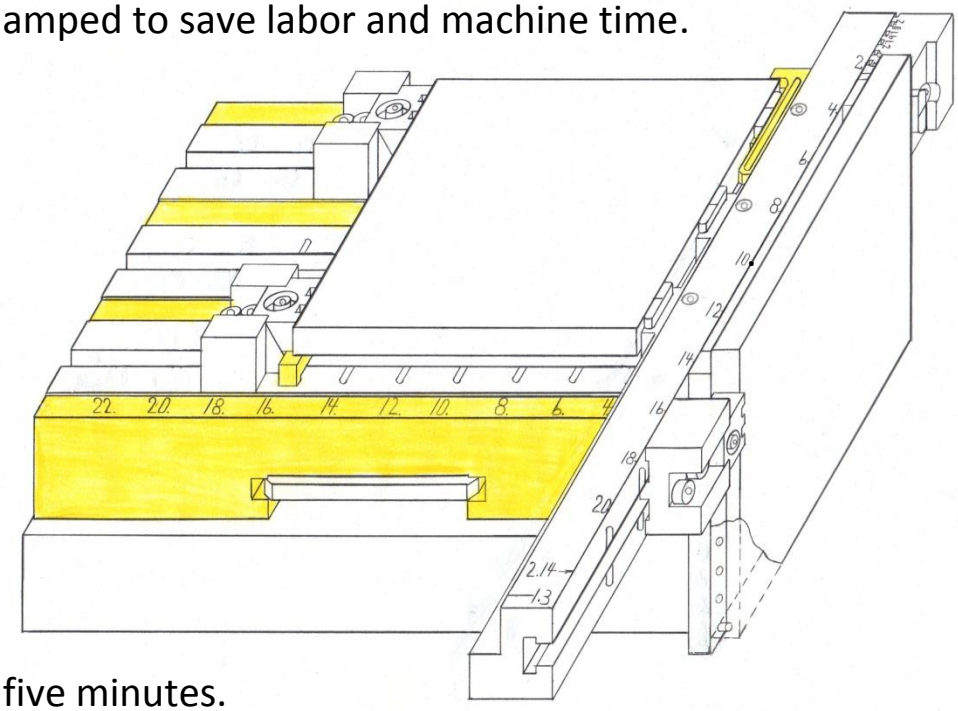
# BAYER INSTANT SET-UP SYSTEM PAT. #8002254

**Reduce work piece clamping set up cost.**
**Work pieces are located in all three axis.**
**Save set up information for instant re set up.**

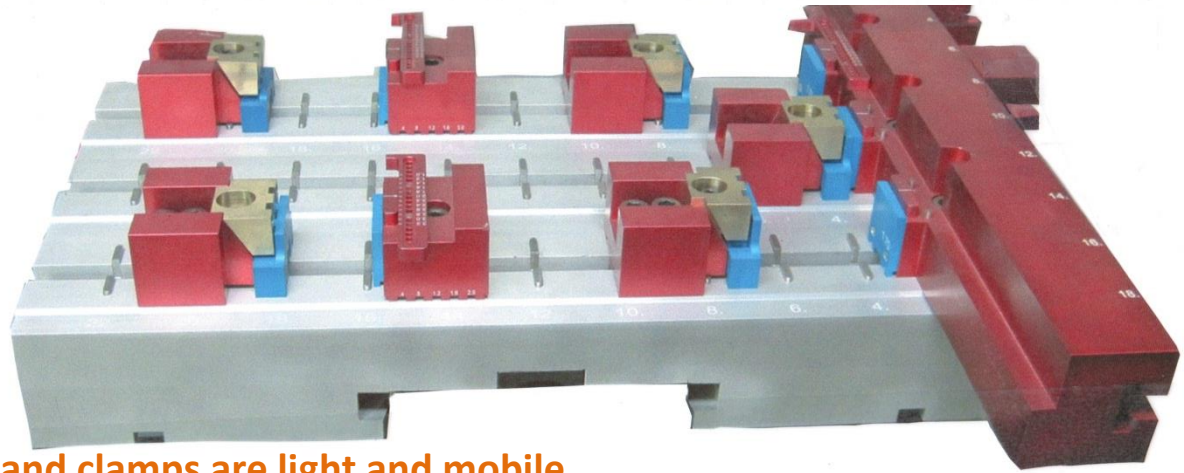
Multiple parts are easily clamped to save labor and machine time.



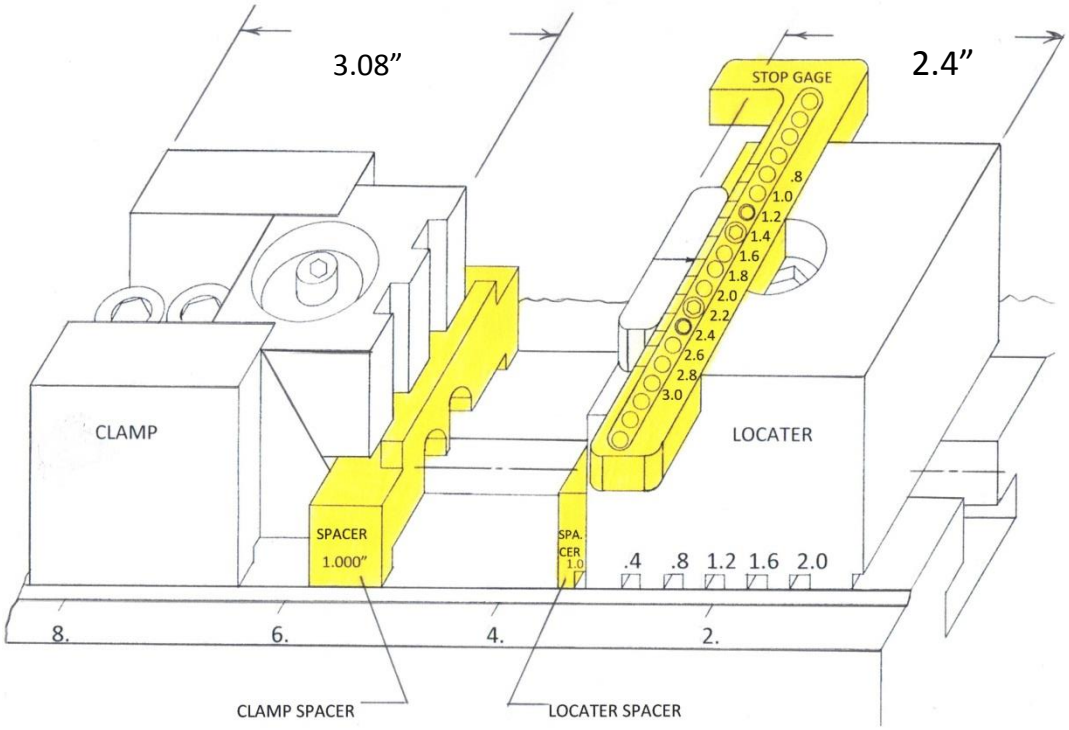
Reduce torque required to clamp work pieces.

Clamp large, small and tall work pieces.

Six sides of this 1.0” X 12.” X 12.” work piece were set up in five minutes.



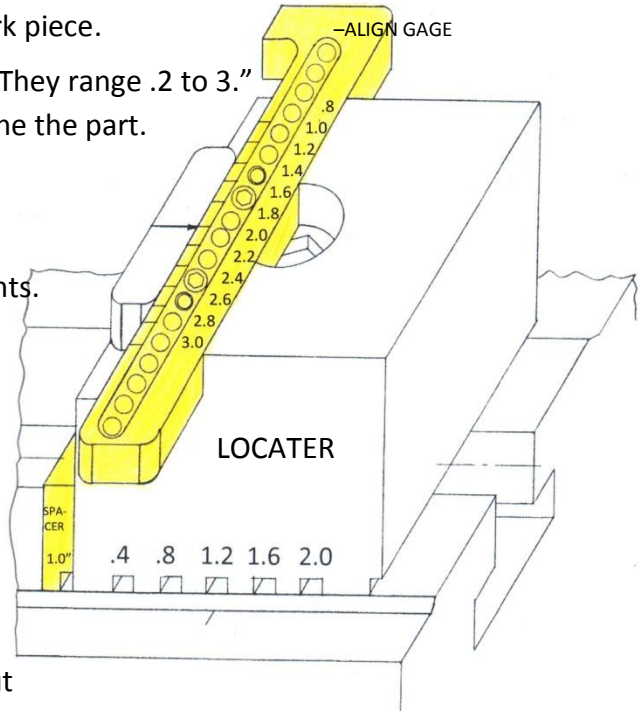
**Logs, pallets and clamps are light and mobile.**
**They are made from 7075-T651 aluminum.**
**They are as hard as cold rolled steel.**
**Wedges are made from wear resistant aluminum bronze.**




1. The Locater has slots every .4 inches. The pallets have keys located every two inches. The location of the work piece locating surface can be determined by adding the number marked on the Locater to the number marked on the pallet or log that corresponds to the engaged slot.

2. The Clamp can be located at any position for clamping a work piece.

3. The stop Gage is used for locating the end of a work pieces**.** They range .2 to 3.” In .2” increments**.** They may be removed if necessary to machine the part.




4. The Align Gage is used to roughly locate the work piece beyond the gage so that it can be machined without interference with the gage. They range 1.T0 3.2” in .2 increments.

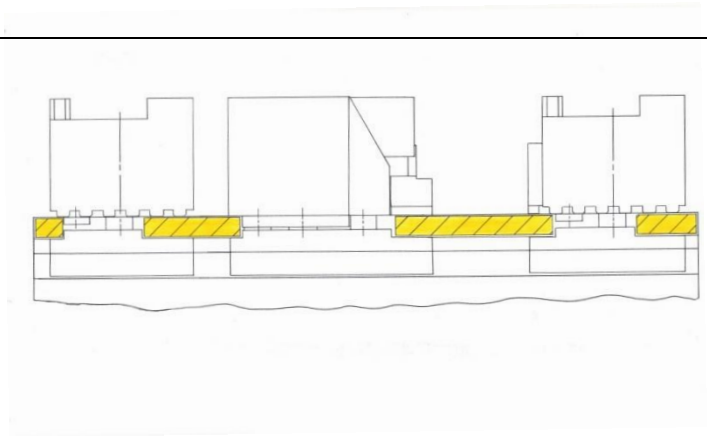
5. The CLAMP AND LOCATER SPACERS are used for locating the work piece above the Base to permit through machining. They are provided in various increments.

6. The wedge clamp moves down and against the work piece for accurate location.

7. Seventy inch pounds torque provides five thousand pounds clamping force. The typical six inch machine vice requires about five hundred inch pounds for the same clamping.

8. The accuracy of the fixture locating surfaces is +/- .002. This does not include thermal expansion errors or machine error. When greater accuracy is required it is recommended that pitch error compensation be used and or the spacer height be machined.

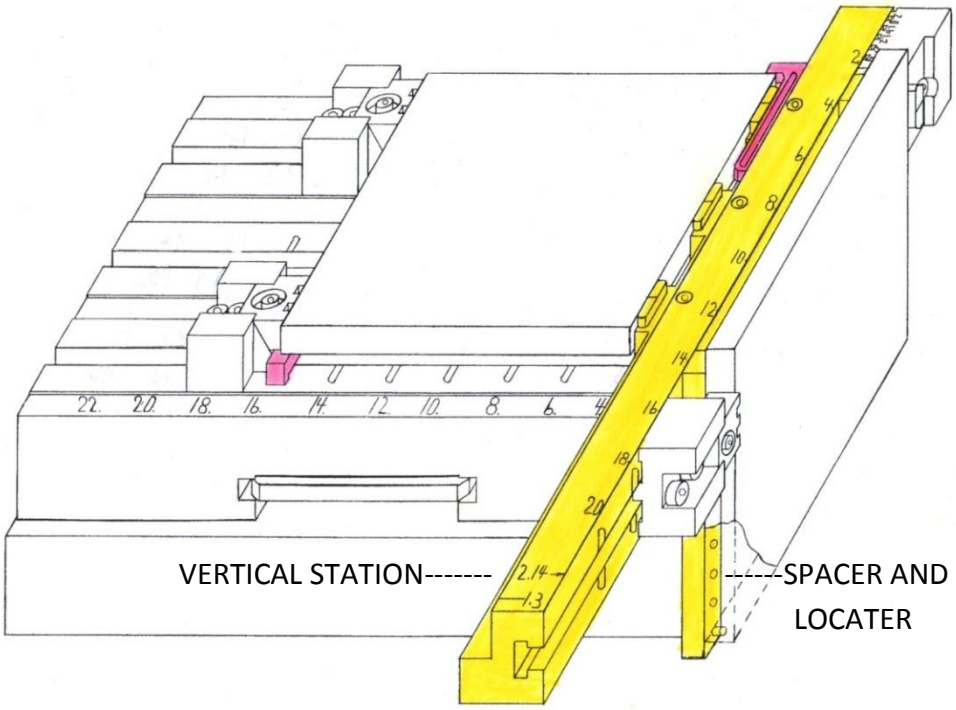
## TEE SLOT COVERS



Tee slot covers may be used to prevent chips from entering the tee slots.

They may be cut to length by hand held cutters.

## VERTICAL STATION



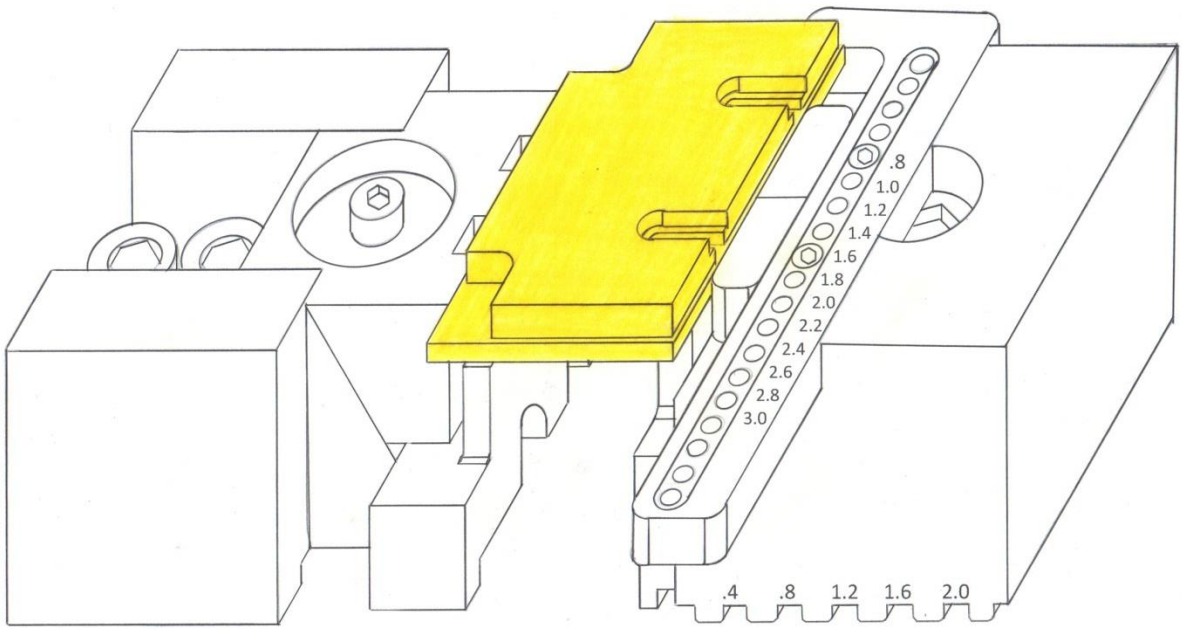

Vertical stations can be mounted to flat pallets and used for locating tall work pieces.

Spacer& Locater

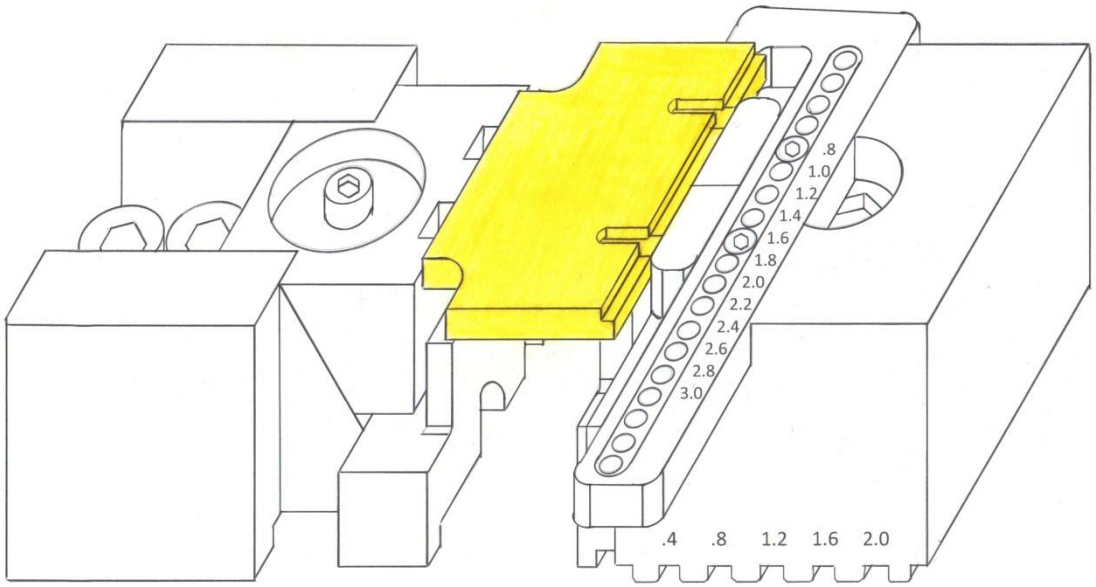
The Spacer& Locater is used to space the work piece above the station and locate the end of the work piece parallel to the Station. The Spacer& Locater may be used with the Vertical Station or the flat pallet or bolt on fixture. Two Spacer& Locaters may be used to locate the end of long work pieces. The Spacer& Locater is provided with threaded holes with pilot diameters located in one inch increments. A threaded shoulder pin is used to provide the work piece stop.

## THE INSTANT SET UP SYSTEM IS IDEAL FOR SACRIFICAL MACHINING.

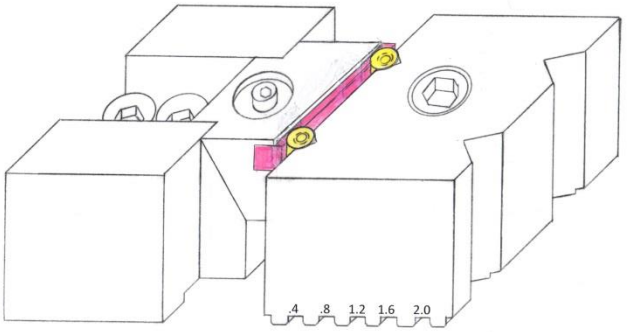
Sacrificial material is often used to hold the work piece while machining five sides.



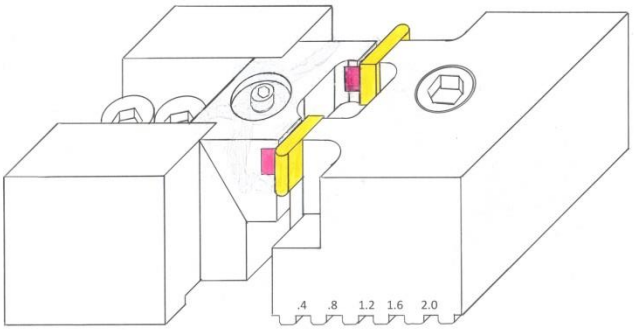

The work piece is then rotated and the sacrifical material is removed and the work piece is completed.

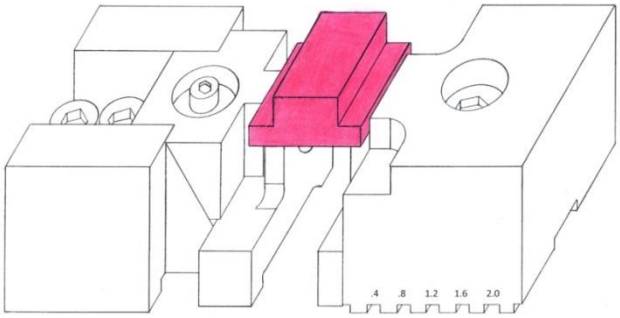


Partially completed wedges and locater bodies can be machined for special clamping requirments.

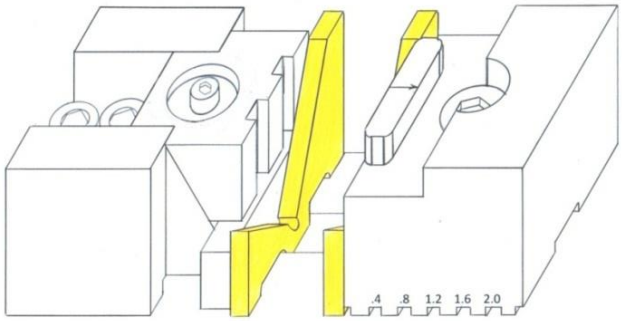



Wedges are available for distributing the clamping force on two or more parts.

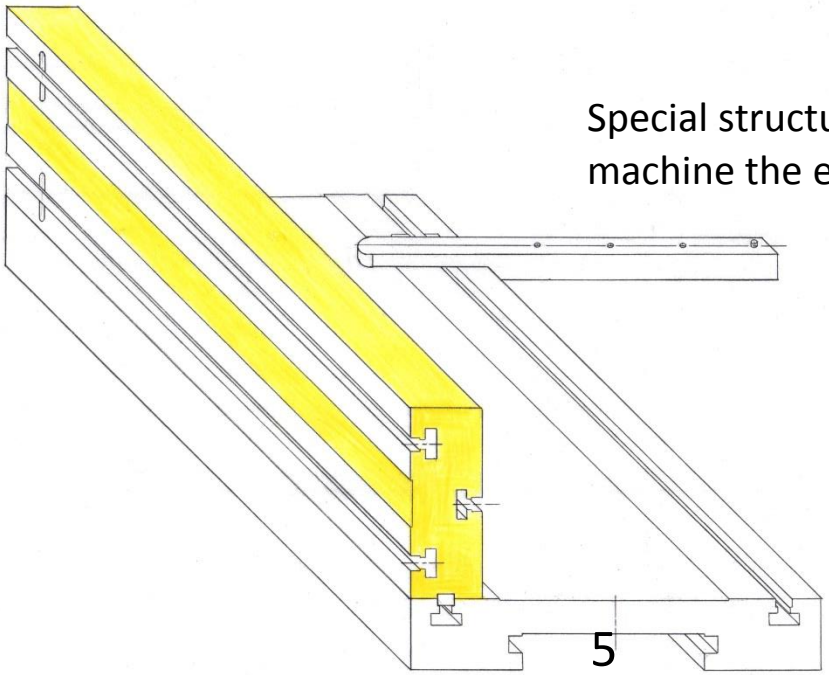



Special spacers can be machined to locate irregularly shaped parts or rotate a part to enable angled machining.

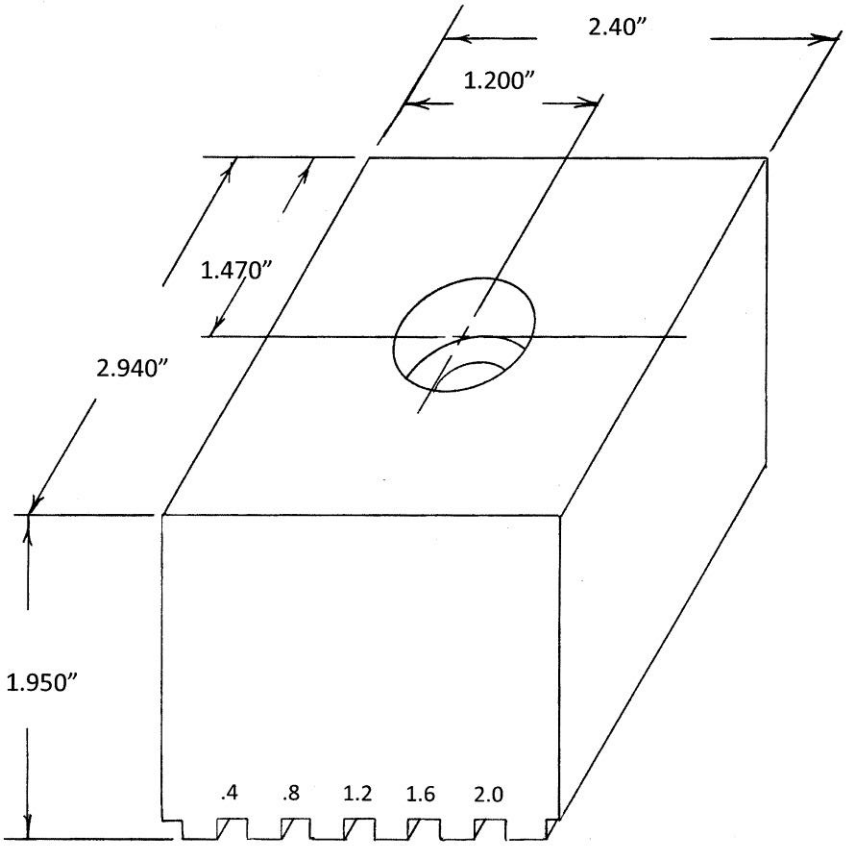



Special structures can be mounted to machine the ends of very tall parts.



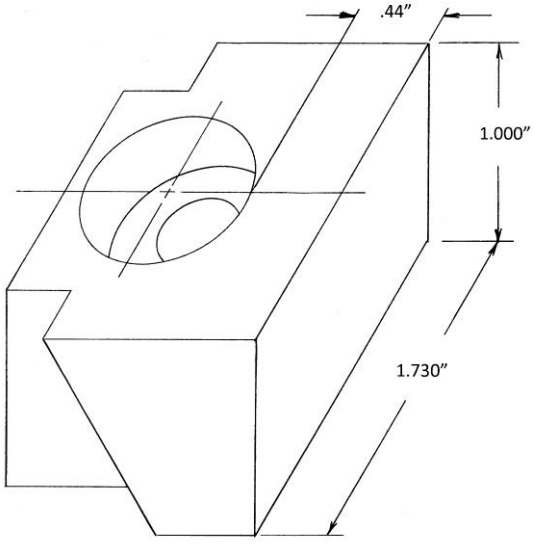
Partly completed clamp bodies and wedges are available for machining special clamping devices.

The locater body is not hard anodized.




LOCATER BODY

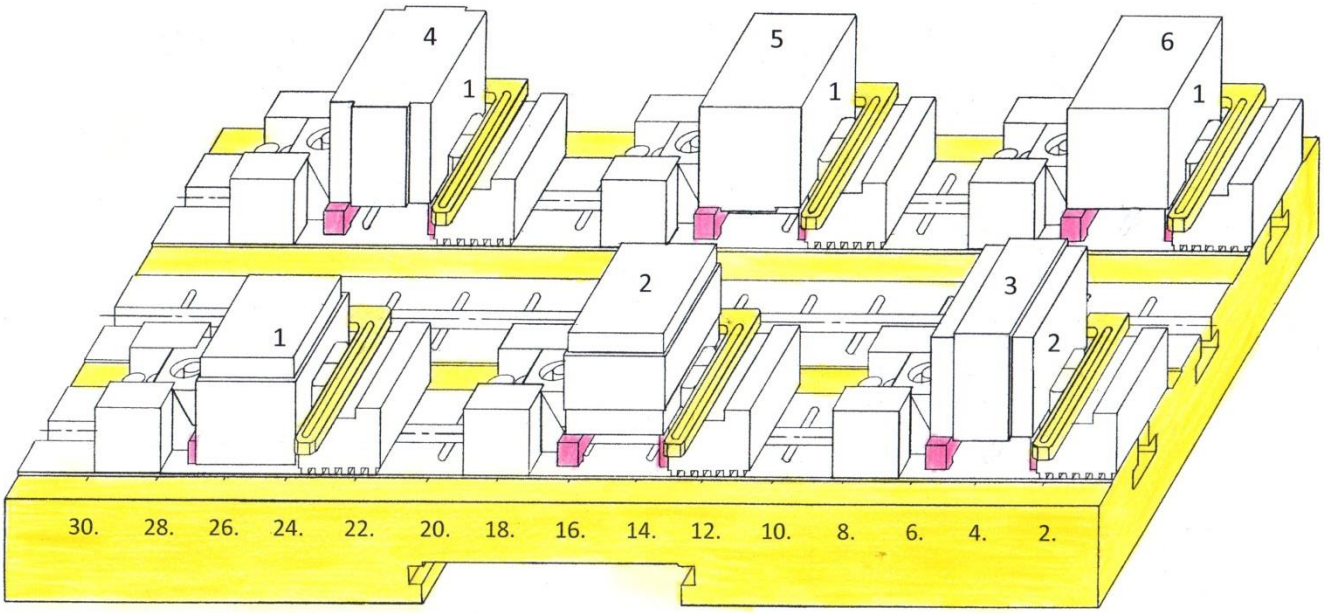
P/N LGS



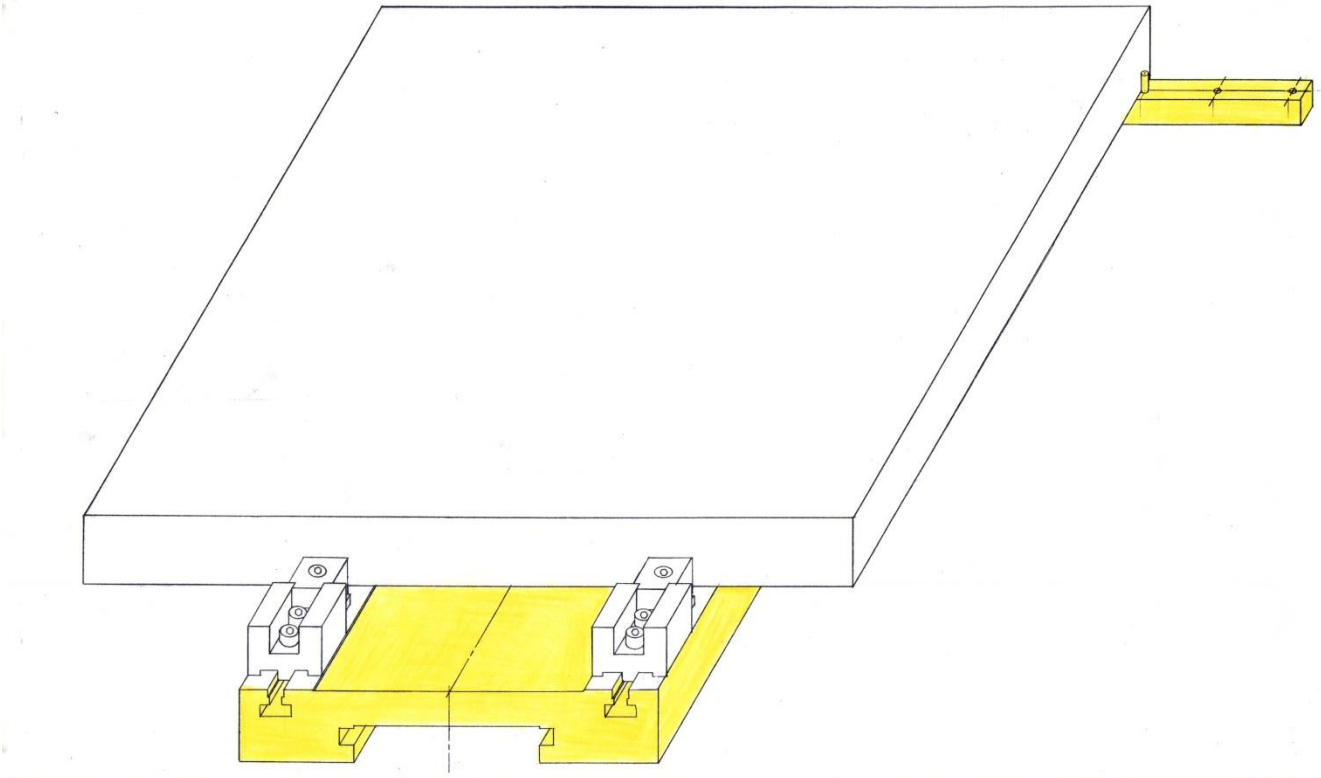

WEDGE BODY

P/N WB

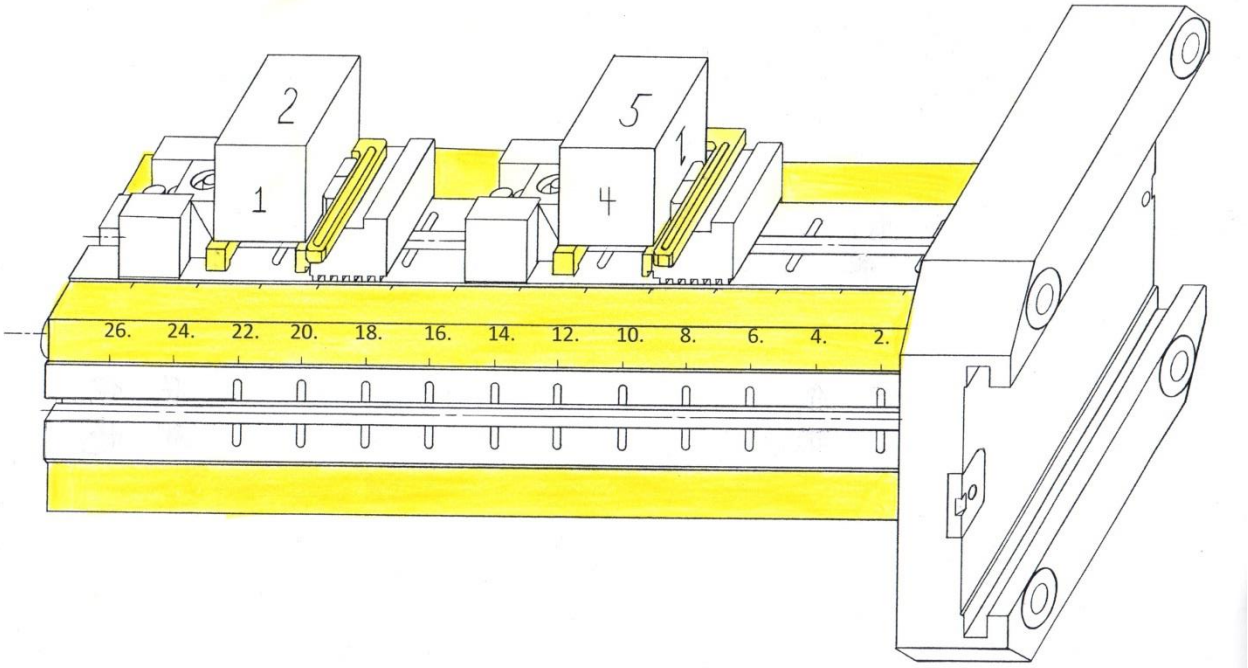
Six sides of a work piece can be machined with surfaces perpendicular and parallel in one set up. This is achieved by machining a face and four adjacent sides to locate from subsequence operations.
Each cycle completes one part..




The Y flat pallet enables long work pieces to be machined.



While a flat pallet may require the work piece to be clamped six times to machine six sides. A log pallet requires the work piece to be clamped two times to machine six sides.




## Advantages of rotary motion for machining more than one side.

1. Three sides can be machined without removing the work piece from the fixture.
   A. This reduces material handling and increases accuracy.
   B. Any angle about the center of rotation can be machined.

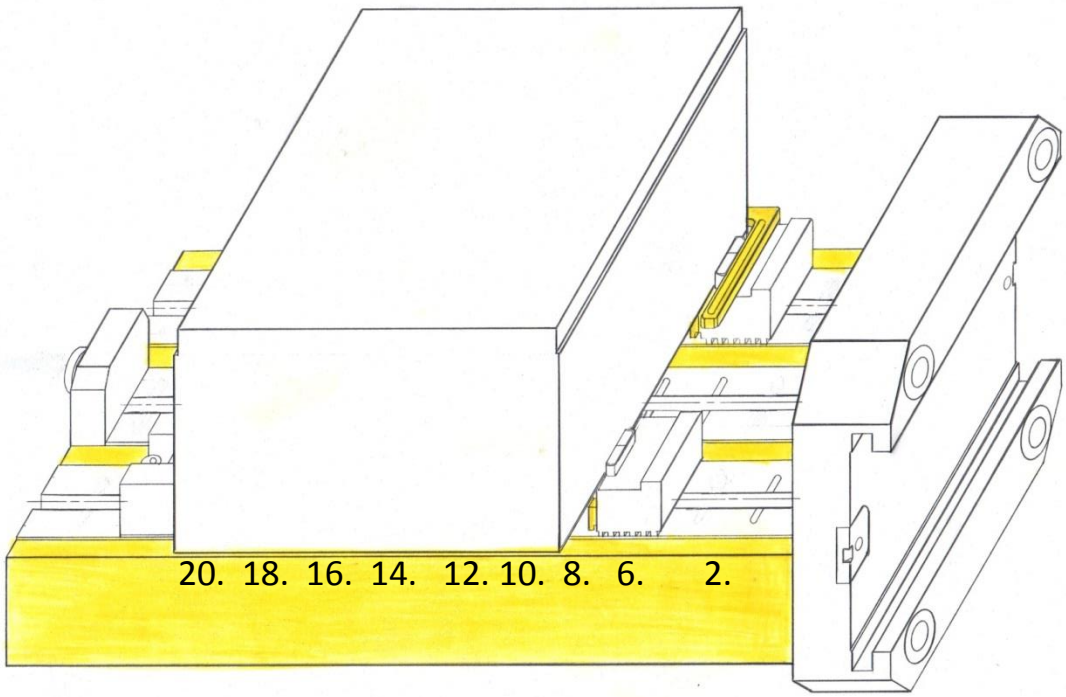
Advantages of a log supported at both ends:

1. The rigidity is 38 times greater than a log supported at one end such as found with horizontal machining centers.
   A. Longer and or thinner logs can be used to permit improved cutter access to the work piece.
   B. More or longer work pieces can be clamped.

Advantages of logs located on vertical machining centers.

A. Logs are horizontal. Their load height is constant.

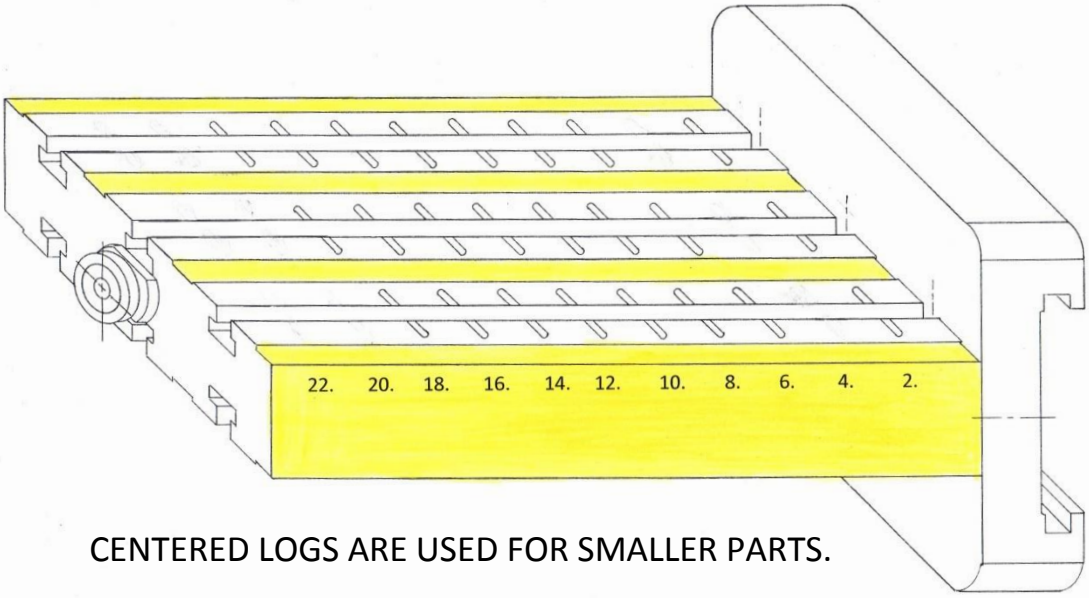
## Off set logs can be used for clamping large parts.




The first operation is located against raw stock.

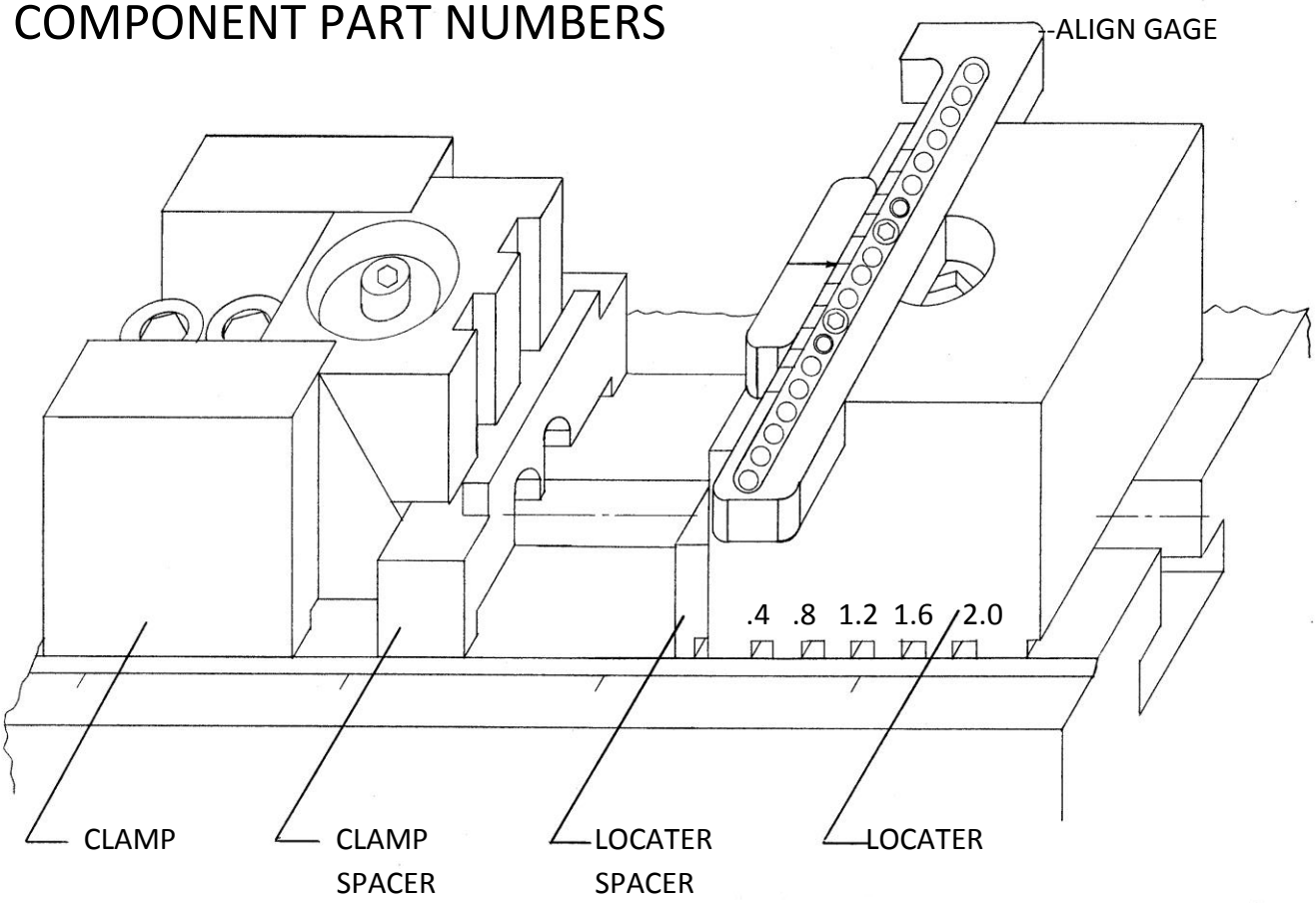
Subsequent operations are located from previously machined surfaces.

This provides accurate location of all features.



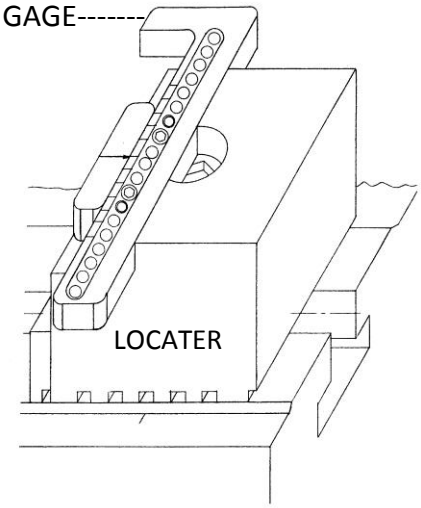

CENTERED LOGS ARE USED FOR SMALLER PARTS.

# COMPONENT PART NUMBERS



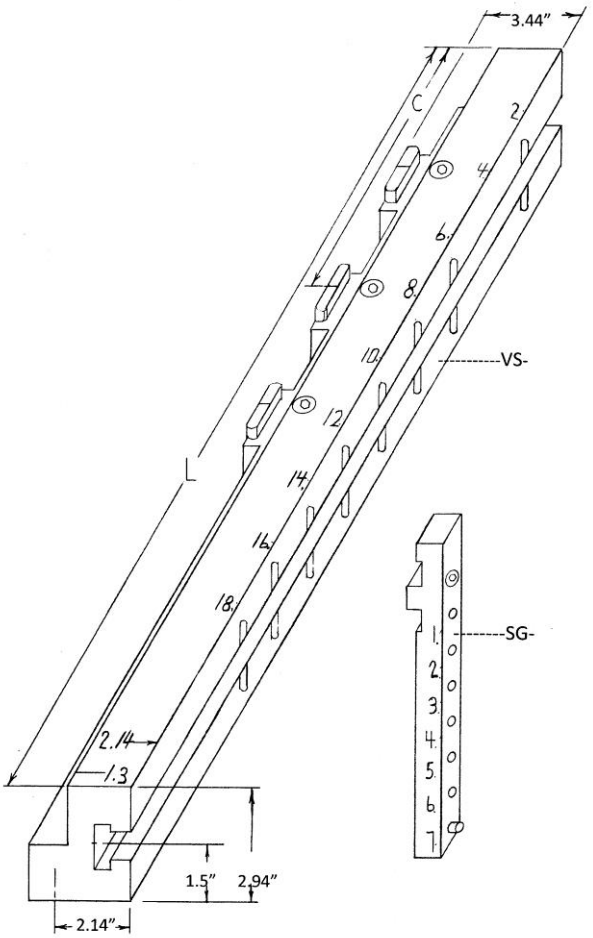

| P/N | NAME |
|---|---|
| ECL | CLAMP |
| LOC | LOCATER |

STOP GAGE-------

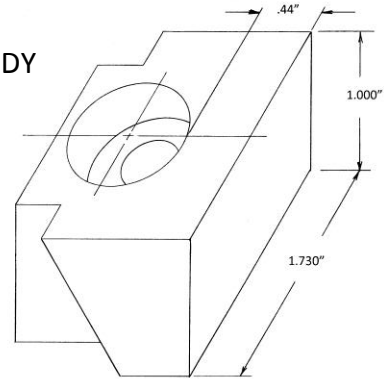



| | |
|---|---|
| GS -1./2.4 | 1.0 TO 2.4" ALIGN GAGE |
| GA -1./3.2 | 1.0 TO 3.2" ALIGN GAGE |
| GS-.2/1.4 | .20 TO 1.4" STOP GAGE |
| GS-.8/3.0 | .80 T0 3.0" STOP GAGE |
| CS-.6 | .60" CLAMP SPACER |
| CS-1.0 | 1.00" CLAMP SPACER |
| CS-1.5 | 1.50" CLAMP SPACER |
| CS-1,7 | 1.70" CLAMP SPACER |
| CS-1.85 | 1.85" CLAMP SPACER |
| LS -.6 | .60" LOCATER SPACER |
| LS -1.0 | 1.00" LOCATER SPACER |
| LS-1.5 | 1.50" LOCATER SPACER |
| LS-1.7 | 1.70" LOCATER SPACER |
| LS-1.85 | 1.85" LOCATER SPA CER |

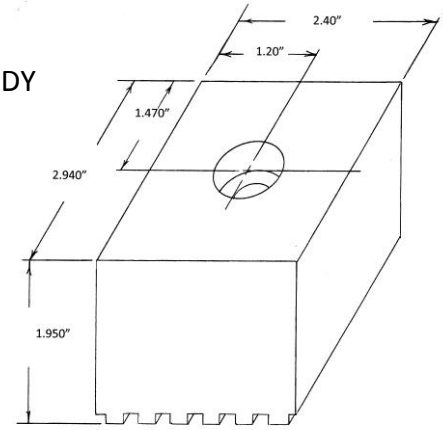
| P/N | NAME |
|---|---|
| SG-4.0 | SPACER & LOCATER, RANGE 1.0 TO 4.0” |
| SG-7.0 | SPACER & LOCATER, RANGE 1.0 TO 7.0” |
| VS-20 | VERTICAL STATION L = 20.0” C = 8.0” |
| VS-24 | VERTICAL STATION L = 24.0” C = 10.0” |
| VS-28 | VERTICAL STATION L = 28.0” C = 12.0” |



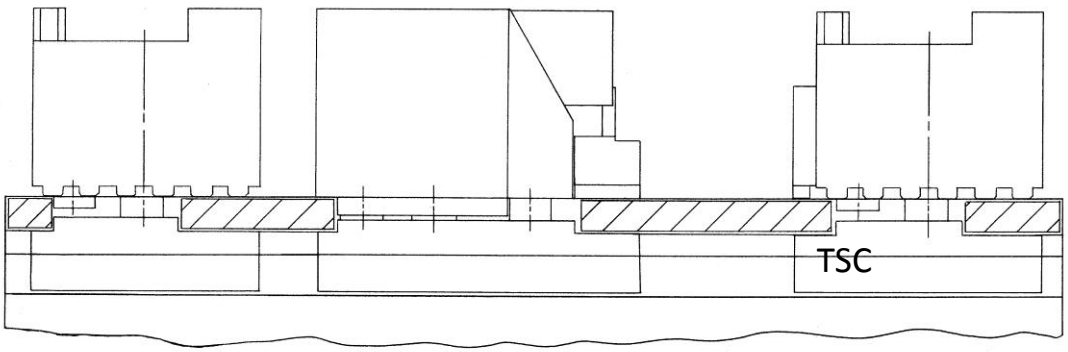

WB WEDGE BODY




LOCS LOCATER BODY




TSC TEE SLOT COVERS



Cutter set up can be reduced by locating pre-set cutters in tool holders that are marked with the cutter diameter, flute length and extended length.

Tool holders can be stored on commercially available carts containing plastic boards with machined holes, marked with the same information as the tool holder.

Cutters that are most frequently used should remain in the machining center, leaving sufficient number of pockets for tools that are infrequently used.

This procedure can greatly reduce cutter set up.

The number of cutters can be reduced by milling counter bores and counter sinks with end mills. Where possible the number of drills and taps can be used by using either fine or coarse pitch threads or metric threads that can serve for either fine or coarse pitch threads.

Example of a tool holder storage cart.