Corporate profile

Doosan Infracore ranks among the world’s leading makers of construction equipment, machine tools and engines required to build and maintain infrastructure. We were founded in 1937 and have since achieved an unrivalled position in the world. In the 1990s, we has grown to become a truly global player through technological advancements, acquisitions and new product development.

Doosan Infracore built a global network of large production facilities and sales subsidiaries, along with extensive dealer networks in all regions of the world including North America, Europe and China. Doosan Infracore continues to secure the latest products and technologies in line with the growing demand for green engines and boosting customer value.

Introduction of Engine Business Group

The history of the Doosan Infracore Engine BG goes back to 1958 by offering diesel engines, and the unit today produces and supplies diesel and natural gas engines with high-performance and fuel-efficiency for commercial vehicles, military vehicles, construction equipment, generators and ships around the world. Doosan Infracore is emerging as a global engine producer by developing a full line-up of diesel and gas models that meet increasingly strict environmental regulatory standards.

With the introduction of our new compact diesel Tier 4 final and EU Stage IIIIB & IV compliant engines, Doosan Infracore is positioned to become one of the world’s top 5 engine makers with advanced environmentally-friendly technology.

1950’s

1958 Marine Engine (AVL)

1970’s

1975 Medium duty Engines (MAN license) - D0846, D2156

1979 Light duty Engines (ISUZU license) - 4BA1, 6BB1 (2.8, 5.4L)

1980’s

1983 Large Engines (MAN license) - 220 Series (15, 18, 22L)

1985 STORM engine, (the first in-house designed model, 8, 13L)

1986 Iron Medal of Industry with STORM engine (Honor of President/ Korea)

1988 Small Engines - 3401, C333, C240, ABC2 (1.8, 2.2, 2.4, 3.3L)

1990’s

1994 Acquire ISO 9001/9002

1995 ‘DE & DV’ series (6, 13L, 15L)

1996 Grand Prix of Quality Control (Honor of President/ Korea)

1997 Grand Prix of Quality Management (Honor of President/ Korea) Acquire ISO 14001

1999 ‘GE’ series - CNG engine for city bus (112)

2000’s

2000 Best Award on Engine with GE12TI engine (M952000)

2001 Tier II engine

2004 Euro III engine with Common-rail system

2006 GM Group Supplier of the Year (SGV) award

2007 Euro IV engine

2008 CNG engine assembly plant in Atlanta - US07 certified

2009 Joint Venture with XCMG in China - XDEC

2010’s

2010 Euro V engine, US10 CNG engine (supplied to LA Metro Bus)

2011 Tier IV interim engine

2012 XDEC, start of production

2013 Engine plant in China

2014 Start of production of Doosan Compact Diesel Engines (1.2, 1.8, 2.4L)

2012 GM Group Supplier of the Year (SGV)

2015 GM Group Supplier of the Year (SGV) award
**Introduction of CASKOD**

Caskod was a division of Doosan Infracore that spun-off and had been established as an employee ownership corporation on February 2001. In 1975, engine parts casting plant started as Korea's first manufacturer of engine blocks and heads which are the core components of diesel engines. The primary business area specializes in engine block, head, hydraulic parts of casting iron. As for major clients, Caskod supplies over 50 types totaling 1.5 million parts to Doosan Infracore, GM-Korea, KVB, Motrol company. Caskod makes an effort to offer a complete guarantee of product's quality and delivery through the certification of ISO9001, TS16949, ISO14001.

### Product Line-Up

<table>
<thead>
<tr>
<th>Type</th>
<th>Displacement (CC)</th>
<th>Material</th>
<th>Weight (Kg)</th>
<th>Engine</th>
</tr>
</thead>
<tbody>
<tr>
<td>D24</td>
<td>2,400</td>
<td>FC25</td>
<td>70</td>
<td>Forklift, Industrial Vehicle</td>
</tr>
<tr>
<td>FAMZ</td>
<td>2,000</td>
<td>FC25</td>
<td>90</td>
<td>Passenger car</td>
</tr>
<tr>
<td>GEN III</td>
<td>1,400</td>
<td>FC25</td>
<td>90</td>
<td>Passenger car</td>
</tr>
<tr>
<td>DLOG6</td>
<td>5,900</td>
<td>FC25</td>
<td>185</td>
<td>Excavator, Marine E/G, Generator</td>
</tr>
<tr>
<td>DLOG8</td>
<td>7,600</td>
<td>FC25</td>
<td>260</td>
<td>Excavator, Truck, Bus</td>
</tr>
<tr>
<td>D2862</td>
<td>22,000</td>
<td>FC25</td>
<td>420</td>
<td>Marine E/G, Generator</td>
</tr>
</tbody>
</table>

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**1970’s**
- 1975: New foundry shop in Incheon (Medium duty Diesel engine Cylinder Block & Head)
- 1981: Light Duty Diesel engine Cylinder Block & Head
- 1986: Gasoline engine Cylinder Block for passenger car(7 & 11 & 13 L)

**1980’s**
- 1981: Export Diesel engine Cylinder Block to Japan (Suzuki Motors, Nissan Diesel)

**1990’s**
- 1991: CASKO employee buy out from Doosan Infracore Production part
- 1991: Gasoline engine Cylinder Block for small passenger car(T4 1.0L & 1.1L)
- 1995: Diesel engine Cylinder Block & Head for D(Tier I)
- 1991: Export Diesel engine Cylinder Block to Japan (ISUZU Motors, NISSAN Diesel)

**2000’s**
- 2001: Diesel engine Cylinder Block for Doosan Infracore (Euro IV)
- 2001: Gasoline engine Cylinder Block for small passenger car(74 1.0L & 1.1L)
- 2002: Diesel engine Cylinder Block for Kia Motors (K6 6.2L)
- 2003: Diesel engine Cylinder Block & Head for Doosan Infracore (Tier II)
- 2004: Diesel engine Cylinder Block for GM-Korea (EURO IV VM 2.0L/2.2L)
- 2005: Proto type Diesel engine Cylinder Block for Hyundai Motor(Y 3.1L)
- 2006: Diesel engine Cylinder Block for Doosan Infracore (Euro IV)
- 2007: GM Group Supplier of the Year(SOD) award
- 2008: Proto type Diesel engine Cylinder Block for Doosan Infracore (Euro III Common rail)
- 2009: Diesel engine Cylinder Block for GM-Korea (Euro IV VM 2.0L/2.2L)

**2010’s**
- 2010: Diesel engine Cylinder Block for Doosan Infracore (Euro V)
- 2011: Diesel engine Cylinder Block for Doosan Infracore (Tier IV)
- 2012: Compact Diesel engine Cylinder Block & Head for Doosan Infracore (G2 1.8L/2.4L/3.6L)
- 2015: GM Group Supplier of the Year(SOD) award
- 2016: Gasoline engine Cylinder Block for GM-Korea (GEN-III 1.4L/1.6L/1.8L)
- 2017: Proto type Diesel engine Cylinder Block for GM-Korea (GEN III 3.0L)
- 2018: Diesel engine Cylinder Block for Doosan Infracore (Euro II)
<table>
<thead>
<tr>
<th>Process</th>
<th>Facilities</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting Line</td>
<td>Melting Furnace</td>
<td>Capa : 13 Ton/Hr</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2Power 3 Body, 1Power 2 Body</td>
</tr>
<tr>
<td>Molding Line</td>
<td>Auto Molding M/C for Green Sand</td>
<td>Capa : 46 Molds/Hr</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Flask Size : 1,200 × 900 × 380/380</td>
</tr>
<tr>
<td></td>
<td>Furan Molding &amp; Hot Box Line</td>
<td>Flask Size : 1,600 × 1,200 × 450/450 (non-fixed)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1,000 × 700 × 250/200 (fixed)</td>
</tr>
<tr>
<td>Core Line</td>
<td>Facility for Resin coated Sand</td>
<td>Capa : 2.2 Ton/Hr</td>
</tr>
<tr>
<td></td>
<td>Core Making M/C</td>
<td>Shell Type : Electric &amp; LNG Type(22 units)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cold Box Type : 6 units</td>
</tr>
<tr>
<td></td>
<td>Core Dry Oven</td>
<td>Infrared Heating Dry oven, Microwave oven</td>
</tr>
<tr>
<td>Fettling Line</td>
<td>Shot Blast M/C</td>
<td>Cage Type : 2 units, Hanger Type : 1 units</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Internal Type : 1 unit</td>
</tr>
<tr>
<td></td>
<td>Shake-out manipulator</td>
<td>Gipser Type : 2 units</td>
</tr>
<tr>
<td>Sand Preparation</td>
<td>Mixer</td>
<td>Eirich Mixer(Stir Type), Capa : 90 Ton/Hr</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Auto Sand Control</td>
</tr>
<tr>
<td>Painting</td>
<td>Organic (water, thinner base)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>/Powder painting</td>
<td></td>
</tr>
</tbody>
</table>

[Quality Management]

ISO 9001
TS16949
ISO 14001

[Tool Design] Manufacturing and Development Cycle

Development Cycle

2D / 3D Component Design
Solidification Modeling
3D Coordinate Measuring
3D Mould Layout with Catia / UG
3D Design of Tooling with Catia / UG

Quality Management
Engine for Excavator, Wheel loader, Fork lift, Industrial vehicle, Generator, SUV, Passenger car, Truck, Bus