MANUFACTURED HOUSING INSTITUTE
Transportation Resource Manual – Guideline 003

Wiring Harnesses for Manufactured Home Braking Systems

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1.0 Wiring harness criterion can be determined by the following procedure.

1.1 Unless substantiated in the braking system design to the approval agency by either engineering analysis, or those alternatives listed in 3280.903(c)(1) or (2), there shall be a minimum of two axles equipped with brake assemblies on each manufactured home transportable section. More stringent requirements may apply based on the State the manufactured home is transported from, through, or to.

1.2 Brake wiring should be installed to provide sufficient operating voltage for each brake. The voltage available at the brakes should not be less than the value specified in the brake manufacturer's instructions.

1.3 When the brake manufacturer's recommendations are not available, the minimum wire size and brake wire run can be determined from Table I. Figure I can be used to determine the brake wire size for temporary brake harnesses.

Figure I
Brake Wire Size – Temporary Brake Harnesses

NOTES: 1. Braked axles may be installed and wired in combinations of configurations A, B and/or C in order to meet the braking capacity required per each transportable section. All "axle wiring" should be a minimum of 14 gauge. All wires in the "brake wire run" from axles to the connection points (either rim plate or tow bar) of 12V power supply shall be sized per Table I.

2. When more than three braking axles are provided, circuits should run separately to the hitch.

3. Run connection(s) to rim plate near axles.

4. Brake wiring should run from the hitch to the braking axle.

5. Add label(s) to each harness connection. Label(s) indicate minimum brake wire size used in movement of transportable sections.

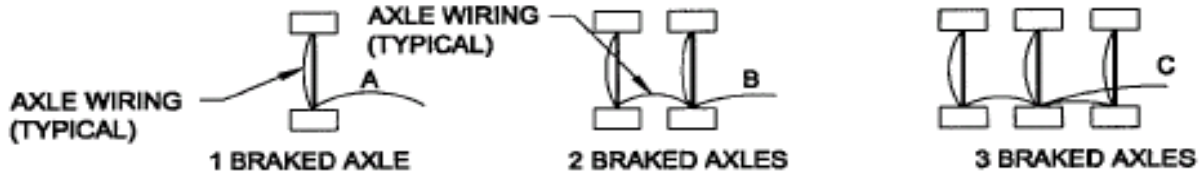

Table I Maximum Brake Wire Run			
Copper Wire Gauge	**Brake Type**		
	A	**B**	**C**
14	37 ft.	16 ft.	10 ft.
12	59 ft.	26 ft.	17 ft.
10	95 ft.	42 ft.	27 ft.
8	150 ft	67 ft	43 ft

1.4 Conductors should be copper and may be stranded or solid. There are no polarity requirements in connecting conductors to brake magnets. Conductors meeting the requirements of this section should be installed from the brake assemblies to the tow bar end of the transportable section. Two conductors should be provided for activation of the braking mechanism.

NOTE: *These methods have been determined to provide the highest voltage potential to each individual brake and would therefore provide the maximum overall braking potential available.*

1.5 Controllers shall drive all braking axles. The controller, or a combination of controllers, should have adequate amperage to activate all braking axles.

1.6 Wiring specifications, protection, connections and installation should conform to 49 CFR 393.27, 393.28, 393.32 and 393.33.

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