Technical Precision TZ-ESBH-R

Technical Precision Replacement Tachometer User Manual

Model: TZ-ESBH-R

Introduction

This manual provides essential information for the installation, operation, and maintenance of your new Technical Precision Replacement Tachometer. Please read this manual thoroughly before installation and retain it for future reference. This tachometer is designed as a direct replacement for the Freightliner FL70 Year 1997 model, featuring a 3.375-inch chrome electric design with a 0-3000 RPM range.

Product Overview

Image: Front view of the Technical Precision 3.375-inch Chrome Electric Tachometer. The gauge features a black face with white markings for RPM (0-3000, marked as RPM x 100), a white needle, and a chrome bezel. The ISSPRO logo is visible at the bottom center.

The Technical Precision Replacement Tachometer is engineered for precise engine RPM measurement. Key features include:

- **Direct Replacement:** Specifically designed for Freightliner FL70 models from 1997.
- **Size:** 3.375-inch diameter for standard dashboard fitment.
- **Range:** Measures engine speeds from 0 to 3000 RPM.
- **Design:** Features a durable chrome finish and an electric operation for reliable performance.

Setup and Installation

Proper installation is crucial for the accurate operation and longevity of the tachometer. If you are not familiar with automotive electrical systems, it is recommended to seek professional assistance.

Tools Required:

- Screwdriver set (Phillips and Flathead)
- Wire strippers/crimpers
- Electrical tape or heat shrink tubing
- Multimeter (for testing connections)
- Wrench set (if dashboard removal is required)

Installation Steps:

1. **Safety First:** Disconnect the vehicle's battery negative terminal before beginning any electrical work to prevent short circuits or electrical shock.
2. **Access Dashboard:** Carefully remove the necessary dashboard panels to access the existing tachometer or the designated mounting location. Refer to your vehicle's service manual for specific instructions on dashboard disassembly.
3. **Remove Old Tachometer (if applicable):** Disconnect all wiring from the old tachometer and unmount it from the dashboard. Note the wiring connections for reference.
4. **Mount New Tachometer:** Insert the new Technical Precision tachometer into the dashboard opening. Secure it using the provided mounting hardware. Ensure it is firmly seated and aligned.
5. **Wire Connections:**
    - **Power (12V Ignition):** Connect the tachometer's positive power wire (usually red) to a switched 12V ignition source. This wire should only have power when the ignition is on.
    - **Ground:** Connect the tachometer's ground wire (usually black) to a reliable chassis ground point. Ensure a clean, secure connection.
    - **Tach Signal:** Connect the tachometer's signal wire (color may vary, often green or white) to the engine's RPM signal source. This is typically found at the negative terminal of the ignition coil, a dedicated tachometer output on the ECU, or an alternator W-terminal. Consult your vehicle's wiring diagram for the exact location.
    - **Illumination (Optional):** If your tachometer has an illumination wire (usually blue or orange), connect it to the vehicle's dashboard illumination circuit. This will light up the gauge when the headlights are on.
6. **Secure Wiring:** Ensure all connections are secure and insulated using electrical tape or heat shrink tubing. Route wires away from moving parts or heat sources.
7. **Test Functionality:** Reconnect the vehicle's battery. Turn the ignition to the ON position (do not start the engine yet) and check if the tachometer illuminates (if connected). Start the engine and observe if the tachometer needle responds to engine RPM changes.
8. **Reassemble Dashboard:** Once satisfied with the operation, carefully reassemble all dashboard panels.

Operating Instructions

The Technical Precision Tachometer operates automatically once properly installed and the engine is running. It provides a real-time display of your engine's revolutions per minute (RPM).

- **Reading the Gauge:** The dial is marked from 0 to 30, representing 0 to 3000 RPM (as indicated by "RPM x 100"). For example, if the needle points to '15', the engine is running at 1500 RPM.
- **Normal Operation:** Observe the tachometer during driving to understand your engine's typical RPM range for various speeds and gear selections.
- **Redline Awareness:** While this tachometer has a 0-3000 RPM range, be aware of your vehicle's specific engine redline (maximum safe operating RPM) as specified by the vehicle manufacturer. Avoid operating the engine consistently at or above its redline to prevent damage.

Maintenance

The Technical Precision Tachometer is designed for durability and requires minimal maintenance.

- **Cleaning:** Clean the face of the tachometer with a soft, damp cloth. Avoid using abrasive cleaners or solvents, as these can damage the lens or markings.
- **Connection Checks:** Periodically inspect the wiring connections to ensure they remain secure and free from

corrosion. Loose connections can lead to inaccurate readings or intermittent operation.

- **Environmental Protection:** Ensure the tachometer is protected from excessive moisture and extreme temperatures, which can affect its electronic components.

Troubleshooting

If you experience issues with your tachometer, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
Tachometer does not light up.	No power to illumination wire; faulty bulb/LED; poor ground connection.	Check illumination wire connection to vehicle's lighting circuit. Verify power with a multimeter. Check ground connection.
Tachometer needle does not move.	No power to the unit; poor ground connection; no RPM signal; incorrect signal wire connection.	Verify 12V ignition power and ground connections. Check the RPM signal wire connection at the source and the tachometer. Ensure the signal source is active.
Inaccurate RPM reading.	Incorrect signal type/source; electrical interference; faulty unit.	Confirm the tachometer is compatible with your engine's ignition system. Ensure signal wire is not routed near high-voltage cables. If issues persist, the unit may be faulty.
Intermittent operation.	Loose wiring connections; intermittent power/ground; signal interference.	Inspect all wiring connections for looseness or corrosion. Check for stable power and ground.

If these troubleshooting steps do not resolve the issue, please contact Technical Precision customer support for further assistance.

Specifications

Attribute	Detail
Product Type	Electric Tachometer
Application	Replacement for Freightliner FL70 Year 1997
Diameter	3.375 inches
Finish	Chrome
RPM Range	0-3000 RPM
Model Number	TZ-ESBH-R
Manufacturer	Technical Precision

Warranty and Support

Technical Precision stands behind the quality of its products. For information regarding warranty coverage, please refer to the documentation included with your purchase or visit the official Technical Precision website.
For technical support, troubleshooting assistance beyond this manual, or inquiries about replacement parts, please contact Technical Precision customer service:

- **Online Support:** Visit the Technical Precision Store on Amazon.
- **Contact Information:** Refer to the packaging or the official website for direct contact details (phone, email).

Please have your model number (TZ-ESBH-R) and purchase date available when contacting support.