

Modular fully automatic varnishing system TLA 1-D35/XXX for masking and colour-ring marking of dental instruments, etc.



Example: Overall view of a complete system TLA1-D35/005 with the following modules:

- Work piece feeding with accumulation-line storage
- Pick-up of work piece from the pallet by a 6-axes bent-arm robot
- Fully automatic varnishing unit
- Accumulation-line storage for contact fixtures
- Loading of fixtures with drying unit
- Push-in unit
- Accumulation-line storage for loaded contact fixtures and taking-out unit

The following modules are available / may be integrated:

1. Basic module:

- 1.1 - 6-axes bent-arm robot
 - 1.2 - Varnishing unit with varnish dosing system
 - with cartridges for 10 cc (standard), 30 and 55 cc
 - or / alternatively with pressure vessel max. 500 ml
- Note:** For other applications also a varnish spraying system is available.

2. Parts feeding:

- 2.1 - through a manual input and output unit for pallets
(various pallet sizes are possible)
- 2.2 - through a pallet input unit with accumulation-line storage or a
space-saving endless-chain storage
- 2.3 - as bulk material with a precision bowl feeder, parts bin,
parts singling with parts sensor and digital camera for identification
and position recognition

3. Feeding of empty pallets or fixtures:

- 3.1 - see point 2.1
- 3.2 - through an empty pallets pre-disposition with active accumulation
line including a pallets clamping unit

3.3 - Pre-disposition of contact fixtures with active accumulation line and fixtures clamping unit

4. Parts processing and taking-out

4.1 - IR varnish drying unit

4.2 - Accumulation-line storage for loaded pallets or for loaded contact fixtures with taking-out unit; alternatively with a space-saving endless-chain storage

4.3 - Active accumulation line for loaded contact fixture, push-in unit for dry masked / colour-ring marked parts and accumulation-line storage with taking-out unit

5. Package loading

5.1 - Pre-disposition of packaging holders from bulk material with a precision bowl feeder, parts bin, feed line and parts singling with a parts sensor for position recognition of the parts, alternatively with an accumulation-line storage for packaging holders

5.2 - Loading unit for packaging holders with robot for taking out the parts and loading into the packaging holders

5.3 - Accumulation-line storage for loaded packaging holders including magazining

Possible operation modes:

1. From pallet to pallet in single operation

See modules: 1.1, 1.2., 2.1

2. From pallet to pallet with **accumulation-line storage** for blanks/burrs and masked blanks/colour-ring marked burrs

See modules: 1.1, 1.2, 2.2, 3.2, 4.2

3. From pallet to pallet with **accumulation-line storage** and **drying unit** for blanks/burrs and masked blanks/colour-ring marked burrs

See modules: 1.1, 1.2, 2.2, 3.2, 4.1, 4.2

4. From **bulk material to pallet fully automatic with accumulation-line storage** and **drying unit** for pallet with masked blanks and from pallet to pallet with **accumulation-line storage** and drying unit for pallet with colour-ring marked burrs

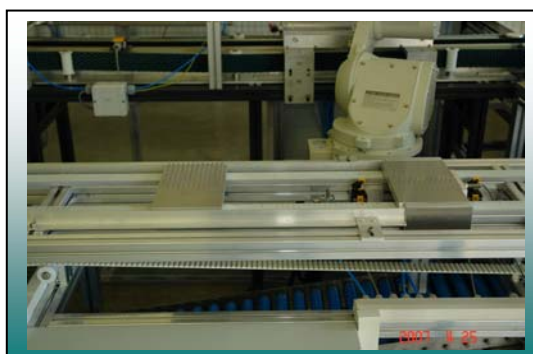
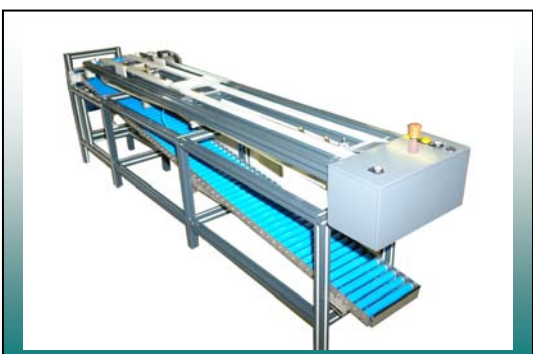
See modules: 1.1, 1.2, 2.3, 3.2, 4.1, 4.2

5. From **pallet to packaging fully automatic with accumulation-line storage, drying unit** for pallet with colour-ring marked burrs and **pre-disposition of packaging holders** and **loading of packages**

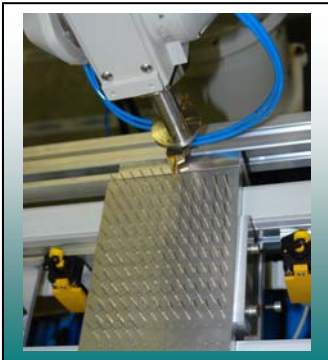
See modules: 1.1, 1.2, 2.2, 3.2, 4.1, 5.1, 5.2, 5.3

Further operation modes are possible and available on request.

Examples of different modules which may be integrated:



Pallet input unit with accumulation-line storage

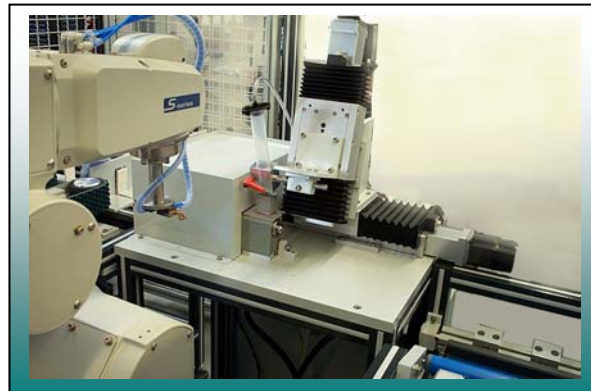
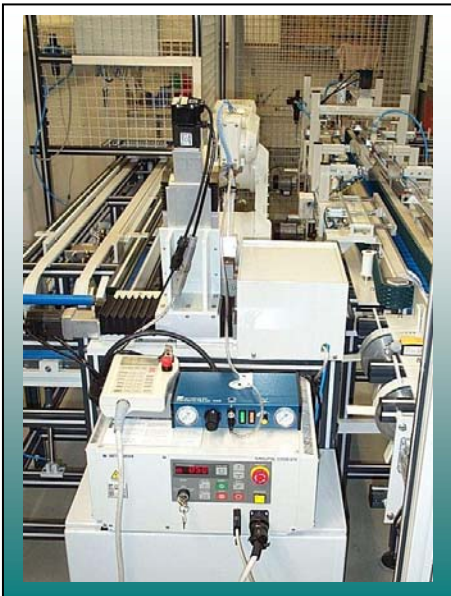


Pick-up from pallet

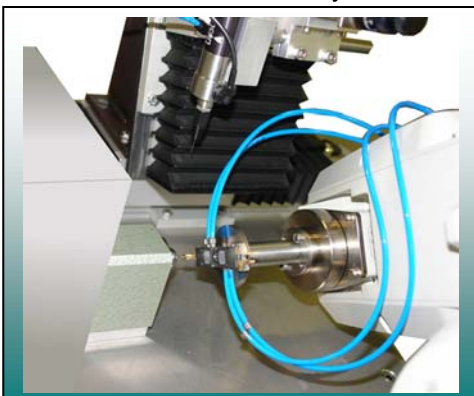


Precision bowl feeder for bulk material

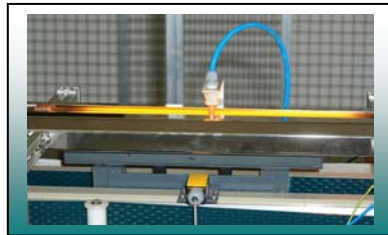
Pallet feeding



Fully automatic varnishing unit with robot system



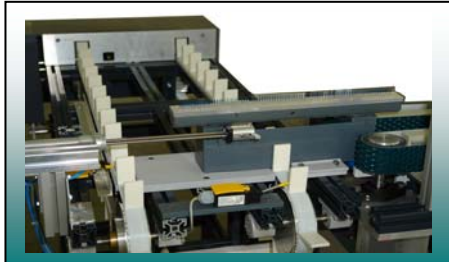
Basic varnishing unit with 6-axes bent-arm robot



Drying unit with infra-red heater

Push-in unit

Loading of fixtures and drying unit



Accumulation-line storage for loaded contact fixtures and taking-out unit

General technical data:

Clamping diameter:	1,6 or 2,35 mm (other diameters on request)
Clamping depth:	min. 4 mm
Varnishing area:	allows two freely programmable axes: varnishing area depending on program
Output:	6-9 burrs/min for masking 8-12 burrs/min for colour-ring marking Important: Depending on the consistency of varnish, the area to be varnished and the specific system configuration
Program memory:	max. 82 types of burr Depending on varnishing zone
V24 interface:	for connection to PC or Laptop
Spindle speed:	max. 800 rpm
Varnish dosing system:	with cartridges for 10 cc (standard), 30 and 55 cc or / alternatively with pressure vessel max. 500 ml
Compressed air req.:	5-7 bar, constant, oil-free, dry
Mains connection:	230 V, 50 Hz
System dimensions:	– depending on configuration