Head stands for porting (or anything else!): by Chris Neighbors 11JUL02

As a PoMoFo, we don't always have the luxury or funds to spend a great deal of cash to try and go fast. Oftentimes, we do the best we can with what we have, and porting heads produces good results for a bit of effort. Porting itself will be covered (well, maybe explored is a better term…) in another article, but it is often the accessories that make a time consuming job a bit more bearable. The head stands (or universal stands; trust me!) illustrated within are one such tool. *(I suggest making them in pairs…)*

Background:

My first attempt at porting was with a pair of old scrap heads thrown on the workbench. The height was a bit too low, and caused severe back pain in just a few minutes. Porting requires constant repositioning of the head in order to get into and around all the features that require attention. In an attempt to combat both of these issues, I searched through a couple of tool catalogues, and found some nice examples of head stands, but they were all a bit out of my price range (up to $150 for a pair, in some cases…). The solution, being a professional piddler? Build'em!

Construction:

As a piddler, you should have a large stock of structural tubing laying about. I happened to have a stick of 1" x 1-1/2" x .120" wall tubing left over from one project, and some ¾" round bar from another. With these materials in hand, I sat down and doodled in AutoCAD a bit, and came up with this design on the last page.

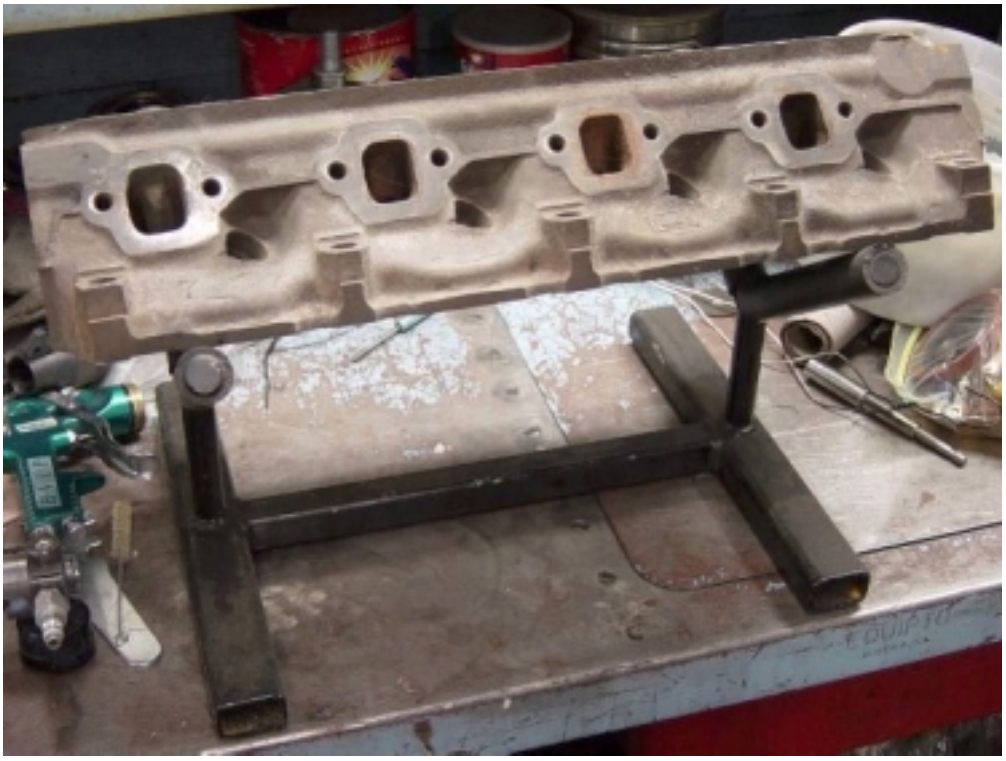
Cut the parts per the print and debur them, then drill the holes (the ½" diameter hole in the bottom of the 1" x 1-1/2" tubes is for plug welding; it is not required, but makes the stand a bit more rigid). Bend the two 13-1/2" long pieces of round bar in the middle until you achieve an approximate 120 degree included angle; the angle is not that critical, as long as both pieces wind up the *same*. Lay the "V" shaped pieces flat on a bench, and weld the short stand-offs to them, trying to ensure they are perpendicular (but again, a matched pair is better than perfection!). Weld the lower "H" portion of the stand together, then press the "Y"'s into the ¾" holes (this may take some effort or slight grinding of the upright). Once in position, flip the stand over,

onto the “Y”’s. Level the “H”, and make sure the “Y”’s are parallel the the sides of the “H” by sighting down them. Once satisfied with the positioning, plug weld the uprights to the base. Flip the base over, and weld around the uprights to the base (lots of weld = good!).

Grind the welds (if you’re like me; an anal but poor welder), paint the stand several coats of your favorite hue and brand of band (and let dry!), apply some self-adhesive rubber feet (Wal-Mart has some decent ones), then slip the lengths of heater hose over the “V”’s (use a little bit of (liquid!) dishwashing detergent to make them slide right on with a little effort).

Use:

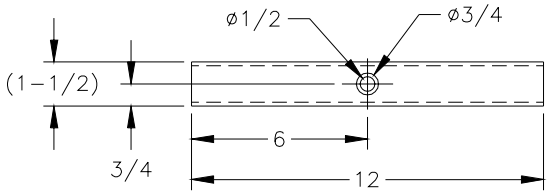
Well, the use and uses so far are endless. Place the stand on the bench, and position your head(s) accordingly. The rubber hose keeps the head in nearly any position you put them in, allowing unhindered access to the nether regions of your favorite castings.



These stands also have been known to hold camshafts, cranks, mainshafts, and complete transmissions when pressed into service. If you find yourself a few inches short of reaching the goodies on the top shelf of your garage (I have that problem often!), then flip the stand over onto the “Y”’s, and stand on the base, carefully…

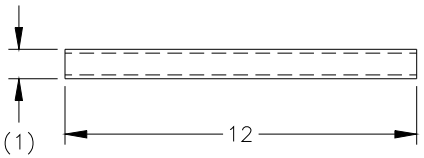
Notes:

1. All dimensions in ( ) are reference.
2. Hose not shown for clarity.



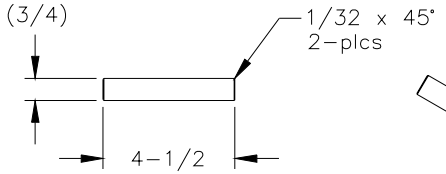
Detail: Item number 1

2-req'd



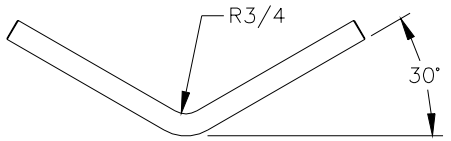
Detail: Item number 2

1-req'd

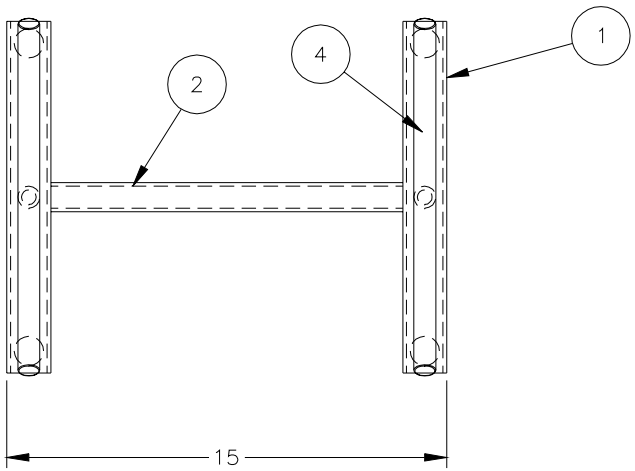


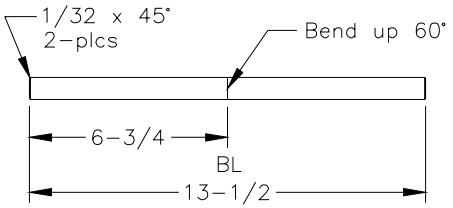
Detail: Item number 3

2-req'd



Formed view

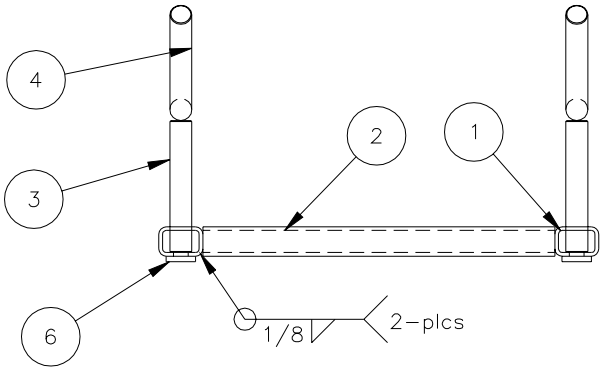


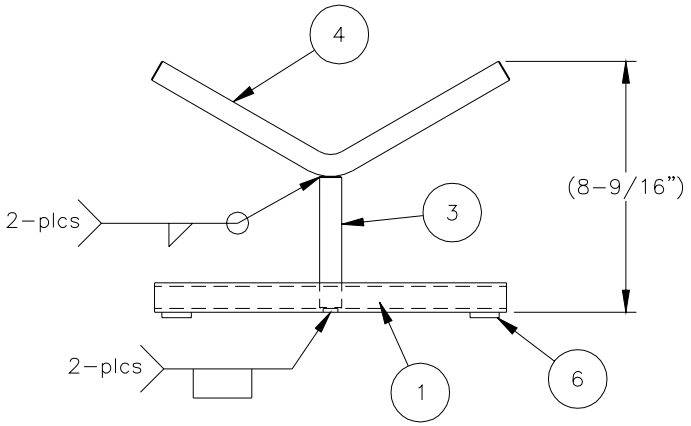


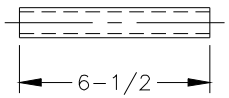
Flat pattern

Detail: Item number 4

2-req'd







Detail: Item number 5

4-req'd

NO	QTY	UOM	DESCRIPTION	STOCK NO.
6	4	ea	Foot, 1" diameter self-adhesive	
5	4	ea	Hose, 3/4" heater x 6-1/" long	
4	2	ea	Round bar, 3/4" hot rolled x 13-1/2" long	
3	2	ea	Round bar, 3/4" hot rolled x 4-1/2" long	
2	1	ea	Tube, sq. 1" x .120" wall x 12" long	
1	2	ea	Tube, rect. 1" x 1-1/2" x .120" wall x 12" long	

MATERIAL LIST

CAD DRAWING

DRAWN C. NEIGHBORS 8-11-99
CHECKER
DESIGNER C. NEIGHBORS 1-99
ENGINEER
MFG. ENGINEER
MAT'L APPROVAL

NEXT ASSEMBLY

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
DIMENSIONAL LIMITS AND SURFACE ROUGHNESS APPLY BEFORE FINISHING PROCESS
TOLERANCES
DECIMAL: .X ±.030, .XX ±.015, .XXX ±.005
FRACTIONAL ±1/32
ANGLES ±1/2°
CONCENTRICITY MACHINED DIAMETERS .005 T.I.R.
MACHINED SURFACE ROUGHNESS 125/
FILLET RADII 1/32
REMOVE ALL BURRS AND SHARP EDGES
DO NOT SCALE DRAWING
DRILL HOLE TOLERANCES
.0135 THRU .125 +.004-.001 .126 THRU .250 +.005-.001
.251 THRU .500 +.006-.001 .501 THRU .750 +.006-.001
.751 THRU 1.000 +.010-.001 1.001 THRU 2.000 +.012-.001

NEIGHBORS INDUSTRIES

TITLE: STAND, HEAD

THIS DRAWING CONTAINS INFORMATION PROPRIETARY TO NEIGHBORS INDUSTRIES. ANY REPRODUCTION, DISCLOSURE OR USE OF THIS DRAWING IS EXPRESSLY PROHIBITED, EXCEPT AS NEIGHBORS INDUSTRIES MAY OTHERWISE AGREE IN WRITING.

SCALE: 1 : 2 | SHT 1 of 1 | QTY

SIZE D | 550-9100 | REV A