数控等离子切割机改光纤激光切割机可行吗？ 可以-可以

产品名称	数控等离子切割机改光纤激光切割机可行吗？ 可以-可以
公司名称	武汉华宇诚数控科技有限公司
价格	.00/件
规格参数	
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产品详情

数控等离子切割机以切割速度快效率高等特点被广大的客户所接受和使用，但随着激光切割机产业的快速发展，尤其是在国产高质量光纤激光器如武汉锐科的拉动下，价格日趋接近到大部分用户可以接受，很多购买使用等离子切割机的客户都想节省成本改装高精度的激光切割机。那么把数控等离子切割机改成光纤激光切割机可行吗？

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首先，我们要弄清楚数控等离子切割机和光纤激光切割机这两种切割机的切割原理

激光切割机原理：通过激光束照射到工件表面时释放的能量使工件融化蒸发，从而达到切割的目的。激光具有无发散的方向性，具有极高的发光强度、高相干性、高强度性与高方向性，从而使切割速度快、精度高、切割质量好、切割缝隙窄；激光切割热影响区小，变形也就极小，切割时安全、清洁、无污染，大大改善了操作人员的工作环境。

等离子切割原理：利用高温等离子电弧的热量使工件切口处的金属局部熔化与蒸发，再借高速等离子的动量排除熔融金属，从而形成切口的加工方法。

其次，数控等离子切割机和光纤激光切割机的性能对比。

从切割效果上说，当然是光纤激光切割机的比较好，金属激光切割机加工出来的成品几乎是光滑的，而等离子切割机加工出来的成品底部有很明显的刮渣；

从切割精度上说，激光切割定位精度0.05mm,重复定位精度0.02mm,而等离子切割要比激光切割机切割精度较低。并且激光切割机速度要比等离子切割机的速度快很多；

从切割成本上说，同样用空气来切割，加工成本相差不大；

从切割环境来说，等离子切割机在切割的过程中有产生大量的有毒烟尘；金属激光切割机基本或几乎没有。

通过以上对比，很明显在加工效果、加工精度、工作环境等光纤激光切割机都要高于等离子切割机。于是很多用户就想把激光切割机的光纤激光器也就是激光头装到数控等离子切割机上面，把数控等离子切割机改成光纤激光切割机。那么。这样改装的数控等离子激光切割机可不可行呢？

如果只是简单地从表象上看，答案是可行的，就像是给汽车换了一个gaoji的发动机而已，对于专业技术人员来说这样的改动，似乎没什么问题。

CNC plasma cutting machine for cutting speed efficiency higher characteristic by the masses of customers to accept and use, but with the rapid development of laser cutting machine industry, especially in the domestic high quality fiber laser such as Wu Hanrui division, under the drive of increasingly close to most users can accept the price, many customers buy used plasma cutting machine to save costs modified high precision laser cutting machine. Is it feasible to change the CNC plasma cutting machine to fiber laser cutting machine? First of all, we want to understand the cutting principle of CNC plasma cutting machine and optical fiber laser cutting machine. The principle of laser cutting machine is that the energy released when the laser beam is irradiated to the surface of the workpiece makes the workpiece melt and evaporate, so as to achieve the purpose of cutting. Laser has no diverging directionality, with high luminous intensity, high coherence, high intensity and high directionality, so that the cutting speed is fast, high precision, good cutting quality, narrow cutting gap; Laser cutting thermal impact area is small, the deformation is very small, cutting safety, clean, pollution-free, greatly improve the operator's working environment. Plasma cutting principle: make use of the heat of high temperature plasma arc to melt and evaporate the metal at the cutting point, and then use the momentum of high speed plasma to eliminate the molten metal, so as to form the cutting machining method. Secondly, numerical control plasma cutting machine and fiber laser cutting machine performance comparison. From the cutting effect, of course, is the fiber laser cutting machine is better, the metal laser cutting machine processing out of the finished product is almost smooth, and the plasma cutting machine processing out of the finished product bottom has a very obvious scraping slag; In terms of cutting accuracy, laser cutting positioning

accuracy is 0.05mm and repeated positioning accuracy is 0.02mm, while plasma cutting is less accurate than laser cutting machine. And the speed of laser cutting machine is much faster than that of plasma cutting machine. From the cutting cost, the same air to cut, the difference in processing costs; From the cutting environment, the plasma cutting machine produces a lot of toxic smoke during the cutting process. Metal laser cutting machines are little or no. Through the above comparison, it is obvious that the optical fiber laser cutting machine is higher than the plasma cutting machine in the processing effect, processing accuracy and working environment. So a lot of users want to laser cutting machine fiber laser is laser head installed on the CNC plasma cutting machine, CNC plasma cutting machine into fiber laser cutting machine. Then. Is this modification of the CNC plasma laser cutting machine feasible? On the surface, the answer is doable. It's like changing a car to a more advanced engine.

但是从真正的使用角度分析，数控等离子切割机的机械传动和机械控制的部件相对于光纤激光切割机而言要粗糙很多，比如数控等离子切割机传动一般都是采用直齿齿条传动，而激光切割机为了满足高速和高精度的切割，基本上都是采用斜齿齿条传动，仔细算算，驱动部分可能要换、系统可能要换、甚至机床床身要做大幅改动等等。这样改造下来，首先、改成成本大；其次改装后能否达到激光切割机的效果与精度；第三、改造后的整机稳定性未知。就像是一辆价格便宜的国产小汽车，不是换上了宝马的发动机就可以跟宝马汽车一样了。这样改造下来，成本不一定比买一台成品光纤激光切割机便宜，但是可以肯定的是，使用的稳定行、切割效果肯定比成品的光纤激光切割机差很多。 But from the perspective of the real use of CNC plasma cutting machine mechanical transmission parts and mechanical control to much rough relative to the optical fiber laser cutting machine, such as CNC plasma cutting machine transmission are generally adopts spur gear rack transmission, and to meet the high speed and high precision cutting, laser cutting machine are basically adopt bevel gear and rack driving, careful calculation, driving part is likely to change, the system may have to change, even machine tool lathe bed to do significant changes, and so on. So down, first, into a large cost; Secondly, whether the modified laser cutting machine can achieve the effect and accuracy; Third, the stability of the modified machine is unknown. Just like a cheap domestic car, it can be the same as a BMW without the BMW engine. In this way, the cost is not necessarily cheaper than buying a finished fiber laser cutting machine, but it is certain that the use of the stable line, cutting effect is certainly much worse than the finished fiber laser cutting machine.

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