

2015

180 – 240 kW at 2,000 rpm

Gas

The engine company.



Any time, any place, any job.

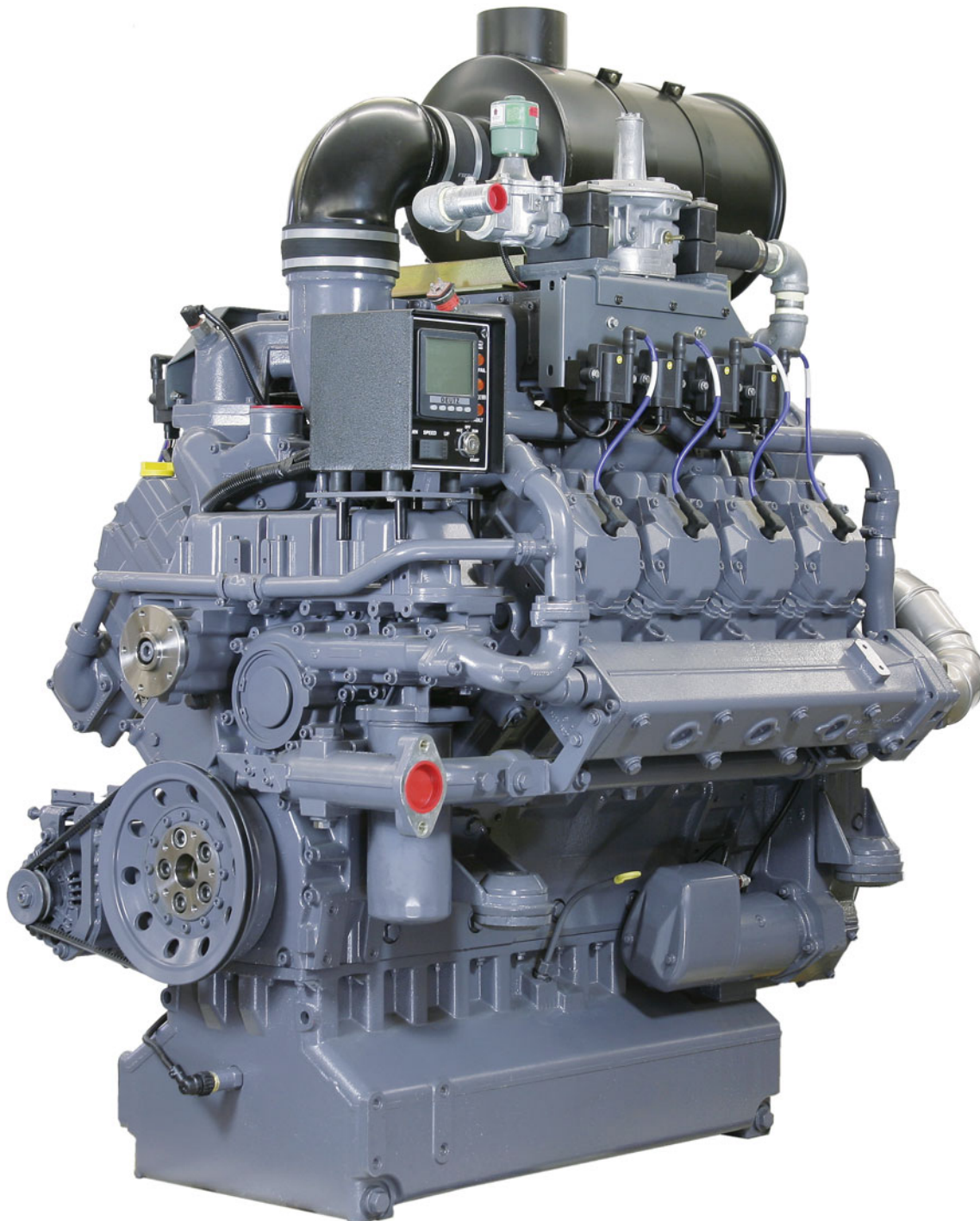
Over the years, our 2015 series has become one of the most widely versatile and trusted power plants worldwide.

To give our customers greater flexibility, we have introduced a turn-key gas version of this successful engine. These engines are targeted at the agricultural, oil and gas markets and applications that demand extremely robust and reliable engines for continuous duty operation.

Our compact designed, water-cooled 2015 Series engines fit the bill completely.

Whether as a 6- or 8-cylinder turbo charged engine (air-to-water charge-air-cooler) our power unit will solve all your drive problems in the 110 – 322 BHP (82 – 240 kW) power range.

The TCG 2015 Series engines can operate on natural gas or common liquid gasses such as propane. Propane requires a derating of approximately 30 percent. The use of proven and widely available components, such as Woodward, Deltec and Motorola, combined with our worldwide service network, ensures service is available at your convenience.



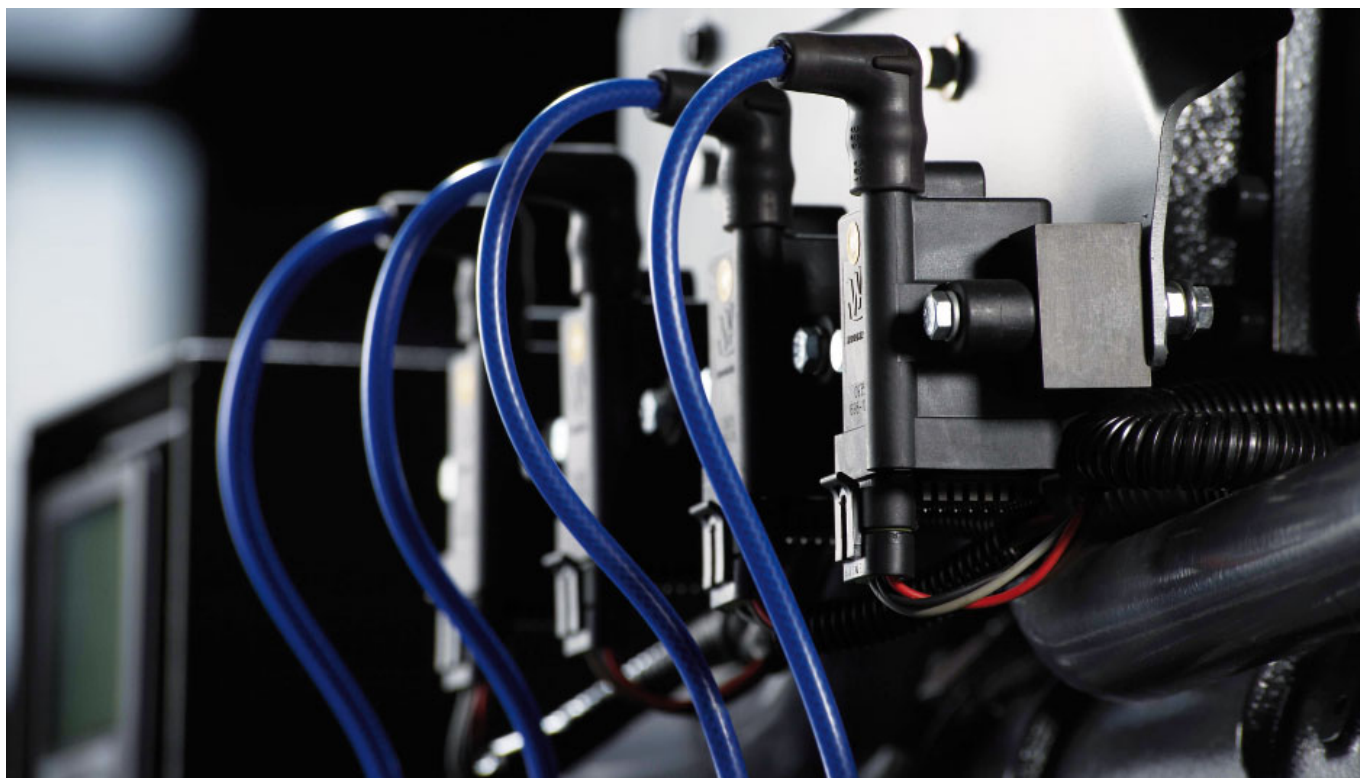
Our 2015 Series of liquid-cooled engines has gained a legendary name for reliability and durability. From the frozen reaches of Siberia to the deserts of Africa and the remote sheep stations of Australia, DEUTZ engines work under the harshest conditions, day after day, frequently in excess of up to 40,000 h without overhaul.

The gas versions of the 2015 Series use the same basic engine components as their well-proven diesel counterparts, with the exception of the cylinder heads and pistons,

charge-air-cooler and turbocharger, which are specifically designed for the gas application.

The modular design means a cylinder head or a cylinder liner can be replaced without distributing the neighboring units, which reduces downtime.

While extremely willing to perform, the 2015 Series is able to achieve a fuel consumption rate of 2.91 kWh/kWh (7,400 BTU/BHP-hr).



Using several of the heavy duty diesel engine components, the 2015 Series is versatile and produces the required power with either natural gas or propane. Propane requires a derating of approximately 30 percent.



The engine safety shut down control panel is functionally designed to provide all vital information on the engine speed, speed control, operating hours, battery voltage, oil pressure and oil temperature at a glance.



Alongside the mechanical reliability, we have used proven ancillary equipment for the highest dependability. State of the art ignition system, gas train and water resistant connectors combine to provide a trouble free installation in all climatic conditions.



Our gas throttle secures speed and load dependent air-fuel ratio, which guarantees constant low exhaust emissions values. Customers benefit from this clean combustion process, which does not require aftertreatment devices*. These low exhaust emission values help avoid costly exhaust gas after treatment.

*Local requirements may vary.

Features and Benefits

Individual coil packs for each cylinder

- Higher electrical performance, which leads to excellent start capabilities and high fuel efficiency.

One Controller Unit for the gas train and the ignition system, realizes one optimized mapping for the gas train and the ignition

- Offers quicker response, better step load acceptance and optimized fuel consumption

Off-Highway components

- High quality, long lasting components
- Leads to less down time and low operating cost

One cooling circuit

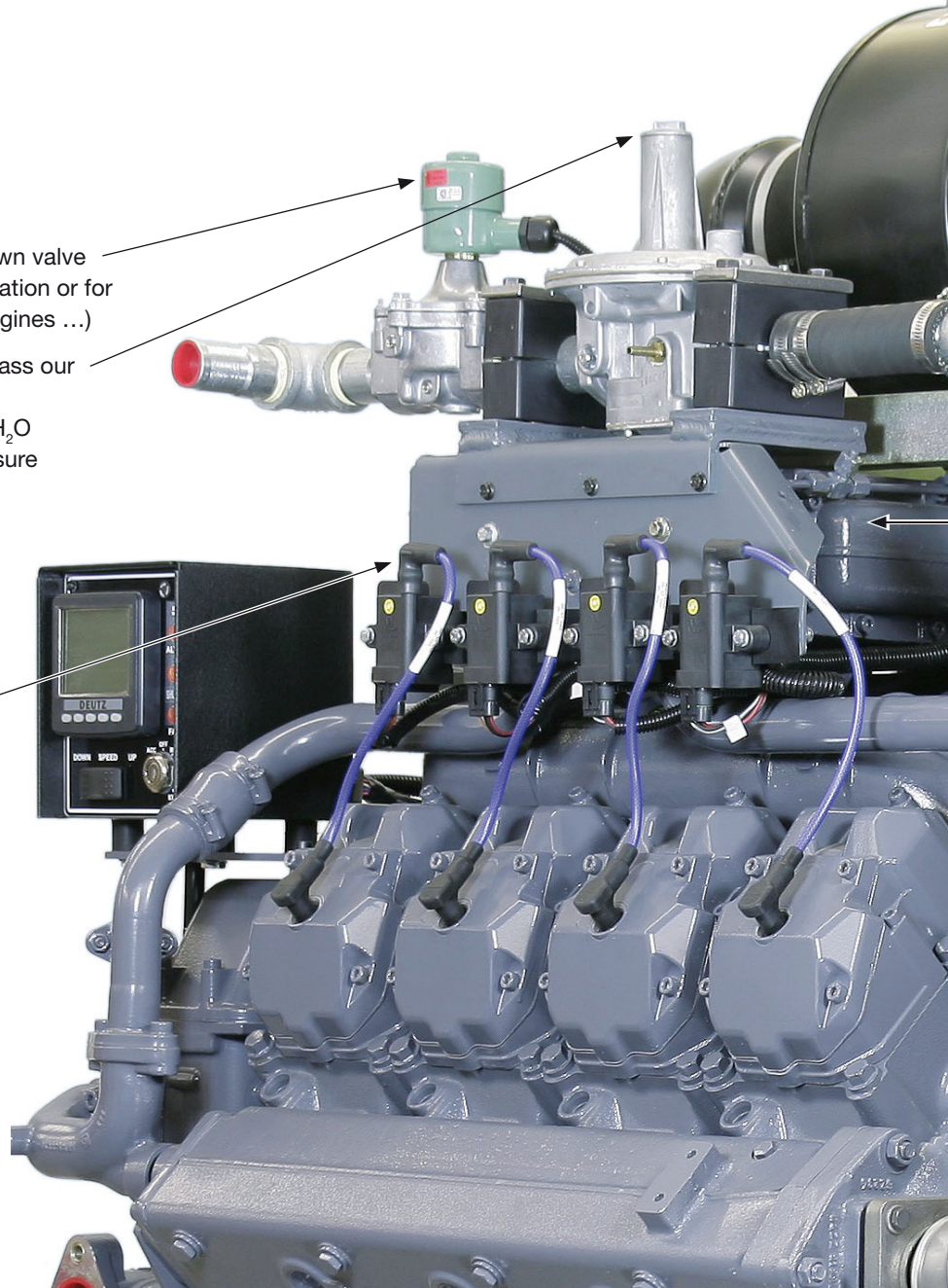
- Due to the use of a water-to-air charge air cooler it takes the 2015 only one water radiator to cool the entire engine

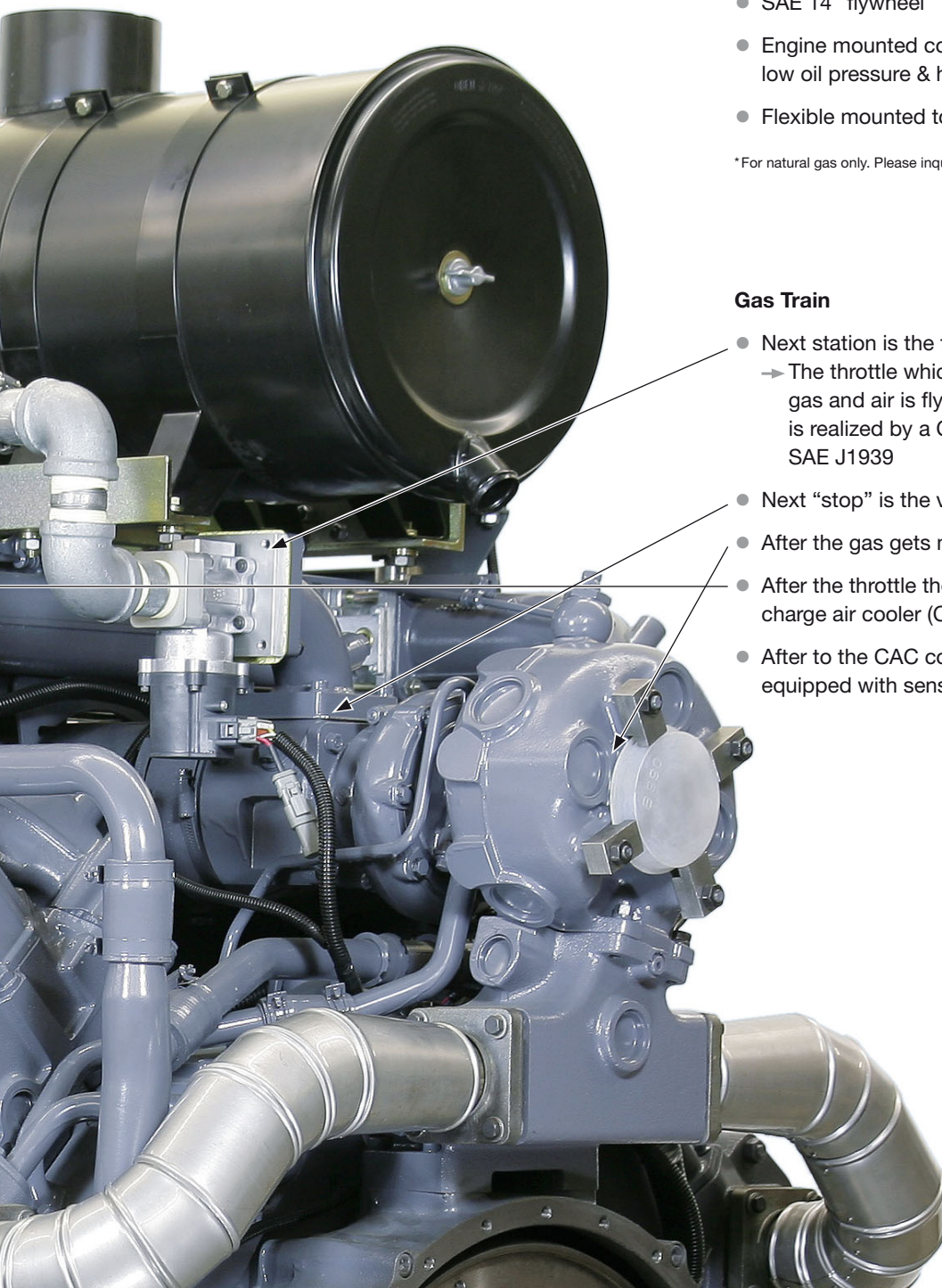
Gas Train

- Natural gas passes has to pass the shut down valve
 - Shuts the engine down after regular operation or for security reasons (e.g. low over heated engines ...)
- After the shut down device the gas has to pass our engine (pressure) regulator.
 - Reduces the gas pressure from 11–15" H₂O (27–37 mbar) down to atmospheric pressure (1,013 mbar)

Ignition system

- We use a fully electronic ignition system with no moving parts
- The current will be provided by individual coil packages





The Power Unit consists of:

- Basic engine
- 24 volt electric starter with charging alternator
- Completely assembled and wired ignition system
- Solid-state engine controller
- Programmable speed controller
- Engine mounted dry type air cleaner and turbo
- Wet exhaust manifold for combined heat and power application
- Engine gas control system includes shut off solenoid, pressure regulator and carburetor*
- SAE 1 flywheel housing
- SAE 14" flywheel
- Engine mounted control panel, with safety shutdowns for low oil pressure & high engine temperature
- Flexible mounted to a base frame for ease of installation

*For natural gas only. Please inquire different gas type.

Gas Train

- Next station is the throttle, for natural gas only
 - The throttle which pre regulates the mixture of natural gas and air is fly-by-wire operated. The entire control is realized by a CAN BUS protocol according to SAE J1939
- Next "stop" is the venturi, where gas and air gets mixed
- After the gas gets mixed, it pass the turbocharger
- After the throttle the mixture gets through the water-to-air charge air cooler (CAC)
- After to the CAC comes the inlet manifold which is equipped with sensors for pressure and temperature

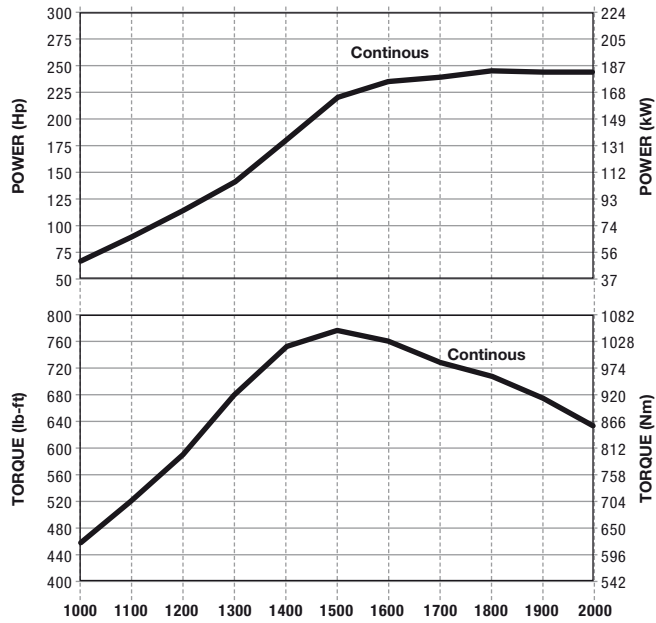
We are the strong heart of machines.

		TCG 2015 V6				TCG 2015 V8			
General data									
Cylinders		6				8			
Cylinder arrangement		V, 90 °				V, 90 °			
Bore	mm inch	132 5.2				132 5.2			
Stroke	mm inch	145 5.7				145 5.7			
Cylinder displacement	liter cin	2.0 121.1				2.0 121.1			
Total displacement	liter cin	11.9 726.5				15.9 968.7			
Compression ratio		12:01				12:01			
Aspiration		Turbo charged, Charge air cooled							
Gross power									
rpm*		1,000	1,500	1,800	2,000	1,000	1,500	1,800	2,000
kW		52	164	180	180	89	220	240	240
HP		70	220	241	241	120	295	322	322
Performance data									
Low idle speed	rpm	800				800			
Peak torque at 1,500 rpm	Nm ft-lb	1,043 769.2				1,400 1,032.4			
Fuel system									
Fuel type (standard)		Lean burn with zero pressure regulator Dry natural gas, minimum methane number is 70							
Pressure		11” to 15” water column							
Lower calorific value	BTU/ft3	950				950			
Gas/Fuel consumption at 2,000 rpm	kWh/kWh/ BTU/BHP-hr	3.14 7,985				3.14 7,985			
Cooling system									
		External radiator Heat exchanger							
Coolant flow rate at max. rpm	l/min GPM	466.0 123.1				600.0 158.5			
Heat rejection to coolant	kW BTU/s	181 172				245 232			
Coolant temperature	° C ° F	80 176.0				80 176.0			
Max. coolant temp at engine outlet	° C ° F	88 190.5				89 192.2			
Max. pressure drop accorss cooling system	bar psi	0.6 8.7				0.6 8.7			
Max. coolant operating pressure	bar psi	1.5 21.8				1.4 20.3			
Coolant volume in engine	liter qt.	34.0 35.6				46.0 48.2			
Expension tank capacity	25 % of the total coolant volume								
Physical data									
Weight, dry	kg lb.	995 2,194				1,290 2,844			
Max. bending force at flywheel housing	Nm ft-lb	1,300 958.7				1,300 958.7			
Max. axial force at flywheel	N lb	5,000 1,126.2				5,000 1,126.2			
Max. radial force at flywheel	N lb	10,000 2,252.3				10,000 2,252.3			

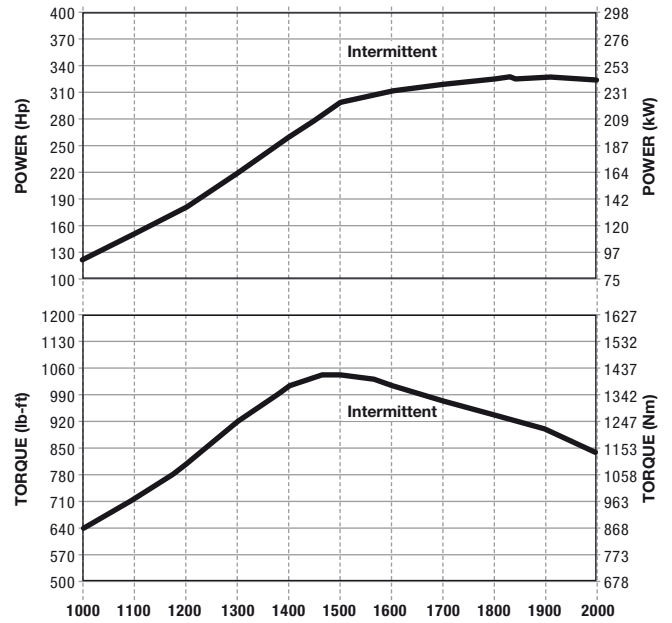
*Minimum continiuous running speed: 1,500 rpm

Engine Performance Curves

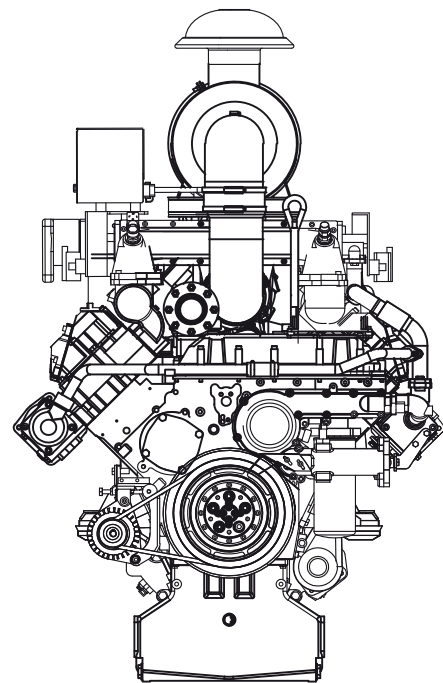
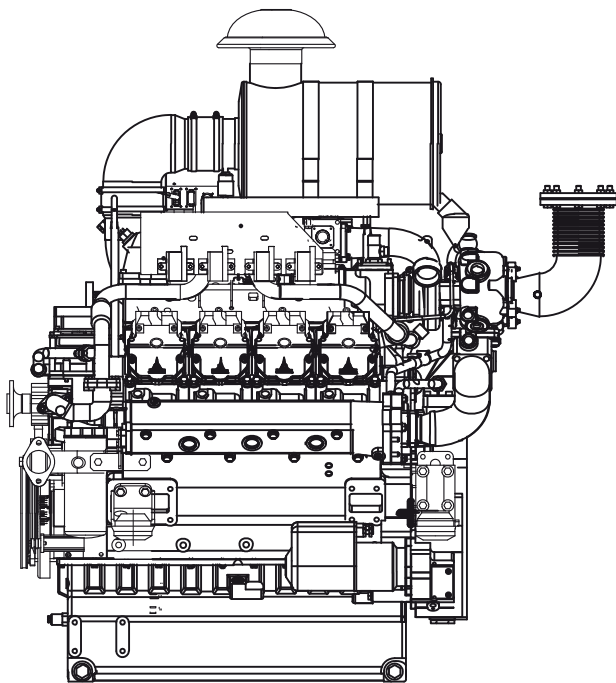
TCG 2015 V6



TCG 2015 V8



Dimensions



		TCG 2015 V6	TCG 2015 V8
A	mm inch	1409.0 55.47	1574.0 61.97
B	mm inch	1111.1 43.75	1110.6 43.73
C	mm inch	1756.5 69.15	1762.1 69.38

Global product support

Our customers demand highest product quality and a clearly calculable performance of our engines. Everywhere on Earth and under all conditions. We are geared up for this, because our service stands on a broad and solid basis.

680 DEUTZ Service Partners in 130 countries are available day and night, supported by our Logistics Center in which over 80,000 parts are stocked.

This guarantees an optimal support of all DEUTZ products over their entire service life. Our intensively trained and motivated service personnel deliver competent advice and assistance with all problems; individual service and maintenance contracts, fast delivery of spare parts, and excellent training facilities complete this offer.

Our 2015 series is serviced

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The engine company.

