

Cummins 400 Engine Specs Manual



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The Cummins 400 engine is a robust and reliable power unit widely used in various applications, from heavy-duty trucks to industrial equipment. Known for its durability and efficiency, the Cummins 400 has become a favorite among operators who value performance and longevity. This comprehensive article delves into the specifications, features, and maintenance of the Cummins 400 engine, providing essential information for both current users and prospective buyers.

Overview of the Cummins 400 Engine

The Cummins 400 engine belongs to the ISC series, which is part of the broader Cummins B Series family of engines. This engine is designed for heavy-duty applications, delivering impressive power and torque while maintaining fuel efficiency. With its advanced technology and engineering, the Cummins 400 has established itself as a reliable option for various industries, including transportation, construction, and agriculture.

Key Features

- Engine Type: Inline 6-cylinder diesel engine
- Displacement: 8.3 liters (504 cubic inches)
- Bore and Stroke: 4.02 inches x 4.72 inches
- Aspiration: Turbocharged and intercooled
- Fuel System: Electronic fuel control for better efficiency and power delivery

- Cooling System: Liquid-cooled with a high-capacity cooling system

Specifications of the Cummins 400 Engine

Understanding the detailed specifications of the Cummins 400 engine is crucial for users looking to optimize their performance and efficiency. Below are the key specifications that define this engine.

Performance Specifications

- Maximum Power Output: 400 hp (298 kW) at 2,200 RPM
- Peak Torque: 1,150 lb-ft (1,560 Nm) at 1,400 RPM
- Fuel Consumption: Approximately 7.5 – 8.5 miles per gallon, depending on load and driving conditions
- Engine Weight: Approximately 2,450 lbs (1,113 kg)

Dimensions

- Overall Length: 49.5 inches (1,257 mm)
- Overall Width: 30.5 inches (775 mm)
- Overall Height: 39.5 inches (1,003 mm)
- Mounting Dimensions: Various configurations available to suit different applications

Electrical System

- Starting System: 12-volt electrical system with a heavy-duty starter motor
- Alternator: 12-volt, 100-amp alternator
- Batteries: Typically requires two 12-volt batteries in series

Applications of the Cummins 400 Engine

The Cummins 400 engine is versatile and can be used in a wide range of applications. Its robust design and reliable performance make it suitable for various industries.

Common Applications

1. Heavy-Duty Trucks: Ideal for long-haul transportation, providing the necessary power and torque for heavy loads.
2. Construction Equipment: Used in backhoes, excavators, and bulldozers, where reliability and durability are paramount.

3. Agricultural Machinery: Powers tractors and harvesters, ensuring efficient operation in the field.
4. Marine Applications: Utilized in fishing boats and other commercial marine vessels.
5. Power Generation: Employed in generators for standby or prime power applications.

Maintenance of the Cummins 400 Engine

Proper maintenance is essential to ensure the longevity and efficiency of the Cummins 400 engine. Regular inspections and service can prevent costly breakdowns and extend the engine's lifespan.

Routine Maintenance Schedule

- Oil Change: Every 5,000 to 7,500 miles, or according to the manufacturer's recommendations.
- Fuel Filter Replacement: Every 10,000 miles or as needed, depending on fuel quality.
- Air Filter Inspection: Check every 5,000 miles; replace if dirty or clogged.
- Coolant System Check: Inspect coolant levels and quality every 10,000 miles.
- Timing Belt Inspection: Replace every 100,000 miles or as specified in the service manual.

Key Maintenance Tips

- Always use genuine Cummins parts and fluids for replacements and repairs.
- Keep the engine clean by regularly washing it to prevent dirt and grime buildup.
- Monitor engine performance and listen for unusual noises that may indicate issues.
- Maintain proper fuel quality to ensure optimal performance and efficiency.

Performance Enhancements

For operators seeking to maximize the performance of their Cummins 400 engine, several enhancements can be considered. While these modifications can improve power output and efficiency, it is essential to ensure that they are compatible with the engine's specifications.

Common Enhancements

- ECU Remapping: Adjusting the engine control unit for improved fuel mapping and performance.
- High-Performance Exhaust Systems: Upgrading to a less restrictive exhaust can enhance airflow and power.
- Cold Air Intake Systems: Improving air intake can lead to better combustion and performance.
- Intercooler Upgrades: Enhancing the intercooler can help manage temperatures and improve efficiency.

Conclusion

The Cummins 400 engine is a powerful and reliable choice for various applications, from heavy-duty trucking to industrial machinery. With its impressive specifications and maintenance requirements, this engine continues to be a popular option among operators who prioritize performance, durability, and efficiency. By understanding its features and adhering to a proper maintenance schedule, users can ensure that their Cummins 400 engine operates at peak performance for years to come. Whether you are currently using this engine or considering its purchase, the Cummins 400 stands out as a dependable power source in today's demanding work environments.

Frequently Asked Questions

What is the horsepower rating of the Cummins 400 engine?

The Cummins 400 engine typically has a horsepower rating of 400 HP at 2100 RPM.

What is the displacement of the Cummins 400 engine?

The displacement of the Cummins 400 engine is 14.0 liters (or 855 cubic inches).

What type of fuel does the Cummins 400 engine use?

The Cummins 400 engine runs on diesel fuel.

What are the torque specifications for the Cummins 400 engine?

The Cummins 400 engine produces a maximum torque of approximately 1,450 lb-ft.

What kind of turbocharger is used in the Cummins 400 engine?

The Cummins 400 engine typically uses a Holset turbocharger for improved performance.

What is the compression ratio of the Cummins 400 engine?

The compression ratio for the Cummins 400 engine is around 15.1:1.

What cooling system is recommended for the Cummins 400 engine?

A liquid cooling system is recommended for optimal performance of the Cummins 400 engine.

What are common applications for the Cummins 400 engine?

The Cummins 400 engine is commonly used in heavy-duty trucks, construction equipment, and marine applications.

What is the oil capacity of the Cummins 400 engine?

The oil capacity of the Cummins 400 engine is approximately 32 quarts, including the filter.

Where can I find the service manual for the Cummins 400 engine?

The service manual for the Cummins 400 engine can typically be found on the official Cummins website or through authorized Cummins dealers.

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