



**2009 - 2024
Dodge RAM**

**Supports Up To
1100 RWHP!**

**High Performance
Fuel Delivery System**



Note: Image includes items supplied in the performance fuel pump kit and items reused from the vehicle.

Installation Manual 2009-2024 Dodge Ram Dual Pump Fuel System

Please take a few minutes before installing to review the following guide. Ensure all parts and tools that are needed are present to complete install. See list below necessary tools.

Caution! - Modifying your fuel system without the proper knowledge, tools, or precautions can be **dangerous!** Fuel level must be below 1/8 tank before beginning the installation process to avoid fuel leakage into the passenger cabin of the vehicle.

Check your area before you begin the installation process. Remove any open flames such as cigarettes or pilot lights. Install only in a well-ventilated area. **DO NOT** install inside of a standard garage or with the vehicle doors closed to avoid inhalation of toxic gas fumes and risk of explosion. **DO NOT** smoke in the installation area. Fumes and a small amount of fuel may be released when servicing the pump, basket or connections. In order to reduce the risk of personal injury, cover any fittings with a shop towel before disconnecting to catch any fuel that may leak out. Place the towel in an approved container when the job is complete.

Engine recelabrating devices can modify fuel and spark curve (including, but not limited to programmers) and are recommended when changing the pressure or volume of fuel delivered to the engine. Improper use of these programmers may cause engine damage or failure. Modern Muscle is not responsible for engine or consequential damages. Modern Muscle is not responsible for damages, injury, or death caused by improper installation of fuel systems or components. Fuel system installations should be completed only by a qualified technician.

For technical support please contact:

Modern Muscle Xtreme
340 Colonel Lee Road
Martinsville, VA 24112
276-666-1934



Safety Precautions:

- Disconnect the truck's battery.
- Ensure all connections are secure and insulated to avoid short circuits.
- Keep the harness away from heat sources, sharp edges, and moving parts (e.g., drive and steering shafts).
- If you encounter any issues, recheck all connections and ensure the harness is properly routed.
- For any additional support, please contact the manufacturer or refer to the product documentation.

Tools required:

- Safety glasses
- Fuel pump harness
- Supplied FPCM Jumper or Fuel Pump Control Module
- Zip ties or cable (used for securing the harness)
- 10mm socket
- 13mm socket
- Tube of dielectric grease
- (Recommended: Lockring removal tool PN: 9340. Note that similar tools are available at your local parts store.)

***IMPORTANT NOTE: CHECK THE FUEL LEVEL IN THE TANK. IF IT EXCEEDS 1/8 FULL, YOU MUST EITHER DRAIN SOME FUEL OR OPERATE THE VEHICLE UNTIL THE LEVEL IS BELOW 1/8 TANK.**

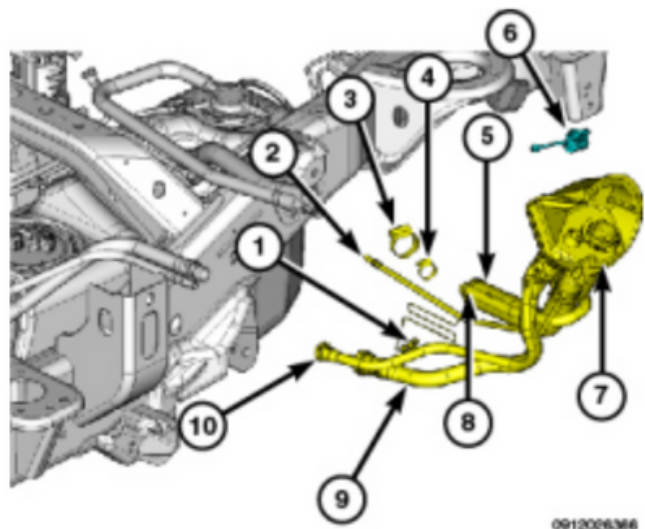
Step 1:

Disconnect the negative terminal of the vehicle's battery.

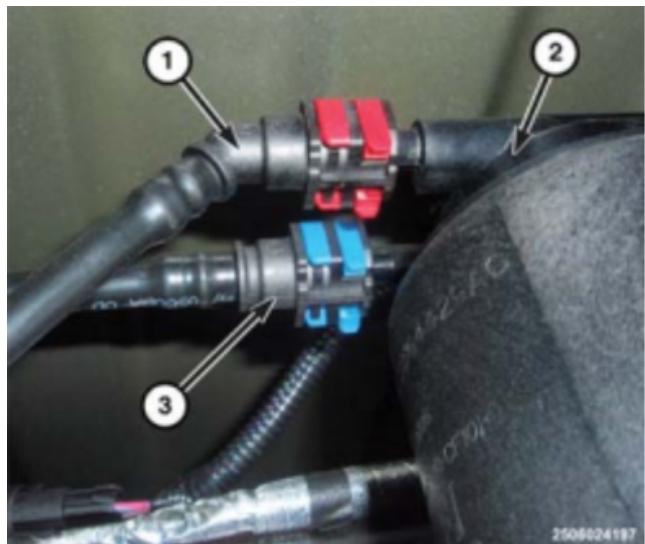
Step 2:

Remove the vehicle's fuel tank according to the procedure listed below.

1. Loosen the clamp (4) and disconnect the fuel vent hose (8).
2. Disconnect the fuel vapor filter hose (2).
3. Loosen the clamp (3) and disconnect the fuel fill hose (5).



4. Disconnect the fuel supply (1) and fuel return line (3) quick-connect fitting (refer to quick fittings section pg. 14-19) from the fuel filter/water separator housing.



Step 2 continued:

5. Disconnect the fuel line quick connect fitting (1).

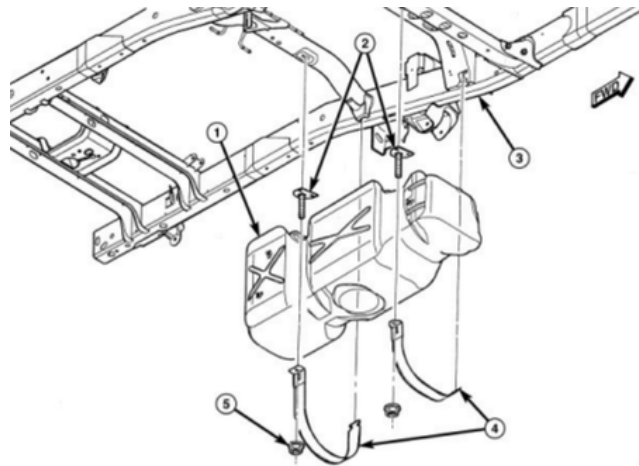


6. Disconnect the front fuel line quick connect fitting (1).

7. Using a suitable hydraulic jack with a fuel tank adapter, support the fuel tank.

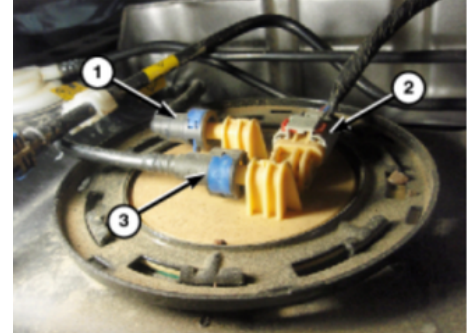


8. Remove the nuts (5) and carefully lower the fuel tank a few inches.



Step 2 continued:

9. Disconnect the fuel pump module wire harness connector (2).
10. Lower hydraulic jack and remove the fuel tank.



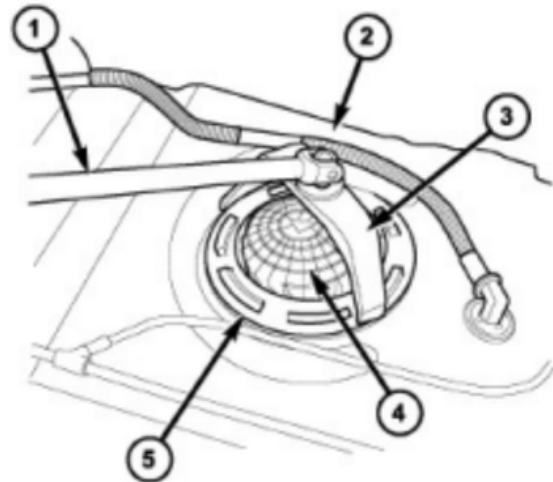
Note: Prior to removing the fuel pump module, use compressed air to remove any accumulated dirt and debris from around fuel tank opening.

Caution: An indexing arrow is located on top of the main fuel pump module to clock it's position into the fuel tank, note it's location for reassembly.

Step 3:

Remove the fuel pump module lock ring.

- Position the lock ring remover/installer 9340 (3) into the notches on the outside edge of the lock ring (5).
- Install a 1/2 inch drive breaker bar (1) into the lock ring remover/installer 9340 (3).
- Rotate the breaker bar counterclockwise and remove the lock ring.



Caution: Whenever the fuel pump module is serviced, it is recommended that the rubber O-ring seal be replaced.

Step 4:

Remove the fuel pump module (4) from the fuel tank. Be careful not to bend float arm during removal.

Step 5:

(Recommended)

Remove and discard the rubber O-ring seal.



NOTE: In the following instructions both DT and DS variants of the Ram trucks will be covered. DT models have a Fuel Pump Control Module (FPCM), pictured below, DS models do not. The FPCM is located above the rear axle. If an instruction is different based on variant, a **(DT)** or **(DS)** will follow the step number

Step 1:

After disconnecting the battery, lay out the fuel pump harness from the engine bay to the fuel tank.

Step 2:

Mount the relay under the hood in a secure, accessible location.



Fuel Pump Control Module

Step 3:

Connect the 12V fuse block eyelet to the stud on the truck's fuse box.

Step 4:

Connect the ground eyelet to a ground source of your choosing.

Recommend using one of the ground studs on the inner fender near the battery for a reliable connection.



Connecting the Trigger Wire for DT Variants

Step 1: (DT)

Locate and Open the loom. Begin by accessing the wiring loom at the relay. Identify the purple wire within the loom.

Step 2: (DT)

Follow the purple wire down to the first tape line. Carefully cut the purple wire at this point and extract it from the loom, pulling it back toward the relay.

Step 3: (DT)

Re-wrap the remaining wires in the loom with electrical tape to secure them.

Step 4: (DT)

Select the appropriate fuse tap from the three provided, matching the fuse style in your truck's fuse box. Crimp the selected fuse tap onto the end of the purple wire previously removed from the loom.

Step 5: (DT)

Insert the fuse tap with the attached purple wire into the ASD fuse slot in the fuse box, ensuring a secure connection. If the ASD fuse is not applicable, use a known switched 12V fuse slot instead.

NOTE: Ensure all connections are secure and the loom is properly insulated to prevent electrical issues.



Step 1: (DT)

Apply dielectric grease to the supplied FPCM jumper Connector.

Step 2: (DT)

Connect the fuel pump harness to the fuel hat.

Step 3: (DT)

Apply dielectric grease to the supplied FPCM jumper connector.

Step 4: (DT)

Connect the supplied FPCM jumper to the fuel pump harness.



Step 5: (DT)

Apply dielectric grease to the other end of the supplied FPCM jumper cable.

Step 6: (DT)

Attach the other end of the supplied FPCM jumper to the truck's OEM pump wiring harness.

Step 7: (DT)

Connect the ground outlet to the OEM ground stud on the outside of the frame rail, located under the gas filler neck.



FPCM Connections

Step 1: (DS)

Locate and unplug the OEM Fuel Pump Control Module.

Step 2: (DS)

Apply dielectric grease to the supplied FPCM breakout harness connector

Step 3: (DT)

Connect the supplied FPCM breakout harness to the OEM FPCM.

Step 4: (DT)

Apply the dielectric grease to the other end of the supplied FPCM breakout harness connector.



Step 5: (DT)

Plug the other end of the supplied FPCM breakout harness into the OEM harness that was just disconnected.

Step 6: (DT)

Apply dielectric grease to the fuel pump harness connector

Step 7: (DT)

Connect the fuel pump harness to the supplied FPCM.

NOTE: (DT)

The harness is designed to allow the supplied FPCM to be mounted right beside the OEM FPCM for ease of installation. The mount for the supplied FPCM is not provided and must be fabricated or sourced by the customer.



Connect 2-pin Connectors

Step 1: (DT)

Apply dielectric grease to the 2-pin connectors on the fuel pump harness and the supplied FPCM breakout harness.

Step 2: (DT)

Securely connect the 2-pin connectors to the complete circuit (see last page for diagram)

Secure the harness

Step 1:

Verify that all the connections are secure.

Step 2:

Use zip ties or cable clips to tie up the harness, ensuring it is neatly:

- Away from all heat sources
- Clear of sharp edges
- Not in contact with rotating parts, such as drive or steering shafts



Step 1:

Reconnect the truck's battery.

Step 2:

Double-check all connections for tightness and proper insulation.

Step 3:

Start the truck and verify that the fuel pump is operating correctly.

Step 4:

Inspect the harness routing to ensure it remains secure and protected during operation.

**CAUTION:**

Before separating a Quick-Connect fitting, pay attention to what type of fitting is being used. This will prevent unnecessary fitting or fitting latch breakage.

CAUTION:

The interior components (O-rings, clips) of quick-connect fittings are not serviced separately, but new plastic spacers and latches are available for some types. If service parts are not available, do not attempt to repair the damaged fitting or fuel line (tube). If repair is necessary, replace the complete fuel line (tube) assembly.

Different types of quick-connect fittings are used to attach the various fuel system components, lines and tubes. There are specific methods required to release each type of fitting without damaging the fitting or components that they are attached to. Some are equipped with safety latch clips. Some quick-connect fittings require the use of a special tool for disconnection and removal.

Quick-Connect Fitting

The following are the various types of automotive quick-connect fittings:

- Redundant Latch Single Button Type Fitting
- Single Button Type Fitting
- Pinch Type Fitting
- Pinch Type Fitting With Lock Tab
- Single Tab Type Fitting

NOTE:

Care must be used when separating fittings. Over-flexing may cause the tube to become deformed or damaged.

DISCONNECTING

WARNING:

On vehicles equipped with gasoline engines, the fuel system is under a constant pressure (even with engine off). Before servicing any fuel system hose, fitting or line, fuel system pressure must be released.

CAUTION:

Before separating a Quick-Connect fitting, pay attention to what type of fitting is being used. This will prevent unnecessary fitting or fitting latch breakage.

CAUTION:

The interior components (O-rings, clips) of quick-connect fittings are not serviced separately, but new plastic spacers and latches are available for some types. If service parts are not available, do not attempt to repair the damaged fitting or fuel line (tube). If repair is necessary, replace the complete fuel line (tube) assembly.

Redundant Latch Single Button Type Fitting:

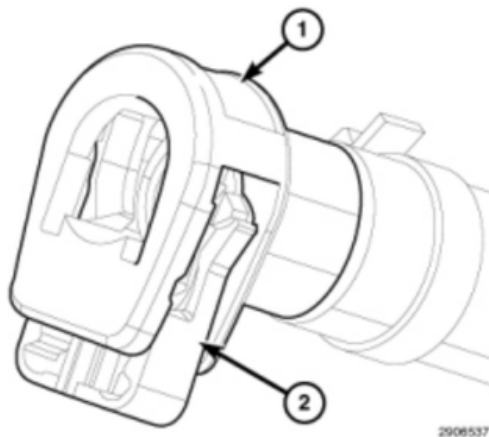
This type of quick-connect fitting is equipped with a redundant latch and a single push button that releases two internal latches located in the quick-connect fitting. Special tools are not required for removal.

CAUTION:

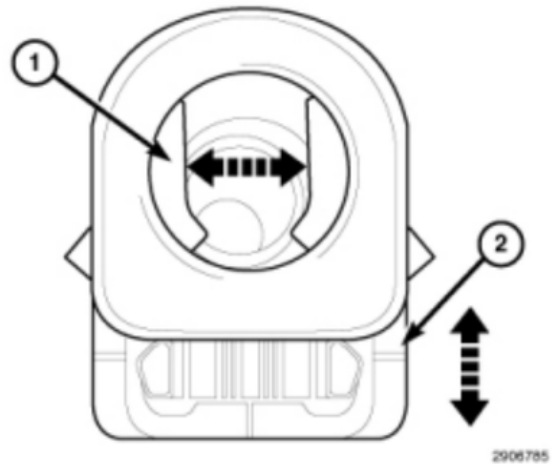
Do not pry or pull up on the push button as damage to the latches of the quick-connect fitting will occur.

1. Pull the redundant latch out away from the quick-connect fitting.
2. Press on the push button with your thumb, release the internal latches and remove the quick-connect fitting from the fuel system component.

Quick-Connect Fitting



- 1 - Single Push Button
2 - Redundant Latch



- 1 - Internal Latches
2 - Redundant Latch

Single Button Type Fitting:

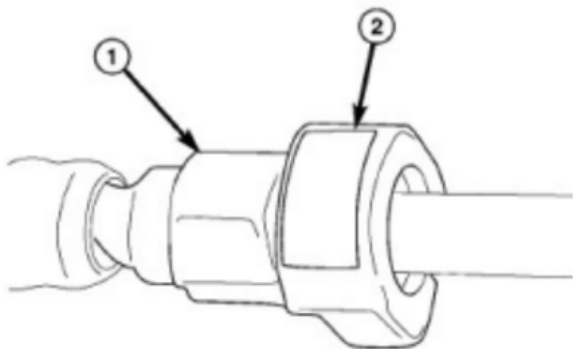
This type of quick-connect fitting is equipped with a single push button that releases two internal latches located in the quick-connect fitting. Special tools are not required for removal.

CAUTION:

Do not pry or pull up on the push button as damage to the latches of the quick-connect fitting will occur.

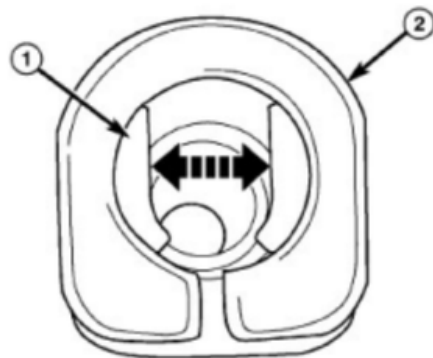
1. Press on the push button with your thumb, release the internal latches.
2. Remove the quick-connect fitting from the fuel system component

Quick-Connect Fitting



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- 1 - Quick-Connect Fitting
2 - Single Push Button



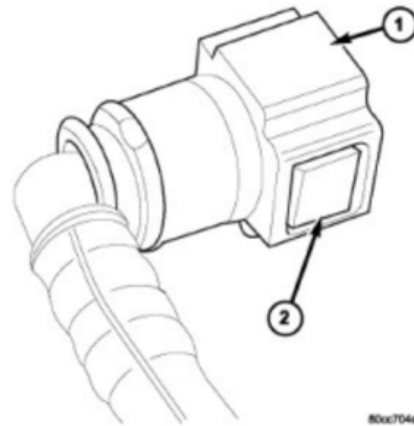
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- 1 - Internal Latches
2 - Quick-Connect Fitting

2 Button Type Fitting:

This type of quick-connect fitting is equipped with two push buttons that releases two internal latches. Special tools are not required for removal.

1. Press on both push buttons with your thumb, release the internal latches.
2. While holding the two push buttons simultaneously, remove the quick-connect fitting from the fuel system component.

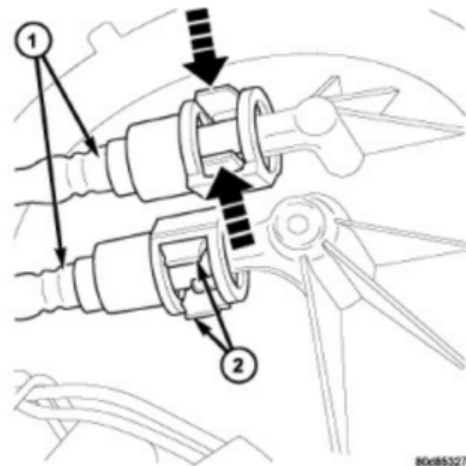


- 1 - Quick-Connect Fitting
2 - Two Push Buttons

Pinch Type Fitting:

This type of quick-connect fitting is equipped with two finger tabs. Special tools are not required for removal.

1. Pinch both tabs together and release the quick-connect fitting.
2. Remove the quick-connect fitting from the fuel system component.

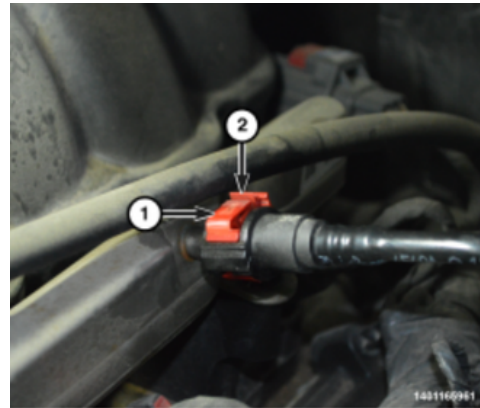


- 1 - Quick-Connect Fitting
2 - Two Finger Tabs

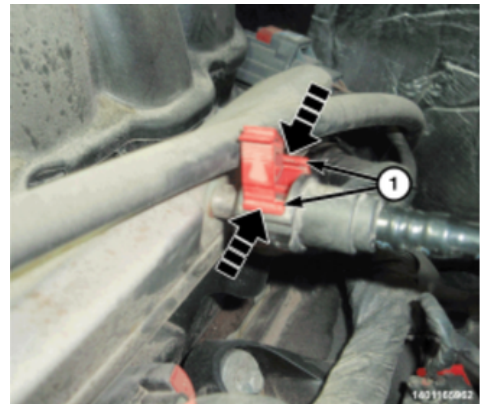
Pinch Type Fitting With Lock Tab :

This type of quick-connect fitting is equipped with two finger tabs. Special tools are not required for removal.

1. Press on the tab (2) and release the lock (1).



2. Pinch both tabs (1) together and push down release the quick-connect fitting.



3. Pull back and remove the quick-connect fitting (1) from the fuel system component.



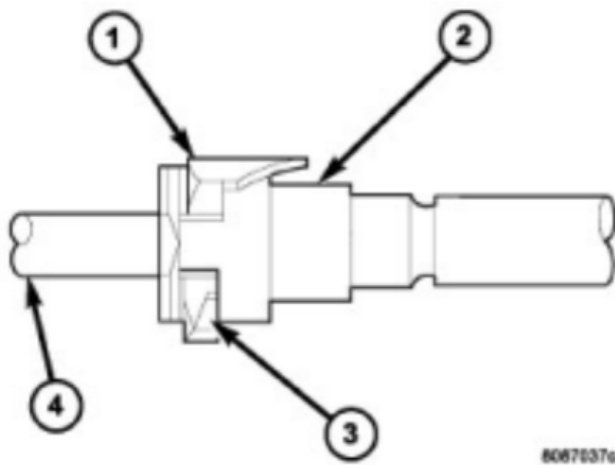
Single Tab Type Fitting:

This type of quick-connect fitting is equipped with a single pull tab. The tab is removable. After tab is removed, the quick-connect fitting can be separated from the fuel system component. Special tools are not required for removal.

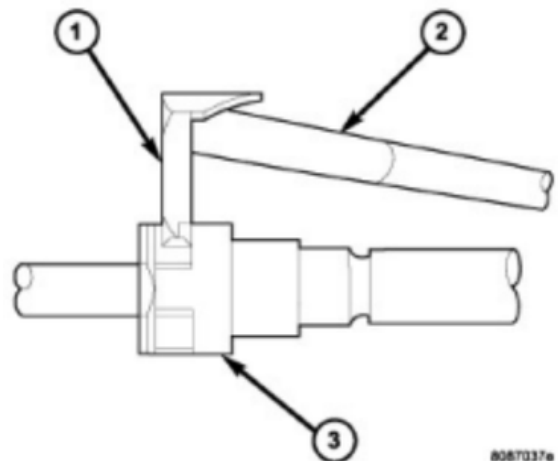
1. Press release tab on side of fitting to release pull tab.
2. While pressing the release tab on the side of the quick-connect fitting use a screwdriver to pry up the pull tab.
3. Raise the pull tab until it separates from the quick-connect fitting.
4. Remove the quick-connect fitting from the fuel system component.

NOTE: If release tab is not pressed prior to releasing pull tab, pull tab will be damaged.

Quick-Connect Fitting



- 1 - Single Pull Tab
- 2 - Quick-Connect Fitting
- 3 - Release Tab
- 4 - Fuel System Component



- 1 - Pull Tab
- 2 - Screwdriver
- 3 - Quick-Connect Fitting



Thank You for Choosing Modern Muscle!

Please take a moment to review the following important information:

Customer Support

If you have any questions or encounter any issues, our friendly customer support team is here to help! You can reach us through the following channels:

Phone: 1-276-666-1934

Email: customerservice@modernmusclextreme.com

Website: www.modernmusclextreme.com/contactus

Warranty & Returns

We stand behind our products. For details on warranty coverage or how to initiate a return, please visit the "Warranty & Returns" section on our website or contact our customer support team.

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Instagram: @modern_muscle_xtreme

YouTube: @ModernMuscleXtreme

Feedback

We value your feedback! Your experience helps us improve and provide you with the best possible products. Please take a moment to leave a review or share your thoughts on our website.

Thank you again for choosing Modern Muscle!

Best Regards,
The Modern Muscle Team