours

TYPICAL ARRANGEMENT OF A COMPEX MOBILE COMPRESSOR SYSTEM



1. Power connections module
2. Discharge separator
3. Heat exchanger
4. Oil separator
5. Storage tank
6. Suction separator
7. Electric motor
8. Screw air end
9. Air cooler for water-ethylene glycol mixture
10. Air cooler for gas

Main Challenges of Gas Fields at Final Development Stage:

- Self-kills of marginal wells
- Accumulation of formation fluids in gas gathering system
- Significant formation pressure drop and reduction of gas production

COMPEX Mobile Compressor Systems Provide the Following:

- Stabilize suction pressure of gas booster station
- Optimize operation of gas-gathering systems and well production as well as bottom hole fluid ejection
- Increase flow rate of gas gathering headers
- Provide individual operating modes for multiple wells with unmanned operation at minimum maintenance
- Increase gas recovery ratio

ADVANTAGES

- Easy installation and pre-commissioning
- Modular design facilitates easy field maintenance
- Highly automated, unmanned operation with remote control and monitoring capabilities
- Mobility: after required gas recovery ratio is reached mobile compressor systems can be easily dismantled and carried to a new operation site
- Significant savings: distributed compression features low energy intensity (up to 10 % lower compared to centralized compression) and makes replacements of changeable flow channels in booster compressor stations unnecessary
- Flexible operating mode control provides efficient suction and discharge pressure regulation in conditions of frequent operating pressure surges as well as optimizes loading of gas compressor units



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