# **PRODUCT SPECIFICATIONS FOR C7.1**

## **POWER RATING**

Maximum Power320 HPMaximum Torque935 lb-ft @ 1400 rpmRated Speed2200 rpmMinimum Power172 HP

# **EMISSION STANDARDS**

Emissions

U.S. EPA & CARB Tier 4 Final, EU Stage V

### GENERAL

**Engine Configuration** In-Line 6 4.1 in Bore Stroke 5.3 in 427.7 in<sup>3</sup> **Displacement** 16.5:1 **Compression Ratio** Turbocharged-Aftercooled (TA) or Series Aspiration Turbocharged Aftercooled (TTA) **Direct Injection Combustion System Rotation from Flywheel End** Counterclockwise Aftertreatment DOC+DPF+SCR

### **ENGINE DIMENSIONS - APPROXIMATE**

Length	41.9 in
Width	31.4 in
Height	35.9 in
Weight - Net Dry - Basic Operating Engine Without Optional Attachments	1658 lb

# AFTERTREATMENT DIMENSIONS

Length 29 in Width 30.3 in



# **AFTERTREATMENT DIMENSIONS\***

### Diameter 13.3 in

# **C7.1 STANDARD EQUIPMENT**

### **AIR INLET**

• Standard air cleaners

### **CONTROL SYSTEM**

- Full electronic control system, all connectors and wiring looms waterproof and designed to withstand harsh off-highway environments
- Flexible and configurable software features and well-supported SAE J1939 CAN bus enables highly integrated machines

### **COOLING SYSTEM**

- Top tank temperature 108° C (226° F) as standard to minimize cooling pack size
- 50:50 water glycol mix
- Guidance on cooling system design available through your dealer to ensure equipment reliability

### FLYWHEELS AND FLYWHEEL HOUSING

• Wide choice of drivetrain interfaces, including SAE No. 1, SAE No. 2, and SAE No. 3 configurations

### **FUEL SYSTEM**

- Electronic high pressure common rail
- Innovative filter design to ensure maximum protection of the engine

### LUBE SYSTEM

• Wide choice of sumps for different applications

### GENERAL

• Paint: Caterpillar yellow, with optional colors available on request

### U.S. EPA TIER 4 FINAL, EU STAGE V, JAPAN 2014 (TIER 4 FINAL) AFTERTREATMENT/ CLEAN EMISSIONS CONTROL EQUIPMENT

- Clean Emissions Module (CEM), consisting of Diesel Particulate Filter (DPF) and Diesel Oxidation Catalyst (DOC)
- NOx Reduction System (NRS)
- Selective Catalytic Reduction (SCR)
- 3" flex pipe connection with straight, 45°, and 90° options for flexibility

### Cat<sup>®</sup> C13B Diesel Engine Industrial





Image shown may not reflect actual configuration The Cat<sup>®</sup> C13B Industrial Diesel Engine is offered in ratings ranging from 340-430 bkW (456-577 bhp) @ 1800-2100 rpm. These ratings will meet EU Stage V, U.S. EPA Tier 4 Final, Japan 2014, and Korea Tier 4 Final emission standards.

The C13B engines are ideal choices to power applications in agriculture, aircraft ground support, construction, forestry, general industrial, material handling, and mining.

# **Specifications**

Power Rating		
Minimum Power	340 bkW	456 bhp
Maximum Power	430 bkW	577 bhp
Rated Speed		1800-2100 rpm

Emission Standards	
Emissions	EU Stage V, U.S. EPA Tier 4 Final, Japan 2014, and Korea Tier 4 Final emission standards.
Performance	UN R120 for measurement of net power and specific fuel consumption

Engine Specifications				
Engine Configuration	In-L	ine 6, 4-Stroke-Cycle Diesel		
Bore	130 mm	5.1 in		
Stroke	157 mm	6.2 in		
Displacement	12.5 L	762.8 in³		
Aspiration	Tur	Turbocharged-Aftercooled (TA		
Compression Ratio		15.8:1		
Combustion System		Direct Injection		
Rotation (from flywheel end)		Counterclockwise		
Cooling System Capacity (engine)	18.7 L	19.8 qts		
Lube System (refill)*	34-41 L	35.9-43.3 qts		

\*Varies based on sump/oil pan selection

Engine Dimensions (Approximate. Final dimer	nsions dependent on selec	ted options.)
Length	1274 mm	50 in
Width	994 mm	39 in
Height	1134 mm	45 in
Weight – Net Dry (Basic Operating Engine Without Optional Attachments)	1125 kg	2480 lb

Aftertreatment Dimensions (Approximate. Final dimensions dependent on selected options.)						
Length	896 mm	35.3 in				
Width	807 mm	31.8 in				
Height	460 mm	18.1 in				
Weight	100 kg	220 lb				



# **Benefits & Features**

#### **High Power Density**

High power density. With peak power increased up to 20%, you can look to downsize the displacement of the engine currently powering your application without impacting performance.

#### **Reliable, Quiet and Durable Power**

World-class manufacturing capability and processes coupled with proven core engine designs – over 109 million off-highway field hours – assure reliability, quiet operation, and many hours of productive life.

#### **Fluid Efficiency**

Fluid consumption optimized to match operating cycles of a wide range of equipment and applications while maintaining low operating costs.

#### Installation

- Exceptional power density enables you to use a smaller displacement engine than previously, and optimize the installation in your application.
- Fully configurable engine and compact aftertreatment minimize package size. Ideal for equipment with narrow engine compartments.
- Aftertreatment installation flexibility to meet all applications including remote mount and enginemounted from the factory.
- Industrial power unit (IPU) available from factory to avoid significant design, validation, and manufacturing costs.
- Low heat rejection levels allow for optimized cooling package at equivalent power.
- The C13B will be available in single label certification for EU Stage V, U.S. EPA Tier 4 Final, Japan 2014, and Korea Tier 4 Final providing global customers a single source solution that streamlines design, installation, and service processes.

#### Low Cost Maintenance

- · Worldwide service delivers ease of maintenance and simplifies the servicing routine.
- 5000-hour diesel particulate filter (DPF) ash service interval enables low-cost maintenance.
- Standard service intervals of 500 hours under normal operating conditions.
- The S•O•S<sup>™</sup> program is available from your Cat dealer to optimize oil change intervals.
- Ideal for high-hour applications over 10,000 hours.
- Remote mount options for serviceable items such as oil and fuel filters.

#### Quality

Every Cat engine is manufactured to stringent standards in order to assure customer satisfaction.

#### World-class Product Support Offered Through Global Cat Dealer Network

- Scheduled maintenance, including S•O•S sample
- Customer support agreements (CSA)
- Extended service coverage (ESC)
- Superior dealer service network
- Extended dealer service network through the Cat industrial service distributor (ISD) program



# **Benefits & Features (continued)**

#### Tier 4 Final, Stage V Aftertreatment Features

- Clean emissions module (CEM) consisting of diesel oxidation catalyst (DOC) and combined diesel particulate filter (DPF) and high-efficiency selective catalytic reduction (SCR)
- Maximum uptime with transparent aftertreatment regeneration, without operator distraction or impact to machine performance
- PETU DEF capacity up to 93.7 liters (24.7 U.S. gallons)
- Minimum 5000 hour service interval for DPF/PETU filters

#### **Enhanced Electronics**

- The C13B is equipped for the future with the latest technology from a single on-engine ECM.
- 12V and 24V available

# **Standard Equipment**

#### Air Inlet System

- Turbocharged
- Air-to-Air Aftercooled
- Front or rear exhaust configurations available

#### **Control System**

- Electronic control system
- Over-foam wiring harness
- Automatic altitude compensation
- Configurable software features
- Engine monitoring system SAE J1939 broadcast and control
- Integrated Electronic Control Unit (ECU)
- Remote fan control

#### **Cooling System**

- Vertical or RH thermostat outlet
- Centrifugal water pump
- · Guidance on cooling system design available through your dealer to ensure equipment reliability

#### Flywheels and Flywheel Housing

• Available SAE No. 1 power take-off with optional SAE B or SAE C power take-off drives. Engine power can also be taken from the front of the engine with optional attachments.

#### **Fuel System**

- Mechanical Electronic Unit Injector fuel system (MEUI-C)
- · Primary fuel filter
- · Secondary and tertiary fuel filters
- Fuel transfer pump
- Electronic fuel priming





# Standard Equipment (continued)

#### Lube System

- Oil cooler
- Oil filler
- Lube oil filter
- Oil dipstick
- Gear-driven oil pump
- · Choice of front, rear or center sumps
- Open crankcase ventilation system with fumes disposal (OCV filter system required for EU Stage V certification engines)

#### Power Take-off (PTO)

 SAE B or SAE C power take-off (PTO) drives. Engine power can also be taken from the front of the engine on some applications.

#### General

- Caterpillar Yellow paint, with optional colors available
- Vibration damper
- Lifting eyes





Emissions: EU Stage V, U.S. EPA Tier 4 Final, Japan 2014, and Korea Tier 4 Final Emission Standards

> C13B 340-430 bkW/456-577 bhp 1800-2100 rpm

Image shown may not reflect actual configuration

	Metric	English	
General Engine			
Number of Cylinders		6	
Bore	130 mm	5.1 in	
Stroke	157 mm	6.2 in	
Displacement	12.5 L	762.8 in <sup>3</sup>	
Compression Ratio	15.8:1		

### **RATING DEFINITIONS AND CONDITIONS**

**IND-A (Continuous)** for heavy duty service where the engine is operated at maximum power and speed up to 100% of the time without interruption or load cycling.

IND-B for service where power and/or speed are cyclic (time at full load not to exceed 80%).

**IND-C (Intermittent)** is the horsepower and speed capability of the engine where maximum power and/or speed are cyclic (time at full load not to exceed 50%).

**IND-D** for service where maximum power is required for periodic overloads (time at full load not to exceed 10% of the duty cycle).

**Diesel Engines –** greater than 7.1 liter. All rating conditions are based on SAE J1995, inlet air standard conditions of 99 kPa (29.31 in Hg) dry barometer and 25°C (77°F) temperature. Performance measured using a standard fuel with fuel gravity of 35° API having a lower heating value of 42,780 kJ/kg (18,390 btu/lb) when used at 29°C (84.2°F) with a density of 838.9 g/L.

**INDUSTRIAL – Technical Spec Sheet** AGRICULTURE, CONSTRUCTION, FORESTRY, GENERAL INDUSTRIAL, MATERIAL HANDLING C13B



Emissions: EU Stage V, U.S. EPA Tier 4 Final, Japan 2014, and Korea Tier 4 Final Emission Standards



Rating	Aspiration	Rated Speed rpm	Rated Power bkW	Rated Power bhp	Peak Torque N•m	Peak Torque Ib-ft	Speed rpm
А	TA	1800-2100	340	456	2082	1536	1400
В	TA	1800-2100	370	496	2266	1671	1400
С	TA	1800-2100	400	536	2450	1807	1400
D	TA	1800-2100	430	577	2634	1943	1400

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Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication.

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# **Performance Data**

VII Proce	/II Process Equipment Information (use additional sheets if necessary)										
List al	List all equipment and emissions sources at the facility, not only what is being substituted, added or removed										
Unit Number	Component Description (or unit's function) For each crusher, designate as primary or secondary	Manufacturer	Manufacture Date	Model Number	Equipment Size, Capacity <sup>1</sup> or Maximum Process Rate (for generator sets, report the rated horsepower)	Manufacturers Emission Factors for Regulated Air Pollutants (for engines or generators) <sup>2</sup>	Date of Most Recent Compliance Test in New Mexico (or "None")				
S	Screener	Kleeman	2017	MS 15Z	400 TPH	See Attached AP-42 Emission Factors	none				
С	Crusher (TBD)	Astec	2018	4250	200-300 TPH	See Attached AP-42 Emission Factors	none				
	Engine for Screener	CAT	2017	C7.1	172-320hp	See Attached C7.1 Specs/Emission Factors	None				
	Engine for Crusher	CAT	2018	C13B	340-430kW	See Attached Specs/Emission Factors	None				

To properly account for power conversion efficiencies, generator set rated capacity shall be reported as the rated capacity of the engine in horsepower, not the kilowatt capacity of the generator et.

Include a copy of the manufacturers data sheets specifying the emission factors of the unit. If no manufacturers data are available, please use EPA's AP-42 emission factors for engines or enerators.



III Current Facility Status										
1	Has this facility previously been issued a general construction permit?  Yes  No If yes, the registration No. is:									
2	Has this facility already been constructed? 🗆 Yes 🛛 No If yes, is it currently operating in New Mexico? 🗆 Yes 🖾 No									
3	Does this facility currently have a construction permit (20.2.72 NMAC, Section 200.A or 200.B)? Yes X NoIf yes, the permit No., and whether it will remain active or not									
4	Is this application in response to a Notice of Violation (NOV)? If yes, NOV date: NOV Tracking No.									
	This Facility is submitting this applicat	ion as a Small B	usiness and	l d wi	ll operate u	nder the smal	    business	product	limitat	ion in the
5	GCP, Section II.D.2 – Fees. $\square$ Yes $\square$ No									
6	This Facility will operate as a Small Bu	siness under Co	ndition II.D	). lu redi	understand in Condition	that addition	al reportin Ves П No	ng require n	ements	are
IV	Facility Location Information					111.C.1.D. X				
Ple	ase use Montana's Graphical Locater to	convert Lat/Lor	ig to UTM s	yste	ems, found a	at:				
<u>htt</u>	p://rcn.montana.edu/resources/convert	ter.aspx	-		-			,		
1	a) Latitude (decimal degrees):	b) Longitu	de (decimal 929333	l de	grees):		c) Co Mor	ounty:	d) Ele	vation (ft):
2	a) UTM Zone: 12 or 13 b) U	TME (to nearest 0.0	1 km): 46664	16		c) UTMN (to ne	arest 0.01 ki		85	
	d) Specify which datum is used:	NAD 83 🛛 \	VGS 84	-				,		
	See this link for more info. http://er	n.wikipedia.org/	<mark>/wiki/Nort</mark> h	Ar	<u>merican_Dat</u>	tum				
3	Name and zip code of nearest New	Mexico town ar	nd/or tribal	con	nmunity: M	ora 87732				
4	Detailed Driving Instructions includi roadmap if necessary). If there is n	ing direction and or street address	d distance f s, provide p	fron ubli	n nearest NN ic road milea	VI town and/c age marker:	or tribal co	ommunity	y (attao	ch a
	From Mora, NM, travel north on Sta far.	ate Hwy 518 for	1.75 miles	. Ph	nysical addre	ess is 2797 Sta	ate Hwy 5	18. Mile	Marke	r 32 is too
5	The facility is 1.75 (distance) miles I	North (direction	) of Mora (	neai	rest town).					
6	Direction and distance to the neare Southeast just over 0.25 miles	st occupied stru	icture from	the	e perimeter (	of the Area of	f Operatio	ons:		
7	Land Status of Facility (check one):	🛛 Private 🗆 I	ndian/Pueb	lo	🗆 Governm	ent 🗆 BLM	□ Fores	st Service	П Мі	litary
8	Name and county of the nearest Cla	ass I Area and it	s direction	fron	n the facility	: Pecos Wild	erness Ar	ea, Santa	Fe Cou	unty, West
9	Shortest distance from the facility t	o the boundary	of the near	rest	Class I Area	(to the neare	est 1 km):	8 km (4.	7 miles	)
v	Proposed Operating Schedule									
1	Facility <b>maximum</b> operating ( <sup>hours</sup> ):	( <mark>day</mark>	<u>s</u> k):		(weeks year):		( <u>hours</u> ):	OR t hours only	M.	
2	Facility's maximum daily operating sch	edule? Start: 7:	00				ind: 7:00		,   [] A   [2] P	M
3	Month and year of anticipated startup	of new or modif	fied facility:	: Au	igust 2024					
4	Month and year of anticipated complet	ion date at this	proposed s	site:	February 2	028				
5	5       Will this facility operate at this site for more than one year? ☑ Yes □ No       If yes, give number of years, months, permanent etc. 42 months									
VI	Other Facility Information									
1	Maximum proposed production	30	tons/hr.	3	Total miles way)	s of haul road	(one	0.33		miles
2	Area of storage pile & operations	20	Acres	4	Estimated N trips per da	lumber of Hau y (round trip)	l truck	12		trips/day