

Modular fixturing systems



System Overview **2018**



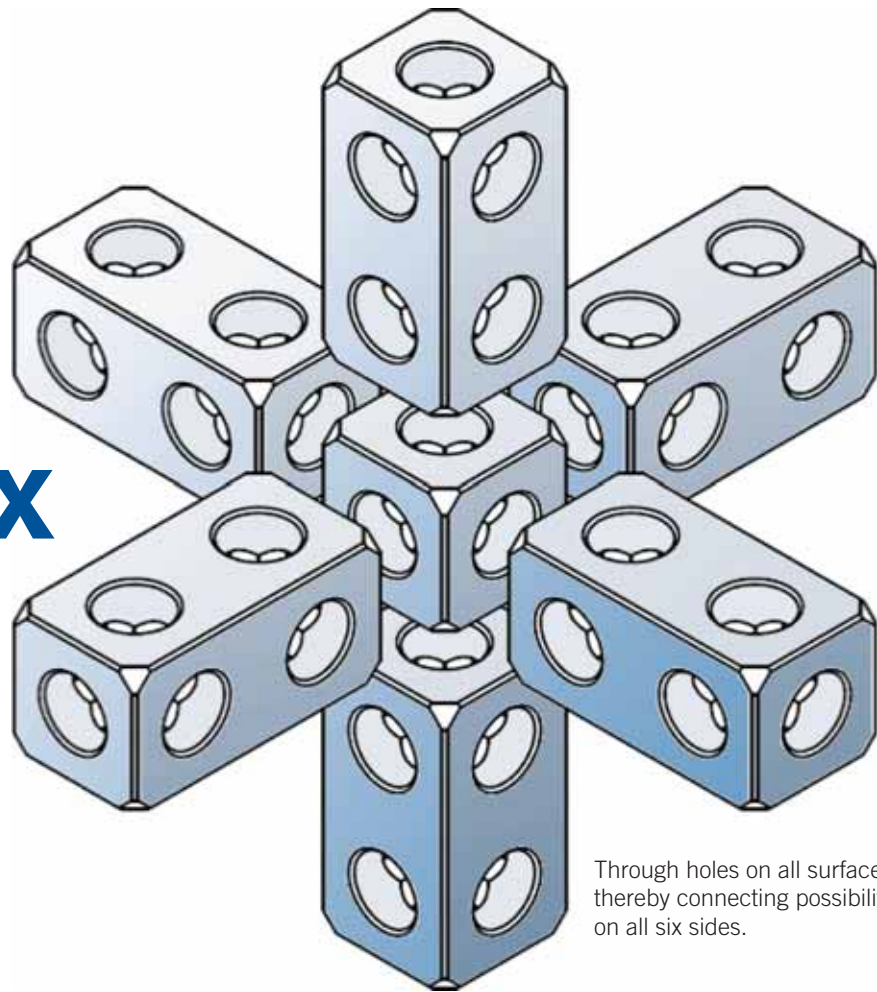
ALUFIX
CLASSIC

ALUFIX
ECO

FixBase®
PLATES/CUBES



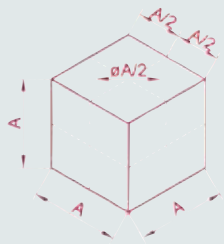
The ALUFIX principle



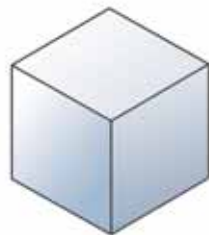
Through holes on all surfaces, thereby connecting possibilities on all six sides.

Basic design

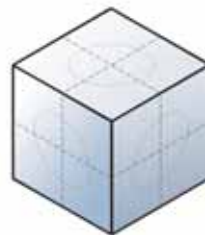
Origin of element geometry



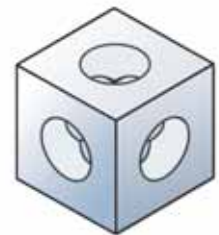
All further dimensions arise by multiplying the initial cube.



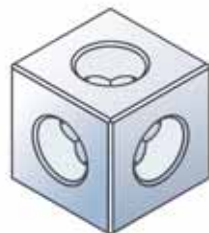
Initial shape: Cube



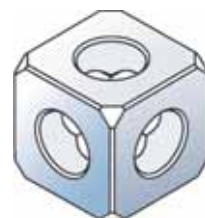
Marking for holes on all surfaces



Through holes on all surfaces



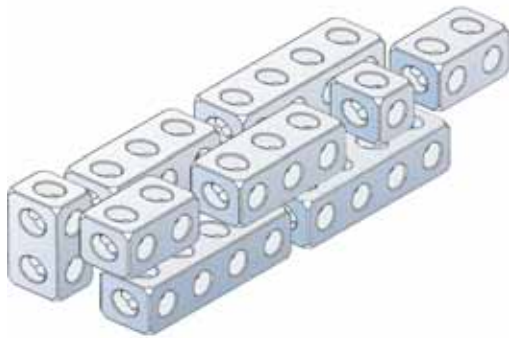
Chamfers on all edges



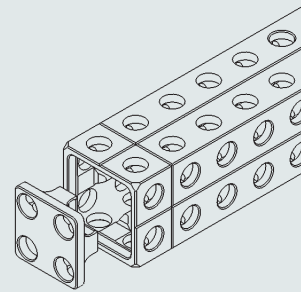
Angles on corners



Sectional view



ALUFIX element geometry guarantees that the grid in all directions across any number of joins will remain unchanged.



Hollow profiles (Light bars) are a logical extension for larger cross sections and lengths. Couplings mounted at both ends create 6 sided connection option.

Connection technology

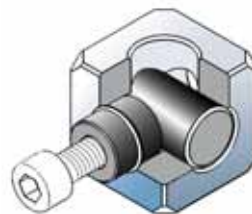
Each hole is not only for positioning but also for fixation



Sleeve for positioning



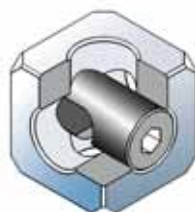
Screw nut



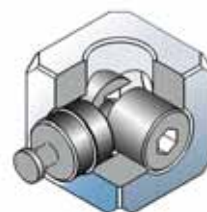
Sleeve, nut and screw



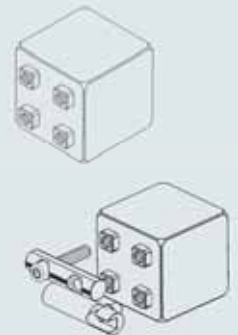
Twin bolt for positioning



Lock for securing



Lock and twin bolt



Nubs are space saving connection solution for slides, quick couplings and contour blocks.

Versions

ALUFIX CLASSIC

High tensile-strength aluminium for highest demands on load, stability, durability, accuracy



ALUFIX ECO

Medium tensile aluminium as economical alternative for normal applications and moderate building intervals



Basic Components

Base plates/grid base plates
(small to medium size fixtures)

Bars full/light

Structure plates and grid plates
(large fixtures, mobile)



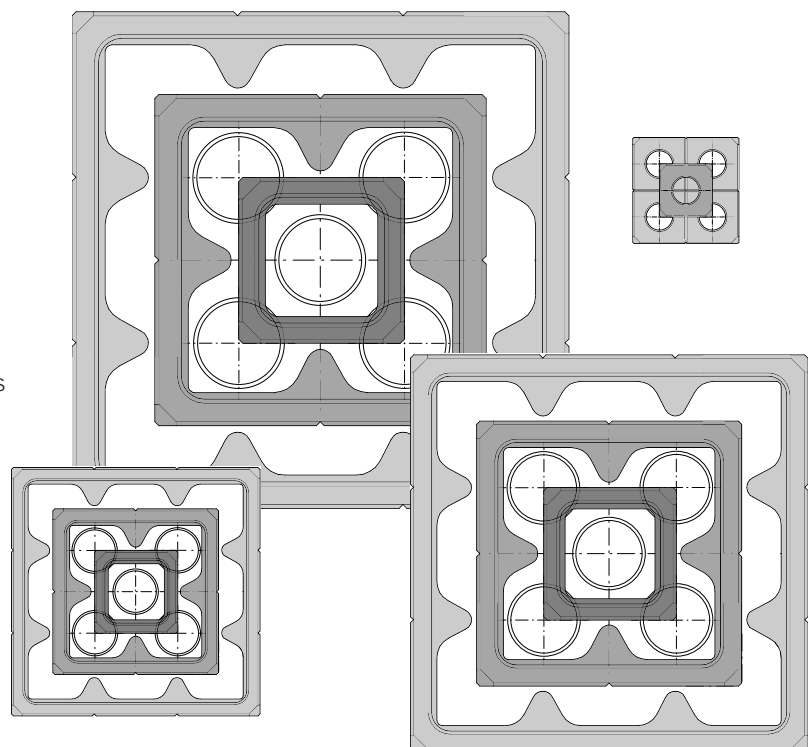
System sizes

ALUFIX 16
for optical measuring,
Mounting small parts

ALUFIX 25
for small to medium single part fixtures

ALUFIX 40
for medium to large assembly part
fixtures, meisterbocks etc.

ALUFIX 50
for mounting large, heavy parts



Element groups

Basic elements

Plates, bars, struts, angle brackets



Adjustable elements

Slides, rockers, jacks, rotary plates etc.



Contact elements

Centers, ball points, v-pieces, contour blocks etc.



Clamping elements

Hold-down springs, toggle clamps, clamps, jaw chucks, vises, magnets, vacuum suckers etc.



Connection elements

Couplings, quick and screw connectors



Application spectrum

Simple part supports

- simple, direct and without design, built according to the Alufix principle.

Here a modular fixturing system with a large range of components comes into its own.



Fixtures

- According to design and requirements of workpiece data, concept for repeatable use
 - From checking of purchase parts to series measuring



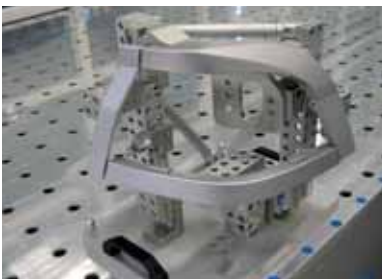
Sophisticated part supports

- With measuring, checking and adjusting elements, i.e. dial gauges, retractable plug gauges, moving slides



Gap and flush gauges

- with folding/removable contour stripe models and or measuring equipment



Meisterbocks

- Outer and inner for front, decklid, floor or complete body-in-white



Fuegemeisterbocks (Match metal fixtures)

- For front, rear, floor, sidepanels and a complete chassis



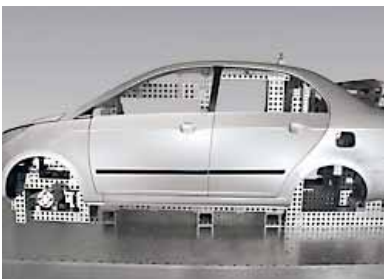
Cubings

- For supporting reference models and single parts in changeover



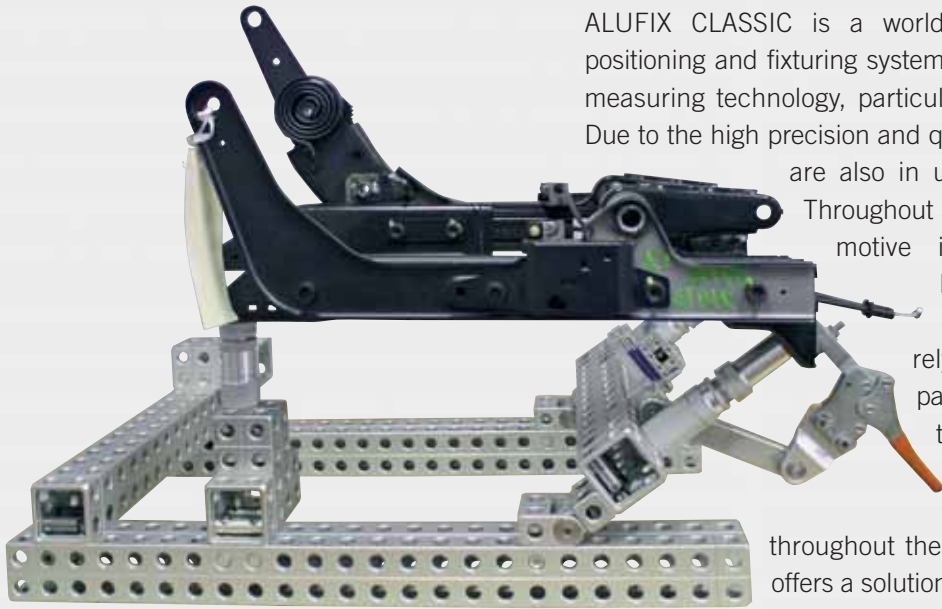
Frames for design models

- For supporting Uriol and clay models



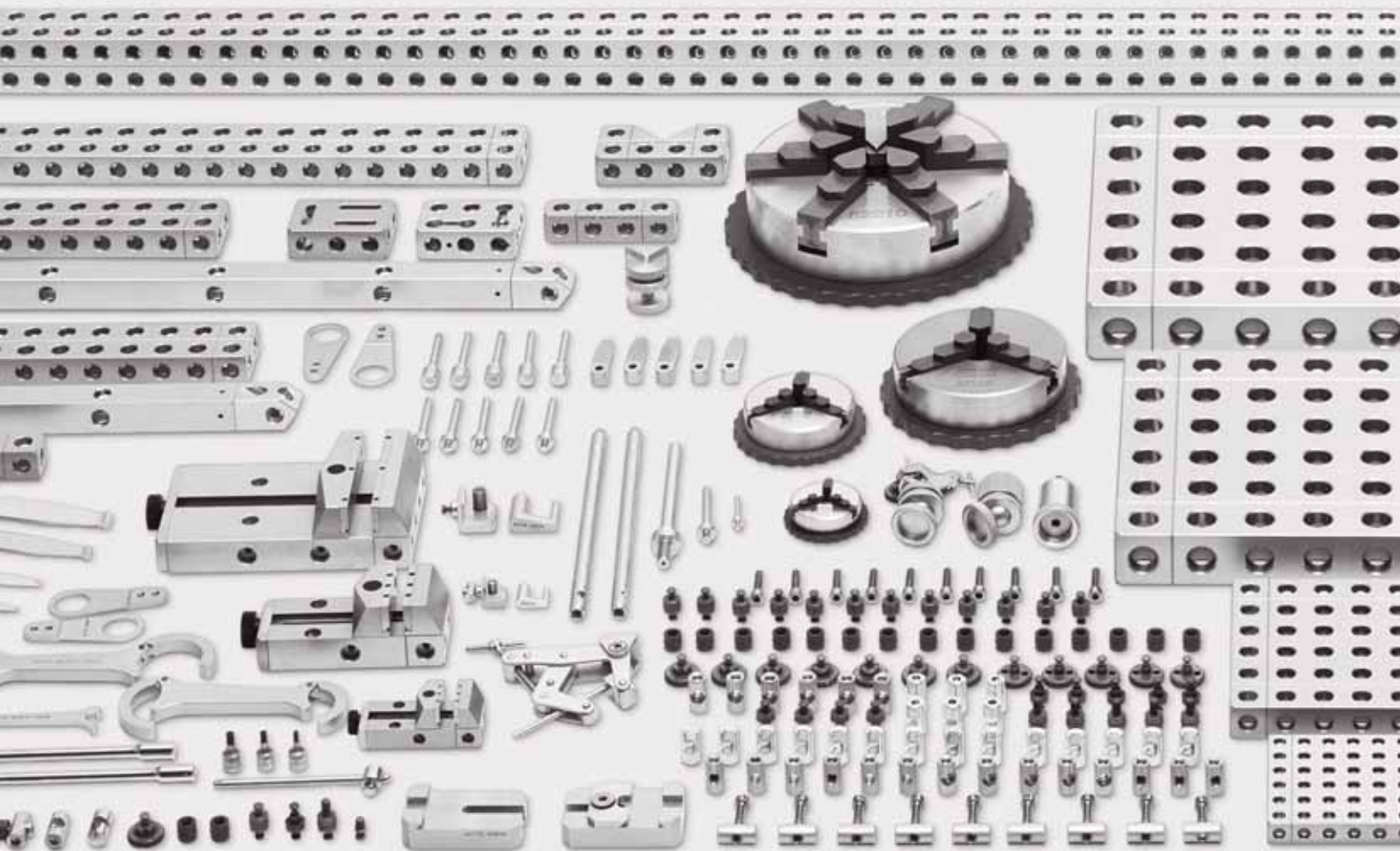
ALUFIX fixtures can also be used for
assembly and alignment, glueing and welding, milling and laser machining

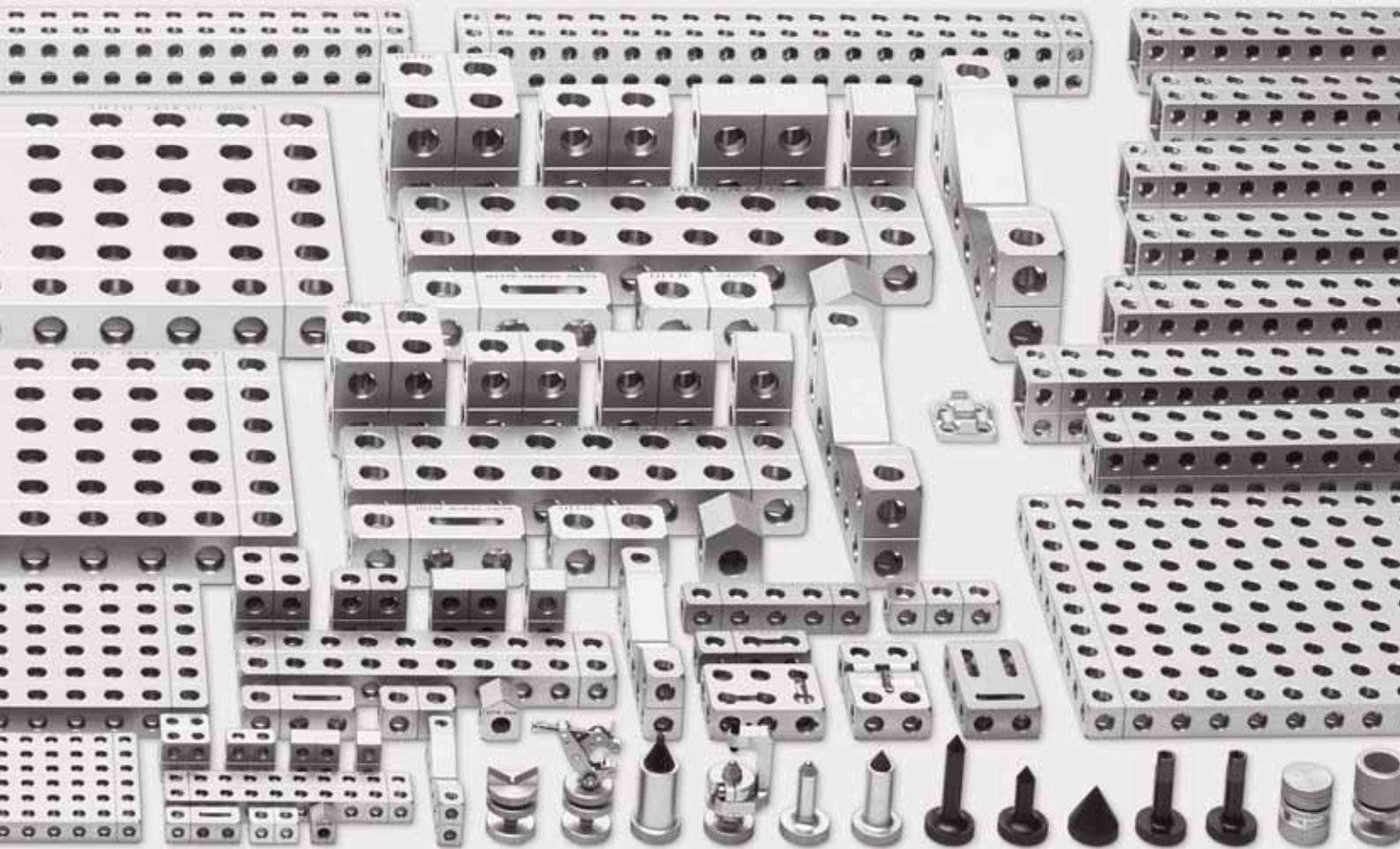
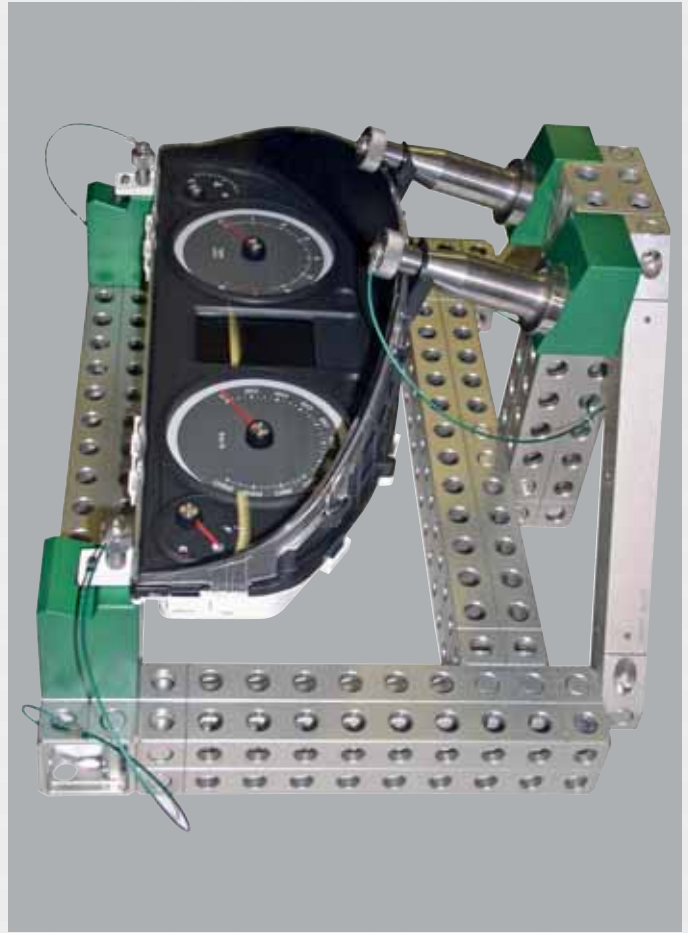
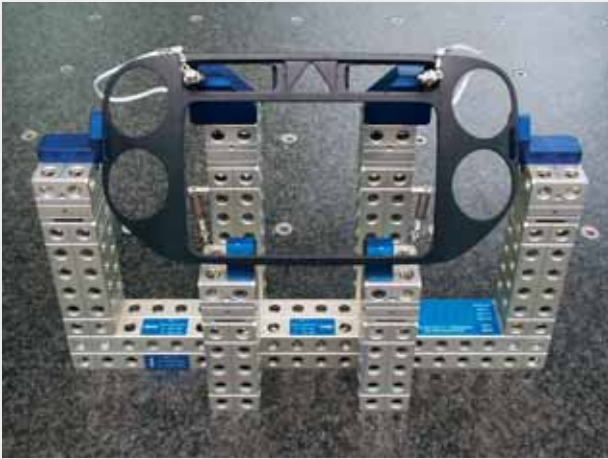
ALUFIX CLASSIC Modular Fixturing System



ALUFIX CLASSIC is a worldwide renowned and proven modular positioning and fixturing system for almost all applications in dimensional measuring technology, particularly on coordinate measuring machines. Due to the high precision and quantity of intelligent elements ALUFIX sets are also in use as assembly or positioning systems.

Throughout all kinds of companies, ranging from automotive industry to aerospace technology to biomedical equipment manufacturers Witte ALUFIX CLASSIC is the one people rely on. You have different materials, your parts vary in size, mass and stability, you have to measure using styli or optically? It's no problem for ALUFIX CLASSIC! Based on the variety of elements developed throughout the decades of experience at Witte, ALUFIX offers a solution for every job. ALUFIX CLASSIC is not only an investment for your current needs, but also for the future, because all elements, in accordance with the real idea of a modular system, are reusable and can be combined with all other Witte systems and elements.

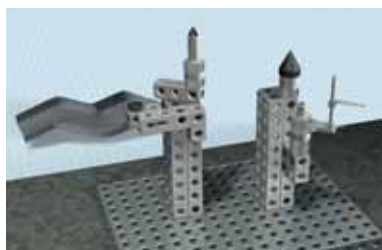
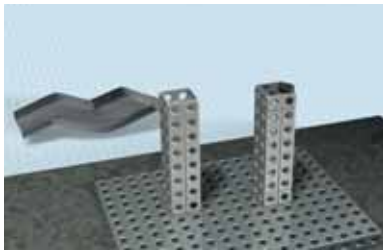
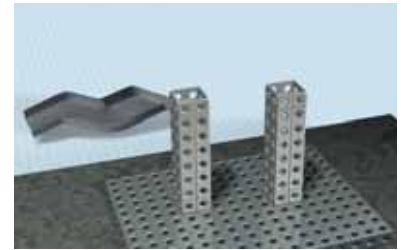
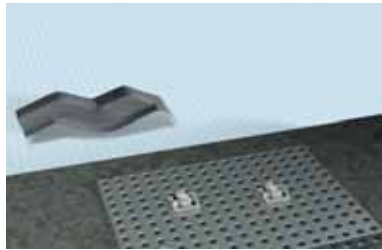
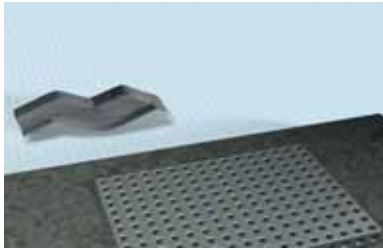
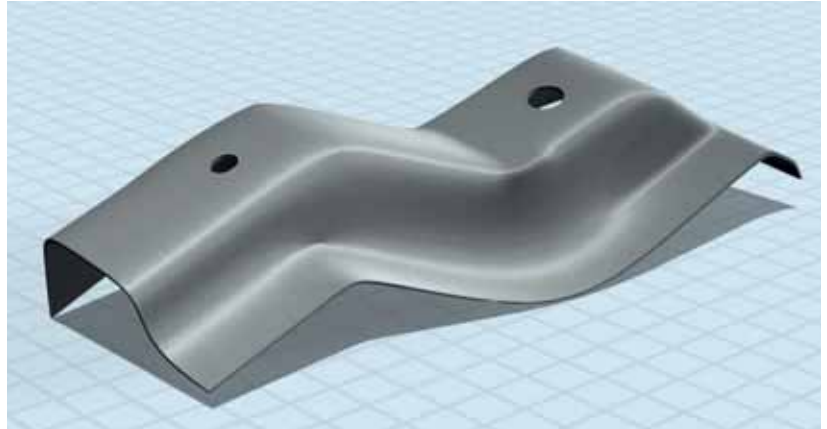




ALUFIX

Building block system

One system, almost boundless possibilities.
No limitations on shape, size, mass of parts.



Step by step set up of a part using ALUFIX Classic standard components.

ALUFIX Expert 2015

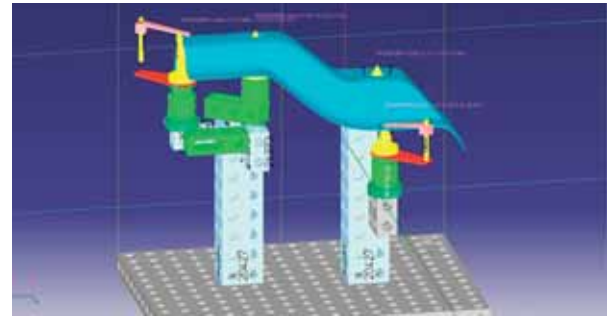
3D Design Software

ALUFIX Expert software makes automatic designs for fixtures with corresponding partlists. You choose the system and define clamping points. The software calculates on the basis of this information complete solutions and variations of a fixture.

Simply select the desired ALUFIX system, the basic type of build (frame or plate), the grid size and the position and function of clamping points. On the basis of this input the software calculates complete solutions and variations. For checking purposes and measuring off of surface vectors additional part

data in all established formats can be imported.

Pictures show some variations, which have been calculated by the software. The clearly structured, self-explaining software is easy to learn. Two separate but complementing help functions (Tool tips and Operation Manual) support users at all times. The design data is exported in either IGES, STL or VRML format (i.e. for offline programming of coordinate measuring machines), or can be transferred with a macro and the corresponding parts library in Catia V5, Siemens NX and Autocad.



FIXMES

ALUFIX parts library for CAD systems

Fixmes is an Alufix parts library on a geometric basis for designing and documenting fixtures. Using Alufix standard elements fixtures can be built in a fraction of the time required previously. By designing the fixture on-screen expensive idle-times of the measuring machine are avoided.

The principle:

at the CAD workplace the user designs a desired fixture for workpiece machining or measuring using Alufix components. To do so he can use all parts available in the Fixmes library.

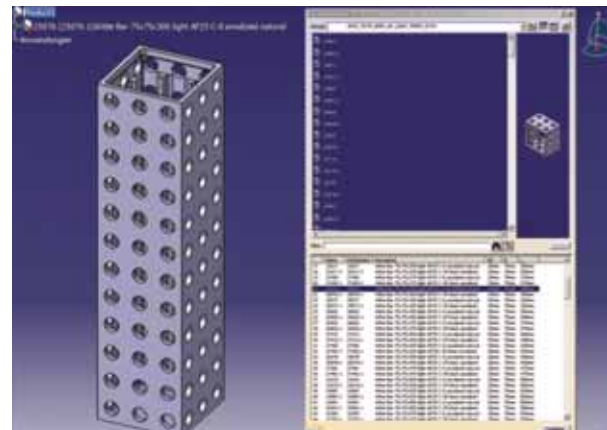
The selection is made according to one of the following features:

- Item No.
- Name
- Dimension

The parts of the fixture can be displayed as a wire model or solid. For a clearer image and an increase in speed individual planes or elements (holes) can be excluded. A printout of the finished fixture includes a parts list.

The advantages:

- Shorter design times
- Better prolonged use of measuring machine
- Timely preparation of fixture
- Documentation for later repeat assembly of fixture
- Short term changes can be carried out quickly
- No training necessary,
- CATIA or AutoCAD functions are utilised
- Also for off-line programming



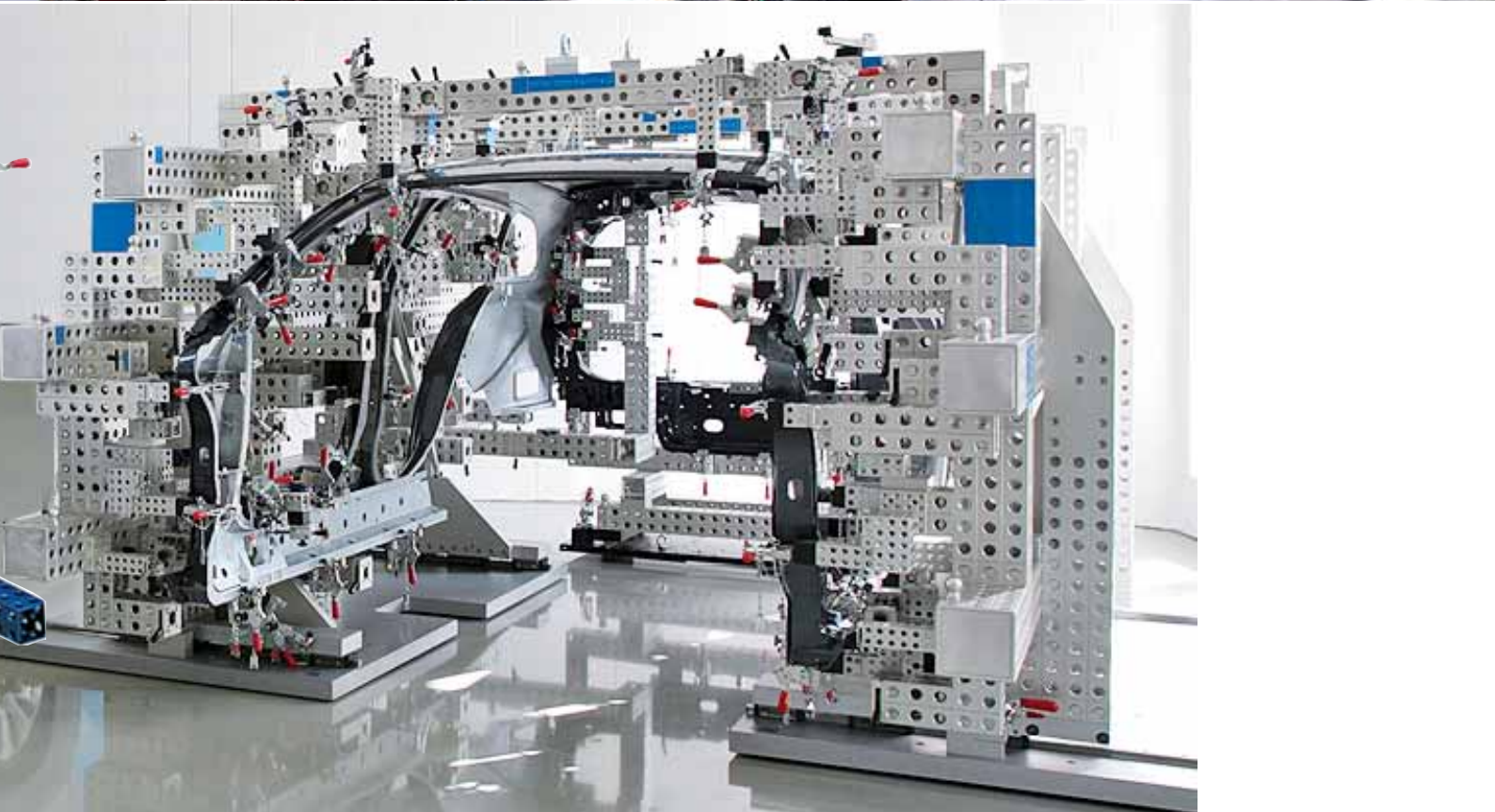
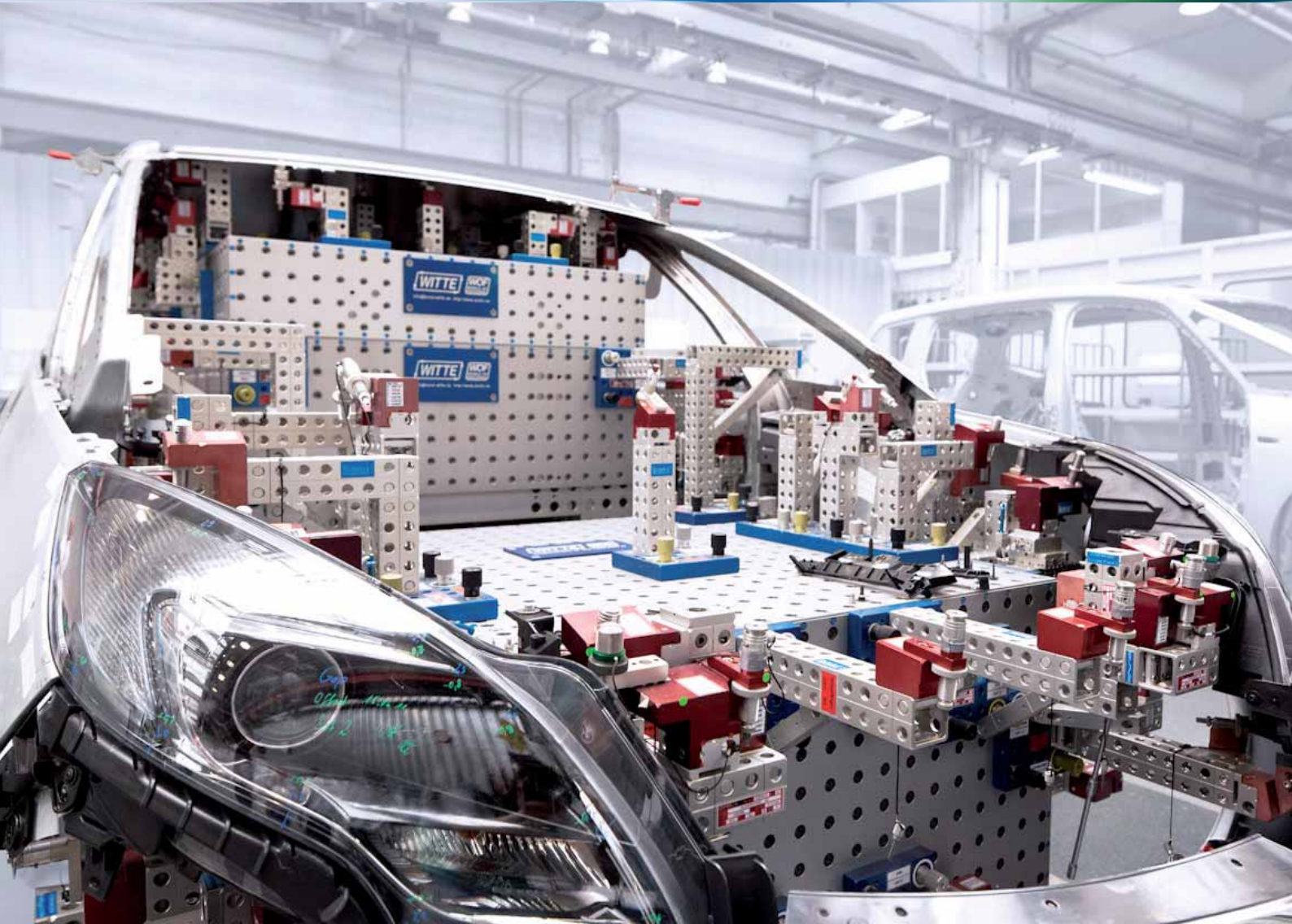
Modular fixturing systems for fixture building

Added value:

- Best compromise between weight and stability (high and medium tensile-strength aluminium, square profiles without ribs, wear and tear protection (alu anodized all round, steel items hardened/tempered), corrosion protection (alu anodized/chromated all round, steel parts in stainless or specially coated – not burnished!)
- Intelligent components, which can later be changed or extended in function (i.e. quick change couplings with hinge, ratchet grip)
- Later modifications and extensions to fixtures possible without mechanical processes such as sawing, drilling, milling, welding (also without help from service technicians by using pre-assembled component groups)
- Multiple use for different parts or stages of development possible at all times
- Subsequent change or extension of application possible (i.e. by adding on gap and flush or cubing elements, upgrade for photogrammetry measuring)
- Transformation from development/pre-series tool to fixture for series measuring possible

- Reassembly to mount completely different parts (retooling with up to 90% reusability of single components)
- High basic accuracy “integrated”, all outer surfaces machined, each profile and each hole can be used as a reference (i.e. when using a measuring arm select any mounting point and measure incrementally without loss of accuracy)
- Complete or part knockdown for space saving storage / transport.







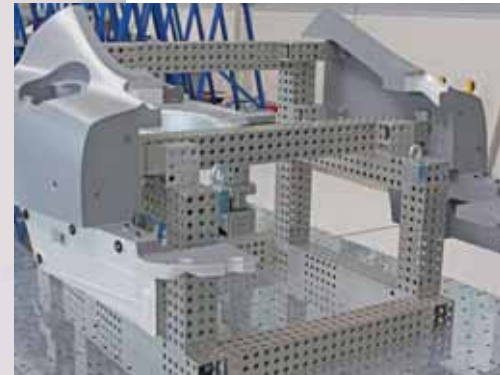
Meisterbock

on hovercraft
structure plate



Design model

on grid base plate



Rear cubing

for supporting simulated rear sidepanel, cross member and bumper parts. The original trunk lid can also be mounted.

Front cubing

with exchangeable simulators

Witte FixBase®

Structure plates

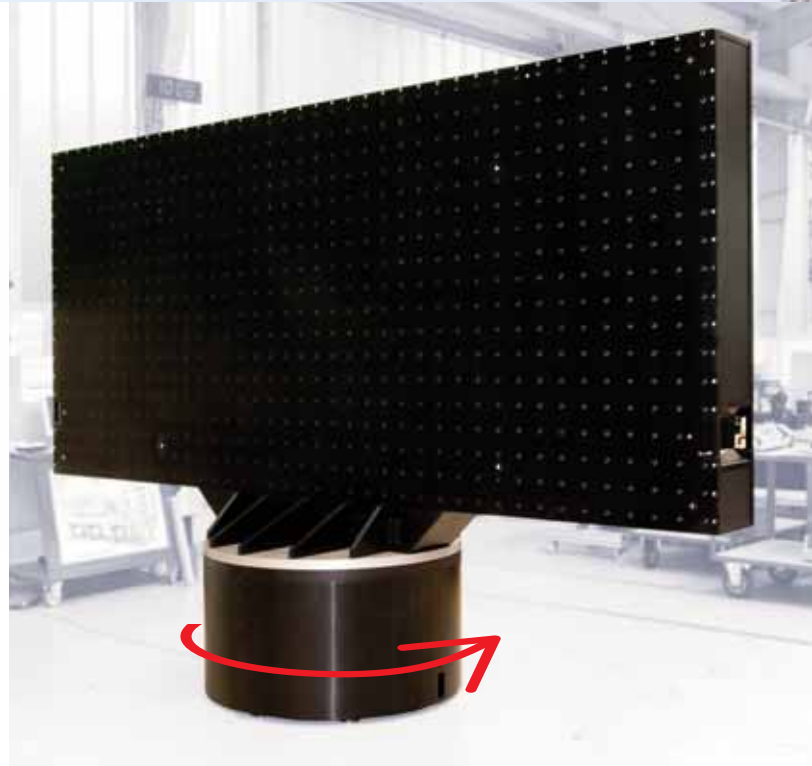
- stationary
- with hovercraft, manually mobile
- with hovercraft and direct drive
- roller mounted with direct drive
- rail-guided
- independent, free moving





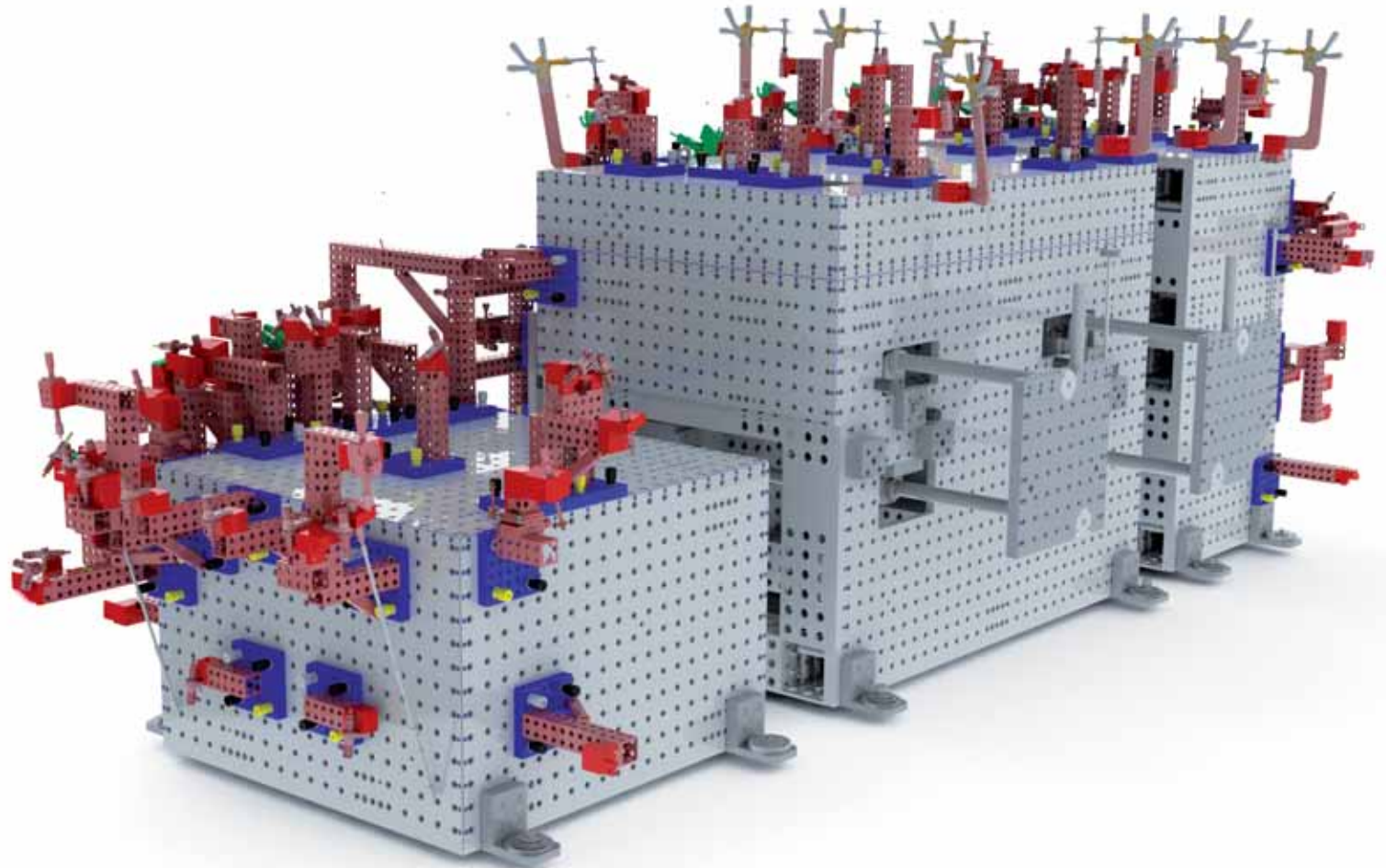


FixBase Structure plate
for mounting column type supports



Witte FixBase®

Application examples



FixBase cube combination mounted with column type supports



ALUFIX - Systematic flexibility...

Reliability from market leader in fixture building
with 30 years of experience and more than 10.000 systems sold worldwide

Why and when do you need this system?

- You want a fast solution with short reaction times and high flexibility?
- Immediate availability is a must for you because planning time is getting shorter and shorter ?
- You want to remain independent and prefer “do it yourself”?

ALUFIX supports you fourfold to master these demands successfully

What does
this mean?



Planning reliability

ALUFIX shortens your planning time and gives you
a high degree of freedom with

100% compatibility

- ▶ Complete system is upwards or downwards compatible
- ▶ All system sizes can be combined
- ▶ No weight or size limits

100% continuity

- ▶ Can be used with other systems and clamps
- ▶ ALUFIX has been on the market for 25 years
- ▶ Basic design has always remained the same
- ▶ Original components still valid today

100% Verfügbarkeit

- ▶ Majority of components on stock
- ▶ Own manufacturing facilities with modern workshop



Investment reliability

ALUFIX offers you 4 tangible commercial advantages

100% quality

ALUFIX quality standard

- ▶ High quality aluminium raw material
- ▶ Comprehensive machining for highest precision
- ▶ Patented wear-resistant connection technology

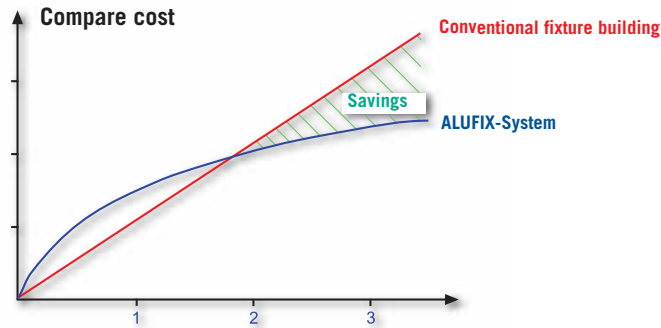
100% cost effective

- ▶ Fast return on investment
- ▶ Productivity advantage by minimizing your standing times
- ▶ Multiple application possibilities with few components

100% cost effective

- ▶ Fast return on investment
- ▶ Productivity advantage by minimizing your standing times
- ▶ Multiple application possibilities with few components
- ▶ Multiple retooling concept enables multiple use of most of the standard components built in to fixtures

Compared to dedicated fixtures Alufix gives you a financial advantage already from second application onwards.


Functional reliability

ALUFIX saves you time and money, because all tasks are solved quickly and accurately:

100% intelligence
High versatility due to patented system
100% easy handling
100% speed

- ▶ The Alufix principle: Outer dimensions are always a multiple of the grid, grids are maintained even over several joined elements, through bores in three directions
- ▶ Low weight and high dimensional accuracy
- ▶ No large storage space required when fixtures are disassembled
- ▶ Few special assembly tools necessary
- ▶ ALUFIX-EXPERT software for short term feasibility studies, for planning or simple partlists and pre design drawings
- ▶ Parts library ALUFIX FIXMES for common CAD applications


100% Service
Service reliability

Services around ALUFIX leave nothing to be desired:

- ▶ Service stations worldwide
- ▶ Advice, Demos, training and support directly on customer's site or at Witte
- ▶ Worldwide network
- ▶ Teams of assembly engineers for installation and startup on site

... a pleasure to work with!



Business activities of Witte Gerätebau Barskamp KG

Why should you choose Witte ?

To decide on Witte system solutions and products is a decision for the future and reduces investment for measuring equipment and fixture cost for every following project.

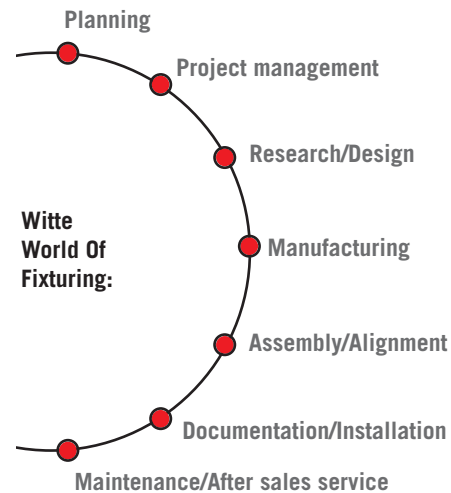
The system components from product lines ALUFIX Classic / ECO can be 100% reused for new tasks, multiple retooling for a lifetime. Reusability presupposes durability!

Witte uses high-grade material quality without compromise. High manufacturing accuracy of the components themselves and in assembly with each other as well as hard-wearing surface protection guarantee "Systematic Quality".

All Witte system elements follow a consistent idea, are downwards compatible and at the same time build a basis for future additional items.

Witte modular systems are an optimal match to today's requirements as well as being wisely combinable with each other.

No matter what demand and individual application you have, Witte offers you the correct technical and cost-effective solution.



- As everything is done under one roof, time consuming interfaces and inevitable cost arising from overlapping are dispensed with.
- International sales and service network through own subsidiaries and regional solution partners.
- Experienced project teams with sound knowledge in almost all standards of the automotive industry and their related partners.

www - Witte worldwide

We meet the challenges of our customers wherever they occur.

Our sales and service network guarantees support worldwide.

Witte companies and subsidiaries in Singapore, Mexico and USA as well as long term partners in all major industrial nations ensure the same high service level all over the World.



www - Witte worldwide:

www.witte-barskamp.de
www.witteasia.com
www.witteamerica.com
www.witemexico.com



Hightech in Aluminium

Witte was founded in 1969 and initially manufactured complex, high-precision parts for the aerospace industry.

Today Witte is one of the key developers and manufacturers of modular fixturing, positioning and measuring fixtures as well as gauges.

Almost all major companies from automotive and aircraft industries now rely on Witte products and 45 years company history.

Main emphasis of a broad range is the development and manufacture of progressive part fixturing systems for universal applications.

Due to patented solutions Witte is a leading supplier in areas of modular fixturing systems and vacuum clamping technology.

The high quality level of all Witte

products is documented with certification according to European standards.

Qualified personell with decades of experience and modern manufacturing plants are further quality guarantees.





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