



Operator Manual

Our energy working for you.™



4BT3.3G3 Engine Manual

with PowerCommand® 1.1

C20 D5R/D6R
C30 D5R/D6R
C35 D5R/D6R
C40 D5R/D6R
C50 D5R/D6R
C33 D5e
C38 D5e
C44 D5e
C55 D5e
C30 D6
C35 D6
C40 D6
C50 D6

FOREWORD

The purpose of this manual is to provide basic, Operator-level, information relevant to an engine when used as part of a stand-by generator set assembly. Should you require further, more detailed, information regarding the engine, please contact your authorised distributor.

This manual should be read in conjunction with the relevant PowerCommand® Manual supplied with the generator set documentation pack. It contains additional, generator set specific, information and should form part of the documentation package supplied with the generator set.

The information contained within this manual is based on information available at the time of going to print. In line with Cummins Power Generation Limited policy of continuous development and improvement, information may change at any time without notice. The Operators should therefore ensure that before commencing any work, they have the latest information available.

Should you require any further assistance contact:

Cummins Power Generation
1400 73rd Avenue NE
Minneapolis
MN 55432
USA

Cummins Power Generation
Columbus Avenue
Manston Park
Manston
Ramsgate
Kent CT12 5BF
United Kingdom

Cummins Power Generation
10 Toh Guan Road #07-01
TT International Tradepark
Singapore 608838

Tel:+1 (763) 574-5000
Fax:+1 (763) 574-5298

Tel:+44 (0) 1843 255000
Fax:+44 (0) 1843 255902

Tel: (65) 6417 2388
Fax:(65) 6417 2399

e-mail:pgamail@cummins.com

e-mail:cpgk.uk@cummins.com

e-mail: cpg.apmktg@cummins.com

Web: www.cumminspower.com

Web: www.cumminspower.com

Web: www.cumminspower.com

Cummins Power Generation
35A/1/2, Erandawana
Pune 411 038
India

Cummins Power Generation
Rua Jati, 310 - Cumbica
Guarulhos –SP
Brazil
CEP: 07180-900

Tel.: (91 020) 3024 8600
Fax: (91 020) 6602 8090

Tel.: (55 11) 2186 4195
Fax: (55 11) 2186 4729

e-mail:
cpgiservicesupport@cummins.com

e-mail: falecom@cumminspower.com.br

Web: www.cumminspower.com

Web: www.cumminspower.com



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SECTION 1 – ENGINE DATA

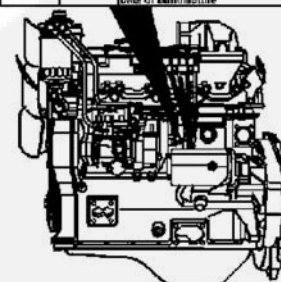
1. Engine Data

1.1 Engine Identification Plate

Each engine is provided with a Data Plate as shown below. This provides information unique to the engine.

The engine data plate shows specific information about your engine. The Engine Serial Number (ESN) (1) and Control Parts List (CPL) (2) provide information for ordering parts and service needs.

 Cummins Engine Company, Inc. Columbus, Indiana 47202-3005 www.cummins.com	Important Engine Information Model B3.3 ESN	
	Gross rated HP/kw at rpm	Low Idle RPM RPM
Warning: Injury may result and warranty is voided if fuel rate, rpm, or altitudes exceed published maximum values for this model and application.	Fuel Rating CPL	
This engine conforms to 1999 U.S. EPA and California regulations for large non-road compression ignition engines as applicable. This engine is certified to operate on diesel fuel.	Displacement: in3 / L	
Timing - BTDC degrees	EPA Cert. Family:	
Valve Lash (cold engine) Intake in. / mm Exhaust in. / mm	European Approval Number:	
Fuel rate at rated HP/kw mm3/st	Date of Manufacture	
Made in Japan	Date of Manufacture	



 Cummins Engine Company, Inc. Columbus, Indiana 47202-3005 www.cummins.com	Important Engine Information Model B3.3 ESN	
	Gross rated HP/kw at rpm	Low Idle RPM RPM
Warning: Injury may result and warranty is voided if fuel rate, rpm, or altitudes exceed published maximum values for this model and application.	Fuel Rating CPL	
This engine conforms to 1999 U.S. EPA and California regulations for large non-road compression ignition engines as applicable. This engine is certified to operate on diesel fuel.	Displacement: in3 / L	
Timing - BTDC degrees	EPA Cert. Family:	
Valve Lash (cold engine) Intake in. / mm Exhaust in. / mm	European Approval Number:	
Fuel rate at rated HP/kw mm3/st	Date of Manufacture	
Made in Japan	Date of Manufacture	



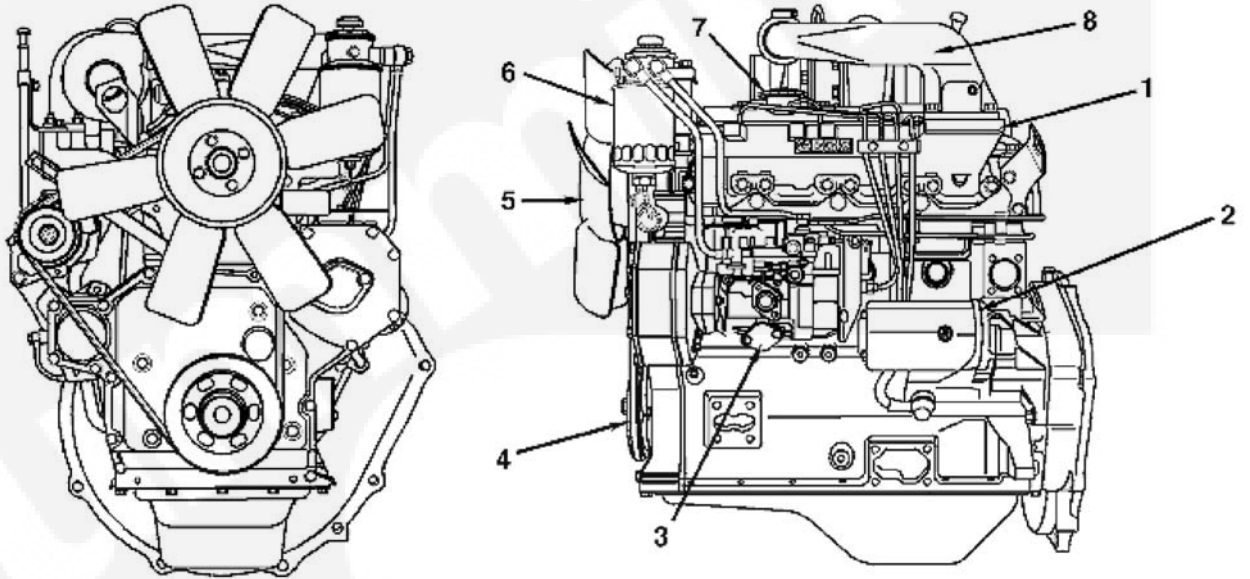
Note: The engine data plate must not be changed unless approved by Cummins Engine Company Inc.

1.2 Engine Diagrams

The following illustrations show the locations of the major external engine components, filters, and other service and maintenance points of a typical 4BT3.3 engine. Some external components will be at different locations for different engine models.

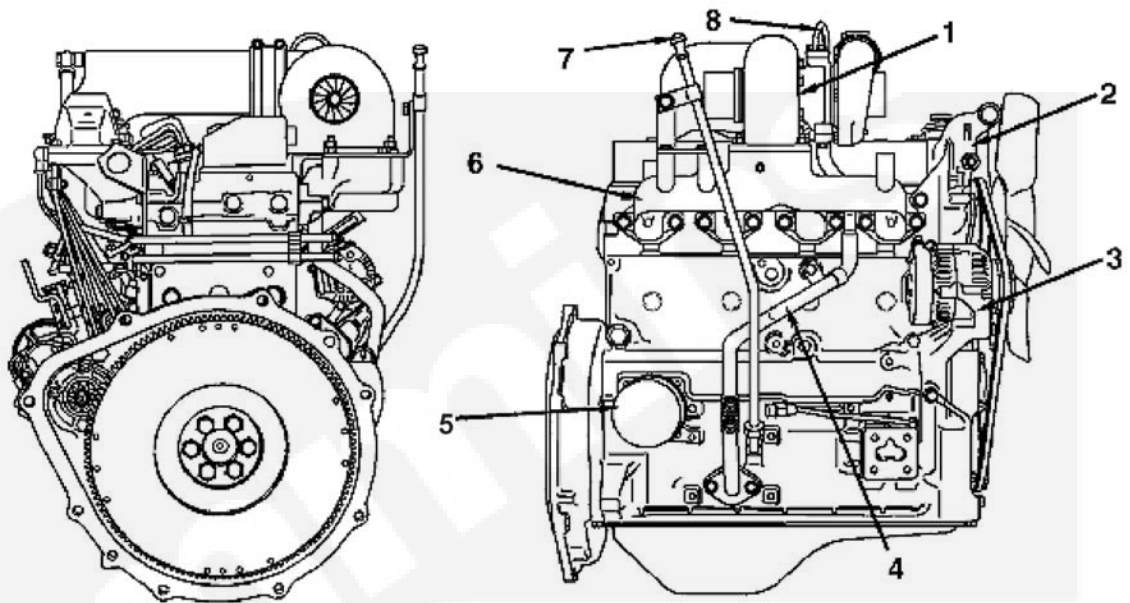
1.2.1 Engine Views –Turbo-charged

1.2.1.1 Intake Side and Front



KEY			
1.	Intake Manifold	5.	Fan
2.	Starting Motor	6.	Fuel Filter
3.	Fuel Injection pump	7.	Oil Fill Cap
4.	Crankshaft Pulley	8.	Air Crossover Tube

1.2.1.2 Exhaust Side and Rear



KEY			
1.	Turbocharger	5.	Oil Filter
2.	Thermostat Housing	6.	Exhaust Manifold
3.	Alternator	7.	Dip Stick
4.	Turbocharger Oil Drain Tube	8.	Turbocharger Oil Supply Tube

1.3 Acoustic Information (1500 rpm)

MODEL	C20 D5R	C30 D5R	C35 D5R	C40 D5R	C50 D5R
ENGINE	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3
Enclosed Set Acoustic Data – LWA (Based on using a standard Cummins' canopy, and set operating with doors closed) ^{1,2}	93	92	92	89	90
^{1.} Doors closed figures are measured using 2000/14/EC guaranteed sound power levels ^{2.} Based on 75% load For Noise Spectrum Figures refer also to Health and Safety Manual (0908-0110-00) In line with the CPGK policy of continuous improvement these figures are subject to change.					

MODEL	C33 D5e	C38 D5e	C44 D5e	C55 D5e
ENGINE	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3
Enclosed Set Acoustic Data – LWA (Based on using a standard Cummins' canopy, and set operating with doors closed) ^{1,2}	89	89	89	90
Open Set Acoustic Data – dB(A) at 1m ³ – SPL (or enclosed set with doors open)	91	91	91	91
^{1.} Doors closed figures are measured using 2000/14/EC guaranteed sound power levels ^{2.} Based on 75% load ^{3.} Based on 110% load For Noise Spectrum Figures refer also to Health and Safety Manual (0908-0110-00) In line with the CPGK policy of continuous improvement these figures are subject to change.				

1.4 Acoustic Information (1800 rpm)

MODEL	C20 D6R	C30 D6R	C35 D6R	C40 D6R	C50 D6R
ENGINE	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3
Enclosed Set Acoustic Data – LWA (Based on using a standard Cummins' canopy, and set operating with doors closed) ¹	94	94	93	92	92
^{1.} Sound power levels are tested according to ISO 3744 at 75% prime power For Noise Spectrum Figures refer also to Health and Safety Manual (0908-0110-00) In line with the CPGK policy of continuous improvement these figures are subject to change.					

MODEL	C30 D6	C35 D6	C40 D6	C50 D6
ENGINE	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3
Enclosed Set Acoustic Data – LWA (Based on using a standard Cummins' canopy, and set operating with doors closed) ¹	92	92	92	92
Open Set Acoustic Data – dB(A) at 1m ² – SPL (or enclosed set with doors open)	93	93	93	93
^{1.} Sound power levels are tested according to ISO 3744 at 75% prime power ^{2.} Based on 110% load For Noise Spectrum Figures refer also to Health and Safety Manual (0908-0110-00) In line with the CPGK policy of continuous improvement these figures are subject to change.				

1.5 Engine Fuel Consumption (L/Hr)

MODEL	C20 D5R	C30 D5R	C35 D5R	C40 D5R	C50 D5R
ENGINE	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3
Engine Performance Data at 50Hz ¹	6	9	10	12	15
³ Standby/Full Load Refer to Data Sheets for other applications In line with the CPGK policy of continuous improvement these figures are subject to change.					

MODEL	C33 D5e	C38 D5e	C44 D5e	C55 D5e
ENGINE	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3
Engine Performance Data at 50Hz ¹	9	10	12	15
¹ Standby/Full Load Refer to Data Sheets for other applications In line with the CPGK policy of continuous improvement these figures are subject to change.				

MODEL	C20 D6R	C30 D6R	C35 D6R	C40 D6R	C50 D6R
ENGINE	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3
Engine Performance Data at 60Hz ¹	7	11	12	14	17
¹ Standby/Full Load Refer to Data Sheets for other applications In line with the CPGK policy of continuous improvement these figures are subject to change.					

MODEL	C30 D6	C35 D6	C40 D6	C50 D6
ENGINE	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3	4BT3.3 G3
Engine Performance Data at 60Hz ¹	11	12	14	17
¹ Standby/Full Load Refer to Data Sheets for other applications In line with the CPGK policy of continuous improvement these figures are subject to change.				



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SECTION 2 – GENERATOR SET INFORMATION (POWERCOMMAND® 1.1 CONTROL)

2. Generator Set Information (PowerCommand® 1.1 Control)

2.1 Scope

The information contained within this section is generic only.

For installation specific drawings refer to drawings supplied with the generator set documentation package.

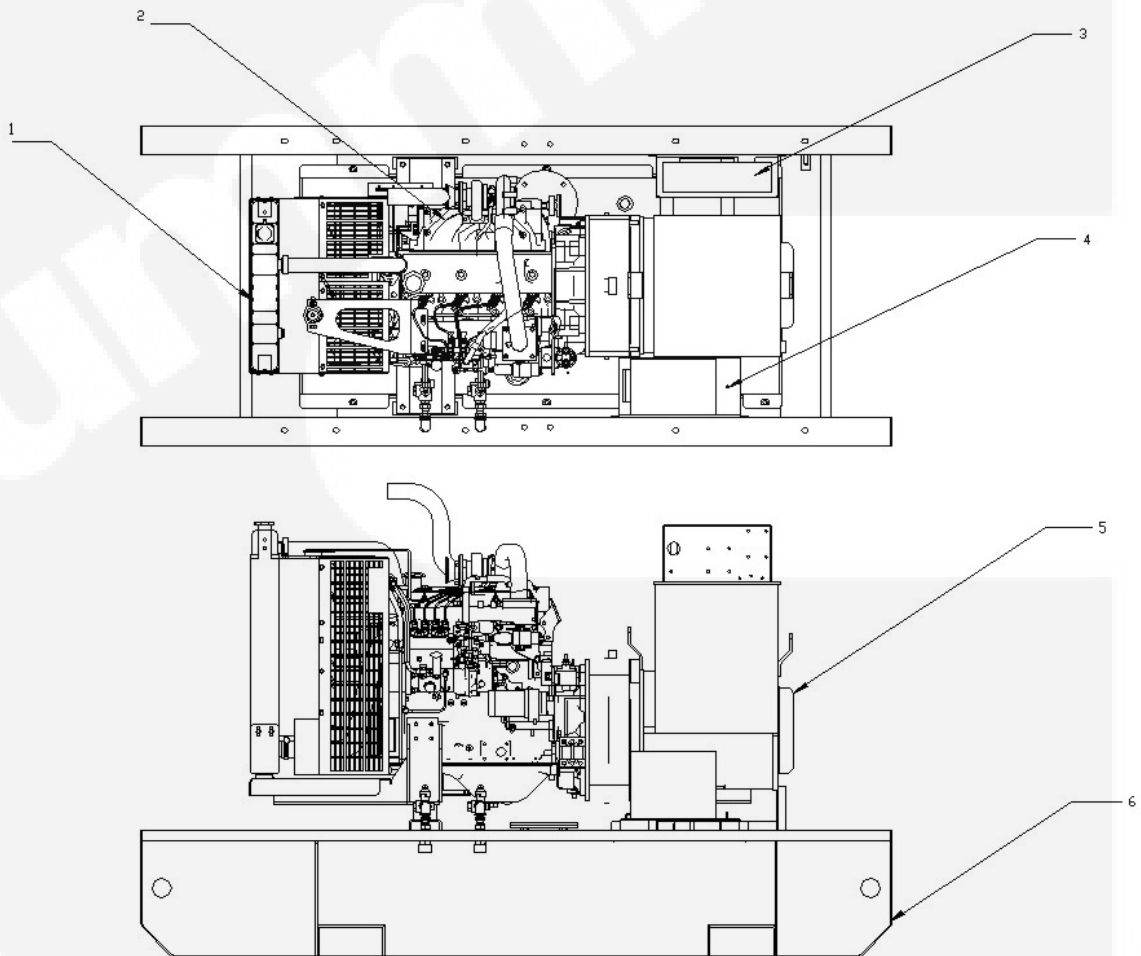


Figure 1 Typical 4BT3.3 Generator Set

KEY			
1.	Radiator	4.	Battery
2.	Engine	5.	Alternator
3.	Controller PowerCommand1.1	6.	Bed Frame

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Cummins Power Generation
1400 73rd Avenue NE
Minneapolis
MN 55432
USA

Tel:+1 (763) 574-5000
Fax:+1 (763) 574-5298

e-mail: pgamail@cummins.com

Web: www.cumminspower.com

Cummins Power Generation
35A/1/2, Erandawana
Pune 411 038
India

Tel.: (91 020) 3024 8600
Fax: (91 020) 6602 8090

e-mail:
cpgiservicesupport@cummins.com

Web: www.cumminspower.com

Cummins Power Generation
Columbus Avenue
Manston Park
Manston
Ramsgate
Kent CT12 5BF
United Kingdom

Tel:+44 (0) 1843 255000
Fax:+44 (0) 1843 255902

e-mail: cpgk.uk@cummins.com

Web: www.cumminspower.com

Cummins Power Generation
Rua Jati, 310 - Cumbica
Guarulhos –SP
Brazil
CEP: 07180-900

Tel.: (55 11) 2186 4195
Fax: (55 11) 2186 4729

e-mail: falecom@cumminspower.com.br

Web: www.cumminspower.com

Cummins Power Generation
10 Toh Guan Road #07-01
TT International Tradepark
Singapore 608838

Tel: (65) 6417 2388
Fax:(65) 6417 2399

e-mail: cpg.apmktg@cummins.com

Web: www.cumminspower.com

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