

Munich October 20th, 2022

WORLD PREMIERE at BAUMA

PUNCH Group and TecnoGen present their hydrogen generator with integrated Formula One derived flywheel system

BAUMA is the *must-go-to exhibition* to present new technology to the experts of the heavy-duty field. That is why PUNCH Group and TecnoGen (part of Bruno Generators Group) decided to showcase here for the first time their *New Hydrogen generator*.

As a World's First a **hydrogen engine** by PUNCH Hydrocells is combined with a **Flywheel Power System** by PUNCH Flybrid. These innovative components are integrated into a **generator** developed in collaboration with TecnoGen.

The PUNCH hydrogen engine is able to achieve a maximum power of 250kW at 3000 rpm in Marine, mobile Off-highway as well as On-highway applications. This remarkable specific power of 38kW per Liter has been achieved with state-of-the-art Port Fuel Injection combined with an innovative PUNCH combustion system for high efficiency. The hydrogen engine is controlled by a proprietary PUNCH control unit.

In the generator application it achieves an impressive 100kW (Prime Rated Power - PRP) at 1500 rpm and 110kW (PRP) at 1800rpm.

Appealing product cost versus other green technologies, capability to operate at heavy duty conditions in harsh environments and tolerance to low purity hydrogen are the key advantages of this proposal

Originally developed for Formula One Racing, **PUNCH Flybrid products** now enable huge generator set downsizing for dynamic applications like tower cranes, chillers, rock sizers, hoists, mast climbers and pumps. The flywheel system boosts the peak performance and significantly improves the load response of the generator. As a result, fuel & emission savings of over 50% are achieved in dynamic applications. If combined with hydrogen technology, the emissions are reduced close to zero, supporting the efforts of the construction industry to reach Net Zero.

The **TecnoGen** generator is characterized by the use of VSi technology, recognized with European patent n. 2754872, and for the robustness and compactness typical of the TecnoGen FUSTEQ series.

This technology allows a significant reduction in consumption as well as a low noise level. With its vertically integrated production, TecnoGen guarantees the control of every single phase of the production process to ensure the highest quality and reliability of the product.

The generator is equipped with a DSE8610MKII control unit for synchronising & load sharing and therefore can be synchronized with up to 32 other generators. It delivers a power of 105kVA (PRP) at 50Hz and 120kVA at 60Hz.

PUNCH Group acts as the key technology provider to ensure that the generator achieves great efficiency in terms of emission and fuel savings.

Come and visit **PUNCH Group** at the Booth A3.512E and **TecnoGen** (part of BGG) at the Booth A6.102 at BAUMA.

You can find the *New Hydrogen generator* in the Outdoor area 56A / A56.13.



TECNOGEN (part of BGG)

TecnoGen is part of Bruno Generators Group (BGG), which is one of the world's leading operators in the power generation sector, and its generating sets are considered the gold standard for applications requiring superior technical and quality specifications. In fact, the Group is focused on the engineering and production of premium generation systems, with high customization and industry-leading performance in terms of energy efficiency, emissions containment, soundproofing, and resistance to extreme environmental conditions. These product features, deriving from proprietary research and development, are protected by patents, and are particularly appreciated by the rental market.

BGG's generators are used in various sectors such as: energy, oil and gas, telecommunications and data centres, shipbuilding, infrastructure, defence and civil protection (UN, NATO), event organization (e.g. Tokyo 2020 Olympics, Hollywood studios, Monte Carlo F1 GP).

The Group, with 4 plants in Italy (Piacenza, Grottaminarda, Bari and Milan), and a direct commercial presence in UK, USA and Germany, has an established international presence (exports account for over 60% of turnover) in more than 70 countries with a wide and heterogeneous customer base active in diversified target markets.

PUNCH Group

PUNCH Group, founded in Belgium, has a strong international footprint that has been the key to growth. The vision of the group is to set a future with sustainability mobility for all, turning challenges into opportunities by leveraging proven technologies with innovation.

PUNCH Hydrocells, based in Turin in the "Cittadella Politecnica", is PUNCH Group's Unit focused on the energy transition and the decarbonization challenge. Our Hydrogen solutions cover the entire value-chain of the hydrogen ecosystem: Production, Storage and Distribution, Fuel Cells and Internal Combustion Engines.

PUNCH Flybrid has developed energy recovery technology that uses high power densities to achieve exceptional performance. All our products are based on advanced, high-speed flywheel energy storage technology. Originally designed for the high intensity life of motorsport, PUNCH Flybrid's systems have demonstrated their performance under demanding conditions in various applications in off-highway, power generation, commercial vehicles and passenger cars.

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