EMERGENCY GENERATOR

http://www.gpckorea.com
**About GPC**

**Green Power Corporation**

Since our establishment in 2002, GPC has worked with endless effort to realize innovations in management to lead the industry with new technologies and products. GPC has become the world’s No.1 Emergency Generator manufacturer and demonstrated boundless imagination and technical capability in marine emergency generator sets.

All GPC Members are creating the world’s best products and services and are constantly pursuing innovations and challenges with the pride as contributors to industrial development and society.

We ask for your continuous support in our efforts to deliver the best technology and products for our customers.
History

2002.08 Establishment
2002.11 Vendor of Daewoo Shipbuilding Marine Engineering Co.
2004.05 Vendor of Hyundai Mipo Dockyard, Samsung Heavy Industries
2005.02 Vendor of Hyundai Heavy Industries Co.
2006.10 Production of Emergency Gen-Set for LNG Ship for SHI
2007.05 Production of Dead Ship Gen-Set for Drill-rig
2007.09 Relocated Plant & Office to GIMHAE
2008.06 New Line-up with Doosan Infracore Marine Diesel Engine
2008.12 Delivery of Emergency Gen-Set to Japanese shipyard
2009.06 Development of Digital Type Control Panel for Emergency Gen-Set
2010.05 Delivery of VSP Gen-Set Package for WHRP Platform
2011.05 Approval of Japanese Government Regulation for Car/Ferry Vessel
2012.06 Delivery of Harbour Gen-Set with MAN D2842 Engines
2012.12 Awarded “World Class Product of Korea” by Korean Government
2013.07 New Line-up with MTU Marine Diesel Engine
2014.12 Delivery of 1,100kW(RMRS) Emergency Gen-Set for Arctic LNG Carrier
2015.04 Delivery of MTU Model Remote Radiator Type Gen-Set
2017.03 Awarded “Small Giant Company Korea 2017” by Korean Government
2018.01 New Line-up with WEICHAI Diesel Engine for below 100kW Gen-set
Organization

CEO

Q.A. Team
• Quality Control
• Safety Management
• Commissioning

Audit

Sales Team
• Preparing Quotation
• A/S

Management Team
• Planning
• Accounting

Production Team
• Assembly
• Manufacturing

Procurement Team
• Purchasing
• Logistics

Research and Design Team
• Engineering & BM
• Draft
• Test
• Commissioning

• Office Main Number : +82-55-343-9870
Sales Team - Korean Market : +82-55-343-9874
Sales Team - Overseas Market : +82-55-343-9878
Q.A Team : +82-70-5056-6464
Outline of Emergency Generator

- Emergency Generator Set (150kW, 60Hz)
- Digital Type Control Panel

Components:
- Expansion Joint
- Turbocharger
- Thermostat Valve
- AC Alternator
- Battery Charger
- Digital Type Control Panel
- Radiator
- Common Bed
- Electric Starting Motor (Primary Starter)
- Spring Starter (Secondary Starter)
- Vibration Isolator
- Battery Switch Box
- Battery with Box
## Characteristics of Emergency Generator

### Special Requirements for Emergency Generator

- **PRIME MOVER**
  - Marine Prime Rating
  - High Speed Diesel Engine
  - Variety of Options

- **DUAL STARTING SYSTEM**
- **AUTHORIZED CLASS SOCIETY CERTIFICATION**
- **TECHNICAL DOCUMENT**
  - Discussion / Approval / Working / Final Drawing

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### PROFESSIONAL ENGINEERING COMPANY

- **CUSTOMER ORIENTED**
- **DEVELOPING PROJECT EXECUTION**
  - On time
  - Meet Budget
- **CUSTOMER ACCEPTANCE AND FEED-BACK SYSTEM**
- **ACTIVE QUALITY AND PROCESS**
  - Improvement System
# Specification of Generators

## Powered by DOOSAN INFRACORE Engines

### Emergency Generator Set

<table>
<thead>
<tr>
<th>Gen-Set Ratings (kW)</th>
<th>Diesel Engine</th>
<th>Dimension L x W x H (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model</td>
<td>Output (kW)</td>
<td></td>
</tr>
<tr>
<td>100 ~ 125</td>
<td>AD136TI</td>
<td>138</td>
<td>2,750×950×1,450</td>
</tr>
<tr>
<td>126 ~ 165</td>
<td>AD086TI</td>
<td>186</td>
<td>2,910×950×1,550</td>
</tr>
<tr>
<td>166 ~ 220</td>
<td>AD126TI</td>
<td>247</td>
<td>3,300×1,150×1,550</td>
</tr>
<tr>
<td>221 ~ 270</td>
<td>4AD126TI</td>
<td>302</td>
<td>3,400×1,150×1,600</td>
</tr>
<tr>
<td>271 ~ 320</td>
<td>AD158TI</td>
<td>353</td>
<td>3,450×1,400×1,800</td>
</tr>
<tr>
<td>321 ~ 400</td>
<td>AD180TI</td>
<td>441</td>
<td>3,500×1,400×1,850</td>
</tr>
<tr>
<td>401 ~ 500</td>
<td>AD222TI</td>
<td>530</td>
<td>3,800×1,400×1,950</td>
</tr>
</tbody>
</table>

## Powered by WEICHAI Engines

### Emergency Generator Set

<table>
<thead>
<tr>
<th>Gen-Set Ratings (kW)</th>
<th>Diesel Engine</th>
<th>Dimension L x W x H (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model</td>
<td>Output (kW)</td>
<td></td>
</tr>
<tr>
<td>30 ~ 40</td>
<td>WP4CD55E201</td>
<td>50</td>
<td>2,300×900×1,400</td>
</tr>
<tr>
<td>41 ~ 50</td>
<td>WP4CD66E201</td>
<td>60</td>
<td>2,300×900×1,400</td>
</tr>
<tr>
<td>51 ~ 80</td>
<td>WP4CD100E201</td>
<td>90</td>
<td>2,400×900×1,400</td>
</tr>
</tbody>
</table>

- 60Hz, 1,800rpm, AC450V, IP23, Insulation Class “H”
- with Temperature Rise Class “F”
## Specification of Generators

### Powered by CUMMINS Engines

**Emergency Generator Set**

<table>
<thead>
<tr>
<th>Gen-Set Ratings (kW)</th>
<th>Diesel Engine</th>
<th>Output (kW)</th>
<th>Dimension L x W x H (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>600 ~ 910</td>
<td>KTA38DM</td>
<td>1,007</td>
<td>5,200×1,850×2,650</td>
<td>8,000</td>
</tr>
<tr>
<td>911 ~ 1,100</td>
<td>KTA50DM</td>
<td>1,220</td>
<td>6,000×1,850×2,650</td>
<td>11,500</td>
</tr>
<tr>
<td>1,101 ~ 1,500</td>
<td>QSK50DM1</td>
<td>1,628</td>
<td>7,000×2,500×2,950</td>
<td>14,800</td>
</tr>
<tr>
<td>1,501 ~ 1,800</td>
<td>QSK60DM</td>
<td>2,000</td>
<td>7,200×2,500×2,950</td>
<td>17,000</td>
</tr>
</tbody>
</table>

### Powered by MTU Engines

**Emergency Generator Set**

<table>
<thead>
<tr>
<th>Gen-Set Ratings (kW)</th>
<th>Diesel Engine</th>
<th>Output (kW)</th>
<th>Dimension L x W x H (mm)</th>
<th>Weight (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 ~ 630</td>
<td>12V 2000 P82</td>
<td>695</td>
<td>4,450×2,100×2,650</td>
<td>6,600</td>
</tr>
<tr>
<td>631 ~ 850</td>
<td>16V 2000 P82</td>
<td>930</td>
<td>5,100×2,450×3,150</td>
<td>8,500</td>
</tr>
<tr>
<td>851 ~ 1,500</td>
<td>12V 4000 P83</td>
<td>1,680</td>
<td>6,400×3,800×2,750</td>
<td>13,800</td>
</tr>
<tr>
<td>1,501 ~ 1,950</td>
<td>16V 4000 P83</td>
<td>2,240</td>
<td>6,650×3,800×2,750</td>
<td>15,500</td>
</tr>
<tr>
<td>1,951 ~ 2,500</td>
<td>20V 4000 P83</td>
<td>2,800</td>
<td>8,500×3,800×3,600</td>
<td>21,200</td>
</tr>
</tbody>
</table>

- 60Hz, 1,800rpm, AC450V, IP23, Insulation Class “H” with Temperature Rise Class “F”
## Secondary Starting System

※ Primary Starting Method: Electric Battery System

<table>
<thead>
<tr>
<th>Output (kW)</th>
<th>30 ~ 80</th>
<th>100 ~ 165</th>
<th>180 ~ 270</th>
<th>300 ~ 500</th>
<th>550 ~</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Green: Maker Standard
- Yellow: Maker Option

- <Spring Starter>
- <Hydraulic Starter – Prestolite type>
- <Hydraulic Starter - Hydrotor type>
- <Compressed Air Starter>
# Suppliers of Parts

<table>
<thead>
<tr>
<th>Unit Name</th>
<th>Supplier</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diesel Engine</td>
<td>DOOSAN INFRACORE CUMMINS</td>
<td>KOREA, UK/USA, GER, CHINA</td>
</tr>
<tr>
<td></td>
<td>DOOSAN</td>
<td></td>
</tr>
<tr>
<td></td>
<td>INFRACORE</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CUMMINS MTU WEICHAI</td>
<td></td>
</tr>
<tr>
<td>Alternator</td>
<td>NIDEC LEROY SOMER CUMMINS GENERATOR</td>
<td>JAPAN, UK</td>
</tr>
<tr>
<td>Hydraulic Starting</td>
<td>PRESTOLITE KTI IPU GALI</td>
<td>UK, USA, UK, SPAIN</td>
</tr>
<tr>
<td>Air Starting</td>
<td>TDI IPU GALI Ingasol Rand</td>
<td>USA, UK, SPAIN, USA</td>
</tr>
<tr>
<td>Spring Starting</td>
<td>STARTWELL</td>
<td>UK</td>
</tr>
<tr>
<td>Vibration Isolator</td>
<td>TRELLEBORG</td>
<td>UK</td>
</tr>
<tr>
<td>Control Panel</td>
<td>KMC</td>
<td>KOREA</td>
</tr>
<tr>
<td>Radiator</td>
<td>DAEHEUNG RADIATOR</td>
<td>KOREA</td>
</tr>
<tr>
<td>Common Bed</td>
<td>DOOSUNG</td>
<td>KOREA</td>
</tr>
</tbody>
</table>
Business Procedure

1. Maker List
2. Ship Contract
3. Issue POR
4. Quotation
5. Deviation Check
6. Approval of Ship-owner
7. Contract
8. Approval
9. Delivery
10. Sea trial Support

- Basic System Drawing
- Standard Price List
- Price
- Supply Scope
- Deviation List
- Working Drawing
- Class Certification
- Final Drawing
- Instruction Manual
Production Process

Sales
- Promotion Documentation
  - Approval Drawing
  - Working Drawing

Engineering
- BOM
- Production Drawing
  - Torsional Vibration Calculation

Part Purchasing
- Engine
  - Alternator
  - Radiator
  - Control Panel
  - Starter

Assembly by
- Generator Set
  - Class Certificate
  - Final Documentation

Paint
Test
Delivery
Site Test
A/S
Facility

1. Facility Site 3,000 m²
   Workshop & Test area 1,000 m²
   Office 170 m²

2. Lift Capacity 15 ton Crane, 10 ton Crane

3. Test Equipment 5 Sets
   3.1 Control Panel & Resistor Load Bank: Total 3,000kW
   3.2 Temperature and Pressure Alarm Tester
   3.3 Graphic Recorder for Governor Test, Vibrationmeter etc.

4. Assembly Torque Wrench etc

5. Paint Booth 50 m²

6. Production Capacity 600 Sets / year

7. ISO Certificate ISO9001 since 2003

8. Address
   #217 Jinsan-daero, Jinyeong-eup, Gimhae, Gyeongnam, Korea
   Tel: +82 55 343 9870, Fax: +82 55 343 9875, E-mail: gpc@korea.com
Suggestions

ACTIVITY OF GPC

- SATISFYING TO EXPECTATIONS OF CUSTOMERS
- MORE COMPACT SIZE
- VARIETY OF OPTIONS
- MINIMUM OVER-HEAD COST

THE WORLD RENOWNED
EMERGENCY GENERATOR MANUFACTURE

ADVANTAGES OF PURCHASE

- EMERGENCY GENERATOR SET AT REASONABLE PRICE
- SAVING LABOR FROM STANDARDIZATION
- JUST ON TIME