

Regulateurs Europa Ltd. Achieve Successful New Installations in Western-Canada

Western-Canada is home to one of the largest and most aggressive oil and gas production areas on the planet. Oil and gas producers must invest in the best available technology to achieve overall "online status" to meet their production quotas. Unscheduled down-time, or non-optimized equipment impairs the ability of the producers to deliver their product to the meter station resulting in lost revenues and reduced profitability.

It was against this background that REGULATEURS EUROPA opted to pursue additional aftermarket business in the area of hydraulic speed controls. Through customer surveys and many meetings with oil and gas producers it was learned that many clients were unhappy with the stability, performance, and life-cycle of existing hydraulic speed controls. This is a significant market in the Americas as a large percentage of the installed fleet of industrial engines is legacy equipment and was initially supplied with hydraulic governors. Furthermore, as many production sites are located in remote areas it is not always feasible to use electronic speed controls or actuation due to the lack of available electrical supply power.

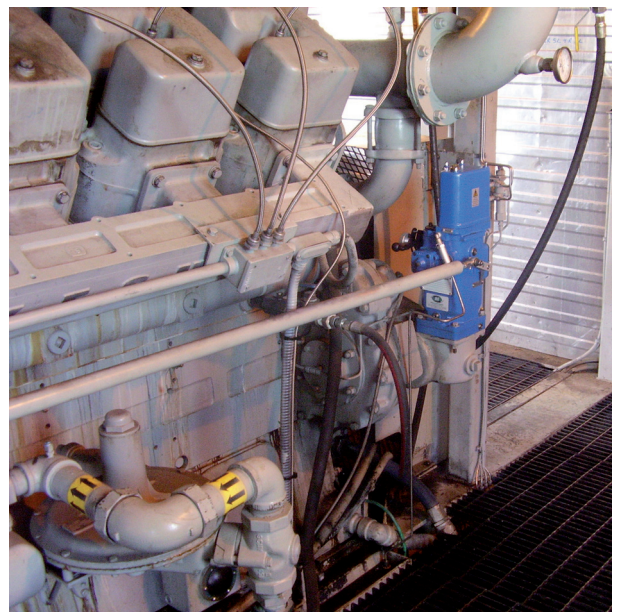
As a result of the customer surveys it was identified that the large majority of customers were concerned about three different hydraulic governor applications, where the customers felt the existing design did not always offer exceptional stability or performance, and also commented on the perceived short life-cycle.

REGULATEURS EUROPA immediately opted to pursue the largest area of application concern as described by our customer base and the 2104 governor was released in a configuration suitable for the compression industry.

The 2100 series of governors was first designed and released in the very late 1970's based on the same REGULATEURS EUROPA tried and tested design philosophy that has accumulated millions of operating hours in a wide variety of applications throughout the world including marine, traction and power generation. The 2100 series governor was designed to deliver the high levels of stability and performance required by high speed marine and stationary industrial engines.

The primary benefits of the 2104 hydraulic governor are the following:

- Improved response and stability through load-change cycles; demonstrated narrower speed variances at all speed and load change cycles. This is primarily due to the different engineering philosophy that was developed by REGULATEURS EUROPA.
- Integrated Pneumatic Actuator for speed control. The pneumatic actuator that accepts the 3-15 psig signal (other pressure ranges are available) from the throttle mechanism is built right into the 2104 assembly.



RE 2104 hydraulic governor on AltaGas gas compressor

This eliminates the need for external linkage and an external actuator supplied by other manufacturers. This allows total quality control for REGULATEURS EUROPA regarding supply of the actuator and also eliminates the common problems associated with linkage, such as worn rod ends, and incorrect linkage angles. There is simply less wear items and less components to pose any operational problems.

- Boost Limitation block (if required) is an integrated assembly is usually which prevents the accidental overload of a prime mover by limiting the governor within operational limits set by the end-user. A tubing line is connected between the engine intake manifold and the Boost Limitation block on the 2104A assembly. Different diaphragm kits are available, and the customer chooses the appropriate diaphragm kit to match the maximum intake manifold pressure of his specific engine at rated speed and load. When the maximum intake manifold is achieved the Boost Limitation block effectively prevents the delivery of additional fuel thereby preventing accidental overload conditions on the engine which may be catastrophic.

Upon preparation of several 2104 field trial units REGULATEURS EUROPA were pleased to partner with AltaGas Ltd. to install and field trial the 2104 in the stationary market. AltaGas Ltd. is one of Western-Canada's largest natural gas transmission providers. They offer an extensive network of pipelines and compressor stations throughout western Canada and provide producers a transportation services to deliver their natural gas to the market.

The first 2104's were installed at two separate AltaGas facilities. For additional comparison and evaluation two separate engine models were chosen: a Waukesha L7042 GSI and a Waukesha F3521 GL.

The field installation process of the 2104 is extremely easy and efficient as the 2104 utilizes an identical mounting base and drive shaft as the existing governor. Further, the output terminal shafts are an identical diameter, and are at a height and orientation close to that of the existing governor allowing the existing lever and linkage can simply be mounted onto the 2104. As the 2104 utilizes an integral pneumatic actuator for biasing the speed set-point, the throttle tubing line is piped directly into the governor housing (see pictures). For both installations, installation time was less than 30 minutes.

Upon installation a series of tests were performed and compared to the existing equipment results that were taken prior to the installation. Additionally, the AltaGas operators were kind enough to vary the load and speed of the engines across the complete load and speed range of the engine.

It was confirmed that the response characteristics and stability benchmarks were significantly improved over the existing equipment. The lack of linkage vibration and butterfly shaft oscillation was keenly noticed immediately by the AltaGas operators. These experienced operators had become accustomed to the constant minor "fluttering" oscillations of the butterfly shaft over years of observing the existing equipment attempting to hone in on the speed set point. Absolutely no flutter or minor oscillation was visible on the 2104 governors. The governor simply moved the linkage when required and held. There was no visible compensation or over-shoot or under-shoot to compensate when observing the linkage, the 2104 simply "moves and sticks", as described by the AltaGas operators. This will translate into reduced rod end and linkage wear; and ultimately a smoother-running, better performing engine.



REGULATEURS EUROPA
2104 governor

These 2104 governors have been operating flawlessly for several months in continuous use now and REGULATEURS EUROPA has opted to officially release the 2104 governor to the aftermarket.

Upon conclusion of the successful field tests; representatives from both AltaGas Inc. and REGULATEURS EUROPA met to discuss the final evaluation.

Mr. Al Cennon, the Area Supervisor from AltaGas Ltd. stated; "We have realized significantly better performance and stability with the 2104, the engines track and respond better and allow us to run closer to rated speeds, yielding slightly increase production. I wouldn't have believed that speed control variance this narrow was possible without going to an electronic system. The speed variance is much narrower and improved over the existing governor system. The integrated actuator is an especially good idea as it eliminates the external speed biasing linkage, and all of the potential wear and linkage alignment problems that accompany any linkage assembly. Rod end wear and linkage problems have always been an operational and maintenance issue; we see this problem solved with the 2104 because linkage oscillations are no longer visible."

When asked if AltaGas would continue to utilize the 2104 going forward, not only was it indicated that the 2104 would be considered a better quality replacement assembly for the existing governor assembly on Waukesha VHP's but Al Cennon further added; "...when will you be able to provide a 2104 version for the rest of our fleet of Waukesha VGF's and Caterpillar engines?"

The REGULATEURS EUROPA 2100 series of governors are suitable for engines in the power range 200 – 2000 Hp and the speed range 300 – 1800 rpm. The nominal output from the governors is 8 – 12 ft lbf. REGULATEURS EUROPA will be releasing additional hydraulic governors and actuators to be applied to Waukesha, Caterpillar, and White-Superior engines.

These governors will be available through a network of authorized Central Distributors that include Advantage Governor & Controls Inc. (Canada); Emission Compliant Controls Corporation (US- West Coast), Kraft Power Corporation (US East Coast and Great Lakes), Waukesha-Pearce Industries (US-Gulf Coast), and HEINZMANN/REGULATEURS EUROPA America, Inc. (US- Rocky Mountain).

AltaGas Ltd. is an energy infrastructure business with a focus on natural gas, power and regulated utilities. The Company creates value by acquiring, growing and optimizing gas and power infrastructure, including a focus on renewable energy sources. For more information visit: www.altagas.ca.

For further information please contact your local authorized HEINZMANN/REGULATEURS EUROPA Central Distributor, or Brent Powers, Vice-President of Sales (HZM-RE) at b.powers@heinzmann.com.

HEINZMANN and REGULATEURS EUROPA corporate websites are www.heinzmann.com and www.regulateurseuropa.com

HEINZMANN

The HEINZMANN Group is one of the leading system suppliers worldwide for engine and turbine management solutions, specialising in all relevant technologies.

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- Air fuel ratio controllers for gas fuelled engines
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The product portfolio is completed by engine emission management, safety systems for combustion engines, communication software and a variety of accessories. Our system solutions optimise the management of diesel, gas and dual fuel engines and gas, steam and hydro turbines.

HEINZMANN has the appropriate control and system solution for any application involving marine drives, locomotive control systems, construction and agricultural vehicles or gen-sets.

HEINZMANN was founded in 1897 and has been growing ever since. At the end of 2005, HEINZMANN acquired REGULATORS EUROPA, which supplies electro-hydraulic actuators and diesel engine governors' highest quality. DATA PROCESS, a specialist in monitoring and control systems for marine applications, became part of the Group in 2011.

HEINZMANN has two other divisions:

- Innovative hybrid drives for industrial vehicles driven by diesel, gas and petrol
- Electric drive systems for the whole range of industrial applications. This division was expanded in 2005 with the acquisition of PERM Motoren GmbH

HEINZMANN continues to pursue a strategy of innovation and absolute customer focus, enabling it to offer the best possible solutions both today and in the future.

Contact:

Mr. Brent Powers

HEINZMANN/REGULATEURS EUROPA AMERICA, INC.

Cell +1 780-231-2280

E-mail b.powers@heinzmann.com

REGULATEURS EUROPA Ltd.

Port Lane, Colchester, Essex CO1 2NX
United Kingdom

Phone: +44 (0)1206 799 556

Fax: +44 (0)1206 792 685

E-mail: sales@regulateurseuropa.com
www.regulateurseuropa.com

REGULATEURS EUROPA BV

Ekkelkamp 3, 9301 ZZ Roden
The Netherlands

Phone: +31 (0)5050 19888

Fax: +31 (0)5050 13618

E-mail: sales@regulateurs-europa.com
www.regulateurseuropa.com

HEINZMANN GmbH & Co. KG

Am Haselbach 1
D-79677 Schönau/Germany

Phone: +49 7673 8208 - 0

Fax: +49 7673 8208 - 188

E-Mail: info@heinzmann.de
www.heinzmann.com