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A-Premium APITC132

A-Premium Turbocharger Intercooler Instruction Manual

Model: APITC132

1. Product Overview

The A-Premium Turbocharger Intercooler (Charge Air Cooler) is designed to enhance engine efficiency and power by cooling compressed air from the turbocharger before it enters the engine. This component is crucial for maintaining optimal engine performance and fuel economy in turbocharged vehicles.

Key Features:

- **Efficient Cooling:** Compresses and cools air from the turbocharger.
- **Durable Construction:** Features a die-cast aluminum tank and tube-and-fin design for optimal heat transfer and reliability.
- **Precise Fitment:** Engineered for specific vehicle compatibility to ensure proper installation and performance.
- **Improved Engine Performance:** Contributes to increased engine efficiency and power output.

Vehicle Compatibility:

Make	Model	Years	Engine
Chevrolet	Silverado 2500 HD	2017-2019	V8 6.6L
Chevrolet	Silverado 3500 HD	2017-2019	V8 6.6L
GMC	Sierra 2500 HD	2017-2019	V8 6.6L
GMC	Sierra 3500 HD	2017-2019	V8 6.6L



Figure 1: A-Premium Turbocharger Intercooler. This image shows the complete intercooler unit, highlighting its robust construction and design.

2. Product Specifications

Detailed specifications for the A-Premium Turbocharger Intercooler (Model APITC132):

- **Core Material:** Aluminum
- **Tank Material:** Aluminum
- **Length:** 28 3/16 Inch (approx. 71.6 cm)
- **Width:** 16-3/8 Inch (approx. 41.6 cm)
- **Thickness:** 1 3/16 Inch (approx. 3.0 cm)
- **Inlet Diameter:** 2-9/16 Inch (approx. 6.5 cm)
- **Outlet Diameter:** 1-15/16 Inch (approx. 4.9 cm)
- **Manufacturer Part Number:** APITC132

- **OEM Part Numbers:** 44011216, 6079, 23208446

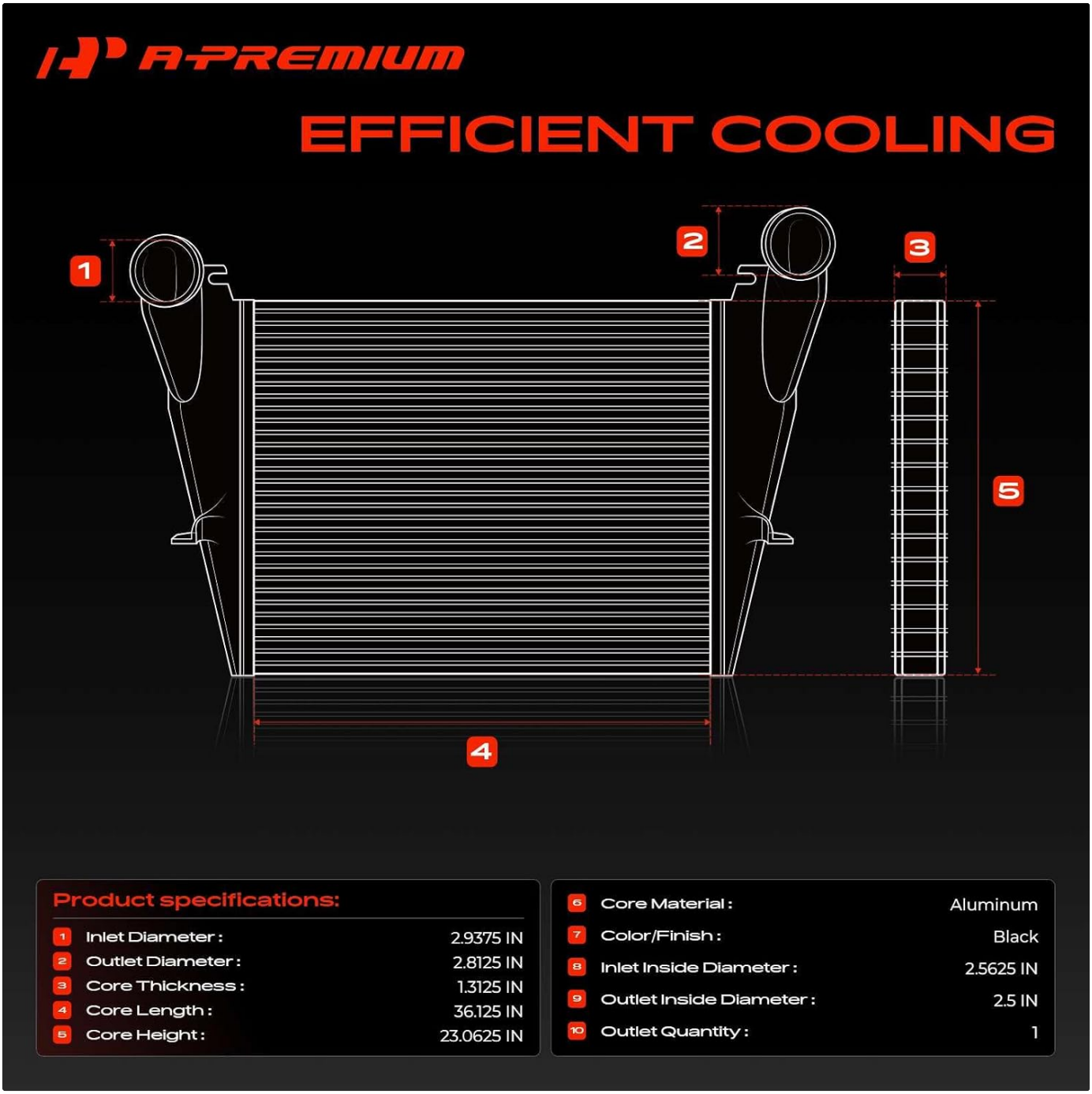


Figure 2: Dimensional diagram of the intercooler, illustrating key measurements such as inlet/outlet diameters, length, width, and thickness.

3. Installation Guide

Important Safety Notice: Installation of automotive components, especially those related to the engine and turbocharger system, can be complex and may require specialized tools and knowledge. Incorrect installation can lead to vehicle damage, reduced performance, or safety hazards.

It is highly recommended to consult your vehicle's official shop manual for specific, detailed installation instructions pertaining to your exact make and model. If you lack the necessary skills, experience, or tools, it is strongly advised to seek assistance from a qualified and certified mechanic.

General Installation Steps (Consult Vehicle-Specific Manual for Details):

1. **Preparation:** Ensure the vehicle is turned off, cooled down, and safely supported on jack stands or a lift.

Disconnect the battery.

2. **Access:** Depending on your vehicle, you may need to remove the front bumper, grille, or other components to gain access to the existing intercooler.
3. **Drain Coolant (if applicable):** Some intercoolers are liquid-to-air and may require draining coolant. This intercooler is air-to-air, so this step is generally not applicable.
4. **Disconnect Hoses and Sensors:** Carefully disconnect all charge air hoses, clamps, and any electrical sensors attached to the old intercooler.
5. **Remove Old Intercooler:** Unbolt and remove the existing intercooler from its mounting brackets.
6. **Inspect and Clean:** Inspect the surrounding area for any debris, damage, or leaks. Clean any mating surfaces.
7. **Install New Intercooler:** Position the A-Premium intercooler into place and secure it with the appropriate mounting hardware. Ensure a snug and stable fit.
8. **Reconnect Hoses and Sensors:** Reattach all charge air hoses, ensuring clamps are tightened to manufacturer specifications to prevent leaks. Reconnect any electrical sensors.
9. **Reassemble Vehicle:** Reinstall any components removed during the access phase (bumper, grille, etc.).
10. **Final Checks:** Reconnect the battery. Start the engine and check for any air leaks, unusual noises, or warning lights. Perform a test drive to ensure proper operation.

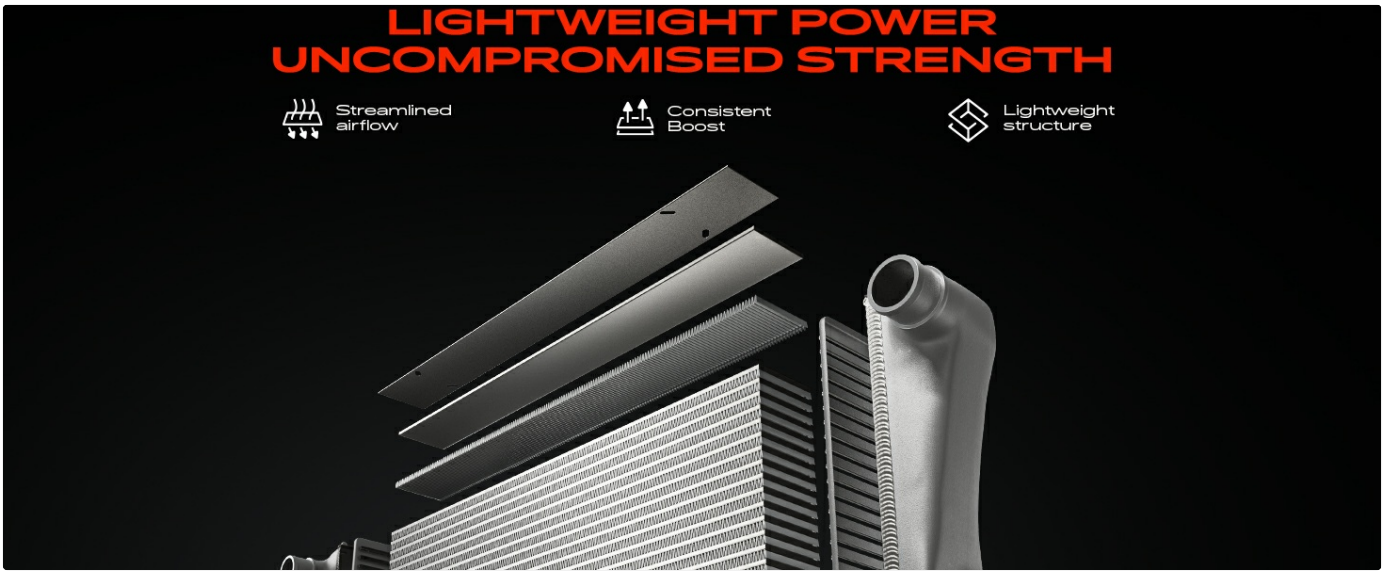


Figure 3: Illustration of the intercooler's function within the engine system, showing hot compressed air entering and cooled air exiting to the engine.

4. Operation and Function

The A-Premium Turbocharger Intercooler operates by reducing the temperature of the air compressed by the turbocharger before it enters the engine's combustion chambers. When air is compressed, its temperature increases significantly. Hot air is less dense and contains less oxygen, which can reduce engine power and efficiency.

The intercooler acts as a heat exchanger, similar to a radiator. Hot, compressed air from the turbocharger flows through the intercooler's core, where heat is dissipated to the cooler ambient air passing over the fins. This process cools the charge air, making it denser and richer in oxygen. Denser, cooler air allows for more efficient combustion, leading to:

- Increased engine power and torque.
- Improved fuel efficiency.
- Reduced risk of engine knocking or pre-ignition.
- Lower exhaust emissions.

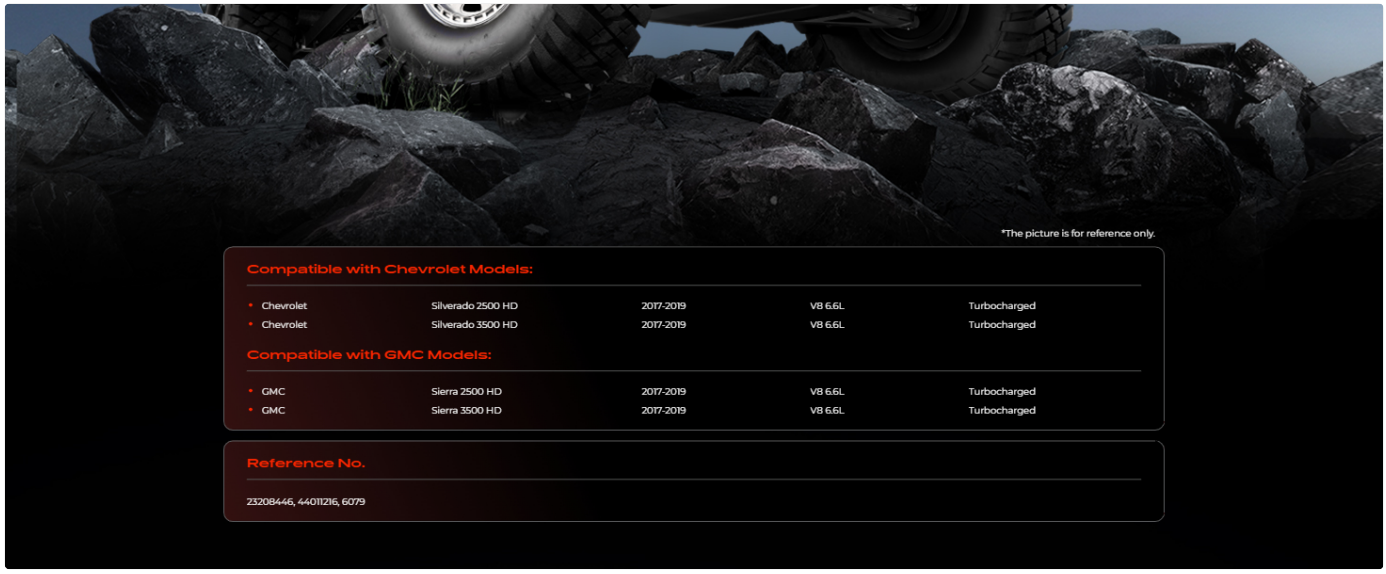


Figure 4: Detailed view of the intercooler's tube and fin design, illustrating how it facilitates efficient heat exchange for optimal cooling.

5. Maintenance and Care

Proper maintenance of your intercooler ensures its longevity and continued optimal performance. While intercoolers are generally robust, periodic checks are recommended.

Recommended Maintenance Practices:

- **Visual Inspection:** Periodically inspect the intercooler for any signs of damage, such as bent fins, cracks, or punctures. Check the integrity of the charge air hoses and clamps for tightness and wear.
- **Cleanliness:** Ensure the exterior fins of the intercooler are free from debris, insects, leaves, or road grime. Blocked fins can reduce cooling efficiency. Use a soft brush and compressed air or a gentle stream of water to clean the fins, being careful not to bend them.
- **Leak Detection:** Check for any oil residue or coolant leaks (if applicable to your system, though this model is air-to-air) around the intercooler and its connections. Air leaks in the charge air system can lead to reduced boost pressure and engine performance.
- **Connection Integrity:** Verify that all connections to the intercooler are secure and free from corrosion.

If any significant damage or persistent leaks are detected, it is advisable to have the intercooler inspected and potentially replaced by a qualified mechanic.



Figure 5: Detail of the intercooler's connection point, emphasizing the importance of proper sealing to prevent air leakage and maintain boost pressure.

6. Troubleshooting Common Issues

If you experience issues that you suspect are related to your intercooler, consider the following common problems and potential solutions:

Problem	Possible Cause	Solution
Reduced Engine Power / Lag	◦ Air leak in charge air system (hoses, clamps, intercooler). ◦ Clogged or damaged intercooler fins reducing cooling efficiency. ◦ Internal blockage or damage.	◦ Inspect all connections for tightness and damage. Replace worn hoses or clamps. ◦ Clean intercooler fins. ◦ Professional inspection for internal damage or blockage.
Check Engine Light (CEL)	◦ Significant air leak detected by engine management system. ◦ Faulty sensor related to boost pressure or air temperature.	◦ Scan for diagnostic trouble codes (DTCs) to pinpoint the issue. ◦ Address air leaks. ◦ Inspect and test relevant sensors.
Visible Damage / Leaks	◦ Impact damage from road debris. ◦ Corrosion or material fatigue.	◦ Replace the damaged intercooler. ◦ Address the source of corrosion if possible.

For complex issues or if you are unsure about diagnosis, always consult a professional automotive technician.

7. Warranty and Support

The A-Premium Turbocharger Intercooler is backed by a **one-year unlimited-mileage guarantee** from the date of purchase. This warranty covers defects in materials and workmanship under normal use and service.

What the Warranty Covers:

- Manufacturing defects.
- Material failures.

What the Warranty Does Not Cover:

- Damage due to improper installation.
- Damage from accidents, misuse, abuse, or neglect.
- Normal wear and tear.
- Consequential or incidental damages.

To make a warranty claim or for technical support, please contact A-Premium customer service through the retailer where the product was purchased or visit the official A-Premium website for contact information. Please have your purchase receipt and product model number (APITC132) available.

8. Contact Information

For further assistance, inquiries, or support regarding your A-Premium Turbocharger Intercooler, please refer to the following:

- **Manufacturer:** PremiumpartsWhosale
- **Brand:** A-Premium
- **Online Store:** Visit the A-Premium Store on Amazon
- **General Inquiries:** Please use the contact methods provided by your retailer or the official A-Premium website.

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