

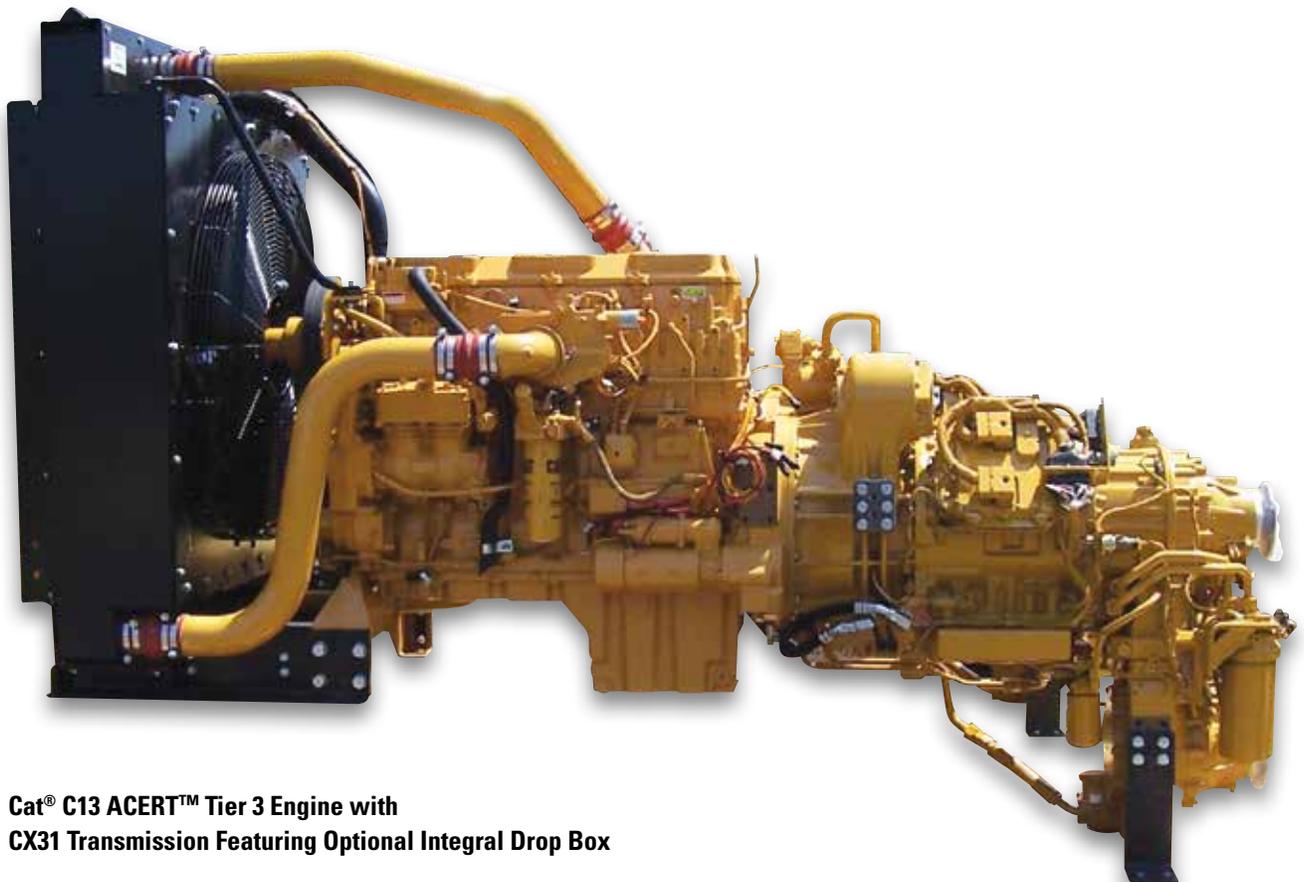
Transmissions for the Petroleum Industry

Your Unique Needs, Our Custom Solutions



TRANSMITTING YOUR POWER, TRANSFORMING YOUR OPERATION

Your operation depends on the power driving it. And your transmission is as crucial to your power solution as the engine. For more than 80 years, Cat® engines have been the power source for the oil and gas industry, and that same engineering expertise makes sure your transmission integrates with the rest of the power train. Exceptional power, ease of operation, and shifting options with Cat transmissions, proven in the demanding mining, locomotive, and forestry industries, are ideal for your oil and gas operation.



**Cat® C13 ACERT™ Tier 3 Engine with
CX31 Transmission Featuring Optional Integral Drop Box**



Well Constructed

QUALITY

Your operation demands products built with rigorous quality standards. High quality materials, advanced manufacturing techniques, heat treatment processes, high-performance surface treatments, and special coatings ensure exceptional product life and performance. Cat transmission manufacturing quality procedures meet or exceed SAE, ASTM, ISO, Class A, and DIN standards, and follow the 6 Sigma method.

Cat transmissions are built for your specific application needs:

- For rugged, harsh-duty applications, TH transmissions are built with a robust cast iron casing
- For highly mobile applications requiring permitted loads, CX transmissions are tough, yet extremely lightweight

SAFETY

Even more important than job site productivity is job site safety. Cat transmissions and transmission packages incorporate built-in security features to keep operators and site personnel safe on the job:

- Integration of the rig and engine/transmission controls
- Condition-restricted mode changes and operation
- Lock-up clutch disable capability
- Programmable minimum and maximum gear
- Lock to neutral to prevent shifting into gear unless certain conditions are met
- Parking brake neutralize to prevent “driving through” the parking brake
- Anti-lock brake integration
- Engine/service brake control integration to improve shifting strategy



PERFORMANCE

Out in the field, equipment either proves itself, or it doesn't. Cat power equipment has been proven in countless oil and gas applications around the world. Cat purpose-built transmissions are the latest reason why:

- More power delivery to the well with fewer trailers
- Clutch control for maximum clutch life
- Warm-up assist mode for faster work startup
- Lock-up mode for transmission of more energy output using the same power
- Well service tailored clutch timing
- Electronic controls for intelligent shifting



Well Connected

Maximize power and performance and minimize downtime. Caterpillar pioneered engine electronics and continues to lead the way in making equipment that works harder – and smarter – with electronic controls and communication for more responsive, efficient, and consistent operation. Cat transmissions can be integrated with other components, including the engine, drop box, axles, hydraulics, and operator interface. Specific electronic features include:

- Customizable configuration with Cat Electronic Technician (ET)
- Improved transmission management with electronic reporting:
 - Engine torque/engine speed
 - Engine speed/torque converter output speed
 - Torque converter out temperature/sump temperature over time
 - Shift counts
 - Time in each gear
 - Event logging
- Operating mode indicators
- Data link communication

Well Matched

CUSTOM SOLUTIONS

We work with you to design a custom Cat package that meets one goal — yours. Proven Cat components including engines, transmissions, controls, radiators, and skids seamlessly integrate to work together for your unique operation. These components, with “plug and play” harnesses, are assembled and wired for easy installation. From needs assessment and engineering, to testing, assembly, and installation, you can be sure you’re getting unrivaled equipment and expertise.

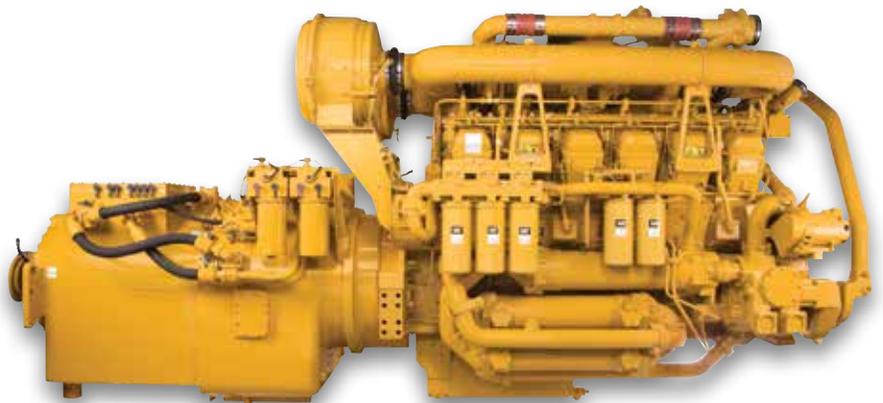
Beyond productivity benefits, a custom package from Caterpillar saves your valuable time with one quote, one purchase order, one freight bill, and one invoice. We can also provide project management services, factory test reports, and documentation. And you have a single source for your warranty and all service work.





WELL SERVICE TRANSMISSIONS

You have no time for downtime, so whether your business is workover, fracturing, or pumping, Cat transmissions can help you get in, get out, and get on your way. Our purpose-built well service transmissions deliver continuous operation under full load, smooth shifting at any speed, and maximum uptime, with unmatched durability and easy maintenance. These and other benefits and options can be combined in a package tailored to the exact demands of your operation.



**Fracturing Rig Module with Cat 3512C Engine
and TH55 Transmission**

WELL SERVICE TRANSMISSION PACKAGES

Petroleum Series Transmission

Engine	Transmission	Input Power (bhp)	PTO	Application		
				Workover	Pumping	FRAC
C9 ACERT™	CX31-P600 with 2WD and 4WD Drop Box Option	600	2-5 PTOs: 200-475 bhp	X	X	
C11 ACERT	CX31-P600 with 2WD and 4WD Drop Box Option	600	2-5 PTOs: 200-475 bhp	X	X	
C13 ACERT	CX31-P600 with 2WD and 4WD Drop Box Option	600	2-5 PTOs: 200-475 bhp	X	X	
C15 ACERT	CX31-P600 with 2WD and 4WD Drop Box Option	600	2-5 PTOs: 200-475 bhp	X	X	
	CX35-P800	800	2-5 PTOs: 200-475 bhp	X	X	
C18 ACERT	CX31-P600 with 2WD and 4WD Drop Box Option	600	2-5 PTOs: 200-475 bhp	X	X	
	CX35-P800	800	2-5 PTOs: 200-475 bhp	X	X	X
C27 ACERT	CX35-P800	800	2-5 PTOs: 200-475 bhp	X	X	X
	TH48-E70	1500	3 @ 150 bhp, 200 max bhp		X	X
C32 ACERT	TH48-E70	1500	3 @ 150 bhp, 200 max bhp		X	X
3512B	TH48-E80 CX48-P2300	2250	3 @ 150 bhp, 200 max bhp		X	X
3512C	TH48-E80 CX48-P2300	2250	3 @ 150 bhp, 200 max bhp		X	X
	TH55-E70	3000	1 @ 150 bhp, 1 @ 20 bhp		X	X
	TH55-E90	3000	1 @ 150 bhp, 1 @ 20 bhp		X	X

CAT CUSTOM WELL SERVICE PACKAGES

If your application presents unique challenges or complex design issues, Caterpillar can engineer a custom well service power package to maximize your productivity. A seamless integration of proven Cat components offers you single-source consistency, unparalleled performance, and streamlined procurement. Your one-of-a-kind package also comes with documentation, factory testing/reports, and the peace of mind of a Caterpillar warranty.

3D modeling images and schematic drawings are available for all Cat engine/transmission packages.

Engine/Transmission Package Literature Available for Worldwide Serviceability

- Complete Package Warranty
- OMM
- Parts Book
- Parts CDs



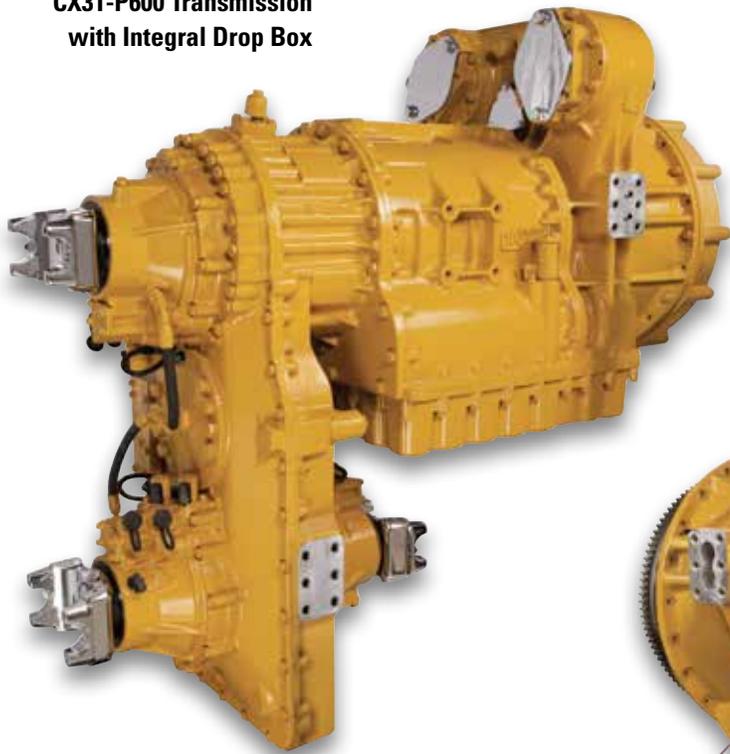
CX SERIES TRANSMISSION

PERFORMANCE THAT DOESN'T WEIGH YOU DOWN

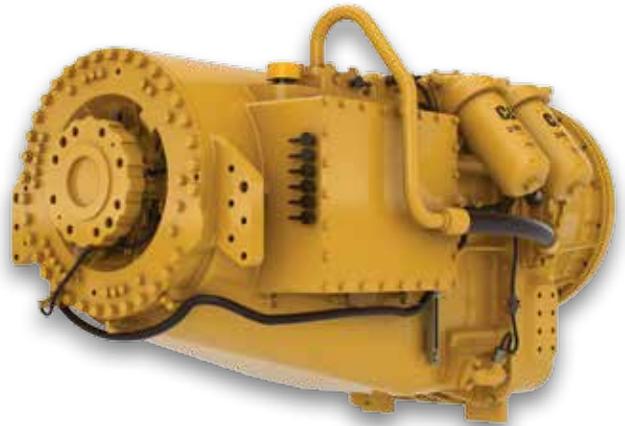
The CX series transmission for well service applications lets you travel light, but work hard. In fact, the design offers the highest power density in the industry, so you can get to jobs — and get them finished — faster. The CX is engineered for a significant weight reduction without a sacrifice in power. And the design also incorporates the most advanced electronic controls available.

- Aluminum construction minimizes unit weights to 1026 lbs (CX31), 1410 lbs (CX35)
- Elimination of the need for costly road permits
- Exceptional power:
 - CX31-P600 — 600 bhp and 2025 lb-ft input torque
 - CX35-P800 — 800 bhp and 2700 lb-ft input torque
 - CX48-P2300 — 2300 bhp and 6656 lb-ft input torque
- Extended electronic configurable, safety, and productivity capabilities
- Rear PTO option (CX31-P600 and CX35-P800 only)
- Selectable modes of operation (CX31-P600 and CX35-P800 only)

**CX31-P600 Transmission
with Integral Drop Box**



CX48-P2300 Transmission



CX35-P800 Transmission



Well Equipped

OPTIONS AND ATTACHMENTS

You're assured an ideal match between your petroleum application and transmission with the wide array of available options from Caterpillar. In addition to shift control options and electronic features, Cat Messenger information system, integral parking brakes, mounts, yokes, SAE pump drives, and other options and attachments are available.

Integral Drop Box Option

Caterpillar offers a more flexible and precise transfer of transmission output with integral drop boxes. Because these systems are integrated with the transmission, their engagement and disengagement is controlled by the transmission's ECU. The result is more efficient reassignment of power among service equipment and vehicle driving needs. The integral drop box option is available on TH31, CX31, and TH35 transmissions, and includes:

- Filtered oil system
- Pressurized oil
- Common oil sump
- Electronic drive gear engagement
- 24-inch drop





Well Supported

There are many reasons to partner with Caterpillar. Cat equipment is at work in countless petroleum applications around the world with technical innovation, purpose-built products, superior quality, and customized solutions. Cat equipment

and customers are the focus of the largest, most responsive, and well-equipped support network in the world. Our experts are on every continent, in more than 200 countries, and in the oceans between. Professional service

and genuine parts are available 24 hours a day, 365 days a year, making sure the performance we promise is the performance you get.

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