

primavis [pri-mə-vis] noun original power; development, production and marketing of innovative systems for propulsion and power generation



#### The Company



- Established in 2011
- Headquarter in Turin (Italy)

as for stationary applications,

as Combined Heat & Power

 Primavis mission is to develop and to sell best in class internal combustion engines for hybrid and conventional vehicles, as city cars, motorcycles, light airplanes, drones, ATV, light trucks, small boats, construction and agricultural vehicles as well





## The Management Team

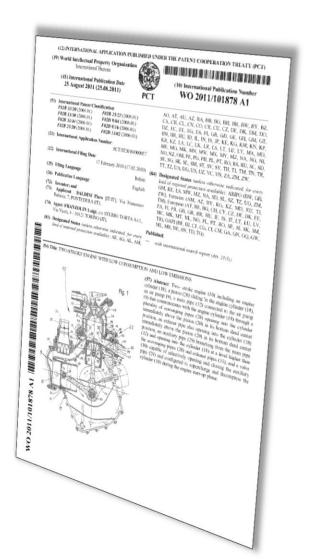


- President of Primavis is Mr. Piero Baldini (Chairman of the Board), who
  has more than thirty years of experience in engine design and in his
  career covered different high responsibility roles at Piaggio & C. S.p.A.
- Mr. Luca Morfino (Primavis' CEO) is member of the Board and Corporate Development Director of Fidia S.p.A. while Mr. Paolo Morfino, CEO of Fidia S.p.A. and former Renault-Nissan Gasoline Engines Senior Buyer, is in charge of supply chain and quality management.
- The Strategic Advisory Board is composed by Mr. Edoardo Fea, Partner of Studio Palea S.r.l., a leading advisory & accounting firm in Italy and Mr. Claudio Siniscalco, Harbourvest Director for Southern Europe.

#### **The Product**



- Primavis offers a range of solutions based on the Patent WO/2011/101878 titled "Two Stroke Engine with Low Consumption and Low Emissions", studied to achieve
  - High efficiency
  - High specific power
  - Very compact dimensions
  - Low weight
  - Simplicity, low production costs
  - Extremely good NVH
- Mono and multicylindrical configurations, from 15 kW to 180 kW, have been studied



#### **Technical Characteristics**



- One combustion process every cranckshaft revolution (modern Two Stroke)
- Air supply realised by external volumetric pump, with possibility of supercharging by patended CCD (control charge device)
- High pressure direct fuel injection system
- Lubrication system "Four Stroke like" (lubrication oil not mixed with fuel and not burned during the combusion process)
- Liquid cooling
- Possibility of internal EGR
- Possibility to function with several fuels (gasoline, CNG, LPG and also diesel, if required)

Innovative clean Two Stroke engine, no drawback of standard solutions

## Development agreement with BRC



BRC is a global acting company, part of the Fuel System Solution, listed at the NASDAQ Stock Exchange (FSYS), industry leader delivering proven alternative fuel system technology to more than 120 OEM and delayed-OEM customers as well as 400 aftermarket distributors/dealers in 70 countries

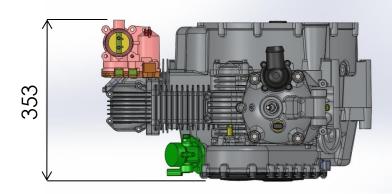
 Primavis and BRC are jointly developing fully functional Range Extender prototypes based on the patented Two Stroke engine, including generator, power electronics and control unit (Plug-and-Play solution)

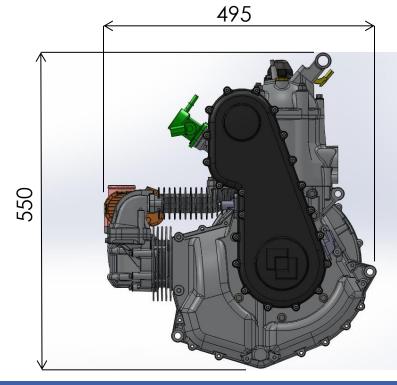


# **Primavis Range Extender**



- Monocylindrical supercharged, Gasoline Direct Injection
- 500cc displacement
- 225 g/kWh best BSFC
- PMSM starter-generator, external rotor
- 30 kW@4500rpm power output
- 55 kg total weight





# **Primavis Range Extender**









#### We are keen to answer your questions, please contact us









Industry Innovator Thank you for your interest!