Design Engineering 080110

DEI CryO2 3" O.D. Cryogenic Air Intake User Manual

Model: 080110 | Brand: Design Engineering

1. Introduction

The Design Engineering CryO2 3" O.D. Cryogenic Air Intake is designed to enhance engine performance by cooling the intake air charge. This system utilizes a patented cryogenic chamber within an aerodynamically designed bulb, which is integrated into a 4-inch segment of air tube. As air flows over the bulb, heat is removed, resulting in a colder, denser air charge for improved combustion efficiency. This product is suitable for turbocharged, supercharged, and normally aspirated applications.

2. Safety Information

Please read and understand all safety warnings and instructions before installing or operating this product. Failure to do so may result in property damage, personal injury, or death.

- Always wear appropriate personal protective equipment (PPE), including safety glasses and gloves, during installation.
- Ensure the vehicle's engine is off and cool before beginning installation.
- Handle cryogenic components with care. Avoid direct skin contact with extremely cold surfaces to prevent frostbite.
- Ensure all connections are secure and leak-free to prevent accidental release of cryogenic agents.
- Do not modify the product in any way. Use only genuine Design Engineering replacement parts.
- Keep out of reach of children.

3. Package Contents

Verify that all components listed below are present in your package:

- CryO2 Air Intake Unit (aerodynamically designed bulb with cryogenic chamber in a 4" air tube segment)
- Silicone Connection Sleeve
- Hose Clamps (2)
- Connection/Vent Hose
- Fittings (if applicable, for connection to cryogenic source)

Figure 3.1: Contents of the DEI CryO2 Air Intake kit. This image displays the primary components: the chrome-finished cryogenic air intake unit, a blue silicone connection sleeve, two metal hose clamps, a braided stainless steel connection hose with fittings, and two small brass fittings.

4. Setup and Installation

Follow these steps for proper installation of the CryO2 Air Intake system:

1. **Preparation:** Ensure the vehicle's engine is completely cool. Disconnect the negative terminal of the battery. Identify a suitable location in your vehicle's air intake system where the 4-inch segment of the CryO2 Air Intake can be integrated. This typically involves cutting an existing section of the intake tube.
2. **Cutting the Intake Tube:** Carefully measure and mark the section of your vehicle's existing air intake tube where the CryO2 unit will be installed. Cut the tube cleanly and precisely to accommodate the 4-inch length of the CryO2 unit. Ensure there are no burrs or sharp edges.
3. **Installing the CryO2 Unit:** Slide one hose clamp onto each end of the silicone connection sleeve. Place the silicone sleeve onto one end of the cut air intake tube. Insert the CryO2 Air Intake unit into the silicone sleeve, ensuring a snug fit. Then, connect the other end of the silicone sleeve to the remaining section of the vehicle's air intake tube.
4. **Securing Connections:** Position the hose clamps over the silicone sleeve and the air intake tubes/CryO2 unit. Tighten the hose clamps securely using an appropriate tool, ensuring a tight, leak-free seal. Do not overtighten.
5. **Connecting the Cryogenic Source:** Attach the provided connection/vent hose to the fitting on the CryO2 Air Intake unit. Route the hose to your cryogenic source (e.g., a CO2 bottle, sold separately) following the instructions provided with your cryogenic system. Ensure all fittings are tightened to prevent leaks.
6. **Final Checks:** Double-check all connections for security and proper fitment. Ensure no hoses are kinked or pinched. Reconnect the negative terminal of the battery.

5. Operating Instructions

The CryO2 Air Intake system operates by cooling the incoming air charge. Its function is dependent on the activation of your connected cryogenic system (e.g., CO2 injection). Refer to the operating instructions of your specific cryogenic system for details on activation and usage.

- Ensure your cryogenic source is adequately filled and properly connected.

- Activate the cryogenic system according to its manufacturer's instructions. The CryO2 Air Intake unit will then begin to cool the air passing through it.
- Monitor your vehicle's performance and intake air temperatures (if equipped with a sensor) to observe the effects of the system.

6. Maintenance

The CryO2 Air Intake unit requires minimal maintenance. Regular inspection is recommended to ensure optimal performance and safety.

- **Periodic Inspection:** Regularly inspect all hose connections and clamps for tightness and signs of wear or damage.
- **Cleaning:** If the exterior of the unit becomes dirty, wipe it with a soft, damp cloth. Do not use abrasive cleaners or solvents.
- **Cryogenic Source:** Ensure your cryogenic supply (e.g., CO2 bottle) is refilled or replaced as needed, following the supplier's guidelines.

7. Troubleshooting

If you encounter issues with your CryO2 Air Intake system, consider the following common problems and solutions:

Problem	Possible Cause	Solution
No noticeable temperature drop.	Cryogenic source empty or not activated. Leaks in the cryogenic supply line.	Check cryogenic bottle level and ensure system is activated. Inspect all fittings and hoses for leaks and tighten as necessary.
Air intake unit feels warm.	Cryogenic flow insufficient or absent.	Verify cryogenic system operation and supply.
Loose connections.	Hose clamps or fittings not tightened sufficiently.	Inspect and tighten all hose clamps and fittings.

If problems persist, contact Design Engineering customer support.

8. Specifications

- **Model Number:** 080110 (also referred to as 80110)
- **Outer Diameter (O.D.):** 3 inches
- **Product Dimensions:** Approximately 22.86 x 15.24 x 13.97 cm (9 x 6 x 5.5 inches)
- **Item Weight:** Approximately 580 g (1.28 lbs)
- **Material:** Aerodynamically designed bulb with cryogenic chamber, silicone connection sleeve.
- **Application:** Turbocharged, supercharged, and normally aspirated engines.
- **Temperature Reduction:** Up to 50°F (typical, based on testing)

9. Warranty and Support

Design Engineering products are manufactured to high standards. For specific warranty information, please refer to the warranty card included with your product or visit the official Design Engineering website. Keep your proof of purchase for warranty claims.

For technical support, installation assistance, or to inquire about replacement parts, please contact Design Engineering customer service:

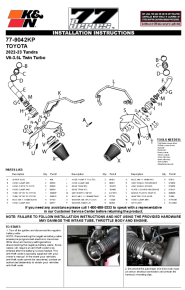
Website: www.designengineering.com

Phone: Refer to the website for regional contact numbers.

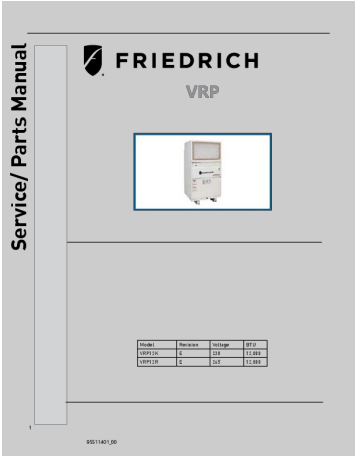
Address: Design Engineering, Inc., AVON LAKE, OH, 44012 US

Figure 9.1: Authentic Design Engineering, Inc. Product Hologram. This image shows a holographic sticker with the "DEI Design Engineering, Inc." logo, indicating an authentic product.

Related Documents - 080110

	K&N 77-9042KP Performance Air Intake Installation Instructions for Toyota Tundra V6-3.5L Twin Turbo (2022-23) Step-by-step installation guide for the K&N 77-9042KP high-flow performance air intake system for the 2022-2023 Toyota Tundra with a V6-3.5L Twin Turbo engine. Includes parts list, tools needed, installation procedures, and road testing advice.

	PPE Lower Intake Manifold Kit Installation Guide for 2004.5-2010 Duramax Trucks Comprehensive installation guide for the PPE Lower Intake Manifold Kit (Part #115051500) designed for 2004.5-2010 Chevrolet Silverado and GMC Sierra 2500/3500 models equipped with the 6.6L Duramax diesel engine. Includes a detailed parts list and step-by-step installation procedures.
	aFe POWER Quantum Cold Air Intake System for Ford F-150 V8-5.0L (2015-2020) Installation manual for the aFe POWER Quantum Cold Air Intake System (P/N 53-10034D) for Ford F-150 V8-5.0L vehicles (2015-2020). Includes component list, required tools, and step-by-step installation instructions.
	PPE Intake Manifold and Turbo Inlet Kit Installation Guide - 2015-2025 Ford 6.7L Power Stroke Comprehensive installation guide for the PPE Intake Manifold and Turbo Inlet Kit designed for 2015-2025 Ford Super Duty 6.7L Power Stroke engines. Includes detailed steps, parts list, and important notes for proper installation.
	PPE Intake Manifold and Turbo Inlet Kit Installation Guide for 2015-2025 Ford 6.7L Power Stroke Detailed installation guide for the PPE Intake Manifold and Turbo Inlet Kit (Part Numbers 315054000, 315054010, 315054030) for 2015-2025 Ford Super Duty 6.7L Power Stroke vehicles. Includes parts list, disassembly, and installation steps.
	aFe POWER BladeRunner Hot Side Charge Pipe Kit Installation Manual (Ford Bronco 2021+ V6 2.7L) Detailed instruction manual for installing the aFe POWER BladeRunner Hot Side Charge Pipe Kit (P/N 46-20588-B) on Ford Bronco vehicles (2021+ V6 2.7L twin-turbo). Includes parts list, tools required, and step-by-step installation guide.



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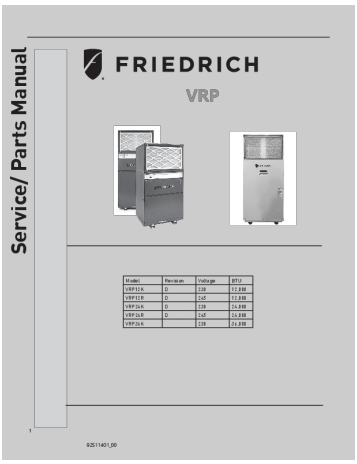

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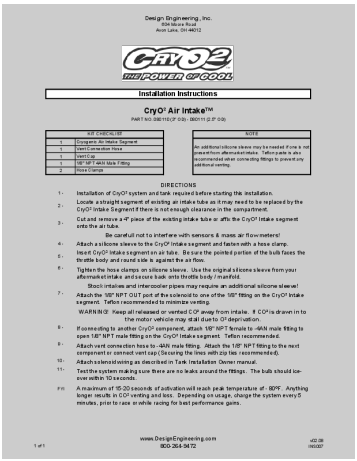

[pdf] Instructions

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Design Engineering, Inc. 604 Moore Road Avon Lake, OH 44012 Installation Instructions CryO Air IntakeTM PART NO. **080110** 3 OD - 080111 2.5 OD KIT CHECKLIST 1 Cryogenic Air Intake Segment 1 Vent Connection Hose 1 Vent Cap 1 1/8 NPT 4AN Male Fitting 2 Hose Clamps NOTE An additional...

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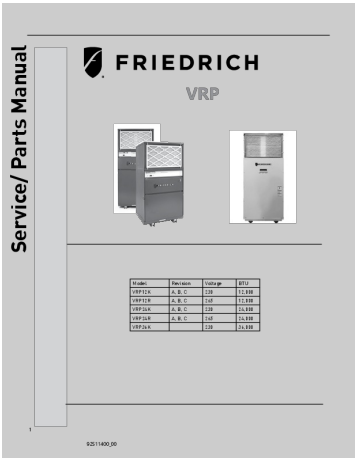

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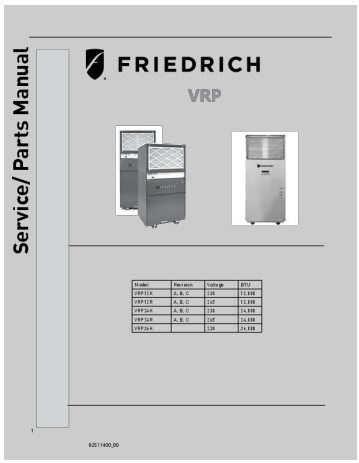

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