



A joint venture of Chrysler LLC, Hyundai and Mitsubishi Motors

INDUSTRY RECOGNITION

Global Engine Manufacturing Alliance LLC has received some very significant recognition in our short time as a company. A few of these are:

- Top Plant, *Plant Engineering Magazine* (2007)
- Shingo Silver Medallion Recipient for Manufacturing Excellence (2008)
- Environmental Achievement Award from the Environmental Management Association (2006)
- 2007 North American Harbour Report – The Global Engine Manufacturing Alliance in Dundee, MI., finished a respectable third in its 1st year building engines in an average 2.68 hours each..

CORPORATION

Global Engine Manufacturing Alliance (GEMA) is a joint venture comprised of Chrysler LLC, Hyundai Motor Corporation (HMC), and Mitsubishi Motors Company (MMC). The partnership leverages the extensive resources of each company to create and use best-practice flexible manufacturing processes, advanced automation and leading-edge technology. The result is that the partners, relying upon their collective strengths, have joined forces in an historic effort that combines automotive innovation, a culture of embracing diversity of thought and background, and cooperation at an unprecedented level between team members and management.

The launch team benchmarked organizations from around the world, looking at three key areas: Process/People, Products and Safety.

- Education, selective hiring – ensures a 'fit' into high-performance environment
- Empowered teams – decision-making at lowest possible level
- Alignment around common company goals (Strategy Deployment)
- Standard work (SWI's) – developed and

written by experts (the team)

- Partnerships with subject-matter experts, focused company resources
- Safety – ownership at every level

With the three partners actively involved at GEMA, the full capability of Chrysler, HMC and MMC could be leveraged by focusing on manufacturing flexibility. With each partner sharing the same World Engine design, the joint venture can potentially ship to any Chrysler, HMC or MMC vehicle plant worldwide. All three companies regularly exchange knowledge (Key Performance Indicators) pertaining to Quality, Warranty and Processing Methods.

GEMA creates value for its parent companies by focusing on engine assembly and the machining only three main engine components. GEMA is considered a "3C" machining facility, manufacturing only Cylinder blocks, Cylinder heads, and Crankshafts. The stated capacity of each plant is 420,000 units for a total of 840,000 annually. Currently, the North facility is at full production and is managed by a leadership team representing each of the parent companies – 17 from Chrysler, 2 from MMC and 2 from HMC.

PLANT



GEMA broke ground in April of 2003 on a facility comprising 486,917 ft². The facility launched volume production on October 3rd, 2005. Since then, GEMA has expanded its operations by adding a South plant – which is a mirror image of the North plant. This creates a combined facility with over 1,159,000 ft² of manufacturing, office and material handling space. The South

plant launched production in October 2006. Both the North and South plants produce the same engine family and even use the same manpower. Special care was taken to ensure that the machinery and processes were identical -- North plant Best Practices in design and processing were incorporated into the South plant equipment design and processing.

PEOPLE

The Dundee facility is comprised of approximately 600 team members who excelled in rigorous selection processes and learned to strengthen GEMA's robust team support systems. Our multi-skilled workforce completes internal certifications to achieve our "4A" goal of developing the team so that **Anyone, Anywhere, can do Anything, at Anytime.**

Anyone

Each person in the plant is a member of TEAM GEMA and contributes to our team.

Anywhere

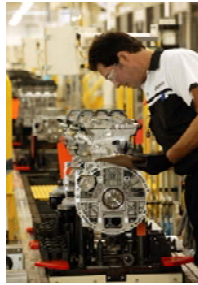
We will rotate through the machining and assembly departments in the plant.

Anything

Cross-training will help ensure that we have the knowledge and skills to do what is needed.

Anytime

Crews rotate work schedules. Everyone pitches in to help anytime.



All of the Team Members at GEMA have one important goal.....*"to build the **Greatest Engines Made Anywhere...**"*

PROCESS

The GEMA Production System consists of 6 foundational beliefs: Focus on the Core Business, Lean Principles and Methods applied to Everything, Problem Finding & Solving Culture, Control the Inputs – Monitor the Outputs, a Continuous Learning Organization and a Cross Functional team Based Structure. This last point is reflected in our 4A Philosophy that **Anyone, Anywhere, can do Anything, at Anytime.**

Flexible manufacturing processes allow us to

manufacture four different engine displacements with one investment in machining and assembly equipment and machines. GEMA is also flexible enough to quickly change production to meet the requirements of our customers.

PRODUCT



GEMA is part of a seven-factory global venture that builds a family of 1.8-liter, 2.0-liter, 2.4-liter, and 2.4-liter Turbo engines jointly-developed by Chrysler, HMC and MMC. This engine is often referred to as the "World Engine". When all seven plants are fully operational, the combined project will be the largest engine manufacturing operation in the world. Annual capacity will approach 2.2 million units, including the two GEMA facilities in Dundee, Michigan:

- Asan and Hwasung, South Korea
- Shandong, China,
- Montgomery, Alabama
- Shiga, Japan

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