



# 19" SUB RACK SYSTEM

The RS 19" Sub-rack system is a versatile method of accommodating modules and/or printed circuit boards. The system is 3 Units (5½") high and will accommodate boards up to 203mm in length. When used as a card only system it can be adjusted to accept RS stripboards or other standard cards between 95mm and 114mm in height.

Before assembling a 19" sub-rack, all system requirements should be considered, and the final form decided upon.

**Please read this Data Sheet in full before proceeding to assemble a Sub-rack.**

## Card system only

The spacing between cards is the first consideration. This system offers the option of a 0.2" or 0.5" pitch. The final choice will be dependant on the number of cards to be accommodated and the final width of the card when components are mounted. The appropriate Guide Location Strips may then be selected. If it is also intended to use edge connectors, then Tapped Strips of the same pitch as the Guide Location strips will be required.

The front of the Sub-rack may be covered, either with an overall hinged panel, or by fitting Card Fronts to each card.

## Module/card front system

As an alternative to the card only system, Modules, or a mixture of Modules and cards with Card Fronts can be accommodated in the Sub-rack. For this system 0.5" pitch Guide Location Strips must be used.

This 19" Sub-rack is an extremely flexible system with many assembly variations. The final system should be carefully considered and planned, to help ensure that the correct components are obtained, in the correct quantity.

## SUB-RACK ASSEMBLY INSTRUCTIONS

### Sub-rack kit consists of:

- |                                |   |   |   |
|--------------------------------|---|---|---|
| 2-End Plates                   | ① | 2-Connector mounting rails                                | ⑤ |
| 2-End Plate Angles             | ② | 2-Ident strips  | ⑥ |
| 2-Guide mounting rails (front) | ③ | 14-Pozidriv <sup>™</sup> self-tapping screws (two spares) |   |
| 2-Guide mounting rails (rear)  | ④ |   |   |

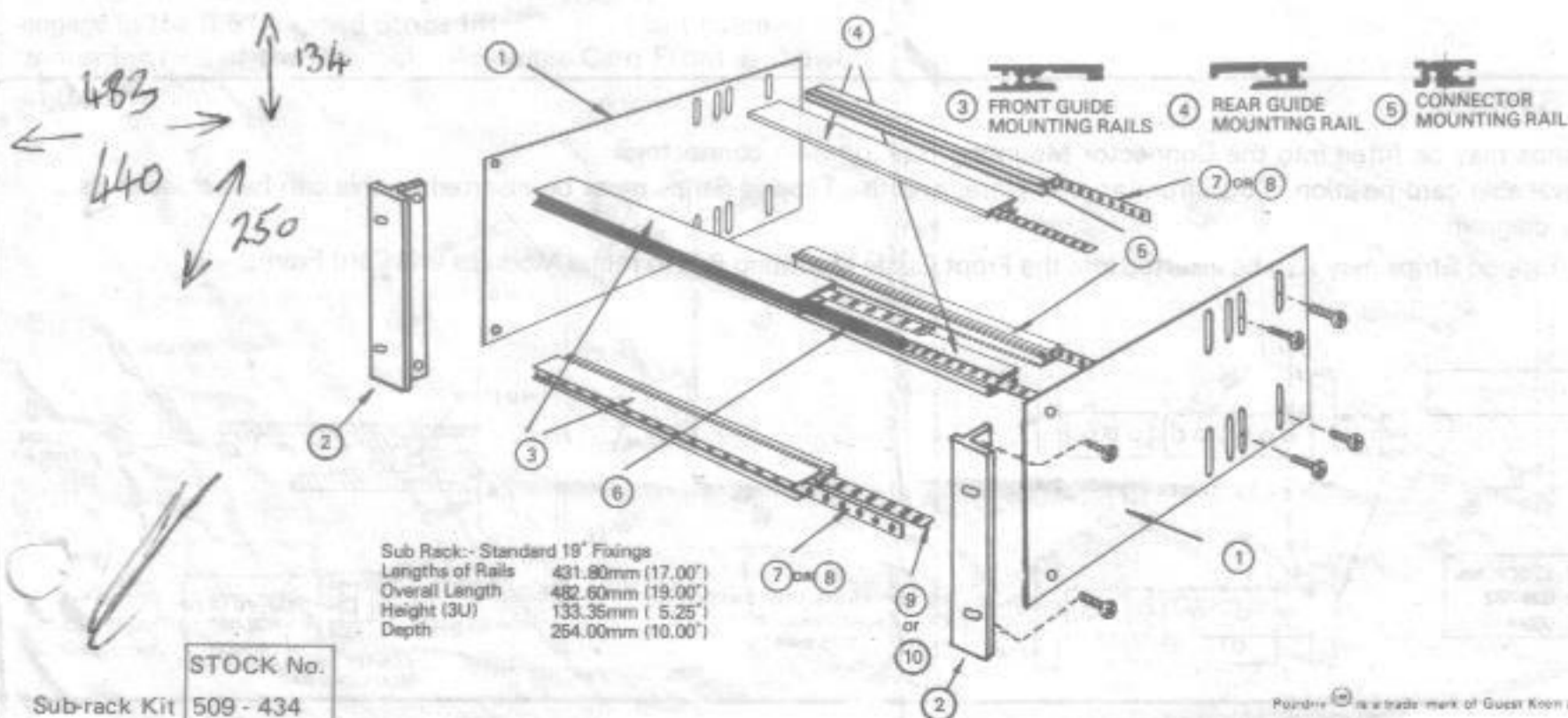
If Tapped Strips ⑦ or ⑧ and Guide Location Strips ⑨ or ⑩ are required, they must be inserted into the rail extrusions before the sub-rack is assembled.

Guide Location Strips are fitted into all four guide mounting rails as shown. Two Tapped Strips (which must be of the same pitch as the Guide Location Strips) are inserted into the Connector Mounting Rails to retain the edge connectors. Two more Tapped Strips may also be inserted into the Front Guide Mounting Rails to retain Modules and/or Card Fronts.

The Ident Strips may be inserted into the Front Guide Mounting Rails, if Modules or Card Fronts are not used. They may then be marked to identify board positions.

Having inserted the appropriate items, the rails can then be fixed to the end plates and end plate angles using the Pozidriv<sup>™</sup> self-tapping screws provided. (A No.2 point Pozidriv<sup>™</sup> screwdriver is recommended). Lubricating the threads will aid the self-tapping action. The rails should be spaced apart front and rear to suit the card guides and board used. The vertical rail separation can be adjusted to suit the board height. It is recommended that the lower rails are left at their lowest position and the top rails lowered to the desired height.

The basic sub-rack is now ready to accept single cards and connectors, as desired. Instructions for fitting these and other items can be found under the appropriate section of this data sheet.



## GUIDE LOCATION STRIPS

The Guide Location Strips should be fitted into the Front Guide Mounting Rails and the Rear Guide Mounting Rails as shown below. The pitch of the Tapped Strips should be chosen to match the pitch of the Guide Location Strips.

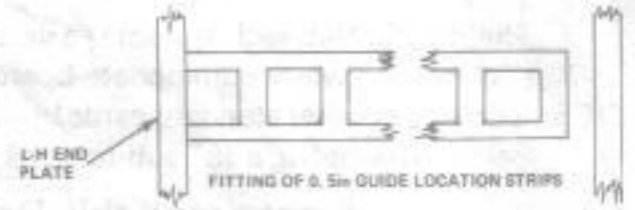
When housing Modules or Modules and Card Fronts, 0.5" Guide Location Strips are used.

The 0.2" Guide Location Strip is symmetrical and may be inserted either end first, the 0.5" type must be inserted as shown with the open end adjacent to the left-hand end plate.

0.2" Guide Location Strips  
0.5" Guide Location Strips

STOCK No.  
509-440  
509-466

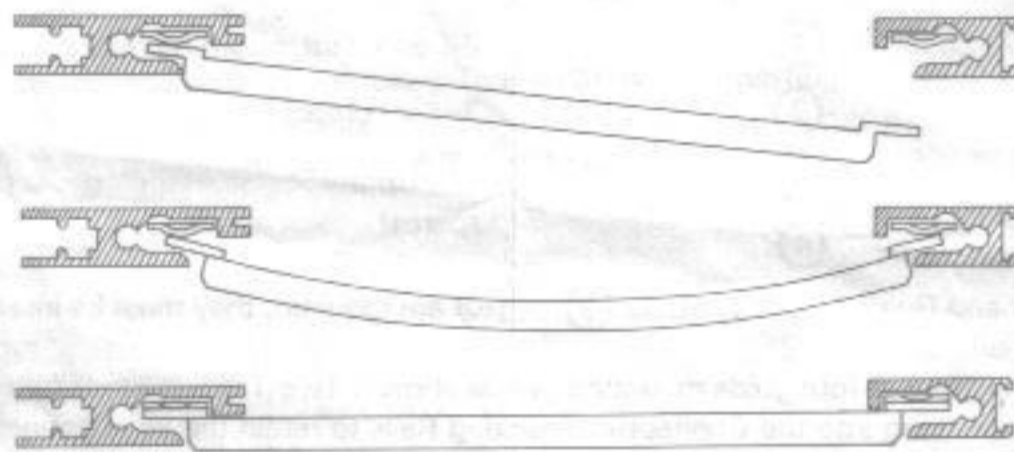
4 per pk.



## CARD GUIDES

Card Guides may be clipped into the Sub-rack provided the appropriate Guide Location Strips have been fitted to the Guide Mounting Rails. With 0.2" Guide Location Strips fitted, board spacings on multiples of 0.2" may be obtained, 0.4" being the minimum board spacing. With 0.5" Guide Location Strips fitted, card spacing on multiples of 0.5" may be obtained, 0.5" also being the minimum spacing.

When housing Modules or Modules and Card Fronts, Guides are used on a 0.5" pitch: Two guides per card and four guides per module are required. Care should be taken to see that when the guides are clipped on the rails they are at 90° to the rails and that they line the board up with the appropriate connectors mounted on the Connector Mounting Rails. Using an actual board will help to ensure that the guides and connectors are correctly aligned.



Card Guides

STOCK No.  
509-507

10 per pk.

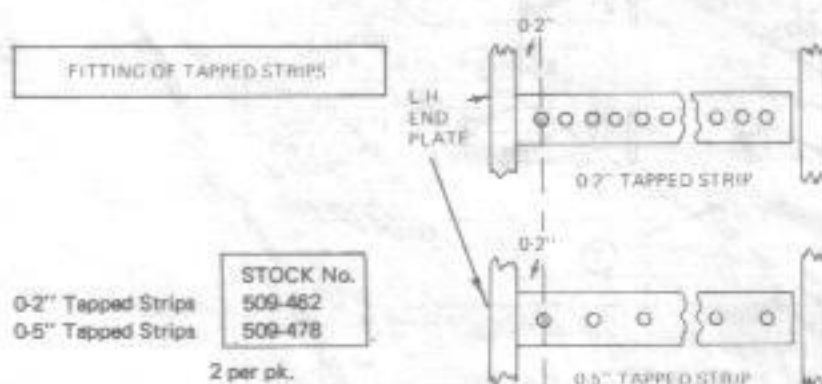
METHOD OF CLIPPING CARD GUIDES TO GUIDE MOUNTING RAILS

## TAPPED STRIPS

Tapped Strips may be fitted into the Connector Mounting Rail to retain connectors.

The first available card position is 0.2" from an end plate, and the Tapped Strips must be inserted so this can be achieved as shown in the diagram.

0.5" pitch Tapped Strips may also be inserted into the Front Guide Mounting Rail to retain Modules and Card Fronts.

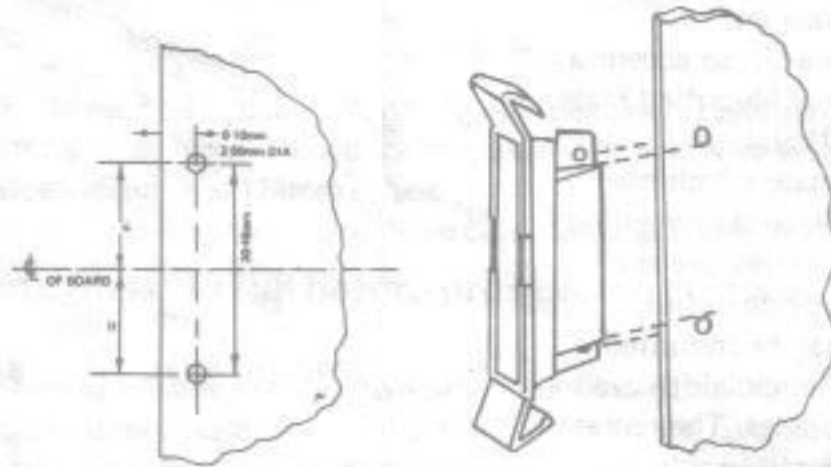


0.5" TAPPED STRIP USED WITH CARD FRONTS SHOULD BE FITTED THIS WAY



### CARD HANDLES

The Card Handles may be clipped on to the front edge of stripboards to aid card removal. The Hinged Front Panel (Stock No. 508-891) may be used to cover up the cards and handles if desired.

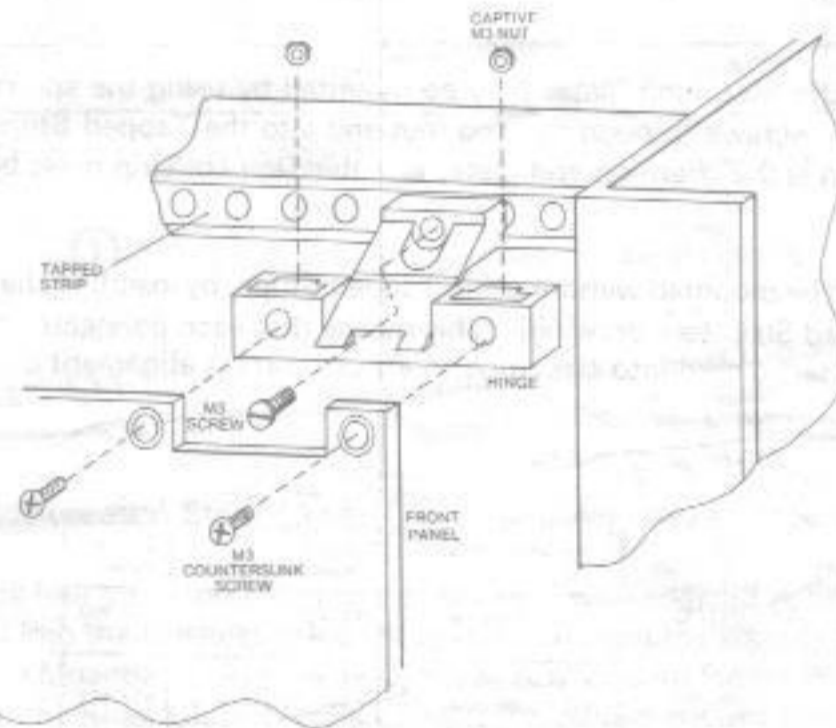


Card Handles

STOCK No.  
509-513

### HINGED FRONT PANEL KIT

The Front Panel kit may be used to cover the front of the Sub-rack. It cannot be used when Modules or Card Fronts are fitted in the Sub-rack. The front panel should be assembled to the sub-rack frame using the two plastic hinges and screws as shown. It may be mounted to hinge from either the top or the bottom of the sub-rack.

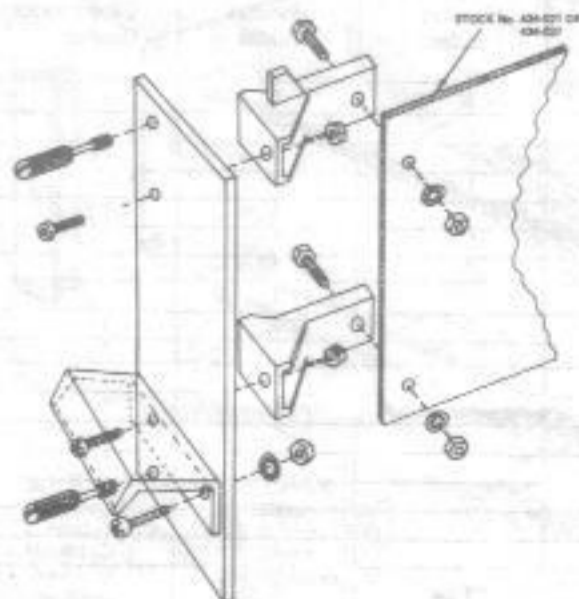


Front Panel Kit

STOCK No.  
508-891

### 1" and 2" CARD FRONTS

The Card Fronts may be used as a system in their own right, or mixed in a system with Modules. Please Note: Card Fronts are only suitable for use with 114 x 203mm stripboards fitted into Card Guides on a 0.5" pitch. The front panel is retained in the sub-rack using two knurled screws, which engage in the 0.5" Tapped Strips fitted in the front guide mounting rails of the Sub-rack. Assemble Card Front as shown in the diagram.

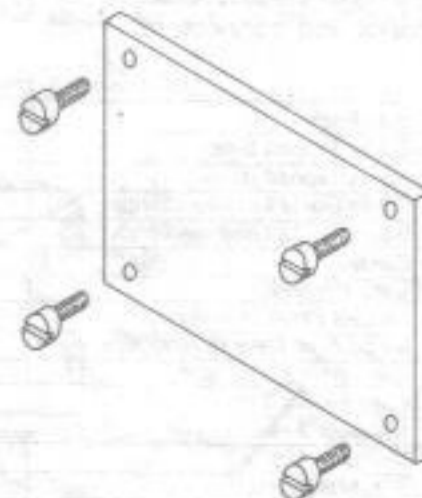


1" Card Front  
2" Card Front

STOCK No.  
509-535  
509-541

### 5" FRONT PANEL

This Card Front may be used to mount meters and controls. It is retained in the Sub-rack by 4 screws which engage in the 0.5" Tapped Strips fitted in the front guide mounting rails of the Sub-rack. Note: This card front is not drilled to accept cards and has no handle.



5" Panel

STOCK No.  
509-210

## 2" and 4" MODULES

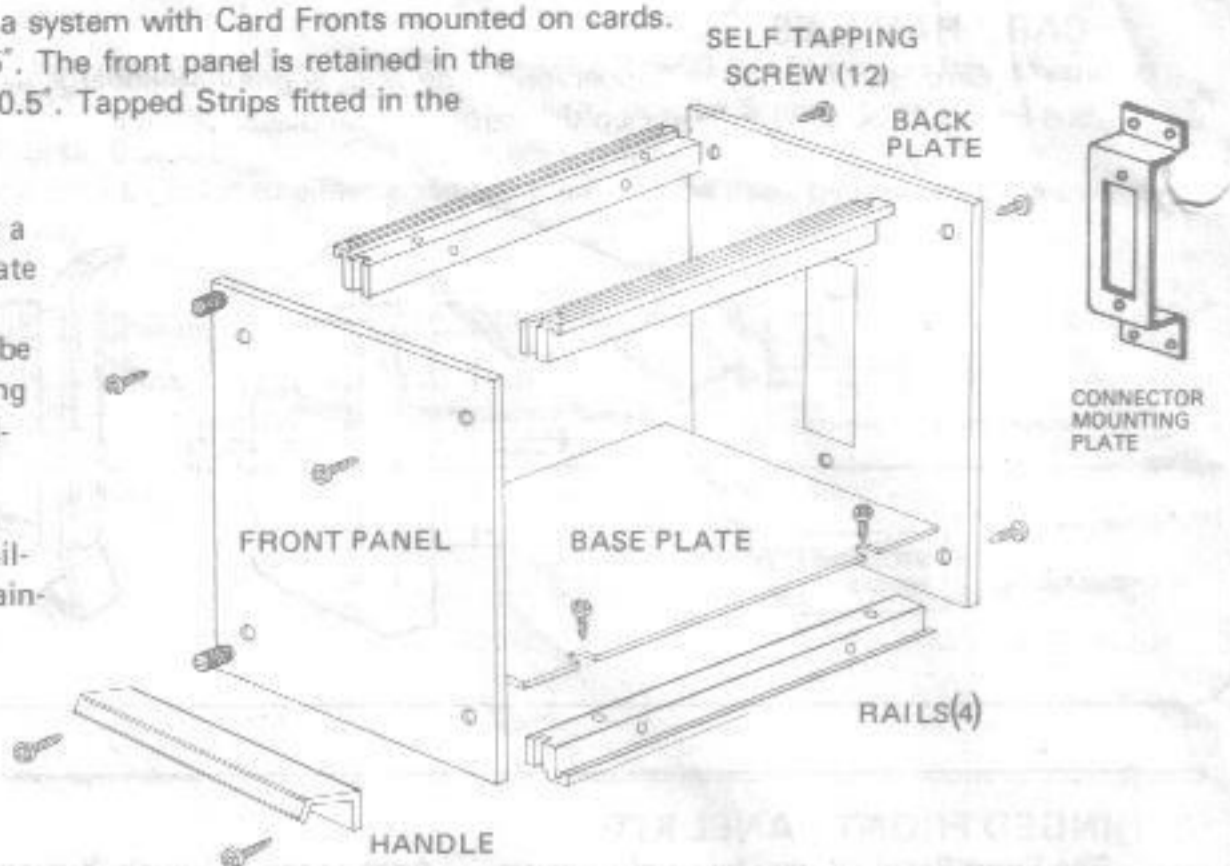
May be used in an all module system, or mixed in a system with Card Fronts mounted on cards. Modules are used with Card Guides on a pitch of 0.5". The front panel is retained in the sub-rack using knurled screws, which engage in the 0.5". Tapped Strips fitted in the front guide mounting rails of the sub-rack.

Assemble modules as shown in the diagram.

The back plate of the module is pre-cut to accept a 24 way plug (467-009). The Connector Mounting Plate accepts mating 24 way socket (467-015).

Modules are supplied with a baseplate which can be used for transformer mounting etc. Separate screening kits, consisting of a top and two side plates, are available. In addition to screening they provide useful surfaces onto which circuit boards may be mounted. Note: A maximum of 16" of the 17" rack width available can be fitted with 2" and 4" modules. The remaining 1" may be filled with a 1" Card Front used either with, or without a card.

	STOCK No.
2" Module Kit	509-333
4" Module Kit	509-349
2" Screening Kit	509-359
4" Screening Kit	509-361
Connector Mounting Plate	509-377



## CONNECTOR MOUNTING

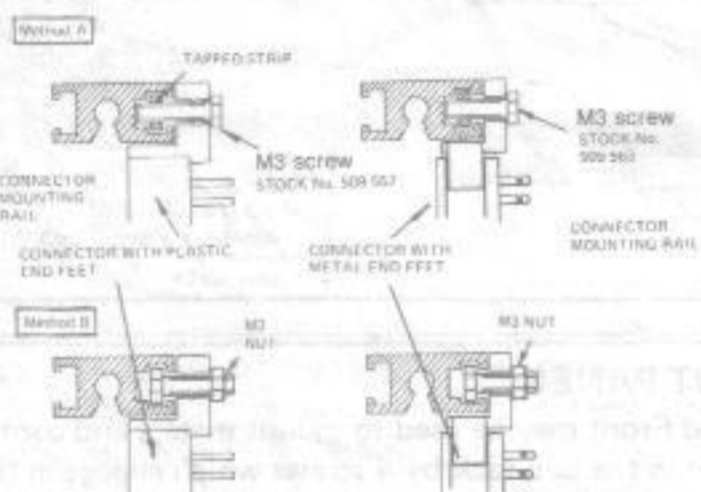
### Method A

Connectors or module Connector Mounting Plates may be mounted by using the appropriate Tapped Strips in the Connector Mounting Rails and then inserting screws through the end feet and into the Tapped Strips.

The first available card position is 0.2" from an end plate, and the Tapped Strip must be inserted so this can be achieved.

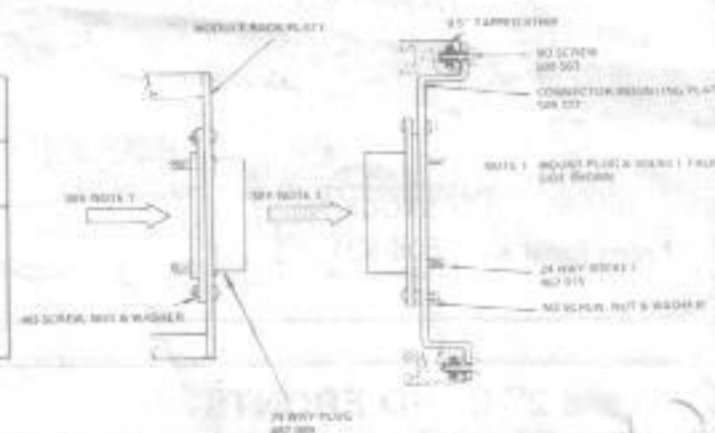
### Method B

Alternatively, connectors can be mounted without using Tapped Strips, by inserting the head of the screw into the slot normally occupied by the Tapped Strip (see drawing). This means that each connector must be individually positioned. It is usually more convenient to insert a card into the guide to ensure correct alignment of card and edge connector.



Module/Stripboard Type	Suitable Connector	Suitable Screws
2 or 4 in Module	467-015 (mounted in 509-377)	509-563
114 x 203 mm single sided board	466-999	509-563
114 x 203 mm double sided board	or 467-043 wirewrap	509-563
95.5 mm <sup>h</sup> high single sided board	467-021	509-563
	or 467-059 wirewrap	509-563
	466-551	509-557
	or 467-037 wirewrap	509-563

\*not suitable for card fronts.  
Note: Two screws per edge connector and four per Connector Mounting Plate are required.



Module Connector Mounting using Method 'A'.

## system selection guide

This chart indicates some of the assembly possibilities and the components needed. For suitable Stripboards and connectors refer to catalogue.

	Stock No.	0.2 in pitch		0.5 in pitch			
		Connector Mounting Method A		Connector Mounting Method A		Connector Mounting Method B	
		Card Handles Guides	Card Handles Guides	Card Handles Guides	Modules/ Card Fronts Guides	Card Handles Guides	Modules/ Card Fronts Guides
Sub-Rack	509-434	1	1	1	1	1	1
0.2 in Tapped Strip	509-462	1 pk					
0.5 in Tapped Strip	509-478			1 pk	2 pk		1 pk
0.2 in Guide Location Strips	509-440	1 pk	1 pk				
0.5 in Guide Location Strips	509-456			1 pk	1 pk	1 pk	1 pk
Guides	509-507						
Card Handles	509-513						
Hinged Panel (if required)	508-891	1	1	1		1	
Instrument Case (if required)	508-778	1	1	1		1	
Card Fronts 1 in	509-535						
Card Fronts 2 in	509-541						
Modules 2 in	509-333						
Modules 4 in	509-349						
5 in Front Panel	509-210						
Screening Kit 2 in	509-355						
Screening Kit 4 in	509-361						
Connector Mounting Plate	509-377						
M3 Screws	See Chart Above	1 pk	1 pk	1 pk	1 pk	1 pk	1 pk
M3 Nuts	522-421		1 pk			1 pk	1 pk

\* Quantity as required.