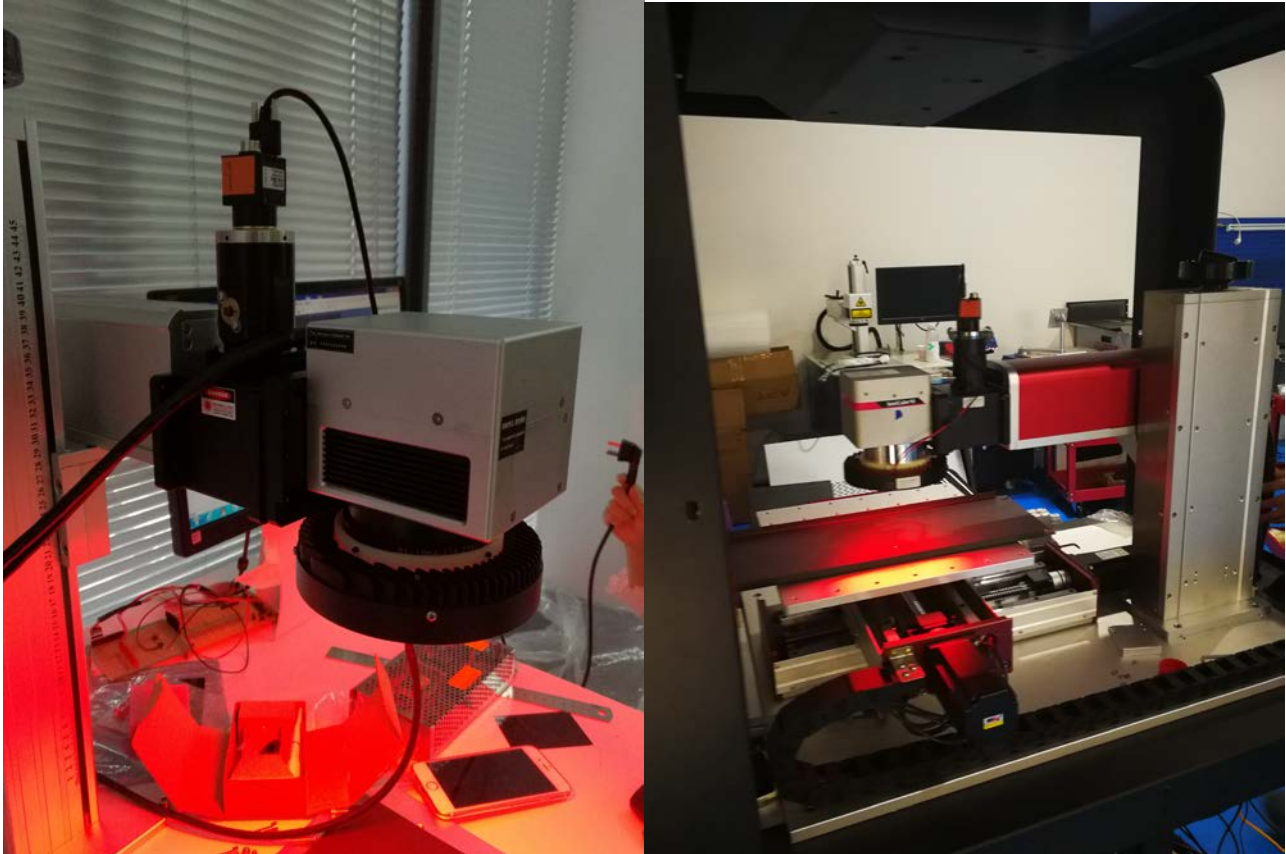




## 一体化振镜视觉加工系统简介

# Brief introduction of integrated scan head visual processing system



## 消色差扫描聚焦镜 COLOR CORRECTED F-THETA LENSRS

### 产品简介 Product introduction

本镜头采用消色差设计, 完全满足同轴视频定位加工要求, 同时也能在全扫描范围内取的均匀一致的光斑聚焦特性。

The lens is achromatic, meets the requirements of coaxial video positioning processing, and also can achieve uniform spot focusing characteristics in full scanning range.

### 产品特点 Product features

- 1、完全消除 1064nm 红光的色差。It completely eliminates color aberration of 1064 nm red light.
- 2、全扫描范围内激光聚焦性能保持一致。Laser focusing performance is consistent in the whole scanning range.
- 3、每支镜头均经过专用仪器设备的调试, 保证优良品质。Each lens has been debugged by special instruments and equipment to ensure good quality.

## 同轴摄像系统 CCD Adapter of Galvo Scanning System



## 产品简介 Product introduction

同轴摄像系统专为满足有高精度定位要求的振镜扫描加工而设计，CCD 观测的图像与激光光束焦点完全同轴，于 F-theta 镜头及照明光源配套可实现“所见即所得”的激光加工。校正后的激光加工绝对位置精度可达到 0.02mm 以上。与软件配合使用可以几乎完全克服振镜温漂带来的加工位置误差。

Coaxial camera system is specially designed to meet the requirements of high precision positioning of scan head. The image observed by CCD is completely coaxial with the focus of laser beam. The laser processing of “what you see is what you get” can be realized by matching F $\theta$  lens with illumination source. The absolute position precision of laser processing after correction can reach more than 0.02mm. The position error caused by the temperature drift of the scan head can be almost completely overcome by software.

## 产品特点 Product features

1、可与常用的各种品牌扫描振镜直接配套。

It can be directly matched with all kinds of common brand scan head.

2、单色光照明设计提高 CCD 观测清晰度。Monochromatic illumination design improve CCD observation clarity.

3、简单更换少量光学镜片即可满足不同波长激光系统的需求。Simply replacing a few optical lenses can meet the needs of different wavelength laser system.

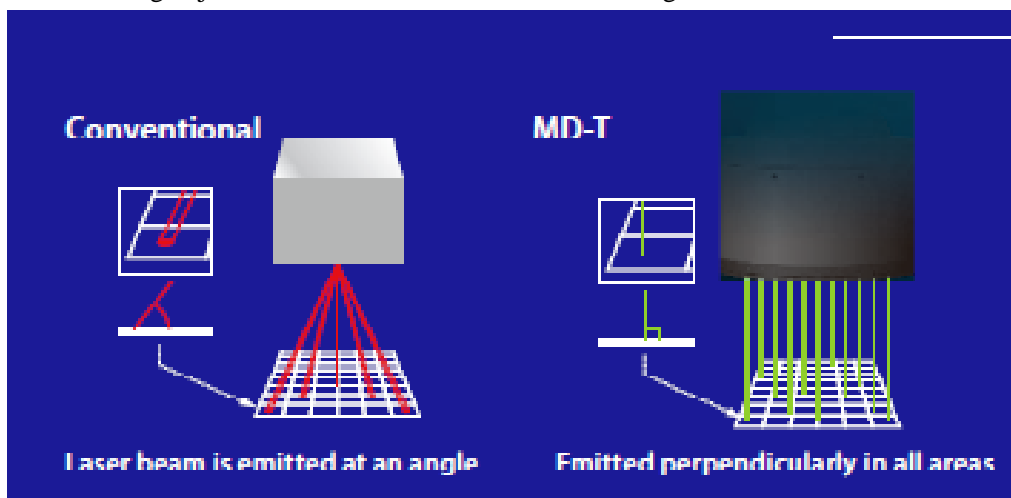
4、与金橙子同轴打标软件系统配套，可无缝衔接地使用。With the golden orange coaxial standard software system, it can be used seamlessly.

## 同轴监视振镜打标焊接系统特点介绍

### Feature introduction of coaxial monitoring scan head marking welding system

#### 特点: Features

- 一，扫描物镜采用远心设计，消除了一般扫描物镜所带来的居多问题，使标刻范围内均匀统一  
The telecentric design of the scanning objective lens eliminates the majority of problems caused by the general scanning objective lens and makes the calibration range uniform.

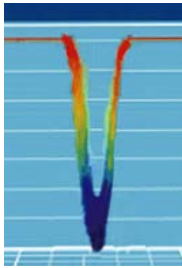


- 二，对于划线来说，采用远心扫描物镜也使得划痕中心对称

For scratches, the use of telecentric scanning objective lenses also makes scratches centrally symmetrical



采用远心镜  
Using telecentric lens



采用普通平场镜  
using fθ lens



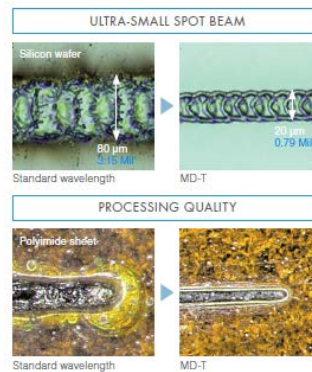
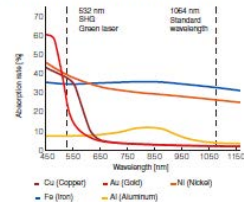
三, 系统模块化设计, 且都为 Pre-aligned 模块, 即插即用, 无需额外的调整; 系统兼容波长从 355~1080 范围内的所有激光波长, 无论是直接半导体, DPSSLs, LPSSLs, 光纤传输的 LPSSLs, 还是直接光纤激光器, 都可以很方便的集成到系统中。

System module design, all Pre-aligned modules, plug and use, no need additional adjustment. The system is compatible with all laser wavelength ranging from 355 to 1080 nm. No matter it is direct semiconductor, DPSSLs, LPSSLs, optical fiber transmission LPSSLs, or direct fiber laser, it can be easily integrated into the system.

ø20 μm ø0.79 Mil SHG laser

The MD-T1000 is equipped with a SHG (wavelength: 532 nm) laser. Compared to the standard wavelength, SHG has a high absorption rate for a variety of materials, making it possible to limit heat stress. By combining this with a 20 μm 0.79 Mil beam spot, it is possible to create characters without causing unwanted damage to the surface of the target and limiting the amount of heat transfer.

[Laser absorption rate for metal]

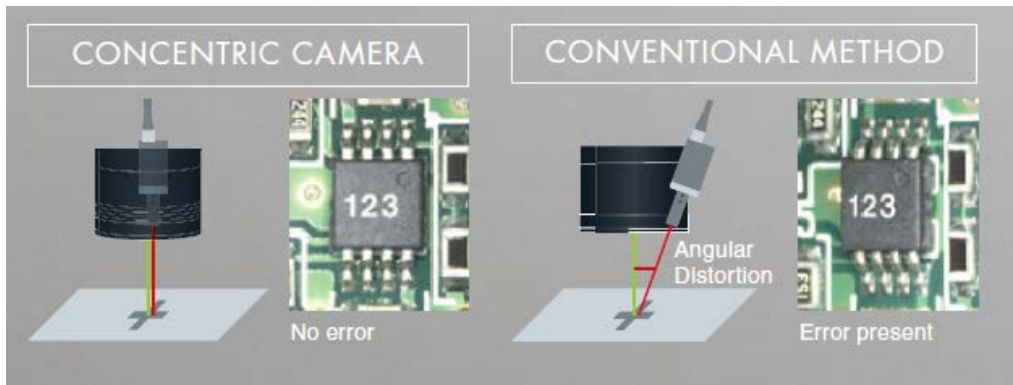


四, 一体化设计使得系统稳定可靠, 包含振镜, CCD 成像系统, 激光传输系统以及扫描物镜系列等。

The integrated design makes the system stable and reliable, including scan head, CCD imaging system, laser transmission system and scanning objective lens series, etc.

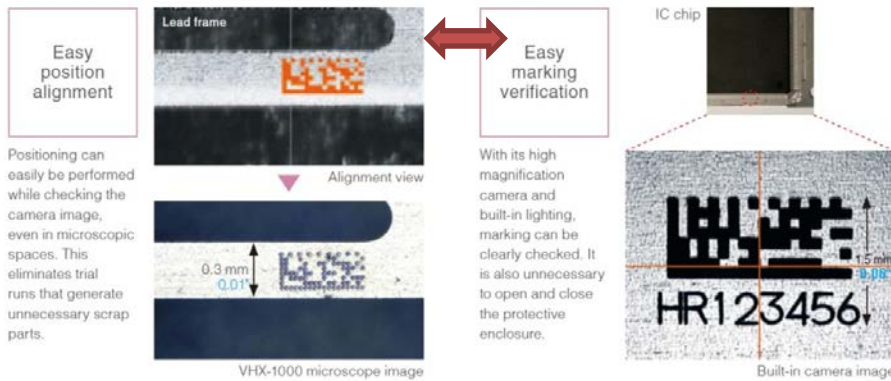
五, 采用同轴的 CCD 光学系统, 使得成像质量更好, 软件更容易识别

The coaxial CCD optical system makes the imaging quality better and the software easier to identify.

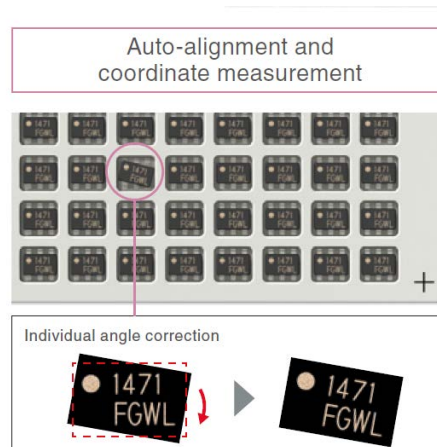


六, CCD 成像方式: 大视场和小视场分开同时运作。大视场用于标记定位, 小视场用于精密定位观察。

CCD imaging method: large view field and small view field operate separately at the same time. Large view field is used for marking positioning and small view field precise positioning observation.



七, 通过 CCD 同轴机器视觉, 软件能进行自动校正所打标的内容的方位和大小  
By CCD coaxial machine vision, the software can automatically correct the orientation and size of the marked content.



八, 应用领域广泛: 精密标记, 切割, 焊接, 打孔等  
Wide range of application: precision marking, cutting, welding, punching, etc.





下面为一套完整的振镜扫描同轴视觉加工系统的配置表

**A complete set of configuration table of scan head coaxial visual processing system is as follows**

序号 Number	系统构成 System structure	单位 Unit	配置内容 Configuration content	数量 quantity	备注 Remarks
1	激光器类型 Laser type		DPSSLs LPSSLs 光纤传输的 LPSSLs optical fiber transmission LPSSLs 直接光纤激光器 direct optical fiber laser 光纤传输半导体激光器 Optical fiber transmission semiconductor laser	1	
2	消色差远心扫描物镜 Achromatic telecentric scanning objective lens	个	焦距: 50mm~250mm, Focus length: 50mm~250mm 激光波长: 355nm~1080nm Laser wavelength: 355nm~1080nm 普通消色差或远心消色差可选 Ordinary achromatism or telecentric achromatism (optional)	1	
3	光纤传输系统 Optical fiber transmission system	个	激光波长: 355nm~1080nm Laser wavelength: 355nm~1080nm 最大功率: ≤1000W, CW Maximum power: ≤1000W, CW 兼容接口: D80、SMA905、QBH Compatible interface: D80、SMA905、QBH	1	
4	功率可调分光衰减 Power adjustable splitting attenuation	套	激光波长: 355nm~1080nm Laser wavelength: 355nm~1080nm 分光和衰减比: 1%~90% Splitting and attenuation ratio: 1%~90%	1	可选 Optional
5	同步视觉光学系统 Synchronized vision optical system	套	同轴监视物像: XYZ 三轴微调 Coaxial monitoring objective image: XYZ three axis fine tuning 视场范围: ≤Φ12mm View field: ≤Φ12mm 扫描视觉同步精度: ±10 μ Precision of scanning visual synchronization:	1	



			±10μ		
6	广角视觉光学系统 Wide-angle vision optical system	套	同轴监视物像: XYZ 三轴微调 Coaxial monitoring objective image: XYZ three axis fine tuning 视场范围: ≤Φ80mm View field: ≤Φ80mm 视觉对位精度: ±50 μ Visual alignment accuracy: ±50μ	1	
7	照明系统 Illumination system	套	同轴照明, 环形照明, 旁轴照明 Coaxial illumination, annular illumination, off-axis illumination	1	
8	同轴测温系统 Coaxial temperature measurement system	套	红外测温: 100~600℃, 测温模块需单独购买, 该系统仅提供相应光学系统及安装接口 Infrared temperature measurement: 100 ~ 600 °C . Temperature measurement module should be purchased separately. The system only provides the corresponding optical system and installation interface.	1	仅适用于需要温控加工 (半导体钎焊) Only suitable for temperature control processing (semiconductor soldering and brazing)
8	工业相机 Industrial camera	个	COMS/CCD 工业相机 200W 像素, COMS/CCD industrial camera 200W pixel USB/1394/camera link/以太网 USB/1394/camera link/ethernet	1	
9	振镜 Scan head	套	二维扫描振镜 Two-dimensional scan head	1	标准产品 Standard product
10	振镜镜片 Scan head lens	套	特殊镀膜处理 Special coating	1	
11	视觉加工软件 Visual processing software	套	功能: 三轴扫描, 同轴监视, 温度反馈, 激光功率反馈 应用: 标记, 切割, 焊接, 打孔, 调阻, 划线 Functions: three-axis movement, coaxial monitoring, temperature feedback, laser power feedback Applications: marking, cutting, welding, punching, resistance adjustment, scribing	1	