

JOB NAME Parallels

BLUE PRINT NUMBER: 01-A-6

INFORMATION: A parallel is a handy tool which is commonly used to support work held in a milling machine or shaper vise. Both sides are parallel to each other.

PRIMARY SKILL LEARNED: 1. Shaping work held in a vise.
2. Grinding flat and parallel surfaces.

PRECAUTIONS: 1. Make two parallels the same size.
2. Dimensions will be determined by your instructor.
3. Check the length of the stroke of the ram.
4. Check the speed of the ram.

STOCK: Tool Steel.

OPERATIONS: 1. Cut stock to length.
2. Shape one side of stock flat to size required.
3. Put first side against stationary jaw and shape second side to proper dimension.
4. Turn piece over with the second side down and the first side still facing the stationary jaw.
5. Shape third side, check with a square.
6. Shape last side, check with a square.
7. Harden and temper.
8. Grind to size.

ELL WHITNEY REGIONAL VOCATIONAL TECHNICAL SCHOOL

DIMENSIONAL TOLERANCES FRACTIONAL $\pm 1/64$ DECIMAL $\pm .002$
 UNLESS OTHERWISE SPECIFIED: ANGULAR $\pm 1^\circ$ CONCENTRICITY $\pm .001$

MATERIAL
Tool Steel

HEAT TREAT

PART NAME

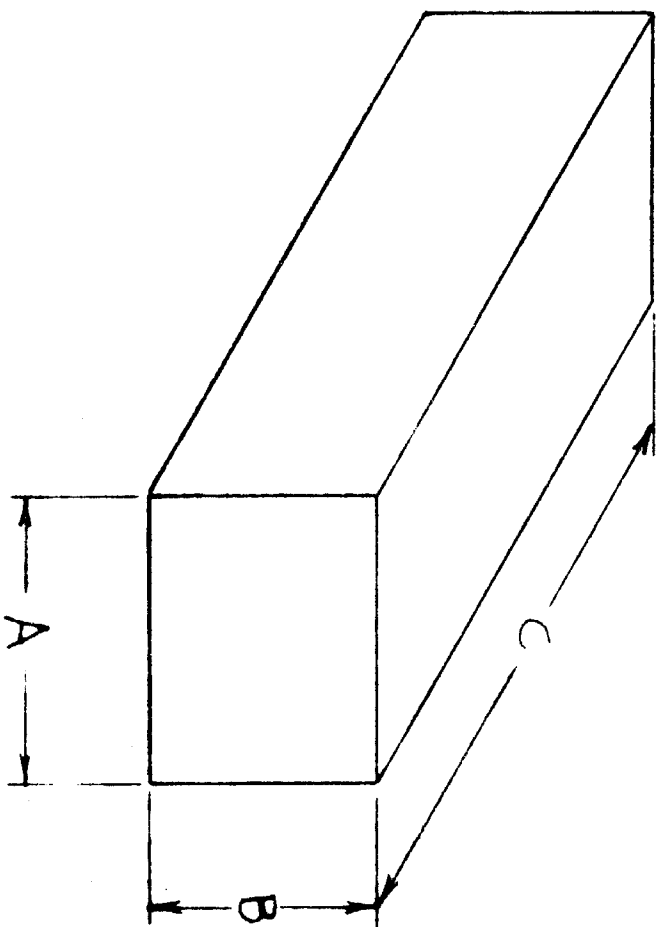
PARALLEL

DATE:

D'W'G N

SCALE:

01-A-6



A $\begin{matrix} +.001 \\ -.000 \end{matrix}$

B $\begin{matrix} +.001 \\ -.000 \end{matrix}$

C $\begin{matrix} +.001 \\ -.000 \end{matrix}$

PARALLELS

Use this procedure when shaping any rectangular block.

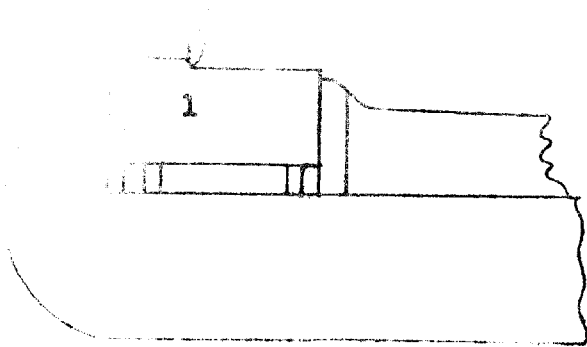


Fig. 1

Place parallels under the work and shape one of the large surfaces first. Set the strokes to cut the length rather than the width. Shape all work toward the stationary jaw. Fig. 1.

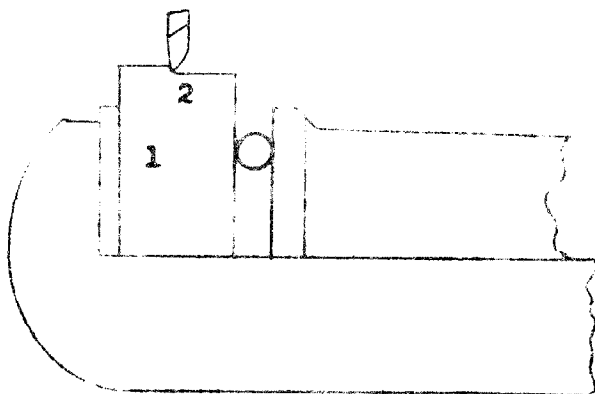


Fig. 2

Place the first shaped surface against the stationary jaw with a soft round rod between the piece and the movable jaw. Shape the second surface. Fig. 2

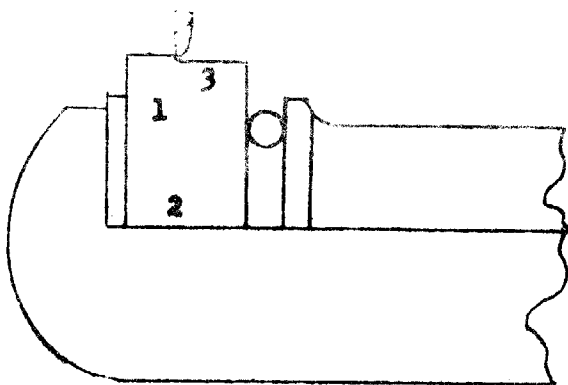


Fig. 3

Shape the third surface using the same set-up as for machining the second surface. Note, the width should now be the correct size. Fig. 3

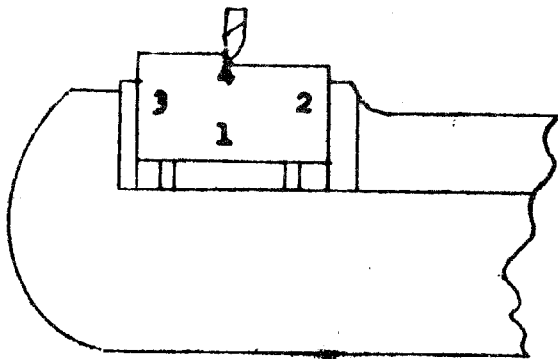


Fig. 4

Place parallel under the work and shape the fourth surface. The thickness should be the correct size. Fig. 4