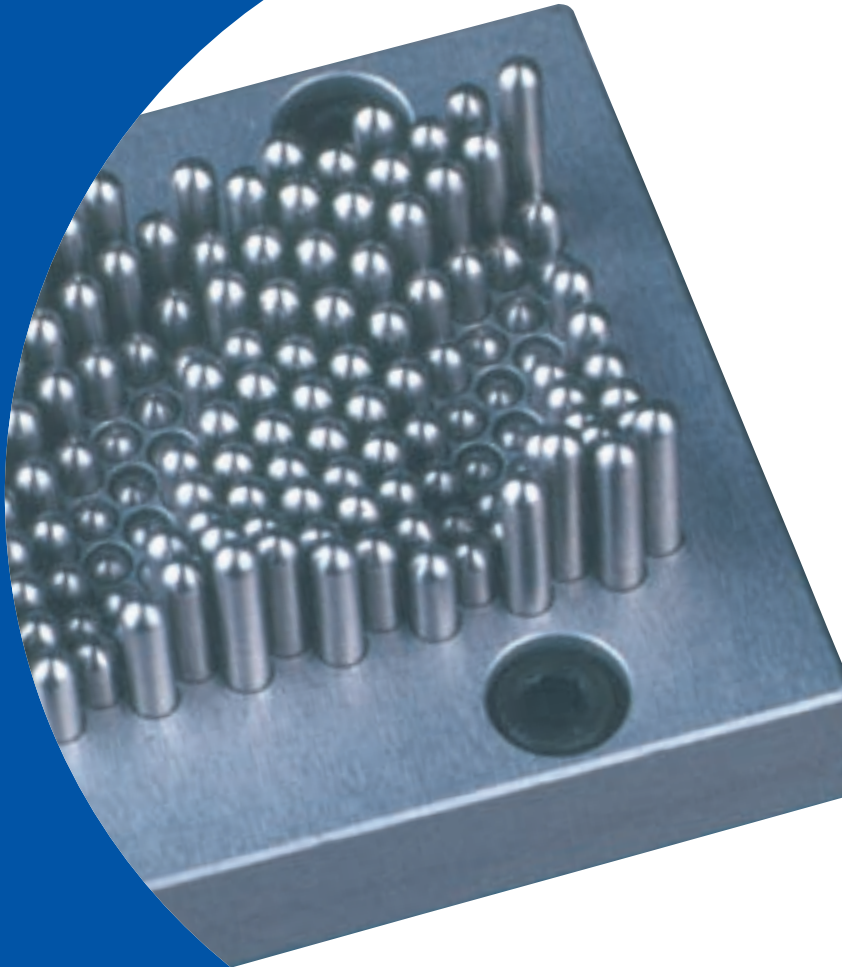


# Innovative Shape-adaptive Systems



Simple

Effective

Holding

Gripping

Clamping





## Workpiece Support

Adapts to the workpiece



## Holding Devices

Holds without deforming



## Profiles

Quick assembly



## Jigs and Fixtures

Flexibility in automobile body manufacturing



## Mounting Tables

Horizontal and Vertical mounting



## Form Clamping Systems

Adaptive jaws for Machining



## The Setup Time

Reduced set-up times for frequently changing workpieces and prototypes



## The Installation

Modular system design for flexible assembly and application



## The Costs

Cost reduced construction of jigs and fixtures



## The Accessibility

Easy access to the workpiece  
Infinite adjustability



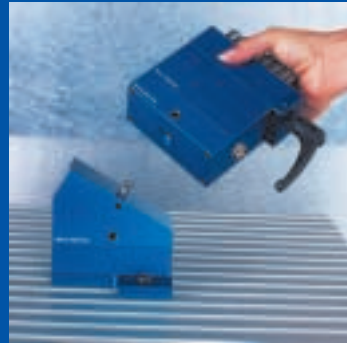
## The Principle

The workpiece molds its own clamp



# X-SUPPORT S and XL

## Flexible Modular Support System



Easily assembled



Only one tool required

### The Principle

#### The support is formed by the workpiece itself

Pressing the workpiece into the spring-loaded pin matrix forms a stable component-customized support in seconds.



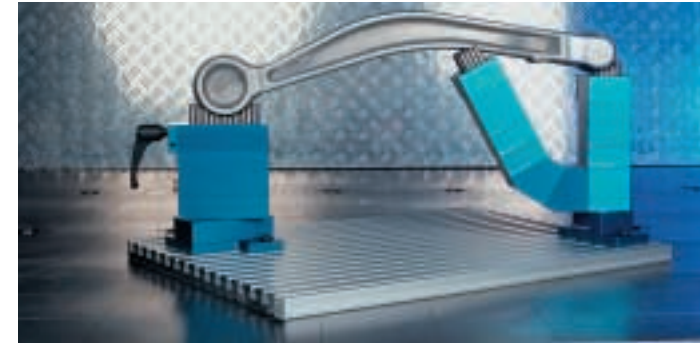
### The Possibilities

#### Unique and versatile

Thanks to a modular design with intermediate elements, angle pieces and connection modules the X-Supports can be optimally adjusted to the requirements of the workpiece and the process.

### The Advantages

- Reduced setup times
- Fast resetting when changing workpieces
- Distortion free support of instable workpieces



Adapts to the workpiece





## Usability

Smaller companies as well as large corporations and their suppliers profit from the versatility of the X-Supports. All workpieces are held optimally, whether prototypes, small production runs, parts with sensitive surfaces or complex free forms.

Thin sheet metal is supported without distortion

## The Accessories

### Cone and V-Block inserts

The Cone and V-Block inserts can be quickly adjusted to the required height.



## The Products

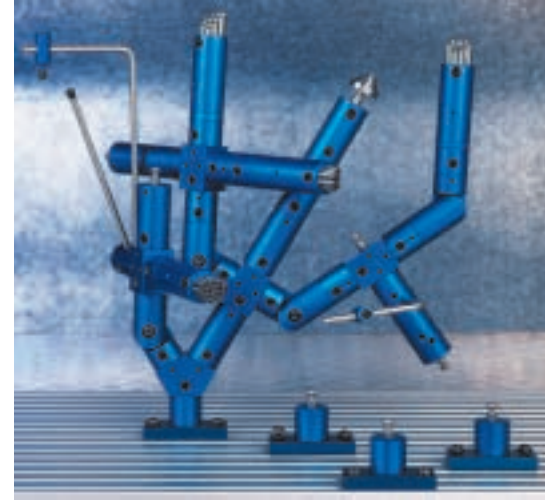
### Individual components and complete Modular systems

The basic elements of the X-Support systems are the Pin modules, which adjust themselves to any workpiece contour through the independent movement of the individual pins. For sensitive surfaces the pins can be provided with plastic or brass caps.

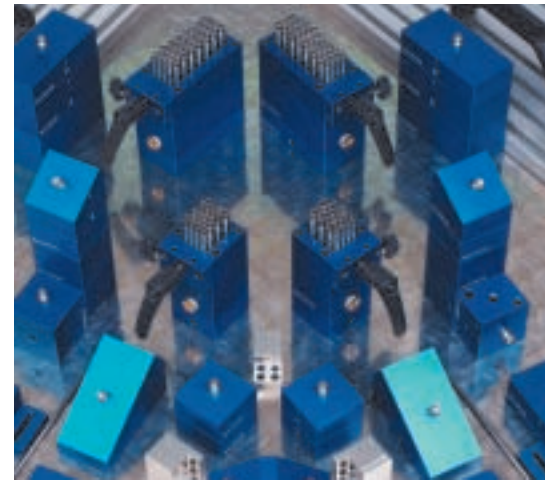


## The Benefits

- Ideal for frequently changing workpieces and prototypes
- Flexible and economical due to the modular design
- Even the X-Support S set, for smaller workpieces, provides the full range of applications and the greatest possible accessibility
- Larger and more complex fixtures are assembled using the aluminum profiles



Either cased sets or single modules are deliverable





# X-SUPPORT F

The low profile X-Support module



Correctly supported and fixed

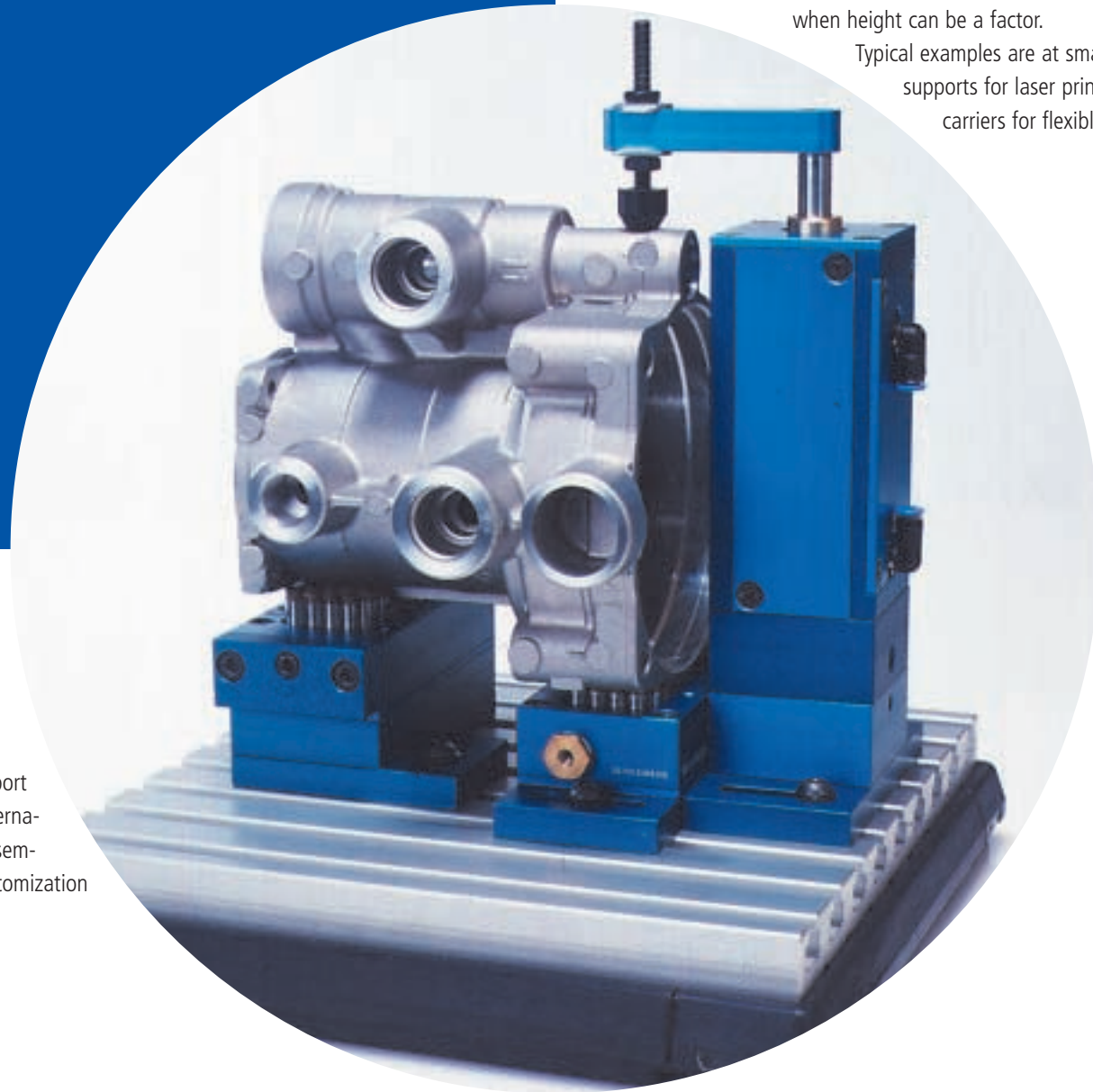


Ready for laser processing

## Extremely flat

The low profile X-SUPPORT F can be used everywhere when height can be a factor.

Typical examples are at small measuring machines, supports for laser printing or as workpiece carriers for flexible assembly stations.



## Workpiece carriers

Pallets combined with X-Support systems make an efficient alternative to the standard pallet assemblies. As they allow quick customization of the workpiece carrier.



A custom workpiece support in seconds



# X-SUPPORT XS

The "pincushion", the smallest X-SUPPORT System



## Compatible

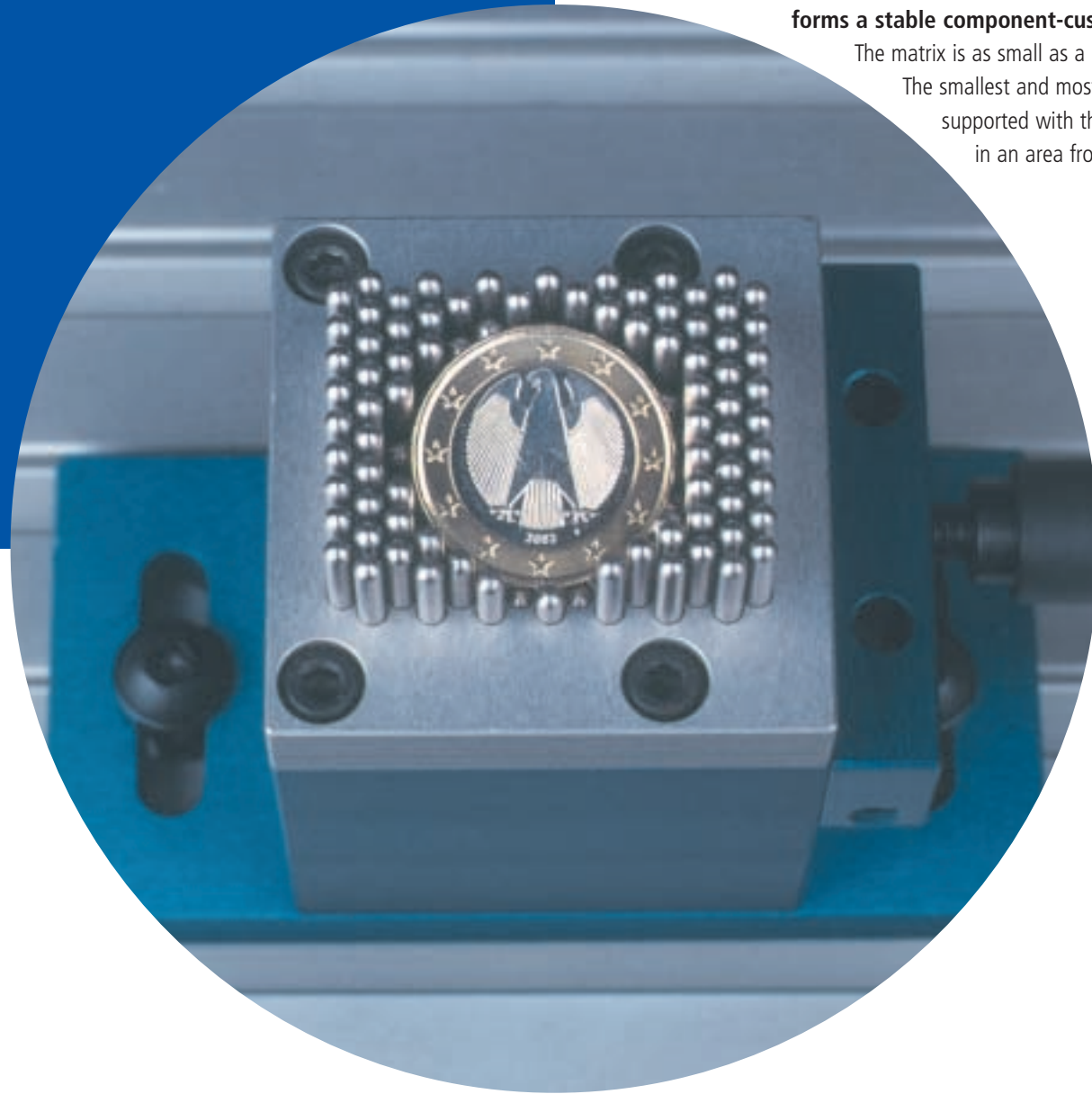
The X-SUPPORT XS is fully compatible to the other MATRIX systems.

## Filigree

**Pressing the workpiece into the spring-loaded pin matrix forms a stable component-customized support in seconds.**

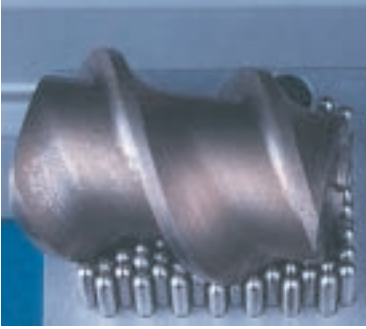
The matrix is as small as a pincushion.

The smallest and most delicate workpieces can be supported with the 142 (2.5 mm diameter) pins in an area from 30 X 39 mm insuring a safe support.



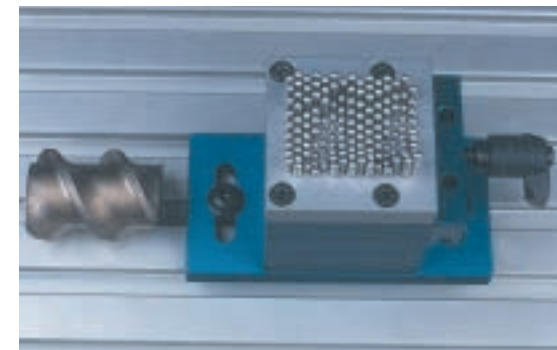
## Application

Miniature and filigree workpieces on small scale measuring machines. Working with workpieces from the advertising or watch industries.



Custom molded support of the workpiece

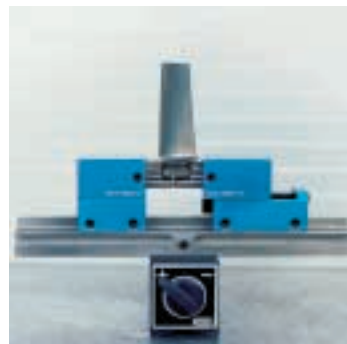
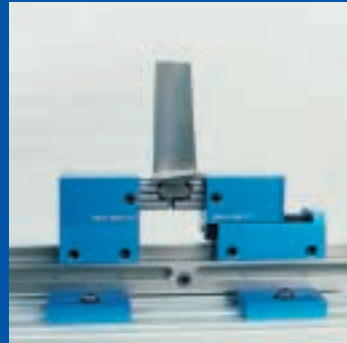
Forming a workpiece mold





# X-Grip XS and XL

Holding without deforming



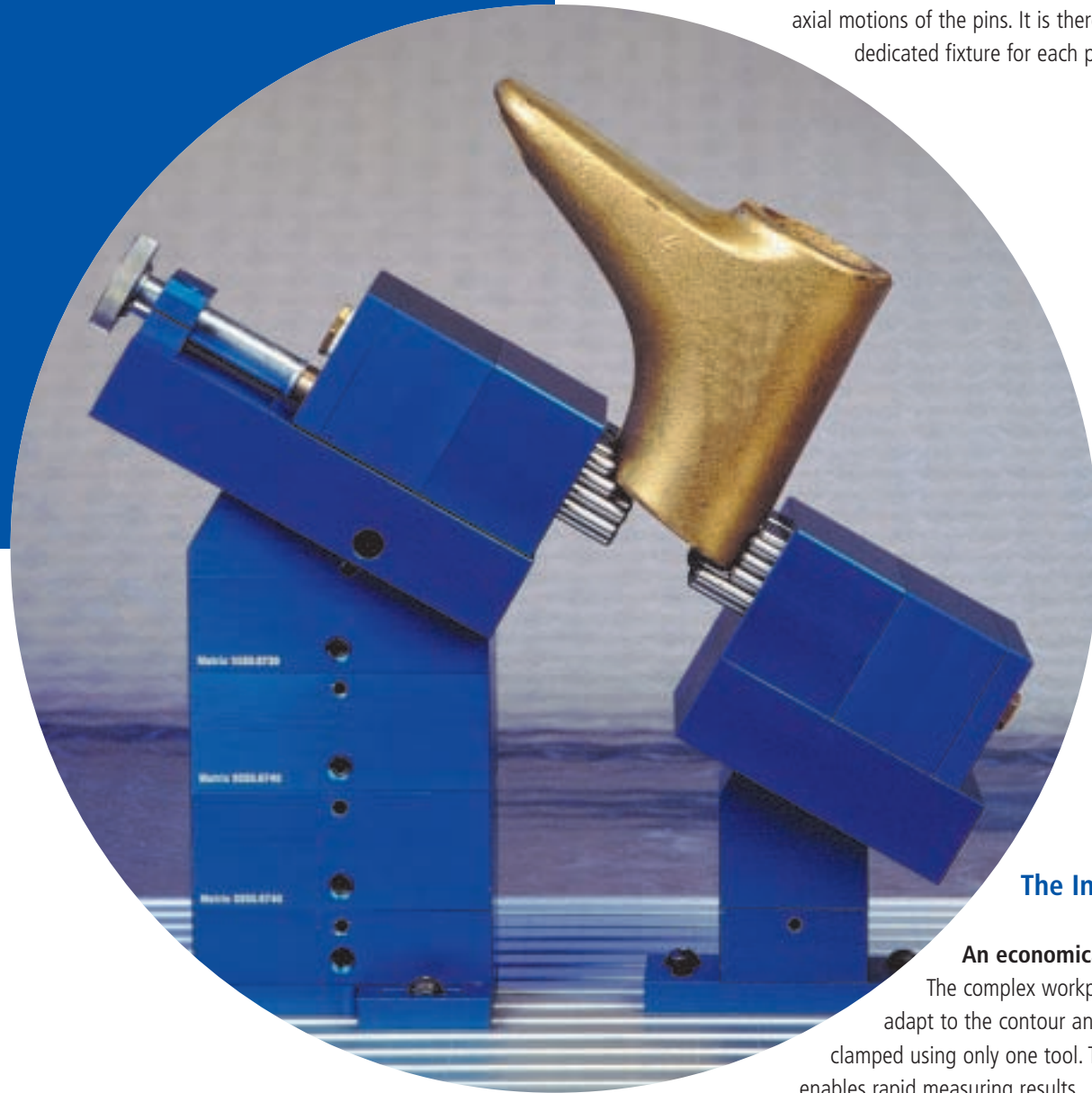
## The Variations

### Simply connect

Different modules allow connection to any measuring table.

## Functional and economical

The opposing variable jaws mold to any workpiece surface through the axial motions of the pins. It is therefore unnecessary to have a dedicated fixture for each product line.



## The Innovation

### An economical way to save a lot of time

The complex workpiece is inserted, the pins adapt to the contour and then are locked and clamped using only one tool. The ease of handling enables rapid measuring results.





# X-Support with Profiles

Fixtures for Auto Body parts



Pins with plastic caps for sensitive workpieces



## The Stability

**Fast assembly times, optimum accessibility**

The highest priority in fixture design is to assure optimum accessibility during workpiece measurement. The 4 slotted profile design standard gives optimum stability with a minimum of weight. The profile connectors are quickly mounted using tie bolts and set screws. All accessories fit all the different profile sizes.

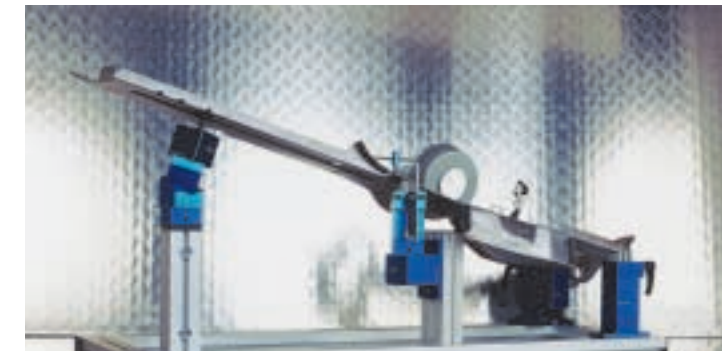


## Infinite Adjustability

To change the spacing of the vertical supports, it is only necessary to reposition their slides. In the automobile body branch, the flexibility of the system enables quick response when specific problems occur and unplanned measurements are needed.



The retaining arm and its limit stop



X-SUPPORT modules in combination with profiles



# Mounting table

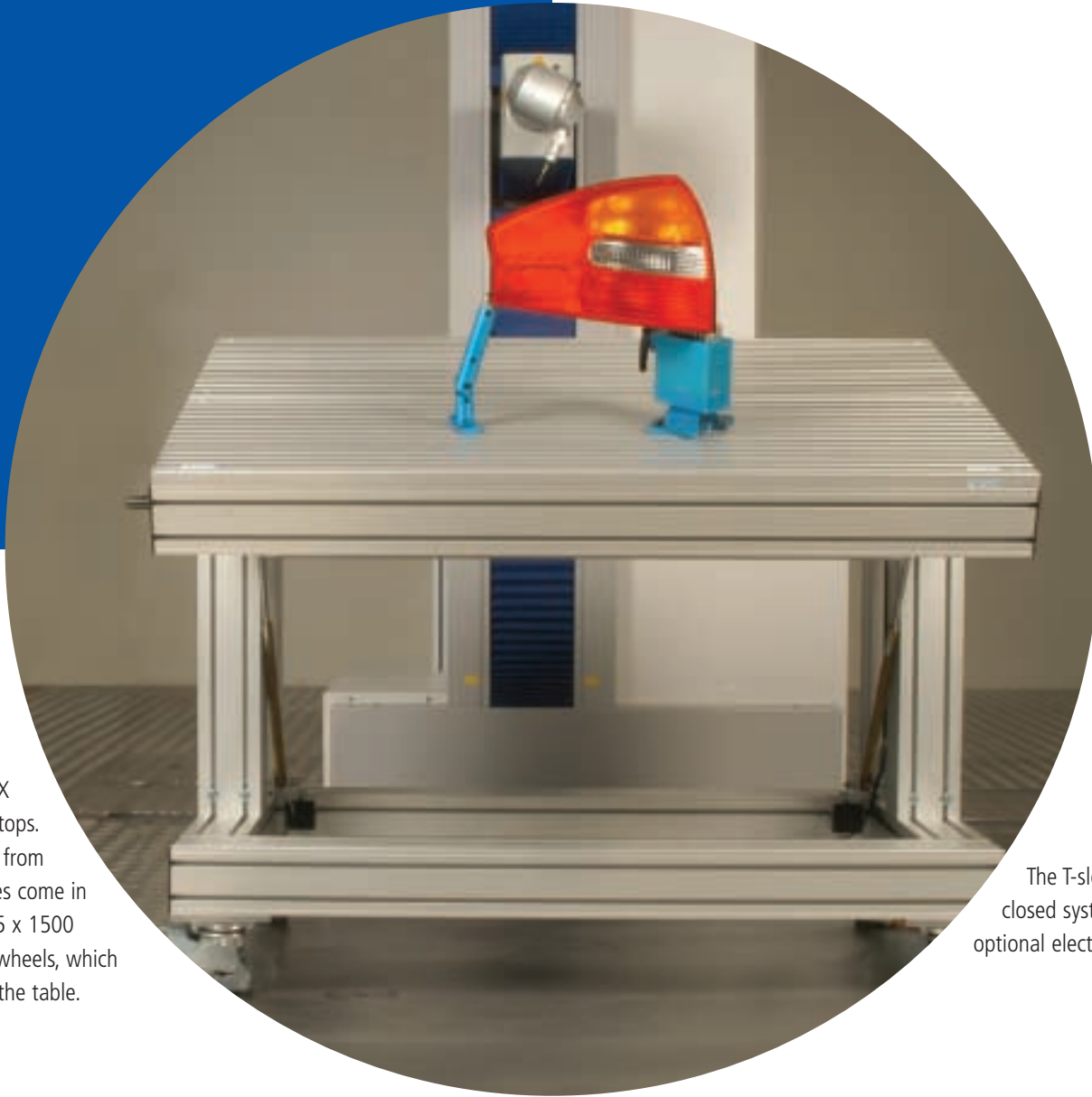
Horizontal and vertical mounting



Foot with integrated wheel

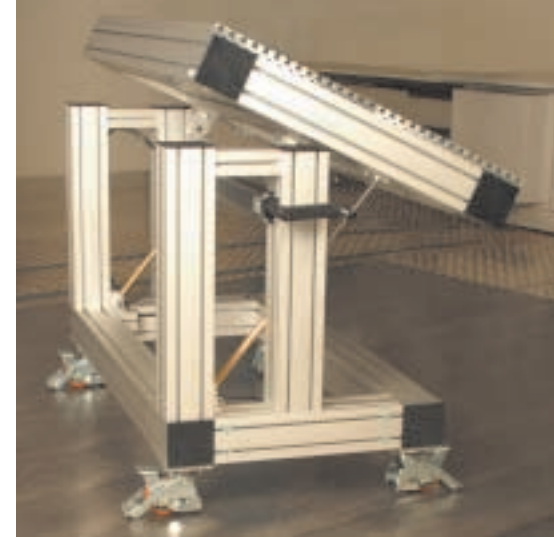
## Tilt Table

The Tilt Tables from MATRIX can be positioned from 0 to 90°. All MATRIX systems attach to the T-slotted tabletops. Fixtures can be utilized at any angle from horizontal through vertical. The tables come in two sizes, 750 x 1200 mm and 1125 x 1500 mm. The table legs have integrated wheels, which can be lowered to facilitate moving the table.



Vertical fixtures can be easily loaded by swinging the table to the horizontal position. The optimal position for measuring a workpiece can be realized by tilting the table.

The T-slotted tabletop is tilted by a closed system, using a hand crank. An optional electrical drive is available.



Variable tilting



Easy to use

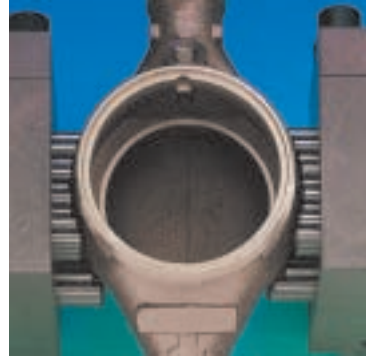


# X-CLAMP

Form fitting fixing during machining

## Modular Clamping: Dependable and safe

The flexible form jaws would be mounted on the machine table or the machine plate as a modular system. Typical applications would be; the machining of turbine blades, cast pieces, forged pieces, or profiles, as well as in Processing centers and production systems. X-Clamp form jaws can also replace the two jaw chucks on lathes.

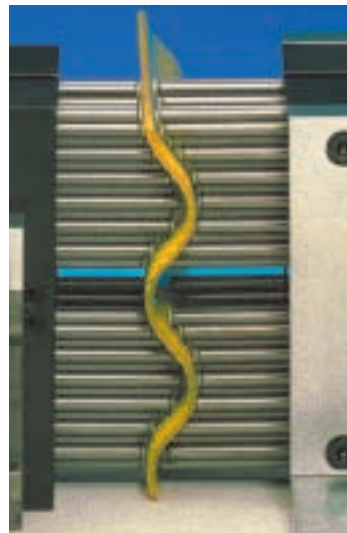


Complex castings, with variable surfaces, are easily fixed by the X-Clamp system.



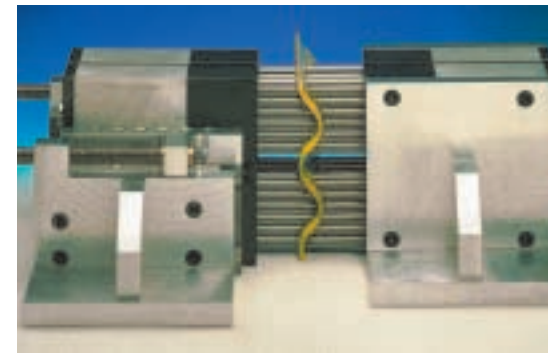
## Quick clamping, economical production

The MATRIX clamping system consists of fields of movable pins driven against a workpiece, either by air or by coolant, at low pressure. The pins adapt to the contour on two or more sides and are mechanically locked. A time and cost saving solution when milling, drilling, sawing or turning, that is easily reset for different workpieces.



### The Advantages:

- Reduced set-up times
- Eliminates expensive dedicated form jaws
- Reduced vibration means higher quality and extended tool life
- The molding effect allows a reduced clamping force for sensitive workpieces
- Custom solutions are deliverable



Custom solution



# X-ADAPT

Form fitting fixing while machining

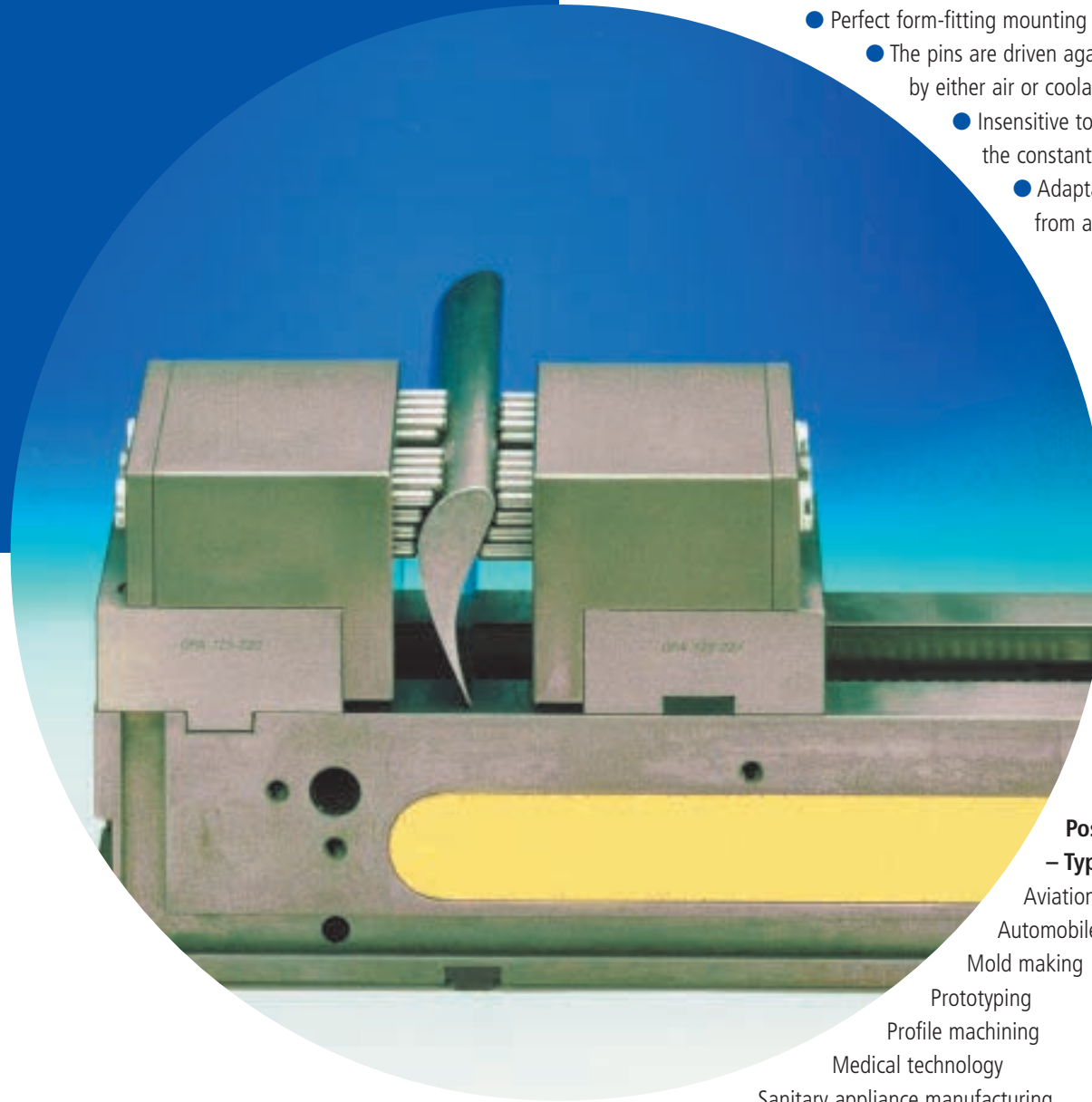


The pins can be tipped with either brass or plastic caps for sensitive workpieces.

## Shape adaptive jaw extensions for machine vises

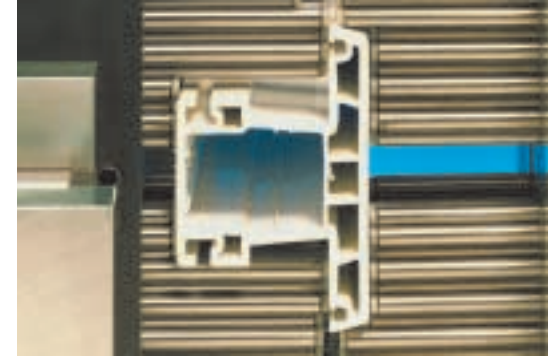
### The advantages of X-Adapt:

- Perfect form-fitting mounting of the workpiece
- The pins are driven against the workpiece by either air or coolant at low pressure
- Insensitive to dust, dirt, or chips through the constant flow of air or coolant
- Adaptable to machine vises from all manufacturers

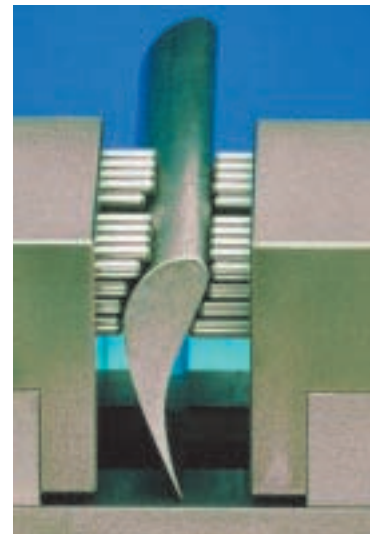


### Positioning, Holding, Fixing – Typical applications:

- Aviation industry
- Automobile industry
- Mold making
- Prototyping
- Profile machining
- Medical technology
- Sanitary appliance manufacturing
- Mechanical engineering in general



X-Adapt jaw extensions:  
Adapts to virtually any machine vise



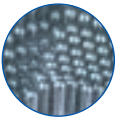
Impressions

Notes

The image features a large grid with a circular highlight. The grid is composed of 10 columns and 10 rows. The left side of the grid (columns 1-4) is filled with a collage of small images related to industrial machinery and manufacturing. The right side (columns 5-10) is mostly empty, with a few scattered images. A large blue circle is drawn over the grid, highlighting a specific area in the center. The word 'Impressions' is written in the top left corner, and 'Notes' is written in the top right corner.

## **Custom Systems**

MATRIX designs and builds customized clamping and preparation systems for use in Manufacturing, Assembly, and Quality control. MATRIX also assists in the realization of fully or semi automatic loading and handling devices.



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Production Automation

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