

BACKBOARDS

INSTALLATION

1.00 GENERAL

1.01 This section covers the installation of the most commonly used backboards for indoor and outdoor locations. It also tabulates the type and size of fasteners to be used on the principal types of surfaces encountered.

1.02 This section is reissued to:

- Include information on the P-480578 backboard.
- Include additional use of existing fasteners and some new fasteners.
- Remove information on a 159A backboard and add the 176 type to Table A.
- Due to extensive changes marginal arrows have been omitted.

1.03 Backboards should be used only when required. **Do not** use backboard unless:

- Mounting surface is uneven or damp.
- A secure mounting could not be obtained otherwise.
- It is necessary to insulate special apparatus from current-conducting surfaces.
- It is necessary to avoid drilling too many holes.

2.00 INSTALLATION

2.01 Selection and mounting of backboards is important. It is necessary that backboards be mounted securely by approved methods and that specified number and type of fasteners be used.

2.02 Fastening devices to be used on the principal types of surfaces encountered are shown in Table A. Methods to install fasteners will be

found in the section entitled Attachments and Fasteners.

Note: Ascertain that fasteners will not extend into or through a surface and cause damage such as puncturing copper tubing or cables.

2.03 The following general rules apply when locating backboards:

 *Locate where workman and equipment will not be exposed to injury or damage.*

- Allow proper clearance for height.
- Locate where backboard will not become inaccessible if objects are stored near or against it.
- Be sure location is well lighted and not locked.

2.04 If backboards are located on an uneven surface, shim to obtain a firm mounting. Use fasteners 1/2 inch longer than specified in Table A.

2.05 Backboards mounted outdoors should be secured with rustproof fasteners such as galvanized screws or bolts.

2.06 If backboard must be mounted on finely finished surface which would be expensive to repair, such as glazed tile or marble, consult supervisor and obtain instructions before proceeding.

2.07 When backboard is mounted on plaster on wood lath, all screws must enter laths or studding. If screws enter the space between laths, move the backboard, provided the screw hole can be covered. Otherwise slant the screws. (See Fig. 1.)

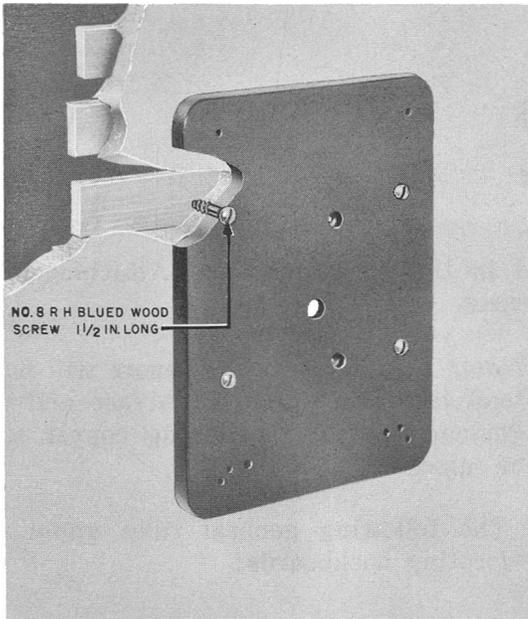


Fig. 1 — 147A Backboard Mounted on Plaster and Lath

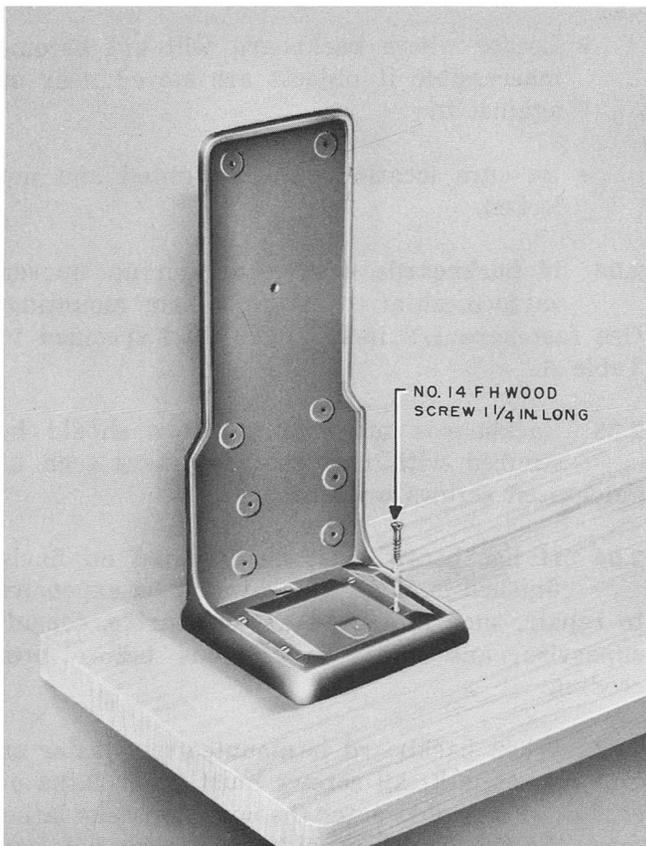


Fig. 2 — 139A Backboard Mounted on Wooden Counter

2.08 The 139A backboard is designed for mounting a coin collector on a horizontal surface (see Fig. 2). If more secure attachment is desired, 1/4-inch carriage or step bolts should be used. Place heads of bolts on underside of support, tighten nuts, and cut off excess length of bolts.

2.09 More mounting holes are provided in the 174A backboard than in the 144D backboard. Therefore, the 174A backboard provides substantially greater security of mounting than is possible with wood-type backboards and should be used at locations where added security is needed.

2.10 When either of these backboards is used, place fasteners in at least six of the mounting holes. Use two holes at top, two at bottom, and two near the center of backboard. Alternate or additional fasteners may be used, but at least three fasteners on each side shall be absolutely secure. If insecure fastener location is encountered when using the 144D backboard, relocate mounting hole in backboard. Use 11/32-inch twist drill, and countersink hole so that head of fastener will be flush with backboard.

2.11 When it is not possible to directly install station sets, etc, over telephone outlet boxes, backboards of the 147-, 154-, 164-, and 172-type may be mounted (see Fig. 3). Backboards are not required for all telephone outlet box installations, eg, the new 554-type telephone set.

2.12 Locating backboards on such surfaces as masonry or tile may be avoided by using 155A or 156A metal backboards on wooden baseboards or similar mounting surfaces. The 155A and 156A backboards are available for the 634-

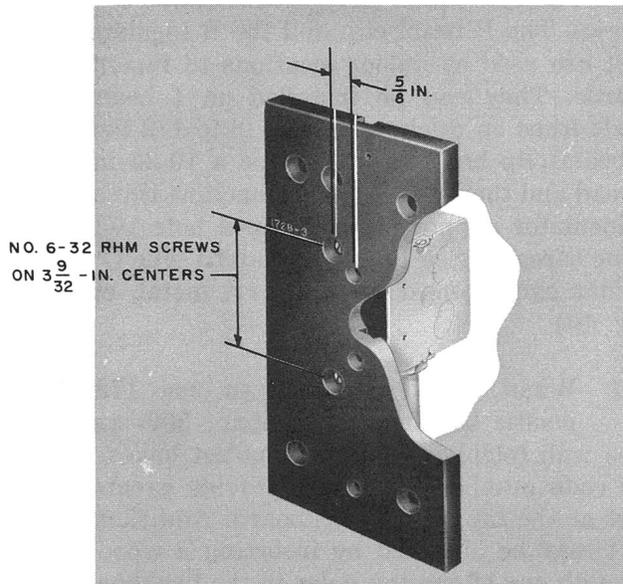


Fig. 3 — 172-Type Backboard Mounted over Telephone Outlet Box

and 684-type subscriber sets, respectively. The fasteners for the subscriber set are furnished with the backboard. Locate these backboards against wall at least 1/8 inch above baseboard before wood-mounting screws are secured. (See Fig. 4).

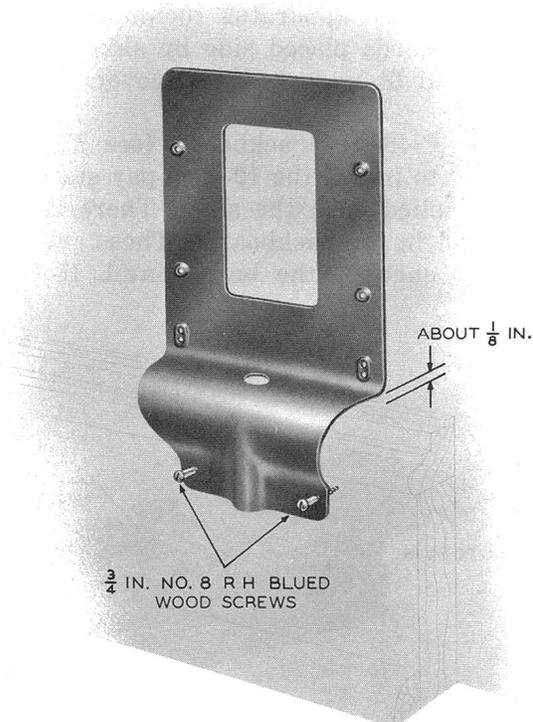


Fig. 4 — Mounting 156A Metal Backboard on Wooden Baseboard

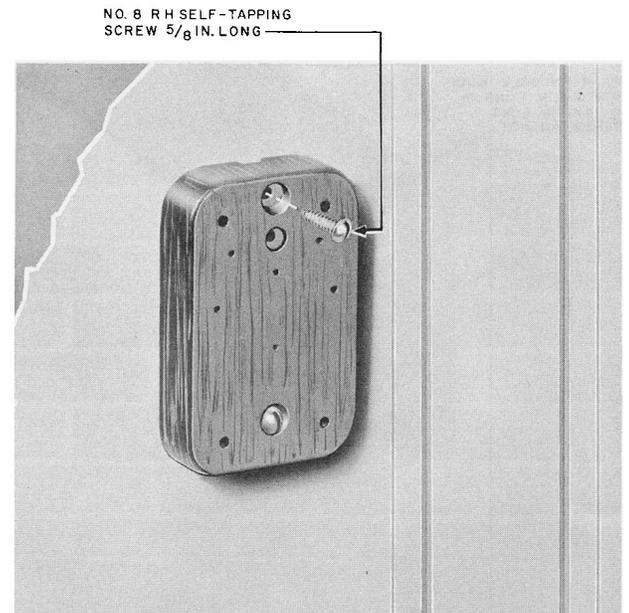


Fig. 5 — 164A Backboard Mounted on Metal Panel

2.13 Use a 164A backboard when hangup type hand telephone sets are mounted on other than wood surfaces.

2.14 The 164A backboard is suitable for mounting some associated station apparatus on metal desks and panels (see Fig. 5). If used to mount 4C- or KS-type buzzer, countersink the backboard mounting screws to prevent screwheads from contacting buzzer base.

2.15 The 169A backboard is used where protection from weather and mechanical injury is desired. This backboard is provided with a hinged cover and machine screws for mounting subscriber set. When mounted outdoors, this backboard should be secured with rustproof fasteners. Where practicable, use three fasteners to attach the 169A backboard. Fasteners should be brought up snug without forcing to avoid distorting backboard and throwing tapped mounting holes out of alignment (see Fig 6).

2.16 The 168-type backboard accommodating one connecting block requires only two fasteners, while backboards accommodating three and

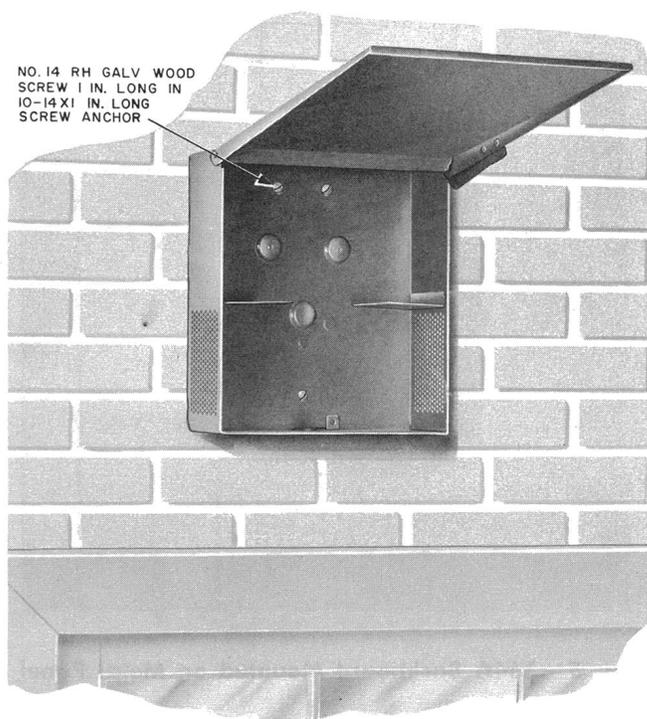


Fig. 6 - 169A Backboard Mounted on Brick Building

four connecting blocks require four fasteners. When fastening connecting blocks to 168-type backboards, use 1/2-inch No. 8 RH blued wood

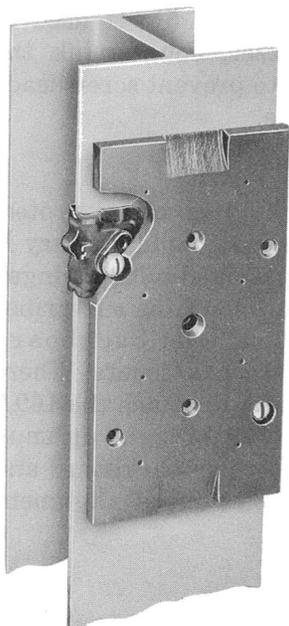


Fig. 7 - B Beam Clip

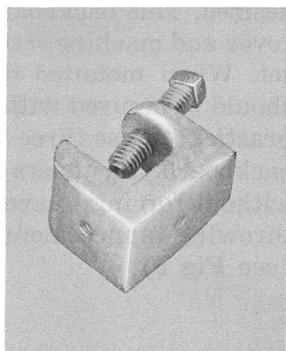


Fig. 8 - B Insulator Support

screws. The B beam clip and the B insulator support are used at indoor locations to fasten backboards. They can be installed on I beams and angle irons on thicknesses of 1/8 to 1/2 inch. The B beam clip has two holes: one a 10-24 machine thread and the other a 1/4-20 machine thread. The B insulator support has a tapped hole 10-24 machine thread. (See Fig. 7, 8, and 9.) The C plastic anchor can be used on masonry, metal, etc (see Fig. 10).

2.17 When it is necessary to use 172C-type plastic backboards to mount 300- and 500-type wall telephone sets over outlet boxes, invert the code number. This will provide greater support at the top of the backboard. Additional support may be obtained by inserting a wood screw through one of the top holes in the backboard and into a wall stud. These plastic backboards are thinner than the 172B type and, therefore, should make a neater wall installation.

Note: Before securing backboard, insert station wire through entrance hole of backboard.

2.18 The 173A backboard is intended for use in the 1A1 key system and is arranged to mount two 15A apparatus mountings. Two of these backboards placed side by side and butted together will fit under a 117A cover.

2.19 The P-480578 backboard (see Fig. 11) is used to install the 19-type pay station shelf and is supplied with the shelf. There are seven tee nuts set in the backboards. These are used to attach the shelf to the backboard. Holes for

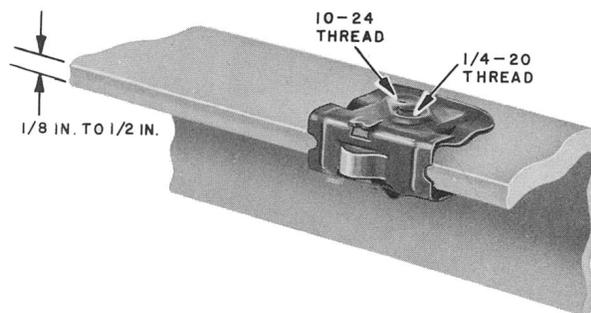


Fig. 9 - B Beam Clip, Top View

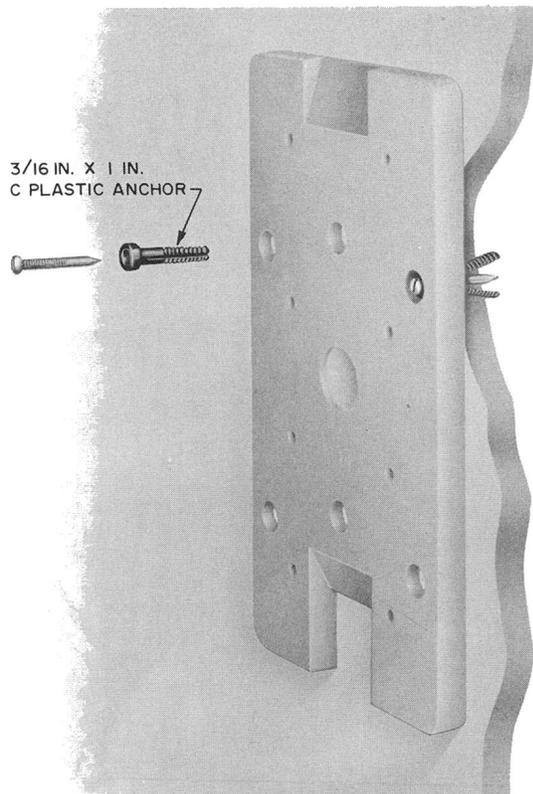


Fig. 10 – 168-Type Backboard

mounting the backboard must be drilled and fasteners countersunk so that the shelf and backboard fit snugly together.

2.20 The KS-5796 type backboard is designed for use with either one, two, or three 105-type apparatus boxes when mounted on a vertical surface (see Fig. 12).

3.00 REMOVAL

3.01 Carefully remove all wire, screws, bolts, and other fasteners used in mounting from all recovered backboards.

3.02 Whenever it is necessary to leave a backboard in place, remove all fasteners used to hold the apparatus to the backboard to prevent the possibility of personal injury, damage to furniture, etc.

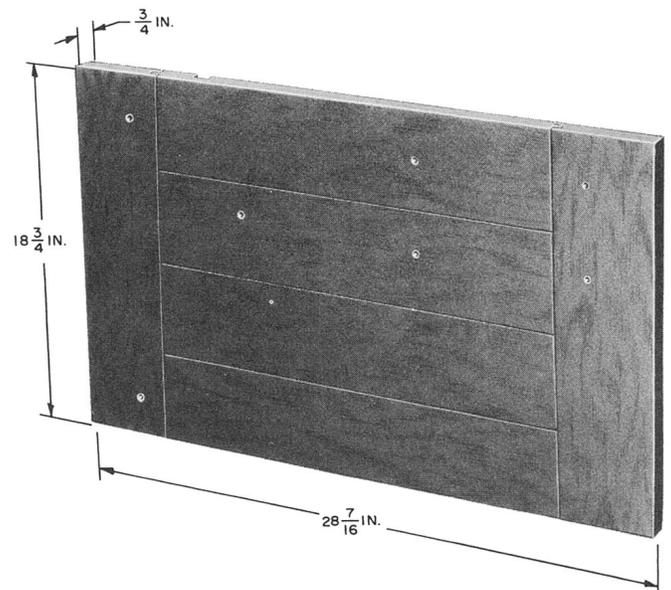


Fig. 11 – P-480578 Backboard

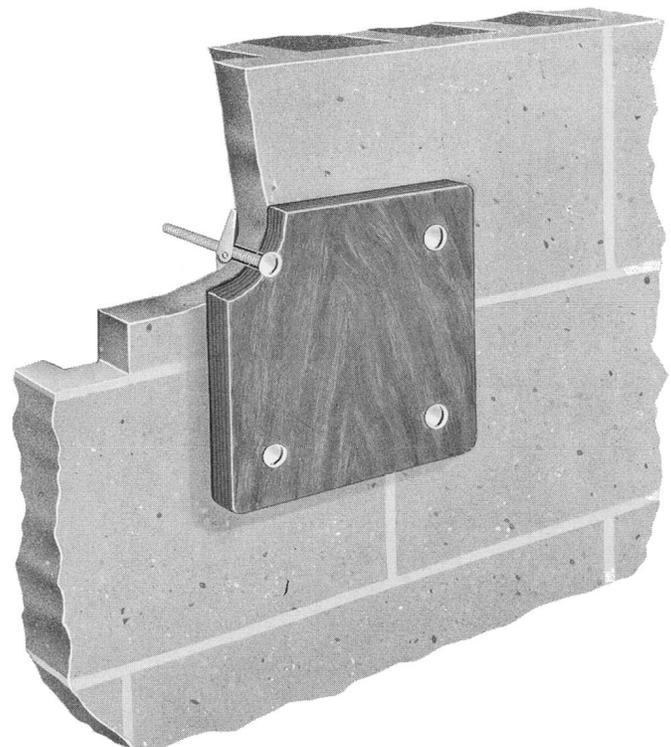


Fig. 12 – KS-5796, List 7 Backboard Mounted on Cinder Block

TABLE A
FASTENERS USED IN MOUNTING BACKBOARDS

Backboard	Mounting Surfaces						Drill Size		Fasteners	Quantity	
	Type	Soft-wood	Hard-wood	Masonry* (Concrete, Brick)	Lath and Plaster	Plaster, Cinder Block, Hollow Tile, Metal Lath, Plaster-board†	Metal (Desk or Paneling)	B and D inches			Masonry
79 81		•						1/16		1-3/4 Inch No. 8 RH Blued Wood Screw	4
			•							1-1/2 Inch No. 8 RH Blued Wood Screw	
				•					None	B Masonry Fastener, Size 6	
								1/4		1-3/4 Inch No. 8 RH Blued Wood Screw in 6-8 by 1/2-Inch Screw Anchor	
					•			1/4		Wall Screw Anchor, Size 2	
								1/16		1-3/4 Inch No. 8 RH Blued Wood Screw	
						•		None	None	B Masonry Fastener, Size 8	
							•	1/4	1/4	Wall Screw Anchor, Size 2-1/2	
							3/8	3/8	1/8- by 4-Inch BH Toggle Bolt		
								No. 33	1-1/4 Inch No. 8 Self-Tapping Screw		
139		•						3/32		1-3/4 Inch No. 14 FH Wood Screw	4
			•							1-1/4 Inch No. 14 FH Wood Screw	
				•					1/2	1/4- by 20- by 1-1/2 Inch FH Machine Screw in 1/4-Inch Machine Screw Anchor	
144 174		•						3/32		2-Inch No. 14 FH Wood Screw	7 6
			•							1-1/2 Inch No. 14 FH Wood Screw	
				•					5/16	2-1/4 Inch No. 14 FH Wood Screw in No. 16 Plastic Anchor	
					•			3/32		2-Inch No. 14 FH Wood Screw, Secure in Stud	
					•		3/4	3/4	1/4- by 4-Inch RH Toggle Bolt		
147 154 172 163		•						1/16		1-1/2 Inch No. 8 RH Blued Wood Screw	4 3
			•							1-1/4 Inch No. 8 RH Blued Wood Screw	
				•					None	B Masonry Fastener, Size 5	
								1/4		1-1/2 Inch No. 8 RH Blued Wood Screw in 6-8 by 1-Inch Screw Anchor	
					•			1/4		Wall Screw Anchor, Size 2	
								1/16		1-1/2 Inch No. 8 RH Blued Wood Screw	
						•		None	None	B Masonry Fastener, Size 6	
							•	1/4	1/4	Wall Screw Anchor, Size 2	
							3/8	3/8	1/8- by 4-Inch BH Toggle Bolt		
								No. 33	1-Inch No. 8 RH Self-Tapping Screw		
155 156		•						1/16		3/4-Inch No. 8 RH Blued Wood Screw	2
			•							3/4-Inch No. 8 RH Blued Wood Screw	
169		•						3/32		1-1/2 Inch No. 14 RH Galvanized Wood Screw	4 3
			•							1-Inch No. 14 RH Galvanized Wood Screw	
				•					None	C Masonry Fastener, Size 42	
								3/8		1-Inch No. 14 RH Galvanized Wood Screw in 10-14 by 1-Inch Screw Anchor	
					•			1/4		Wall Screw Anchor, Size 2-1/2	
								3/32		1-1/2 Inch No. 14 RH Galvanized Wood Screw	
						•		None	None	C Masonry Fastener, Size 52	
								3/8	5/16	Wall Screw Anchor, Size 2-1/2	
							1/2	1/2	3/16- by 4-Inch BH Toggle Bolt		
								No. 30	12-24 by 9/16-Inch RH Galvanized Iron Machine Screw		
164		•						1/16		1-1/4 Inch No. 8 RH Blued Wood Screw	4
			•							1-Inch No. 8 RH Blued Wood Screw	
				•					None	B Masonry Fastener, Size 6	
								1/4		1-1/2 Inch No. 8 Blued Wood Screw in 6-8 by 1-1/2 Inch Screw Anchor	
					•			1/4		Wall Screw Anchor, Size 2	
								1/16		1-1/4 Inch No. 8 RH Blued Wood Screw	
						•		None	None	B Masonry Fastener, Size 8	
								1/4	1/4	Wall Screw Anchor, Size 2	
							3/8	3/8	1/8- by 4-Inch BH Toggle Bolt		
								No. 33	5/8-Inch No. 8 RH Self-Tapping Screw		
165		•						1/16		2-1/2 Inch No. 8 RH Blued Wood Screw	4
			•							2-1/4 Inch No. 8 RH Blued Wood Screw	
				•					None	B Masonry Fastener, Size 8	
								1/4		2-1/2 Inch No. 8 RH Blued Wood Screw in 6-8 by 1-1/2 Inch Screw Anchor	
					•			1/2		Wall Screw Anchor, Size 3-1/2	
								1/16		2-1/2 Inch No. 8 RH Blued Wood Screw	
						•		None	None	B Masonry Fastener, Size 10	
								1/2	7/16	Wall Screw Anchor, Size 3-1/2	
							1/2	1/2	3/16- by 4-Inch BH Toggle Bolt		
								No. 33	1-1/4 Inch No. 8 RH Self-Tapping Screw		

Note 1: Additional fasteners may be placed to ensure mounting.
 Note 2: When using toggle bolts, cut off excess length.
 *When mounting on plastered masonry, use fasteners 1/2 inch longer than specified.
 †When mounting on plasterboard, plaster on lath, etc, fasteners should be secure in stud.

TABLE A (Cont)

FASTENERS USED IN MOUNTING BACKBOARDS

Backboard	Mounting Surfaces						Drill Size		Fasteners	Quantity	
	Type	Soft-wood	Hard-wood	Masonry* (Concrete, Brick)	Lath and Plaster	Plaster, Cinder Block, Hollow Tile, Metal Lath, Plaster-board†	Metal (Desk or Paneling)	B and D			Masonry
							inches		Size and Type		
166		•						3/32		1-1/2 Inch No. 14 RH Galvanized Wood Screw	4
			•							1-Inch No. 14 RH Galvanized Wood Screw	
				•					3/8	1-1/4 Inch No. 14 RH Galvanized Wood Screw in 10-14 by 1-Inch Screw Anchor	
					•			1/2		Wall Screw Anchor, Size 2-1/2	
								3/32		1-1/2 Inch No. 14 RH Galvanized Wood Screw	
						•		1/2	7/16	Wall Screw Anchor, Size 3-1/2	
							•	3/4	3/4	1/4- by 4-Inch RH Toggle Bolt	
							No. 33		12-24 by 9/16-Inch RH Galvanized Iron Machine Screw		
168 176		•						1/16		1-Inch No. 8 RH Blued Wood Screw	4
			•							3/4-Inch No. 8 RH Blued Wood Screw	
				•					None	B Masonry Fastener, Size 4	
									1/4	1-1/4 Inch No. 8 RH Blued Wood Screw in 6-8 by 3/4-Inch Screw Anchor	
									3/16	C Plastic Anchor, 3/16 by 1 Inch	
					•			3/16		C Plastic Anchor, 3/16 by 1 Inch	
								1/4		Wall Screw Anchor, Size 2	
								1/16		1-Inch No. 8 RH Blued Wood Screw	
						•		None	None	B Masonry Fastener, Size 5	
								1/4	1/4	Wall Screw Anchor, Size 2	
								3/8	3/8	1/8- by 4-Inch BH Toggle Bolt	
171		•						1/16		1-Inch No. 8 RH Blued Wood Screw	4
			•							3/4-Inch No. 8 RH Blued Wood Screw	
				•					None	B Masonry Fastener, Size 4	
									1/4	1-Inch No. 8 RH Blued Wood Screw in 6-8 by 3/4-Inch Screw Anchor	
									3/16	C Plastic Anchor, 3/16 by 1 Inch	
					•			3/16		C Plastic Anchor, 3/16 by 1 Inch	
								1/4		Wall Screw Anchor, Size 2	
								1/16		1-Inch No. 8 RH Blued Wood Screw	
						•		None	None	B Masonry Fastener, Size 5	
								1/4	1/4	Wall Screw Anchor, Size 2	
								3/8	3/8	1/8- by 4-Inch BH Toggle Bolt	
173		•						3/32		2-1/2 Inch No. 14 RH Wood Screw with 5/16- by 3/4-Inch Round Washer	4
			•							1-1/2 Inch No. 14 RH Wood Screw with 5/16- by 3/4-Inch Round Washer	
				•					None	B Masonry Fastener, Size 6	
									3/8	2-Inch No. 14 RH Wood Screw with 5/16- by 3/4-Inch Round Washer in 10-14 by 1-1/2 Inch Screw Anchor	
					•			1/2		Wall Screw Anchor, Size 3-1/2	
								3/32		2-Inch No. 14 RH Wood Screw with 5/16- by 3/4-Inch Round Washer	
						•		None	None	B Masonry Fastener, Size 8	
								1/2	7/16	Wall Screw Anchor, Size 3-1/2	
KS-5796, L1, 2, 3, 7, 8, 9		•						1/16		1-1/4 Inch No. 8 RH Blued Wood Screw	4
			•							1-Inch No. 8 RH Blued Wood Screw	
				•					None	B Masonry Fastener, Size 4	
									1/4	1-1/4 Inch No. 8 RH Blued Wood Screw in 6-8 by 3/4-Inch Screw Anchor	
									3/16	C Plastic Anchor, 3/16 by 1 Inch	
					•			3/16		C Plastic Anchor, 3/16 by 1 Inch	
								1/4		Wall Screw Anchor, Size 2	
								1/16		1-1/4 Inch No. 8 RH Blued Wood Screw	
						•		None	None	B Masonry Fastener, Size 6	
								1/4	1/4	Wall Screw Anchor, Size 2	
								3/8	3/8	1/8- by 4-Inch BH Toggle Bolt	
P-480578		•						3/32		2-Inch No. 14 FHB Wood Screw	5
			•						3/4	5/16- by 2-Inch Expansion Shield, 5/16-Inch by 2-3/4 Inch Slotted Machine Screw	
				•				3/32		2-3/4 Inch No. 14 FHB Wood Screw (Fastener Must be in Stud)	
					•			3/4		5/16- by 4-Inch Toggle Bolt	
						•					

Note 1: Additional fasteners may be placed to ensure mounting.
 Note 2: When using toggle bolts, cut off excess length.
 *When mounting on plastered masonry, use fasteners 1/2 inch longer than specified.
 †When mounting on plasterboard, plaster on lath, etc, fasteners should be secure in stud.