



# Modular Fixturing System





FAST  
SIMPLE  
FLEXIBLE  
PRECISE  
ECONOMICAL

**Modular fixturing system, used for repeatable positioning of to-be-tested components with tactile and photometric measuring devices or scanning laser.** Alukeep system, thanks to the simplicity of use, a complete range of elements it consists of and thanks to the reduced set-up time, has achieved a remarkable success on the international level.



Alukeep system allows a quick verification of the production as well as in REAL TIME performing all the modifications necessary for avoiding high quantity of scraps and defective parts.

# A simple system joined quickly: Single Joint System.



Thanks to the „SJS“ (Single Joint System) patent



Alukeep system allows to join - **in one operation** and with a **single**

Element of the  
junction for the  
anchorage on  
SJS holes.

**joint** - different elements of the structure and thus increasing the speed by which

various components are joined in order to form a new fixture. The joint of various

terminals of use is blocked by a common hexagonal key improving the efficiency

of the assembly personnel in charge. The structure can be **implemented** in any

moment without having to remove any element or to dismantle any part. The

joint is **unique** in the measure of the coupling in order to simplify and reduce the

variables to the minimum. Reticular and linear elements

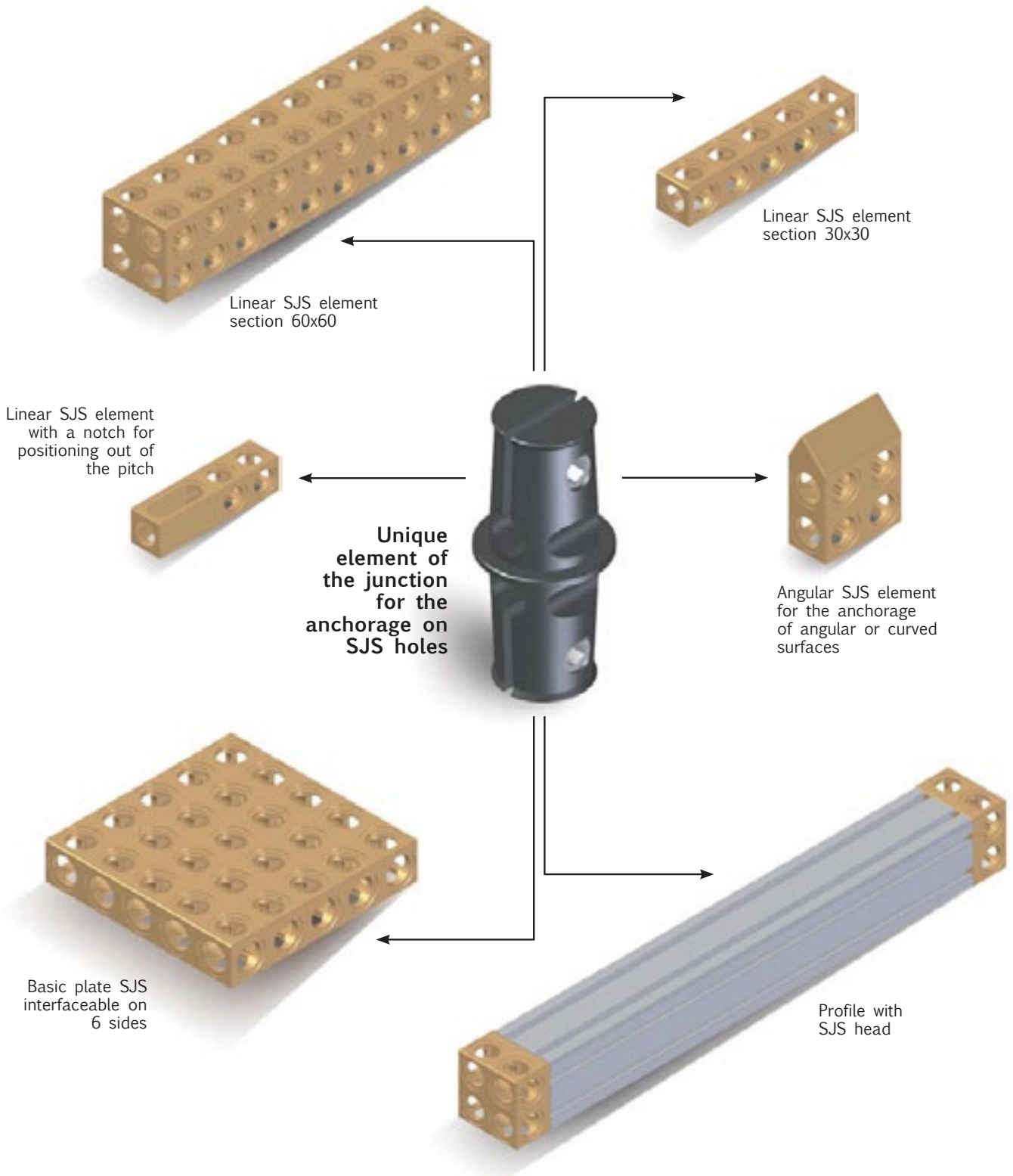
maintaining the pitch of the hole at 30 mm or its multiple,

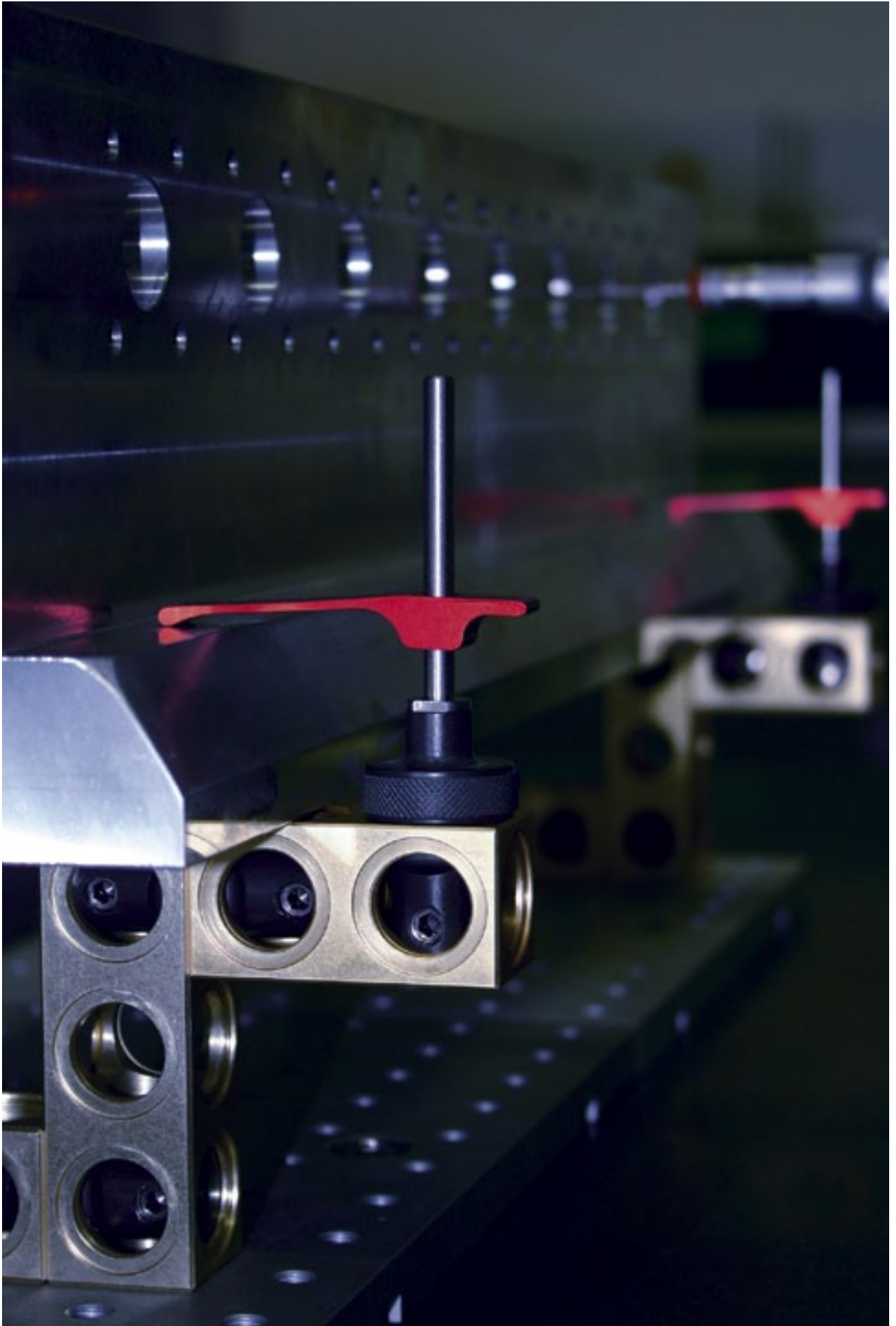
allows easy calculating of the number necessary for the

required quota.

Linear elements for  
the construction of  
3D structure, joined  
with a double joint.

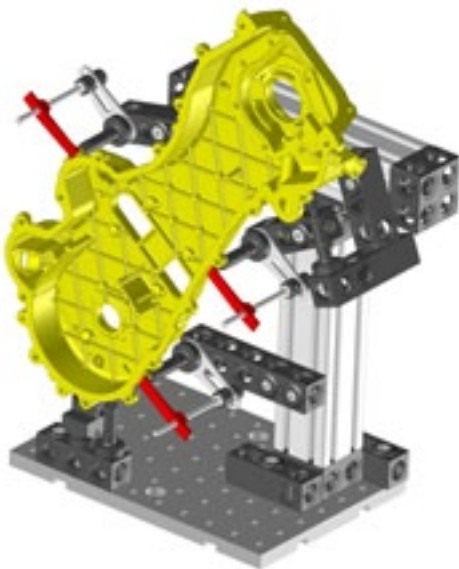






## Flexibility and Italian Technology: Winning Binomial.

The whole range of reticular elements, elements of connections, terminals, shafts, joints and bases allows performing **all required configurations** - thanks to the constructive philosophy of Alukeep system guaranteeing larger and better space around the element to be checked. Alukeep system is particularly suitable for the following sectors: AUTOMOTIVE, AEROSPACE, BIOMEDICAL, MOULDING



An example of the structure realized by Alukeep system for the check of a particular die-cast.

AND CASTING. It is completely constructed in Italy following the most rigorous procedures of the quality control, using CNC unit with HSM technology and 5-axis continual control with the high precision.

The elements are in aluminium with superficial treatment of high resistance.

The SJS joint (patented), keeping the use it was conceived for, has an unlimited guarantee.

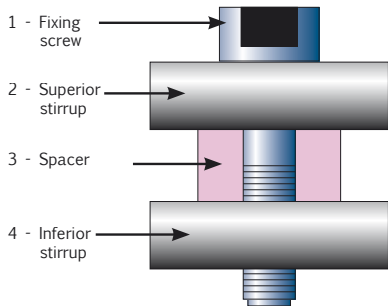
# Only Important and Useful Components. Maximum Economy.

The patented SJS joint is a heart of a genial system that guarantees a maximum economy. Alukeep philosophy goes in the opposite direction compared to modular systems that tend to offer a big quantity of elements, even those not very useful, with consequent costs for supplying, management, and storing.



A unique Alukeep junction element

A junction element formed in 4 parts



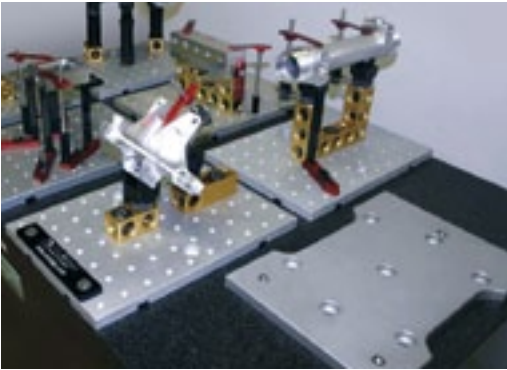
It's not in the clients' interest to pay in the fixture kit articles as screws, bushings, washings, keys-tools or gauges. **Alukeep system offers the client only elements that are useful and essential.** Alukeep is an innovative technology because

it guarantees the same applications with a smaller purchase of the elements. This is an advantage for new users of the modular systems as well as for all the users that have already purchased the systems from competitors.



## Work Testing Has Become Easy.

Alukeep system allows performing CMM adjustment and checking of parts in a very short time; always in a few seconds it allows going from checking one



component to a completely different one without having to perform a new manual alignment of the part. The CMM arranged for the operations

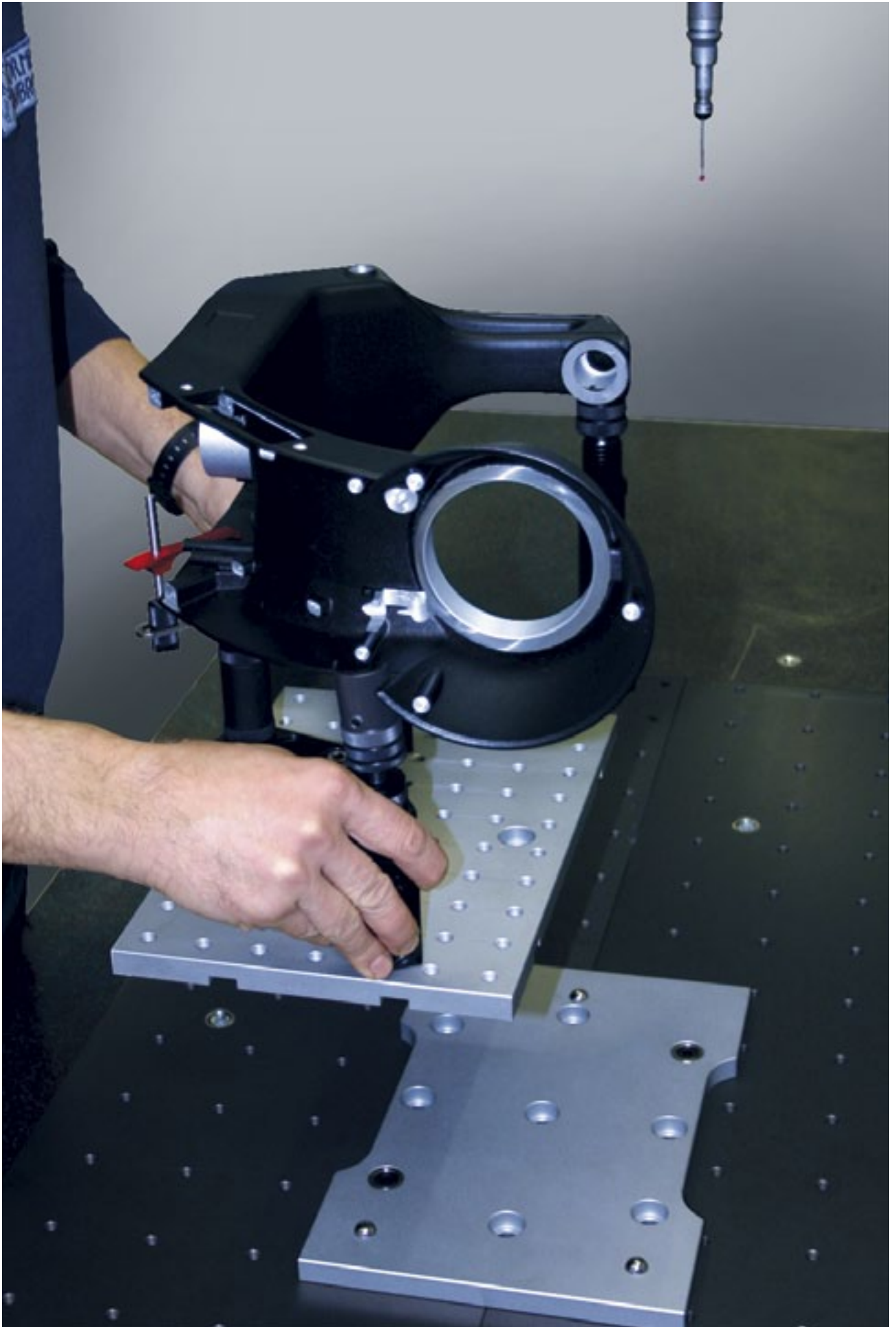
A rapid change  
self-centralsing  
device.

that are to be carried out is possible to be used also by unqualified personnel

achieving maximum efficiency of the machine.

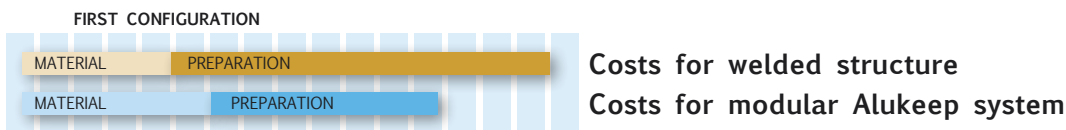
Alukeep system is convenient because of:

- **time gain in the phase of test preparations**
- **maximum efficiency in the course of testing**
- **the use also by unqualified personnel**
- **competitive purchase price**



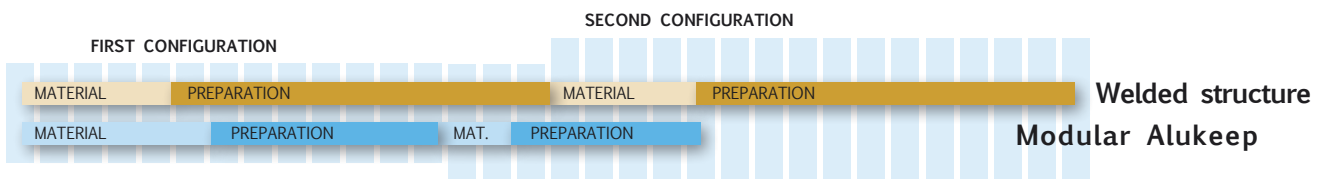
# Dedicated Welded Structure or Modular Alukeep System?

COMPARISON OF COSTS FOR REALIZING A STRUCTURE ON CMM FOR MEDIUM OR BIG ITEMS.



The configuration with modular elements requires a different investment in the material compared to the welded one and presents the following advantages:

1. **time needed for the study and the preparation is considerably shorter;**
2. **it maintains a great adaptability in the phase of verification of possible repairs.**



**The advantage in purchasing the material:** at higher costs of the first modular realization compared to a fixed configuration there follows a second configuration with the integration of only necessary elements which in comparison to the double costs on fixed realization create remarkable savings.

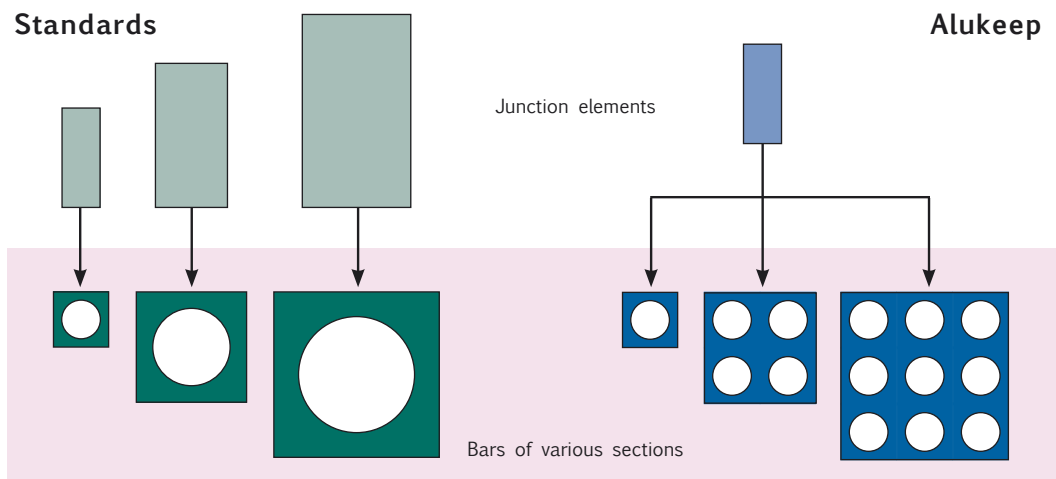
**The advantage in the system preparation:** out of the sources already used for the first modular system only those that are really necessary will be modified; besides the system is more adaptable in the verification phase as it contains a set of adjustment instruments which allow a rapid correction in the metrology room which is impossible to reach in the case of welded configuration.

**Other advantages:**

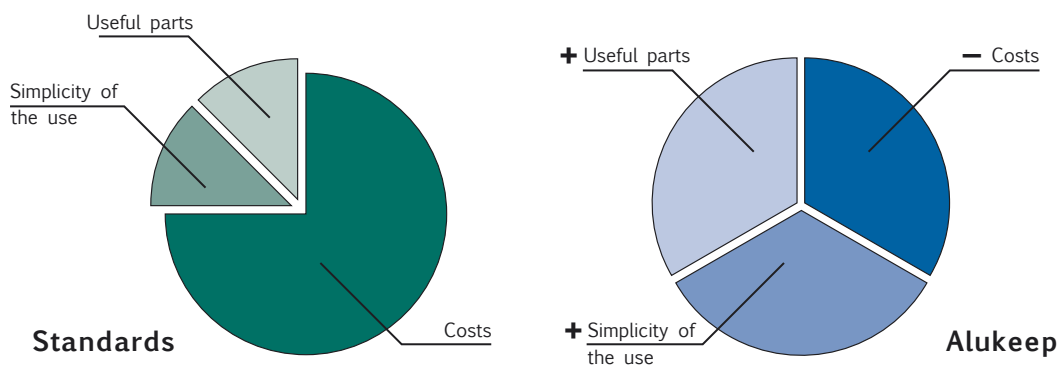
- 1 - space necessary for storing, better stock management;
- 2 - personnel dealing with the adjustment and modification of the structure is independent;
- 3 - economically even more convenient for prototyping or production of small parts.

## The Advantages of Alukeep System. Modularity and Flexibility.

Comparison between the elements on the same technical level which allow maximum ADAPTABILITY, with all the possible adjustments on the base and on the profiles, points out how Alukeep system uses a smaller total number of the parts than other systems, keeping the same functions.



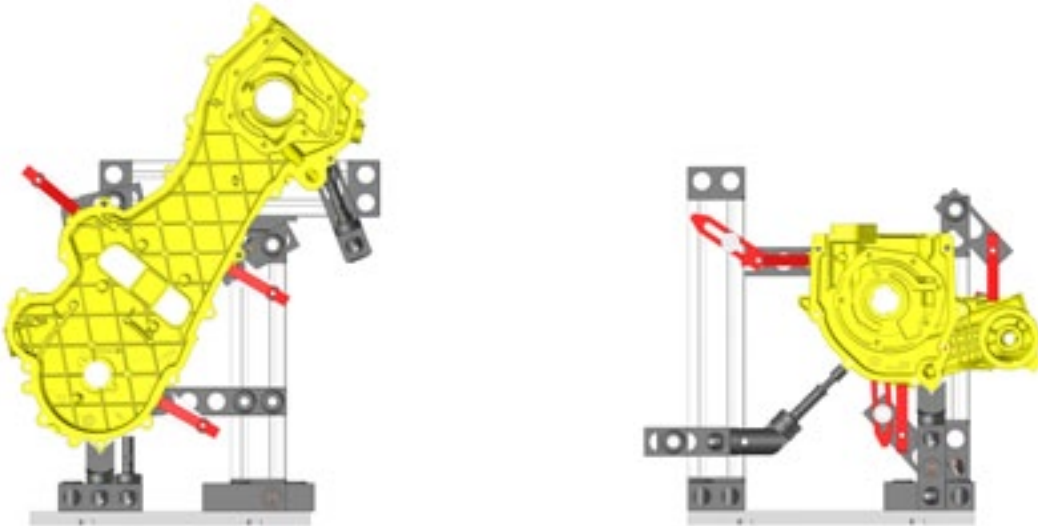
It is easy to understand the following graphs:



### Other advantages of Alukeep:

- 1 - less time for the study, configuration and the effectivity of the physical preparation;
- 2 - greater adaptability in the verification phase for possible required corrections;
- 3 - bigger space available around the object itself.

An EXAMPLE of fixing two ELEMENTS performed by Alukeep system:



A unique structure allows fixing two completely different parts modifying it only partly.

## Technical Data

MATERIALS:	Aluminium alloy with a high resistance
SUPERFICIAL TREATMENT:	Hard black anodized oxidation
TECHNICAL DETAILS:	Reticular inter-axis distance: 30mm or multiples Wheel-base of the thread: 30mm Plate threading: M8 Element threading: M8 / M24 x 1
GEOMETRICAL TOLERANCES	
RETICULAR SJS:	Center to center distance: $\pm 0,020$ mm Thickness of the plate: $\pm 0,1$ mm Flatness: 0.02/100 Perpendicularity: 0.04/100 Parallelism: 0.04/100

## Philosophy of the Alukeep System Sales.

Alukeep system is a set of **modular elements**. All the articles can be joined one with another with the same element of the union, even if the size and the configurations are changed. Here is an offer of the sales:

A

### **MINI SET SLIM:**

Ref. Code ss 1ssu: A kit consisting of 32 elements

This set is recommended to the clients that need to use the basic configuration of our system. The system consists of 3 pillars of 12.5mm diameter adjustable in three axes. This set is only offered at CMM manufacturers as a basic solution.

B

### **MINI SET:**

Ref. Code s1su: A kit consisting of 32 elements

This set is a basic configuration enriched with one pillar for a type which allows a better solution compared to the above mentioned Slim Set.

C

### **STANDARD SET SIZE:**

Ref. Code XS: A kit consisting of 66 elements

Ref. Code S: A kit consisting of 82 elements

Ref. Code M: A kit consisting of 114 elements

Ref. Code L: A kit consisting of 224 elements

Ref. Code XL: A kit consisting of 420 elements

Ref. Code XXL: A kit consisting of 606 elements

Every client can have a broader idea of the set of elements in the kit, an idea which will be close to the real clients' needs. On the basis of the configuration of the set size, quantity and elements are changed. These configurations are then the basis for preparing a specific set according to the client's demands.

The price for the set is an arithmetic sum of single components' prices.

D

### **SPECIAL SET:**

Ref. Code XS-SPE: A kit special for elements and quantity which has the basis in the kit XS standard

Ref. Code S-SPE: A kit special for elements and quantity which has the basis in the kit S standard

Ref. Code M-SPE: A kit special for elements and quantity which has the basis in the kit M standard

Ref. Code L-SPE: A kit special for elements and quantity which has the basis in the kit L standard

Ref. Code XL-SPE: A kit special for elements and quantity which has the basis in the kit XL standard

Ref. Code XXL-SPE: A kit special for elements and quantity which has the basis in the kit XXL standard

Every client has their specific needs. Therefore we are prepared to construct a kit which for the quantity and the articles will be as close to the clients' needs as possible. In this case it is possible to add and/or remove some articles or to change the quantity of the pieces of the standard set.

The price for the set is an arithmetic sum of single components' prices.

## E CUSTOMER DESIGN SET:

Ref. Code SPE: A kit specially prepared according to clients' demands.

In this case we only supply articles necessary for creating a structure needed for fixing the elements supplied from a client. This solution is preferred by the clients that have large volumes of production.

The price for the set is an arithmetic sum of single components' prices.

For new clients as well as for the clients already using Alukeep system we provide a service of designing, software and assembling of the structure.

Alukeep offers its clients a data storage of all types of purchased elements; thus when a client asks for a new project they are informed about the elements that they already own and about the elements necessary for the new application.

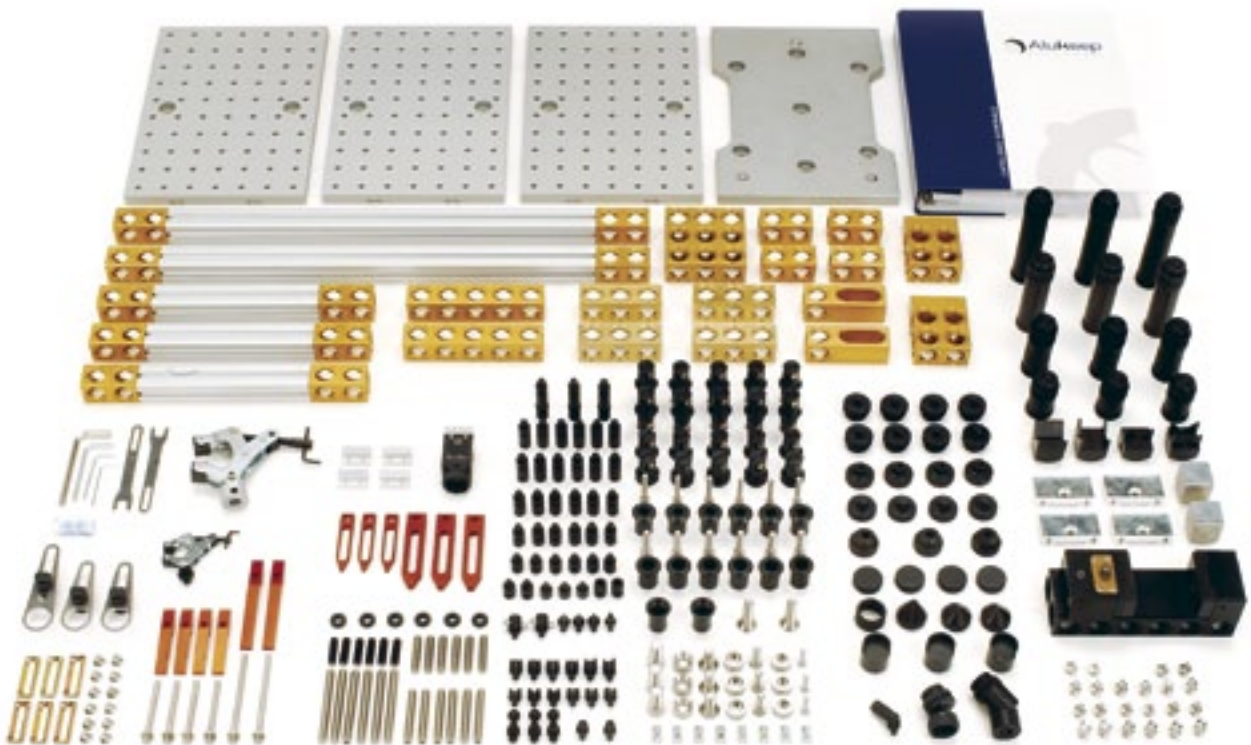
## F SINGLE ELEMENTS:

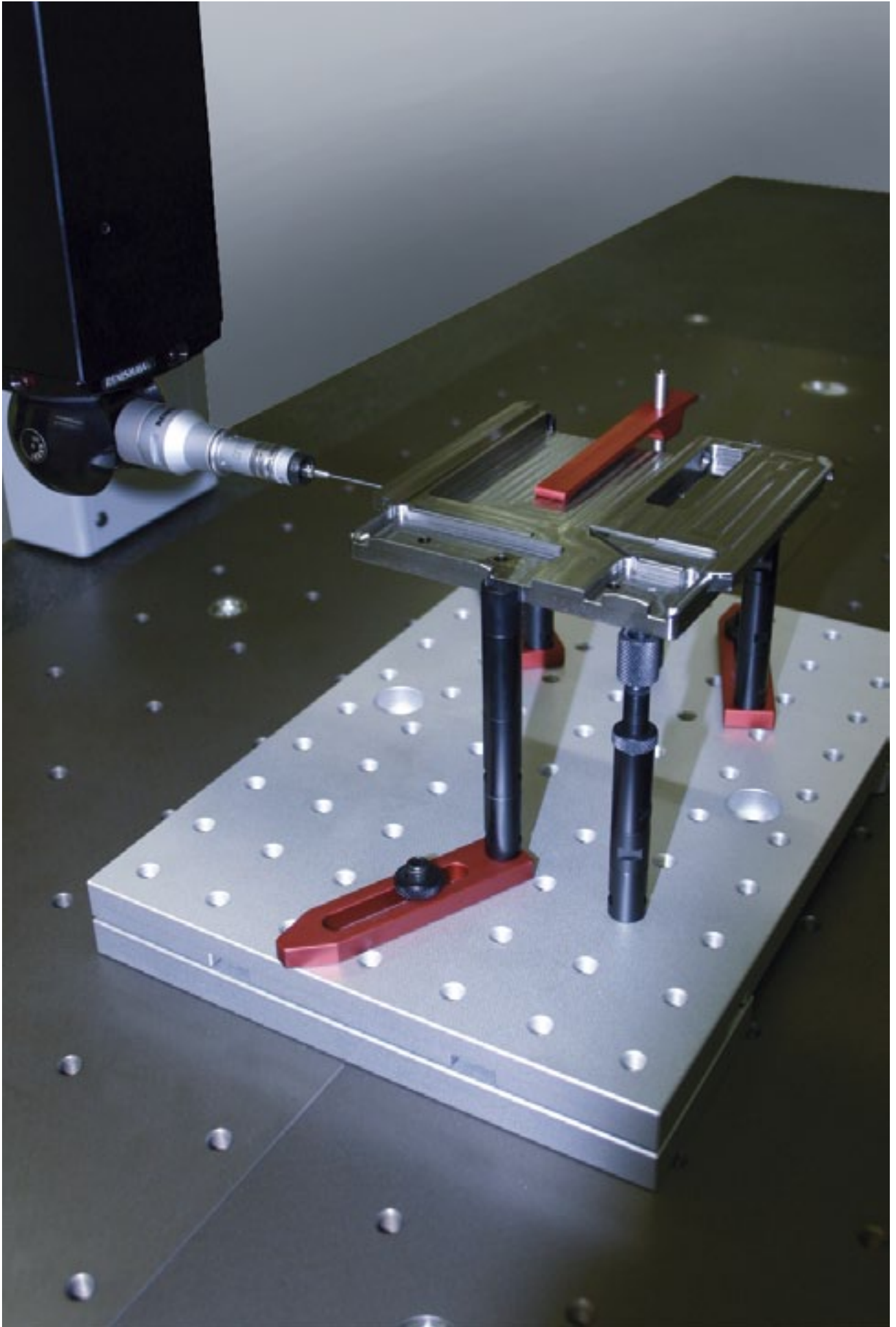
Ref. Code \_\_\_\_\_ (Article Code).

Implementation of Alukeep system with the purchase of single elements.

Suggested for not only those that already own Alukeep system but also for all of those that use modular systems from competitors. Thanks to versatility and a perfect integration to the systems of other suppliers the client will appreciate the purchase of Alukeep elements in terms of improving the range of use with excellent economical savings.

For better functionality of rapid change plates they are also offered individually so the time for setting up a unit was considerably reduced.







## Other Services.

### **STRUCTURES ACCORDING TO THE DRAWING**

ALUKEEP designs and produces structures on demand for various typologies of uses. The structure can either be produced according to Alukeep technology or according to various solutions. ALUKEEP constructs further elements according to a drawing cataloguing and storing all the characteristics for a possible future reorder.

On request it is possible to supply a CAD project with a list and a three-dimensional file of used elements in the CATIA or STEP format and an instructional video for the structure assembly.

### **PROJECTION AND LOGISTICS**

A service created for the customers that have a wide range of products. ALUKEEP offers its clients a data storage of all the range of purchased elements. The list is always updated when a customer purchases our product directly or indirectly.

Every time a customer asks for an Alukeep study projection all the necessary elements are searched in the customer's stock before the purchase. The results of our projection and analysis can thus show that it may not be necessary to purchase additional Alukeep elements, or only those are purchased that are missing, with a significant saving in the adjustment of the structure for different articles.

Alukeep doesn't want to fill up your stock with unnecessary elements but wants to help you with its management.

### **TRAINING ON SITE**

Our company is prepared to organize trainings for assembly and effective use of Alukeep system at our site. On request the trainings can be organized at the user's site with the delivery of the material or every time a customer asks for it.

### **DELIVERY TIMES**

90% of the material is available on stock with the delivery time of 1 week from confirmation of the order, including the transport, in all European Union. Deliveries out of Central and Eastern Europe are mostly processed with higher priority on the production level in order to compensate possible time losses caused by customs clearing.

## FAQ

### Answers to Frequently Asked Questions.

- 1 What does modular Alukeep system serve for?**  
 Alukeep is a versatile system used particularly in Quality Control for realization of measurement structures. For the measuring processes it is necessary to block in the space the element that is to be measured and secure the repeatable positioning with a maximum precision and reliability.
- 2 Why is a modular system better compared to a dedicated system?**  
 It allows a complete use of the 3D space guaranteeing greater and better movements to the measuring instruments. – It offers a better repeatability of positioning of the object to be checked. It allows a consequent re-use for other applications with better timing. The cost in the middle-long term becomes lower. – The modular system storing requires lesser space.
- 3 What are the advantages of Alukeep system compared to the competition?**  
 A patented SJS joint allows a great versatility and economy. Thanks to the SJS joint our philosophy goes in the opposite direction compared to other manufacturers of modular systems that tend to deliver a huge quantity of elements, not always useful, with additional costs for supplying, management and storing. Modular Alukeep system doesn't use screws or bushings for fixing the elements but simply an SJS joint. With the only 4mm hexagonal key an operator constructs a structure. – Less time is required for implementation of existing structures with the addition of other elements. The range of elements that is continually expanding allows using the system also for the future applications. Production of the specific elements according to drawings for the customers in direct contact with our R&D department. – Rapid manual process of loading and unloading a new basic plate thanks to the system of self-centralizing plates.
- 4 Can Alukeep system find application also with the customers that already own a modular system from a different manufacturer?**  
 Yes. Alukeep is a perfect partner also for other systems on the market. This allows implementing and developing mixed structures adding our uniqueness to the quality of the measurement systems of other manufacturers in terms of flexibility, practicality and economy.
- 5 What is the minimum and maximum size of the element to be measured supported by Alukeep system?**  
 The dimensions are very variable, from the elements of few millimetres (electronic cards) to the measures or sizes measurable in metres (parts of planes or cars).
- 6 What terminals are available for fixing the object to be measured?**  
 In the catalogue there are numerous elements of Alukeep production as well as commercial elements for infinite solutions.
- 7 Which are the major fields where Alukeep system is used?**  
 Mechanical, automotive, aerospace, biomedical, die-casting and others. Shortly, a complete range of CMMs, measuring machines in general, are an ideal partner for fixture system Alukeep.

**8 How much time is required for an installation of one structure of medium dimensions?**

It depends on the object that is measured. On average approximately 25 minutes. The required time and application of modular systems depend on dexterity of the involved personnel and their ability to prepare the calibre and also on the frequency of the operations.

**9 How much time is necessary for the control process from one article to another one using Alukeep with a three-dimensional machine CMM of medium size?**

Thanks to our system of rapid change a few minutes are enough for the preparation and starting scanning of the following element.

**10 Is Alukeep system metric or in inches?**

Metric, 30mm pitch, or multiples of this pitch.

**11 Is it possible to purchase a fixture plate separately? What are the dimensions of its holes?**

Yes, it can be purchased separately, in various dimensions. Alukeep plates are standard with the following characteristics: holes M8 pitch 30 mm, they are available in two types of plates, fixed or with a rapid change – self-centralising; the plates can be used on any side; they can be supplied without holes for dedicated structures.

**12 What is the standard colour for the elements of Alukeep system?**

Alukeep is produced in light alloy with superficial treatment in black colour. Also the colour of yellow gold is available. The bases are of grey colour. We chose the black colour in order to reach a versatile use with different metrological methods: photometric – tactile – scanning.

**13 Where is Alukeep system produced, what is the guarantee and the delivery time?**

Alukeep is a technology patented in Italy, developed and produced in Verona, covered by one-year guarantee from the purchase. The material is available in stock with the delivery time of 1 week from the confirmation of an order, including transport within all European Union. Deliveries out of Central and Eastern Europe are mostly processed with higher priority on the production level in order to compensate possible time losses caused by customs clearing.

**14 Can the system be delivered assembled or with detailed instructions how to complete the structure?**

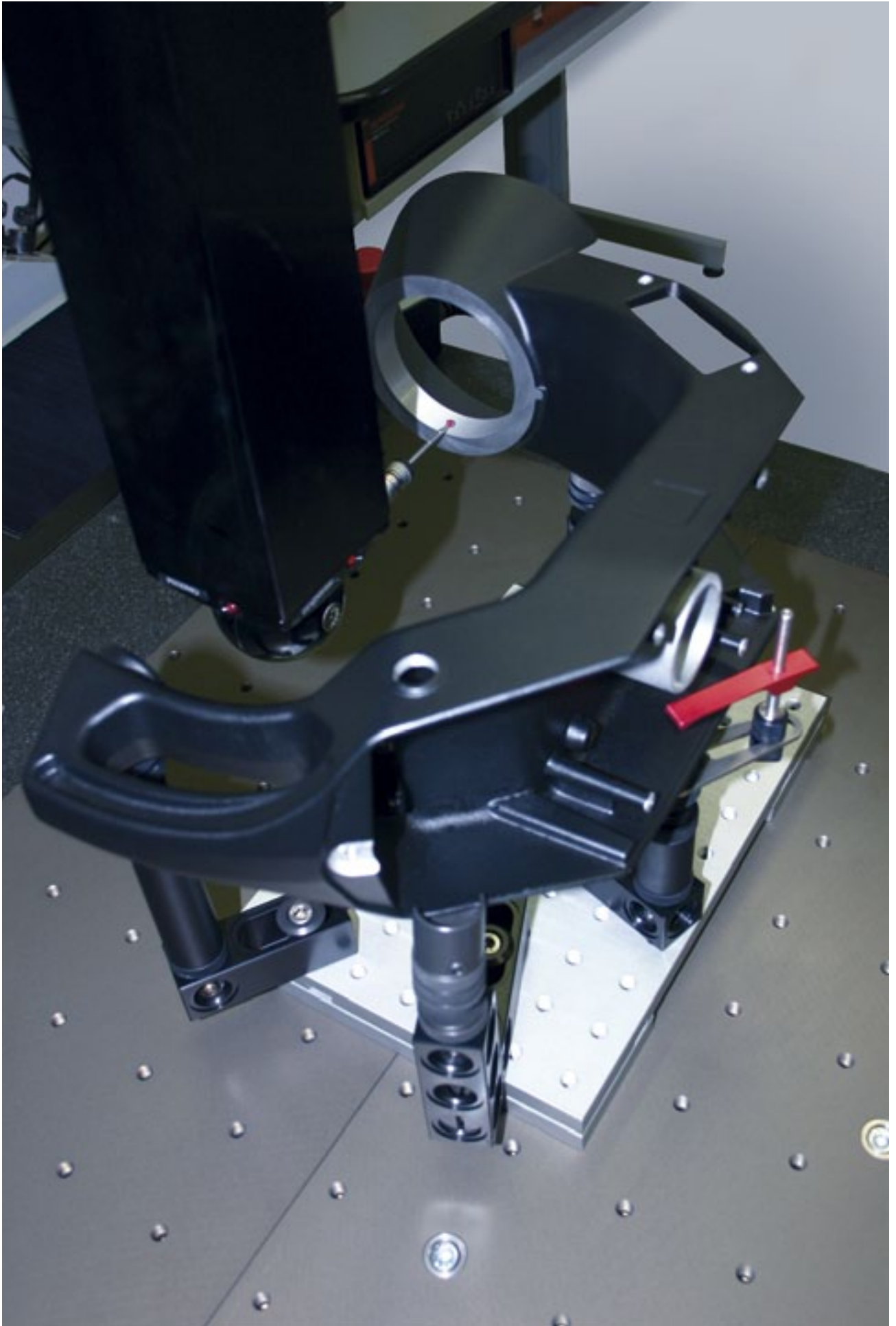
Yes, Alukeep system is supplied assembled or a CAD project is supplied with a list and a three-dimensional file of used elements in CATIA or STEP format and an instructional video with a guide how to assemble the structure.

**15 Can elements be supplied according to a client's drawing?**

The company Alukeep is able to construct checking calibres according to a drawing, with unique elements according to customers' demands.

**16 Can the company Alukeep manage a customer's stock?**

Yes, it is a service that has been created particularly for customers with a wide range of products. Alukeep offers its customers a data storage of all the range of purchased elements. The list is always updated when a customer purchases our product directly or indirectly.



# ALUKEEP

## A New Company's Name.

The company ALUKEEP is situated in Verona, in north-eastern Italy, in a region with a high concentration of precise mechanical production. The company was established as a subsidiary of TOR.MEC. AMBROSI Srl which was founded in 1980 as a mechanical workshop with a high accuracy specialized in sub-deliveries to third parties in the medical, aerospace and food processing sectors. Alukeep system was created and developed as a technical solution of the own department of quality control. High quality standard of Alukeep system is a result of the following factors:

- high qualified and motivated personnel
- production on high precision machines
- methodology of work according to ISO standards
- CMM quality control
- technical cooperation with an engineering company with specific professional competences

Besides Alukeep has settled a technical partnership with a design and project company from the automotive sector for the purpose of developing and supplying engineering equipment and services integrated for the automotive industry, projection and realization of "meisterbock", support and checking calibres, assembly equipments.

Strong points of the company Alukeep in the automotive field are as follows:

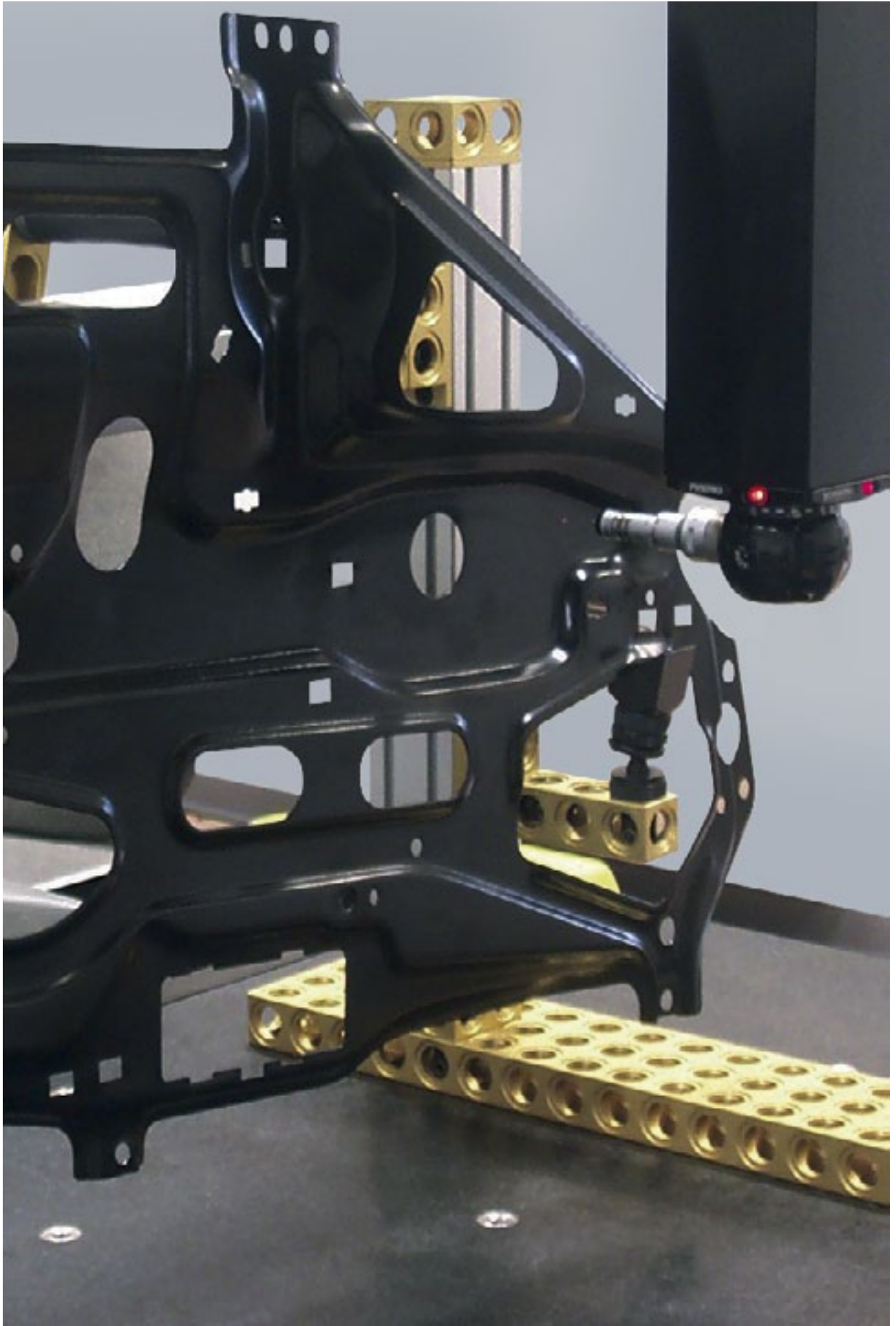
- projection and construction of the development of unique modular fixtures for versatility and flexibility of use
- competitive price
- short lead time
- work team dexterity
- direct relationship with customers
- quality certification ISO 9001:2000

ALUKEEP offers all the services linked to sales, logistic management of the stock, CAD project study, projection and construction of dedicated elements.

Not a long time ago new staff was admitted to the company and was charged with the development of the commercial net, development of products and services for the customers which permits us to claim that Alukeep is thanks to its energy and motivation prepared to address a global market.

Alukeep wants to introduce the best offer for the technicians and traders involved in the field of fixture modular systems!





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