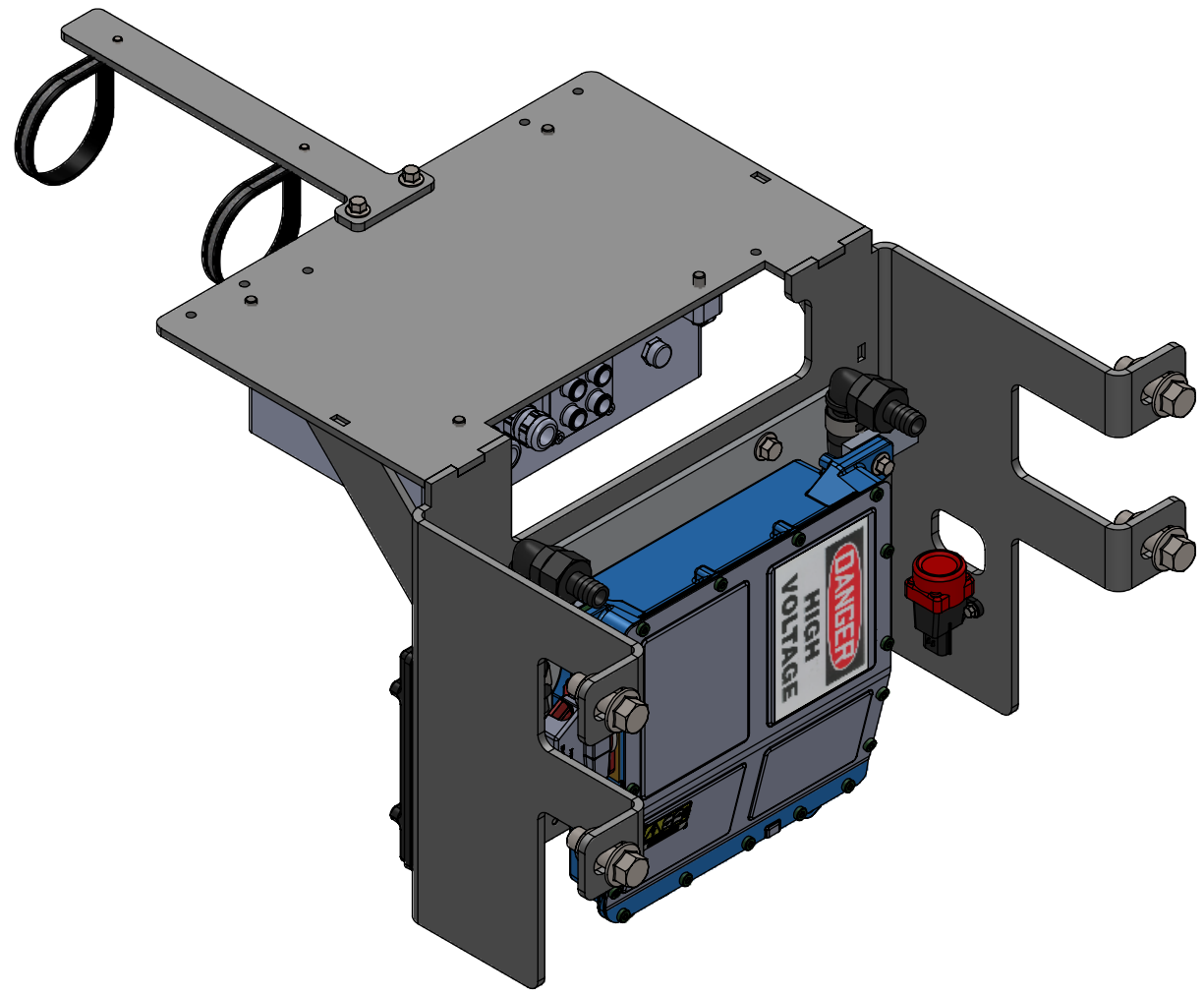


8 7 6 5 4 3 2 1

D  
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A



ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	Qty
1	10005		CONTROLLER,HCU	128 PIN ECU	1
2	10006		MODULE,POWER DISTRIBUTION	FUSE, RELAY CENTER	1
3	10017		SENSOR,INERTIA	CRASH DETECTION SWITCH	1
4	10081		CONVERTER,DC-DC,2.2KW	BI-DIRECTIONAL,LIQUID COOLED	1
5	20258		HARNESS,HIGH CURRENT POS	HARNESS PDM-DC-DC	1
6	30014		WASHER,FLAT,M6X12MM OD	ZPS	1
7	30033		WASHER,FLAT,M10X28MM OD	ZPS,GR 8.8	2
8	30054		BOLT,FLANGE HEAD,M16X2.0X45MM	ZPS,GR 8.8	4
9	30055		NUT,FLANGE,M16X2.0MM	ZPS,GR 8.8	4
10	30056		BOLT,FLANGE HEAD,M8X1.25X25MM	ZPS,GR 8.8	3
11	30057		BOLT,FLANGE HEAD,M8X1.25X16MM	ZPS,GR 8.8	2
12	30063		BOLT,FLANGE HEAD,M6X1.0X20MM	ZPS,GR 8.8	3
13	30067		BOLT,FLANGE HEAD,M5X0.8X12MM	ZPS,GR 8.8	2
14	30069		BOLT,FLANGE HEAD,M8X1.25X20MM	ZPS,GR 8.8	4
15	30108		BOLT,FLANGE HEAD,M6X1.0X12MM	ZPS,GR 8.8	2
16	30113		BOLT,FLANGE HEAD,M6X1.0X16MM	ZPS,GR 8.8	4
17	30115		BOLT,FLANGE HEAD,M8X1.25X30MM	ZPS,GR 8.8	1
18	30125		BOLT,FLANGE HEAD,M10X1.5X16MM	ZPS,GR 8.8	4
19	40006	01	BUSSBAR, PDM		1
20	40193	02	BRACKET,WIRE SUPPORT,ELEC BKT	G2V2	1
21	40197	02	WELDMENT,DC-DC BRACKET	DELPHI DC-DC	1
22	40198	04	WELDMENT,ELECTRONICS BKT	G2V2	1
23	50046		HOSE,HEATER,3/4"		1
24	50096		ADAPTER,90 DEG,TUBE X MNPT	3/4" TUBE X 3/4" MNPT,PLASTIC	2
25	50097		ADAPTER,3/4"FNPT X 5/8" TUBE	PLASTIC	2
26	50118		CLAMP,HOSE,BAND,29MM	CONSTANT TENSION	4
27	60003		LABEL,DANGER HV	DANGER, HV LABEL	1
28	60045		P-CLAMP 3"		2
*	10080		HVJB,28KW,6KW EXP PWR,A/C	IP69,HVIL,STANDARD CONFIG	1
*	10101		HVJB,28KW,PIE,12KW EXP PWR,A/C	IP69,HVIL,PIE WAGON CONFIG	1
*	10102		HVJB,28KW,PIE,6KW EXP PWR,A/C	IP69,HVIL,PIE WAGON CONFIG	1

\* DENOTES ITEM VARIES BASED ON TRUCK CONFIGURATION AND IS INSTALLED IN OP110

04	REVISED PART #40193	AJC	06/10/15
REV	DESCRIPTION OF CHANGE	REVISED BY	DATE

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 REFERENCE DIMENSIONS SHOWN IN PARENTHESIS  
 DIMENSIONS ARE IN INCHES

DRAWN	AJC	04/01/14
ANGULAR	± 1.0°	
NOMINAL	± 0.125	
ONE PLACE DECIMAL	± 0.060	
TWO PLACE DECIMAL	± 0.030	
THREE PLACE DECIMAL	± 0.010	

MATERIAL: INTERPRET GEOMETRIC TOLERANCE PER ASME Y14.5M-1994

FINISH:

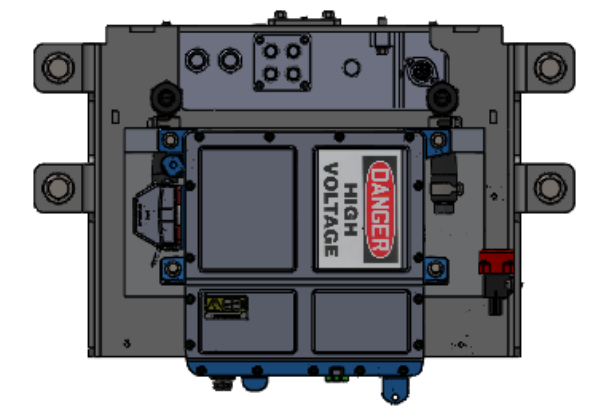
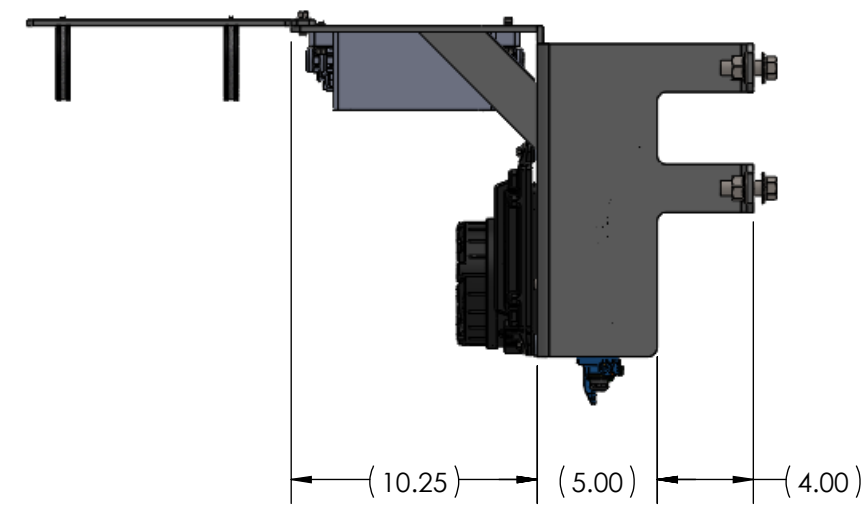
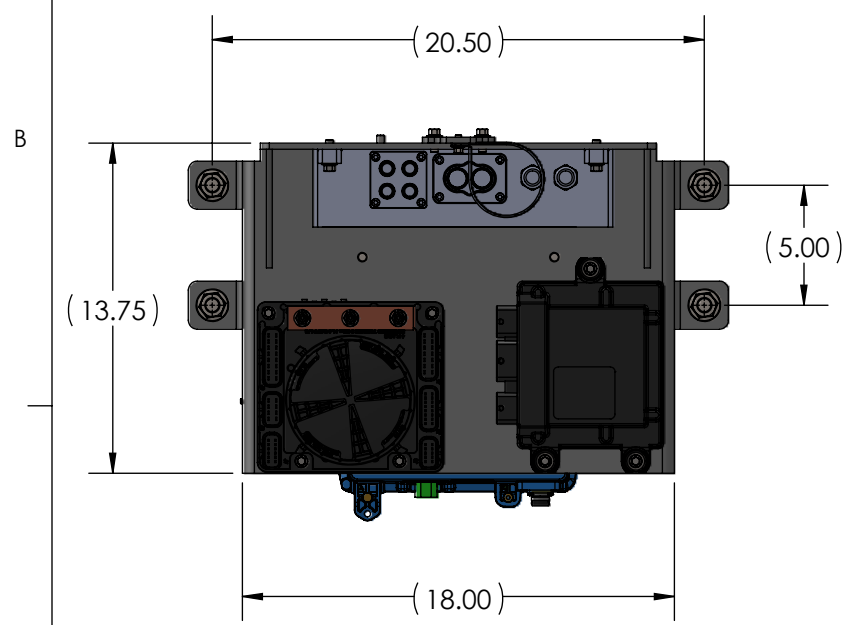
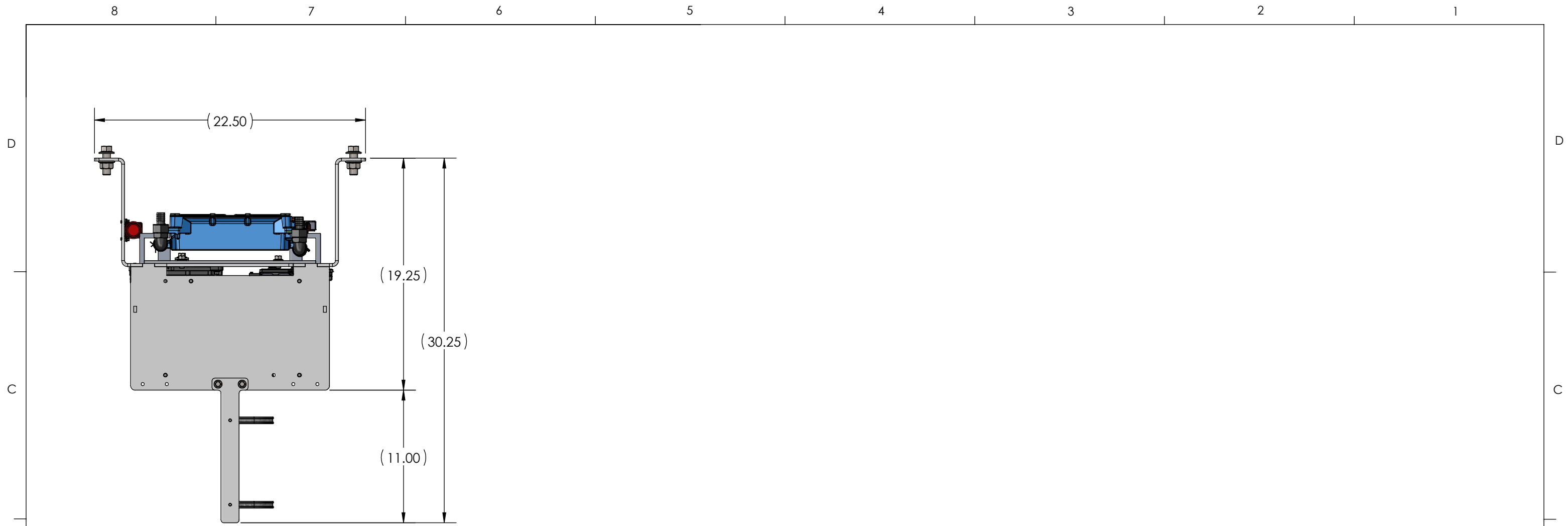
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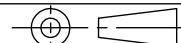
SUB-ASSY,ELECTRONICS BRACKET  
G2V2

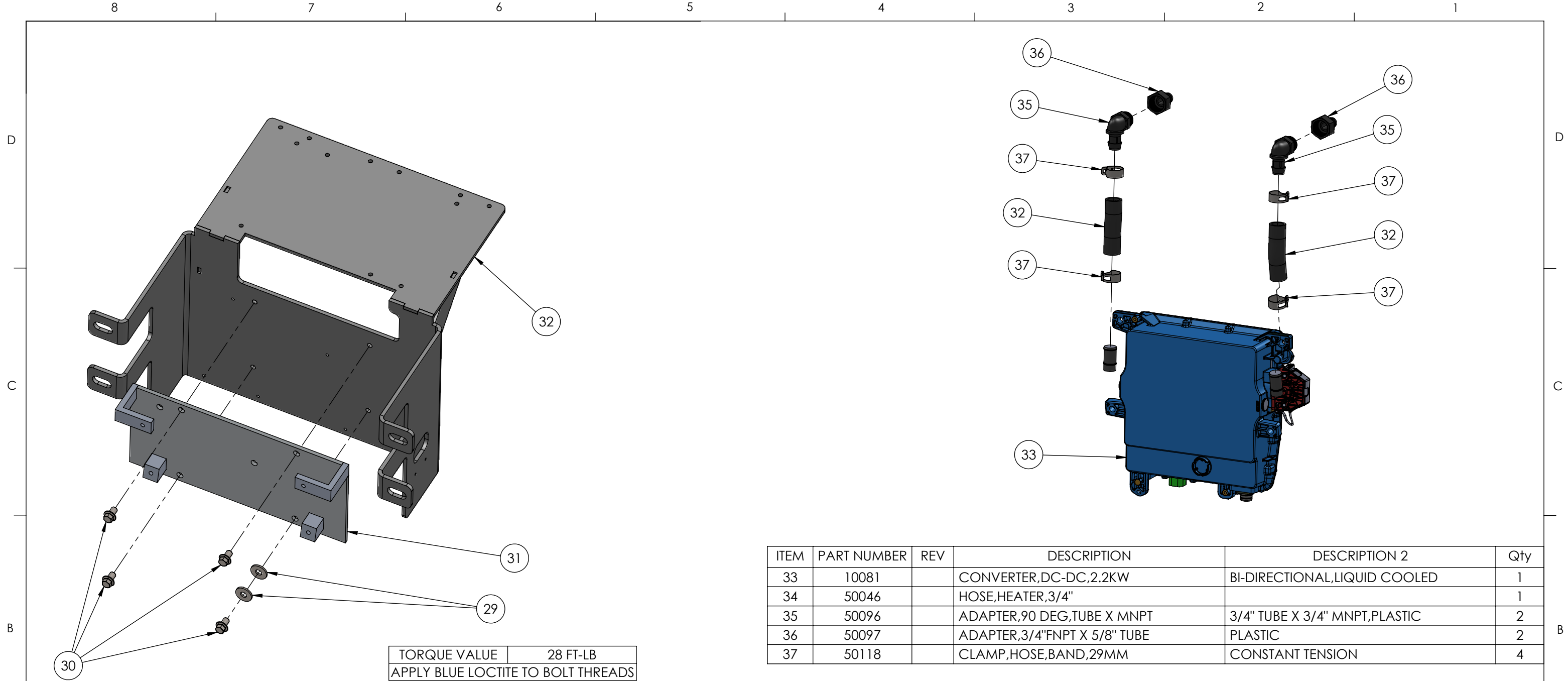
SHEET SIZE	PART NUMBER	REV
B	70189	04
SCALE 1:5	DO NOT SCALE DRAWING	SHEET 1 OF 9

8 7 6 5 4 3 2 1



04	REVISED PART #40193	AJC	06/10/15
REV	DESCRIPTION OF CHANGE	REVISED BY	DATE

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<small>UNLESS OTHERWISE SPECIFIED          REFERENCE DIMENSIONS SHOWN IN PARENTHESIS          DIMENSIONS ARE IN INCHES</small>		DRAWN AJC 04/01/14			SUB-ASSY,ELECTRONICS BRACKET G2V2	
<small>ANGULAR ± 1.0°          NOMINAL ± 0.125          ONE PLACE DECIMAL ± 0.060          TWO PLACE DECIMAL ± 0.030          THREE PLACE DECIMAL ± 0.010</small>		<small>INTERPRET GEOMETRIC TOLERANCE PER          ASME Y14.5M-1994</small>		SHEET SIZE B	PART NUMBER 70189	REV 04
<small>MATERIAL</small>		<small>FINISH</small> 		SCALE 1:8	DO NOT SCALE DRAWING	SHEET 2 OF 9




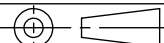
ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	Qty
33	10081		CONVERTER,DC-DC,2.2KW	BI-DIRECTIONAL,LIQUID COOLED	1
34	50046		HOSE,HEATER,3/4"		1
35	50096		ADAPTER,90 DEG,TUBE X MNPT	3/4" TUBE X 3/4" MNPT,PLASTIC	2
36	50097		ADAPTER,3/4"FNPT X 5/8" TUBE	PLASTIC	2
37	50118		CLAMP,HOSE,BAND,29MM	CONSTANT TENSION	4

ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	Qty
29	30033		WASHER,FLAT,M10X28MM OD	ZPS,GR 8.8	2
30	30125		BOLT,FLANGE HEAD,M10X1.5X16MM	ZPS,GR 8.8	4
31	40197	02	WELDMENT,DC-DC BRACKET	DELPHI DC-DC	1
32	40198	04	WELDMENT,ELECTRONICS BKT	G2V2	1

DC-DC CONVERTER BRACKET INSTALLATION

DC-DC CONVERTER HOSE INSTALLATION

04	REVISED PART #40193	AJC	06/10/15
REV	DESCRIPTION OF CHANGE	REVISED BY	DATE

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<small>UNLESS OTHERWISE SPECIFIED</small> <small>REFERENCE DIMENSIONS SHOWN IN PARENTHESIS</small> <small>DIMENSIONS ARE IN INCHES</small>	<small>DRAWN</small> AJC	<small>AJC</small>	<small>04/01/14</small>	<b>SUB-ASSY,ELECTRONICS BRACKET</b> <b>G2V2</b>		
<small>ANGULAR</small> ± 1.0° <small>NOMINAL</small> ± 0.125 <small>ONE PLACE DECIMAL</small> ± 0.060 <small>TWO PLACE DECIMAL</small> ± 0.030 <small>THREE PLACE DECIMAL</small> ± 0.010	<small>INTERPRET GEOMETRIC TOLERANCE PER</small> <small>ASME Y14.5M-1994</small>			<small>SHEET SIZE</small> B	<small>PART NUMBER</small> 70189	<small>REV</small> 04
<small>MATERIAL</small> 	<small>FINISH</small> 			<small>SCALE 1:6</small>	<small>DO NOT SCALE DRAWING</small>	<small>SHEET 3 OF 9</small>

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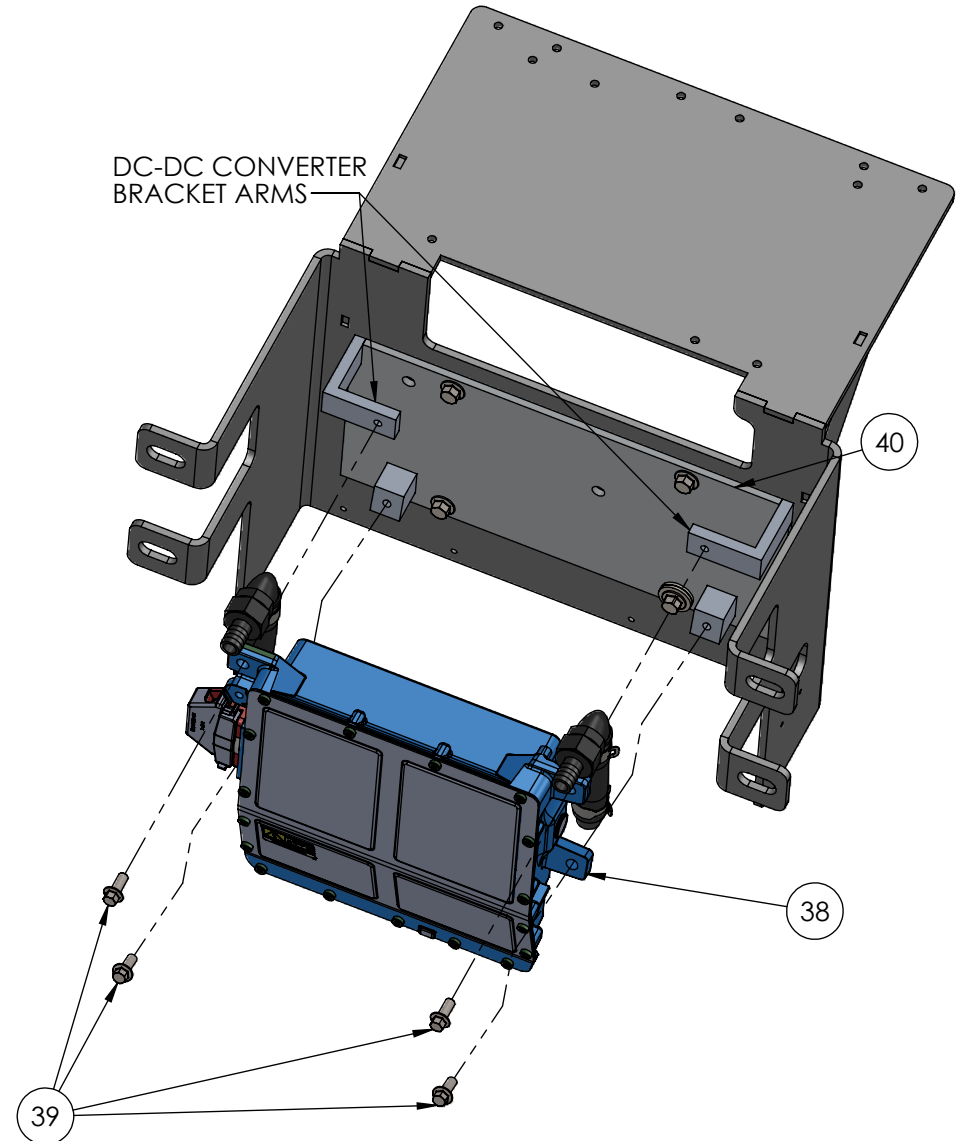
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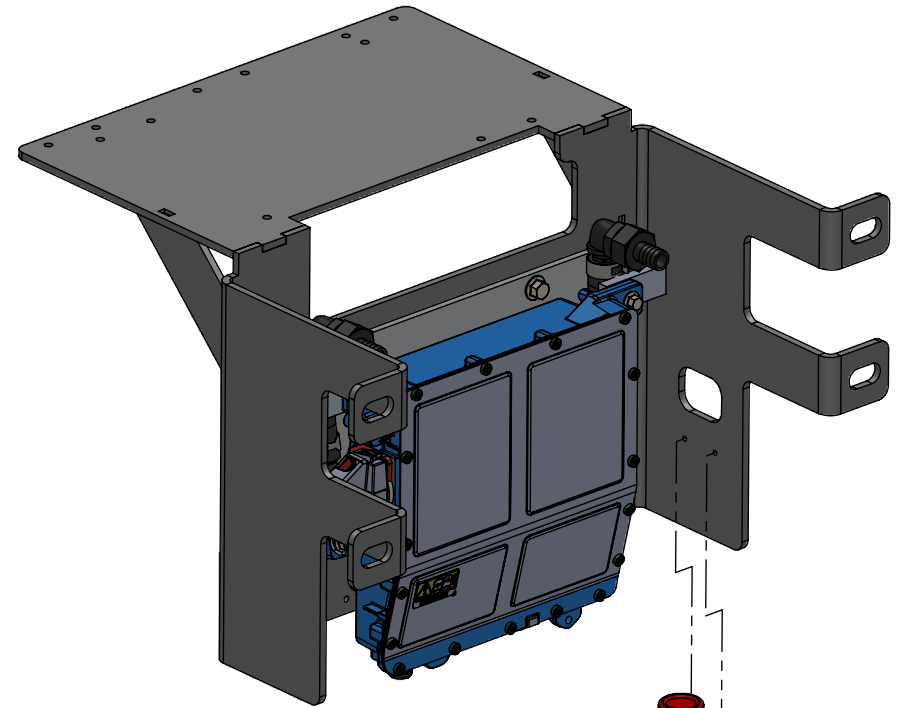
DC-DC CONVERTER  
BRACKET ARMS



TORQUE VALUE	169 IN-LB
APPLY BLUE LOCTITE TO BOLT THREADS	

ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	Qty
38	10081		CONVERTER,DC-DC,2.2KW	BI-DIRECTIONAL,LIQUID COOLED	1
39	30069		BOLT,FLANGE HEAD,M8X1.25X20MM	ZPS,GR 8.8	4
40	40197	02	WELDMENT,DC-DC BRACKET	DELPHI DC-DC	1

DC-DC CONVERTER INSTALLATION



TORQUE VALUE	41 IN-LB
APPLY BLUE LOCTITE TO BOLT THREADS	

ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	Qty
41	10017		SENSOR,INERTIA	CRASH DETECTION SWITCH	1
42	30067		BOLT,FLANGE HEAD,M5X0.8X12MM	ZPS,GR 8.8	2

INERTIA SWITCH INSTALLATION

04	REVISED PART #40193	AJC	06/10/15
REV	DESCRIPTION OF CHANGE	REVISED BY	DATE

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<small>UNLESS OTHERWISE SPECIFIED REFERENCE DIMENSIONS SHOWN IN PARENTHESIS DIMENSIONS ARE IN INCHES</small>	<small>DRAWN</small> AJC	<small>DATE</small> 04/01/14	
<small>ANGULAR</small> ± 1.0° <small>NOMINAL</small> ± 0.125 <small>ONE PLACE DECIMAL</small> ± 0.060 <small>TWO PLACE DECIMAL</small> ± 0.030 <small>THREE PLACE DECIMAL</small> ± 0.010			
<small>MATERIAL</small>	<small>INTERPRET GEOMETRIC TOLERANCE PER ASME Y14.5M-1994</small>		
<small>FINISH</small>			



SUB-ASSY,ELECTRONICS BRACKET  
G2V2

SHEET SIZE	PART NUMBER	REV
B	70189	04
SCALE 1:6	DO NOT SCALE DRAWING	SHEET 4 OF 9

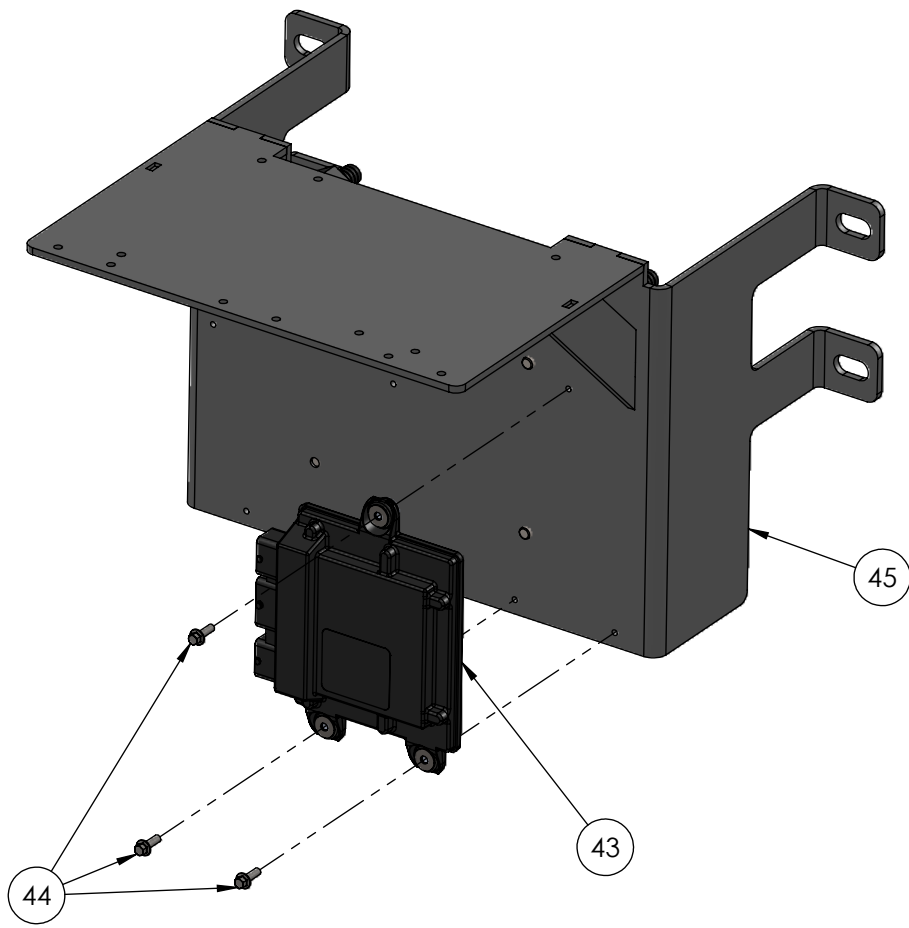
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8 7 6 5 4 3 2 1

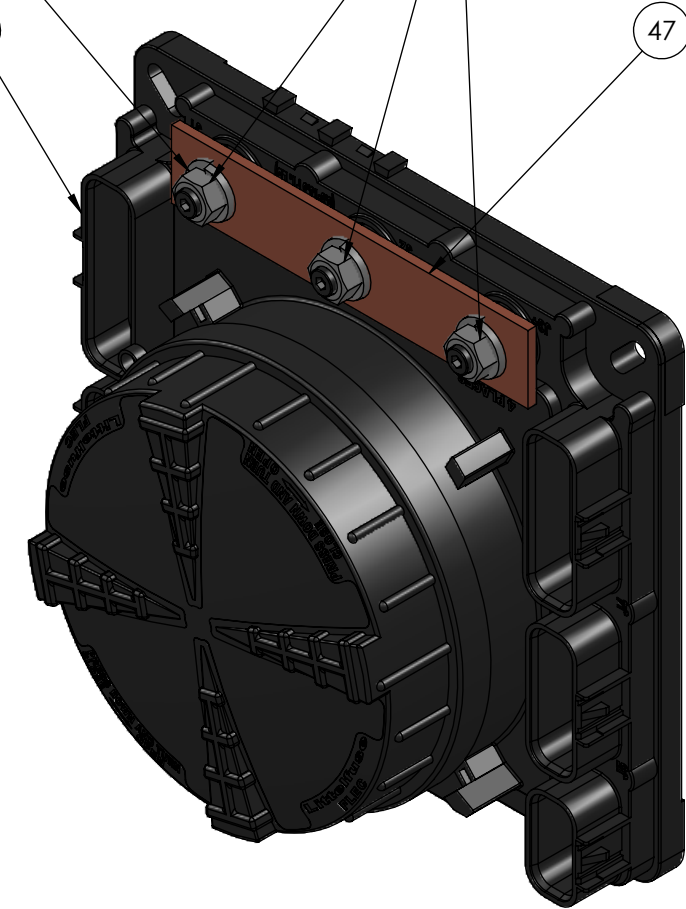
TORQUE VALUE	69 IN-LB
APPLY BLUE LOCTITE TO BOLT THREADS	

USE NUTS/WASHERS INSTALLED ON PDM TO BOLT ON BUS BAR

DO NOT TORQUE DOWN  
HAND TIGHTEN ONLY



TORQUE VALUE	69 IN-LB
APPLY BLUE LOCTITE TO BOLT THREADS	




ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	Qty
43	10005		CONTROLLER,HCU	128 PIN ECU	1
44	30063		BOLT,FLANGE HEAD,M6X1.0X20MM	ZPS,GR 8.8	3
45	40198	04	WELDMENT,ELECTRONICS BKT	G2V2	1

HCU CONTROLLER INSTALLATION

ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	Qty
46	10006		MODULE,POWER DISTRIBUTION	FUSE, RELAY CENTER	1
47	40006	01	BUSSBAR, PDM		1

PDM BUS BAR INSTALLATION

04	REVISED PART #40193	AJC	06/10/15
REV	DESCRIPTION OF CHANGE	REVISED BY	DATE

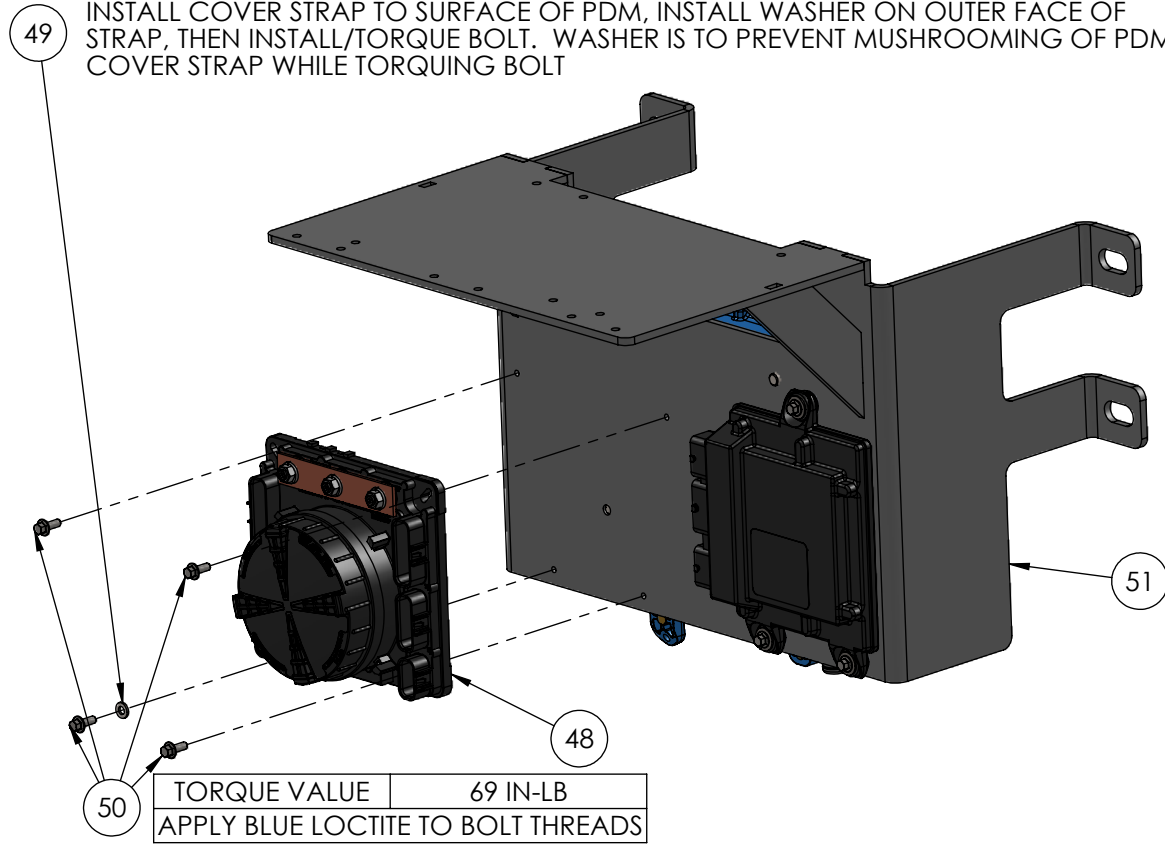
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UNLESS OTHERWISE SPECIFIED REFERENCE DIMENSIONS SHOWN IN PARENTHESIS DIMENSIONS ARE IN INCHES	DRAWN AJC 04/01/14			SUB-ASSY,ELECTRONICS BRACKET G2V2	
ANGULAR ± 1.0° NOMINAL ± 0.125 ONE PLACE DECIMAL ± 0.060 TWO PLACE DECIMAL ± 0.030 THREE PLACE DECIMAL ± 0.010	INTERPRET GEOMETRIC TOLERANCE PER ASME Y14.5M-1994			SHEET SIZE B	PART NUMBER 70189
MATERIAL	FINISH			SCALE 1:6 DO NOT SCALE DRAWING	REV 04 SHEET 5 OF 9

8 7 6 5 4 3 2 1

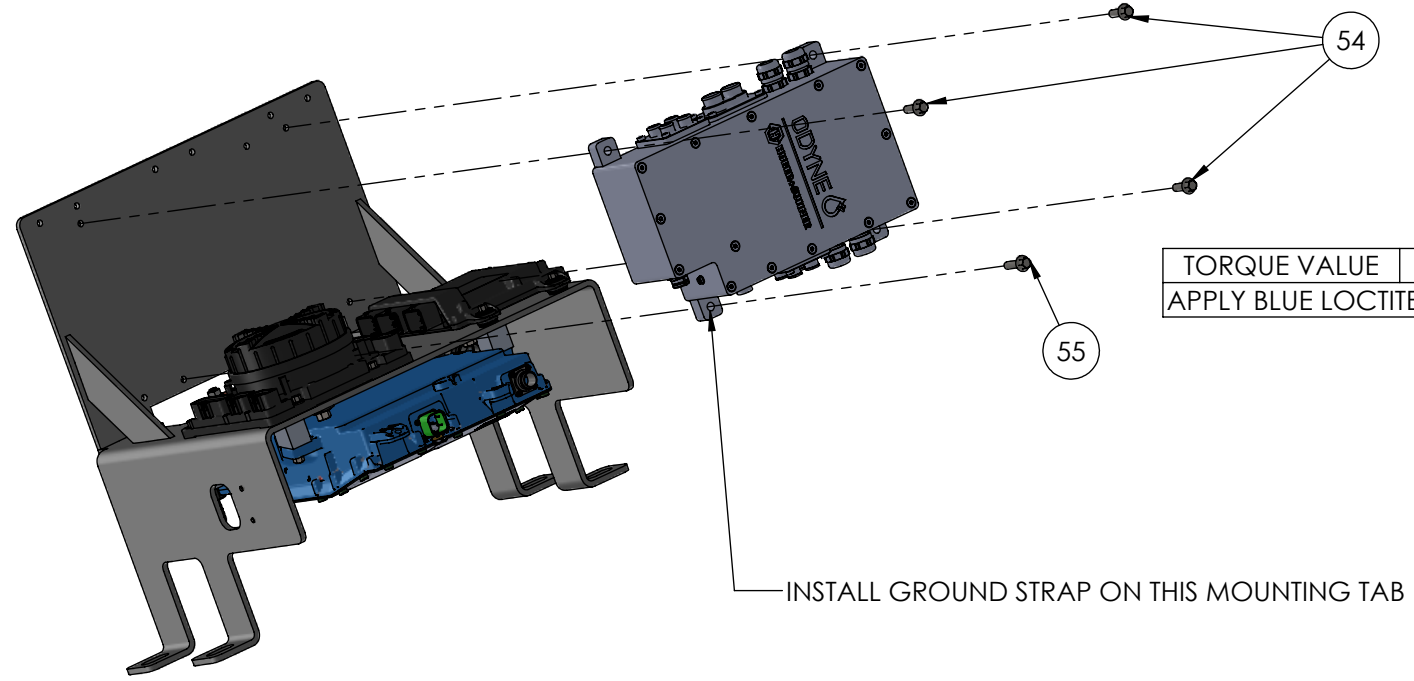
ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	Qty
53	10080		HVJB,28KW,6KW EXP PWR,A/C	IP69,HVIL,STANDARD CONFIG	1
54	30056		BOLT,FLANGE HEAD,M8X1.25X25MM	ZPS,GR 8.8	3
55	30115		BOLT,FLANGE HEAD,M8X1.25X30MM	ZPS,GR 8.8	1
56	40198	04	WELDMENT,ELECTRONICS BKT	G2V2	1

NOTE: PDM COVER STRAP MOUNTS TO LOWER LEFT BOLT

INSTALL COVER STRAP TO SURFACE OF PDM, INSTALL WASHER ON OUTER FACE OF STRAP, THEN INSTALL/TORQUE BOLT. WASHER IS TO PREVENT MUSHROOMING OF PDM COVER STRAP WHILE TORQUING BOLT



TORQUE VALUE	69 IN-LB
APPLY BLUE LOCTITE TO BOLT THREADS	



TORQUE VALUE	169 IN-LB
APPLY BLUE LOCTITE TO BOLT THREADS	


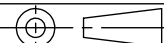
INSTALL GROUND STRAP ON THIS MOUNTING TAB

STANDARD HVJB INSTALLATION

ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	Qty
48	10006		MODULE,POWER DISTRIBUTION	FUSE, RELAY CENTER	1
49	30014		WASHER,FLAT,M6X12MM OD	ZPS	1
50	30113		BOLT,FLANGE HEAD,M6X1.0X16MM	ZPS,GR 8.8	4
51	40198	04	WELDMENT,ELECTRONICS BKT	G2V2	1

POWER DISTRIBUTION MODULE INSTALLTION

04	REVISED PART #40193	AJC	06/10/15
REV	DESCRIPTION OF CHANGE	REVISED BY	DATE

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<small>UNLESS OTHERWISE SPECIFIED REFERENCE DIMENSIONS SHOWN IN PARENTHESIS DIMENSIONS ARE IN INCHES</small>	<small>DRAWN</small> AJC	<small>AJC</small>	<small>04/01/14</small>	SUB-ASSY,ELECTRONICS BRACKET G2V2		
<small>ANGULAR ± 1.0° NOMINAL ± 0.125 ONE PLACE DECIMAL ± 0.060 TWO PLACE DECIMAL ± 0.030 THREE PLACE DECIMAL ± 0.010</small>	<small>INTERPRET GEOMETRIC TOLERANCE PER ASME Y14.5M-1994</small>			<small>SHEET SIZE</small> B	<small>PART NUMBER</small> 70189	<small>REV</small> 04
<small>MATERIAL</small> 	<small>FINISH</small> 			<small>SCALE 1:6</small>	<small>DO NOT SCALE DRAWING</small>	<small>SHEET 6 OF 9</small>

ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	Qty
61	10101		HVJB,28KW,PIE,12KW EXP PWR,A/C	IP69,HVIL,PIE WAGON CONFIG	1
62	30056		BOLT,FLANGE HEAD,M8X1.25X25MM	ZPS,GR 8.8	3
63	30115		BOLT,FLANGE HEAD,M8X1.25X30MM	ZPS,GR 8.8	1
64	40198	04	WELDMNT,ELECTRONICS BKT	G2V2	1

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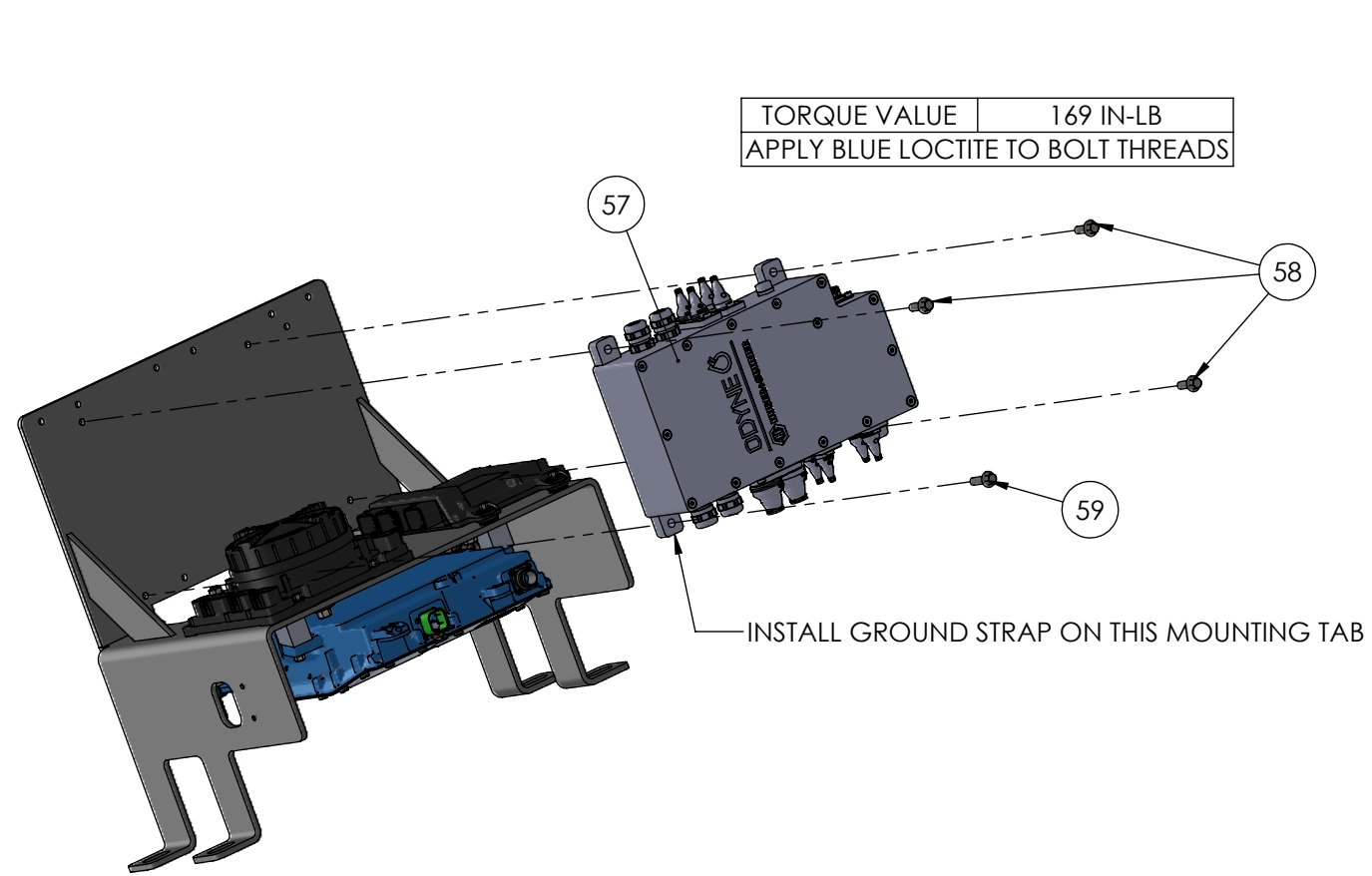
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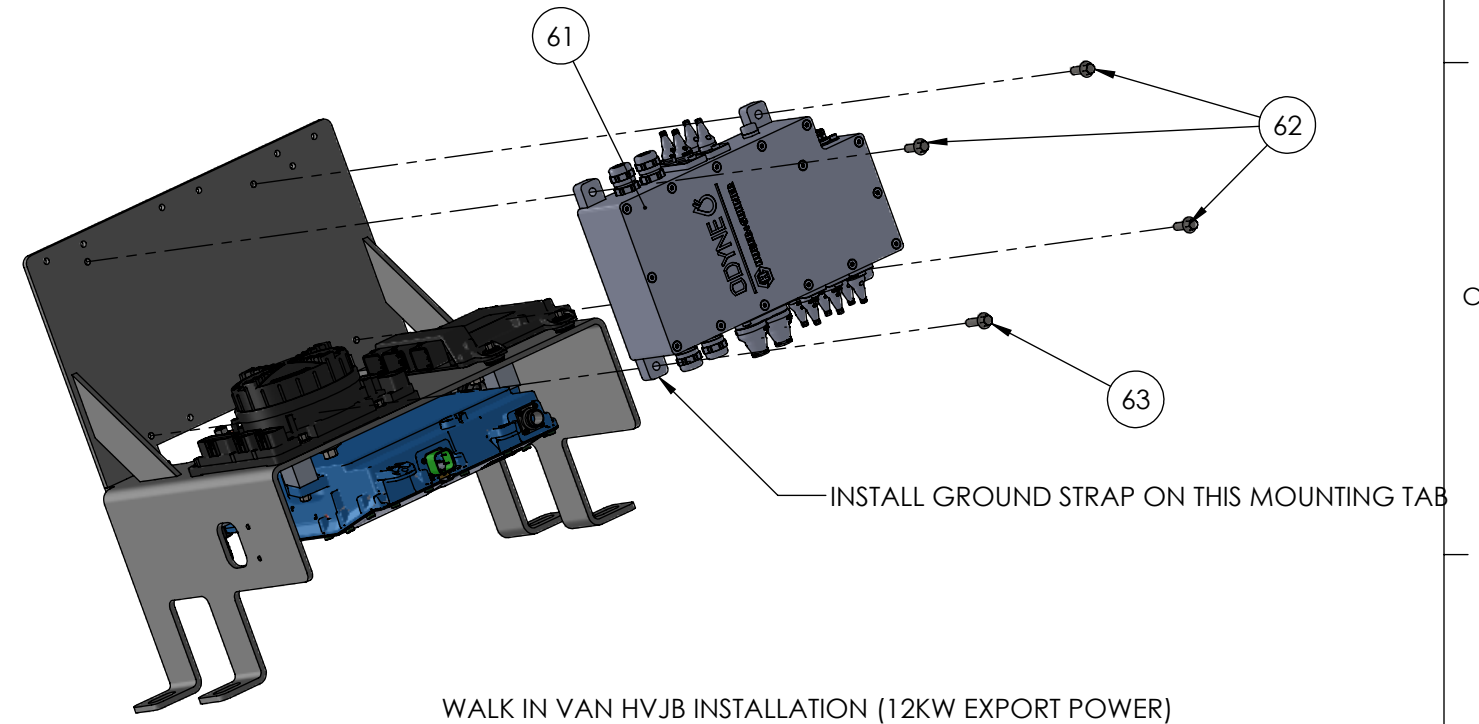
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TORQUE VALUE	169 IN-LB
APPLY BLUE LOCTITE TO BOLT THREADS	

TORQUE VALUE	169 IN-LB
APPLY BLUE LOCTITE TO BOLT THREADS	




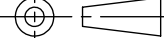
WALK IN VAN HVJB INSTALLATION (6KW EXPORT POWER)



WALK IN VAN HVJB INSTALLATION (12KW EXPORT POWER)

ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	Qty
57	10102		HVJB,28KW,PIE,6KW EXP PWR,A/C	IP69,HVIL,PIE WAGON CONFIG	1
58	30056		BOLT,FLANGE HEAD,M8X1.25X25MM	ZPS,GR 8.8	3
59	30115		BOLT,FLANGE HEAD,M8X1.25X30MM	ZPS,GR 8.8	1
60	40198	04	WELDMNT,ELECTRONICS BKT	G2V2	1

04	REVISED PART #40193	AJC	06/10/15
REV	DESCRIPTION OF CHANGE	REVISED BY	DATE

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ANGULAR ± 1.0° NOMINAL ± 0.125 ONE PLACE DECIMAL ± 0.060 TWO PLACE DECIMAL ± 0.030 THREE PLACE DECIMAL ± 0.010				SHEET SIZE	PART NUMBER
MATERIAL	INTERPRET GEOMETRIC TOLERANCE PER ASME Y14.5M-1994			B	70189
FINISH				SCALE 1:8	DO NOT SCALE DRAWING
					REV
					04
					SHEET 7 OF 9

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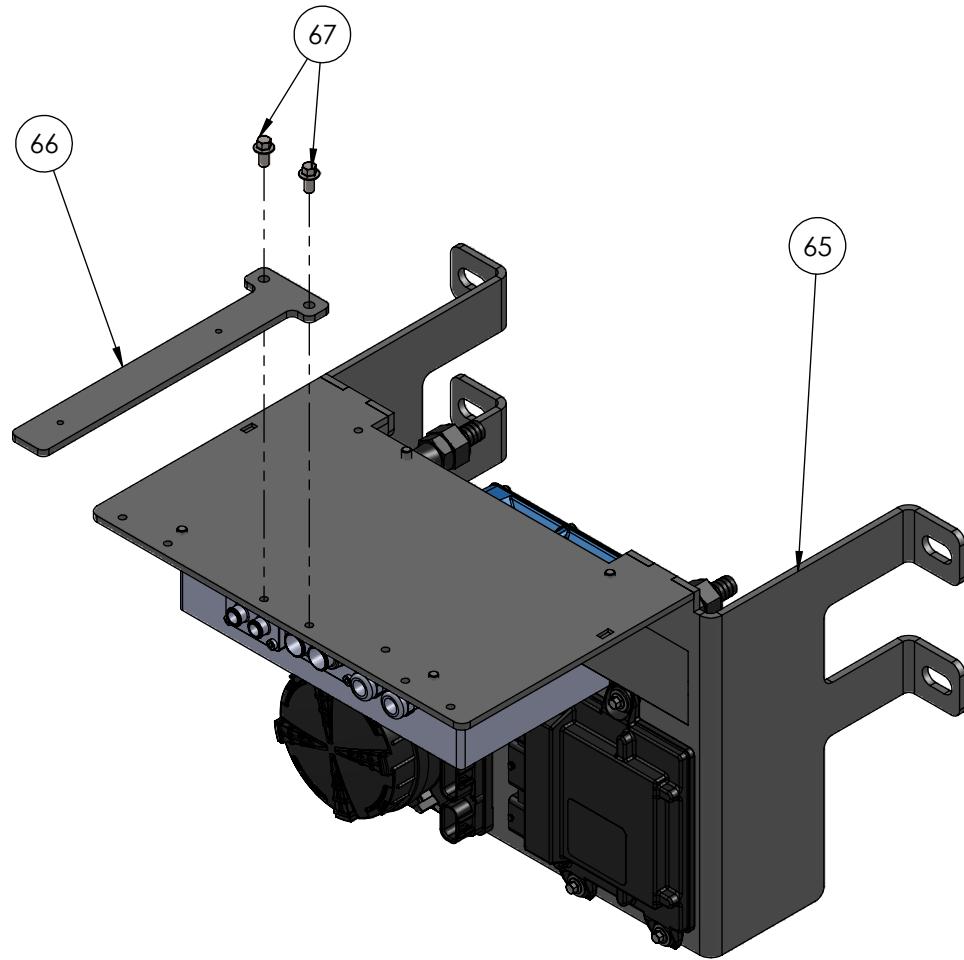
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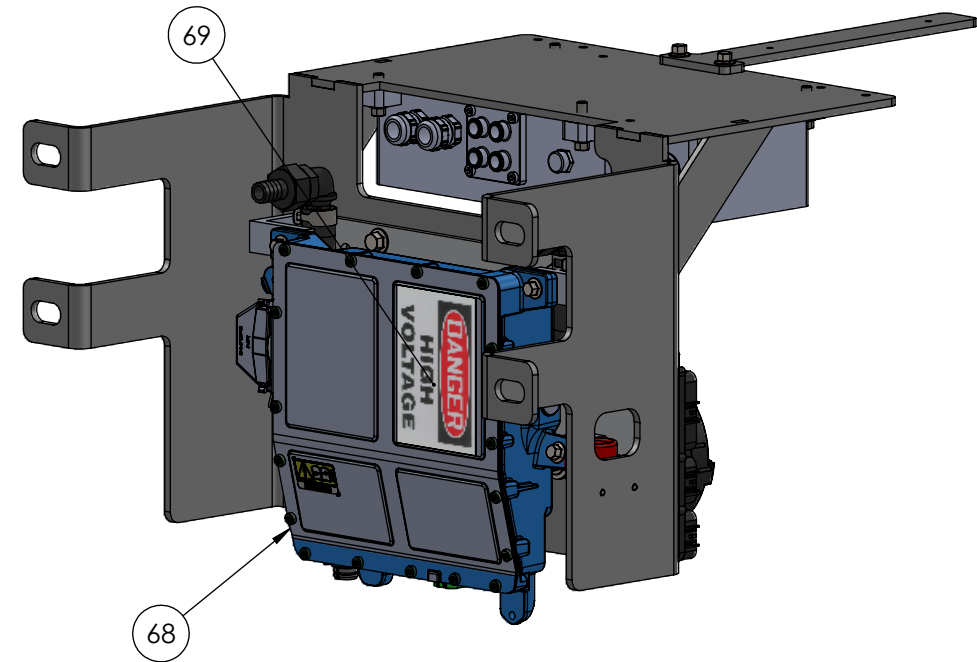
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1

TORQUE VALUE	69 IN-LB
APPLY BLUE LOCTITE TO BOLT THREADS	



INSTALL (69) ONTO (68) IN APPROXIMATE LOCATION SHOWN.




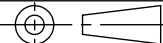
ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	Qty
68	10081		CONVERTER,DC-DC,2.2KW	BI-DIRECTIONAL,LIQUID COOLED	1
69	60003		LABEL,DANGER HV	DANGER, HV LABEL	1

ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	Qty
65	40198	04	WELDMENT,ELECTRONICS BKT	G2V2	1
66	40193	02	BRACKET,WIRE SUPPORT,ELEC BKT	G2V2	1
67	30057		BOLT,FLANGE HEAD,M8X1.25X16MM	ZPS,GR 8.8	2

ELECTRICAL BRACKET WIRE SUPPORT INSTALLATION

HIGH VOLTAGE LABEL INSTALLATION

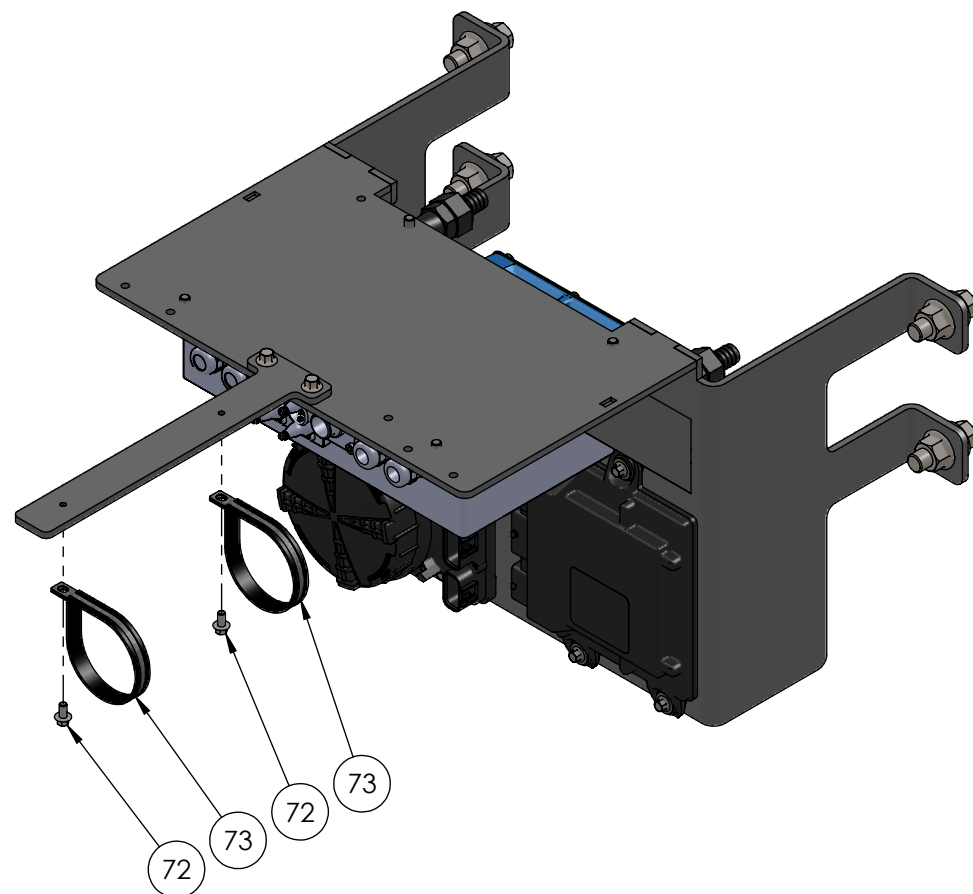
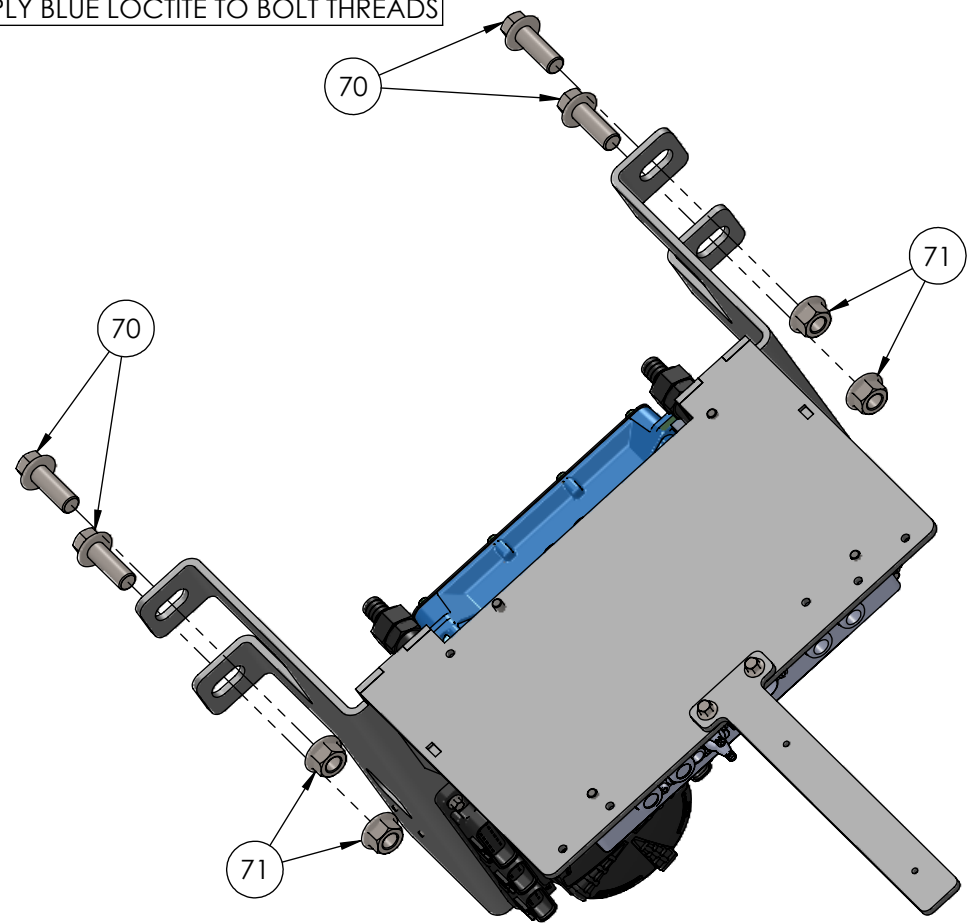
04	REVISED PART #40193	AJC	06/10/15
REV	DESCRIPTION OF CHANGE	REVISED BY	DATE

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ANGULAR ± 1.0° NOMINAL ± 0.125 ONE PLACE DECIMAL ± 0.060 TWO PLACE DECIMAL ± 0.030 THREE PLACE DECIMAL ± 0.010					
MATERIAL INTERPRET GEOMETRIC TOLERANCE PER ASME Y14.5M-1994				SHEET SIZE B	PART NUMBER 70189
FINISH		SCALE 1:6 DO NOT SCALE DRAWING		REV 04	SHEET 8 OF 9



ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	QTY.
72	30108		BOLT,FLANGE HEAD,M6X1.0X12MM	ZPS,GR 8.8	2
73	60045		P-CLAMP 3"		2

TORQUE VALUE 121 FT-LB  
APPLY BLUE LOCTITE TO BOLT THREADS



TORQUE VALUE 69 IN-LB  
APPLY BLUE LOCTITE TO BOLT THREADS

ITEM	PART NUMBER	REV	DESCRIPTION	DESCRIPTION 2	Qty
70	30054		BOLT,FLANGE HEAD,M16X2.0X45MM	ZPS,GR 8.8	4
71	30055		NUT,FLANGE,M16X2.0MM	ZPS,GR 8.8	4

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UNLESS OTHERWISE SPECIFIED  
REFERENCE DIMENSIONS SHOWN IN PARENTHESIS  
DIMENSIONS ARE IN INCHES

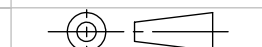
ANGULAR ± 1.0°  
NOMINAL ± 0.125  
ONE PLACE DECIMAL ± 0.060  
TWO PLACE DECIMAL ± 0.030  
THREE PLACE DECIMAL ± 0.010

MATERIAL

FINISH

DRAWN	AJC	04/01/14
CHECKED	AJC	04/16/14
ENG APPR	AJC	4/16/2014
MFG APPR	AJC	04/16/14
QA APPR		

INTERPRET GEOMETRIC TOLERANCE PER  
ASME Y14.5M-1994



SUB-ASSY,ELECTRONICS BRACKET  
G2V2

SIZE B	PART NUMBER 70189	REV 04
SCALE 1:6	DO NOT SCALE DRAWING	SHEET 9 OF 9