# HORSE SCALES PRODUCTION OF POWERFUL AND EFFICIENT TURBO FLEX FUEL ENGINES FOR SOUTH AMERICA

- 3- and 4-cylinder flex fuel engines tailored for South American region
- Exceptional power, efficiency and emissions with cutting-edge technology
- Designed to run on ethanol to meet the demands of the Brazilian market
- Outstanding performance achieved via electronically-controlled direct injection turbo
- Powertrains will be built at HORSE's advanced Curitiba production facility

HORSE, a global leader in innovative and low emissions powertrain systems, has announced that it is bringing production of its powerful and efficient 1.3-litre Turbo Flex Fuel engine to Brazil, following the successful start of production of 1.0-litre models in Brazil earlier this year. Following the proven performance of these engines in the Brazilian market, HORSE plans to start producing these engines domestically at its Curitiba plant by 2024.

Tailored for the unique needs of the South American market, these advanced units deliver outstanding power, torque, efficiency and emissions. These Turbo Flex engines can be run on both gasoline and sustainable Ethanol, plus each is Proconve L7-compliant (equivalent to Euro6d) and are already in the process of becoming certified for the upcoming stringent L8 standards.

- The 1.0-litre three-cylinder unit, **codenamed 'HR10',** delivers peak power of 125PS (92kW) and a maximum of 220Nm of torque, 90% of which is available at as little as 1,750rpm for unrivalled throttle response in all driving conditions.
- The 1.3-litre four-cylinder unit, **codenamed 'HR13',** delivers peak power of 170PS (125kW) and a maximum of 270Nm of torque at just 1,600rpm

More than 170,000 hours of development have been dedicated to deliver the 1.0-litre Turbo Flex engine alone, so it can meet the exacting demand of the South American consumers. HORSE's cutting-edge plant at Curitiba, Brazil will have the capacity to produce 500,000 engines annually.

Following a R$100 million investment in the Curitiba facility, production of the HR13 will begin alongside the HR10 in 2025.

**Guillaume Tuffier, Director of Powertrain Strategy & Advanced Engineering at HORSE Powertrain Solutions said:**
*"When we say that we're creating tailormade powertrain solutions for markets around the globe, we really mean it. Producing HR10 and HR13 in Brazil is a perfect example of us taking advantage of local expertise to cater to local demand. With outstanding driving characteristics, seamless dual-fuel running and exceptional quality, the HR10 and HR13 are ideal engines for the Brazilian market".*

**Outstanding Efficiency**
Both the HR10 and HR13 feature a Formula One-inspired Diamond-Like Carbon (DLC) coating for the moving parts of the cylinder head as well as the piston rings and pins. This advanced nano technology reduces friction for enhanced fuel efficiency.

The cylinder walls of the lightweight aluminium engine block benefit from a Bore Spray Coating (BSC), which allows faster warm-up from cold and alone results in a reduction in emissions and consumption of 1 per cent.

Further fuel-saving features include friction-reducing polymer surface treatment for the crankshaft components and a Reflex-equipped Start & Stop system, which can shut off the engine before the vehicle comes to a stop for even greater efficiency.

**Cutting edge technology**

With an innovative Delta-shaped cylinder head, both these engines are more compact, lighter and has a lower centre of gravity than rival engines. Additionally, the exhaust manifold is cast into the head for faster turbo response and exceptional low speed torque delivery. The turbocharger for both engines is precisely controlled by an electronic wastegate, providing a maximum boost pressure of 1.5bar for the HR10 and 1.4bar for the HR13.

Power and efficiency are enhanced by continuous variation of the exhaust valve timing by an electronically-actuated, double-valve control shaft in the cylinder head. Not only does it allow for more efficient combustion and greater performance, the controller uses roller bearings to further reduce friction.

Both HR10 and HR13 benefit from a bespoke direct injection system that's been developed specially for ethanol fuel use. Each cylinder in both engines is accompanied by a centrally mounted six-hole injectors operating at 200bar pressure, tailored for exceptional fuel atomisation that delivers effortless power and torque without impacting fuel efficiency.

**HORSE: a leader in automotive innovation**

HORSE was created to provide highly efficient, low-emission engines, transmissions, and technologies to meet the varying power generation needs around the world. HORSE operates eight production plants across seven countries, three R&D centres and a head office based in Madrid, Spain – the company produces 3.2 million units per year for its customers around the world.

## Ends

**About HORSE**

HORSE is a global supplier of innovative powertrain solutions. It believes that there is no one-size-fits-all solution to sustainable mobility and so is investing in technologies which will support the automotive industry, and other sectors requiring power generation, in their transition to a sustainable future. With decades of industrial know-how, HORSE develops, produces and supplies highly efficient full-hybrid, plug-in hybrid and internal combustion powertrains, and cutting-edge technologies (engines, gearboxes, full-hybrid and plug-in hybrid systems, and batteries).

HORSE employs over 9,000 people in seven countries, it is headquartered in Madrid, Spain and has eight manufacturing plants and three R&D centres around the world (Argentina, in Córdoba; Brazil in Curitiba; Chile in Los Andes; Portugal in Aveiro; Romania in Bucharest, Mioveni and Titu; Spain in Seville and Valladolid, and Turkiye in Bursa in partnership with Oyak).

HORSE is a division of HORSE Powertrain Limited, a worldwide leader in hybrid and combustion powertrain solutions. Headquartered in London, UK, the company employs 19,000 people globally across 17 plants and five R&D centres. HORSE Powertrain Limited was officially created on 31 May 2024, with Renault Group and Geely each holding a 45% stake in the company, with Aramco holding a further 10%.

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