

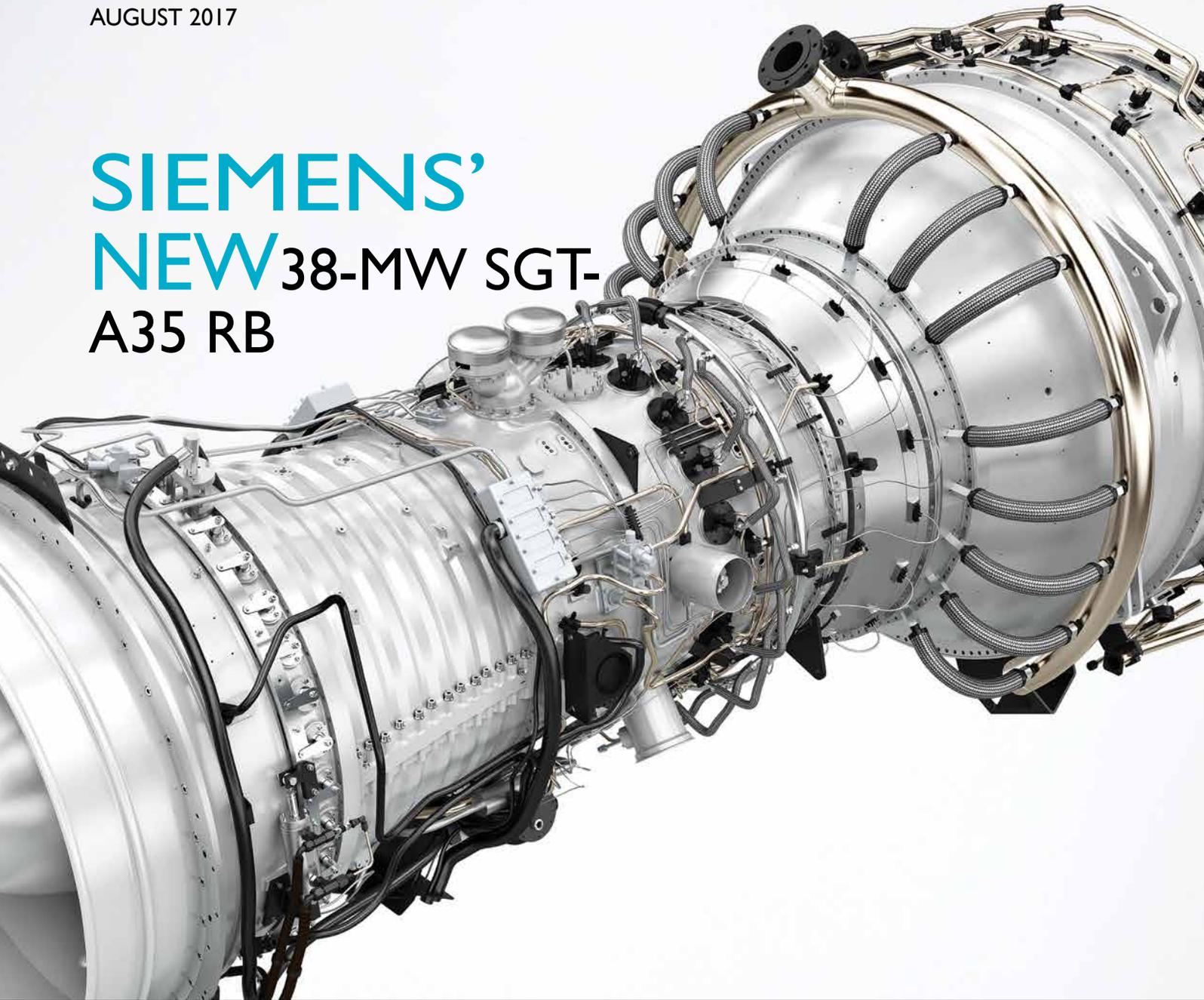
GAS COMPRESSION

magazine



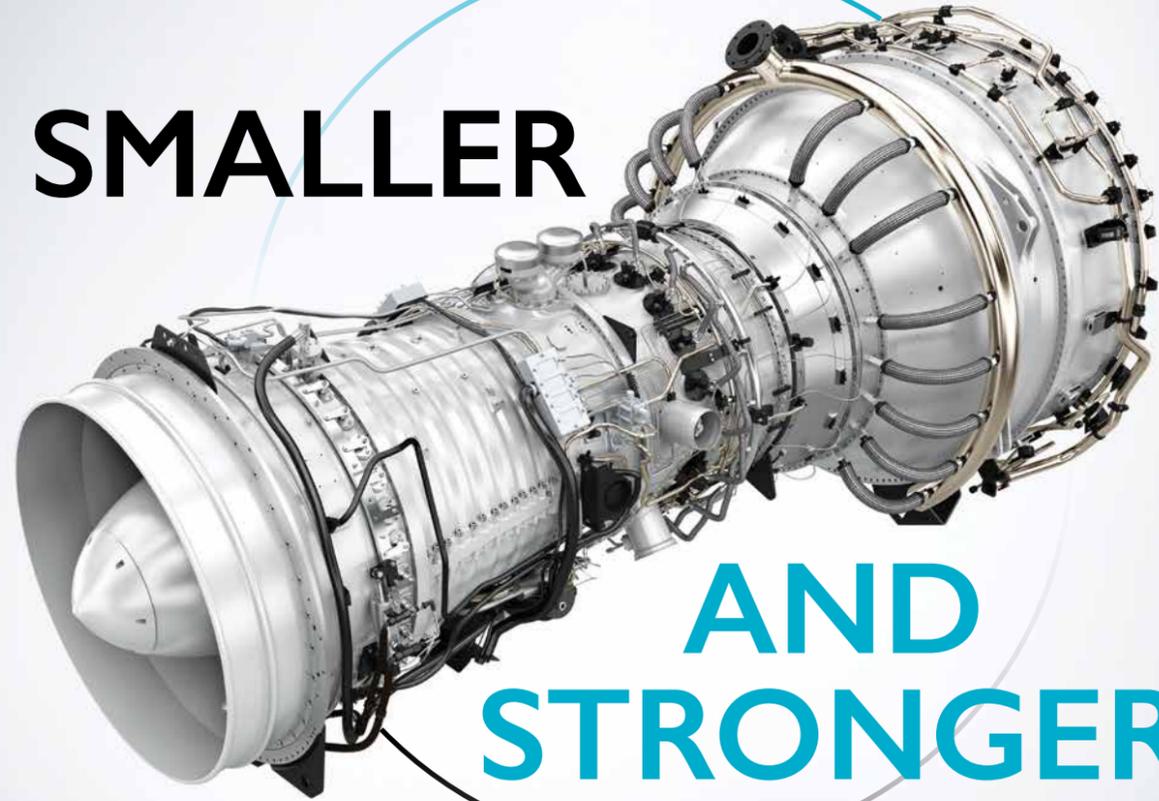
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SIEMENS' NEW 38-MW SGT- A35 RB



PLUS WET GAS
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The 38-MW SGT-A35 RB gas turbine uses a zero-stage compressor upgrade to deliver about 10% more power without any change in the turbine section.

Continuing the legacy of its Industrial RB211 gas turbine while capitalizing on the knowledge and expertise gained from its acquisitions of Dresser-Rand and Rolls-Royce Energy, Siemens has introduced the latest addition to its gas turbine portfolio, the 38-MW SGT-A35 RB.

“This is a natural extension of the product line that came together because of the mergers of Siemens, Rolls-Royce Energy, and Dresser-Rand,” said Matthew Rickert, regional director of gas turbine business development at the Dresser-Rand business part of Siemens. “Previously, we were at 34 MW. We’re now increasing that to 38 MW, bringing more power in the same footprint, and targeting offshore applications. In offshore applications, everything is about power density. ‘How much power can I get out of a limited footprint?’ This gives us the largest power density on the market to date.”

The SGT-A35 RB gas turbine is available in 34- and 38-MW variants to match a range of application requirements. Both ratings are available for mechanical drive and 60 or 50 Hz electrical generation. In this configuration, the gas turbine can directly drive a 2-pole A/C generator without the need for a gearbox. The thermal efficiency of the gas turbine exceeds 40% at ISO conditions.

The 38-MW variant utilizes a zero-stage compressor upgrade to deliver about 10% more power without any change in the turbine section, and with the same firing temperature. The power increase is achieved through higher core flow and compressor efficiency, rather than over-firing. Optimized for hot climates, the SGT-A35 RB retains over 90% of its power, up to 86°F (30°C).

“We call it a new gas turbine but it’s really a reconfiguration of a lot of existing, proven technology,” said Rickert. “To get to

SIEMENS INCREASES POWER DENSITY WITH INTRODUCTION OF 38-MW SGT-A35 RB

BY BRENT HAIGHT



The SGT-A35 RB utilizes the Dresser-Rand offshore package, making the unit about 30% lighter and smaller than its Industrial RB211 gas turbine predecessor.

38 MW we put an extra stage of compression on the compressor. Everything on the back end of the turbine stays the same – same firing temperature, same components.

“The core engine is all proven technology,” added Rickert. “We’ve paired the RB211 engine with the MT30 power turbine to increase the power rating. On the packaging side, we’ve used the Dresser-Rand offshore package. Dresser-Rand has packaged gas turbines for offshore applications for a long time and in a similar size range.”

According to Rickert, the Dresser-Rand package design makes the SGT-A35 RB 30% lighter and smaller than its Industrial RB211 gas turbine predecessor.

“This package is specifically configured for the offshore market,” said Rickert. “As the offshore oil and gas market continues to go into deeper and deeper water, the demand for power continues to increase. With current low oil prices

keeping capital price expenditures low, minimizing the deck footprint is more critical than ever. We set out to provide more power and at the same time reduce the footprint and the weight of the package. We achieved that. The acquisitions that Siemens made with Rolls-Royce Energy and Dresser-Rand are bringing fantastic synergies. We’re going to continue our development by increasing power, minimizing weight, reducing footprint, and increasing value for clients. This is really an exciting time for gas turbine development.”

| 50 Hz | SGT5-8000H | 425 MW |
|-------------|------------|------------------------|
| | SGT5-4000F | 329 MW |
| | SGT5-2000E | 187 MW |
| 60 Hz | SGT6-8000H | 310 MW |
| | SGT6-5000F | 250 MW |
| | SGT6-2000E | 117 MW |
| 50 or 60 Hz | SGT-A65 TR | 53 to 66 / 54 to 62 MW |
| | SGT-800 | 48 to 54 MW |
| | SGT-A45 TR | 39 to 44 MW |
| | SGT-750 | 40 / 41 MW |
| | SGT-700 | 33 / 34 MW |
| | SGT-A30 RB | 27 to 37 / 28 to 38 MW |
| | SGT-A35 RB | 27 to 37 / 28 to 38 MW |
| | SGT-600 | 24 / 25 MW |
| | SGT-400 | 13 to 14 / 13 to 15 MW |
| | SGT-300 | 8 / 8 to 9 MW |
| | SGT-100 | 5 / 6 MW |
| | SGT-A05 AE | 4 to 7 MW |

| Nominal rating | 34 MW | | 38 MW | |
|------------------------------|---------------------|---------|---------|---------|
| Ambient temperature | 15° C | 30° C | 15° C | 30° C |
| Mechanical drive (3,429 rpm) | | | | |
| Shaft power output | 33.7 MW | 30.8 MW | 38.1 MW | 33.3 MW |
| Shaft thermal efficiency | 39.1% | 38.3% | 40.3% | 39.1% |
| 60 Hz electrical generation | | | | |
| Power output A/C | 33.2 MW | 30.3 MW | 37.4 MW | 32.6 MW |
| Simple cycle efficiency | 38.5% | 37.8% | 39.7% | 38.4% |
| 50 Hz electrical generation | | | | |
| Power output A/C | 32.2 MW | 29.7 MW | 36.6 MW | 32.4 MW |
| Simple cycle efficiency | 37.5% | 36.8% | 38.7% | 37.6% |
| Power turbine speed | 3,000 – 3,600 rpm | | | |
| Fuel type | Dual (gas & liquid) | | | |