Date: September 5, 2000

Subject: 42V Battery Connection System Specification

To: Connector suppliers
Wiring harness suppliers
Battery suppliers
Vehicle manufacturers

A team of connection, battery and vehicle personnel has been working toward the goal of defining a global connection system to be used on all 42 V network batteries. Information on this workgroup is available on the Web by visiting the following address: www.auto.mit.edu/consortium/
Go to the “Public Access” section and click on “Battery Termination”.

At the August 30, 2000 meeting of this workgroup, a decision was made to survey the industry for information that will assist the team in choosing the best choice for a hand pluggable connection system. Both a round pin and a flat blade have been proposed. This letter is soliciting your response in providing any information you may have that will assist us in recommending one of these approaches. The questions below are meant to help you categorize your thoughts. Please address only those areas that are appropriate for your company (i.e. a battery company would not be able to provide information on harness assembly).

Your response is needed by September 15, 2000. I will collect all of the information and present it at the next meeting of the workgroup which is scheduled for 9 am – noon September 20, 2000 at Amphenol in Mount Clemens, Mi. More details on this meeting will be provided at a later date; however, you are invited to attend and may want to make travel arrangements now. Conferencing capability will be set up for remote call in.

The information requested is solely for the purpose of determining the type of terminal to be used. Actual dimensions and detailed designs will follow at a later date. Also the type of locking mechanism used in the plastic will be determined at a later date. Please direct your responses to the terminal only.

Thank you in advance for your timely response.

Norman Traub
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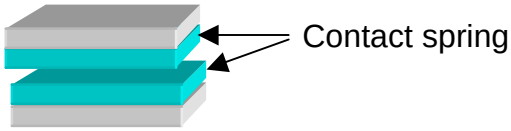
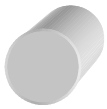
Connection system questionnaire

Choice 1 - Flat blade on battery

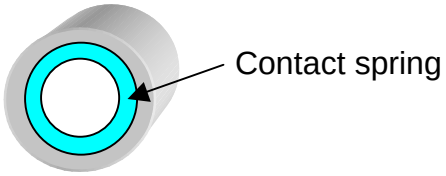
Female on harness side



Choice 2 – Round pin (solid)



Female on harness side



Choice 3 – Round pin (formed)

Female on harness side – same as #2

For the questions below, are you answering based on your companies experience as a:

Connection system manufacturer _____

Wiring harness assembler _____

Battery manufacturer _____

Vehicle manufacturer _____

If your company is involved in more then one of the above categories, please send separate responses for each activity.

If you are not the only participant from your company responding to this survey, it would be helpful if you could consolidate your organization's responses within a category before returning.

Questions regarding the **male terminal**

For the three choices above, do you have any experience/data that would assist in answering the following:

Manufacturing operations?
- Number of operations?
- Type of operations?

Cost to manufacture?

Dimensional stability (flatness of blade, concentricity of pin, taper on the edge, etc.)

Questions regarding **installing the male terminal in the battery**

For the three choices above, do you have any experience/data that would assist in answering the following:

Dimensional preferences on battery surface area needed for the connector?
(blade = low height / large width, pin = average height / width)

Ability to attach to internal battery conductors?

Cost to assemble?

Alignment stability in the battery housing?

Ease of “fingerproofing”? (ability to pass a test that would not provide finger access for a small child)

Serviceability? (bent pin vs. blade)

Questions regarding the **female terminal**

For the three choices above, do you have any experience/data that would assist in answering the following:

Manufacturing operations?
- Number of operations?
- Type of operations?

Cost to manufacture?

Dimensional stability?

Questions regarding **wiring harness assembly**

For the three choices above, do you have any experience/data that would assist in answering the following:

Cost to assemble a female terminal in the harness connector?

Alignment stability in the harness connector?

Retention within the harness connector?

Capability to seal?

Serviceability?

Questions regarding **vehicle assembly**

For the three choices above, do you have any experience/data that would assist in answering the following:

Ease of assembly? (assume the same alignment features in the plastic connector for all three approaches)

Cost of assembly?

Performance of contact surface?

Durability of contact surface?

Battery cable – directional orientation?

Size of connection system?

Reliability / Warranty history?

Competitive product availability?

Serviceability / repairability?