

Sometimes “things” just do not go as expected. To give you one more example, last week started just about like every other week – but soon went from good, to not so good, then from bad to ridiculous. Everything I tried seemed to end in disappointment. When I examined the intake manifold jigs it became evident there needed to be some serious changes made. Remember, a jig or fixture can be made rather simple when you are only making one part, but now I need to be able to make hundreds of parts, all of which must be exactly the same. After designing and making the new jig, which only took about one day, I thought to myself, this was not going to be too difficult. Remember the old saying “Never ASSUME anything”. Pictures #1 & #2 show how I am using the 4<sup>th</sup> axes and able to rotate the piece. If you remember, this same process was used for machining the heads. Keep in mind, the intake manifold must be machined precise, with no margin for error. Trying to take everything into consideration and the fact the engine is a “V” shape, the alignment and fit of the intake manifold to the heads, must be perfect. This means all holes, angles, height, width, and length, must be flawless! Since each side of the intake manifold should be symmetrical, the jig was made with “stops” which make sure each casting is in the exact position every time. Little did I realize the castings were off by about .025 from side to side. This may not sound like a lot, but in actuality, this is enormous with a combined total of at least .050, when the piece is rotated. If that were not bad enough, add to the equation, the part is being indexed (rotated) to the next position. Now, the center distance of each bank of legs, must be recalculated. After some critical programming and making sure everything was centered I machined the first piece and accepted the fact that there were going to be some changes needed. What I did not realize is that the jig had rotated a small amount in the collet fixture and the program had been written and all the tool offsets had been set, for this unknown problem. When I finally discovered what had happened it was evident that a lot of changes needed to be made to the program. Finally, I was ready to make new parts but had not realized the parts must be put in the jig with the same side to the right, each time. If not then the .025 tolerance which I spoke about earlier would end up with more rejected parts. This was very difficult, because the castings look identical from side to side. Is everyone still with me? I could go into more detail but I think you get the jest of my dilemma.

The bottom line is that 7 days later and lots of rejected and scrap pieces the program is finally running and reliable. Not only did I loose expensive castings, but now, new waxes must be made and new castings produced. All of these parts should have been finished the end of last week; unfortunately, they will not be finished until Saturday. Another week+, lost! It isn't that I do not want to learn, it is just that it would be nice if it were a little easier sometimes. Understand, I am not complaining, but rather trying to explain some of the reasons that I have a lot of sleepless nights.

Picture # 6 shows what happens when the brain is not running a full capacity or what I call "another Conley screw-up". This happened after a complete week of tribulations and was the result of not processing the next move of the machining center. Unless I was able to get a new cutter immediately then another two days would be lost. I thought all was well when I placed an order for pick-up and was told that they closed at 2:00 pm on Saturday. Plenty of time, right - how as I to know of construction traffic? Anyway when I finally arrived, which was only two minutes late, they were closed. By this time I was seriously thinking of my sanity. Ha. Ha.

Also, during this week it became evident that new waxes needed to be made, but when I checked out the inventory I discovered my raw wax supply was very low. After placing the order, three days later the UPS man came to the door with not so good news - of the three, 50 pound bags, of wax granules, only one was basically intact and it had actually been tapped close. The other bag had been torn open and lucky someone had placed the remaining wax in a box. The third bag had broken open and 50 pounds of tiny wax pieces were all over the entire back of the truck. What a mess. I got out the shop-vac and proceeded to try and salvage what I could. Not only did I pick up all the wax but also every other piece of liter. We were able to clean the wax, but who knows how much was lost. Keep in mind wax is about \$4.00 a pound. So much for my week of "hell"! Although the milling machine gave me some significant challenges, I was much more successful with the lathe as can be seen in pictures #7 -#10

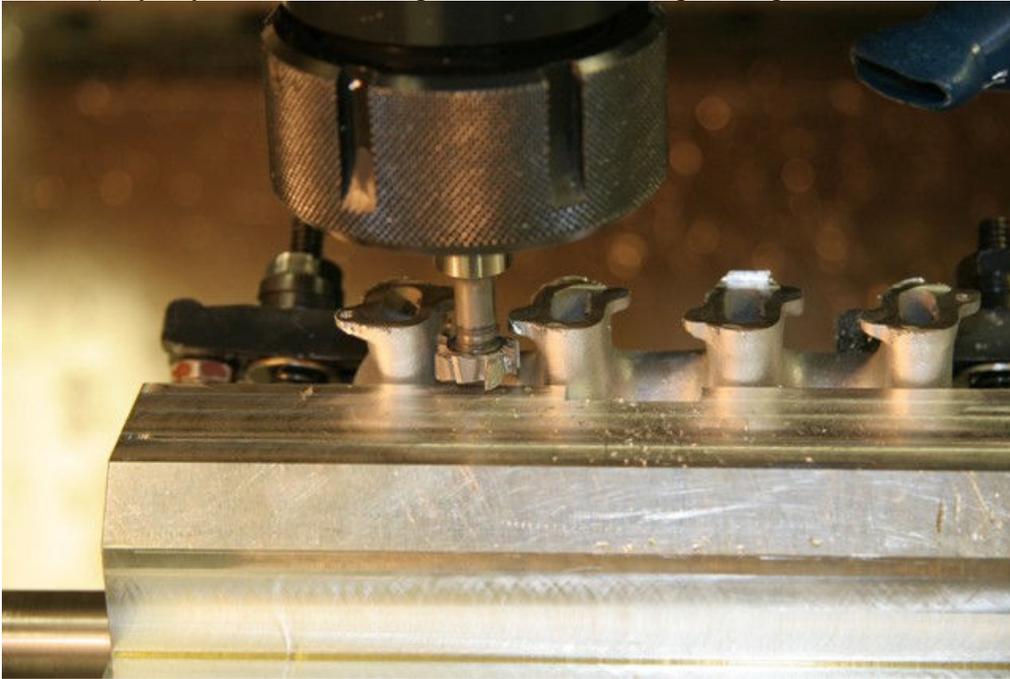
Pic #1 &2 (New jig set-up for machining intake manifold)



Pic #2



Pic #3 (Keyway cutter machining bottom – inside edge of leg on intake manifold)



Pic # 4 (Finished intake manifold)



Pic # 5 (Finished intake manifold)



Pic #6 (Conley screw-up)



Pic # 7 (Clutch drive adaptor)



Pic #8 (Supercharger impeller alignment tubes)



Pic #9 (Supercharger gear spacers)



Pic #10 (Supercharger gear spacers)

