

APPLICATION SPECIFICATION

1. SCOPE

This specification covers the requirements for application of AMP* keyboard switch assembly to printed circuit boards. For applicable part numbers see Figure 8.

2. NOMENCLATURE

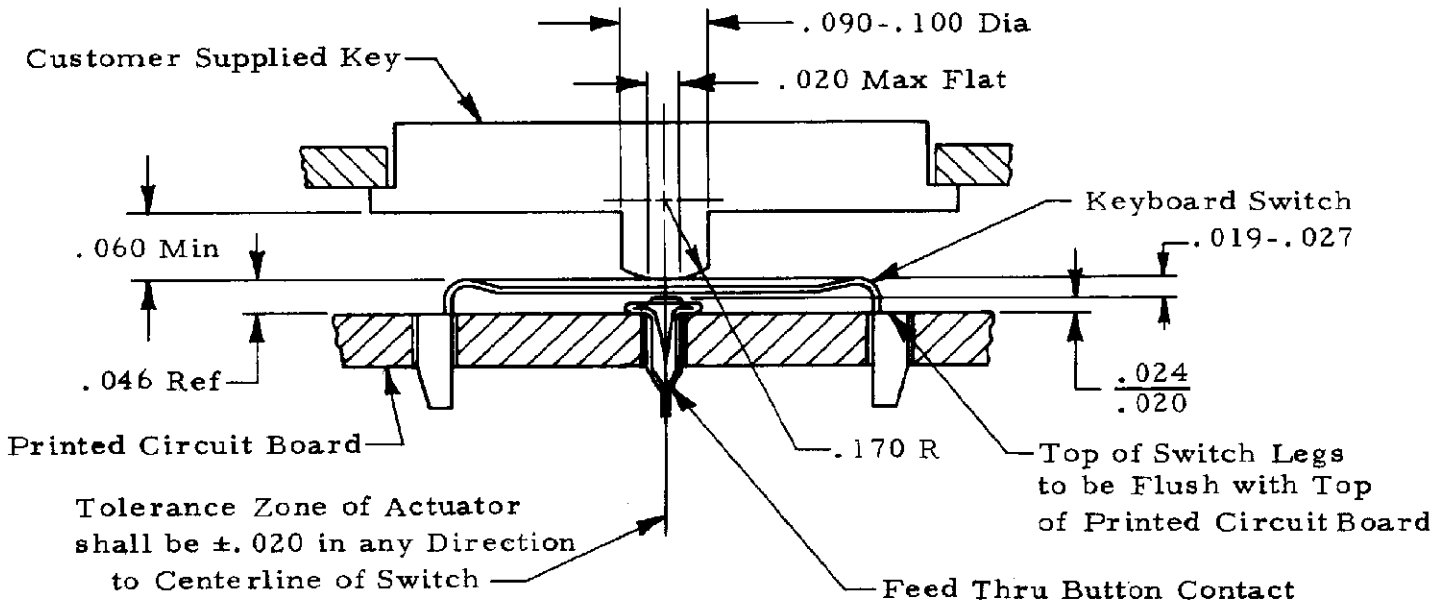


Figure 1

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C	E	Revise per ECN AF-1306	TLC	SHEET 1 OF 6		
DIST 02	LTR	REVISION RECORD	APP			
			DATE			

3. REQUIREMENTS

3.1. Printed Circuit Board

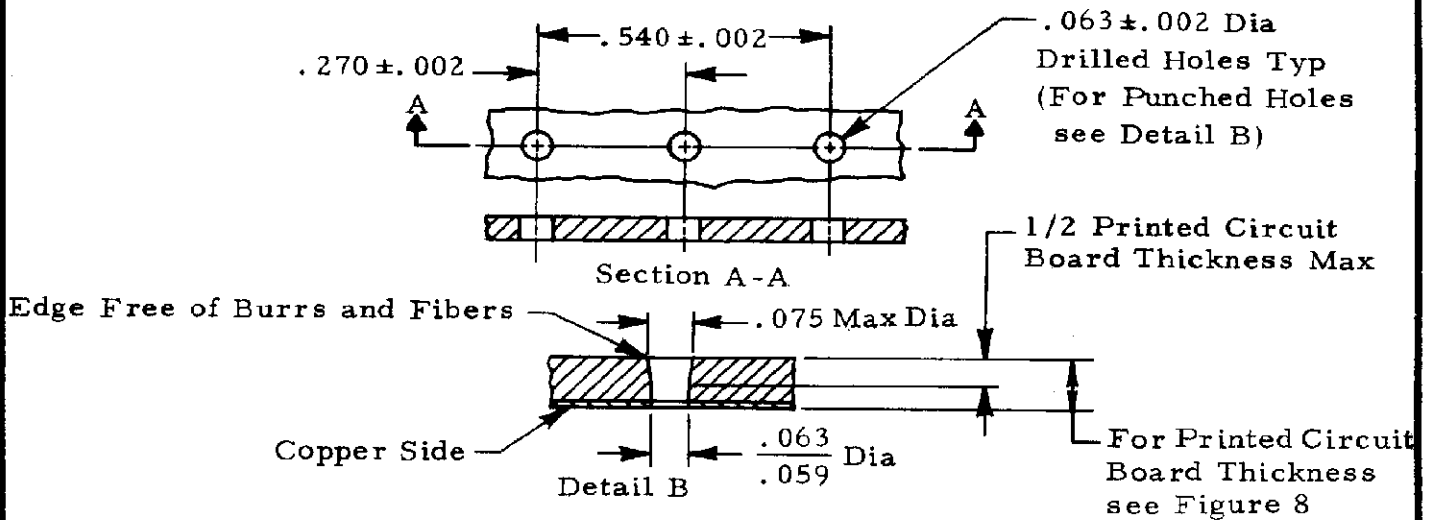


Figure 2

3.2. Switch Orientation

It is preferred that all switches lay in the same orientation as indicated in Figures 3 and 4 for machine insertion. Otherwise, extra handling of boards would be required for insertion of switch components on different orientation. Figure 5 illustrates a 45° arrangement which may be utilized for maximum switch density.

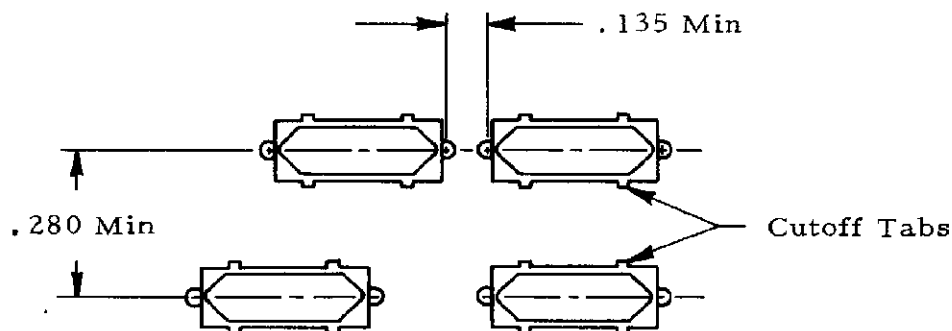


Figure 3

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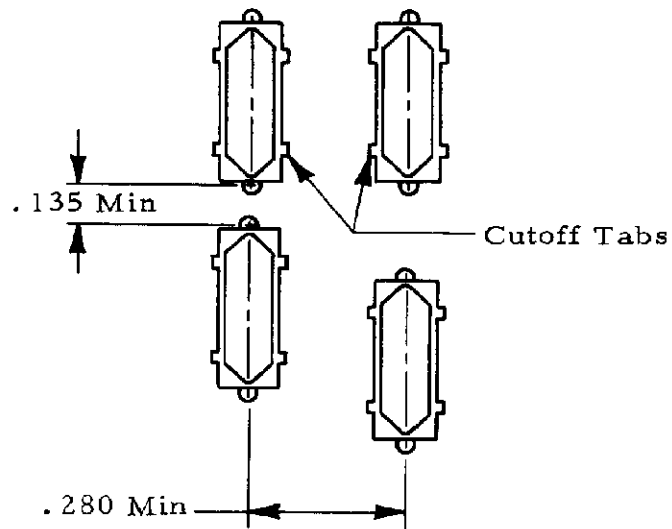


Figure 4

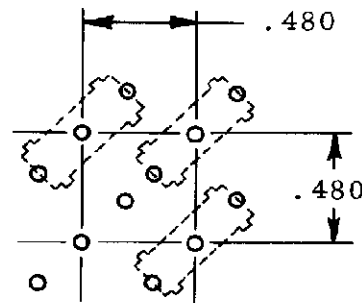


Figure 5

3.3. Insertion Machines

A. Single Head Bench Machine

Typical hole tolerances required for insertion of components with a single head bench machine are shown in Figure 2. Pilot holes in boards are not required. Customer's detailed drawings of board layout shall be submitted to AMP Engineering to determine if any special fixturing is required.

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B. Dual Head Pantograph Machine

Typical board layout with hole tolerances required for insertion of components with a dual head pantograph machine are shown in Figure 6. Two pilot holes are required for single or breakaway boards as indicated. Customer's detailed drawings of board layout shall be submitted to AMP Engineering prior to machine fabrication.

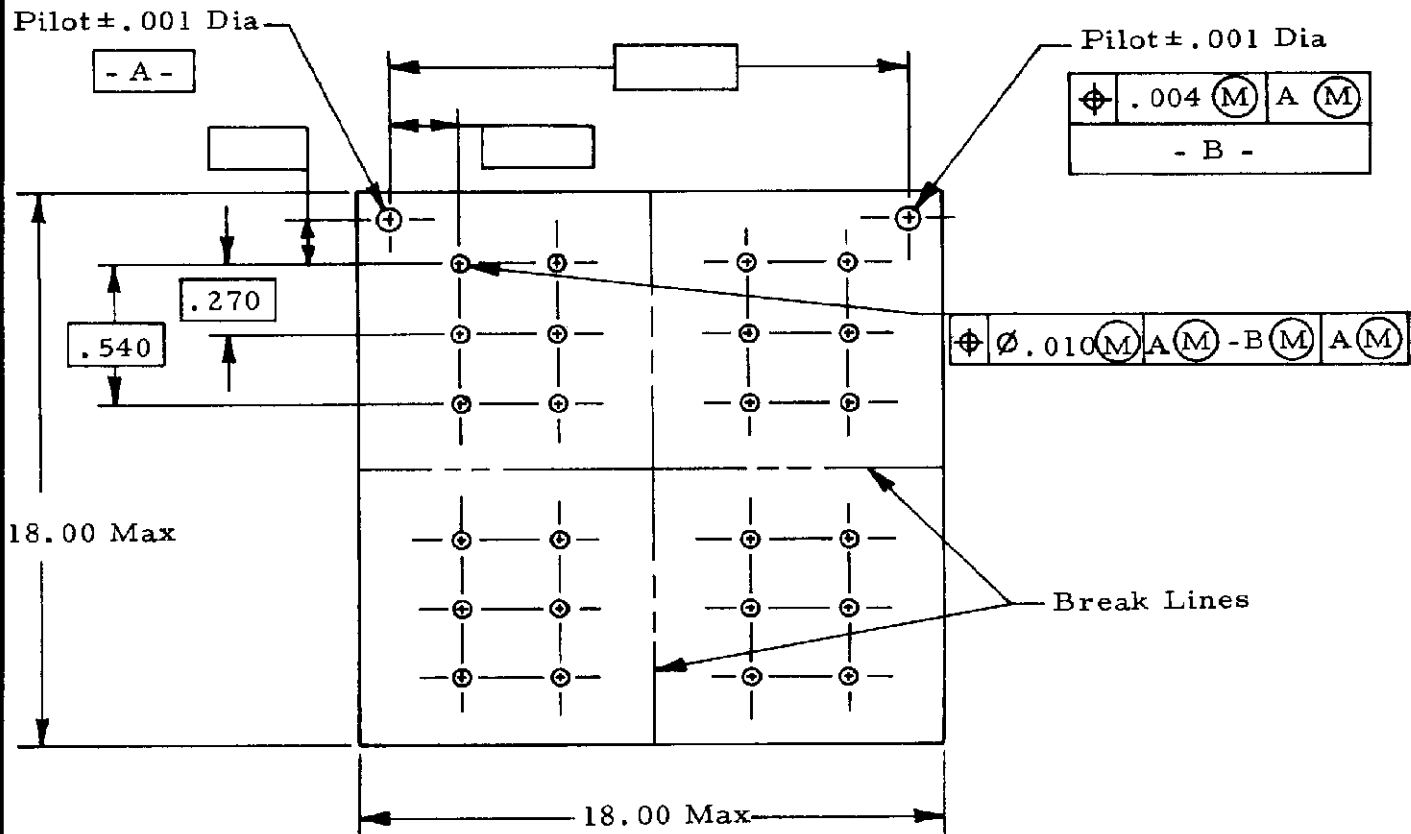


Figure 6

3.4. Ordering Information

- A. In order to provide accurate recommendations and quotations, AMP Form 3550, Insertion Equipment Order Information, is required.
- B. Customer boards shall be supplied to AMP for machine qualification prior to shipment. Quantity of boards required shall be determined by AMP Engineering when the customer's board layout drawings are reviewed. All boards that have been satisfactorily inserted with switches can be returned to customer for use.

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4. SOLDERING AND CLEANING

4.1. Flux Selection

Keyboard switch components shall be fluxed prior to soldering by use of a medium active rosin base flux or a medium to highly active organic flux. Selection of the proper flux will depend on customer's type of printed circuit board and other components, if any, mounted on the board. Also, the choice of flux would have to be compatible to customer's flow solder line, as well as manufacturing and safety requirements.

4.2. Cleaning

Removal of fluxes, residues and activators is mandatory to assure proper function of the switch. Cleaning procedures would again be the choice of the customer and would depend on the type of flux used on his solder line. The following are suggested cleaners and methods for removal of standard flux types:

Flux	Cleaner	Methods
Rosin and rosin based (Types R, RMA, RA, RSA)	Solvent	Cold cleaning (Batch)
		Vapor degreasing (Batch)
		In-line automated (Continuous)
Rosin and rosin based (Types R, RMA, RA, RSA)	Aqueous	Tank cleaning (Batch)
		Automated cabinet (Batch dishwasher)
		In-line automated (Continuous)
Water soluble (Type OA)	Aqueous	Tank cleaning (Batch)
		Automated cabinet (Batch dishwasher)
		In-line automated (Continuous)
Inorganic acid (Chloride type)	Use is not recommended for soldering of printed circuit boards and other types of assemblies for electronic use.	

Figure 7

A. Solvent Cleaners Recommended

Solvent cleaners that give the best results in removing rosin are blends of alcohol and chlorinated or fluorinated solvents designed specifically for use in removing fluxes. Many are available and the user should be careful in weighing the effectiveness with the problems and hazards.

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B. Aqueous Cleaners Recommended

Aqueous cleaners for the removal of rosin fluxes are formulated to convert the rosin to soluble soaps, and are required for aqueous cleaning of rosin fluxes. Aqueous cleaners are not essential for removal of water soluble fluxes, but are strongly recommended to improve ionic cleanliness. Again, many formulations are available and care should be taken in their selection.

C. Cleaning Processes

Justification for cleaning processes depends on many factors, including production volume, desired cleanliness, and environmental considerations.

D. Flux Removal Techniques

AMP Corporate Bulletin No. 35 is available upon request and includes a more complete discussion of flux removal techniques.

4.3. Soldering Guideline

AMP Corporate Bulletin No. 52 is available upon request and can be used as a guide in soldering. This bulletin gives various flux types and characteristics along with the commercial designation and flux removal procedures. A checklist is attached to the bulletin and is intended to serve as a guide for obtaining information from customers having soldering problems.

Item	Part Number			Printed Circuit Board Thickness, nominal
	Strip	Loose Piece	Styrofoam Mounted	
Keyboard Switch	62312	62353	520067	.062
	62644	62614	520068	.062
	62815	62477	————	.094
	62910	62983	————	.094
Feed thru Button Contact	62313	62380	520066	.062
	62911	62476	————	.094

Figure 8

Part Numbers

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