Warnings and Considerations

> **WARNING!** Use Geotab telematics devices only with Geotab-approved harnesses acquired from Geotab-authorized channels. Use of non-Geotab harnesses from unauthorized channels can cause serious safety risks, including fire, and can lead to serious personal injury and/or damage to the vehicle.

> **! IMPORTANT:** For heavy-duty trucks, always use a vehicle-specific harness when offered by Geotab or the vehicle manufacturer (see Harness Identification and Application [PUB] and this document). Where a heavy-duty truck-specific harness is not offered by Geotab or the vehicle manufacturer, use the adapter harness (HRN-CG13S1) for any 16-pin (OBDII) installation method to avoid possible GO device damage.

> **! IMPORTANT:** The State of California currently prohibits Installing HRN-GS16K2, HRN-GS09K2, HRN-GR09K1, and HRN-BD16S5 in a manner that relocates the in-vehicle diagnostic connector. The following documents provide guidance on installing harnesses using a direct plugin installation method without relocating the data link connector:
> - HRN-GS16K2 Installation - Direct Plug-In
> - HRN-GS09K2 Installation - Direct Plug-In
> - HRN-GR09K1 Installation - Direct Plug-In
>
> Alternatively, GO devices can be installed directly into the OBDII port using an extension/conversion harness that plugs directly into the OBDII port or other emissions diagnostic data link connector port. For more information on Geotab harnesses and adapters, see Harness Identification and Application.

Introduction

For many vehicles, the installation of a GO device requires an intermediary harness cable. The purpose of this document is to help you identify which harness cables are required for installation based on vehicle make, model, and year, as described in the Compatibility Tables.

Once you know which harnesses are required for your customer's installation needs, the harnesses can be ordered in MyAdmin, and you can refer to the related Harness Identification and Application document for more detailed HRN-DM09T2 information about each harness.

Vehicle Assessment Instructions

To complete a vehicle assessment, do the following:

1. Request a complete vehicle list from the customer, which includes:

    - VIN

    - Manufacturer

    - Model

    - Year

2. Use the [Harness Lookup Excel template](#) to prepare a list of vehicles for harness assessment:
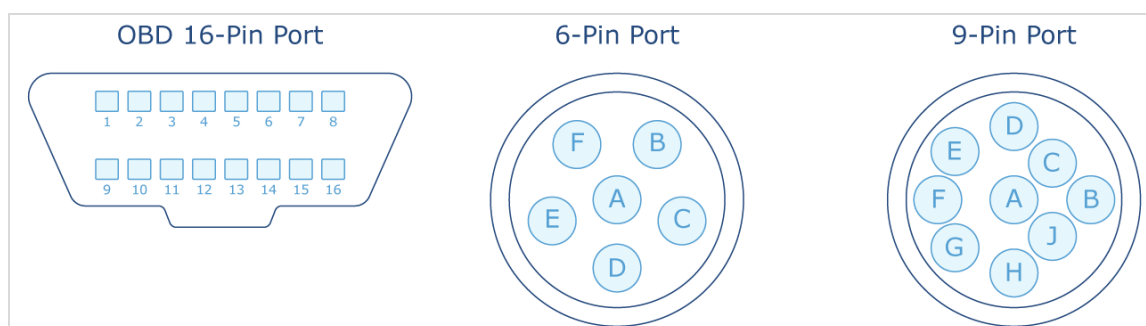
   - Ensure that there is no missing information or incomplete entries.

   - Normalize the manufacturer and model names (for example, ensure all variations of model names, such as F-150 and F150, are entered in the same way).

   - Use the **Summary** tab to get counts of each vehicle type.

3. Use the [Compatibility Tables](#) to determine which harnesses are required for each vehicle.

Vehicle Type Overview

Light-Duty Vehicles

All light-duty vehicles made since 1997 have a 16-pin OBDII port. They are able to use the standard HRN-BS16S4 harness, the HRN-BS16S4F harness, or the HRN-GS16K2 universal T-Harness. Review the [Compatibility Tables](#) for any exceptions.

> ✱ **NOTE:** A standard GO9 device is also a 16-Pin Port, so a harness may not be required.

Heavy-Duty Truc*ks

Listed below are a number of common heavy-duty truck manufacturers:

- Autocar

- Freightliner

- International

- Isuzu

- Kenworth

- Mack

- Peterbilt

- Sterling

- Volkswagen

- Volvo

- Western Star

GO RUGGED

GO RUGGED requires specific harnesses for installation. For more detailed information about installation and harness types, please see the [Vehicle Specific Installation Notes](#) and the [Harness Identification and Application](#) document.

Diagnostic Ports

> **! IMPORTANT**: OBDII and RP1226 diagnostic ports are supported. Refer to [OBD vs. RP1226 Connector - Compare and Contrast](#) for more information.

The websites below can assist in finding the diagnostic port in your vehicle.

- [Wiki OBD](#) — Europe, Latam, Asia, Africa and Australia
- [Innova DLC](#) — North America only
- [CarMD](#) — North America only
- [The Diagnostic Box](#) — North America & Europe
- [Outils OBD Facile](#) — North America & Europe

VIN Decoding

If you only have access to a VIN, there are various online decoding sites that can retrieve the Make, Model and Year of a vehicle based on its VIN.

Harness Estimates

> **! IMPORTANT**: Geotab does not guarantee that the following suggestions are 100% accurate. They are best guesses and are considered to be estimates based on experience.

Compatibility Tables

Light-Duty

The following tables provide information regarding the Light-Duty vehicle type.

All Makes / Models

Make	Model	Year	Straight Harness	T-Harness	Notes
All	All	<1996	HRN-CW03K3		Any vehicle without a diagnostic port.

All light duty	All	1997+	HRN-BS16S4 or HRN-BS16S4F	HRN-GS16K2	Applies to all light duty makes and models. See exceptions below.

Ford

Make	Model	Year	Straight Harness	T-Harness	Notes
Ford	F150−F550	1997+	HRN-BS16S4 or HRN-BS16S4F	HRN-GS16K2	
Ford	F650+	1997+	HRN-DS09S4	HRN-GS09K2	Please confirm the diagnostic port to ensure it is 9-pin prior to purchasing a 9-pin harness. Purchase HRN-GS16K2 for 16-pin OBDII. F650+ trucks can have either a gas (Ford) or diesel (Cummins or Cat) Engine. Ford trucks with gas engines send the majority of data via 16-pin OBDII, however some data may be sent via 9-pin (brake/ABS). Ford trucks with Diesel engines send the majority of data via 9-pin, however some data may be sent via 16-pin (odometer/seatbelt).
Ford	Fiesta	1997+	Must use T-harness	HRN-GS16K2	Must use T-harness due to the location of the diagnostic port. The 2017+ Mk7 models can be directly plugged into the diagnostic port.
Ford	Fusion	1997+	Must use T-harness	HRN-GS16K2	Must use T-harness due to the location of the diagnostic port.

Dodge

Make	Model	Year	Straight Harness	T-Harness	Notes
Dodge	All	1997+	HRN-BS16S4 or HRN-BS16S4F	HRN-GS16K2	Please confirm that the diagnostic port is a 16-pin OBDII before ordering the harness.

General Motors (GM) / Chevrolet / GMC

Make	Model	Year	Straight Harness	T-Harness	Notes
GM/Chevy	All light-duty GM/Chevy cars/trucks (e.g. Cruze, Malibu, Silverado, Sierra, etc.)	1997+	HRN-BS16S4 or HRN-BS16S4F	HRN-GS16K2	Please confirm that the diagnostic port is a 16-pin OBDII before ordering the harness.
Chevrolet	C4−C7 & T6−T8 Series	2006−2009	HRN-BS16S4 or HRN-BS16S4F	HRN-GS16K2	Please confirm that the diagnostic port is a 16-pin OBDII before ordering the harness.
GMC	C4−C8 & T6−T8 Series	2006−2009	HRN-BS16S4 or HRN-BS16S4F	HRN-GS16K2	Please confirm that the diagnostic port is a 16-pin OBDII before ordering the harness.

Nissan

Make	Model	Year	Straight Harness	T-Harness	Notes
Nissan	Frontier	1997+	Must use T-harness	HRN-GS16K2	Must use T-harness due to the location of the diagnostic port.
Nissan	UD	2009	HRN-DS09S4	HRN-GS09K2	**! IMPORTANT**: The vehicle has two diagnostic ports — **do not connect to the OBDII port.**

Isuzu

Make	Model	Year	Straight Harness	T-Harness	Notes
Isuzu	All	1997+	HRN-BS16S4 or HRN-BS16S4F	HRN-GS16K2	Please confirm that the diagnostic port is a 16-pin OBDII before ordering the harness.
Isuzu	Diesel Vehicles	2017+	N/A	HRN-CM24Y1 + HRN-CI04A2	The optional Isuzu FMS port provides features required for ELD solutions, such as odometer, which are not provided by HRN-GS16K2. Requires HRN-CM24Y1 (from Geotab) and FMS kit (CAN converter) #8983519390, which if not ordered at time of manufacture must be ordered and activated through an Isuzu dealer.

Hino

Make	Model	Year	Straight Harness	T-Harness	Notes
Hino	All	1997-2013	HRN-BS16S4 or HRN-BS16S4F	HRN-GS16K2	The vehicle has two diagnostic ports. Data typically comes through the 16-pin but in some cases the 9-pin.
Hino	200-500 Series	2014-2018		HRN-CM24Y1 + HRN-CH06A2	Special adapter HRN-CH06A2 harness required.
Hino	100 Series	2014-2018		HRN-CM24Y1 + HRN-CH10A2	Special adapter HRN-CH10A2 harness required.
Hino	All	2019-2022		HRN-CM24Y1 + HRN-CH10A2	Special adapter HRN-CH10A2 harness required.
Hino	All	2023		HRN-GS09K2	

Mercedes-Benz

Make	Model	Year	Straight Harness	T-Harness	Notes
Mercedes	All	1997+	HRN-BS16S4 or HRN-BS16S4F	HRN-GS16K2	
Mercedes	Sprinter	2019+	HRN-CP04A2 + HRN-CM24Y1 (for PSM connection)		907 & 910 chassis only.

Mitsubishi

Make	Model	Year	Straight Harness	T-Harness	Notes
Mitsubishi	All Light Duty	1997+	HRN-BS16S4 or HRN-BS16S4F	HRN-GS16K2	Please confirm that the diagnostic port is a 16-pin OBDII before ordering the harness.
Mitsubishi Fuso	All	<2009	HRN-CW03K3	N/A	Please use HRN-CW03K3 unless confirmed diagnostic port with Auxiliary port. If an Auxiliary port is present, use HRN-BU16Y5.
Mitsubishi Fuso	All	2010+	HRN-BU16Y5	N/A	Must use HRN-BU16Y5. May require HRN-CW03K3 if no Auxiliary port is available.

Workhorse Chassis

Make	Model	Year	Straight Harness	T-Harness	Notes
Workhorse Chassis	All	1999+	HRN-BS16S4 or HRN-BS16S4F	HRN-GS16K2	Please confirm that the diagnostic port is a 16-pin OBDII before ordering the harness.

Electric Vehicles

The following tables provide information regarding the Electric vehicle type.

BYD

Make	Model	Year	Straight Harness	T-Harness	Notes
BYD	All Bus Models	All	HRN-BS16S4	HRN-GS16K2	Only applicable for BYD buses made in North America. For BYD buses made outside North America, please work with your Geotab Solutions Engineering team member and BYD person of contact to determine the appropriate harness to use.

> **✱ NOTE:** All BYD trucks made in North America require a proprietary harness, which Geotab does **not** make in-house. For BYD vehicles outside North America please work with your regional Solutions Engineering rep, the EV team, and your BYD point of contact to determine the appropriate harness to use.

Tesla

Make	Model	Year	Straight Harness	T-Harness	Notes
Tesla	Model S	September 16, 2015 or older	HRN-CT06S2	N/A	Please check the diagnostic connector of any MY2015 Model S prior to purchasing the harness.
Tesla	Model S/X	September 17, 2015 or newer	HRN-CT06S1	N/A	Please check the diagnostic connector of any MY2015 Model S prior to purchasing the harness.
Tesla	Model 3	2018	N/A	HRN-CT20T1	The diagnostics port can be found in the rear behind the lower center console panel.
Tesla	Model 3	2019+	N/A	HRN-CT20T11	The diagnostics port can be found in the rear behind the lower center console panel.
Tesla	Model Y	2019+	N/A	HRN-CT26T1	The diagnostics port can be found in the rear behind the lower center console panel.

Heavy-Duty

The following tables provide information regarding the Heavy-Duty vehicle type.

All Makes / Models

Make	Model	Year	Straight Harness	T-harness	Notes
All	All	<1996	HRN-CW03K3		Any vehicle without a diagnostic port.
All Heavy Duty (see list above)	All	1997–1999	HRN-DS06S4	HRN-DS06T2	

Autocar

Make	Model	Year	Straight Harness	T-harness	Notes
Autocar	All		HRN-DS09S4	HRN-GS09K2	

Freightliner

Make	Model	Year	Straight Harness	T-harness	Notes
Freightliner	All Medium Duty (i.e. M2 106 Medium Duty)	2000+	HRN-DS09S4	HRN-GS09K2	
Freightliner	All Heavy/Super Duty (ie. Cascadia, 114SD, 122SD & 108SD)	2000–2012	HRN-DS09S4	HRN-GS09K2	
Freightliner	All Heavy/Super Duty (ie. Cascadia,	2013+	Must use T-harness	HRN-GS09K2	Must use T-harness due to the location of the diagnostic port.

Freightliner	All models	2019+	HRN-CS14S21	HRN-GS09K2	If the vehicle is equipped with a 14-pin (RP1226) port, use HRN-CS14S21 as more data is sent through this port. If not, then use HRN-GS09K2.

International

Make	Model	Year	Straight Harness	T-harness	Notes
International	7300−9900	2000−2005	HRN-DS06S4	HRN-DS06T2	For MY2005, please check your diagnostic port prior to purchasing the harness. For International 7400, 2005 use HRN-DS09S4 and HRN-GS09K2
International	7300−9900	2006+	HRN-DS09S4	HRN-GS09K2	
International	5500i−9900i	2000−2007	HRN-DS06S4	HRN-DS06T2	Please check your diagnostic port prior to purchasing the harness.
International	5500i−9900i	2008+	HRN-DS09S4	HRN-GS09K2	

Kenworth

Make	Model	Year	Straight Harness	T-harness	Notes1XK
Kenworth	All	2000−2016	HRN-DS09S4	HRN-GS09K2	
Kenworth	All	2017+	Must use T-harness	HRN-GS09K2	To guarantee the operation of the GO device, it is recommended that a GO9 is used exclusively for 2017+ Kenworth. GO7 and GO8

| | | | | | devices may not work correctly with some motors (MX13 and MX15). See [Installation Notes](#) for more information.

If the vehicle has a Paccar Motors MX13 or MX15 and a GO7 or GO8 is already installed, then the harness HRN-BS04A1 must be used instead. |
|---|---|---|---|---|---|
| Kenworth | All models | 2019+ | HRN-CS14S21 | HRN-CS14T2 | If the vehicle is equipped with a 14-pin (RP1226) port, use this harness as more data is sent through this port.

If the vehicle is not equipped with a 14-pin (RP1226) diagnostic connector, use the 9-pin harness HRN-GS09K2 instead. |

Mack

> **! IMPORTANT**: The OBDII port **must not** be used for 2019+. Always use a vehicle-specific harness when offered by Geotab or the vehicle manufacturer. Where a heavy-duty truck-specific harness is not offered by Geotab or the vehicle manufacturer, use the adapter harness (HRN-CG13S1) for any 16-pin (OBDII) installation method to avoid possible GO device damage.

Make	Model	Year	Straight Harness	T-harness	Notes
Mack	All	2000–2005	HRN-DS09S4	HRN-GS09K2	
Mack	Cabover models	2000-2012		HRN-GS09K2	
Mack	Models: CTP, CXP, CHP, CHU, CXU & GU	2006-2018	N/A	HRN-CM24Y1 + HRN-CK10K2	[2006-2018 Mack Install Guide](#)

Mack	Models: GR, AN & PI	2019+	N/A	HRN-CM24Y1 + HRN-CE10K2	[Installation Instructions](#)
Mack	Cabover MR Models	2019+	N/A	HRN-CM24Y1 + HRN-CE10K2	[Installation Instructions](#)
Mack	MD Series	2022+	N/A	HRN-GS09K2	

Peterbilt

Make	Model	Year	Straight Harness	T-harness	Notes
Peterbilt	All	2000–2007	HRN-DS09S4	HRN-GS09K2	Please confirm the diagnostic port, as in some cases the vehicle may have a 6-pin port and will require the HRN-DS06T2.
Peterbilt	All	2008-2018	N/A	HRN-GS09K2	To guarantee proper operation of the GO device, it is recommended that a GO9 is used exclusively for 2017+ Peterbilt. GO7 and GO8 devices may not work correctly with some motors (MX13 and MX15).
Peterbilt	All models	2019+	HRN-DS09S4	HRN-GS09K2	If the vehicle is equipped with a 14-pin (RP1226) Sterling diagnostic connector, use the 14-pin straight harness HRN-CS14S21 or T-harness HRN-CS14T2 instead.

Sterling

Make	Model	Year	Straight Harness	T-harness	Notes
Sterling	All (except Bullet)	1997–1999	HRN-DS06S4	HRN-DS06T2	
Sterling	All (except	2000+	HRN-DS09S4	HRN-GS09K2	

	Bullet)				
Sterling	Bullet	2008-2009	HRN-BS16S4 or HRN-BS16S4F	HRN-GS16K2	

Volkswagen

> **! IMPORTANT**: The OBDII port **must not** be used for Volkswagen trucks. Always use a vehicle-specific harness (HRN-CG04T3) when offered by Geotab or the vehicle manufacturer. If a heavy-duty truck-specific harness is not offered by Geotab or the vehicle manufacturer, use the adapter harness (HRN-CG13S1) for any 16-pin OBDII installation to avoid possible damage to the GO device.

Make	Model	Year	Straight Harness	T-harness	Notes
Volkswagen	All heavy duty trucks			HRN-CG04T3	It is a proprietary FMS connection for VW heavy Duty trucks

Volvo

> **! IMPORTANT**: The OBDII port **must not** be used for 2019+. Always use a vehicle-specific harness when offered by Geotab or the vehicle manufacturer. Where a heavy-duty truck-specific harness is not offered by Geotab or the vehicle manufacturer, use the adapter harness (HRN-CG13S1) for any 16-pin (OBDII) installation method to avoid possible GO device damage.

Make	Model	Year	Straight Harness	T-harness	Notes
Volvo	All Heavy Duty (ie. VNM, VNL, VNX, VHD, VAH, VNR)	2000–2003	HRN-DS09S4 or HRN-DS06S4	HRN-GS09K2 or HRN-DS06T2	Please confirm if there is a 6-pin or 9-pin diagnostics port on the truck.
Volvo	All Heavy Duty (ie. VNM, VNL, VNX, VHD, VAH, VNR)	2004-2018	N/A	HRN-CM24Y1 + HRN-CE10K2	Models from 2004 to 2013 can either use a HRN-GS09K2 or HRN-CM24Y1+HRN-CE10K2. Installation Instructions
Volvo	All models	2019-2021		HRN-CM24Y1 + HRN-CE10K2	Installation Instructions

| Volvo | All models | 2021+ | HRN-CS14S21 | | If the vehicle is equipped with a 14-pin (RP1226) port, use this harness as more data is sent through this port. |

Western Star

Make	Model	Year	Straight Harness	T-harness	Notes
Western Star	All		HRN-CS14S21	HRN-GS09K2	If the vehicle is equipped with a 14-pin (RP1226) port, use HRN-CS14S21 as more data is sent through this port. If not, then use HRN-GS09K2.

Equipment & Off-Road Assets

> ✱ **NOTE:** The GO RUGGED is mandatory for these vehicles.

The following tables provide information regarding Equipment and Off-Road Assets. Generally speaking, assets in this table fall into one of the following categories:

- Equipment with engines that produce less than 25 hp, or equipment without a diagnostics port (meaning they likely do not have ECM capabilities). Such equipment requires a non-ECM type harness (HRN-RW03K4, HRN-RW04K4, HRN-RW03K5).
- Assets that are **NOT considered on-highway vehicles**, which includes a broad range of applications (agricultural, construction, oil & gas, recreational, etc.).
  - You can verify whether an asset is considered on-highway or not by entering its VIN into the following NHTSA VIN decoder: https://vpic.nhtsa.dot.gov/decoder/
  - If the asset has a valid 17-character VIN, then it is considered on-highway and the below table does not apply. Otherwise, it is considered off-road, in which case you may refer to the below table to determine which harnesses are required.

Make	Model	Year	Straight harness	T-harness	Notes
All	All	<1999	HRN-RW03K4		Any vehicle without a diagnostic port.
All Equipment	All	2000+	See Notes	HRN-GR09K1	General guideline for all yellow iron equipment. Please check

					the table for specific manufacturers. Check for a diagnostic port. If no port exists, then only the HRN-RW03K4 is required. See exceptions below.
Caterpillar	All equipment with diagnostic port	2000–2016		HRN-GR09K1 + HRN-RMRCA1	
Caterpillar	All equipment with 14-pin Deutsch diagnostic port	2016+	HRN-DC14S2	N/A	
John Deere	All	2000+		HRN-GR09K1	Please confirm there is a diagnostic port prior to purchasing the harness. If no port exists, HRN-RW03K4 is required.
Komatsu	All	2000-2009		HRN-GR09K1	Please confirm there is a diagnostic port prior to purchasing the harness. If no port exists, HRN-RW03K4 is required.
Komatsu	All	2010+		HRN-RC12T2	This harness is only compatible with Komatsu tier 4 engines, and is **not** compatible with tier 3 engines. In addition, please confirm there is a 12-pin diagnostic port prior to purchasing the harness. If no port exists, HRN-RW03K4 is required.
Polaris	All equipment with a diagnostic port. In particular, this includes smaller off-	2000+	HRN-RD04S1	N/A	

	road vehicles such as snowmobiles and ATVs.				

Fire Trucks

The following table provides information regarding fire trucks.

Make	Model	Year	Straight harness	T-harness	Notes
Oshkosh	All	2008+	N/A	HRN-GS09K2	
Spartan	All	2008+	N/A	HRN-GS09K2	
E-ONE	All	2008+	N/A	HRN-GS09K2	

Engine Control Module (ECM) and Non-Engine Control Module

> ✷ **NOTE:** The GO RUGGED is mandatory for these vehicles.

Intelligent ECM (Engine Control Module)

The following table provides information regarding the Intelligent ECM.

Harness	Description
HRN-RZ04S4	Ford Model type Engine MSG-425. 2.5 liter (Ground Service Equipment).
HRN-RZ04T4	Kubota Type Engine MA-40-36 (Ground Service Equipment).

NON-ECM

The following table provides information regarding the Non-ECM.

Harness	Description
HRN-RW04KS4	All Equipment with Ground Disconnect on Asset and/or NON-ECM with no true ignition.

HRN-RW03KS5	NON-ECM with no true ignition using Low Voltage/Primary side of ignition coil.