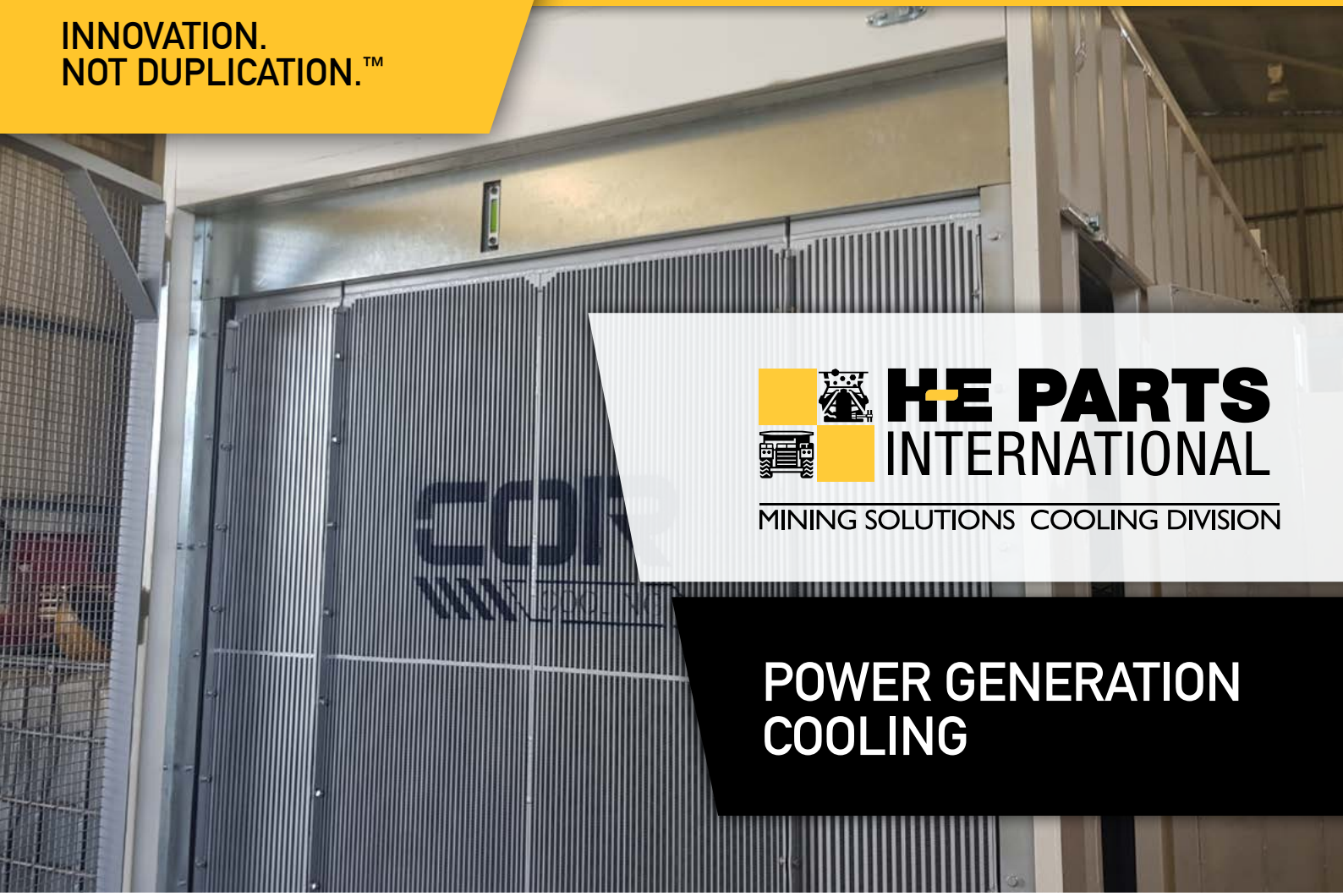
INNOVATION.
NOT DUPLICATION.™



H-E PARTS INTERNATIONAL

MINING SOLUTIONS COOLING DIVISION

# POWER GENERATION COOLING

**H-E PARTS MINING SOLUTIONS COOLING DIVISION (H-E PARTS) ARE A LEADING PROVIDER OF RELIABLE, APPLICATION SPECIFIC HEAT TRANSFER SOLUTIONS. H-E PARTS MANUFACTURE AND SUPPLY HIGH QUALITY, INNOVATIVE PRODUCTS THAT ARE TAILORED TO OUR CUSTOMERS SPECIFIC REQUIREMENTS. H-E PARTS INHOUSE ENGINEERING, PRODUCT AND SERVICE OFFERINGS, GUARANTEE WE SUPPORT CUSTOMERS THROUGHOUT THE FULL PRODUCT LIFECYCLE AND ENSURES THE LOWEST TOTAL COST OF OWNERSHIP IS ACHIEVED.**

An industrial power generation solutions provider based in Western Australia, approached H-E Parts to provide a solution to excess heat in their container gensets. The OEM supplied fans were designed for cooler regions with an ambient temperature of 25°C (77°F). With the customers gensets predominately used on Australian mine sites where the ambient temperature is as high as 50°C (122°F), the fans weren't cooling as needed and as a result the engine powering the genset was not performing as expected. Due to regular overheating issues, the engine was being reduced to operate at 75% to prevent component failure and excess heat build-up in the containers.

## STAGE ONE

To rectify these issues, H-E Parts engineering team undertook a complete redesign and modification of the existing cooling set up which included:

- Resizing air flow components to suit the applications 50°C ( 122°F) ambient temperature by installing twin 990mm (39in) fans and motors to the roof of the genset
- Redirecting air flow direction for greater efficiency by mounting two small canopy extraction fans to the side of the container
- Redesigning the existing layout for greater structural durability

The supplied custom-built assembly allowed for higher air flow rates (over 26.8 m3/s) when compared to the previously installed OEM assembly (17.2 m3/s).

## STAGE ONE RESULTS

As a result of the new configuration, the engine in the container is now able to operate at maximum load without overheating awarding the customer a safer environment, prevention of premature component failure along with cost savings associated with a reduction in fuel consumption. The customer was impressed with the improvements made in stage one, so much so that they ordered another six sets of the modified layout for another six container gensets.

# COMPLETE COOLING SOLUTIONS

## STAGE TWO

After the success of stage one, the customer approached H-E Parts again to provide an upgraded assembly configuration for the entire container genset.

H-E Parts replaced the current OEM sandwich style cooling pack that was notorious for being hard to clean and expensive to run, with a custom designed COR Cooling™ bar and plate, single core style, in-line cooling pack. The COR Cooling™ cooling pack has a heavy-duty bar and plate design with a fully welded aluminum configuration that offers a robust and more efficient solution for many applications. The configuration is anodized for higher protection against corrosion, low fins per inch (FPI) for the ease of cleaning and is fully serviceable.

H-E Parts genset upgrade also includes:

- A large built-in roof fan to replace the two smaller fans requiring less power draw and resulting in a more efficient cooling assembly
- 2 x COR Cooling™ charge air coolers (CAC's), for a more efficient cooling assembly


COR Cooling™ container assembly

## STAGE TWO RESULTS

The change from an aftercooler to an intercooler ensured a more efficient heat dissipation that resulted in substantial fuel savings. As a result of the successes in stage one and two, the customer continues to convert their container gen sets.

H-E Parts understand the importance of accurate and reliable cooling and heat transfer solutions to suit the harsh and unique environments your equipment operates under. Our experience in application specific solutions assists our customers to avoid costly machine breakdowns caused by inappropriate or ineffective cooling systems. This results in lower maintenance costs and more machine uptime, increasing productivity.


Complete genset with COR Cooling™ assembly installed

| | OEM | H-E PARTS | IMPROVEMENT % |
|---|---|---|---|
| AIR FLOW RATE | 17.2 m3/sec @ 125Pa | 26.8 m3/sec @125Pa | 55.8% |