

Gauge stands and 3D Clamping joints



Five programs for highest precision by measuring and positioning

We have been pursuing the philosophy of modular construction for many years as a manufacturer of fixating systems for measuring, laser, dispensing and handling technology. The modular structure, compatibility and above all the number of combinable functional elements give our programs a very high utility value. Our customers worldwide appreciate this. And it is precisely this modularity that we now use with our gauge stand and 3D clamping joints in the field of 3D articulated arms.

Our five stand ranges form a solid and broad basis for this:

StrongLine

Strongly dimensioned aluminium articulated arms combined with precise ball joints and a central clamping technology that has proven itself over many years for play-free clamping and flexible positioning. Four sizes with an action radius of 100 to 290 mm can be supplemented with various dial gauge holders and a previously unattainable range of accessories for all applications and requirements. The perfect basis for dial gauge stands and all 3D fixation tasks with high demands on functionality, stability and durability.

VarioLine

The progressive clamping principle and extra large ball joints on solid articulated arms characterise this programme. VarioLine offers demanding OEM customers the possibility of the individual design of ball size, thread connection colour and grip design. Highly specialised interfaces such as the SWA5 and SWA8 quick-change adapters of the dk module system for metrology are also available here.

TurnStopLine

TurnStopLine is characterised by two technical highlights: the positive locking of the central joint by a pair of fine locking discs and the logically enlarged main ball of the large clamping joint. This absolutely rigid fixation is necessary where dirt or lubricants can reduce frictional contacts in production environments. Special applications such as the long-term mounting of vision or sensor elements as well as demanding measurement mounting applications also require this technology.



modular. simple. better.

COMBI-TABLES

For more product details and possible combinations see accompanying table or visit:
www.dk-fixiersysteme.de/service



ChromLine

Solid ball joints and strong, long steel arms for applications with particularly large action radii complete the dk segment of 3D clamping joints for the high industrial standard. Whether used as a dial gauge stand with dial gauge holder and extra-strong magnet or equipped with alternative device bases and instrument or part holders for a wide range of positioning tasks - ChromLine fulfills the holding tasks reliably, quickly and without play with an extended projection and individually adjustable pretension.

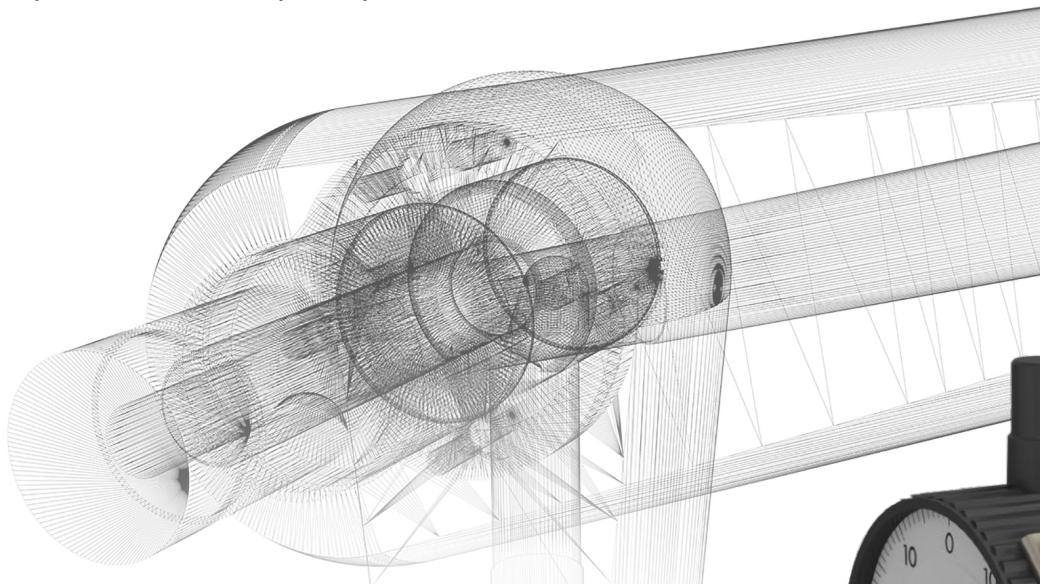
INOX HygienicLine

The 3D clamping joints for high-tech industries are available for clean zones and sterile rooms in the categories "rustproof" and "steam sterilisable". Materiality, technology and design are conceived down to the last detail so that this product line achieves qualifications even for the most sensitive industrial sectors. The characteristic mode of operation is retained: simple, fast and secure fixation with a central clamping unit for perfect positioning, alignment and holding. HygienicLine - when chemical and microbiological resistance is a prerequisite.



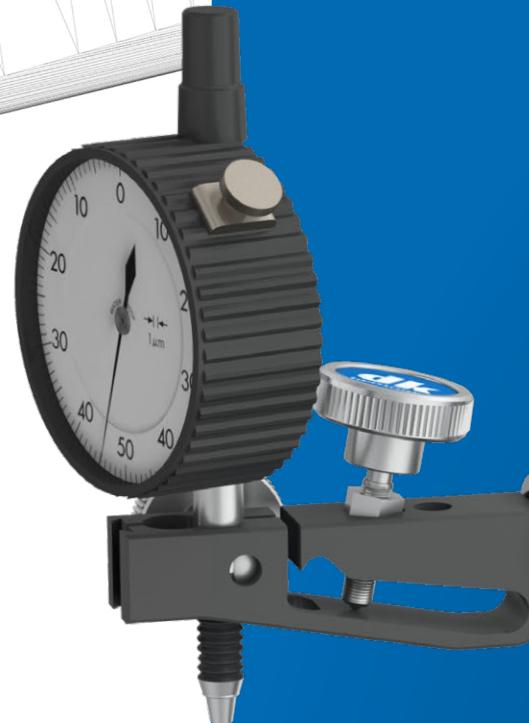
Modular design for dial gauge stands and 3D articulated arm stands

Dial gauge stands are usually offered and sold as prefabricated standards, as is the case with us. In addition, we show in a concise table (see QR code at the top right-hand side) which combinations of our wide range of equipment bases, 3D articulated stands and instrument holders are possible in order to meet more specific requirements and improve processes.



HIGH PERFORMANCE JOINT

Large StrongLine joints and ChromLine with individually adjustable pretensioning. VarioLine and TurnStopLine with progressive clamping. TurnStopLine additionally with locking disc.



Product videos



Clear explanatory videos of our three different stand clamping systems are available on our YouTube channel: www.youtube.com/@dkfixiersysteme

COMBI-TABLES

For more product details and possible combinations see accompanying table or visit:
www.dk-fixiersysteme.de/service



Central mechanical clamping of three joints

Those who imagine high quality dial gauge stands when considering 3D flexible articulated arms in the premium sector are absolutely correct. However, with dk the application possibilities of the "central mechanical clamping of three joints" functional principle are almost unlimited due to the modular component system.

Quick positioning and play-free fixating

In addition to the dial gauge stands, there are almost unlimited possibilities how instruments, technical devices, clamping devices and test parts can be exactly positioned and play-free fixated in no time.

Configuration possibilities for gauge stands and 3D flexible articulated arm stands

dk provides all relevant equipment bases in a module system for process-oriented placement of the 3D joints: threaded and T-slot adapters, clamping elements, sliding bases and powerful switch magnets. The dk modular system contains everything the user needs for a flexible and safe placement of the stands.

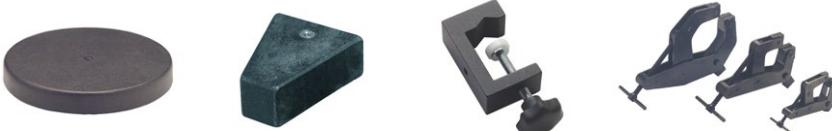
With a wide range of system-compatible clamping elements, dk's 3D joints enable the optimal spatial positioning of a wide variety of parts. Easy and precise adjustment. Firm and permanent fixation.

Equipment feet (connection below)

Adapter

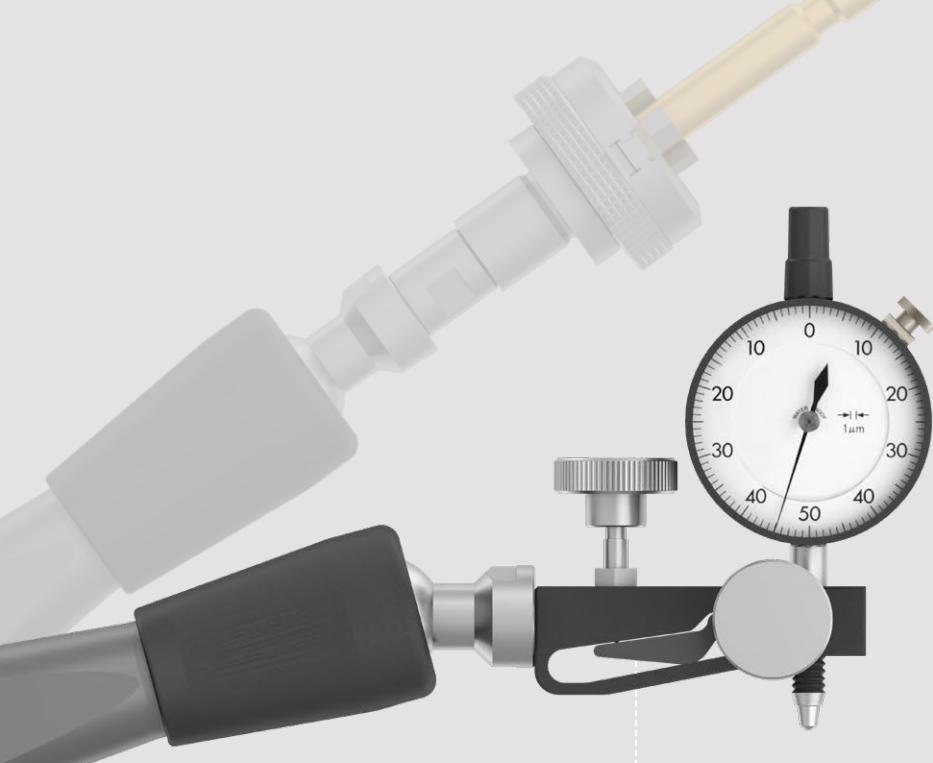


Stand and column clamp



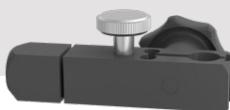
Magnetic base





PERFECTION

For every measuring task the suitable gauge holder



Standard range "F"
1.4 mm / U for simple tasks, 2-part with axis



Fine range "FS"
0.6 mm / U for 0.01 mm measurements; 1-piece, permanently play-free



Micro range "MS"
0.1 mm / U for 0.001 mm measurements; 1-piece, permanently play-free

The standard in the fine range is the model "F", adjustable via a rotary axis, with an adjustment of ca. 1.4 mm per revolution. The "FS" version, which is permanently play-free due to the one-piece joint design and has a more precise resolution, moves ca. 0.6 mm per revolution and is therefore highly suitable for measurements in hundredths without deviation error. For use in the high-precision range, the permanently play-free version "MS" is equipped with a further reduction ratio of ca. 0.1 mm travel per revolution.

Instrument and part holder (connection top)

Adapter



Clamp and magnetic holder



Clamping elements



COMBI-TABLES

For more product details and possible combinations see accompanying table or visit:
www.dk-fixiersysteme.de/service

3D Gauge stands

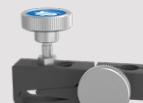
Of the many different possibilities to assemble dial gauge stands according to requirements, we show here the usual standards for (machining) measurement technology. All programs optionally with fine adjustment, permanently play-free fine adjustment or μ -precise permanently play-free micro-fine adjustment of the dial gauge.



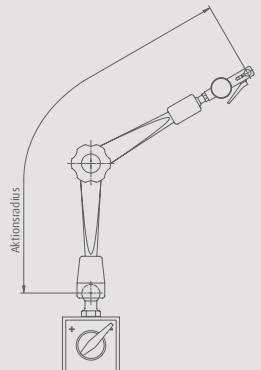
Fine adjustment
(-F) Standard



Fine adjustment
(-FS) play-free



Micro adjustment
(-MS) play-free



Action radius
of ball
to dial gauge
hole

StrongLine

Strong dimensioned articulated arms and precision ball joints for perfect dial gauge positioning. Pre-tension adjustable from size 310 mm.

Gauge stand StrongLine M-SL-160-300 (action radius 160 mm, switch magnet 300 N)

Article No.	240100-F	240100-FS	240100-MS
-------------	----------	-----------	-----------

Gauge stand StrongLine M-SL-240-750 (action radius 240 mm, switch magnet 750 N)

Article No.	240112-F	240112-FS	240112-MS
-------------	----------	-----------	-----------

Gauge stand StrongLine M-SL-310-750 (action radius 310 mm, adjustable pre-tension, switch magnet 750 N)

Article No.	240122-F	240122-FS	240122-MS
-------------	----------	-----------	-----------

Gauge stand StrongLine M-SL-360-1000 (action radius 360 mm, adjustable pre-tension, switch magnet 1,000 N)

Article No.	240133-F	240133-FS	240133-MS
-------------	----------	-----------	-----------



VarioLine

Progressive clamping principle and large ball joints on extra strong articulated arms.

Gauge stand VarioLine M-VL-225-750 (action radius 225 mm, progressive clamping, switch magnet 750 N)

Article No.	244112-F	244112-FS	244112-MS
-------------	----------	-----------	-----------

Gauge stand VarioLine M-VL-345-1000 (action radius 345 mm, progressive clamping, switch magnet 1,000 N)

Article No.	244133-F	244133-FS	244133-MS
-------------	----------	-----------	-----------

TurnStopLine

In addition to VarioLine toothed locking discs in the main joint and extra large ball joints for absolutely rigid fixation.

Gauge stand TurnStopLine M-TS-230-750 (action radius 230 mm, locking discs, progressive clamping, magnet 750 N)

Article No.	241112-F	241112-FS	241112-MS
-------------	----------	-----------	-----------

Gauge stand TurnStopLine M-TS-350-1000 (action radius 350 mm, locking discs, progressive clamping, magnet 1,000 N)

Article No.	241133-F	241133-FS	241133-MS
-------------	----------	-----------	-----------



ChromLine

Sturdy, long steel arms on solid ball joints for applications with a particularly large action radius. Pre-tension individually adjustable.

Gauge stand ChromLine M-CL-480-1000 (action radius 480 mm, articulated arm Ø 16/12 mm, switch magnet 1,000 N)

Article No.	242143-F	242143-FS	242143-MS
-------------	----------	-----------	-----------

Gauge stand ChromLine M-CL-640-1500 (action radius 640 mm, articulated arm Ø 24/16 mm, switch magnet 1,500 N)

Article No.	242154-F	242154-FS	242154-MS
-------------	----------	-----------	-----------



Dial gauge holders

Available in three versions.

"F": Standard for the fine range with travel of ca. 1.4 mm per revolution. "FS": one-piece and thus permanently play-free with ca. 0.6 mm per revolution. "MS": one-piece, play-free and additionally reduced for measurements in the μ range with a travel of only ca. 0.1 mm per revolution

» highest precision

3D measuring stands from dk stand for perfect measurements up to the μ range, high ease of use and lasting reliability. In addition to the standards, the modular design of the equipment base, clamping joint, instrument holder and protective sleeves also permits the configuration of measuring stands optimised for specific parts or processes.

Individually adjustable pre-tensioning

By the larger StronLine joints and the Chromeline joints. Therefore holds its position independently and yet is fully movable with little force. No sudden collapse when the central knob is loosened.

» operating comfort by fine adjustments
» prevents damage

Progressive clamping

With the VarioLine and TurnStopLine ranges, the joints are not clamped simultaneously, but one after the other from bottom to top. The loosening of the clamps occurs in the opposite direction.

» operating comfort by fine adjustments
» prevents damage

Strong articulated arms

Due to particularly generously dimensioned light metal construction with rounded transitions. (Chromeline: Chromed steel)

» permanent highest stability
» high repeat accuracy
» comfortable handling



Central locking knob

For fixation of all possible 3D spatial movements of the three system joints. Simple and quick. Smooth from light to fixated. With the TurnStop joints, positive locking in 2.3° increments by means of fine toothed discs for high demand use and under adverse environmental conditions

» one hand operation



Mechanical clamping principle

For long service life and fully maintenance-free. Power transmission through precision steel components

» no sudden pressure reductions
» independent of temperature
» suitable for long-term clamping

Protective sleeve (optional)

Protects the ball joint from dirt and lubricating fluids.

» perfect function
» long service life

Ball joint

With precise fit of ball and counterpart. 360° rotation and over 180° pivot.

» high retaining force
» complete 3D flexibility

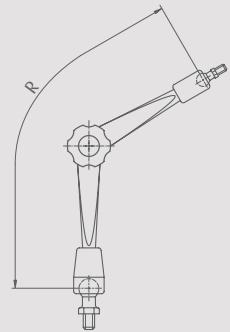
Magnetic base

Available in different sizes and force ranges. Switch magnet with reliably high magnetic force. The magnetic force is effective over the prismatic sole and the flat rear side.

» constant force
» for flat and rounded surfaces

3D Clamping joints

Every product line of the dk articulated stands can be simply, quickly, flexibly and precisely adjusted and rigidly and play-free fixated. All programs are equipped with our proven, ergonomic star grip as standard. As an option, we can supply the clamping joints with an indexable ratchet lever, which not only enables maximum clamping force with less effort, but can also be "parked" in any position where space is limited.



Action radius
always from ball
to ball



Star grip



Ratchet lever,
indexable (-H)

StrongLine

Strongly dimensioned articulated arms and precision ball joints for the rigid and reliable positioning of all components. Pre-tension adjustable from size 250 mm.

Clamping joint StrongLine SL-100 (action radius 100 mm, total length 130 mm, male thread M6 bottom / M6 top)
Article No. 240001 240001-H

Clamping joint StrongLine SL-170 (action radius 170 mm, total length 200 mm, male thread M8 bottom / M6 top)
Article No. 240011 240011-H

Clamping joint StrongLine SL-250 (action radius 250 mm, total length 280 mm, male thread M8 bottom / M8 top)
Article No. 240021 240021-H

Clamping joint StrongLine SL-290 (action radius 290 mm, total length 330 mm, male thread M8 bottom / M8 top)
Article No. 240031 240031-H



VarioLine

Progressive clamping principle and large ball joints on extra strong articulated arms.

Clamping joint VarioLine VL-160 (action radius 160 mm, length 200 mm, threads M8/M8, progressive clamping)
Article No. 244010 244010-H

Clamping joint VarioLine VL-280 (action radius 280 mm, length 320 mm, threads M8/M8, progressive clamping)
Article No. 244030 244030-H



TurnStopLine

In addition to VarioLine toothed locking discs in the main joint and extra large ball joints for absolutely rigid fixation.

Clamping joint TurnStopLine TS-160 (action radius 160 mm, length 200 mm, M8/M8, locking discs, progressive clamping)
Article No. 241010 241010-H

Clamping joint TurnStopLine TS-280 (action radius 280 mm, length 320 mm, M10/M8, locking discs, progressive clamping)
Article No. 241031 241031-H



ChromLine

Sturdy, long steel arms on solid ball joints for applications with a particularly large action radius. Pre-tension individually adjustable.

Clamping joints ChromLine CL-400 (action radius 410 mm, length 460 mm, arm Ø 16/12 mm, threads M8/M8)
Article No. 242041 242041-H

Clamping joints ChromLine CL-600 (action radius 560 mm, length 630 mm, arm Ø 24/16 mm, threads M10x1.25/M8)
Article No. 242051 242051-H





Fixation for measuring, laser and assembly technology

Fixation and alignment of parts of any size steplessly and spatially in combination with dk clamping elements



Universal part fixation

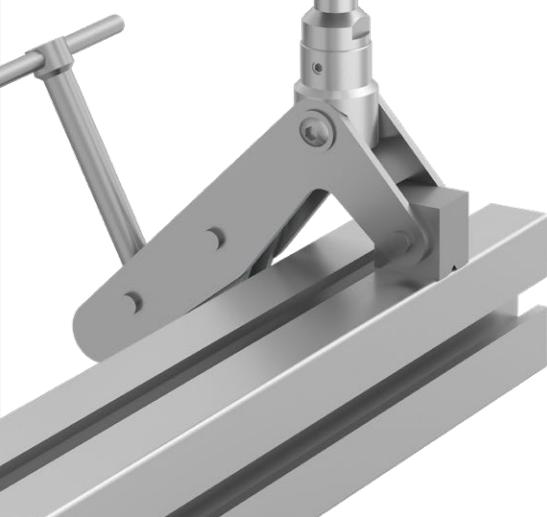
Part and process specific individual solutions are easy to realise. Combine the versatile equipment bases with the four categories of clamping joints in the appropriate size and the parts holders on the upper ball joint.



Long-term fixation for vision and sensor

Fix-variable mounts for industrial cameras and lighting systems in plant construction: the dk TurnStopLine joints are easy to adapt, can be adjusted with ease and then hold as firmly as if welded for years...although they can be readjusted or removed at any time. Imaging and machine vision thus become completely 3D flexible in a simple, universal and secure way in a virtually unlimited range of motion.

Articulated arms from dk stand for infinite variability together with simple to operate spatial fixating solutions. The possibilities of the module system are almost unlimited.



COMBI-TABLES

For more product details and possible combinations see accompanying table or visit:
www.dk-fixiersysteme.de/service

3D articulated arms for sterile rooms and clean zones

Clean-room and hygiene-suitable articulated stands must have low particle emission as well as chemical and microbiological resistance. They are permanently easy to clean thoroughly and without corrosion damage. Hygiene optimisation enables low concentrations of disinfectants to reliably achieve high sterility of the production environment. We distinguish between the categories "rustproof" and "steam sterilisable" for the stainless steel articulated arms.



Simple, rapid and secure fixation with a central clamping unit for positioning, aligning and holding

Suitable for:

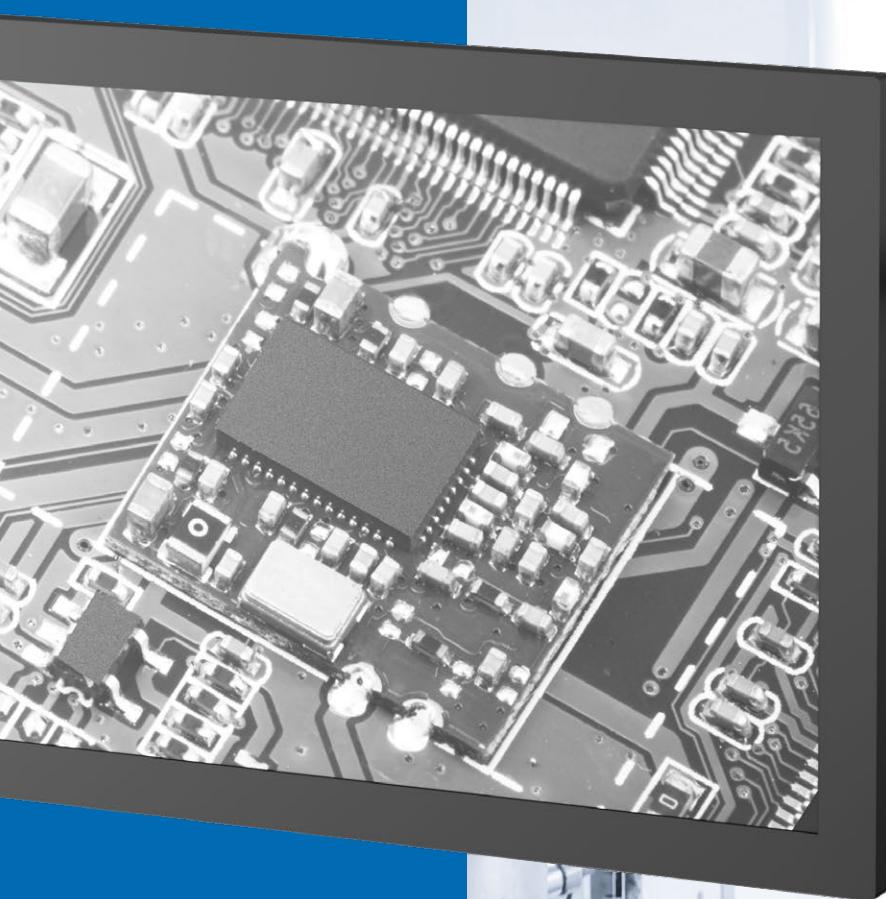
- » Instruments, equipment, tools and accessories
- » Auxiliary utensils such as hoses, cables and containers
- » Vision: Cameras, optics and lighting
- » Control: Sensors for environment, noise and light
- » Display equipment for measuring technology
- » Screens
- » Input devices
- » Other IT components

Highest operational safety due to excellent stability and processing quality

Permanent security against the release of detrimental particles as a result of possible damage to the surface in the category "steam sterilisable", as high-quality stainless steel without metal plating or other coatings is used. In the "rustproof" category, the mechanically stressed ball joints are stainless steel and the arms chromium plated precision steel tubes.

Qualified safe and clean in sensitive high-tech areas

- » Micro production in electronics, optics and mechanics
- » Semi-conductor industries
- » Laser technology
- » Automotive
- » Aeronautics and aerospace
- » Surface treatment technology
- » Foodstuff / Beverage-industries
- » Pharmaceutical industries
- » Biotechnology



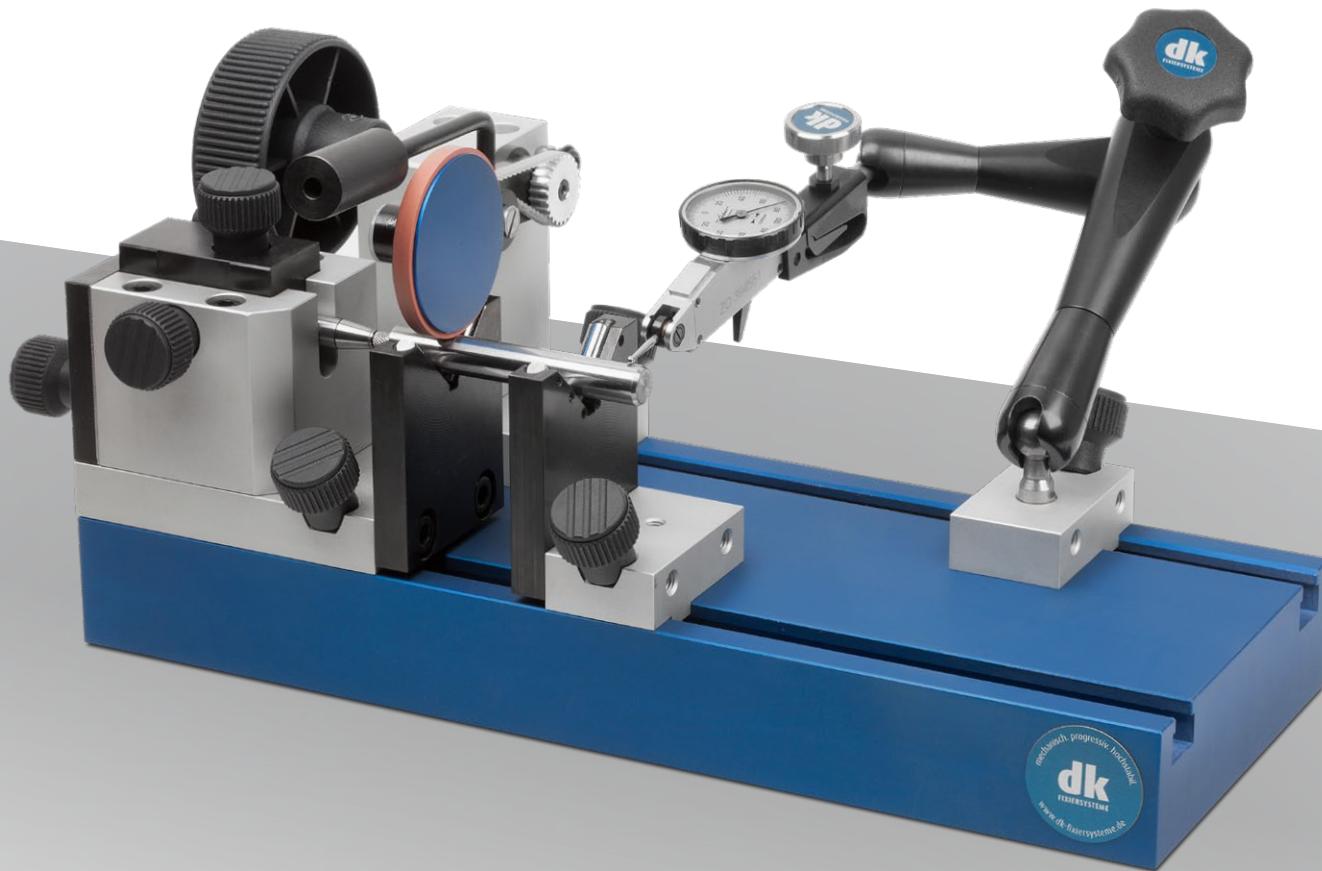
Play it safe with
stainless steel!

COMBI-TABLES

For more product details and possible
combinations see accompanying
table or visit:
www.dk-fixiersysteme.de/service

Radial run-out testing with perfectly matched components

Fixation, movement and measuring stand from one source from the specialist for measuring fixation systems: Due to their robust construction, the concentricity gauges can be used both in inspection and machine shops. The inspection devices can be equipped with dial gauges or electronic probes.



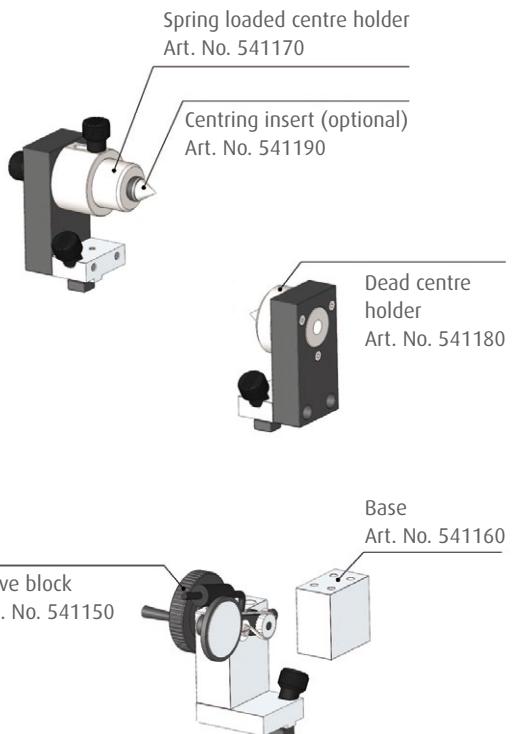
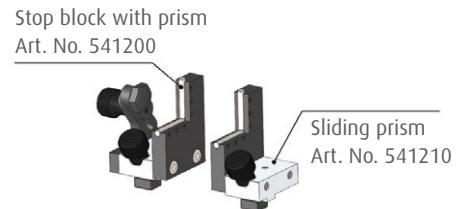
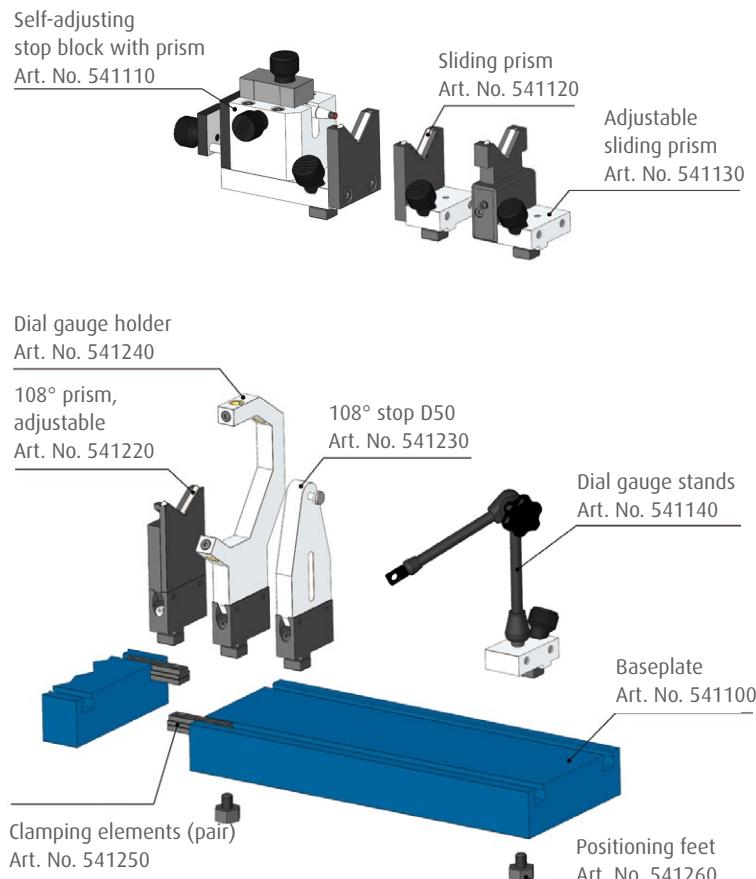
The prismatic rests are made from carbide rods. By using the integrated adjustment unit, the stop can be quickly and precisely set to the workpiece centre point. The handwheel enables a very slow rotation of the workpieces. A sliding counterweight enables the thrust pressure on the friction wheel to be regulated. The structural elements are so designed that they can be flexibly combined with each other.

Baseplate 300 mm x 120 mm, total weight ca. 6 kg

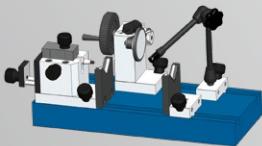
Suitable for:

- » Concentricity and coaxiality
- » Radial and axial run-out
- » Total runout
- » Diameter comparison
- » Optical measurements
- » Support station for surface finish measurements

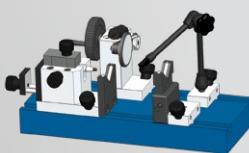
Combination example



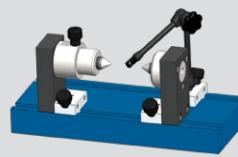
Program overview



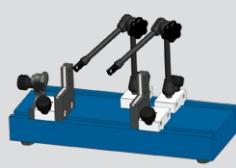
Concentricity gauge with prism support
 » Workpiece length 220 mm
 » Workpiece diameter 32 mm
 Art. No. 540010



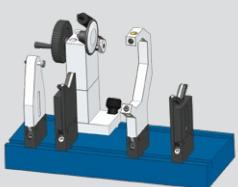
Concentricity gauge with adjustable prism support
 » Workpiece length 220 mm
 » Workpiece diameter 32 mm
 Art. No. 540020



Concentricity gauge with centre support
 » Centre distance 180 mm
 » Centre height 100 mm
 » Workpiece weight max. 3 kg
 Art. No. 540030



Measuring station for checking tapers, concentricity and dimensions
 » Workpiece length 300 mm
 » Workpiece diameter 50 mm
 Art. No. 540040



Measuring station for concentricity, roundness and uniform thickness testing
 » Workpiece length 300 mm
 » Workpiece diameter 50 mm
 Art. No. 540050



TACTILE MEASURING



OPTICAL MEASURING



MACHINE VISION & SENSOR



CONTOUR & SURFACE MEASUREMENT



COMPUTED TOMOGRAPHY



3D LASER SCANNING



dk FIXIERSYSTEME GmbH & Co. KG

Untere Breite 7
D-72144 Dußlingen

Tel. +49 (0) 7072 60042-0
info@dk-fixiersysteme.de
www.dk-fixiersysteme.de

modular. simple. better.

The entire world of fixating, clamping and positioning

The comprehensive standard construction sets with around 1,000 parts by dk FIXIERSYSTEME for metrology technology offer the following advantages:

- » Modular system that has grown and been tried and tested for decades
- » Modularity across different lines
- » Solutions for every positioning task
- » Efficiency through synergetic effects through several industry solutions



FAST
REASSEMBLY
LIFELONG



The basic principle of all dk FIXIERSYSTEME!

Our fixtures have a modular design, may be dismantled at any time and reassembled to their initial state. The compatibility of dk FIXIERSYSTEME ensures perfect utility value.