

HARNESSES FUNDAMENTALS

SECTION OBJECTIVES

1. Harness Basics
2. Wiring Color Codes
3. Tools Of The Trade
4. Wiring Schematics

1. Harness Basics

Trailer harnesses are collections of multiple wires within a single cable assembly, which are used to route power to all lighting applications throughout the trailer.

Due to a greater number of legally required lighting components, the trailer harness is growing in its importance within the electrical system. The nature of bringing power to so many applications means that even with the most problem-free lighting components, a single cable can be the source of many different types of failures.

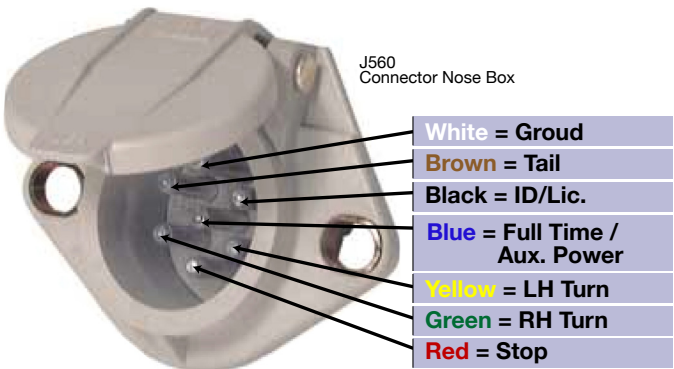
As they run through the underside of trailers, harness components are exposed to even greater amounts of corrosives and impacts than the lamps they power. Every day concerns from the rigorous vibration of the road, to varying weather conditions to the impact of salt and road debris, maintenance has become more important than ever to ensure wiring systems perform as designed.

There are two protective layers within harness cables that offer both electrical insulation and environmental protection to the current-carrying wire.

2. Wiring Color Codes

Trailer wiring systems are designed using varying colors of wire within the main harness assembly. These different colors designate which lighting applications the wires are being routed to. This makes finding the culprit in electrical malfunctions a bit easier.

Example of wire color codes as connected to a nose box, as referenced in regulation SAE J560:



3. Tools Of The Trade



Soldering Iron
- Melts solder over wiring connections to create a permanent seal



Lamp Tester
- Checks lamps for proper functioning



Multi-Meter
- Measuring instrument to record current, voltage and resistance



Wire Strippers
- Strips insulation away from wiring to expose clean wire



Wire Cutters
- Cleanly cuts through wiring and wiring insulation



NYK-77 Compound
- Prevents the build-up of corrosion on wiring connections

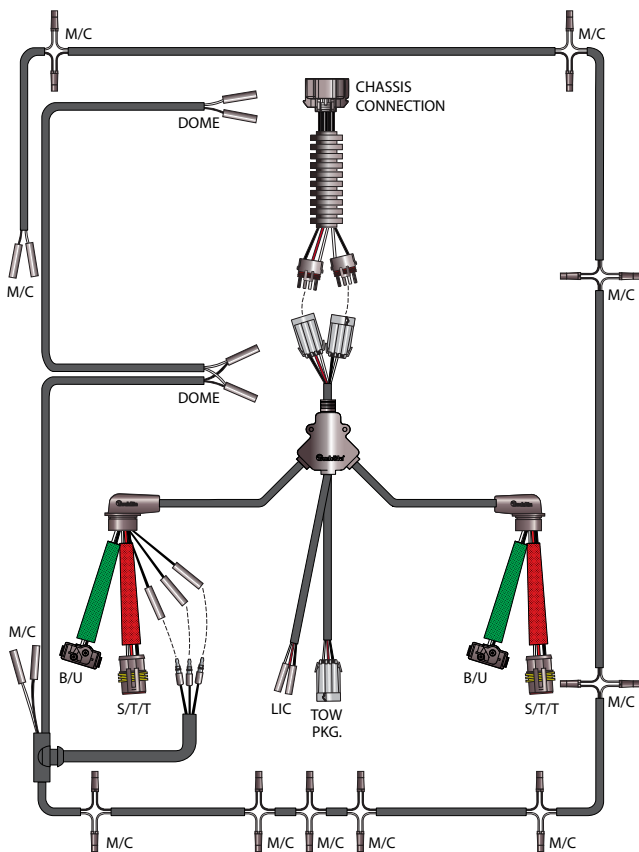


Wire Ties/Clamps
- Keeps wiring held to vehicle to prevent slack from damage



Cable Coverings
- Protects wiring from damage against the elements

4. Wiring Schematics

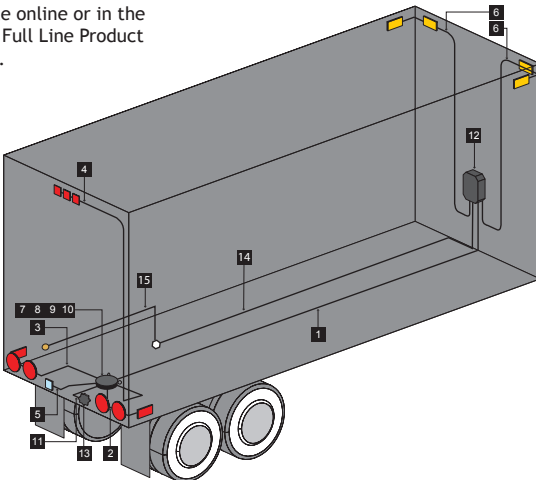


Traditional Truck-Lite harness connector schematic

28' 50 Series Harness System

Part No.	Qty.	Description
1	50733-0396	1 7 Conductor Main Cable - 33'
2	50208-0600	1 RH Stop/Turn/Tail & Side Marker Harness - 60"
3	50209-0600	1 LH Stop/Turn/Tail & Side Marker Harness - 60"
4	50301-0216	1 Identification Lamp Harness - 216"
5	50307	1 License Lamp Harness - 36"
6	50309	2 Front Marker/Clearance Lamp Harness - 168"
7	50400	1 Junction Box Kit
8	50840	2 3/8" ID Compression Fitting
9	50841	2 1/2" ID Compression Fitting
10	50842	2 3/4" ID Compression Fitting
11	50706-0072	1 7 Conduction Main Cable - 6'
12	50868	1 7 Way Receptacle - Front
13	50868	1 7 Way Receptacle - Rear
14	52100-0396	1 ABS Power Jumper Harness
15	52200	1 ABD Fault Lamp Jumper Harness

* See Truck-Lite selection available online or in the printed Full Line Product Catalog.

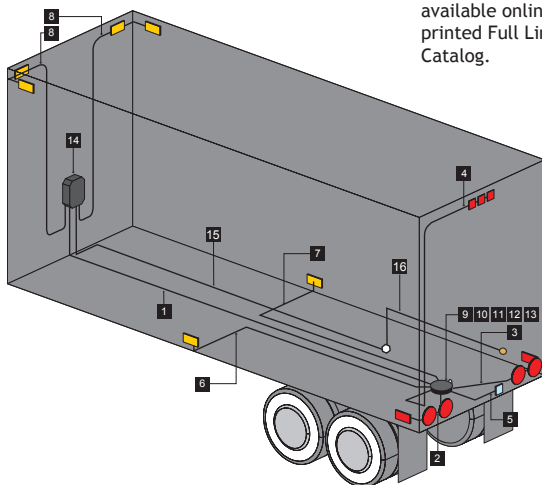


The sketch illustrates a typical 28' dry van using Truck-Lite's lighting and harness system. The list demonstrates how each harness system can be used to meet a 28' application. The part numbers listed are recommendations and substitutions may be made to customize each system to your exact needs.

48' 50 Series Harness System

Part No.	Qty.	Description
1	50751-0612	1 7 Conductor Main Cable - 51'
2	50208-0060	1 RH Stop/Turn/Tail & Side Marker Harness - 60"
3	50209-0060	1 LH Stop/Turn/Tail & Side Marker Harness - 60"
4	50301-0216	1 Identification Lamp Harness - 216"
5	50301	1 License Lamp Harness - 36"
6	50344-0336	1 RH Center Turn & Marker / Clearance Lamp Harness - 336"
7	50345-0336	1 LH Center Turn & Marker / Clearance Lamp Harness - 336"
8	50309	2 2 Front Marker/Clearance Lamp Harness - 168"
9	50400	1 Junction Box Kit
10	50840	2 3/8" Compression Fitting
11	50841	2 1/2" Compression Fitting
12	50842	1 3/4" Compression Fitting
13	50846	2 Oval Hole Compression Fitting
14	50868	1 7 Way Receptacle
15	52100	1 ABS Power Jumper Harness
16	52200	1 ABS Fault Lamp Jumper Harness

* See Truck-Lite selection available online or in the printed Full Line Product Catalog.

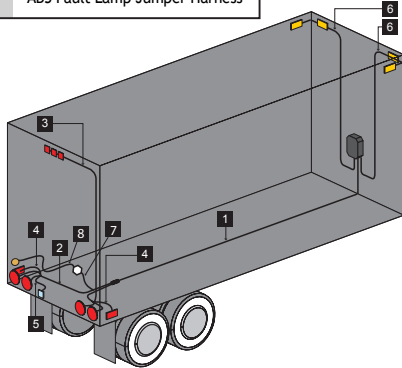


The sketch illustrates a typical 48' dry van using Truck-Lite's lighting and harness system. The list demonstrates how each harness system can be substituted to meet a 48' application. The part numbers listed are recommendations and may be made to customize each system to your exact needs.

28' Van Trailer Harness System

Part No.	LED Part No.	Qty.	Description
1	88703 420	1	7 Conductor Main Cable - 35'
2	88911	1	Rear Sill Harness
3	88301	1	Upper ID Harness, 192"
4	88303	2	Rear Marker Lamp Harness, 24"
5	88307	1	License Lamp Harness, 36"
6	50309	2	Front M/C Harness, 168"
7	88100 120	1	ABS Power Jumper Harness. 120"
8	52200	1	ABS Fault Lamp Jumper Harness

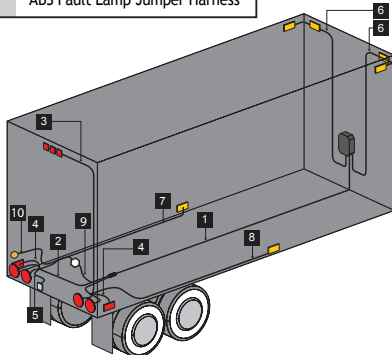
INTERNAL GROUND



48'/53' Van Trailer Harness System

Part No.	LED Part No.	Qty.	Description
1	88703	1	7 Conductor Main Cable - 60'
2	88911	1	Rear Sill Harness
3	88301	1	Upper ID Harness, 192"
4	88303	2	Rear Marker Lamp Harness, 24"
5	88307	1	License Lamp Harness, 36"
6	50309	2	Front M/C Harness, 168"
7	51355	1	Mid Turn Harness, Left Side, 420"
8	51356	1	Mid Turn Harness, Right Side, 420"
9	88100 120	1	ABS Power Jumper Harness. 120"
10	52200	1	ABS Fault Lamp Jumper Harness

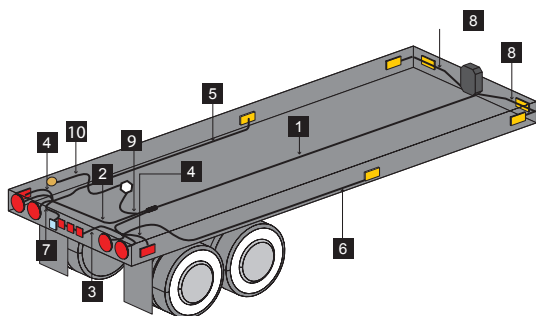
INTERNAL GROUND



48' Trailer Harness System

	Part No.	LED Part No.	Qty.	Description
1	88703 624	88703 624	1	7 Conductor Main Cable - 52'
2	88911	88931	1	Rear Sill Harness
3	88300	88367	1	Lower ID Harness, 60"
4	88303	88373	2	Rear Marker Lamp Harness, 24"
5	51355	51343	1	Mid Turn Harness, Left Side, 420"
6	51356	51342	2	Mid Turn Harness, Right Side, 420"
7	88303	88303	1	License Lamp Harness
8	80309	50377	1	Front M/C Harness
9	88100 120	88100 120	1	ABS Power Jumper Harness, 120"
10	52200	52203	1	ABS Fault Lamp Jumper Harness

INTERNAL GROUND



The sketches on pages 18 and 19 illustrate typical 28', 48' and 53' setups using Truck-Lite's lighting and harness systems. The list demonstrates how each harness system can be used to meet its respective application. The part numbers listed are recommendations and substitutions may be made to customize each system to your exact needs.