

Technical Information

Information Technique Información técnica

LIMITED WARRANTY

Grote Industries, Inc. ("Grote") warrants its products to be free from defects in material and workmanship under normal use and service as set forth in this Limited Warranty. THIS LIMITED WARRANTY is the final, complete and exclusive expression of warranty to the purchaser and cannot be modified except in writing signed by an authorized officer of Grote.

GENERAL ONE-YEAR LIMITED WARRANTY

Subject to the following conditions, Grote warrants to the original purchaser only (and not to anyone else) of each new product made by Grote that any part thereof which proves to be defective in material or workmanship within one year from the date of manufacture by Grote will, at Grote's option, be repaired or replaced without charge upon return to Grote of the defective product, provided any defect in the product is brought to the attention of Grote within the warranty period, who alone will be authorized to furnish or arrange for repairs or replacements within the terms of this limited warranty.

The above limited warranty does not apply, and no warranty, either expressed or implied, shall be applicable (a) to damage resulting from accident, alteration, misuse or abuse; (b) if the product is not installed, operated and maintained according to procedures recommended by Grote; (c) if the serial number, date code, or other identifying marks affixed to the product by Grote are removed, obliterated or defaced. In no case shall the warranty be extended to defects in materials, components (which includes but not limited to bulbs), or services furnished by third parties nor to the installation of the product performed by third parties, except those performed by or on behalf of Grote authorized distributors. If any repairs are made, or any other parts are replaced during the warranty period, by any distributor other than a Grote distributor, in accordance with service manuals, parts, accessories, or attachments other than authorized by Grote for use in Grote's products, the purchaser shall pay for such repairs or parts without recourse against Grote, and Grote shall be relieved of responsibility for fulfillment of the warranty with respect to parts or components of all repairs, alterations, or replacements so made.

INSTALLATION GUIDELINES:

Grote Systems - Grote lamp assemblies and harness products are designed to function as a complete system; therefore, this limited warranty shall not extend to failure of any Grote products caused by the use of incompatible lamp assemblies, harness products or other components.

Heat - All electronic and lighting products produce heat. The installer is responsible for assurance that the application of the component will not result in contact with flammable material.

Surface Mount - The following procedures need to be practiced to assure proper installation: The lamp should be placed on a level unobstructed surface. Number 10 screws should be tightened to 25 in. pounds of torque. Only Grote ULTRA-BLUE-SEAL® pigtails should interface with any Grote lamps. These guidelines will assure the products will function and last as they were designed. Deviations from these guidelines will void any warranty.

Design Voltage and Current - Current is provided as an approximate value and is listed for the design voltage of the lamp. The design voltage of the lamp may vary. Customers should contact Grote Industries if detailed information is required.

IN CONSIDERATION OF THE EXPRESS WARRANTY AND OTHER TERMS HEREIN CONTAINED, THE PURCHASER AGREES THAT PURCHASER'S EXCLUSIVE REMEDY AND GROTE'S SOLE LIABILITY ON ANY CLAIM, WHETHER IN TORT, CONTRACT

OR WARRANTY, SHALL BE LIMITED TO, AT GROTE'S OPTION, REPAIR OR REPLACEMENT OF A DEFECTIVE PRODUCT. NO OTHER REMEDY (INCLUDING BUT NOT LIMITED TO INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR THE LOST PROFITS, LOST SALES, INJURY TO PERSON OR PROPERTY; OR ANY OTHER INCIDENTAL LOSS OR DAMAGES) SHALL BE AVAILABLE TO PURCHASER. IN NO EVENT, AND FOR NO CAUSE WHATSOEVER, INCLUDING ANY BREACH OR DEFAULT BY GROTE, SHALL GROTE HAVE ANY MONETARY LIABILITY TO PURCHASER IN EXCESS OF THE PRICE PAID BY PURCHASER FOR THE PRODUCT IN QUESTION.

THIS LIMITED WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER EXPRESSED OR IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND THE IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND OF ALL OTHER OBLIGATIONS OR LIABILITIES ON THE PART OF GROTE. NO DEALER, DISTRIBUTOR OR OTHER REPRESENTATIVE OF THE COMPANY IS AUTHORIZED TO CHANGE THIS WARRANTY IN ANY WAY OR TO GRANT ANY OTHER WARRANTY.

Any affirmation of fact or promise made by Grote shall not be deemed to create an expressed warranty that the products shall conform to the affirmation or promise. Any description of the product is for the sole purpose of identifying such product and shall not be deemed to create an express warranty that the product shall conform to the description. Any sample or product model is for illustrative purposes only and shall not be deemed to create an express warranty that the whole of the products shall conform to the sample or model. Further, no affirmation or promise, or description, sample or model shall be deemed a part of the basis of the bargain between Grote and the purchaser.

Grote assumes no responsibility that title conveyed to the purchaser is good or the transfer of title to the products is rightful, or that the products shall be delivered free from any security interest or other lien or encumbrance of any third party, or free from any rightful claim of any third party by way of infringement or otherwise.

NON-TRANSFERABLE

THIS WARRANTY SHALL EXTEND ONLY TO THE ORIGINAL PURCHASER AND IS NON-TRANSFERABLE.

EXCEPTIONS

The general one-year (1) limited warranty shall apply but shall be altered as set forth below for the following products:

- (1) All Grote Sealed Lamps (12 Volt Only) shall be subject to a two-year (2) limited warranty unless otherwise stated.

A) Grote Economy sealed lamps shall be subject to a one-year (1) limited warranty.

- (2) Conspicuity Tape shall be subject to a five-year (5) or ten-year (10) limited warranty. Please refer to the Grote catalog and/or Grote web-site for warranty time frame by part number.

- (3) Grote LED Products are subject to the terms set forth below under "Special LED Limited Warranty"

- (4) Grote ULTRA-BLUE-SEAL® Male Pin Wire Harnesses shall be subject to a seven-year (7) limited warranty.

- (5) Grote ULTRA-BLUE-SEAL® Female Pin (Standard) Harnesses shall be subject to a five-year (5) limited warranty.

- (6) Grote makes no warranty whatsoever with respect to bulbs and fluorescent tubes in lamp assemblies.

- (7) Grote makes no warranty whatsoever with respect to any and all devices powered by common household-type batteries.

SPECIAL LED LIMITED WARRANTY

Grote LED lamps are covered by the Grote Special LED Limited Warranty and are warranted to be free from defects in workmanship and/or material only for the specified time frames listed below. Grote will replace any Grote LED lamp to the original purchaser, if the Grote LED lamp fails due to defects in workmanship and/or materials during the warranty time frame specified below:

THE LED LIMITED WARRANTY DOES NOT APPLY TO SEVERE APPLICATIONS such as off-road vehicles or construction equipment. These applications are examples for the purpose of illustration only; these examples are not intended to, and in fact do not, constitute an exhaustive list of "severe applications".

- (1) Grote LED lamps are to REMAIN INTACT, FREE FROM PHYSICAL ABUSE, SUBJECT TO PROPER INSTALLATION WITHOUT MODIFICATION AND MUST BE USED ONLY WITH GROTE APPROVED WIRING ACCESSORIES. ANY VIOLATION OF THESE CONDITIONS WILL VOID THIS LED LIMITED LAMP WARRANTY. For guidance regarding proper installation, please see above under "Surface Mount Installation Guidelines".
- (2) ANY DAMAGE DUE TO CHEMICALS OR INCOMPATIBLE CLEANERS WILL VOID THIS WARRANTY.
- (3) Grote LED lamps are designed to work in conjunction with the Grote ULTRA-BLUE-SEAL® trailer wiring system including Grote factory molded pigtails for use with the Grote ULTRA-BLUE-SEAL® trailer wiring system. Therefore, Grote LED lamps have a Limited Warranty based on the following criteria:
 - A – Grote SuperNova® high performance LED lamps are covered by a ten-year (10) Limited Warranty when installed with male pin, hard shell or patented double-seal pigtail connectors.

1) Grote SuperNova® high performance LED lamps are covered by a three-year (3) Limited Warranty when installed with hardwire bullet connectors.

2) Grote SuperNova® high performance LED lamps are covered by a two-year (2) Limited Warranty when installed with hardwire termination.

B – Grote Hi Count® LED lamps (part numbers that begin with a G) are covered by a two-year (2) Limited Warranty.

C – Grote WhiteLight™ LED lamps are covered by a three-year (3) Limited Warranty.

D – Grote Select™ high value LED lamps are covered by a two-year (2) Limited Warranty and Grote's exclusive Performance Advantage Plus Extended Warranty Program which is three-year (3) Limited Warranty when installed with Grote ULTRA-BLUE-SEAL® patented double-seal pigtail connectors.

E – Grote LED lamps that are hardwired and use standard bullet terminal/receptacle type connections are covered by a three-year (3) Limited Warranty.

F – Grote Warning & Hazard LED's are covered by a two-year (2) Limited Warranty.

1) Any and all LED Devices powered by common household-type batteries are not covered by Grote's "Special LED Limited Warranty".

G – Other Grote LED lamps for FMVSS applications excluding SuperNova®, MicroNova®, WhiteLight™ and Hi Count® are covered by a two-year (2) Limited Warranty.

H – Other Grote LED lamps (non-FMVSS) are covered by a one-year (1) Limited Warranty.

LED Brand Category	Termination Style					
	Male Pin	Hard Shell	Female Pin	Hardwire w/Bullet Connectors	Hardwire	Patented Double-Seal Pigtail
Grote SuperNova®	10	10	N/A	3	2	10
Grote MicroNova®	N/A	N/A	N/A	3	N/A	N/A
Grote Hi Count®	N/A	N/A	2	N/A	2	N/A
Grote LED WhiteLight™	3	3	3	3	3	N/A
Grote Select™	N/A	N/A	2	N/A	N/A	3
Grote Warning & Hazard LED's	2	N/A	N/A	2	2	N/A
Grote LED's (FMVSS)	2	N/A	2	2	2	N/A
Grote LED's (non-FMVSS)	N/A	N/A	N/A	1	1	N/A
N/A - Not Available or None Number represents the years of warranty from manufacture date						

QUALITY SYSTEMS:

Product within the catalog may be manufactured under various quality system certifications. If a customer requires particular quality certifications on specific products, they may contact Grote Industries for detailed information.

END USER RESPONSIBILITY:

Each user bears full responsibility for making their own determination as to the suitability of Grote materials, products, recommendations, or advice for their own particular use. Each user is ultimately responsible to identify and perform tests and analyses necessary to assure that its finished parts incorporating Grote products will be safe and suitable for use under end-user conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of this Limited Warranty or this Disclaimer, unless any such modification is specifically agreed to in writing signed by a Grote Industries Representative.

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Information Technique Información técnica

INTELLECTUAL PROPERTY:

No statement contained herein concerning a possible or suggested use of any material, product or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Grote Industries or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product or design in the infringement of any patent or other intellectual property right.

The information in this catalog is deemed correct at the time of publication and is provided in good faith. There may be inaccuracies due to legislative changes, competitive part number changes, technological advances or typographical errors. Customers should contact Grote Industries for updated information.

WARRANTY RETURN AND REPLACEMENT INSTRUCTIONS

To be eligible for limited warranty consideration, either contact your Grote sales representative or call Grote customer service at 800.628.0809 (In Canada call 800.268.5612). Upon issuance of a returned goods authorization number, return the failed product, freight prepaid to: Warranty at Grote Industries, Inc., 2600 Lanier Drive, Madison, Indiana 47250. In Canada, return product, freight prepaid to: Warranty at Grote Industries Co., 230 Travail Road, Markham, Ontario L3S 3J1. Any product covered under the terms of the respective limited warranty will be replaced directly to the original consumer/purchaser only. Items received by Grote will not be returned unless accompanied by a specific written request. The product to be returned will be those items not covered under the warranty and will be returned to sender freight collect.

CONSUMER RIGHTS IN VARIOUS STATES

This warranty gives you specific legal rights, and you may have other rights that vary from state to state. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you. Further, some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you.

Effective October 1, 2012

MAXXIMA-TO-GROTE INTERCHANGE

Maxima PN	Grote Form, Fit and Function	Grote Fit and Function
M09100R	47112	
M09100R	G3002	
M09100Y	47113	
M09100Y	G3003	

MAXXIMA-TO-GROTE INTERCHANGE

Maxima PN	Grote Form, Fit and Function	Grote Fit and Function
M09105R	47212	
M09105R	G3092	
M09105Y	47213	
M09105Y	G3093	
M09250R-X	47112	
M09250Y-X	47113	
M09300R	49332	
M09300Y	49333	
M09320R-X	49322	
M09320R-X	49322	
M09320Y-X	49333	
M11201R	47222	
M11201R	G1082	
M11201Y	47223	
M11201Y	G1083	
M11256R	G1032	
M11256R	G1092	
M11256Y	G1033	
M11256Y	G1093	
M11260R	46142	
M11260R	47122	
M11260Y	46143	
M11260Y	47123	
M11300R	G1032	
M11300R	G1092	
M11300Y	G1033	
M11300Y	G1093	
M11303R		49162
M11350R-X	G1032	
M11350R-X	G1092	
M11350Y-X	G1033	
M11350Y-X	G1093	
M16280R	G1032	
M16280R	G1092	
M16280Y	G1033	
M16280Y	G1093	
M16800R	47222	
M16800R	G1082	
M16800Y	47223	
M16800Y	G1083	
M20311R	G5052	
M20311Y	G5053	
M20315R	G4602	
M20315Y	G4603	
M20320R	47082	
M20320Y	47083	
M20323R		49182
M20325	94233	
M20326		43970
M20327	43970	
M20328	43980	
M20330R	G2102	
M20330Y	G2103	
M20332R	47252	
M20332Y	47253	
M20340R	49252	
M20340Y	49253	
M20343R		49122
M20343R		49212-5
M20350R	G1902	
M20350R/Y		46740
M20350Y	G1903	
M20355		43850
M20356		43850
M20361Y	47063	
M20395R	46832	
M20395Y	46833	
M34100Y	47113	
M34100Y	G3003	
M34260R	47112	

Maxima PN	Grote Form, Fit and Function	Grote Fit and Function
M34260R	G3002	
M34260Y	47113	
M34260Y	G3003	
M34600R	47212	
M34600Y	47213	
M42100R	G4002	
M42100Y	G4003	
M42201R		G4502
M42201Y		G4503
M42213R	G4502	
M42213Y	G4503	
M42220		50920
M42220		G5202
M42320R	G4002	
M42322R		54342
M42322Y		54343
M42332R/Y	G5530	
M42333R/Y	G5540	
M42339Y		54343
M42339Y	54643	
M42341R/Y		G5300
M42344R		54362
M42346R		54342
M42347		62791
M42354R		54042
M42354R	54572	
M43253	43253	
M43253CH	92513	
M49700	94180	
M50102	91410	
M50103	43823	
M50300-B	92120	
M50303		43153
M50310	43673	
M50400-B	91740	
M50410	93683	
M50410		93553
M50600-B	92420	
M63100R	G6002	
M63100Y	G6003	
M63120Y		54183
M63120Y		54193
M63120Y		54213
M63121Y	52193	
M63253	43220	
M63253CH	43223	
M63254-OVAL		42103 + 43723
M63322Y	54133	
M63339Y		54173
M63346R		54172
M63420R		53962
M63420R		54162
M63420Y		53963
M63420Y		54163
M84405		61171
M84407-A		61871
M84433		61411
M84435		61391
M90061R	53422	
M90081Y	55983	
MWL-01		63551
MWL-01HP	63861	
MWL-05SP	63601	
MWL-06SP		63601
MWL-11HL		63861
MWL-12	63971	
MWL-16	63981	

PETERSON-TO-GROTE INTERCHANGE

Peterson PN	Grote Form, Fit and Function	Grote Fit and Function
45	43424	
46	43901	
320	55450	
321	55460	
326	55470	
335	56020	
337	56000	
367	61871	
400	60001	
413	50232	
413	50232-5	
415	62271	
428	50872	
428	50872-5	
435	60151	
436		60011
438	60101	
438	60101-5	
440	52302-5	
442	50912	
445	50972	
445	50972-5	
449	71422	
459		71152
500	48072	
511	64340	
512		63F61
554	44810	
554	44810-5	
557	44820	
570	44530	
570	44530-5	
571	44540	
571	44540-5	
573	44690	
574	44700	
576	44710	
577	44720	
579		44730
591	18252-5	
595	18103-5	
598	18302-5	
605	28162	
606	12111-5	
607	12272-5	
608	16032	
609		12101
615	16244	
616	16092	
617	16021	
654	28032	
655	28042	
666	26012-5	
780	73040	
780	73040-5	
781	73090	
810	28323-5	
815	28393-5	
821	28093-5	
830	12073	
830	12073-5	
831	12112-5	
832	12113-5	
833	12263-5	
907	63551	
1841	44134	
1941	44421	

Peterson PN	Grote Form, Fit and Function	Grote Fit and Function
2757	53833	
3132		50642
3132		50642-5
3342	53052	
3352	53020	
3372	53000	
4591	71152	
4651	41160	
7991		77263
10609	43673	
10609	43673-5	
13918	94110	
14209		43690
14218	91410	
14249	67050	
14249	67050-5	
14318	91400	
14418	92070	
14618	92120	
15009	43970	
15010	43980	
15410		43783
16249	67001	
16249	67001-5	
16309	43690	
41021		99595
41107	68170	
41307	68130	
41748	66862	
41749	66861	
42015	91482	
42109	43362	
42149	67014	
42149		67010
42409		92510
42609	43572	
42610	43655	
42618	91740	
42809	43272	
42809	43272-5	
43149	67010	
44015		92792
44525		91302
45171	43411	
150091	43380	
160491		66931
160492	66930	
162491	66850	
162493	66851	
417491	66860	
421491	67090	
421491	67090-5	
421491		66843
421491		66843-5
431491	67000	
10015A		90163
10015R		90162
100A		45413
100R		45412
104A	45413	
104A	45413-5	
104R	45412	
104R	45412-5	
106A	45933	
106A	45933-5	
106R	45932	
106R	45932-5	
10715A		92433
10715R		92432
1073R	49112	

Peterson PN	Grote Form, Fit and Function	Grote Fit and Function
1073R	49112-5	
107WA	46883	
107WA	46883-5	
107WR	46882	
107WR	46882-5	
10815A		90203
10815A		90203-5
10815R		90202
10815R		90202-5
108WA	46713	
108WA	46713-5	
108WR	46712	
108WR	46712-5	
10915A		90133
11015A		90303
111R	49002	
117A		45993
11815A	91683	
118A	46543	
118A	46543-5	
11915A	90053	
11915R	90052	
119A		45173
119R		45172
120A		46003
122A		46283
122R		46282
123A	46283	
123R	46282	
12415A	90923	
12415R	90922	
124A	46893	
124A	46893-5	
124R	46892	
124R	46892-5	
13025A		91043
13025R		91042
130A	46303	
130R	46302	
13415A		90123
13415A		90123-5
13415R		90122
13415R		90122-5
135A	45263	
135A	45263-5	
135R	45262	
135R	45262-5	
13615A	90153	
13615A	90153-5	
13615R	90152	
13615R	90152-5	
136-3R	49062	
136A	45253	
136A	45253-5	
136R	45252	
13815A		91963
13815A		91963-5
13815R		91962
13815R		91962-5
138A	46793	
138A	46793-5	
138R	46792	
14218K	94000	
142A	45813	
142A	45813-5	
142KA	45043	
142KR	45042	
142R	45812	
142R	45812-5	
14318K	94010	

PETERSON-TO-GROTE INTERCHANGE

Peterson PN	Grote Form, Fit and Function	Grote Fit and Function
143A	45833	
143FA	45833 + 43162	
143FR	45832 + 43162	
143R	45832	
145A	47013	
145R	47012	
14618K	94100	
146A	45823	
146A	45823-5	
146FA	45823 + 43152	
146FR	45822 + 43152	
146R	45822	
146R	45822-5	
1503A	49173	
1503R	49172	
150A	46413	
150A	46413-5	
150R	46412	
150R	46412-5	
153A	G1503	
153C-BT2	60671	
153R	G1502	
15409K	43850	
154A	46743	
154A	46743-5	
154C	60291	
154C	60301	
154KA		45093
154KR		45092
154R	46742	
154R	46742-5	
155A		46833
155A		46833-5
155R		46832
155R		46832-5
15625A		92163
15625R		92162
156A		46803
156R		46802
158A		47073 + 66911
158R		47072 + 66911
160A	49253	
160R	49252	
161A	49413	
161R	49412	
162A	47123	
162R	47122	
164A	47113	
164R	47112	
168C		60421
176KA	49333	
176KR	49322	
176KR	49332	
187A	47163	
187R	47162	
188A	G2103	
188A	G2103-5	
188A	47073	
188R	G2102	
188R	G2102-5	
188R	47072	
2636A		46413 + 91380 + 67050
2636R		46412 + 91380 + 67050
2637A	45093	
2637R	45092	

Peterson PN	Grote Form, Fit and Function	Grote Fit and Function
2668A	55573	
2668R	62171	
3132RA	50630	
3132RA	50630-5	
313AA	55223	
313AA	55223-5	
32615A		91503
32615R		91502
338-15A		90233
338-15R		90232
352A	52513	
352R	52512	
393A		53133
394C	60361	
41015A		90013
41015C		90011
41015R		90012
41015R		90012-5
41415C	91311	
41524V	62321	
415K	62331	
415K24V	62321 + 91740 + 67010	
416K	62251	
417KR		53312 + 91740 + 66830
417R		53312
417TA		53413
418KR		53182 + 66830
418R		53182
418SA		77353
418SR		77352
420C5P	62751	
420KR		53962 + 92420 + 66830
420R		53962
421A	52183	
421A	52183-5	
421AEF	55773	
421AER	55772	
421KA	52573	
421KR	52572	
421R	52892	
421R	52892-5	
422R	52922 + 64930	
423KR		53622 + 66830
423R		53622
426A	52773	
426A	52923	
426A24V	52153	
426AEF24V		52153
426AER	55572	
426AER24V		52152
426KR	52782	
426R	52772	
426R	52922	
426R	52922-5	
426R24V	52152	
427KR	52682	
428S	50862	
428S	50862-5	
428W	50852	
428W	50852-5	
430L		51042
436SX	60011	
436SX	60011-5	
440-09	43262-5	
440L	52312	
440L	52312-5	
442L	50902	

Peterson PN	Grote Form, Fit and Function	Grote Fit and Function
4654K	40650-5	
504HF	63151-5	
504HF	63181-5	
504HT	63171-5	
504HT	63201-5	
505K	64261-4	
507F	64931	
507F		64991
507LU	64930	
608O	12173	
608X	16033	
616W	16091	
617X	16023	
617XH	16053	
653X	28083-5	
654X	28033	
654X	28033-5	
655X	28043	
666W	26001-5	
717A	55993	
717R	55982	
746A		77103
746B		77105
746R		77012
753A	76813	
753MA	76813 + 43090	
754A		76223
756A	76163	
756MA	76183	
76625A	92033	
766A	77101	
7691C		77101
7691R		77102
769MA		77203
77415A		92453
789MA		77903 + 97750
793A	77123	
794A1	43100	
799K		52010
812L	28433-5	
812R	28423-5	
909-MV	63981	
910MV		63981-5
910-MV-PKD	63981-5	
911-MV		63861
911-MV-PKD	63861	
95A		46413 + 43370
95R		46412 + 43370
96A		46413 + 43380
96R		46412 + 43380
B13415C		90121
B13815B		91964
B13815C		91961
B13815G		91965
B150-181	91380	
B160492	66931	
B33415A		91583
B33415R		91582
B472A	40233	
B477A	40093	
B477R	40092	
B481R	40072	
B481R	40072-5	
B489A		41153
B489R		41152
B490A	41143	
B490R	41142	
B490R	41142-5	
B491A	41153	

PETERSON-TO-GROTE INTERCHANGE

Peterson PN	Grote Form, Fit and Function	Grote Fit and Function
B491R	41152	
M110C	45021-5	
M122A		46893
M122R		46892
M126A	47053	
M126C	47051	
M126R	47052	
M138B		46793-3 + 91965
M138C	46791	
M138G		46793-3 + 91964
M143FA	45833 + 43162	
M143FR	45832 + 43162	
M146FA	45823 + 43152	
M146FR	45822 + 43152	
M150W	60271	
M158A	47073 + 66910	
M158R	47072 + 66910	
M163FR		47202
M164C	45811	
M164FA		47113 + 43152
M164KR		47112 + 43152
M165FA	47113-3 + 43152-3	
M165FR	47112-3 + 43152-3	
M172A	G1033	
M172A	G1033-5	
M172R	G1032	
M172R	G1032-5	
M187A-MV	47353	
M187R-MV	47352	
M306A	53133	
M306R	53132	
M343A	53853	
M352KA	52253	
M355A	54193	
M355AF	54213	
M360		61261
M360-BT2		61F61
M380S	61161	
M387S		61371
M389S	61091	
M391		61491-5
M392C		62021
M392C		62021-5
M393C	62291	
M395C		61821
M396C	61031	
M408	64411	
M4102	50352	
M411C	60311	
M413S	52522	
M416	62231	
M417C-5AMP		62791
M417TA		54643
M417W-2	61G91	
M418R-3AMP	54572	
M418R-3P	54582	
M418TA		54633
M418W-2	61E41	
M421A	52893	
M421A	52893-5	
M421KA	53093	
M421KR	53092	
M426KR	53012	

Peterson PN	Grote Form, Fit and Function	Grote Fit and Function
M426KR	53012-5	
M427R	52672	
M428	50882	
M433S		61221
M434	61501	
M436B	60081	
M437	60251	
M437	60251-5	
M439		60001
M452	52442	
M452L	52452	
M456L	52482	
M456L	52492	
M517S		7803
M526	64401-5	
V109A		45333
V110A	45023	
V110A	45023-5	
V110R	45022	
V110R	45022-5	
V114A	46983-5	
V114R	46982-5	
V133XA		47263
V133XR		47262
V139A	46783	
V139R	46782	
V150KA	46422-5	
V150KR	46423-5	
V153KA	47083 + 43980 + 67001	
V153KR	47082 + 43980 + 67001	
V158KA	47073 + 66910	
V158KR	47072 + 66910	
V160KA	47243 + 66930	
V160KR	47242 + 66930	
V161KA	65203	
V161KR	65202	
V162KA	47123 + 91400 + 67001	
V162KR	47122 + 91400 + 67001	
V164KA	47113 + 92120 + 67001	
V164KR	47112 + 92120 + 67001	
V168A	45003-5	
V168R	45002-5	
V169-3R	49192	
V170A	47853-5	
V3392	50652	
V366		61861
V379S	61171	
V384	61641	
V391C	61491-5	
V408		64411
V41015R		90762
V417KR	G4012	
V417KR	53312 + 91740 + 66830	
V417KR2	53252 + 91740 + 66830	
V417KTA	53413 + 91740 + 66830	
V417R	G4002	
V417R	G4002-5	
V418KR	53182 + 66830	
V418KR2	53292 + 66830	
V418KTA	G4023 + 66830	

Peterson PN	Grote Form, Fit and Function	Grote Fit and Function
V420KR	53962 + 92420 + 66830	
V420KR2	53962 + 92420 + 66830	
V421R	52182	
V421R	52182-5	
V423KR	53622 + 66830	
V423KR2	53622 + 66830	
V426KR		52782
V434	61501-5	
V435	60151-5	
V452		51932
V452L		52452
V472A	40233-5	
V472R	40232	
V472R	40232-5	
V475A	40053	
V475A	40053-5	
V475R	40052	
V480A	41033	
V480A	41033-5	
V480R	41032	
V480R	41032-5	
V483A		40303
V483R		40302
V487A	40133	
V487A	40133-5	
V487R	40132	
V487R	40132-5	
V500		48072
V506		63981
V507F	64931-5	
V520-40	44840-5	
V530		64481-5
V531	64501-5	
V534-2	64371-5	
V540	65370-5	
V5425Y	68540-5	
V543	65312	
V544	65440-5	
V547	65300-5	
V555	65730-5	
V555		65402-4
V5671	64351-5	
V582-2	64481-5	
V599	12312-5	
V600	12201-5	
V602	12164-5	
V603	12004	
V603	12004-5	
V603L	12014	
V603L	12014-5	
V766MA	77203	
V771A		76183
V773A		76083
V774A	76033	
V774B	76035	
V774R	76032	
V809		28032
V809F		28162
V809X		28033
V911-MV	63861-5	
V940	65330-5	
V941	65320-5	
VH549	92701-5	
VH550	90861-5	
VH551	90971-5	

TRUCK-LITE-TO-GROTE INTERCHANGE

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
32		40302
37	41160	
41	40232	
41		40162
43	40192	
45	41002	
45		40072
47	40052	
47	40062	
47		40152
50	43411	
52	41012	
52		40092
54	41032	
57	40152	
102	44170	
172	44530	
173	44540	
182	44690	
183	44700	
191	44460	
262	44810	
263	44820	
264	44893	
266	44730	
275	44010	
276	44030	
282	44710	
283	44720	
285	44891	
333		76032
528	52492	
529	52482	
541	50862	
541	50862-5	
542	50852	
542	50852-5	
542		50852
544		50862
548	53132	
790		43970
791	94233	
793	43980	
797	71152	
798	71422	
801	42180	
802		43970 + 67050
808		49172
900	48072	
1050	G1032	
1050	G1032-5	
1051	G1042	
1052	45832	
1075	G1082	
1150	46322	
1155	G5052	
1203	46782	
1204		46782 + 43673
1211		46792
1213	46792	
1215	49082	
1216		49082
1222	46712	
1222	46712-5	
1259	45262	
1259	45432	

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
1259	45262-5	
1264	45932	
1264	45932-5	
1294	45412	
1294	45412-5	
1507	46882	
1507	46882-5	
1520	45512	
1520	45512-5	
1555	45252	
1555	45672	
1555		45382
1560	G1502	
1570	46982-5	
1571	47052	
1960	G1902	
1960	G1902-5	
2110		50882
2112	50882	
2150	G2102	
2150	G2102-5	
2660	G4602	
2660	G4602-5	
2673	47252	
2701	56052	
2702	53052	
2750	G5300	
2753	G5530	
2753	G5530-5	
2756	G5540	
2756	G5540-5	
2756	G5543-5	
2801	56020	
2803	53020	
3050	G3002	
3050	G3002-5	
3075	G3092	
3616	52612	
3701		56052
3702		53052
3763	53032	
3802	56000	
3812	53000	
3850		55220
4013	50912	
4014	50902	
4015	50952	
4016	50942	
4023	52912	
4024	52902	
4025	52812	
4026	52802	
4027	50972	
4027	50972-5	
4028	50992	
4050	G4002	
4050	G4002-5	
4051	G4022	
4091	52062	
4091		52063
4094		52062 + 66905
4095	53062	
4550	G4502	
4742	55410	
4754	55420	
4801	55280	
4805	55470	
4854	55430	
4855	55440	
5013	53712	

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
5014	53702	
5023	53762	
5060	G5212	
5061	G5202	
6050	G6002	
6050	G6002-5	
6051	G6012	
6502	50132	
6503	56072	
7038	12201-5	
7039	12004	
7039	12004-5	
7044	12014	
7044	12014-5	
7048	12164	
7518	28423-5	
7519	28433-5	
7555	28293-5	
7619	18302-5	
8160	63611	
8170		63611
8810	92980	
8820	92970	
9007	91962	
9007	91962-5	
9071	91302	
9093	91572	
9101	68110	
9102	68170	
9160	68080	
9179	43673	
9179	43673-5	
9180	94110	
9199	43112	
9296		43112
9464	68680	
9465		66826
9470		68680
9536	51012	
9537	51002	
10400		42180
10401	94010	
10403		91880
10404	94000	
10410	43430	
10412	91890 + 67050	
10414	93750 + 67050	
10700	91400	
10702	92070	
10704	91410	
10708	91880	
10718		92070
10722	91890	
10725	93750	
10728		42170
10728		43040
10729	43512	
10730	43522	
10732	49140	
10738	43760	
14700	93400	
14701	93402	
15011	60460	
15012		60460
15040	60681	
15041	60701	
15208		60261
15227	60671	
15401	43380	
15404	43970	

TRUCK-LITE-TO-GROTE INTERCHANGE

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
15412	43370	
15415		46740
15416	46740	
15702	91380	
15720		43380
15727	42131	
15728	42141	
15729	43960	
15729		43830
15736	42162	
19206	60291	
19206		60661
19206		60711
19720	43780	
19721	43390	
19721	43850	
19723		43120
19724	43120	
19726		43850
19740	43790	
19748	43783	
26001	60251	
26330	60151-5	
26331	60101	
26331	60101-5	
26336	60251-5	
26380	93610	
30400		43150
30400		43152
30400		43153
30400		43160
30400		43162
30400		43163
30401	92120	
30402	92150	
30404	93760	
30410		43690
30711		92120
30721	43690	
30728	43532	
30729		93760
33710	42110	
33711	42112	
33711		42110
35720	43230	
40003	61431	
40004	62181	
40012	62321 + 91740 + 67010	
40023	61461	
40023	61451 + 92511 + 67010	
40044	62221	
40071	62221 + 92512 + 67013	
40203	61051	
40203	61451	
40204	62271	
40212	62321	
40223	61451 + 92511	
40224	62271 + 92511	
40244	62171	
40244	62211	
40260	62211 + 92512	
40261	62211 + 92511	
40262	62271 + 92512	
40403	67150	

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
40626	51032	
40627	51022	
40700	91740	
40701		91740
40719	43572	
40719		42052
40720	43572 + 92512	
40721		51052
40725	51090	
40726	43572 + 92512	
40756	51052	
40850	50820	
42722	43022	
42722	43022-5	
42722		43272
42722		43262-5
42722		43272-5
44705	43343	
44708		43343
45004		62381
45720		43212
45721	43212	
50385	66101	
50831	93190	
50878	87140	
50879	87150	
60403	67151	
60704	92720	
60709		92720
60719	42103	
60720	43362 + 43222	
60722	43362	
60723		43362 + 43222
60724		43362
60731	43100	
60733	43952	
70311	50630	
70311	50630-5	
80202		64111
80203		64411
80220		63971
80304	62331	
80340	62021	
80340	62021-5	
80342		62151
80345	62151	
80350	61821	
80356	63061	
80360	64931	
80364	64441	
80395		64891
80397		63221-5
80418	61511	
80442		61371
80444	61371	
80490	61031	
80491	64901	
80513	64401-5	
80514	64351-5	
80520		64061-5
80520		63481 (x2) + 68460-5
80560	92701-5	
80561	91051	
80563	90620	
80563	90861-5	
80720		43842
80800		64261-4
80805	63451-4	
80805		64291-4

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
80810		64241
80820		64251
80848	63381	
80848		64271
80849	63391	
80849		64281
80888	63441-4	
80893		63451-4
81360		63561
81360		63861
81380	63551	
81380		63871
81712		63571
81812		63671
92100		01-5444-71
92560	77013	
92716	44740	
92900	73040	
92902	73110	
92903		73030
92905		73080
92907	44421	
92910		73040
92911		73110
92916	73220	
92923	73080	
92924	73090	
92927	73030	
94609	66930	
94706	66860	
94707	66861	
94718		66931
94727	66981	
94736	66931	
94750	66810	
94759	66862	
94782	66932	
94802	66811	
94802		67090
94850	66800	
94853	66820	
94857	66831	
94882	66844	
94902	67001	
94923	66190	
94925	67010	
94926	67000	
94961	67011	
94962	66812	
94964	66840	
94972	66801	
94991	67014	
94993	67090	
95424		66861
96106	66911	
96107	67002	
96108	66842	
96930	66360	
96932		66360
96959	66100	
96960	66160	
96966	66170	
96973	66161	
97002	99502	
97151	87110	
97153	87111	
97160	87100	
97161	87101	
97171	00840 + 00841	
97172	00840 + 00842	

TRUCK-LITE-TO-GROTE INTERCHANGE

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
97173	00840 + 00843	
97174	00840 + 00844	
97175	00840 + 00845	
97176	00840 + 00846	
97283	44090	
97300	44040	
97384	28763	
97602	12073	
97602	12073-5	
97603	12072	
97603	12102	
97609		12020
97611	28032	
97612	28031	
97614	12813	
97614		12283
97615		12813
97618	28033	
97621	12053	
97621	28043	
97622	12052	
97622	28042	
97623	28041	
97624	16284	
97625	16294	
97626	16304	
97627	16244	
97628	16021	
97628		16244
97631	16172	
97631	16173	
97631		16063
97632	16043	
97632		16041
97636	16142	
97637		16273
97638	16273	
97639	16153	
97649	16092	
97651	16102	
97654		12122
97655	12243-5	
97656		12101
97660	12111-5	
97664		28481
97665	28481	
97667	28493	
97668		28453
97669	28451	
97672	12303	
97673	12301	
97675	12333	
97676	12331	
97678		28091-5
97678		28093-5
97682	28323-5	
97686	28443	
97686		28063
97688	28491	
97693		26001-5
97693		26012-5
97693		26021-5
97693	16123 + 22013	
97695		22013 + 22233
97718	11303	
97718		11133

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
97719	10012	
97720	10002	
97721	10013	
97721	10025	
97721		10012
97725	22233	
97726	22232	
97731	10045	
97733	11293	
97748	10623	
97794	12193-5	
97802	28152	
97802		28162
97803	12183	
97803	12293	
97803	16033	
97803		12983
97804	12182	
97804	16032	
97805	12113-5	
97805		12112-5
97806	16091	
97806		16093
97807	12071	
97808	16101	
97809	16053	
97812	16023	
97814	12173	
97814		12172
97819	28663	
97822	16123	
97823	10173	
97827	16223	
97828	10433	
97829	22193	
97835	12020	
97837	28463	
97837		28461
97843	22013	
97843		22061
97843		22063
97845	29060	
97846	28453	
97852		28083-5
97860		16202
97863	12010	
97863	12272-5	
97940	99180	
97944	99170	
97960	43901	
97980	64930	
97989		64890
98100	40641	
98100		40701
98100		41271
98101	40650	
98107	41080	
98110	41133	
98127	41050	
98127	40650-5	
98153	41121	
98155		41121
98168		41273
10004R		42180 + 67050
10004R3		42180 + 67050-3
10004RP		42180 + 67050-3
10004Y		45812 + 42180 + 67050
10028R	45072	

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
10028R1		45072
10028Y	45073	
10028Y1		45073
10050R	47472	
10050R1		47472
10050Y	47123	
10050Y1		47473
10075R		G1032 + 91400 + 66850
10075R3		G1032-3 + 91400-3 + 66850-3
10075Y		G1033 + 91400 + 66850
10075Y3		G1033-3 + 91400-3 + 66850-3
10076R		46142 + 91400 + 66850
10076R1		46142 + 91400 + 66850
10076Y		46143 + 91400 + 66850
10076Y1		46143 + 91400 + 66850
10079R		47122 + 43160 + 66850
10079Y		47123 + 43160 + 66850
10085R	47242	
10085R1		47242
10085Y	47243	
10085Y1		47243
10086R		46142 + 91400 + 66850
10086Y		46143 + 91400 + 66850
10089R		46142 + 43160 + 66850
10089Y		46143 + 43160 + 66850
10090R		47122 + 43160 + 66850
10090R1		47122 + 43160 + 66850
10090Y		47123 + 43160 + 66850
10090Y1		47123 + 43160 + 66850
10091R		46142 + 43160 + 66850
10091Y		46143 + 43160 + 66850
10092R		46142 + 43160 + 66850
10092Y		46143 + 43160 + 66850
10202C	45811	
10202R	45812	
10202R	45812-5	
10202Y	45813	
10202Y	45813-5	
10203R	45322	
10203Y	45323	
10204R	45182	
10204Y	45183	
10205R1		45832
10205Y	45833	
10205Y1		45833
10212Y	78343	
10250R	47122	

TRUCK-LITE-TO-GROTE INTERCHANGE

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
10251R	47122 + 43160	
10251R3	47122-3 + 43160-3	
10251Y	47123 + 43160	
10251Y3	47123-3 + 43160-3	
10276Y	G1083	
10279R	47372	
10279Y	47373	
10286R	G1002	
10286Y	G1003	
10288R	G1002 + 43162	
10288R3	G1002-3 + 43162-3	
10288Y	G1003 + 43162	
10288Y3	G1003-3 + 43162-3	
10289R	G1002 + 43160	
10289Y	G1003 + 43160	
10379R		47122 + 43160
10379Y		47123 + 43160
10385R	46142	
10385Y	46143	
10389R		46142 + 43160
10389Y		46143 + 43160
10391R		46142 + 43162
10391Y		46143 + 43162
1050A	G1033	
1050A	G1033-5	
1051-3	G1043	
10519R	45042	
10519R1		45042
10519Y	45043	
10519Y1		45043
10520R	45812 + 93750	
10520Y	45813 + 93750	
10744R	49142	
1150A	46323	
1155A	G5053	
1155A	G5053-5	
1203A	46783	
1204A	46783 + 43673	
1211A	46793	
1211A	46793-5	
1211W	46791	
12200R	46092	
1222A	45933	
1222A	45933-5	
1259A	45263	
1259A	45433	
1259A	45263-5	
1294A	45413	
1294A	45413-5	
1312A	45333	
1313A	46003	
1350A		45333
14200R	45232	
14200Y	45233	
15006R	46412 + 43370	
15006Y	46413 + 43370	
15008R		46412 + 43370
15008Y		46413 + 43370
15011-1		60261 + 43960
15011-3	60261-3 + 43960-3	
15013-1		60261 + 43960
15033Y	G1503	

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
1506A		45253
1507A	46883	
1507A	46883-5	
1508R	49112	
1508R	49112-5	
15200C	60271	
15200R	46412	
15200R	46412-5	
15200R	46422-5	
15200Y	46413	
15200Y	46413-5	
15200Y	46423-5	
1520A	45513	
1520A	45513-5	
1520AHT	45523	
1520HT	45522	
15250R	47082	
15250Y	47083	
1555A	45253	
1555A	45673	
1555A	45253-5	
1555A		45383
1570A	91113	
1571A	47053	
1571AD		47053
15745R	49172	
15745Y	49173	
18050R	47732	
18050Y	47733	
18300R1		47732
18300Y1		47733
19002R	45092	
19002R1		45092
19002Y	45093	
19002Y1		45093
19006R	G1902 + 43850	
19006R1		G1902-5 + 43850
19006Y	G1903 + 43850	
19006Y1		G1903-5 + 43850
19020Y	G1903	
19020Y	G1903-5	
19031R		65202
19031Y		65203
19032R	47092	
19032Y	47093	
19200C	60301	
19200R	46742	
19200R	46742-5	
19200Y	46743	
19200Y	46743-5	
19205Y	78393	
19275R		47492
19275R	49412	
19275Y		47493
19275Y	49413	
19375R	47492	
19375Y	47493	
19680A	78473	
21001R	46072	
21001R1		46072
21001Y	46073	
21001Y1		46073
21051R	47072	
21051R1		47072
21051Y	47073	
21051Y1		47073
21056R	47352	
21056R	47352	

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
21056Y	47353	
21056Y	47353	
21200R	46832	
21200R	46832-5	
21200Y	46833	
21200Y	46833-5	
21201R	46872	
21201R	46872-5	
21201Y	46873	
21201Y	46873-5	
21204C	60331	
21210Y	78363	
21251R	47072	
21251Y	47073	
21271R	54002	
21275R	47162	
21275R		47162
21275Y	47163	
21275Y		47163
21506R	46832 + 66910	
21506Y	46833 + 66910	
21507R	46872 + 66910	
21507Y	46872 + 66910	
2150A	G2103	
2150A	G2103-5	
22002Y	53063	
22004Y		53063
22006R		54012
22016Y		53163
25062Y		46003
25750Y	47063	
25760Y		45503
25760Y		46543
25760Y		46543-5
25761Y		46433
25761Y		46493-5
25765Y	46913	
26250R	47262	
26250Y	47263	
26251R		47262
26251Y		47263
262D		44810
26311R	46282	
26311R	46292	
26311Y	46283	
26311Y	46293	
26313R		45172
26313Y		45173
26315R	45012	
26315Y	45013	
26353R	46332	
26353Y	46333	
26393C	G6261	
26393C		60361
2660A	G4603	
2660A	G4603-5	
2673A	47253	
26741R	49002	
26760Y	45993	
26762Y	92773	
26771Y1		46323
2701A	56053	
2702A	53053	
2753-3		G5530
2756-3		G5540
29002R	46832 + 66910	
29002Y	46833 + 66910	
29202R		45442
29202R		45462

Technical Information

Information Technique Información técnica

TRUCK-LITE-TO-GROTE INTERCHANGE

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
29202Y		45443
29202Y		45463
29203R	46302	
29203Y	46303	
30001R	45822 + 42180	
30001Y	45823 + 42180	
30070Y	47113 + 92120 + 67050	
30071R	47112 + 43690 + 67050	
30071Y	47113 + 43690 + 67050	
30075R		46132 + 92120 + 67050
30075Y		46133 + 92120 + 67050
30080R		46132 + 43150 + 67050
30080Y		46133 + 43150 + 67050
30085R		46132 + 92120 + 67050
30085Y		47133 + 92120 + 67050
30086Y	47113 + 92120 + 67050	
30090R	46132 + 42180 + 67050	
30090R1		46132 + 42180 + 67050
30090Y	46133 + 42180 + 67050	
30090Y1		46133 + 42180 + 67050
30091R	G3002 + 43150 + 67050	
30091Y	G3003 + 43150 + 67050	
30200C	45821	
30200R	45822	
30200R	45822-5	
30200Y	45823	
30200Y	45823-5	
30201R	47102	
30201Y	47103	
30203Y		47102
30204R	45822 + 43690	
30204Y	45823 + 43690	
30206R	45202	
30206Y	45203	
30221R	45562	
30221Y	45563	
30222R	45822 + 42180	
30222R3	45822-3 + 42180-3	
30222Y	45823 + 42180	
30222Y3	45823-3 + 42180-3	
30250R	47322	
30250Y	47323	
30257Y	78333	
30264Y	78433	
30269Y	78433 + 43150	
30270R	47112	
30270Y	47113	
30272R	47112 + 43150	
30272Y	47113 + 43150	

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
30275R	46132	
30276R	47212	
30276Y	47213	
30279R	46142 + 67050	
30279Y	46142 + 67050	
30285Y	G3003	
30285Y	G3003-5	
30288R	G3002 + 43152 + 67050	
30288Y	G3003 + 43152 + 67050	
30289R	G3002 + 43152 + 67050	
30289Y	G3003 + 43152 + 67050	
30375Y	46133	
30379R	46132 + 43150 + 67050	
30379Y	46133 + 43150 + 67050	
30386R	47112 + 43150 + 67050	
30386Y	47113 + 43150 + 67050	
30503R	45062	
30503R1		45062
30503Y	45063	
30503Y1		45063
30504R1		45562
30504Y1		45563
307A	77103	
313A	77203	
32A		40303
33050R		47962
33050R	49322	
33050Y		47963
33051R		47952
33051Y		47953
33075R	49332	
33075Y	49333	
33250R		49202
333A	76033	
333B	76035	
333G	76034	
35001R	65512	
35001R1		65512
35001Y	65513	
35001Y1		65513
35075R	47462	
35075Y	47463	
35720-1		43230
35740R	49212-5	
35741R	49122	
3613W	60311	
3753AD		55243
3850AA	55223-5	
3850AA		55223
40001R	52772	
40001Y	52773	
40002R	52782	
40002R1		52782
40006R	53100 + 91740 + 67002	
40008Y	52153 + 91740 + 67000	
40009Y		52153 + 91740 + 67000
40009Y3		52153 + 91740 + 67000
40015R	52672	

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
40022R	52772 + 92511 + 67000	
40022R3	52772-3 + 92511-3 + 67000-3	
40022Y	52773-3 + 92511-3 + 67000-3	
40023-3	61451 + 92512 + 67000	
40028R	53012	
40028R	53012-5	
40029Y	52923 + 91740 + 67000	
40029Y3	52923-3 + 91740-3 + 67000-3	
40048R	52682	
40206C		61051
40206R	52770	
40209R	52152	
40209R3	52153	
40222R	52772 + 92511	
40222R3	52772-3 + 92511-3	
40222Y	52773 + 92511	
40226R	52672 + 92511	
40229Y	52923 + 92511	
40232R	52152 + 43702	
40233R	52772 + 92512	
40233R3	52772-3 + 92512-3	
40233Y	52773 + 92512	
40233Y3	52772-3 + 92512-3	
40234R	52922 + 92512	
40234R3	52922-3 + 92512-3	
40237R	52152 + 92511	
40237Y	52153 + 92511	
40258R	52772 + 92511	
40258R3	52772-3 + 92511-3	
40258Y	52773 + 92511	
40259R	52772 + 92512	
40262-3	62271-3 + 92512-3	
40282R	52922	
40282R	52922-5	
40282Y	52923	
4050A	G4003	
4050A	G4003-5	
4060C	62691	
40720-1		43572 + 92512
40720-3		43572-3 + 92512-3
4091A	52063	
41-3	40232-5	
417TA	54643	
41A	40233	
41A		40163
41A-3	40233-5	
426W	60011	
426W	60011-5	
433W	60151	
435W		60081
43A	40193	
43AD		40193
43D		40192

TRUCK-LITE-TO-GROTE INTERCHANGE

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
44001Y	53413 + 91740 + 66815	
44001Y1		53413 + 91740 + 66815
44001Y3	53413-3 + 91740-3 + 66815-3	
44002R	53312 + 91740 + 66815	
44002R1		53312 + 91740 + 66815
44002R3	53312-3 + 91740-3 + 66815-3	
44003Y	53413 + 91740 + 66815	
44003Y1		53413 + 91740 + 66815
44018Y	52163 + 91740 + 66815	
44022R		54572
44026R	53182	
44032R	53272	
44032R1		53272
44034R	53252 + 93683	
44041C	62391 + 91740 + 66842	
44042C	61141	
44045C	62391 + 43343 + 66842	
44071Y		53553
44071Y	53553 + 91740 + 66815	
44082R	53312 + 91740 + 66815	
44092R	53552 + 91740 + 66815	
44092R3	53552-3 + 91740-3 + 66815-3	
44101R	77352	
44101Y	77353	
44102R	77352 + 91740 + 66815	
44102Y	77353 + 91740 + 66815	
44103R	77352 + 66815	
44103Y	77353 + 66815	
44104R	77352 + 66815	
44104Y	77353 + 66815	
44140C	62101 + 91740 + 66861	
44141C	62391 + 917400 + 66842	
44144C	62671 + 93850	
44145C	62391 + 43343 + 66842	
44146C	62391 + 92512 + 66842	
44180C	62101	
44181C		62101 + 92511 + 66862
44182C		62101 + 92512 + 66862
44184C		62101 + 91740 + 66862
44201Y	53413	

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
44202R	53313	
44203Y		54643
44216R	77192	
44216Y	77193	
44236C		62391
44236C	62391 + 43343	
44239C	62391 + 92510	
44240C	62391 + 92512	
44253R	52162	
44266R	52162 + 92512	
44273Y	52163	
44276Y	52163 + 92512	
44302R	53552	
44308C	61G91	
44308C		61E01
44308C		61H51
44334R	54042	
44339C	61H01	
44339C		61E41
44344C		62101 + 92511 + 66862
44345C		62101 + 92510 + 66862
44346C		62101 + 92512 + 66862
44347C		62101 + 67006
44348C		62101 + 66862 + 92512
44349C		62101 + 92510 + 66862
44350C		62101
44350R	53532	
44350R	54582	
44351R	54342	
44356R	53552 + 92510 + 66862	
44357R	54342 + 92510	
44359R	53272 + 92510 + 66862	
44360R	53532 + 92510	
44361R	53552 + 92511 + 66862	
44362R	54342 + 92511 + 67090	
44363R	53552 + 92511 + 66862	
44390R	65432-4	
44438C	61171	
44877Y		53313 + 92511
44878Y		53313 + 92511
44882R	53312	
44953R	53532 + 92512	
44954R		53532 + 92511
44956R		53532 + 92511
44957R		53532 + 92511
44960R		53532
44974R	53252	
44975R		53532 + 92510
44976R		53532 + 92510
44978R		53532 + 92510
44979R		53532 + 92510
44980R	53282	
44988R	53552 + 92510	
44991C		62101 + 92511
44991C	62791	
44992C		62101 + 92512
44992C		62791
45001R	52202 + 94180 + 67000	

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
45001Y	52203 + 94180 + 67000	
45002R	52202 + 94180 + 67000	
45002Y	52203 + 94180 + 67000	
45021Y	52203 + 94180 + 67000	
45021Y3	52203-3 + 94180-3 + 67000-3	
45022R	52202 + 94180 + 67000	
45022R3	52202-3 + 94180-3 + 67000-3	
45032R		G4502 + 67000
45071Y	G4503	
45202R	52202	
45202Y	52203	
45-3		40072-5
45A	40073	
45A	41003	
45A-3		40073-5
47-3	40052-5	
47A	40053	
47A	40063	
47A-3	40053-5	
4872AA	55450	
4874AY101	55340	
49202R	53102	
49202R	53102-5	
5015K	53722	
52A	41013	
52A		40093
530DK	65300-5	
533DK	65370-5	
534-3	52312	
534D	52312-5	
535D	52302-5	
549SWD	61491-5	
54A	41033	
54A	41032-5	
54A	41033-5	
55555-1	65312	
57A		40153
580DK	65402-4	
60001R	53092	
60001Y	53093	
60002R1		53092
60004C	62231	
60015R		52512 + 92420 + 67000
60015Y	52253	
60015Y1		52253
60022Y	52573	
60050R	53122	
60050R1		53122
60052R	53592	
60052R1		53592
60056R	53622	
60072Y	53593	
60072Y1		53593
60075Y	53123	
60075Y1		53123
60092C	62521 + 92420 + 67010	
60097Y	53623	
60115Y	54193 + 92400 + 67002	

Technical Information

Information Technique Información técnica

TRUCK-LITE-TO-GROTE INTERCHANGE

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
60115Y	54193	
60115Y1		54193 + 92400 + 67002
60120R	77362 + 92420 + 66815	
60120Y	77363 + 92420 + 66815	
60120Y1		77363 + 92420 + 66815
60122R	77362 + 92420 + 66815	
60122Y	77363 + 92420 + 66815	
60122Y1		77363 + 92420 + 66815
60124R	77362 + 66815	
60124Y	77363 + 66815	
60124Y1		77363 + 66815
60126R	77362 + 66815	
60126Y	77363 + 66815	
60126Y1		77363 + 66815
60201R	55772	
60201Y	55773	
60202R	52892	
60202R	52892-5	
60202Y	52893	
60202Y	52893-5	
60215R	52512	
60215Y	52193	
60238R	52182-5	
60250R	53962	
60253R	52072	
60255Y	52073	
60260R	54142	
60275Y	53963	
60283R	52182	
60283Y	52183	
60283Y	52183-5	
60284C	62521	
60298Y		52073 + 43220
60317Y	54213	
60354C	61G31	
60360R	77362	
60360Y	77363	
60364R	77362 + 43222	
60364Y	77363 + 43222	
60366R	77362 + 43222	
60366Y	77363 + 43222	
6050A	G6003	
6050A	G6003-5	
6051A	G6013	
6060C	62751	
620V-4	64921	
630W	64471	
630V-4	64491	
632W	64941	
6500A	56073	
6501A	56083	
6600A		77693
6601A		77713
66050R	54162 + 92420 + 66815	
66050R1		54162 + 92420 + 66815
66052R	54162 + 43220 + 66815	
66052R1		54162 + 43220 + 66815

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
66054R		54162 + 43220 + 66816
66056R	54162 + 43222 + 66815	
66082R	54162 + 43220 + 66816	
66085R	54162 + 92420 + 66815	
66250R	54162	
66252R	54162 + 43220 + 66815	
66254R		54162 + 43220 + 66815
66256R	54162 + 43222 + 66815	
66882R	54162 + 43220 + 66815	
675W	64071	
6810A	77693	
6811A	77713	
6859A	76083	
69202Y	52533	
69203C	62241	
70300-1		56000
70310R	50642	
70310R	50642-5	
70330Y	55243	
7048DB	12164-5	
7217/7218	28393-5	
80162C	61861	
80162C	61921	
80164C		61921
80166C		61861
80250C	61291	
80250C	61881	
80251C	61261	
80251C	61611	
80253C		61611
80255C	61F61	
80302R	50222	
80302R1		50222
80322R	50542	
80322R	50542-5	
80334R	50232	
80334R	50232-5	
80335R	52522	
80339R	50502	
80394-3		63231-5
80396-3		63211-5
80462R	50892	
81312Y		55430 + 91513
8861A	99913	
8933A	90203	
8933A	90203-5	
9004A	90303	
9007A	91963	
9007A	91963-5	
9007B	91965	
9007G	91964	
9007W	91961	
9016A	91583	
9016W	91581	
9029A	90013	
9079A	91503	
9093A	90123	
9093A	90123-5	
9101-3	68130	
91241Y	55983	
91242R	55982	
91243Y	55993	

Truck-Lite PN	Grote Form, Fit and Function	Grote Fit and Function
91244R	55992	
91272R	53422	
91275R		55992
91276Y		55983
92513Y	77453	
92522Y	77753	
92523Y		77753
92524Y	76803	
92525B	76805 + 43420	
92525Y	76803 + 43420	
92534Y	77123	
92539Y		77123
92551Y	77263	
92600Y	76223	
92914-1		73220
9380SW	61161	
9380W		61091
9680A	78980	
97944-3	99170-1	
97960-1		43901
98003R	40132	
98003R3	40132-5	
98003Y	40133	
98003Y3	40133-5	
98006Y	40153	
98031R	41042	
98031Y	41043	
98154R	41122	
98175R	41142	
98175R	41142-5	
98175Y	41143	
98176R	41152	
98176Y	41153	
99007C	90761	
99007R	90762	
99008C	91311	
99008R	90012	
99008R	90012-5	
99009R	90232	
99009Y	90233	
99034R	90162	
99034Y	90163	
99041R	90152	
99041R	90152-5	
99041Y	90153	
99041Y	90153-5	
99063R	99912	
99067Y	91683	
99083R	91482	
99168R	99842	
99168Y	99843	
99169R	99832	
99169Y	99833	
99170R	99802	
99170Y	99803	

SPEAKER-TO-GROTE INTERCHANGE

Speaker PN	Grote Form, Fit and Function	Grote Fit and Function
410	61031	
419		61H01
7150		63J01
6040-12V	63821-5	
6700-12V	63861	
7150-12V		63911
735-12/24V	63F81	
806-12V	63610	
832-12/24V	63981	

Improve Your CSA Score

Converting to LED is the Easiest Way to Improve Your CSA Score!

Lighting Violations represent 4 of the top 11 most common CSA Maintenance Infractions

6 Point Infraction per failed Stop Tail and Turn

Make it easy on yourself - invest in quality LED lamps by Grote.

Roadside Inspections, Vehicle Violations (2011 - Fiscal)

Data Source: FMCSA Motor Carrier Management Information System (MCMIS) data snapshot as of 12/16/2011, including current year-to-date information for 2012. The data presented below are accurate as of this date, but are subject to update as new or additional information may be reported to MCMIS following the snapshot date.

Total number of Vehicle Inspections in FY 2011: 5,251,170

Total number of Vehicle Violations in FY 2011: 4,697,872

Total number of Vehicle Out-of-Service (OOS) Violations in FY 2011: 701,997

Roadside Inspections, Vehicle Violations (2011 - Fiscal)					
Violation Code	Violation Description	# of Inspections	# of Violations	% of Total Violations	# of OOS Violations
393.9A	Inoperative required lamps	543,885	400,110	10.22%	47,720
393.11	Nondefective lighting devices/reflexive devices/projected	215,002	140,134	7.24%	5,653
393.12	Inspection/repair and maintenance parts and accessories	190,112	279,589	5.81%	24,319
393.13	Tire - other tread depth less than 2/32 of inch	179,833	237,792	5.06%	19,848
393.14	Oil and/or grease leak	167,074	222,450	4.74%	4,100
393.15	Failing to secure brake hose/piping against mechanical damage	145,280	218,031	4.66%	11,888
393.16	Clamp/Photo-Chamber type brake(s) out of alignment	122,281	198,120	4.17%	361
393.17	Operating a CMV without periodic inspection	137,686	172,059	3.66%	129
393.18	Nonfunctioning/uninsured fire extinguisher	188,627	188,904	3.92%	20
393.19	Stop lamp violations	102,124	150,831	2.97%	33,762
393.20	Inoperative turn signal	89,052	107,000	2.28%	44,105
393.21	Inoperative/reduced brakes	80,419	103,394	2.21%	30,003
393.22	Automatic brake adjuster CMV manufactured on or after 10/20/1954 - no brake	55,679	94,595	2.02%	12
393.23	Worn/tear/worn stop/reverse/turn	77,204	81,884	1.74%	309
393.24	Damaged or disconnected windshield	1,825	81	0.11%	0
393.25	Not a sufficient warning device	1,545	61	0.00%	0
393.26	Improperly installed or maintained	1,545	61	0.00%	0
393.27	Improperly installed or maintained	1,545	61	0.00%	0
393.28	Improperly installed or maintained	1,545	61	0.00%	0
393.29	Improperly installed or maintained	1,545	61	0.00%	0
393.30	Improperly installed or maintained	1,545	61	0.00%	0
393.31	Improperly installed or maintained	1,545	61	0.00%	0
393.32	Improperly installed or maintained	1,545	61	0.00%	0
393.33	Improperly installed or maintained	1,545	61	0.00%	0
393.34	Improperly installed or maintained	1,545	61	0.00%	0
393.35	Improperly installed or maintained	1,545	61	0.00%	0
393.36	Improperly installed or maintained	1,545	61	0.00%	0
393.37	Improperly installed or maintained	1,545	61	0.00%	0
393.38	Improperly installed or maintained	1,545	61	0.00%	0
393.39	Improperly installed or maintained	1,545	61	0.00%	0
393.40	Improperly installed or maintained	1,545	61	0.00%	0
393.41	Improperly installed or maintained	1,545	61	0.00%	0
393.42	Improperly installed or maintained	1,545	61	0.00%	0
393.43	Improperly installed or maintained	1,545	61	0.00%	0
393.44	Improperly installed or maintained	1,545	61	0.00%	0
393.45	Improperly installed or maintained	1,545	61	0.00%	0
393.46	Improperly installed or maintained	1,545	61	0.00%	0
393.47	Improperly installed or maintained	1,545	61	0.00%	0
393.48	Improperly installed or maintained	1,545	61	0.00%	0
393.49	Improperly installed or maintained	1,545	61	0.00%	0
393.50	Improperly installed or maintained	1,545	61	0.00%	0
393.51	Improperly installed or maintained	1,545	61	0.00%	0
393.52	Improperly installed or maintained	1,545	61	0.00%	0
393.53	Improperly installed or maintained	1,545	61	0.00%	0
393.54	Improperly installed or maintained	1,545	61	0.00%	0
393.55	Improperly installed or maintained	1,545	61	0.00%	0
393.56	Improperly installed or maintained	1,545	61	0.00%	0
393.57	Improperly installed or maintained	1,545	61	0.00%	0
393.58	Improperly installed or maintained	1,545	61	0.00%	0
393.59	Improperly installed or maintained	1,545	61	0.00%	0
393.60	Improperly installed or maintained	1,545	61	0.00%	0
393.61	Improperly installed or maintained	1,545	61	0.00%	0
393.62	Improperly installed or maintained	1,545	61	0.00%	0
393.63	Improperly installed or maintained	1,545	61	0.00%	0
393.64	Improperly installed or maintained	1,545	61	0.00%	0
393.65	Improperly installed or maintained	1,545	61	0.00%	0
393.66	Improperly installed or maintained	1,545	61	0.00%	0
393.67	Improperly installed or maintained	1,545	61	0.00%	0
393.68	Improperly installed or maintained	1,545	61	0.00%	0
393.69	Improperly installed or maintained	1,545	61	0.00%	0
393.70	Improperly installed or maintained	1,545	61	0.00%	0
393.71	Improperly installed or maintained	1,545	61	0.00%	0
393.72	Improperly installed or maintained	1,545	61	0.00%	0
393.73	Improperly installed or maintained	1,545	61	0.00%	0
393.74	Improperly installed or maintained	1,545	61	0.00%	0
393.75	Improperly installed or maintained	1,545	61	0.00%	0
393.76	Improperly installed or maintained	1,545	61	0.00%	0
393.77	Improperly installed or maintained	1,545	61	0.00%	0
393.78	Improperly installed or maintained	1,545	61	0.00%	0
393.79	Improperly installed or maintained	1,545	61	0.00%	0
393.80	Improperly installed or maintained	1,545	61	0.00%	0
393.81	Improperly installed or maintained	1,545	61	0.00%	0
393.82	Improperly installed or maintained	1,545	61	0.00%	0
393.83	Improperly installed or maintained	1,545	61	0.00%	0
393.84	Improperly installed or maintained	1,545	61	0.00%	0
393.85	Improperly installed or maintained	1,545	61	0.00%	0
393.86	Improperly installed or maintained	1,545	61	0.00%	0
393.87	Improperly installed or maintained	1,545	61	0.00%	0
393.88	Improperly installed or maintained	1,545	61	0.00%	0
393.89	Improperly installed or maintained	1,545	61	0.00%	0
393.90	Improperly installed or maintained	1,545	61	0.00%	0
393.91	Improperly installed or maintained	1,545	61	0.00%	0
393.92	Improperly installed or maintained	1,545	61	0.00%	0
393.93	Improperly installed or maintained	1,545	61	0.00%	0
393.94	Improperly installed or maintained	1,545	61	0.00%	0
393.95	Improperly installed or maintained	1,545	61	0.00%	0
393.96	Improperly installed or maintained	1,545	61	0.00%	0
393.97	Improperly installed or maintained	1,545	61	0.00%	0
393.98	Improperly installed or maintained	1,545	61	0.00%	0
393.99	Improperly installed or maintained	1,545	61	0.00%	0
393.100	Improperly installed or maintained	1,545	61	0.00%	0

VIOLATION SEVERITY WEIGHT EXAMPLE

Improper Exhaust: 1 point
Missing wheel stud: 2 points
No brakes as required: 4 points
Possession and/or under the influence of alcohol 4 hours prior to duty: 5 points
Non-functioning tail lamp 6 points



Technical Information

Information Technique Información técnica

Wire Sizes

No matter what the variety, it's critical to choose the correct wire size for the application. The key information required is the length of wire needed, often referred to as the length of run, and the current load that the conductor is expected to carry in use. Knowing the "length and load" characteristics will take the guesswork out of the choice.

Voltage drop, caused by current draw, is the primary consideration when selecting the proper conductor size. Every conductor has a certain amount of resistance per foot. The longer the distance, the greater the resistance in the circuit. The greater the resistance, the higher the voltage drop caused by the same current. This relationship is defined by ohms law (Voltage = Current X Resistance). As distance from the power source

increases, there is less voltage available to "push" the current through the wire. Thus causes the current to drop. There is also heat buildup as the resistance increases, which also lessens the amount of current flow.

In low voltage systems, such as vehicles, even a small drop in voltage can have a serious effect on the amount of light a lamp puts out. But there's a simple solution. As you get further away from the power source, make the conductor larger. A larger conductor means less resistance.

Using the "Wire Size Chart", first find the load in amps on the left-hand edge of the chart. Then find the length of run across the top of the chart. Read down that column until it intersects with the amp load line. The point at which they cross indicates the correct wire size for the job.

Wire Size Chart											
12V (AMP)	6V (AMP)	Length of Wire (most distant light)									
		10'	20'	30'	40'	50'	60'	70'	80'	90'	100'
Load in Amps	Load in Amps	Wire Gauge	Wire Gauge	Wire Gauge	Wire Gauge	Wire Gauge	Wire Gauge	Wire Gauge	Wire Gauge	Wire Gauge	Wire Gauge
1	0.5	18	18	18	18	18	18	18	18	18	18
1.5	0.75	18	18	18	18	18	18	18	18	18	18
2	1	18	18	18	18	18	18	18	16	16	16
3	1.5	18	18	18	18	18	16	16	16	14	14
4	2	18	18	18	16	16	16	14	14	14	12
5	2.5	18	18	18	16	14	14	14	12	12	12
6	3	18	18	16	16	14	14	12	12	12	10
7	3.5	18	18	16	14	14	12	12	12	12	10
8	4	18	16	16	14	12	12	12	10	10	10
10	5	18	16	14	12	12	12	10	10	10	10
11	5.5	18	16	14	12	12	10	10	10	10	8
12	6	18	16	14	12	12	10	10	10	8	8
15	7.5	18	14	12	12	10	10	10	8	8	8
18	9	16	14	12	10	10	8	8	8	8	8
20	10	16	12	12	10	10	8	8	8	8	6

A) DETERMINE THE TOTAL WIRE LENGTH FROM THE POWER SOURCE TO THE MOST DISTANT POINT IN THE CIRCUIT.
B) DETERMINE THE TOTAL ELECTRICAL LOAD ON THE CIRCUIT.
C) FIND THE LOAD ALONG ONE EDGE OF THE CHART (6V OR 12V) DEPENDING ON THE VEHICLE VOLTAGE IN QUESTION, TAKING THE NEXT HIGHER LOAD IF THE INDICATED LOAD FALLS BETWEEN TWO POINTS ON THE CHART.
D) FIND THE CABLE LENGTH REQUIRED ON THE TOP OF THE CHART, TAKING THE NEXT HIGHER LENGTH (IF EXACT LENGTH IS NOT CITED).
E) AT THE INTERSECTION OF THE LENGTH AND LOAD COLUMN, READ THE MINIMUM SIZE WIRE REQUIRED FOR THAT PARTICULAR CIRCUIT.



Wire Gauges

Conductors may be single strand or a group of strands. Stranded conductors are preferred in heavier gauges because they are more flexible and easier to work with than a comparable single strand conductor.

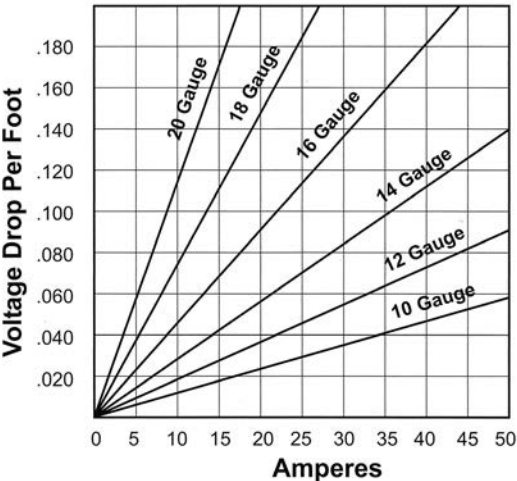
Comparing stranded cable sizes is simple. Stranded cable is compared using a numerical system. For example, 18/24 indicates that the conductor consists of 18 strands of 24-gauge wire. Similarly 12/12 refers to 12 strands of 12-gauge wire.

Gauge refers to the size of the conductor in a wire. The higher the gauge number, the smaller the wire. For example, an 18-gauge wire is smaller than a 12-gauge wire. And a 4-gauge wire has more than twice the diameter of a 10-gauge wire.

When the wire size gets larger, the number reaches #0 gauge or 1/0 (one aught). Additional zeros refer to larger sizes. The next larger size above 1/0 is #00 or 2/0 (two aught).

The capacity of a wire reflects the ability it has to carry electrical current. For example, over a distance of 50 feet, a 12-gauge wire can safely carry 10 amps. Over the same distance a 16-gauge wire can carry 3 amps. Choosing the size wire is made easier using a wire size chart.

Just remember the thicker the wire, the smaller the amperage loss.



Wire Gauge Chart

GAUGE	S.W.G.	A.W.G. (inches)	A.W.G. (mm)	Actual Size (A.W.G.)
00	0.348	0.368	9,266	
0	0.324	0.325	8,252	
1	0.300	0.289	7,348	
2	0.276	0.258	6,543	
3	0.252	0.229	5,827	
4	0.232	0.204	5,189	
5	0.212	0.182	4,621	
6	0.192	0.162	4,115	
7	0.176	0.144	3,665	
8	0.160	0.129	3,264	
9	0.144	0.114	2,906	
10	0.128	0.102	2,588	
11	0.116	0.091	2,304	
12	0.104	0.081	2,052	
13	0.092	0.072	1,829	
14	0.080	0.064	1,628	
15	0.072	0.057	1,450	
16	0.064	0.051	1,291	
17	0.056	0.045	1,150	
18	0.048	0.040	1,024	
19	0.040	0.036	0,912	
20	0.036	0.032	0,813	
21	0.032	0.029	0,724	
22	0.028	0.025	0,643	

A.W.G. = American Wire Gauge

S.W.G. = Imperial Standard Wire Gauge

(British legal standard)

Technical Information

Information Technique Información técnica

IMPORTANT NOTE: Every lamp, reflex reflector, and conspicuity treatment must be permanently attached in the location specified below and must comply with all applicable requirements prescribed for it by FMVSS/CMVSS 108. The face of any device on the front/rear and sides should be, respectively perpendicular and parallel to the vehicle's centerline, unless it is photometrically certified at installation angle. No part of the vehicle shall prevent any device from meeting its prescribed requirements unless an auxiliary device meeting all prescribed requirements is installed.

IN CANADA: Manufacturers and importers of vehicles must have the proper certification test records demonstrating compliance of lighting components with all prescribed requirements.

BASIC EQUIPMENT REQUIRED ON ALL TRAILERS

DESCRIPTION				MANDATORY REQUIREMENTS			
Area	Equipment	SAE Lens Coding	Functional Purpose	Quantity	Color	Location	Height mm(in.) from the ground
1	Tail Lamps	(T)	Indicate vehicle's presence and width	Minimum 2	Red	On the rear - symmetrical as far apart as practicable	380-1830 (15-72)
	Stop Lamps	(S)	Indicate braking	Minimum 2	Red	On the rear - symmetrical as far apart as practicable	380-1830 (15-72)
	Rear Turn Signal Lamps	(I)	Indicate direction of turn	Minimum 2	Red or Amber	On the rear - symmetrical as far apart as practicable	380-2110 (15-83)
	Rear Reflex Reflectors	(A)	Indicate vehicle's presence and width	Minimum 2	Red	On the rear - symmetrical as far apart as practicable facing rearward	380-1530 (15-60)
2	License Plate Lamp(s)	(L)	Illuminates license plate	Minimum 1	White	On the rear - above or at the sides of license plate	No requirement
3	Rear Side Marker Lamps *photometrically certified at installation angle	(P2, PC* or P3, PC2*)	Front and rear side marker lamps / side reflex reflectors indicate vehicle's presence and length	Minimum 2	Red	Each side at rear as far back as practicable	380-1530 (15-60) no max. for veh. under 2032mm (80") wide
	Rear Side Reflex Reflectors	(A)		Minimum 2	Red	Each side at rear as far back as practicable facing sideward	380-1530 (15-60)
4	Front Side Marker Lamps *photometrically certified at installation angle	(P2, PC* or P3, PC2*)		Minimum 2	Amber	Each side at front as far forward as practicable	380 (15) minimum
	Front Side Reflex Reflectors	(A)		Minimum 2	Amber	Each side at front as far forward as practicable facing sideward	380-1530 (15-60)

ADDITIONAL EQUIPMENT FOR TRAILERS EXCEEDING THE FOLLOWING PARAMETERS

Length 9.1m (30 ft.) or longer

DESCRIPTION				MANDATORY REQUIREMENTS			
Area	Equipment	SAE Lens Coding	Functional Purpose	Quantity	Color	Location	Height mm(in.) from the ground
5	Intermediate Side Marker Lamps *photometrically certified at installation angle	(P2, P3, PC* or PC2*)	Indicate presence of a long vehicle	Minimum 2	Amber	Each side near center facing sideward	380 (15) minimum
	Intermediate Side Reflex Reflectors	(A)	Indicate presence of a long vehicle	Minimum 2	Amber	Each side near center facing sideward	380-1530 (15-60)

Width 2032mm (80 in.) or wider

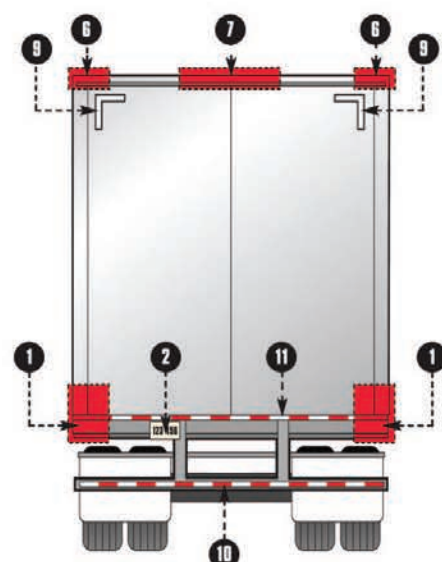
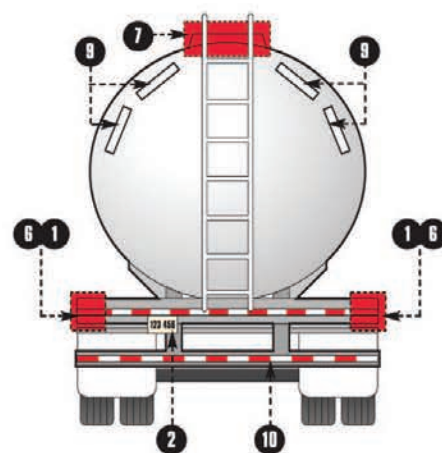
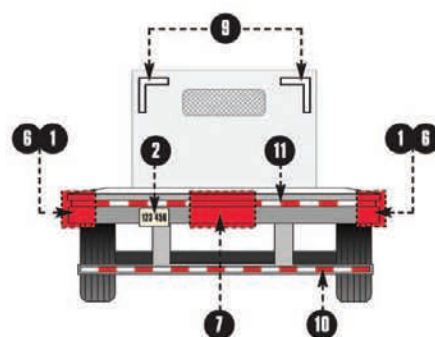
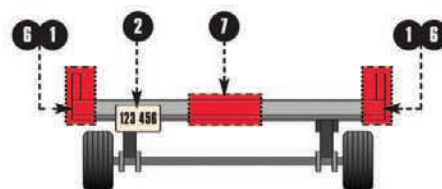
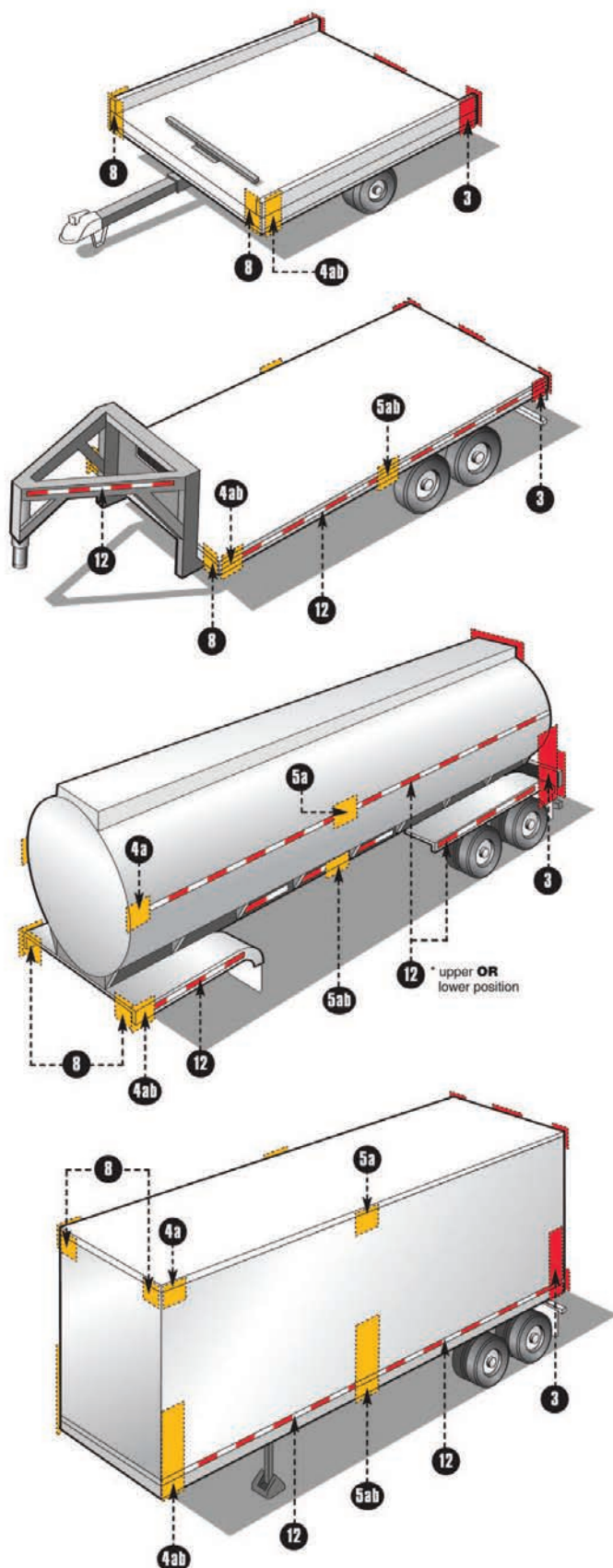
DESCRIPTION			MANDATORY REQUIREMENTS				
Area	Equipment	SAE Lens Coding	Functional Purpose	Quantity	Color	Location	Height
6	Rear Clearance Lamps *photometrically certified at installation angle	(P2, PC* or P3, PC2*)	Show vehicle's width MAY NOT be combined with tail lamps	Minimum 2	Red	At widest point - symmetrical on the rear or near the rear facing rearward	As high as practicable may be lower only if ID lamps are at the top
7	Rear Identification (ID) Lamps	(P2 or P3)	Indicate presence of a wide vehicle	Exactly 3	Red	On the rear - center horizontally spaced 150mm (6 in.) to 300mm (12 in.) apart facing rearward	At the top - may be lower if door header narrower than 25mm
8	Front Clearance Lamps *photometrically certified at installation angle	(P2, PC* or P3, PC2*)	Show vehicle's width	Minimum 2	Amber	At widest point - symmetrical on the front or near the front facing forward	As high as practicable

Width 2032mm (80 in.) or wider AND GVWR 4536 kg (10,000 lb.) or more

DESCRIPTION		MANDATORY REQUIREMENTS					
Area	Conspicuity Treatment	DOT Coding	Quantity	Color	Location	Height	Options
9	Rear Upper Body Markings	DOT-C DOT-C2 DOT-C3 DOT-C4	Exactly 2 pairs of 300mm long strips	White	On the rear upper corners facing rearward	At the top	Reflex reflectors may not be required if they are replaced in their required location with conspicuity treatment.
10	Bumper Bar Marking		Continuous	Red/White	On the rear bumper bar's horizontal element full width - facing rearward	No requirement	
11	Rear Lower Body Marking		Continuous	Red/White (see options)	On the rear full width of the vehicle facing rearward	As horizontal as practicable and as close as practicable to the range of 375 to 1525mm from the ground	
12	Side Marking		(see location)	Red/White (see options)	Each side - facing sideward continuous, or evenly spaced over minimum of 50% of length starts and ends as close to the front and rear of the vehicle as practicable	As horizontal as practicable and as close as practicable to the range of 375 to 1525mm from the ground	Optional in Canada: Rear lower body and side conspicuity treatment may also be solid white, solid yellow, or white and yellow.

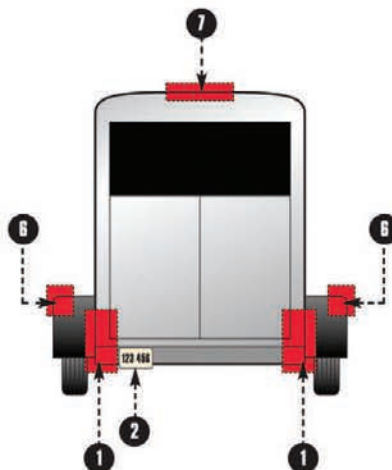
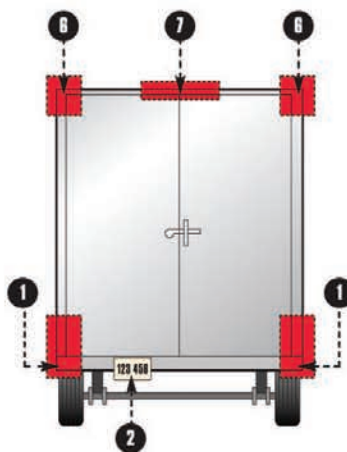
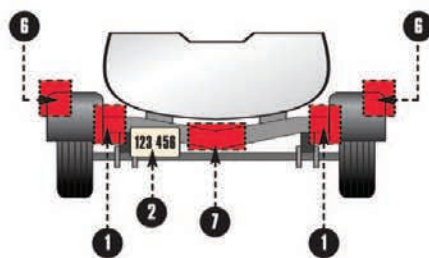
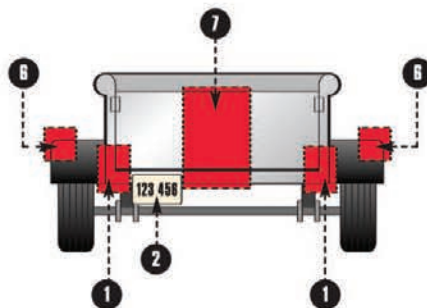
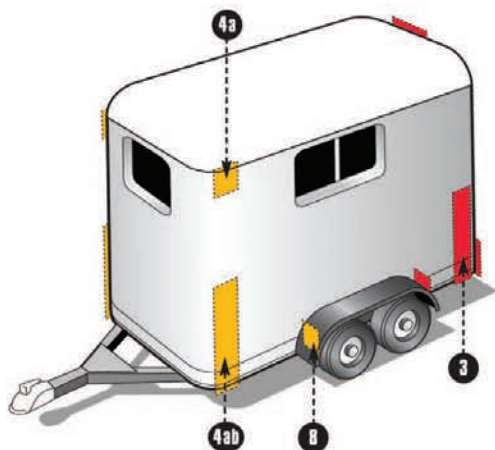
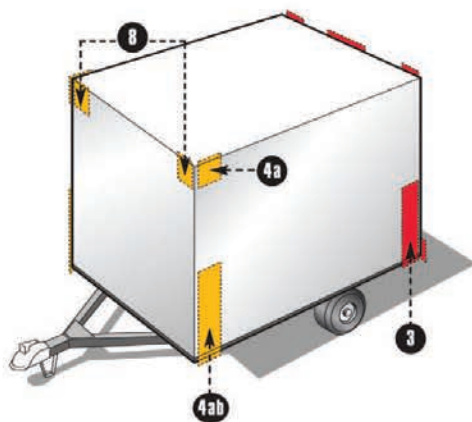
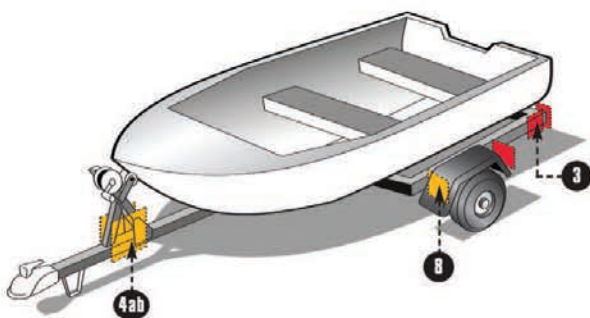
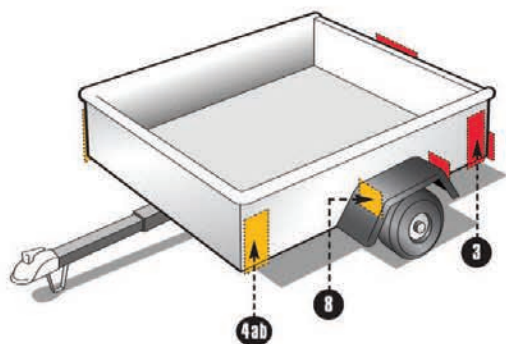
NOTE: The edge of red conspicuity tape shall not be closer than 75 mm to the edge of any amber lamp and the edge of white conspicuity tape shall not be closer than 75 mm to the edge of any lamp

For more information contact: Transport Canada: Motor Vehicle Safety Enforcement Branch Attention: Compliance Engineering Fax: 613-998-4831
National Highway Traffic Safety Administration: Office of Safety Performance Standards Attention: Richard Van Iderstine Fax: 202-366-4329



Technical Information

Information Technique Información técnica



IMPORTANT NOTE: Every lamp, reflex reflector, and conspicuity treatment must be permanently attached in the location specified below and must comply with all applicable requirements prescribed for it by FMVSS/CMVSS 108. The face of any device on the front/rear and sides should be, respectively perpendicular and parallel to the vehicle's centerline, unless it is photometrically certified at installation angle. No part of the vehicle shall prevent any device from meeting its prescribed requirements unless an auxiliary device meeting all prescribed requirements is installed.

IN CANADA: Manufacturers and importers of vehicles must have the proper certification test records demonstrating compliance of lighting components with all prescribed requirements.

BASIC EQUIPMENT REQUIRED ON ALL TRUCKS, BUSES & MPVs

DESCRIPTION				MANDATORY REQUIREMENTS			
Area	Equipment	SAE Lens Coding	Functional Purpose	Quantity	Color	Location	Height mm(in.) from the ground
1	Headlamps - Lower Beam	(H, HR)	Forward road illumination	Minimum 2	White	On the front - symmetrical as far apart as practicable	560-1370 (22-54)
	US requires "DOT" lettering on lens US&Canada - light source code required on lens					If 4 lamp system - outboard or above upper beams	
	Headlamps - Upper Beam	(H, HR)	Forward road illumination	Minimum 2	White	On the front - symmetrical	560-1370 (22-54)
	US requires "DOT" lettering on lens US&Canada - light source code required on lens					If 4 lamp system - inboard or below lower beams	
	Parking Lamps	(P)	Indicate parked vehicle	Minimum 2	White or amber	On the front - symmetrical as far apart as practicable	380-1830 (15-72)
	Vehicles less than 2032mm wide						
	Daytime Running Lamps (DRL)	(Y2)	Indicate in use vehicle	Minimum 2	White or amber	On the front - symmetrical as far apart as practicable	380 (15) min. Max. depends on type of DRL
	Canada - required / US - option US requires "DRL" lettering on lens if not headlamp						
	Front Turn Signal/Hazard Warning Lamps	(I)	Indicate direction of turn/identify disabled vehicle	Minimum 2	Amber	On the front - symmetrical as far apart as practicable	380-2110 (15-83)
2	Front Clearance Lamps	(P2, PC* or P3, PC2*)	Show vehicle's width	Minimum 2	Amber	At widest point - symmetrical on the front or near the front facing forward	As high as practicable
	Vehicles 2032mm wide or wider *photometrically certified at installation angle						
3	Front Identification Lamps (ID)	(P2 or P3)	Indicate presence of a wide vehicle	Exactly 3	Amber	On the front - center horizontally spaced 150 mm (6 in.) to 300 mm (12 in.) apart	As high as practicable or on top of the cab
	Vehicles 2032mm wide or wider						
4	a Front Side Marker Lamps	(P2, PC* P3, PC2*)	Front and rear side marker lamps / side reflex reflectors indicate vehicle's presence and length	Minimum 2	Amber	Each side at front as far forward as practicable	380 (15) minimum
	b Front Side Reflex Reflectors	(A)		Minimum 2	Amber	Each side at front as far forward as practicable facing sideward	380-1530 (15-60)
5	a Rear Side Marker Lamps **	(P2, PC* or P3, PC2*)		Minimum 2	Red	Each side at rear as far back as practicable	380 (15) minimum
	b Rear Side Reflex Reflectors **	(A)		Minimum 2	Red	Each side at rear as far back as practicable facing sideward	380-1530 (15-60)
	**not required on Truck Tractors						
6	Rear Clearance Lamps	(P2, PC* or P3, PC2*)	Show vehicle's width MAY NOT be combined with tail lamps	Minimum 2	Red	At widest point - symmetrical on the rear or near the rear facing rearward	As high as practicable may be lower only if rear ID lamps are at the top
	Vehicles 2032mm wide or wider Not required on Truck Tractors *photometrically certified at installation angle						
7	Rear Identification (ID) Lamps	(P2 or P3)	Indicate presence of a wide vehicle	Exactly 3	Red	On the rear - center horizontally spaced 150mm (6 in.) to 300mm (12 in.) apart facing rearward	At the top may be lower if door header narrower than 25mm
	Vehicles 2032mm wide or wider Not required on Truck Tractors						
8	Tail Lamps	(T)	Indicate vehicle's presence and width	Minimum 2	Red	On the rear - symmetrical as far apart as practicable	380-1830 (15-72)
	Stop Lamps	(S)	Indicate braking	Minimum 2	Red	On the rear - symmetrical as far apart as practicable	380-1830 (15-72)
	Rear Turn Signal/Hazard Warning Lamps	(I)	Indicate direction of turn/identify disabled vehicle	Minimum 2	Red or amber	On the rear - symmetrical as far apart as practicable	380-2110 (15-83)
	Rear Reflex Reflectors	(A)	Show vehicle's presence and width	Minimum 2	Red	On the rear - symmetrical as far apart as practicable	380-1530 (15-60)
9	Backup Lamp	(R)	Illuminates ground behind the vehicle and alert road users	Minimum 1	White	Rear	No requirement
10	License Plate Lamp(s)	(L)	Illuminates license plate	Minimum 1	White	On the rear - above or at the sides of license plate	No requirement
11	Center High Mounted Stop Lamp	(U3)	Indicates braking	1	Red	On the rear - centerline of the vehicle	860 (34) minimum
	Vehicles less than 2032mm wide and 4536kg						

ADDITIONAL EQUIPMENT FOR SPECIFIC VEHICLES VEHICLES 9.1m (30 ft.) LONG OR LONGER

DESCRIPTION				MANDATORY REQUIREMENTS			
Area	Equipment	SAE Lens Coding	Functional Purpose	Quantity	Color	Location	Height mm(in.) from the ground
12	a Intermediate Side Marker Lamps	(P2 or P3)	Indicate presence of a long vehicle	Minimum 2	Amber	Each side near center	380 (15) minimum
	b Intermediate Side Reflex Reflectors	(A)	Indicate presence of a long vehicle	Minimum 2	Amber	Each side near center facing sideward	380-1530 (15-60)

Truck Tractors

DESCRIPTION		MANDATORY REQUIREMENTS					
Area	Conspicuity Treatment	DOT Coding	Quantity	Color	Location	Height	Options
13	Rear Upper Body Markings	DOT-C DOT-C2 DOT-C3 DOT-C4	Exactly 2 pairs of 300mm long strips	White	Rear upper corners of cab facing rearward	As high as practicable excluding fairings	
14	Rear Marking		Exactly 2 sections of min. 600mm each	Red/White	Rear - facing rearward - on fenders, on mud flap brackets, or within 300mm below the top of mud flaps	As horizontal as practicable and not higher than 1525mm from the ground	If mud flaps not used - on the cab or frame mounted brackets

NOTE: The edge of red conspicuity tape shall not be closer than 75 mm to the edge of any amber lamp and the edge of white conspicuity tape shall not be closer than 75 mm to the edge of any lamp

For more information contact:

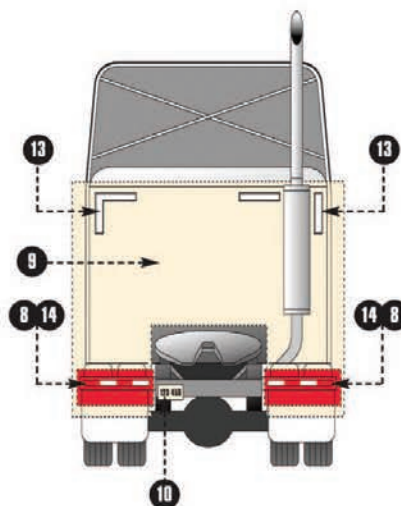
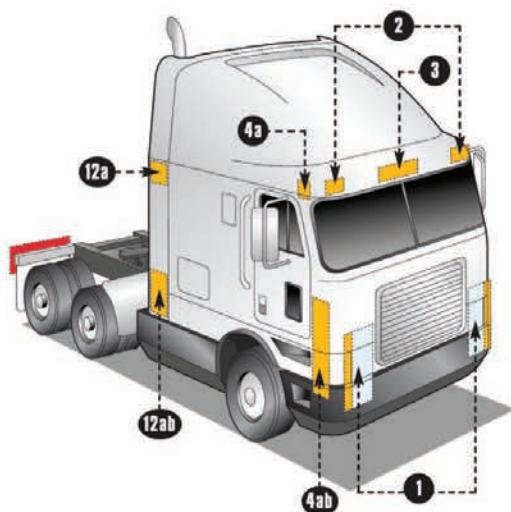
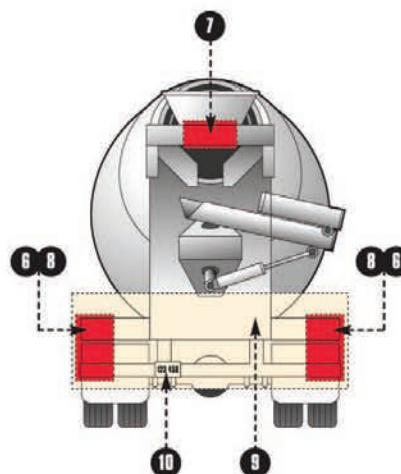
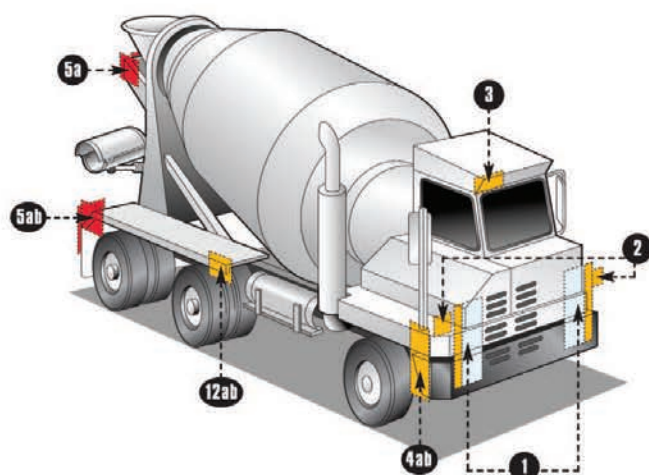
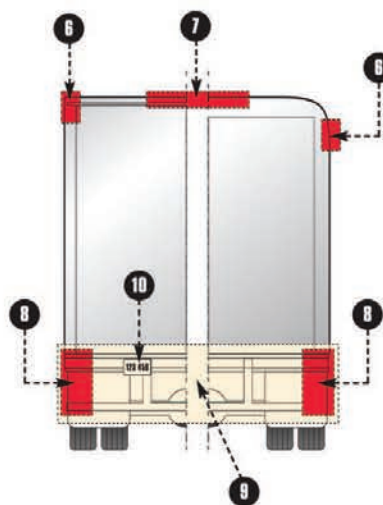
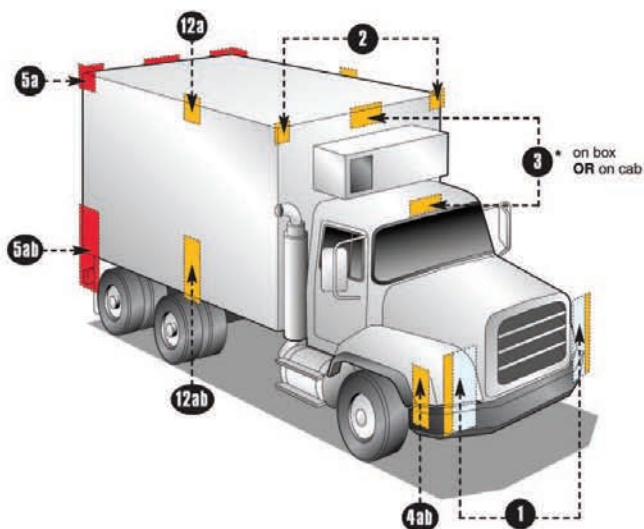
National Highway Traffic Safety Administration: Office of Safety Performance Standards
Transport Canada: Motor Vehicle Safety Enforcement Branch

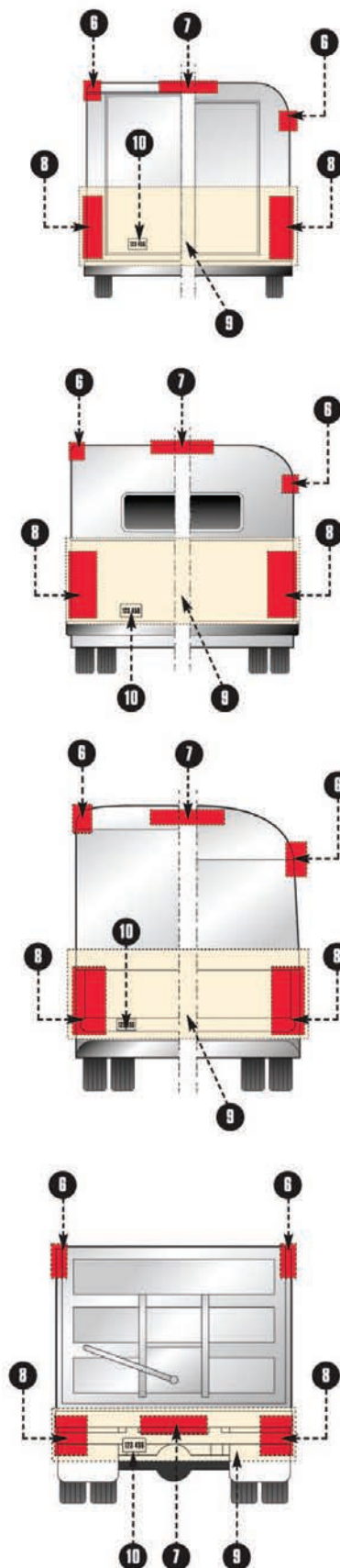
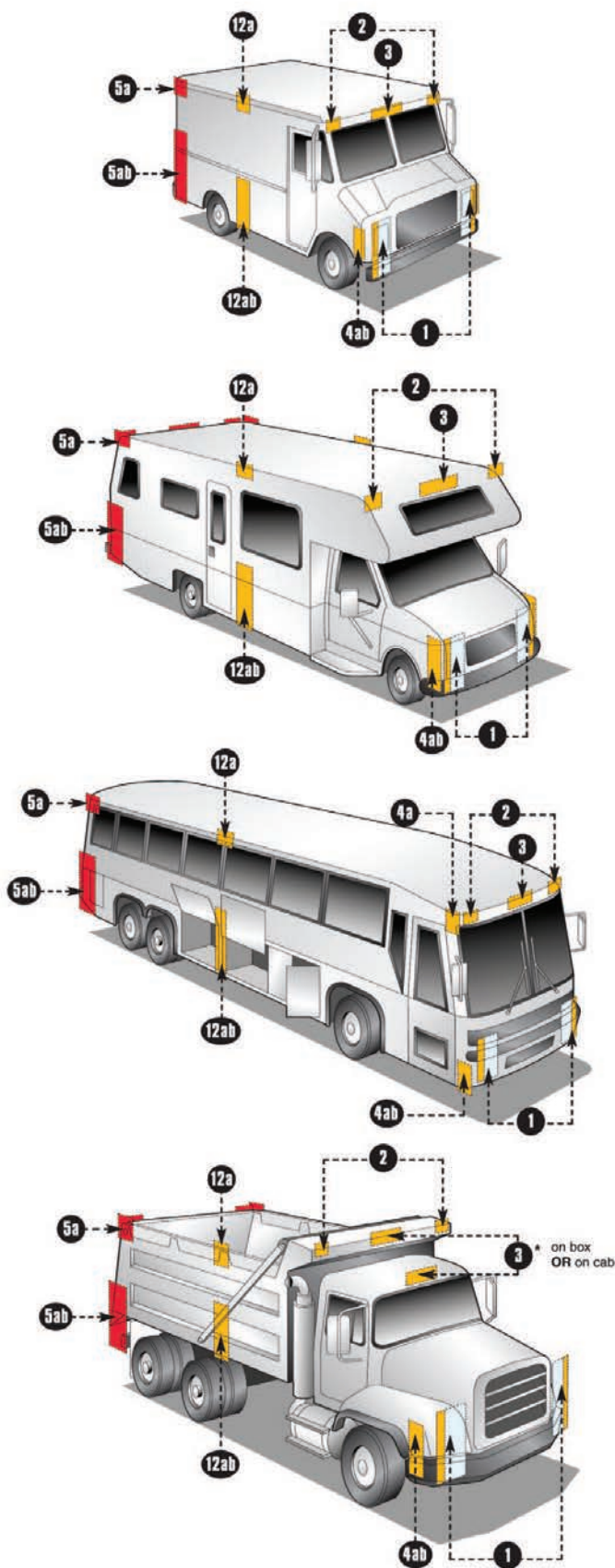
Attention: Richard Van Iderstine
Attention: Compliance Engineering

Fax: 202-366-4329
Fax: 613-998-4831

Technical Information

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Trilliant® Series of LED Work Lamps

THERE'S A RUGGED GROTE TRILLIANT® LAMP FOR ANY WORKPLACE APPLICATION.

Want more information for a specific lamp?

Scan or go to:
<http://www.grote.com/TrilliantProducts/>



Long-lasting, cool running, high output LED work lamp

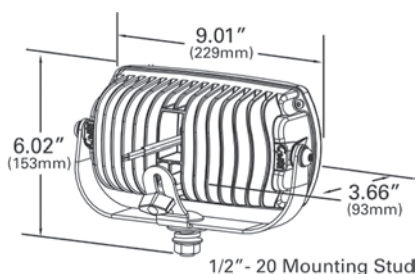
Field tested to survive in brutal off-road conditions

Color temperature provides a natural contrast most like sunlight, reducing eye fatigue



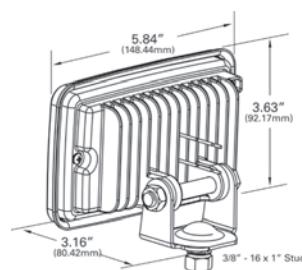
Trilliant®

- Available in 1300 - 2700 Lumens
- Easily mountable with a durable 1/2" stud mounting bracket, also features Aim-N-Go technology
- Trilliant's durable stud mounting bracket allows it to be mounted almost anywhere.



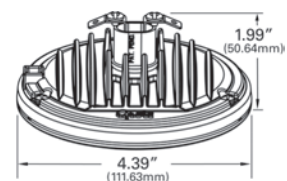
Trilliant® Mini

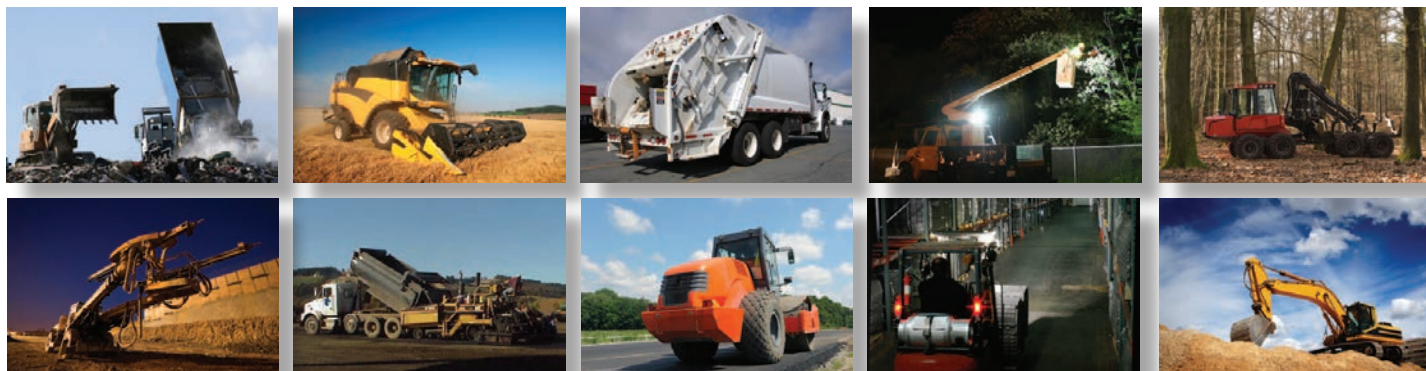
- Available in 600 Lumens
- Greater lumen output with lower power consumption than leading competitors' versions
- Leak proof sealed lamp is certified IP69K; stands up to scratches, pressure washing, and harsh weather



Trilliant® T36 LED Bulb

- Available in 900 Lumens
- LED replacement for PAR36 lamps
- Leak proof sealed lamp is certified IP69K; stands up to scratches, pressure washing, and harsh weather





Superior performance for mining, construction, off-road, agriculture, utility, emergency, and military vehicles

Integrated circuit protection

ECE R10, Dir.72/245/EEC, Amended by 2006/28/EC



Trilliant® T36

- Available in 900 Lumens
- Leak proof sealed lamp is certified IP69K; stands up to scratches, pressure washing, and harsh weather



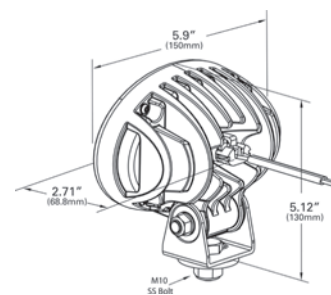
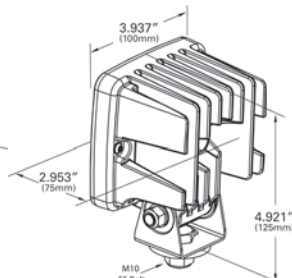
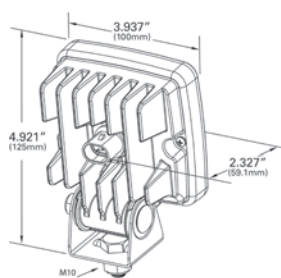
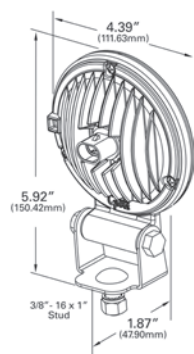
Trilliant® Cube

- Available in 1200 - 2500 usable Lumens
- Leak proof sealed lamp is certified IP69K; stands up to scratches, pressure washing, and harsh weather



Trilliant® Oval

- Available in 1200 - 2500 usable Lumens
- Leak proof sealed lamp is certified IP69K; stands up to scratches, pressure washing, and harsh weather



9 Common Causes of Failure



VIBRATION

Broken lamp filaments are one of the most common problems caused by vibration, but they also can lead to the abrasion of mating surfaces, which cause connectors and splices to fail.

To minimize vibration problems, make certain that all wires and connectors are secured appropriately. Always secure the wiring as it exits the connector. Use cushioned mountings for lamps in applications where vibration is excessive.

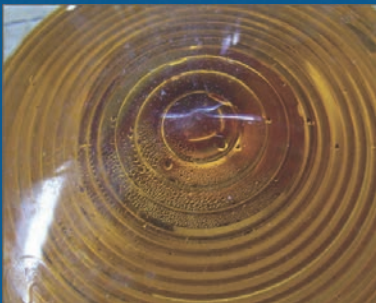


MOISTURE AND CORROSION

Condensed water droplets inside a lens or corrosion around a lamp socket are sure signs that moisture has penetrated the system.

Water can enter the system through ineffective wire seals, unprotected splices, unsealed crimps and connectors and non-mating seals.

When making repairs, don't replace a sealed system with unsealed components. Make certain that connector seals are in place and undamaged. Inspect them carefully for cuts, tears and punctures.



CHEMICAL DAMAGE

Continuous exposure to many of the common chemicals found in and around trucks can cause plastics to swell, crack, soften or otherwise become degraded. Diesel fuel and hot engine oil are the main culprits.

To minimize the effects of chemicals, inspect the wiring for signs of degradation. If it is occurring in an area that is generally free of contamination, check for leaky hoses, gaskets or fittings and repair if damaged or leaking.

To avoid damage from chemicals, don't run wiring in areas where the chance for continuous exposure is likely, such as under fuel lines and filters.



ABRASION

Abrasion occurs when wires or wire wraps are allowed to run against frame members or other abrasive surfaces. Once the insulation is worn away, bare conductors may contact a ground surface and create a grounded circuit. Or, it could cause wear to the point of fracture resulting in an open circuit.

Using the proper routing and coverings will help to prevent wear areas and abrasive damage.

Worn coverings such as loom, convoluted tubing or spiral wrap should be replaced if they are no longer providing sufficient protection for the wires inside.

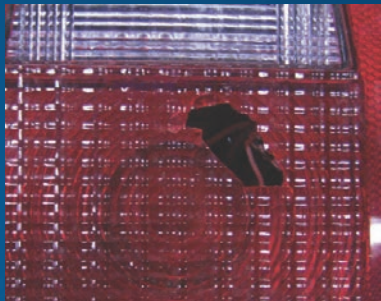


EXTREME TEMP

A variety of conditions lead to extreme temperature build-up that can damage lighting and wiring. These include leaving a trailer's tail lights on when the trailer is backed up to a dock and airflow around the lights is prohibited.

When lights have been damaged from heat buildup, the lenses are often bubbled and misshapen. Where extreme temperatures can't be avoided, special heat-resistant wires and materials should be used.

in Truck Wiring and Lighting



IMPACT

Lighting and wiring must be protected from the impact of rocks, gravel and other road debris. A major impact can cause enough damage to require extensive repairs. Smaller, more frequent impacts over time may deliver equally extensive damage. Damage from impacts can cause problems although the wires are contained in a loom or other covering. During inspection, always check for damage from impacts and replace any wiring or lights that appear to be damaged. Make certain that the replacement parts are equivalent to or better than the original.



FLEXING

Wiring in a truck often must make sharp turns around corners, as well as subjected to constant flexing where doors or hoods are opened and closed repeatedly.

To prevent wire damage from repeated flexing, avoid tight radius turns. Make sure that the wire is not snagged or stressed at its maximum extension. Also, make certain that the wire moves smoothly through its flexing cycle and doesn't rub or scrape against adjacent components.



TENSILE LOADS

Wiring should not be considered an appropriate load-bearing component. It's easy to exceed the designed load limit by inadvertently installing wires under tension or snagging a section of wire on one of the moving parts. Using a wire bundle as a handhold or step can destroy the integrity of the conductor and its connections. So can the weight of accumulated ice, snow, mud and other materials.

Each of these points must be considered carefully when routing wires in a wiring harness.



GRIT AND SAND

Accumulation of abrasive materials can lead to damage, especially when combined with vibration. If gritty materials enter connections, they can accelerate the wear on contact points causing interruption of the circuit and failure of devices. Sand and grit also can attract and hold moisture, creating conditions conducive to corrosion. In some cases, sand and grit may work their way inside protective coverings and abrade the insulation of wires running through them if there is relative motion between the covering and the wire.

One of the ways of reducing sand and grit buildup is to eliminate abrasive materials in the areas where wiring is present. Another way is to seal openings on protective coverings to keep gritty materials from entering.

For more information, visit www.grote.com

Grote

The first name in vehicle
safety systems®

A family's commitment to the vehicle and transportation lighting industry, spanning more than four generations



**William D. Grote, Founder
Grote Industries 1901**

Just like many of the distributors, fleets and OEM's Grote Industries serves, we're a family-owned business. Like a number of our customers, we're proud of our family's multi-generational commitment to the transportation industry, reaching back more than a century. If you know the Grote family, you also know that the vehicle lighting business is not just a job to us, it's something that's folded into our family's culture – part of our very DNA. We're fond of saying that "lighting is in our blood" and we're only half kidding.

Unlike many institutionally-owned companies, we're able to draw on our family's time-honored values, built upon our tradition of service to the industry and our fierce entrepreneurial spirit. We're thankful for the visionary legacy of our predecessors and because

of it, we can't help but to see the past, present and future of the lighting industry in a different context from those who simply find themselves working in the lighting business.

Founded on the principles of solid customer relationships, continuous innovation and exceptional product performance, Grote is committed to propelling itself and its industry forward, with inventive products and challenging ideas.

As a corporation, our family's culture extends to our entire organization, around the globe and particularly to our customer-facing staff. Grote is not sales oriented, we're not engineering oriented – we're relationship oriented and we're working hard every day to uphold our reputation and continue to earn your trust.

The Grote family has played a prominent role in shaping the vehicle lighting industry. We are deeply and personally engaged today, as we will be in the future, to make the kind of brave choices and bold decisions that will help move the vehicle lighting industry ahead and into an even brighter tomorrow.

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