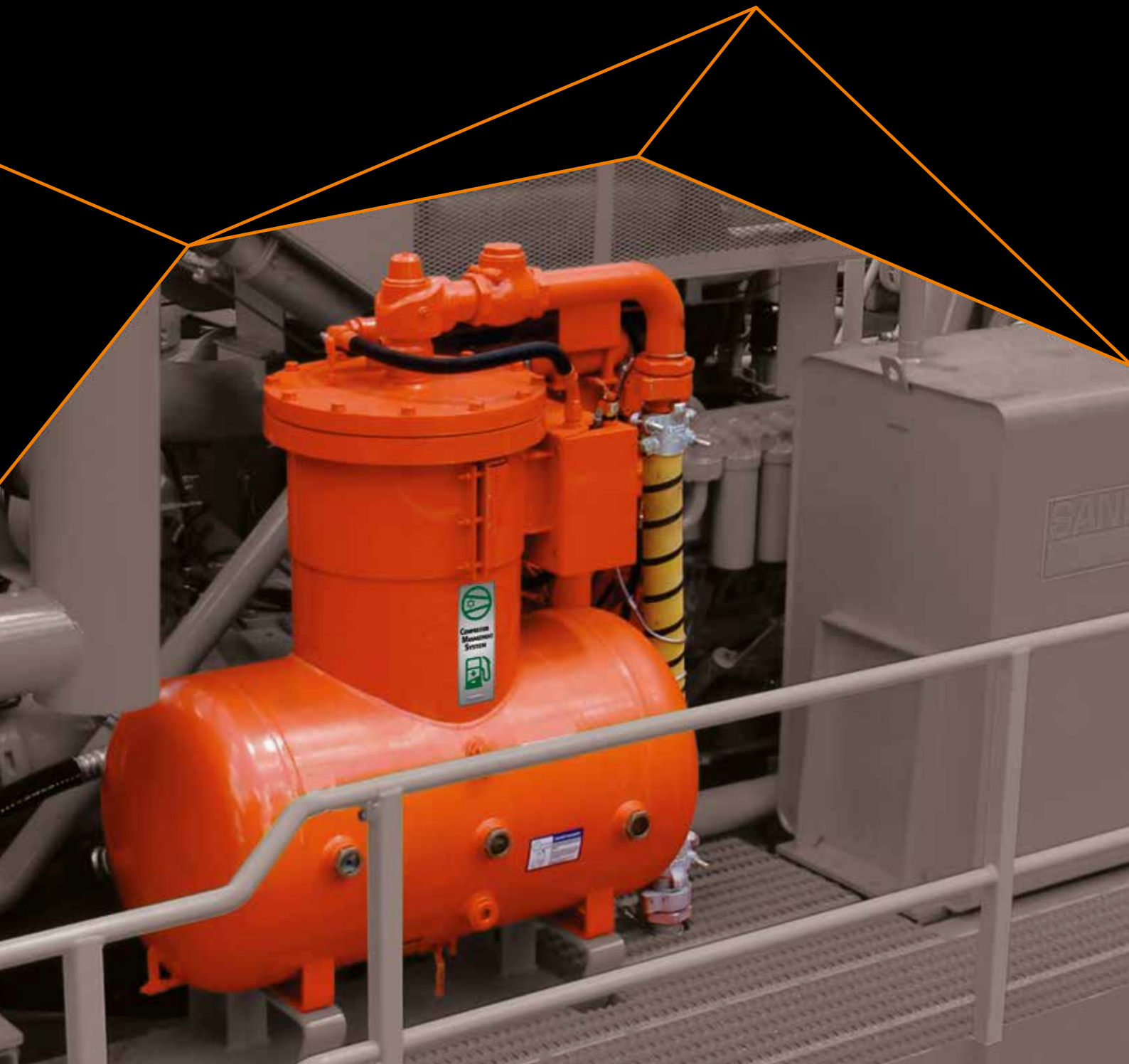
SANDVIK

BOOST PRODUCTIVITY
REDUCE ENVIRONMENTAL IMPACT

SANDVIK COMPRESSOR MANAGEMENT SYSTEM



CONSERVATION & PRODUCTIVITY

Our patented Sandvik Compressor Management System (CMS) tackles two of the primary issues you face today – increasing productivity and reducing environmental impact. Sandvik CMS provides a solution to the inherent inefficiencies of rotary blasthole drills that have a direct connection between the engine and compressor.

Our system works by isolating the compressor and eliminating the need to maintain pressure when the machine is not drilling. This reduces the load on the engine, saving you a significant amount of fuel and reducing wear and tear on your engine. Sandvik CMS can improve productivity and reduce environmental impact for a range of rotary and down-the-hole (DTH) drills, including Sandvik DR460, Sandvik DR560, Sandvik D75KS, Sandvik D90KS and Sandvik D55SP.

"The Sandvik CMS will save us thousands of gallons of fuel every year. It was a classic no-brainer."

- Mark Gilbertson, Director of Asset Management, Cloud Peak Energy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IDEAL FOR COLD-WEATHER STARTUP

DURING DRILLING

- CMS opens compressor intake and outlet
- System produces compressed air in seconds
- System opens butterfly intake valve to deliver precise air volume
- Instantaneous flushing delivered by air stored in receiver tank
- Anti bit/hole blocking feature
- Multiple sensors track air pressure and compressor volume
- Air volume automatically increases and decreases in response to back pressure

WHEN NOT DRILLING

- Isolates receiver tank
- Cuts off air intake
- Creates vacuum in main compressor
- "No-load" eliminates cooling needs of main compressor so cooling oil is switched off
- Stored air pressure in receiver tank continues to lubricate compressor bearings
- Receiver pressure is maintained for accessory functions and for instant air on demand

STARTUP

- Intelligent starting process minimizes startup compressor load
- No air produced until engine reaches idling speed (1,190 RPM)
- Builds 3.5 - 4.5 bar (50-65 psig) pressure in receiver tank
- Activates evacuation pump and off-loads compressor
- Air pressure in receiver tank lubricates compressor without parasitic load

Without CMS

- Starter motor cranks both engine and compressor
- Compressor produces air immediately and builds to full pressure, stalling the engine
- Engine startup can be difficult and require "bleeding" the receiver tank before trying again

SHUTDOWN

- Main compressor evacuated by secondary compressor
- Compressor isolated from receiver tank
- Engine parasitic load drops to less than 10%
- Inlet butterfly is held closed
- EGT drops to less than 300°C/572°F
- Turbo chargers, piston crowns, oil cool to below manufacturer recommendation

Without CMS

- Compressor is loaded by pressure in receiver
- Engine load maintained at as much as 60%
- Engine EGT does not drop (typically 600°C/1,112°F)
- Turbo chargers, piston crowns and engine oil do not cool down

UP TO 35% FUEL SAVINGS

EASY OPERATION

- You input bit size, pipe size, maximum compressor volume, desired up-hole velocity
- Our system calculates optimum compressor volume to deliver desired velocity

Operators will

- Learn to read pressure gauge
- Notice lower flushing air and receiver pressure, and more frequent fluctuation of these pressures
- Enjoy automatic compensation by the CMS without needing to alter anything

FINANCIAL AND ENVIRONMENTAL

- Reduce fuel consumption 20 - 35 %
- Extend the life of the engine and compressor
- Cut costs through extended service intervals
- Reduce drill bit and drill pipe wear
- Reduce refueling
- Reduce rig downtime
- Green credits from lower emissions and dust generation

AUTOMATICALLY ADJUSTING FOR EFFICIENCY

- Fully automated
- Infinitely adjustable
- Closed-loop control for optimal efficiency
- No “hunting” - matches air supply with demand
- Instantaneous reaction
- Provides continuous feedback to operator on down-hole conditions
- Electronic valves - eliminate problematic pneumatic control valves

BREATHE NEW LIFE INTO AN OLDER MACHINE

- Machine audit
- Custom engineered system
- Control module
  - Graphic User Interface (GUI)
  - Program Logic Controller (PLC) with software
- Compressor inlet and actuator
- Evacuation pump and motor
- New piping, valves and hosing
- Custom wiring harness
- Certified installation
- Operator maintenance training
- Sandvik warranty


Compressor
Management
System

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