COMPANY PROFILE

In the late 1970s Finnish entrepreneur and inventor Olli Kytölä bought his first numerically controlled machining centers, but he was not happy with the workholding solutions that were then available.

While fastening the laundry rope to the brick wall of his house, he started studying the screw anchor that he was using - and the rest is part of workholding history.

Hold-down principle

40 years later, as a result of constant product development and dedicated customer service, our name stands for quality in every respect, and today OK-VISE is a well recognized trademark around the globe.

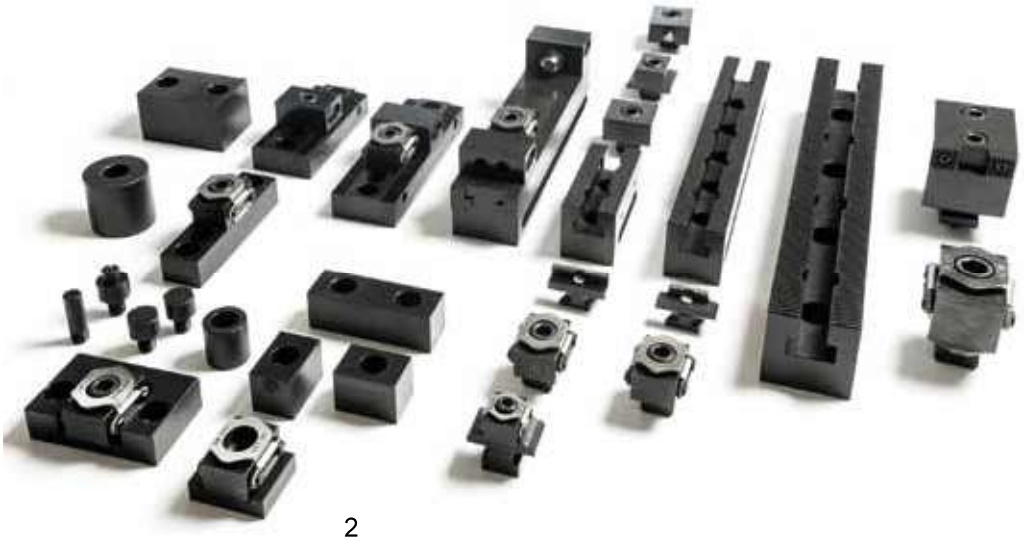
In addition to low-profile clamps, we also manufacture components for various fixturing systems, which form the OK-VISE FIXTURING CONCEPT

Our products are available through a global distribution network and can reach even the most distant places within a few working days. A wide selection of information as well as the latest updates about our products are easily obtained from our website at: *www.ok-vise.com*

More info: ok-vise.com/low-profile-clamps

OK-VISE LOW-PROFILE CLAMPS

Olli Kytölä's original invention is still the core of our product range. This unique workholding solution is designed to meet the demands of the modern metalworking, plastics, aerospace and electronics industries.



OK-VISE®
Clamping Method

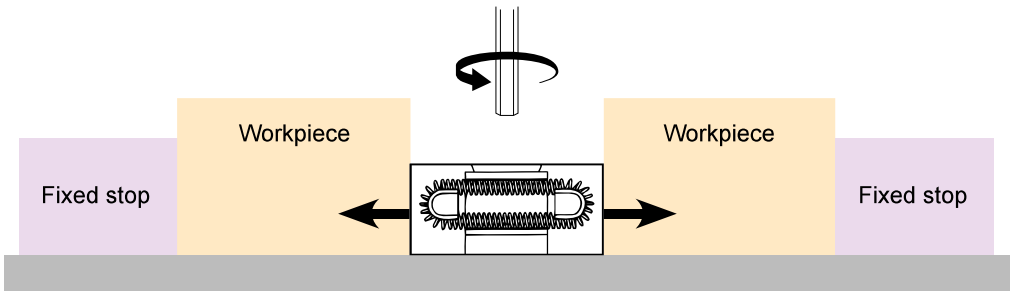
LOW-PROFILE CLAMPS

The OK-VISE clamping method is both an effective and time-saving solution because it allows full utilization of the fixturing platform. It also allows free tool access to the workpiece, is free of play and possesses extreme clamping force in a small space.
Efficient use of the machinable area leads to savings in tool changes, creates less operator interventions and results ultimately in extended cycle times while cutting down machine stop times.

Low-profile clamps do not require a lot of space when compared to traditional machine vises and the variety of jaw types on offer makes the clamp suitable for a wide range of machining applications.

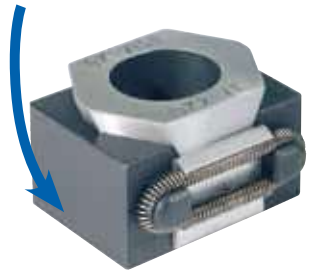
OPERATING PRINCIPLE

OK-VISE low-profile clamps function on the principle that when tightened down they expand, simultaneously pressing the workpieces against the guide and preventing any possibility of play. These clamps are designed to fit between the workpieces and take very little space on the fastening base. Small in size, yet possessing an excellent clamping force up to 150 kN, these clamps guarantee a holding capacity which clearly exceeds the load imposed by machining forces.



SMOOTH JAWS

When no marks on the workpieces are allowed, smooth jaws are used.



SERRATED JAWS

General-purpose clamp for your workshop. Serration creates high friction, which ensures reliable clamping in any circumstances.

GRIP MODELS

When the friction offered by serrated jaws is not enough for your application, grip jaws can be used. Please notice that the jaw penetrates into the work piece, leaving some marks.

MACHINABLE JAWS

Single-wedge clamps are also available with extended jaws and can be machined to suit the geometry of the workpiece. The smallest model can be machined up to 3 mm and the larger ones up to 5 mm.

application

ADDITIONAL PIECE MODELS

Additional piece models have machined female threadings (M5) for socket head screws on the side of the jaw, making it quick and easy to use various additional pieces which can also be machined into irregular shapes.

(option)

SELF-ADJUSTABLE MODELS

These clamps have a self-adjustable ball pressure screw inserted into a clamp jaw. The ball bearing at the end is made of steel and equipped with torsion protection, allowing the ball to self-adjust up to 9 degrees. This makes clamping irregular-shaped parts and castings more flexible.

STAINLESS STEEL MODEL

The stainless steel model is designed to meet the demands of wire EDM applications. This model only contains parts made of high quality stainless steel. Available only with smooth-ended jaws.

PULL-DOWN MODELS

In addition to holding the workpiece in place, pull-down clamps also generate pull-down action, pressing workpieces down onto the fixture base.

ECONOMY MODELS

These models meet the demands of workholding when ultra precision and high clamping force are not necessary. They are made of the same raw material as our other models. Only the bottom of the jaw is ground. Our smallest series is only available as the economy model (AK2-VT-SO).

INCH MODELS

D-series clamps are also designed for the half-inch bolt. The center hole of the inch-series wedge is wider in order to fit the half-inch socket head screw. VTI and WTI in the code stand for inch models.

10 YEAR WARRANTY

A CORE COMPONENT OF ANY JAWS WORKHOLDING SYSTEM

OK-VISE low-profile clamps adapt optimally to any workholding system. They fit into grid pattern systems, T-slot tables, serrated rails and many other platforms. OK-VISE clamps are suitable for three-directional machining, 5-axis machining and many other modern machining methods. When fixtures are needed for any modern machining application, OK-VISE clamps are your best choice.

ABSOLUTE STABILITY

The key feature of the OK-VISE low-profile clamp is its cross-wedge structure in both the horizontal and vertical planes, which means that the clamp is locked firmly in every direction as it is tightened down. This eliminates all possibilities of play.

EXTREME CLAMPING FORCE

With extreme clamping force of up to 150 kN, OK-VISE low-profile clamps guarantee a holding capacity that clearly exceeds the load imposed by machining forces.

SMALL IN SIZE – GIANT IN PERFORMANCE

Low-profile clamps do not require as much space as traditional machine vises. This leads to efficient use of the machinable area, savings in tool changes, less operator interventions, and ultimately to extended cycle times while reducing machine downtime.

Thanks to their small size, these light-weight clamps are easy to install. Moving them from one application or machine to another is virtually effortless. Their universal design makes easy use a reality in all types of CNC machining centers as well as FMS Systems.

ULTIMATE RELIABILITY

As the original inventor of the wedge-operated low-profile clamp, OK-VISE has decades of history of efficient and reliable installations world-wide.

With OK-VISE low-profile clamps, it is possible to achieve the highest level of reliability and safety.

ACCESSORIES

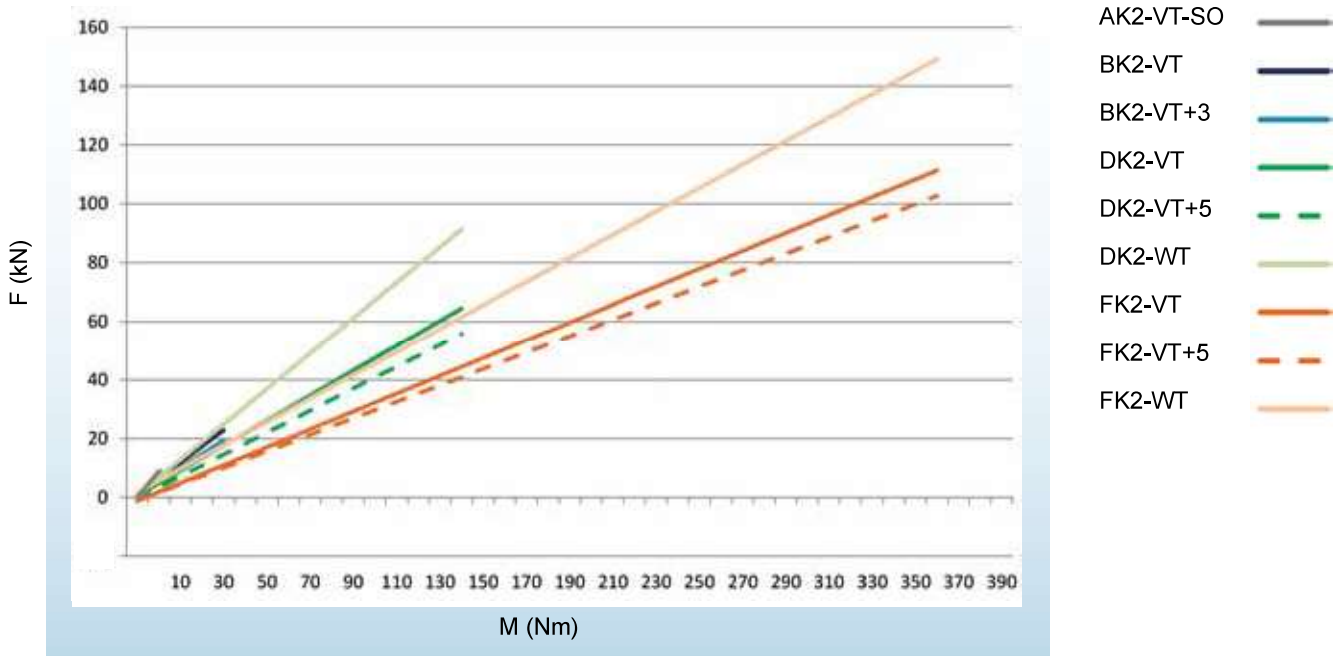
Several accessories can be utilized with OK-VISE clamps. Take a look at the expanding range of accessories at *www.ok-vise.com/low-profile-clamps/accessories*

OK-VISE LOW-PROFILE CLAMP TYPES

SIZE	A	B	D	D *(inch)*	F
Serrated basic version		BK2-VT	DK2-VT	DK2-VTI	FK2-VT
Smooth basic version		BK2-VT-S	DK2-VT-S	DK2-VTI-S	FK2-VT-S
Grip jaw & serrated jaw combo		BK2-VT-RG	DK2-VT-RG	DK2-VTI-RG	FK2-VT-RG
Machinable jaws		BK2-VT+3	DK2-VT+5	DK2-VTI+5	FK2-VT+5
Machinable & smooth combo		BK2-VT+3S	DK2-VT+5S	DK2-VTI+5S	FK2-VT+5S
Machined Cross V jaws		BK2-VT-C	DK2-VT-C	DK2-VTI-C	FK2-VT-C
Additional piece model		BK2-VT-T	DK2-VT-T	DK2-VTI-T	FK2-VT-T
Additional piece model & smooth combo		BK2-VT-TS	DK2-VT-TS	DK2-VTI-TS	FK2-VT-TS
Self-adjustable model		BK2-VT-B	DK2-VT-B	DK2-VTI-B	
Two self-adjustable jaws		BK2-VT-E	DK2-VT-E	DK2-VTI-E	
Single-wedge pull-down, serrated		BK2-VT-PD	DK2-VT-PD	DK2-VTI-PD	FK2-VT-PD
Double-wedge pull-down, serrated			DK2-WT	DK2-WTI	FK2-WT
Double-wedge pull-down, smooth			DK2-WT-S	DK2-WTI-S	FK2-WT-S
Stainless steel model		BK2-VT-SS			
Economy-series, serrated		BK2-VT-O			
Economy-series, smooth	AK2-VT-SO	BK2-VT-SO			
Metric bolt	M5	M8	M12		M16
Imperial bolt	3/16"	5/16"		1/2"	5/8"
Force up to (kN)	10	25	90	90	150

OK-VISE CLAMPFORCES

Horizontal forces of OK-Vise low profile clamps

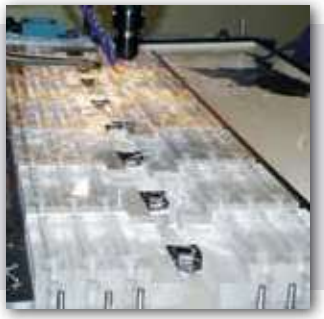


COMPONENTS FOR DEDICATED FIXTURING

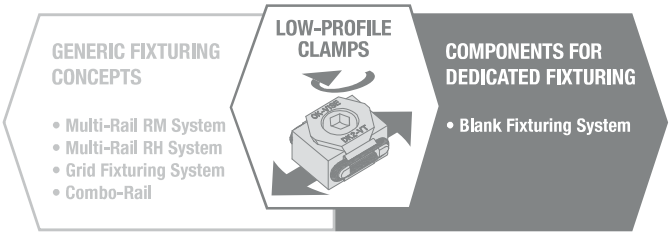
BLANK ORIGINAL
The most traditional way to use OK-Vise low-profile clamps





BLANK SYSTEM
Page 21

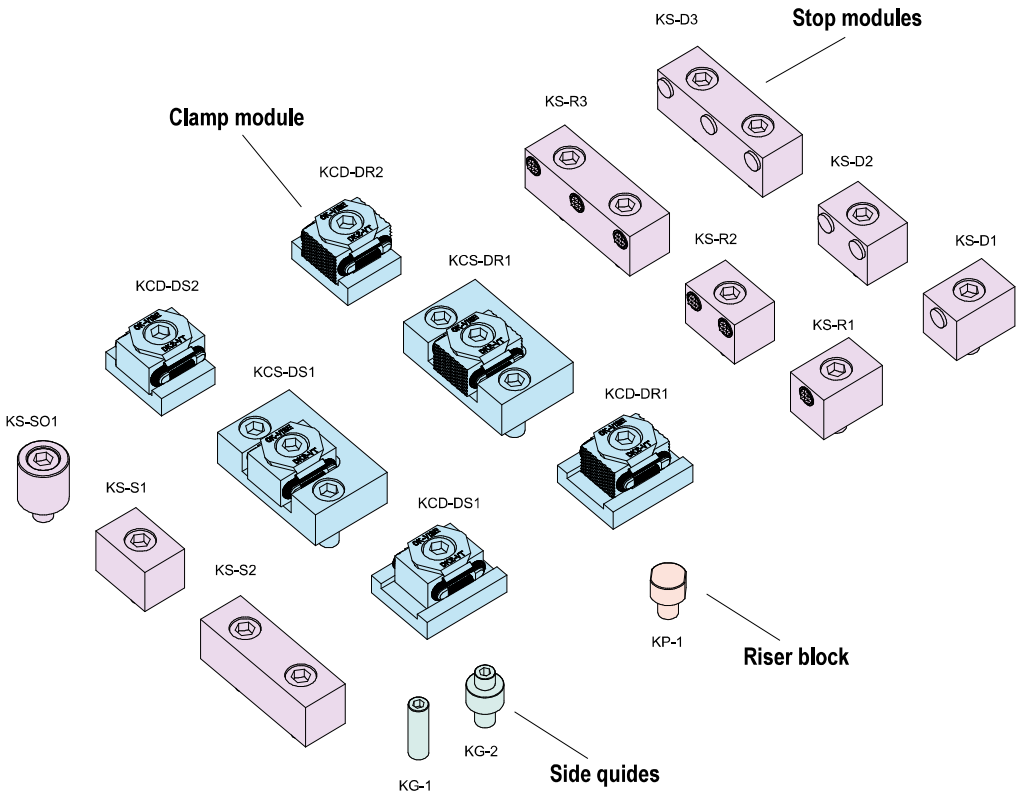
OK-VISE BLANK FIXTURING SYSTEM

The OK-VISE Blank Fixturing System is designed for cases when dedicated (product-specific) fixtures are needed. This is typical in high-volume production. Blank plates are used as a platform on which to build the fixture – aluminium and steel blanks are recommended.

In addition to OK-VISE low-profile clamps and bolts, a variety of components are now available. Various clamp modules, stopper modules, side guides and parallels (or riser blocks) are the basic modules of the system. High-friction jaws in stopper modules and clamps ensure reliable clamping when high machining forces are used.

When sensitive contact with the workpiece is a must, then smooth, diamond-surface or contour-machined jaws are optimal.

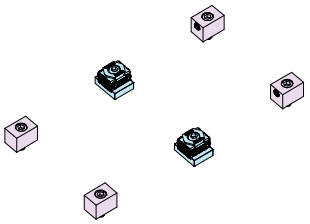
BLANK SYSTEM COMPONENTS



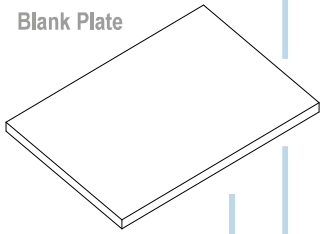
More info: http://www.ok-vise.com/blank-system/

OK-VISE®
Clamping Method

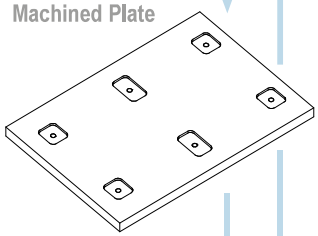
Blank Fixture Set



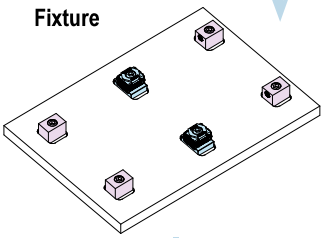
Blank Plate



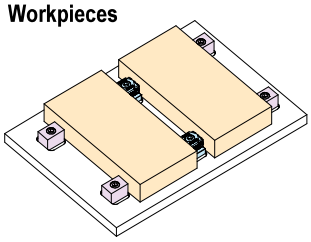
Machined Plate



Fixture



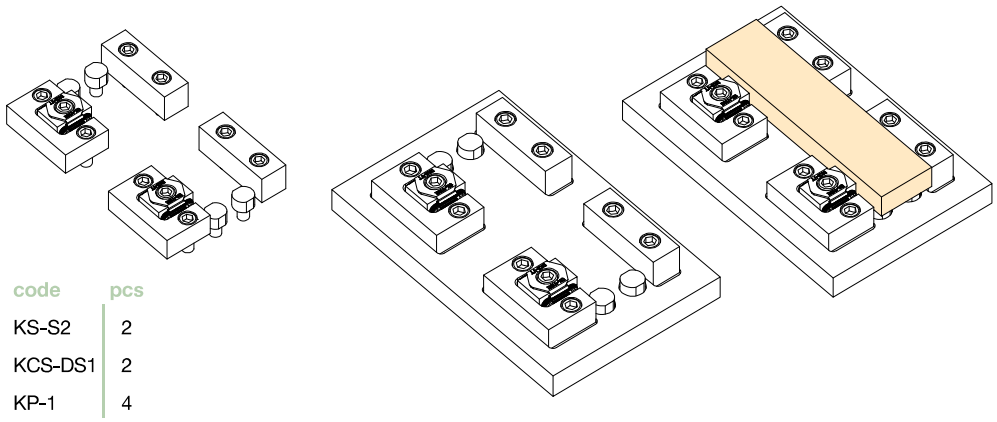
Fixture with Workpieces



BLANK SYSTEM FIXTURE SETS

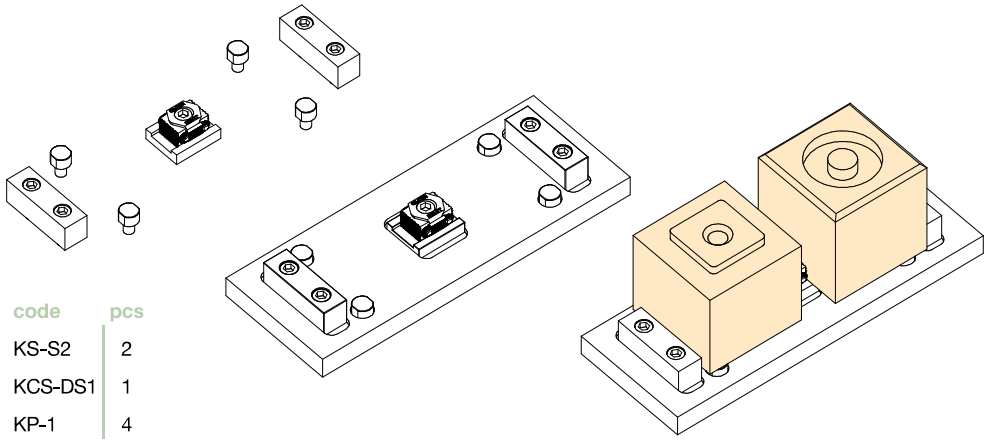
To make selection of the components easier, the OK-VISE team has selected some basic sets to enable an easy start with the Blank system. In the pictures below you can see the solutions done with each set.

SK-Z7



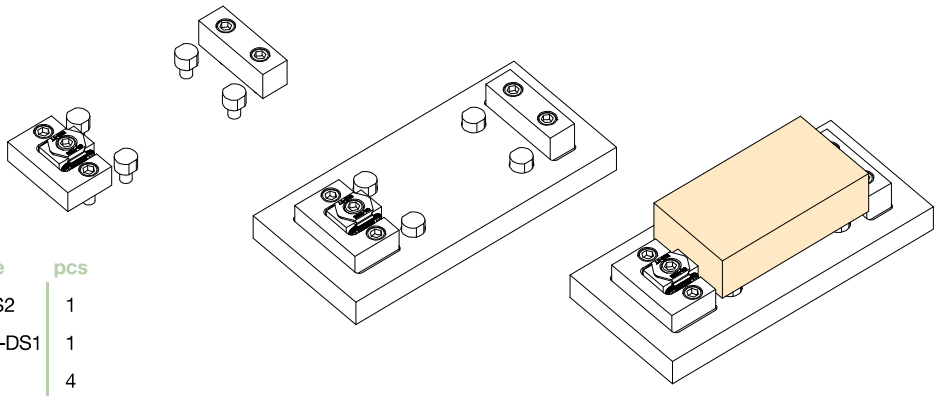
code	pcs
KS-S2	2
KCS-DS1	2
KP-1	4

SK-Z2



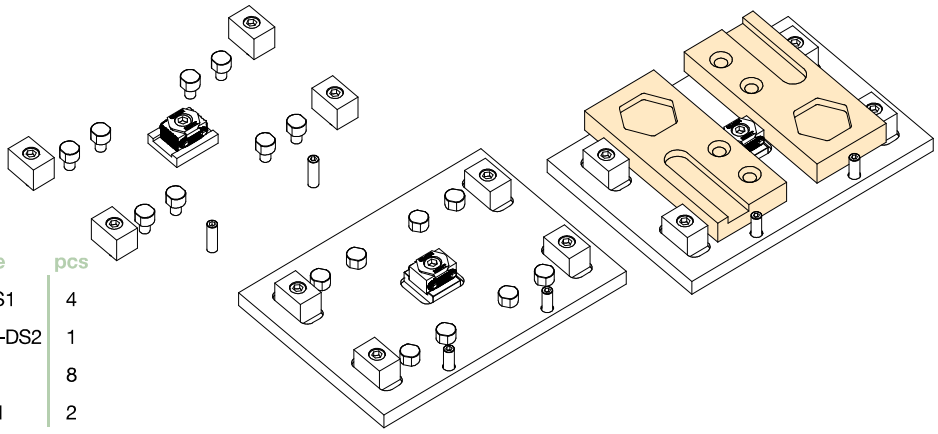
code	pcs
KS-S2	2
KCS-DS1	1
KP-1	4

SK-Z8

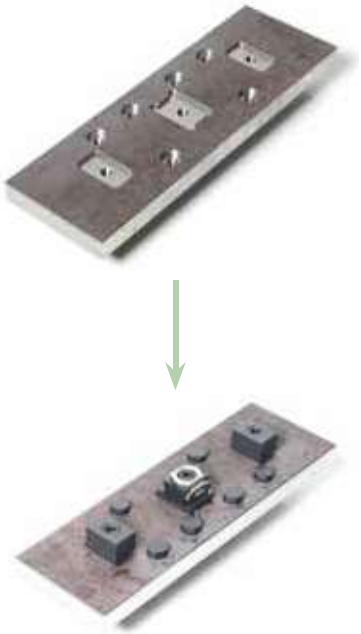


code	pcs
KS-S2	1
KCD-DS1	1
KP-1	4

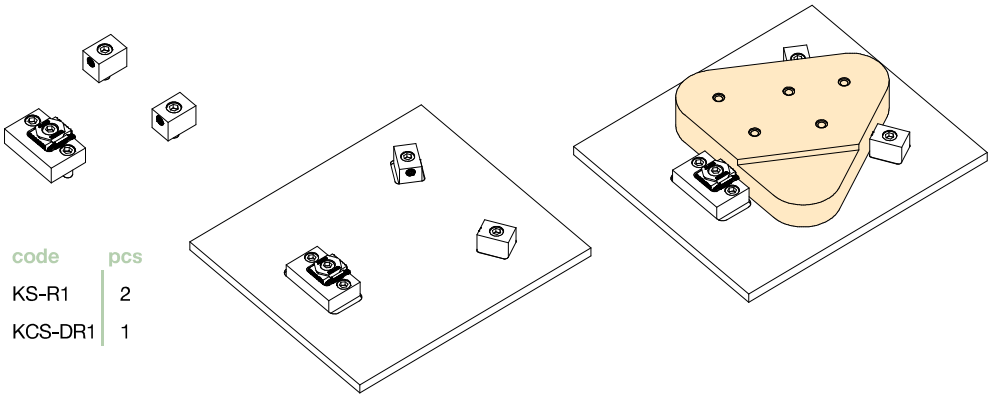
SK-Z4



code	pcs
KS-S1	4
KCS-DS2	1
KP-1	8
KG-1	2



SK-Z6

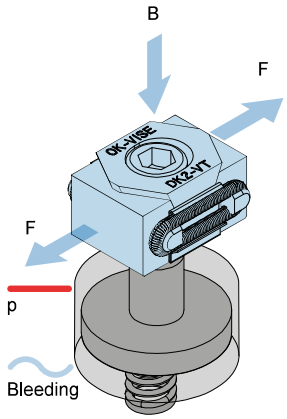


code	pcs
KS-R1	2
KCS-DR1	1

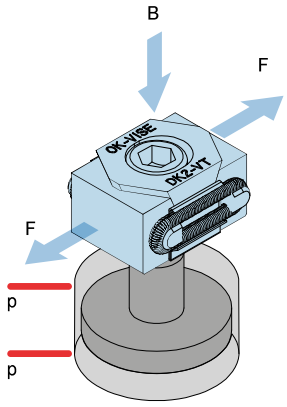
OK-VISE HYDRAULIC ACTUATOR

Hydraulic pressure (p) is first converted to downwards force (B) and using the wedge clamp clamping force (F) is created in two directions. Just like in manual clamping, a stopper is needed on both sides of the clamp.

The simplest way of creating a hydraulic fixture is to use a hydraulic actuator in single acting installation. In some applications double acting installation may be needed. Then, the push force is higher than the pull force.



SINGLE ACTING



DOUBLE ACTING

OK-VISE METHOD OF HYDRAULIC CLAMPING

As the original inventor of the wedge-operated low-profile clamp, OK-VISE has introduced hydraulic actuators that are optimised to utilize the well-known properties of the OK-VISE clamp: extreme clamping force in a small space combined with the accuracy of the clamping force.

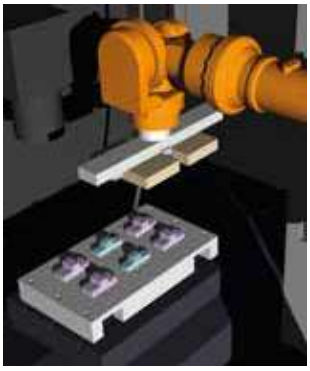
As integral part of the OK-VISE Fixturing Concept, hydraulic actuators can be used to build truly modular fixtures.

Hydraulic clamping can used in combination with

- Automated or manual workpiece loading
- Vertical or horizontal machining centers and 5-axis machines
- A continuous pressure source or a hydraulic connection that is uncoupled after loading

APPLICATIONS

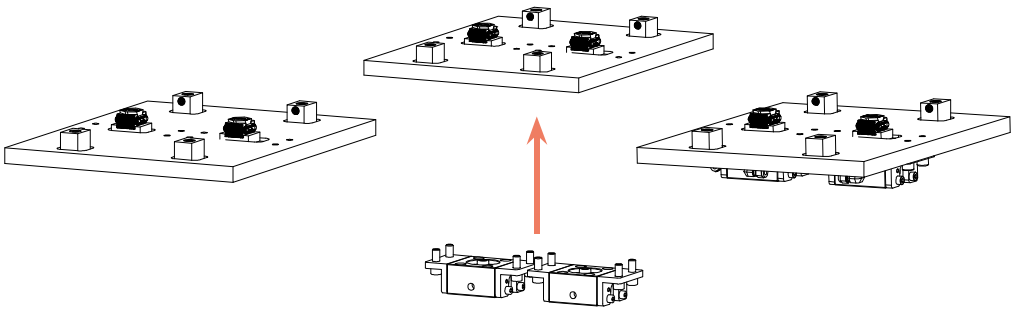
Multi-Rail RM units + hydraulics. Continuous hydraulic connection with horizontal machining center.



Grid System + hydraulics. Continuous hydraulic connection with vertical machining center.

Blank system + hydraulics. Hydraulic connection is uncoupled after loading. Used in FMS systems.

RETRO-FIT OPTION



When a manually operated fixture is designed in the proper way, OK-VISE hydraulic modules can also be installed afterwards in a simple manner. This is the easiest way to enter the world of automated clamping!