



AP-TECHNOLOGY®
der richtige Partner

Automatic Varnishing System 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 Ø 1,0 – 10,0 mm.

Front view



Figure 1



Examples of colour-ring coding, laser engraving and laser blackening on implant drills

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.

Rear view



Examples of masking varnishing and colour-ring coding of dental burrs

Basic equipment

- Fully automatic clamping and varnishing unit (Figure 2)
- Parts feed by holding pallets / active accumulation line (different pallet sizes available on demand)
- Holding frame welded of aluminium profiles and baking enamelled
- Table surface for varnishing unit made of aluminium, baking enamelled
- Headstock with holding fixture for collet; clamping of parts by spring force and pneumatic release
- Freely programmable carriage
- Carriage guide for x-y-z-axes with servo motors
- Drive motor for headstock, continuously speed controlled by PLC
- Main control with PLC and electronics cabinet
- Visual control of masking varnishing / colour-ring coding by camera and monitor
- 6-axes bent-arm robot with motorized double grip for handling of parts
- Robot control including teach box with colour/touch display
- Touch screen operator terminal (Figure 3)
- Electronic hand wheel in connection with on-board PC for easier programming
- Laser-assisted precision zero-setting for improved reproducible varnishing results
- Automatic calibration of dosing needle by cross-laser
- Loading and unloading areas with safety light barrier
- Safety housing including safety interrupters
- 6-station linear transport unit for holding pallets (Figure 5)
- Volumetric paint dosing system VDS-145 for precision dosing (Figure 6)



Varnishing unit with four-axes guidance and volumetric dosing system VDS-145

Figure 2



Monitor and Touch screen-operators terminal for process surveillance and control

Figure 3



Cleaning device for dosing needle

Figure 4



6-station linear transport unit
for holding pallets

Figure 5



Volumetric paint dosing system
VDS-145

Figure 6

Technical data	
Clamping diameter:	0,5-7 mm; 8-90 mm with additional top-mounted collet
Clamping depth:	Depending on work piece length
Varnishing range:	With four freely programmable axes: varnishing zone according to program
Varnishing capacity:	Masking varnishing approx. 11 - 15 pcs/min. (Blank: FG; Varnishing zone 10 mm, Ø of dosing needle 0,25mm,) Colour-ring coding approx. 14 - 17 pcs/min (1- or 2-component varnish)
Note:	All information given depends on operator and quality and precision of blank, and may therefore vary .
Program memory:	approx. 2000 tool types depending on varnishing range, may be expanded
Mandrel speed:	max. 4000 rpm.
Air pressure:	5 ... 7 bar, oil-free, dry
Power connection:	400 V, 50 Hz
System dimensions:	L x W x H approx. 2392 x 2947 x 2690 mm

Optional expansions 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
- GSM module to report malfunctions to an external cell phone (SIM carte of a cell phone network additionally required)
- Enlargement of head stock fixture up to collet Ø- 32mm
- Change of power ratings to 120 V, 60 Hz
- Operation mode from pallet to pallet, fully automatic with two-sided pallet handling unit
- Operation mode from pallet to pallet, fully automatic with circulating conveyor
- Convection drying station with integrated convection heating system
- Infrared drying station with timer controlled infrared radiant heater
- Expansion of the 6-station linear transport unit by a further 6 pallets (Length: appr. 1500mm)
- Docking station for storage stack
- Storage stack for supply of pallets for blanks / uncoded tools (displaceable)
- Supply of blanks (bulk material) with parts recognition and parts singling
- Laser engraving and blackening module (Fibre laser or ultra-short pulse laser)