

8392 ~ by Edward J. O'Rourke

# QP-1800 Inverter System – USMC Workhorse

# Abstract

- The Iris Technology QuietPower 1800 (QP-1800) has been the workhorse inverter for the Marine Corps for 10+ years now. Iris Technology traces the development history of this rugged and reliable DC/AC 1800W inverter platform from initial deliveries to the current day. The QP-1800 has served with distinction in three conflicts and is widely available in several configurations on multi-year contracts with DLA and GSA.

# Development Timeline

ID	Task Name	Start	2000	2001	2002	2003	2004	2005	2006	2007	2008
1	Field trials with 11th Marines	Mon 4/3/00	■								
2	Prototype mods to Inverter 287A101	Mon 5/1/00	■								
3	NATO Cable, 10 ft, 1/0 AWG Designed	Mon 5/1/00	■								
4	Initial military manuals produced PN 287F701	Thu 6/1/00	■								
5	Initial Product Deliveries [303]	Tue 8/1/00	■								
6	Cable safety issues discovered	Mon 10/2/00		■							
7	NATO Cable, 12 ft, 2/0 AWG Designed	Wed 11/1/00		■							
8	Military testing - SPAWAR [324]	Mon 1/1/01		■							
9	NSN Assignments (Initial)	Thu 3/1/01		■							
10	System qualified by SPAWAR for PM INTEL	Tue 5/1/01		■							
11	Initial fielding to PM INTEL	Mon 9/3/01			■						
12	Supplemental Training Document	Mon 10/1/01			■						
13	Alternator overload condition addressed	Thu 11/1/01			■						
14	On-site training for IMEF INTEL operators	Tue 2/12/02				■					
15	Prototype transportation case 287A108	Mon 3/3/03				■					
16	Field Expedient Cable Procedure	Thu 1/1/04					■				
17	Army USACAPOC Support	Mon 3/1/04					■				
18	Military testing - Crane, IN [717]	Fri 5/28/04					■				
19	Bronze Award from DLA / DSCR	Wed 6/1/05						■			
20	Component modification to shock material	Mon 4/3/06							■		
21	Preparation of Product ICD	Tue 8/1/06								■	
22	System qualified by MARCORSSYSCOM	Mon 1/1/07								■	
23	GSA / BPA Awarded by USMC [900]	Thu 2/1/07								■	
24	Military testing - Dayton, NY	Mon 4/2/07								■	
25	Redesigned compact transport case 287A108	Mon 4/2/07								■	
26	Revised military manuals produced PN 287F701	Mon 4/2/07								■	
27	Support to USMC to design Quick Start guides	Mon 4/2/07								■	
28	Mounting Plate designed and tested at APG	Tue 5/1/07								■	
29	DTB Rewrite of User Manual	Tue 5/15/07								■	
30	Military testing - Env Assoc	Fri 6/1/07								■	
31	NSN Assignments (Additional)	Fri 6/1/07								■	
32	Bronze Award from DLA / DSCR	Fri 6/1/07								■	
33	Development of Standard Work Instr	Fri 6/1/07								■	
34	Revised grounding label	Mon 7/2/07								■	
35	JEH Rewrite of User Manual	Tue 7/31/07								■	
36	Selection of Manufacturing Partner	Wed 8/1/07								■	
37	Gold Award from DLA / DSCR	Fri 5/30/08									■

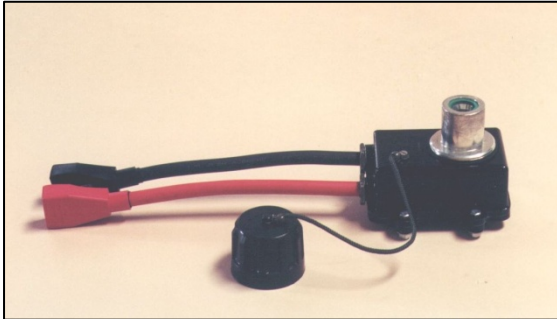
# Specifications



- **Power (Cont / Surge)** 1800 W / 2900 W
- **Output Waveform** True Sine Wave
- **Input Voltage Range** 20 - 32 VDC
- **Weight of Inverter** 16.5 lbs (7500 g)
- **Weight of Cables** 18.0 lbs (8200 g)
- **Weight of Case** 20.0 lbs (9100 g)
- **Size of Inverter** 15.4 x 11.0 x 4.5 in<sup>3</sup>
- **Size of Cables** 144.0 x 4.0 x 3.5 in<sup>3</sup>
- **Size of Case** 22.1 x 17.9 x 10.4 in<sup>3</sup>
- **Operating Temp** -20 / +60 °C (-4 / +140 °F)
- **Storage Temp** -30 / +70 °C (-22 / +158 °F)

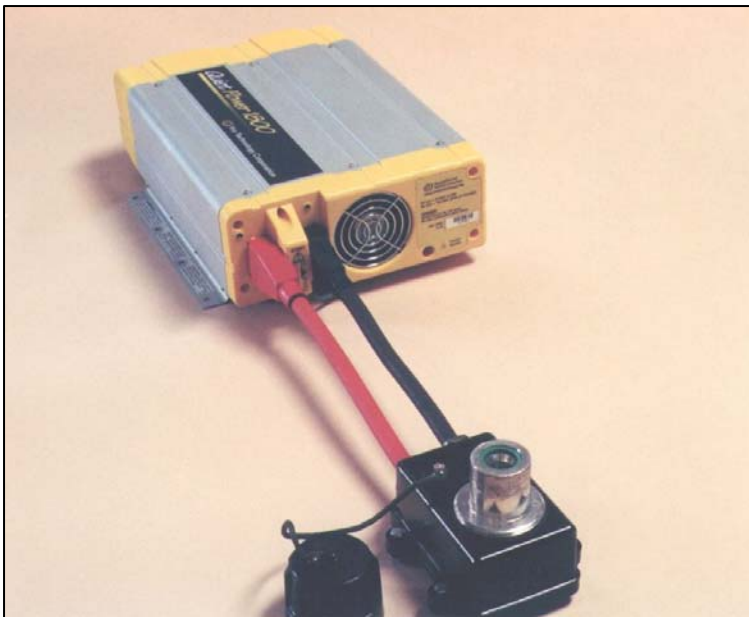
**Note: Low Temperature (-20 °C) Operation**

# History ~ Cables



## SLAVE Receptacle

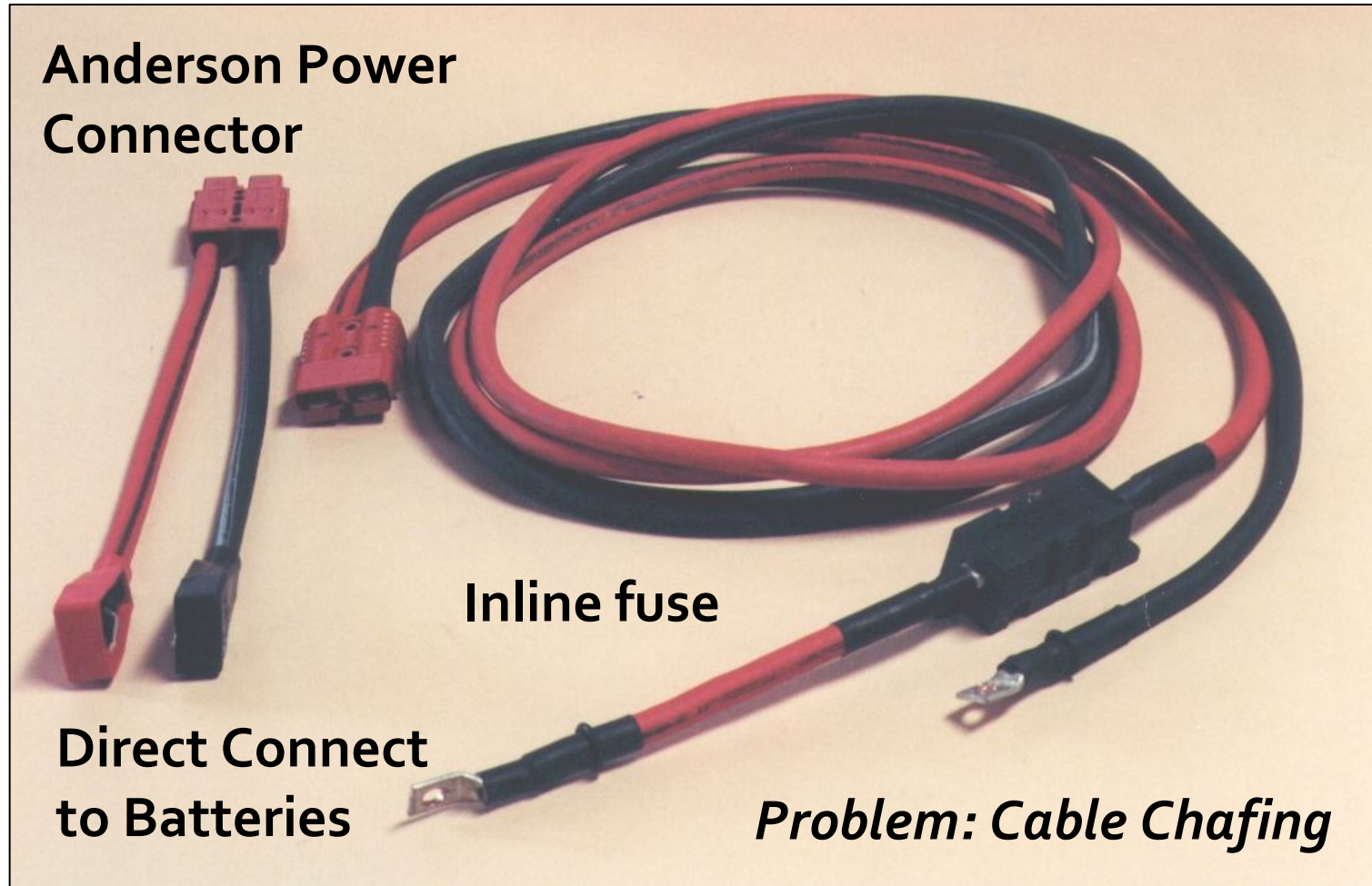
Promote use of standard  
SLAVE Jump Start Cable  
(also, save weight and cost)



*Problem: Modification of  
Existing Required Hardware*



# History ~ Cables





# History ~ Cables



**Hi-Flex SLAVE Cable**  
*Problem: Durability*

**NATO SLAVE  
QP-1800 Cable  
PN 287A106**



# History ~ Cases



**Is / OUTSIDE**

22.1" x 17.9" x 10.4"  
(560 x 455 x 265 mm)

**Was / OUTSIDE**

24-13/16" x 19-3/8" x 13-7/8"  
(63 cm x 49.2 cm x 35.2 cm)

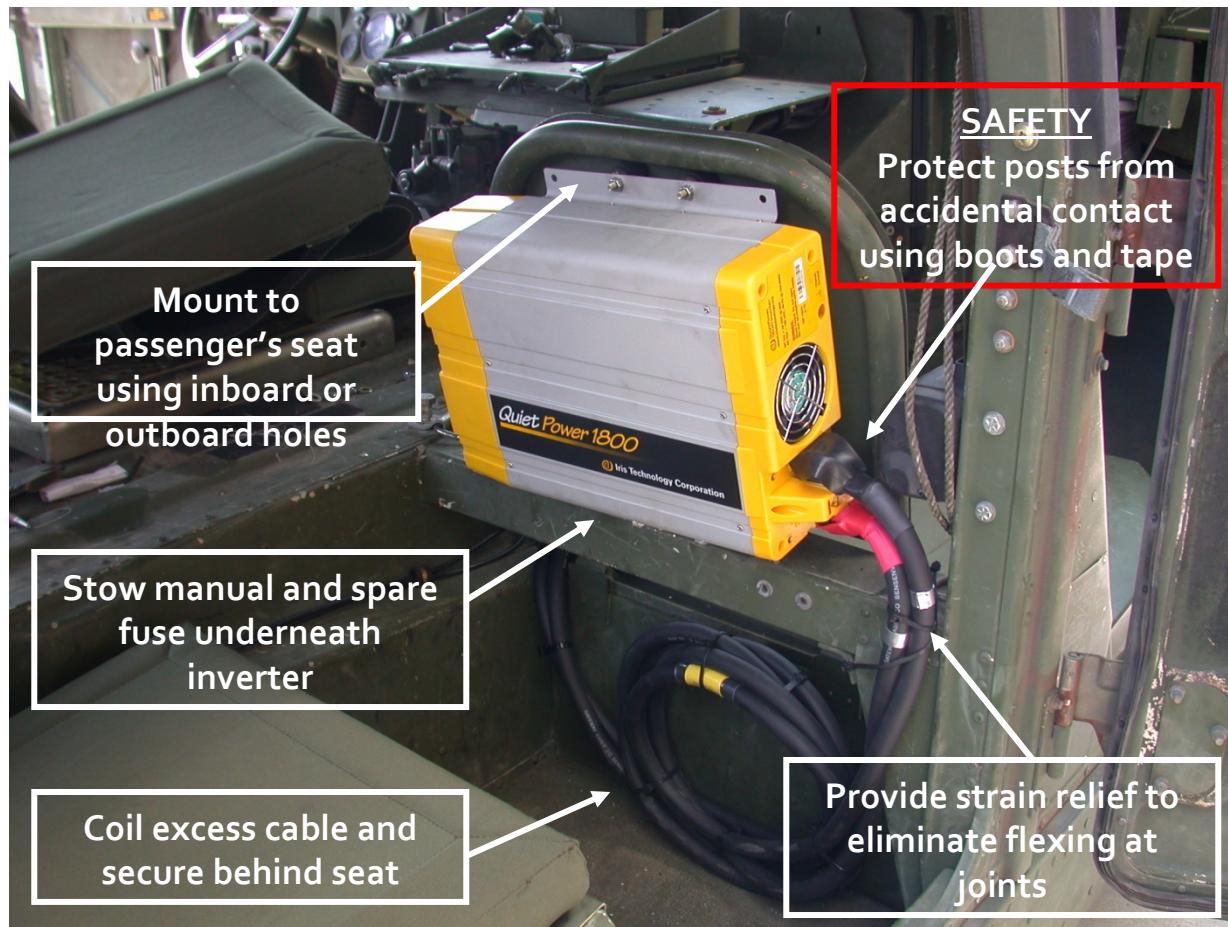




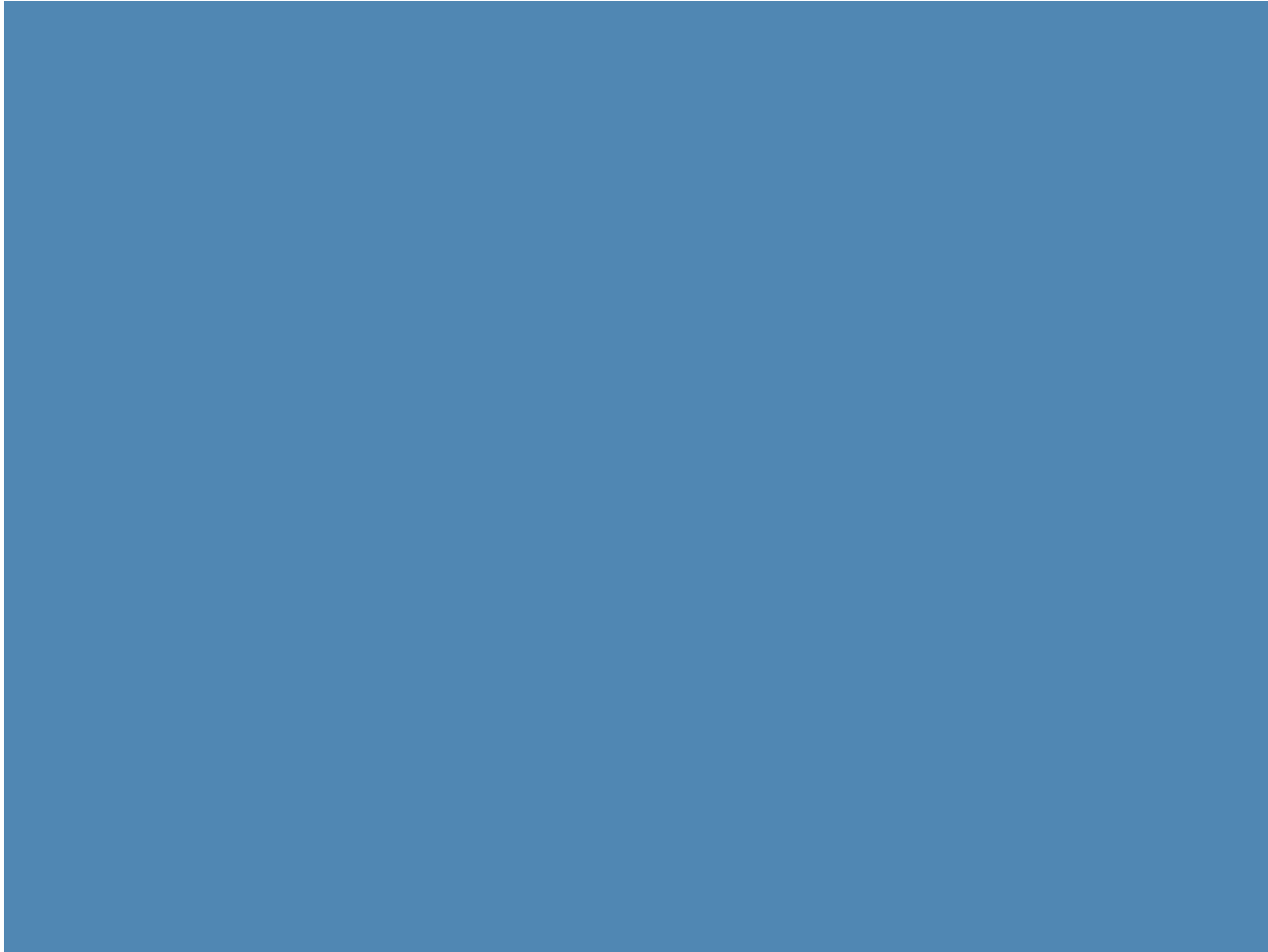
# USACAPOC Install



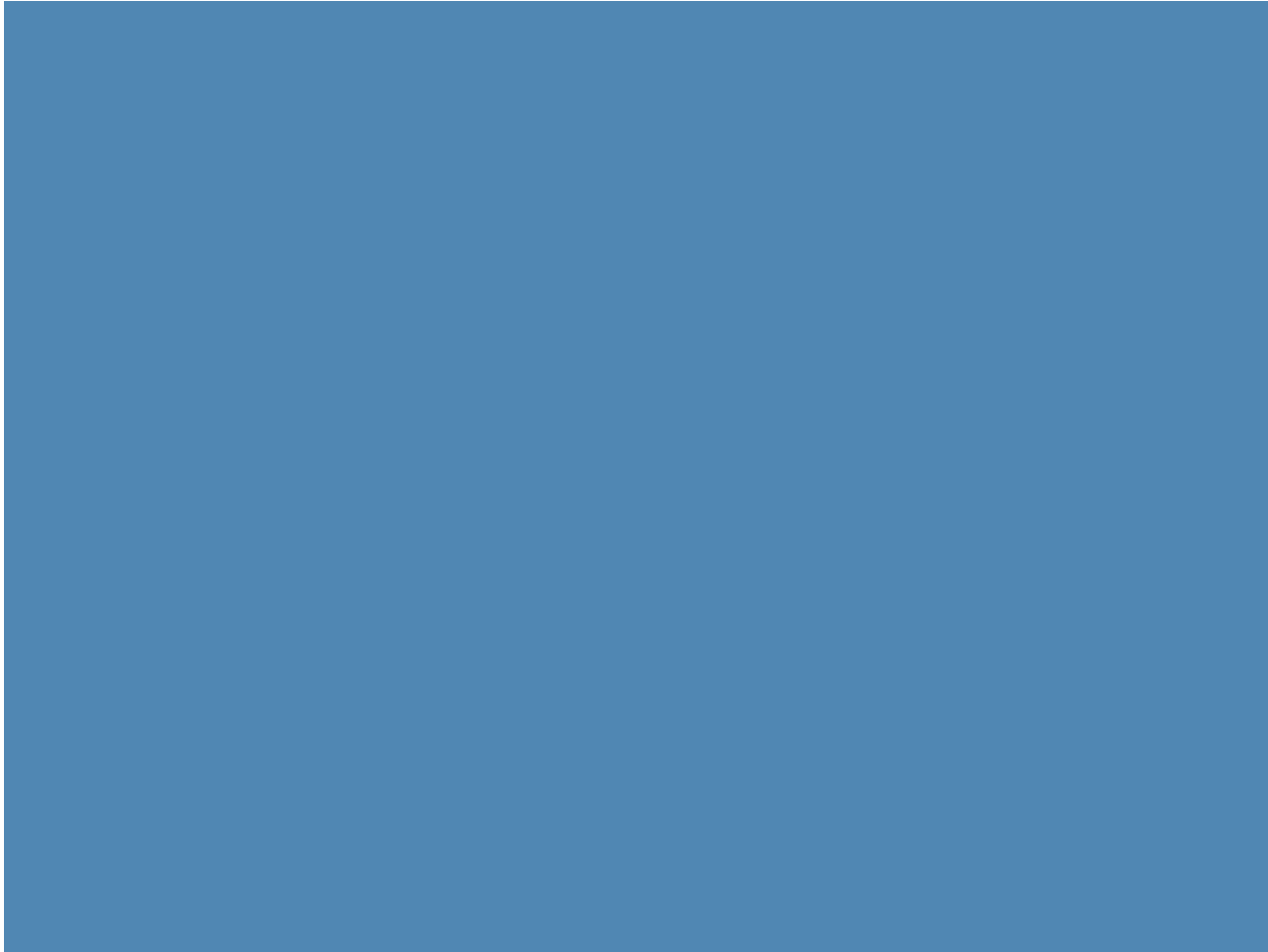
United States Army  
Civil Affairs and Psychological  
Operations Command



# Vibration Testing



# Transportation Testing



# Power Tidbits

Volume 4 Issue 1 (14 June 2008) // pm\_eps@nmci.usmc.mil

*"Fielding of the QP-1800 began during the 3RD Quarter FY08. The distribution plan is provided in Appendix A of the QP-1800 Fielding Plan (FP 11460A, PCN 132 114600 00) dated 28 September 2007.*

*"The QP-1800 DC/AC Inverter System consists of the Inverter (NSN 6130-01-496-6448), Carrying Case (NSN 7050-01-551-0600), and NATO cable (NSN 6150-01-497-2515). Vibration Isolators and one spare fuse are provided with each Inverter. The QP- 1800 is a semi-ruggedized inverter that connects to a military vehicle 24 volt DC (VDC) power system through the supplied NATO slave cable and converts 24 VDC (vehicle power) to 115 VAC (True Sine Wave), 60 Hz at 1800 Watts(W).*

*"... The QP-1800 Inverter System is a SAC 1 Type 2 allowance item and can be procured from Iris Technology Corp., via GSA contract GS-07F-0131N or from DLA using the listed above.*



# USMC Reference



## ***QP-1800 Inverter System***

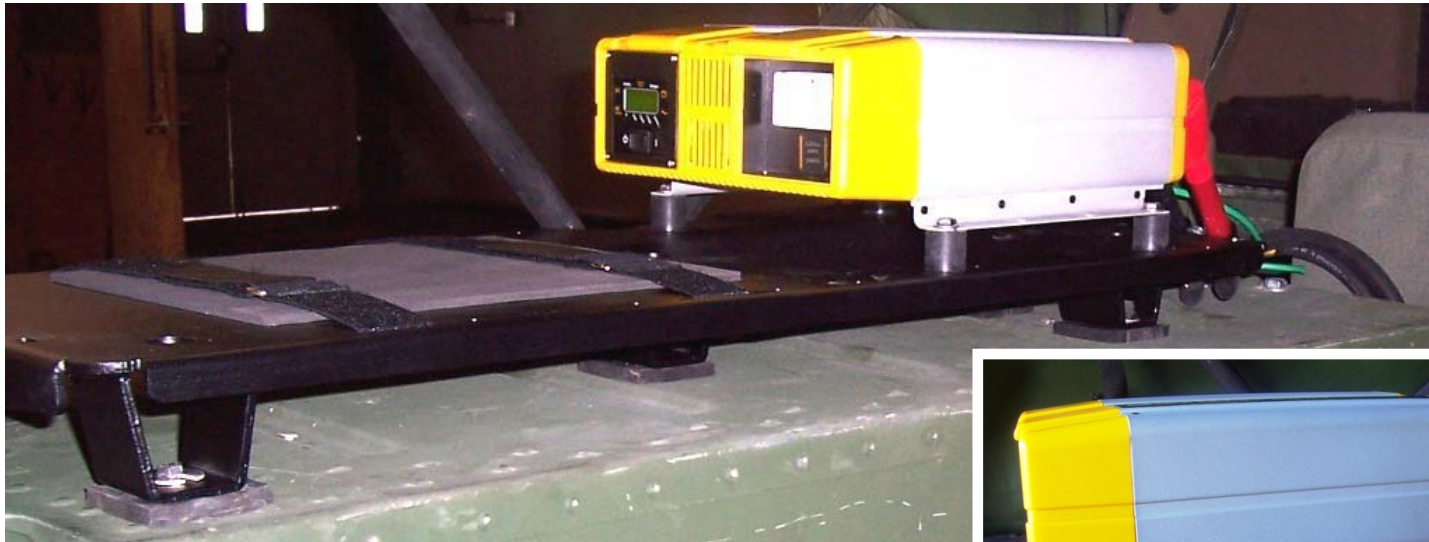
- *TAMCN - H0004*
- *NSN - 6130-01-552-6350*
- *ID - 11460A*
- *SAC - SAC 1*
- *Warranty – Two years*

## ***Publications***

- *TM 11460-OR/1 PCN 500 114600 00*
- *SL-3-11460A PCN 123 114600 00*
- *Job Aid (refer to page 13 of this newsletter)*



# QP-1800 Mounting



*"MI 11460-OI/1 provides instructions for installing the QP-1800 in non-armored HMMWV's using the vehicle mounting bracket or directly to the top of the wheel well."*

*"When the wheel well contains air conditioning components, use of the vehicle mounting bracket is MANDATORY. Vibration isolators are MANDATORY regardless of the method of installation."*



# Applications



# Open Contract Vehicles



- GSA / FSS
  - GS-07F-0131N
- USMC / BPA
  - M67854-07-A-5022
- DSCR / IDIQ
  - SPM4LG-08-D-0018

# Questions

- Equipment on display in Booth 314