



ADJUSTABLE PCB VICE

by [ajoyraman](#) on November 15, 2011

Table of Contents

ADJUSTABLE PCB VICE	1
Intro: ADJUSTABLE PCB VICE	2
Step 1: BASIC PARTS	2
Step 2: TOWER BOLT REWORK	3
Step 3: SHEET METAL PARTS	3
Step 4: SCREW NUT AND HOUSING	3
Step 5: BASE PLATE ASSEMBLY	4
Step 6: ASSEMBLY TRIMMING AND TESTING	4
Step 7: READY FOR USE	5
Related Instructables	5



Author: ajoyraman Ajoy Raman

I am a retired Electronic Systems Engineer now pursuing my hobbies full time.

Intro: ADJUSTABLE PCB VICE

This adjustable vice for holding printed circuit boards while soldering is built around a discarded car rear view mirror and other readily available material.



Step 1: BASIC PARTS

A discarded Maruthi Suzuki Van rear view mirror provides a ready made ball and socket joint and an additional semi-circular degree of freedom for the PCB vice. The old mirror is removed by placing the whole assembly in boiling water, the plastic expands and the old mirror comes out smoothly. The flat surface originally seating the mirror forms a perfect base for the PCB vice. An Aluminum tower bolt used for fastening doors forms the second major component.



Step 2: TOWER BOLT REWORK

The tower bolt forms the heart of the adjustable screw moving mechanism. In this step three grooves are cut in a standard 1/2 inch steel nut using a hacksaw. This modified nut is used as a die to form threads on the aluminum rod removed from the tower bolt. A long groove is also cut in the tower bolt housing. The movable jaw of the PCB vice will move within this groove.



Step 3: SHEET METAL PARTS

Sheet metal parts are made using 1/16 inch aluminum sheet. The PCB vice base plate is cut using the mirror which was removed as a template. The fixed and movable jaws of the vice are cut from the sheet using paper templates and bent into suitable shapes.



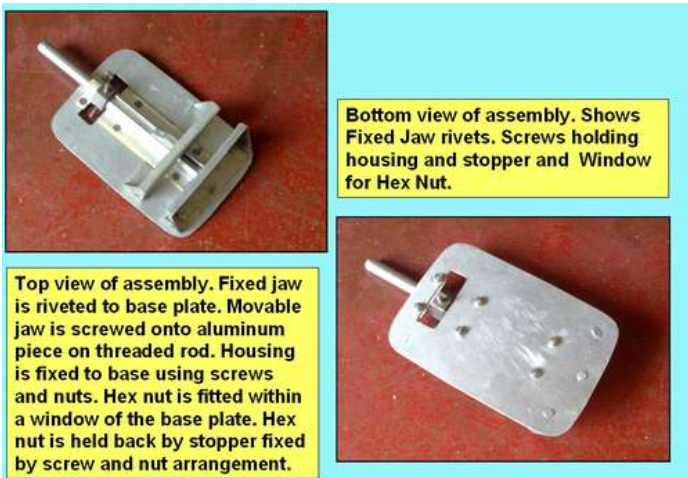
Step 4: SCREW NUT AND HOUSING

The threaded tower bolt rod is fitted with an aluminum gusset of 1/4 in thickness using tapped holes and screws. The movable jaw would be screwed onto the front end of the gusset. The grooved housing is trimmed to size and the end stop made ready. A 1/2 in steel nut modified with three spokes tapped and fitted at 120 deg would be used to provide linear movement to the movable jaw.



Step 5: BASE PLATE ASSEMBLY

A rectangular opening is cut in the base plate to accommodate the revolving nut which will move the screw thread. The fixed jaw is riveted onto one end of the base plate. The screw thread along with the movable jaw screwed onto the aluminum gusset is inserted into the housing. The hex nut is assembled onto the screw and the end stop fitted. The housing and end stop are fitted to the base plate using screws and nuts.



Step 6: ASSEMBLY TRIMMING AND TESTING

The base plate with vice jaws assembled is fitted into the mirror holder and sits exactly within the groove in which the mirror was earlier housed. Before completing the fabrication task the vice is tested by holding a cylindrical object, the vice movable jaw is tightened by rotating the hex nut using the spokes. After this test the movable jaw is placed in the fully closed position and the excess length of threaded rod trimmed.



Step 7: READY FOR USE

The fully assembled PCB vice is fixed to the worktable using a C-clamp. The PCB under test is held within the fixed and movable jaws and soldering is in progress.

Summary: This vice works well, only two small additions were made the first was to add strips of insulation tape onto the two vice jaws, and the second was to mark 'O' for open and 'C' for close near the hex nut on the base plate to indicate opening and closing.



Related Instructables



**PCB business
key fob** by
quicumque



**Recycle old
PCB
components** by
Patented



**How To Charge
Your Ipad,
Camera,
Cellphone Or
Handheld Game
Console On The
Go** by
qazwsx755



**PCB Etching
Machine. Save
money and
time....** by
SAGUTRIC



**Tic-Tac box
computer
mouse** by
Yewfort



**New simple
method for
corrosion PCB**
by kingcm