

Automatic Varnishing System

自动上漆系统

TLA/FCA 1-D45/XXX-XXX



For application of colour-ring coding and/or masking varnishing on dental burrs (types FG, H, HP and RA), implant drills, milling cutters, grinding pins, spiral bits, screw taps and similar with shank \varnothing 1,0 – 10,0 mm.

用于牙钻（型号 FG, H, HP 和 RA），植入钻，铣刀，植入钻，螺旋钻头，螺丝攻等相似品的色环点胶编码与/或绝缘上漆。柄 \varnothing 1,0 – 10,0 mm。

Front view 前视图



Figure 1 图 1



Examples of colour-ring coding, laser engraving and laser blackening on implant drills
植入钻上的色环点胶编码，激光雕刻和激光黑化示例

Please note: All illustrations are examples. Depending on the customers' configuration, the product may vary from the illustrations. The product shown is a type TLA/FCA 1-D45/322-001 plant.
请注意：所有图示均为样品。根据客户具体配置，产品可能与图片有差别。所示图例为 TLA/FCA 1-D45/322-001 装置

Rear view 后视图



Examples of masking varnishing and colour-ring coding of dental burrs
牙钻上的绝缘上漆与色环点胶编码示例

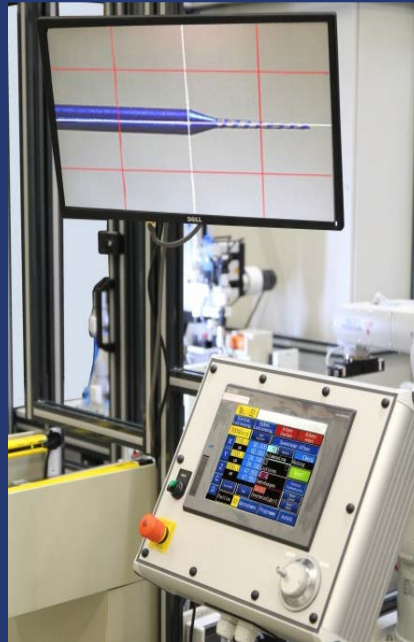
Basic equipment 基础配备

- Fully automatic clamping and varnishing unit (Figure 2)
全自动夹紧与上漆单元 (图2)
- Parts feed by holding pallets / active accumulation line
(different pallet sizes available on demand)
通过托盘/活动管路补给零件 (可根据需求提供不同的托盘尺寸)
- Holding frame welded of aluminium profiles and baking enamelled
支撑框架铝型材, 焊接, 烤漆
- Table surface for varnishing unit made of aluminium, baking enamelled
上漆单元的桌子表面为铝材质, 烤漆
- Headstock with holding fixture for collet; clamping of parts by spring force and pneumatic release
头架带夹头夹具; 通过弹簧力和气动释放夹紧零件
- Freely programmable carriage 可自由编程的运输厢
- Carriage guide for x-y-z-axes with servo motors
x-y-z轴带伺服电机的运输厢导轨
- Drive motor for headstock, continuously speed controlled by PLC
头架的驱动马达, 通过PLC持续调速
- Main control with PLC and electronics cabinet
PLC主控制与电子柜
- Visual control of masking varnishing / colour-ring coding by camera and monitor
通过摄像头和显示屏视控绝缘上漆/色环点胶编码
- 6-axes bent-arm robot with motorized double grip for handling of parts
带有电动双握爪的6轴曲臂机器人, 用于处理零件
- Robot control including teach box with colour/touch display
机器人控制包括彩色/触控显示屏的教学盒
- Touchscreen operator terminal (Figure 3)
触屏操作终端 (图3)
- Electronic hand wheel in connection with on-board PC for easier programming
与PC连接的电子手轮, 更快捷的编程
- Laser-assisted precision zero-setting for improved reproducible varnishing results
激光辅助精确置零, 用于改进的可重复的上漆效果
- Automatic calibration of dosing needle by cross-laser
加料针的交叉激光用于自动校准
- Loading and unloading areas with safety light barrier
装载与卸载区, 带安全光栅
- Safety housing including safety interrupters
安全屋包括安全开关
- 6-station linear transport unit for holding pallets (Figure 5)
6站线性运输单元, 用于装托盘 (图5)
- Volumetric paint dosing system VDS-145 for precision dosing (Figure 6)
容积漆料加料系统 VDS-145 用于精确加料 (图6)



Varnishing unit with four-axes guidance and volumetric dosing system VDS-145
容积漆料加料系统 VDS-145 的四轴引导与容积加料系统

Figure2 图 2



Monitor and Touchscreen-operators terminal for process surveillance and control
用于过程监视与控制的监视器与触屏操作终端

Figure3 图 3



Cleaning device for dosing needle
加料针清洗装置

Figure4 图 4



6-station linear transport unit for holding pallets
装托盘的 6 站式线性运输单元

Figure 5 图 5



Volumetric paint dosing system VDS-145
容积漆料加料系统 VDS-145

Figure 6 图 6

Technical data 技术参数	
Clamping diameter: 夹持直径:	0,5-7 mm; 8-90 mm with additional top-mounted collet 0,5-7 mm; 8-90 mm, 有额外的顶部安装的夹头
Clamping depth: 夹持深度:	Depending on work piece length 根据工件长度
Varnishing range: 上漆范围:	With four freely programmable axes: varnishing zone according to program 有四个可自由编程的轴: 上漆范围根据程序设置
Varnishing capacity: 上漆能力:	Masking varnishing approx. 11 - 15 pcs/min. (Blank: FG; Varnishing zone 10 mm, Ø of dosing needle 0,25mm,) 绝缘上漆: 大约11 - 15 pcs/min. (坯件: FG; 上漆区域10mm, 加料针Ø 0.25mm) Colour-ring coding approx. 14 - 17 pcs/min (1- or 2-component varnish) 色环编码: 大约14 - 17 pcs/min (1-2份漆料)
Note 备注:	All information given depends on operator and quality and precision of blank, and may therefore vary . 所有提供的数据与操作员以及坯件的质量和精度有关, 因此可能有差异
Program memory: 程序内存	approx. 2000 tool types depending on varnishing range, may be expanded 大约2000工具型号, 根据上漆范围可扩大
Mandrel speed: 芯轴速度	max. 最大 4000 rpm.
Air pressure 气压:	5 ... 7 bar, oil-free, dry 5...7 巴, 无油, 干燥
Power connection 电源连接:	400 V, 50 Hz
System dimensions: 系统规格:	L x W x H approx. 2392 x 2947 x 2690 mm 长x宽x高 大约2392 x 2947 x 2690 mm

Optional expansions 可选性扩展 TLA/FCA 1-D45/002

- Module for remote maintenance, remote diagnosis, malfunction report and transmission of files by "Remote Access" for PLC controller through Web server
远程维护模块, 远程诊断, 失灵报告, 通过PLC控制器的网页服务器实现文件的“远程传输”
- GSM module to report malfunctions to an external cell phone (SIM card of a cell phone network additionally required)
GSM模块用于将故障报告到外部移动电话 (需要额外的有移动网络的SIM卡)
- Enlargement of head stock fixture up to collet Ø- 32mm
头架夹具可扩展至夹头Ø- 32mm
- Change of power ratings to 120 V, 60 Hz 电源接入值可更改至120 V, 60 Hz
- Operation mode from pallet to pallet, fully automatic with two-sided pallet handling unit
操作模式因托盘而异, 全自动的双边托盘处理单元
- Operation mode from pallet to pallet, fully automatic with circulating conveyor
操作模式因托盘而异, 全自动带循环运输机
- Convection drying station with integrated convection heating system
具有一体式对流加热系统的对流干燥站
- Infrared drying station with timer controlled infrared radiant heater
具有定时控制红外辐射加热器的红外干燥站
- Expansion of the 6-station linear transport unit by a further 6 pallets (Length: appr. 1500mm)
通过另加的6个托盘可扩展6站式线性运输单元 (长度: 大约1500mm)
- Docking station for storage stack 用于堆栈的坞站
- Storage stack for supply of pallets for blanks / uncoded tools (displaceable)
堆栈用于坯件/未编码工具的托盘的供应 (可拆卸)
- Supply of blanks (bulk material) with parts recognition and parts singling
坯件的供应 (散装材料), 具有识别零件与挑选零件的功能
- Laser engraving and blackening module (Fibre laser or ultra-short pulse laser)
激光雕刻和黑化模块 (光纤激光器或超短脉冲激光)