

*Articular systems*

## *3D articulated arms for Machine Vision*



# *Five programmes for unlimited 3D variable, rapid and precise alignment. Perfect hold, lasting stability and problem-free dismantling and re-alignment.*

Actually, many years ago we did not develop this mounting programme for Machine Vision, image processing and sensor technology specifically for this purpose. But more and more customers have been using our existing metrology products for a completely different purpose: with outstandingly positive results in terms of functionality, utility and costs!

We have taken up this impulse and set ourselves the goal of creating the best solution for the mounting and positioning of cameras, sensors, lighting, end-of-arm robotic tools and much more. Meanwhile, five stand programmes form the solid basis for this:

## **TurnStopLine**

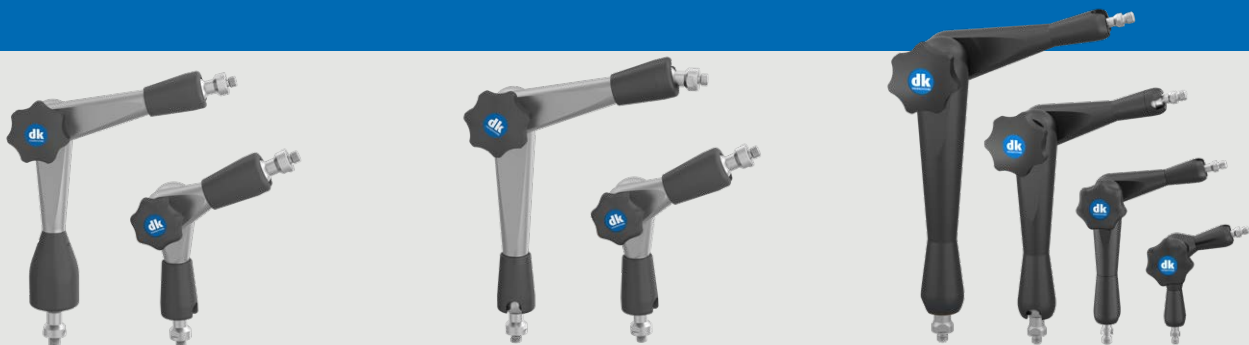
TurnStopLine as the high-end variant of the VarioLine series is characterised by two technical highlights: the positive locking of the central joint by means of a pair of fine locking washers and the consequently further enlarged base ball of the large clamping joint. This absolutely rigid fixation is necessary where dirt or lubricants can reduce frictional contacts in automation environments. Special applications such as the reliable long-term fixation of vision or sensor elements also require this technology. TurnStopLine is absolutely perfect for highest requirements in the field of Machine Vision.

## **VarioLine**

A progressive clamping principle and extra large ball joints on sturdy articulated arms characterise this high-end programme. VarioLine is the programme for the demanding fixation of cameras and sensors that must remain perfectly aligned over a long period of time. Due to the tool-free one-hand operation, cameras can be aligned extremely easily and quickly and, after the central clamping grip is tightened, are absolutely secure. Due to the variable action radius from zero to a nominal dimension, a VarioLine arm replaces entire programmes of conventional products. Simple project planning and investment security through maximum re-usability are the result.

## **StrongLine**

Generously dimensioned articulated arms combined with precise ball joints and central clamping technology proven over many years for backlash-free clamping and flexible positioning. Four sizes from an action radius of 100 to 290 mm form the programme for the simpler Machine Vision tasks, such as holding lighting elements.



*modular. simple. better.*



## ChromLine

Solid ball joint, and strong, long steel arms for applications with particularly large action radii complete the dk segment of 3D clamping joints for high-end industrial standard. This enables e.g. cameras to be positioned in completely inaccessible places that are up to 1,000 mm away from the next solid mounting point on a machine. ChromLine fulfils holding tasks that have overlong projections reliably, quickly and play-free. The individually adjustable pre-tensioning greatly facilitates installation.

## INOX HygienicLine

The 3D clamping joints for high-tech industries are designed for clean zones and sterile rooms with 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 is used where chemical and microbiological resistance is a prerequisite.



***Tool-free, one-handed operation  
for easy, secure fixation that can  
be altered as often as required  
leads to a permanent hold  
- just like a firmly welded  
appliance base!***

### **HIGH PERFORMANCE JOINT**

Large StrongLine joints and ChromLine with individually adjustable pre-tensioning.

VarioLine and TurnStopLine with progressive clamping.

TurnStopLine additionally with positive locking.







### Device holder

Based on our experience, we have decided to offer the precisely correct instrument holder for every camera, every sensor and every instrument. In-house production makes this possible. Why the exact orientation on the devices being positioned and not universal plates? Because an overall fixture must not have any weak points. They have to be stable, permanently rigid and neither too small nor too big. And, of course, they need exactly the right holes in the right places.

- » perfect hold
- » simple installation

### 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
- » tool-free operation
- » perfect fine adjustment
- » maintenance-free and durable



3D articulated joints from dk stand for optimum adjustment possibilities and absolutely secure fastening in the field of Machine Vision. They are ideal for aligning and holding industrial imaging and sensor instruments.

### Individually adjustable pre-tensioning

By the larger StrongLine joints and the ChromLine 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. (ChromLine: Chromed steel)

- » permanent highest stability
- » high repeat accuracy
- » comfortable handling
- » stable with low dead weight

### 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

### Base / Fastening elements

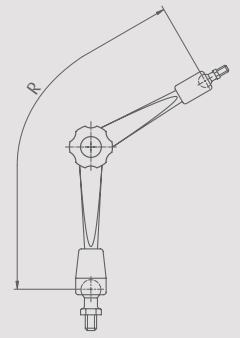
For example, die-cast retaining plates that have an M8 connection to the 3D joint as standard and two countersunk holes for different sized screws. These plates in two sizes are just two of the many fasteners we offer.

- » perfect hold
- » simple installation



# 3D Clamping joints

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



Maximum action radius and all other radii in the 3D range from zero to maximum value.



Star grip



Clamping lever, indexible (-H)

## StrongLine

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

<b>Clamping joint StrongLine SL-100</b> (action radius 100 mm, total length 130 mm, male thread M6 bottom / M6 top)		
Article No.	240001	240001-H
<b>Clamping joint StrongLine SL-170</b> (action radius 170 mm, total length 200 mm, male thread M8 bottom / M6 top)		
Article No.	240011	240011-H
<b>Clamping joint StrongLine SL-250</b> (action radius 250 mm, total length 280 mm, male thread M8 bottom / M8 top)		
Article No.	240021	240021-H
<b>Clamping joint StrongLine SL-290</b> (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.**

<b>Clamping joint VarioLine VL-160</b> (action radius 160 mm, length 200 mm, threads M8/M8, progressive clamping)		
Article No.	244010	244010-H
<b>Clamping joint VarioLine VL-280</b> (action radius 280 mm, length 320 mm, threads M8/M8, progressive clamping)		
Article No.	244030	244030-H



## TurnStopLine

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

<b>Clamping joint TurnStopLine TS-160</b> (action radius 160 mm, length 200 mm, threads M8/M8, indexing discs, progressive clamping)		
Article No.	241010	241010-H
<b>Clamping joint TurnStopLine TS-280</b> (action radius 280 mm, length 320 mm, threads M10/M8, indexing 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.**

<b>Clamping joints ChromLine CL-400</b> (action radius 410 mm, length 460 mm, arm $\varnothing$ 16/12 mm, threads M8/M8)		
Article No.	242041	242041-H
<b>Clamping joints ChromLine CL-600</b> (action radius 560 mm, length 630 mm, arm $\varnothing$ 24/16 mm, threads M10x1.25/M8)		
Article No.	242051	242051-H



## HygienicLine

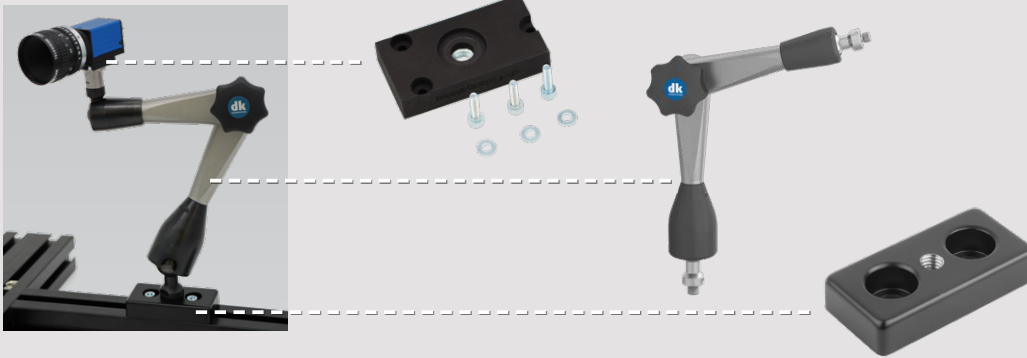
**For use when rust or chemical and microbiological resistance is a prerequisite.**

Designed individually according to customer specifications (please tell us your exact requirements)



# Mounting accessories

Fasteners for Machine Vision in the automation and AI sectors.



## Base / Fastening elements

### Universal fastening plate e.g. for mounting on aluminium profiles

Description	Order number
WxDxH 60x30x12 mm, for M8 with 2 x 2 M5 and M6 fastening screws	245110-M8
WxDxH 80x40x16 mm, for M8 with 3 x 2 M5 and M6 and M8 fastening screws	245111-M8



### Universal clamp e.g. for mounting on plates

Description	Order number
Clamping width 40 mm, for M8 with clamping grip, M8 top and side	245201



### Switchable magnet e.g. for mounting on steel parts

Description	Order number
Holding force 750 N, for M8, WxDxH 50x60x55 mm	245012
Holding force 1,000 N, for M8, WxDxH 50x74x55 mm	245013



### Extension column for setting the 3D joints at fixed distances

Description	Order number
Hex column 17 AF each with an M8 male and female thread, L 50 mm	304100
Hex column 17 AF each with an M8 male and female thread, L 100 mm	304200



## Camera / Sensor / Light holder and device plate

### Camera / Device holding plate for all industrial cameras, lights and sensors

Description	Order number
With metal M8 female thread for 3D clamping joints from dk incl. precise fitting bores, fastening screws and dimensions for all device types and manufacturers. Please send us the type and hole pattern of the camera or the device to be mounted.	On request



### Holder for round objects (e.g. fibre optics or sensors)

Description	Order number
Connection M8, suitable for 8 mm diameters (6 mm with reducer sleeve)	246040
Connection M8, suitable for 10 mm diameters	246501-M8
Connection M8, suitable for 11 - 16 mm diameters	246500-M8
Connection M8, suitable for 30 mm diameters	246510





The digital version of the catalogue can be found under:  
[www.dk-fixiersysteme.de](http://www.dk-fixiersysteme.de)



# The entire world of fixating, clamping and positioning

The around 1,000 part comprehensive standard construction sets of the dk fixating systems for measuring technology offer the following advantages:

- » Modular system that has grown and proven itself over decades
- » Modularity across different programmes
- » Solutions for every positioning task
- » Economic efficiency through the synergy effects of several sector solutions

SWA39



SPANNFIX PRO



SPANNFIX ECO



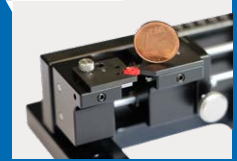
QUADERFIX



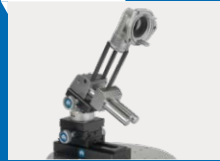
SCHIENENFIX



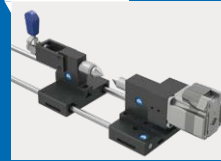
MICROFIX



SWA39CT



SPEZIALFIX



ARTICULATED SYSTEMS



SWA39SURF



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*modular. simple. better.*



**FAST  
 REASSEMBLY  
 LIFELONG**

The basic principle of all dk fixating systems!

Our fixtures are modular in design, can be dismantled at any time and can be identically reassembled again. The compatibility of the dk fixation systems makes the utility value perfect.