



INNOVATING IN HYDRAULIC SOLUTIONS

UPGRADES

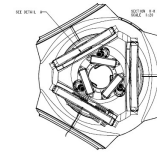
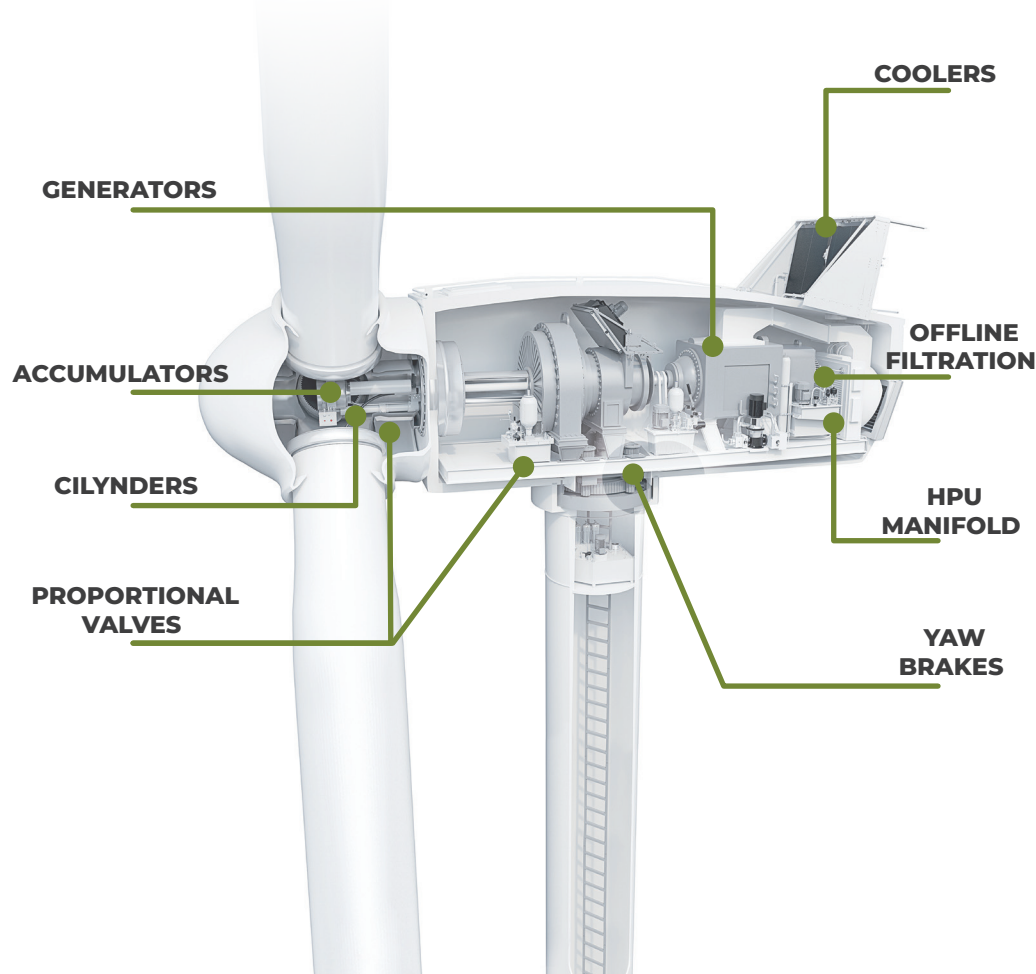
HINE provides its customers with upgrades and retrofits for hydraulic and cooling systems.

Our R&D team continuously develops and creates solutions to optimize the efficiency and extend the lifetime of the equipment installed in the field.

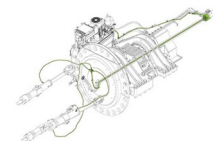


Main upgrade programs & retrofits developed:

- Change of position of **hub accumulators**.
- **Cylinder drain** bypass solution
- Reinforcement, guiding and **half-moons** on pitch cylinders.
- Elimination of **proportional valves** contamination problems.
- **Yaw brakes** overpressure elimination.
- **HPU block** upgrade.
- **Offline filtration** on the gearbox and pitch.
- **Cooling system** improvement.
- **Generator** upgrade kit.

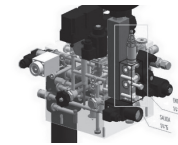


Position change of hub accumulators to extend the lifetime of the accumulator bladders.

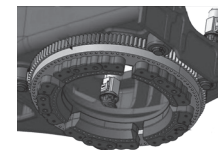


Cylinder drain bypass solution to avoid oil spilling in the hub.

Reinforcement, guiding and half-moons on pitch cylinders removing hub vibration.

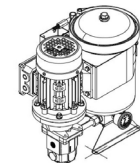


HPU block upgrade to avoid contamination breakdowns.

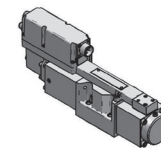


Yaw brakes overpressure elimination.

It prevents premature breakage of the yaw calliper brakes.

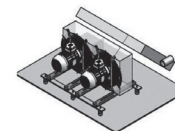


Offline nanofiltration in the gearbox and pitch. Removal of oil contamination.



Elimination of proportional valves contamination problems. Improvement of the oil's properties extending its lifetime.

We minimise of CO2 emissions and reduce of the number of machine's attendances.



Cooling system capacity improvement to optimize the cooling of the different elements.



Up tower generator upgrade kit. Preventive and sustainable reparation to avoid failures in the generator.

SOLUTIONS FOR THE FOLLOWING PLATFORMS:

 Gamesa	G4X G5X G8X G9X G114 G132 G145 SG5X
SIEMENS	D3 D6 D7 D8 SG11 SG14
 Acciona <small>Windpower</small>	AW1500 AW3000 N155
MITSUBISHI 	MWT600 MWT2400

Vestas	V4X V5X V8X V9X V112 V117 V136 V150 V164 V236
	GE1.5 GE2.5 GE HAL-150 GE HAL-X
SUZLON	S88 S111 S120

HNE is the leading hydraulic & cooling expert in the Wind industry providing the best components and systems for renewable energy companies. The company's in-house technology team, extensive R&D portfolio and global manufacturing capabilities deliver competitive hydraulic solutions to customers worldwide. It has production sites in China, Spain, USA, Brazil, India, and Mexico.