



## HARTING Systems

enclosures technology  
storage- and dispensing solutions /  
vending machines  
contract manufacturing



Pushing Performance

## RANGE OF SERVICES

All variations of sheet metal working and processing are custom planned under the most demanding environmental and quality aspects at one of Europe's most advanced, leading-edge production plants. The facilities spread out over more than 17,500 square meters of production and logistics space.

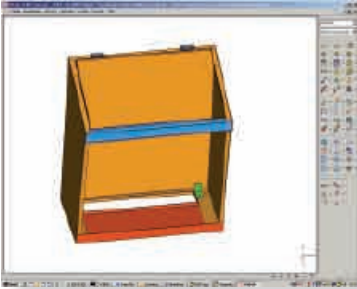
From sample parts through to optimized sub-assembly production, we advise, design, support, produce and provide solutions for your sheet metal processing assignments. We also provide surface treatment and finishing matched to your requirements.

Our expertise and many years of experience are concentrated in the following areas:

- **Design**
- **CAD programming**
- **Punching – nibbling – laser cutting**
- **Edging, bending**
- **Welding**
- **Surface treatment and finishing**
- **Assembly and manufacture of sub-assemblies**
- **Control system and software development**

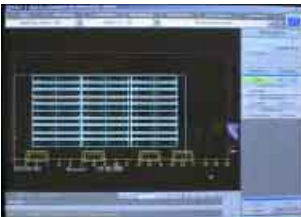


## DESIGN



With the 3D-CAD tool I-DEAS, we offer our customers CAD design for vending systems and control cabinet and housing technology or flexible data transfers of customer requirements in the IGES, STEP, VDA, DXF and DWG formats.

## CAD PROGRAMMING



The use of the latest CNC technology allows us to harness corresponding development programs to convert the data from the 3D designs into 2D formats, and to prepare this data for the programming places for the respective machines. Data transfer based on the project is consequently also possible for our customers. IGES, STEP and DXF are the applicable formats here.

## PUNCHING – NIBBLING – LASER CUTTING



State-of-the-art, fully automatic punching/laser cutting systems guarantee the highest degree of precision in punch-outs to free-form cuts to thread molding. Using on-line program transfer, direct warehouse connection (automatic) and an extensive tool inventory, we achieve optimal exploitation of all process sub-assemblies.

TC 5000 R Punch-nibble machine

TC 6000 Punch-laser combination machine

### TRUMPF Centers

- Extensive tool inventory
- Fully automatic sheet metal supply from warehouse connection
- Short delivery times for raw material procurement
- Sheet metal punchings from steel, aluminum or V2A sheet up to 8.0 mm thick
- Max. sheet size: 1250 x 2500 mm (TC 5000 R)
- Max. sheet size: 1500 X 3000 mm (TC 6000)

## EDGING – BENDING



The use of CNC-controlled sheet metal bending equipment means precision bent parts quickly, in large quantities and with a very high level of repeat accuracy.

### RAS CNC Bending Center

- Fully automatic blank feed from a blank stack via sheet isolation using suction cups
- Blank turner and linear transport unit
- Optoelectronic blank position measurement,
- Feeding movement and sheet rotation using manipulator,
- Fully automatic bending process sequence

Max. bending length:	2160 mm
Max. bending height:	211 mm both sides 410 mm one side
Min. bending line spacing:	150 mm
Repeat accuracy:	± 0.1 mm
Positional accuracy:	0.001°
Material thicknesses:	
Steel	2.0 mm
Stainless steel	1.5 mm
Aluminum	3.0 mm

### CNC Press Brakes

Complex edged parts, complicated because they interlock, are produced on our 80 – 225 ton press brakes.

Some of our equipment's features:

- 5 freely programmable solid axes
- Automatic computation of the process data by part geometry and material data input
- Large selection of standard and special dies
- Max. bent part length 3000 mm

# WELDING



The welding area at HARTING Systems ranges from manual welding stations to automated stud welding to fully automated booths with robot deployment.

## Robot Welding Technology Area

- Robot welding (protective gas)
- Welding robot systems with 8 axes, diverse welding stations and rotary tables
- Programming using the „point-to-point“ method
- Digitally clocked welding power source
- Welding smoke removal in recirculated air and exhaust operation

## Welding Technology Area

### Resistance Welding

- Welding machines and electrode holders

### Stud Welding

- Using coordinate-guided, freely programmable stud welding system employing the tip ignition and short cycle method (1250 mm X 800 mm)

### Shielded Arc Welding

- With manual welding equipment (MIG, MAG)



## SURFACE TREATMENT AND FINISHING



Surface finishing at HARTING Systems takes place in a complex, state-of-the-art and environmentally friendly powder coating system. In addition to the powder coating itself, a primer coat in the form of cathodic dip painting (KTL) is also possible.

### Powder Coating + KTL Sheet Sealing

7-zone pretreatment by spraying using wet-chemical methods with alkali degreasing, phosphating and passivation

- Lead-free 2-shot priming using cathodic dip painting (light beige)
- Integrated wastewater treatment system
- Powder coating using the corona method and automatic painting booth and painting robot with central paint supply and powder recovery.
- Enameling furnaces for primed and powder-coated parts
- Max. part size: 1500 X 1200 X 800 (HxWxD)



## ASSEMBLY AND MANUFACTURE OF SUB-ASSEMBLIES

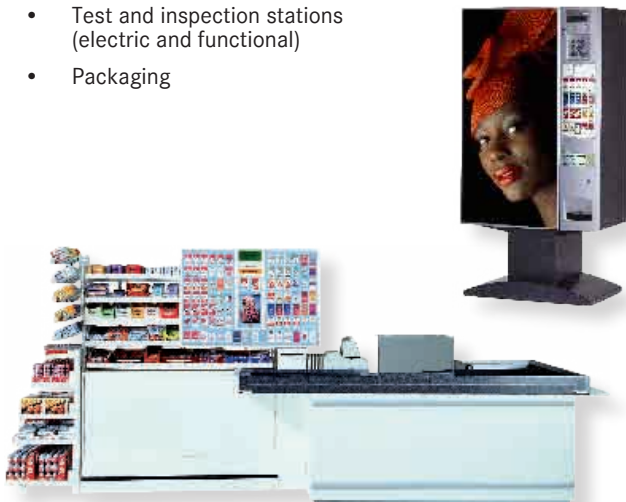


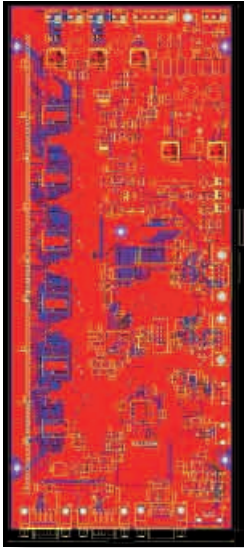
### Pre-assembly and Line Packaging

- Sub-assembly assembly stations
- Trimming machines
- Crimping machines
- Manual soldering stations
- Cabling of special control cabinets for applications, e. g., in automation technology
- Complete assembly of 19" special sub-assemblies

### Final Assembly

- Final assembly lines for series parts
- Test and inspection stations (electric and functional)
- Packaging





## Control System Hardware Development

- PCB design with Protel Design Explorer
- Design and construction of cable harnesses

## Software Development

- Hardware-based software development for microcontrollers in C and FPGAs in VHDL
- Windows (control) programming in C++ and C#
- Stored program control (SPC) with Simatic S7

# Quality and Environment

In addition to placing high demands on product and process quality, HARTING Systems is committed to environmental protection. Routine inspections and constant monitoring of the respective process parameters allow us to comply with the requirements that we have come to take for granted with regard to the ISO 9001 and ISO 14001 standards.



## Contact

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