

OK-VISE®

FIXTURING CONCEPT

All Platforms, All Workpieces



WITH HYDRAULIC CLAMPING

NEW!

ALL BASED ON
ORIGINAL
OK-VISE®
Clamping Method



OK-VISE LOW-PROFILE CLAMPS

As the original inventor of the wedge-operated low-profile clamp, OK-VISE is still going strong. 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.



Hold-down principle



Pull-Down Models



Clamps with Machinable jaws



Clamps with Serrated jaws



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



Additional Piece models



Clamps with Self-adjustable jaws



Clamps with Smooth jaws



OK-VISE FIXTURING CONCEPT

Based on 30+ years in the business, we have put together the best ideas to complement OK-VISE low-profile clamps in workholding. Our Fixturing Concept can be used on a variety of platforms and workpieces.

We have clamp modules, end stoppers, riser blocks and side guides available to guarantee easy and reliable clamping of workpieces.

Clamping modules are available for both dual directional and single directional clamping. Where clamp jaws and stoppers are concerned, there are many alternatives for optimal gripping and clamping of the workpiece.

Our **Blank system** is a system for building **dedicated fixturing** (workpiece-specific fixturing). Normally only one workpiece variant can be clamped with these systems.

A second option for fixturing is to use **generic-purpose workholding**. Generic purpose means that when buying this system you don't have to know exactly what kind of workpieces you will be clamping in the future. The components of these systems can be reused and re-configured easily for a variety of applications and workpieces.

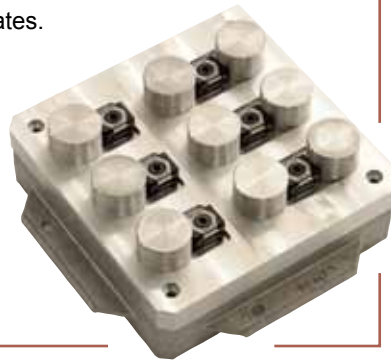
Of our generic-purpose components the most typical is the **Multi-Rail System**. In addition to the commonest RM size – M stands for medium – we also supply a heavy duty rail size RH. Multi-Rail RM is the ideal system to replace old-fashioned machine vises in generic-purpose clamping, and it also performs optimally on all platforms.

Another system that is available is the **Grid System**. When you have a grid platform in use – typically an M12 positioning bushing and an M12 thread in a 50x50mm matrix – these components are optimal for clamping complex workpiece forms like castings and plates.

Perhaps the most fascinating product in our fixturing concept is the **Combo-Rail** which features several operating modes: centralizing mode, machine vise mode and floating mode. Floating mode is needed for large castings which are typically long or large in size. This patent-pending solution has earned praise worldwide for its simplicity.

PLATFORMS AND SUB-PLATES

We also offer platforms like tooling columns, trunnion units (RPS), zero-point positioning system (OK-LOCK) and sub-plates.



WEDGEMAN SELECTION TOOL

To find most suitable fixturing system for your needs, OK-VISE has designed a selection tool Wedgeman

Multi-Rail RM



5

Multi-Rail RH System



10

Combo-Rail



12

Grid System



14

Blank System



17

Hydraulic



20

OK-VISE FIXTURING CONCEPT APPLICATIONS

Generic purpose components



OK-VICE MULTI-RAIL RM SYSTEM

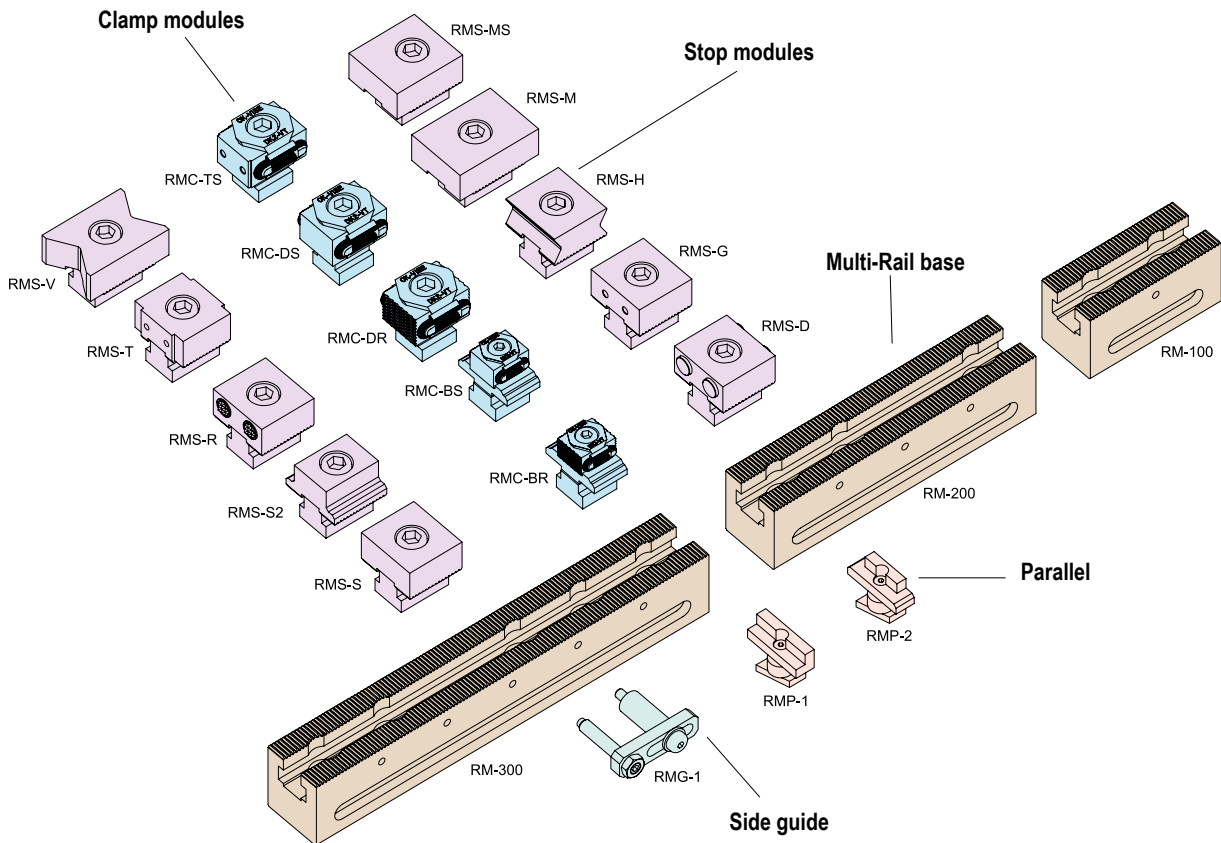
Multi-Rail is the new generic-purpose workholding system of OK-VICE.

Compared to a traditional machine vise, the Multi-Rail system offers the following benefits:

- Using the components of the system, even the most challenging workpiece types can be machined
- All sides of a workpiece can be machined with two setups
- Multiple workpieces can be clamped on the same area
- Workpiece will be safely fixtured in all conditions
- It is also possible to fasten very large work pieces



MULTI-RAIL RM SYSTEM COMPONENTS



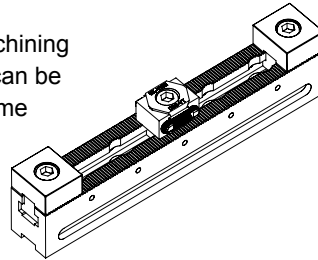
MULTI-RAIL RM FIXTURE SETS

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



SRM-132GD1

- For three-directional machining
- One or two workpieces can be machined at the same time

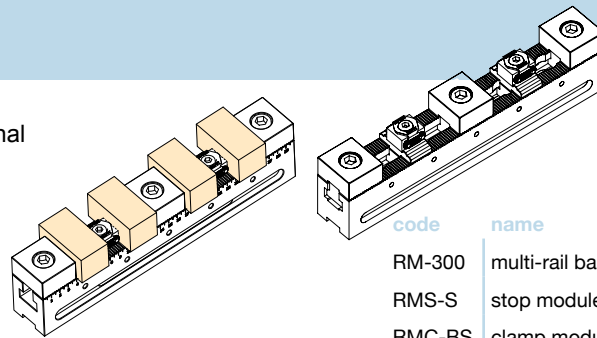


code	name	pcs
RM-300	multi-rail base	1
RMS-S	stop module smooth	2
RMC-DS	clamp module D smooth	1



SRM-133GB1

- For three-directional machining
- Four workpieces can be machined at the same time

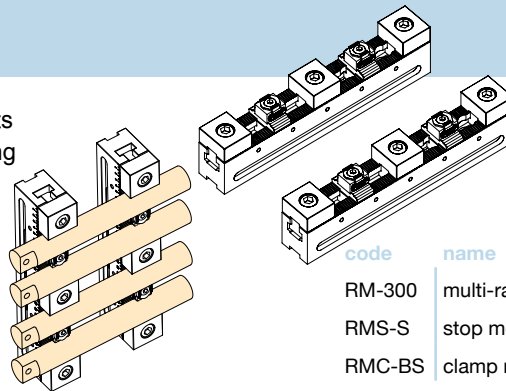


code	name	pcs
RM-300	multi-rail base	1
RMS-S	stop module smooth	3
RMC-BS	clamp module B smooth	2



SRM-236GB1

- Two SRM-133GB1 sets
- Also suitable for holding long workpieces

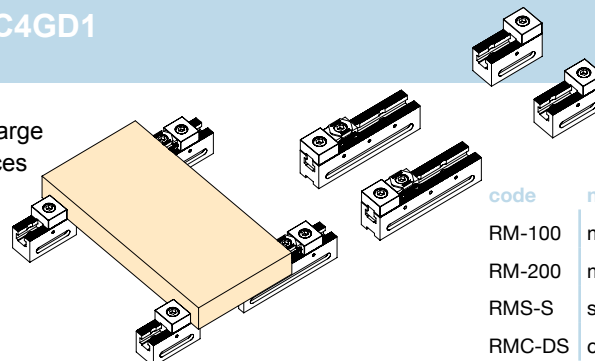


code	name	pcs
RM-300	multi-rail base	2
RMS-S	stop module smooth	6
RMC-BS	clamp module B smooth	4



SRM-4C4GD1

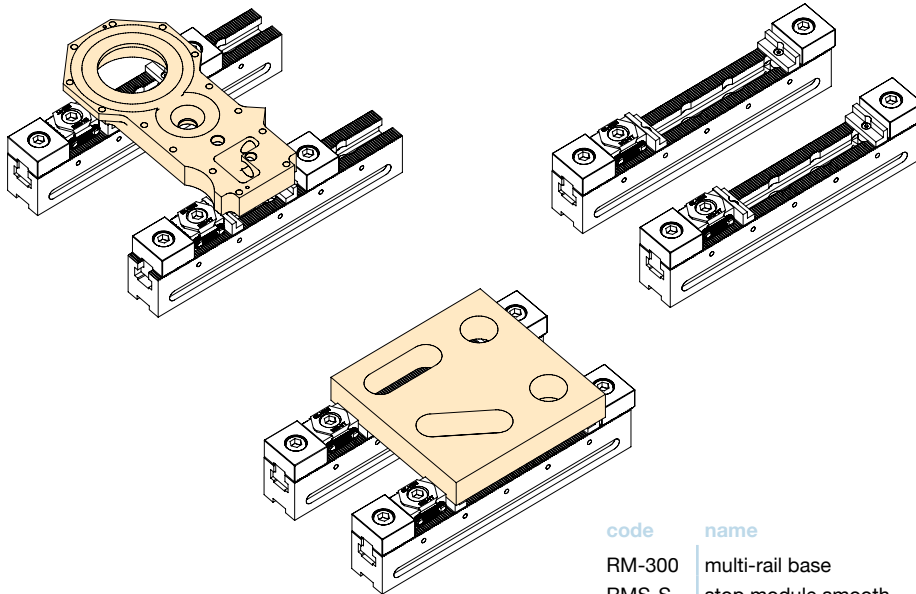
- To hold large workpieces



code	name	pcs
RM-100	multi-rail base	2
RM-200	multi-rail base	2
RMS-S	stop module smooth	4
RMC-DS	clamp module D smooth	2

MULTI-RAIL RM SYSTEM APPLICATIONS

SRM-Z101



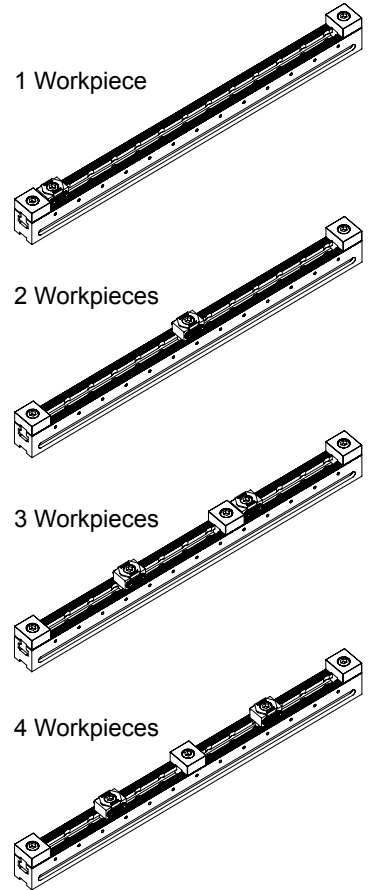
code	name	pcs
RM-300	multi-rail base	2
RMS-S	stop module smooth	4
RMC-DS	clamp module D smooth	2
RMP-1	parallel block	4

1 Workpiece

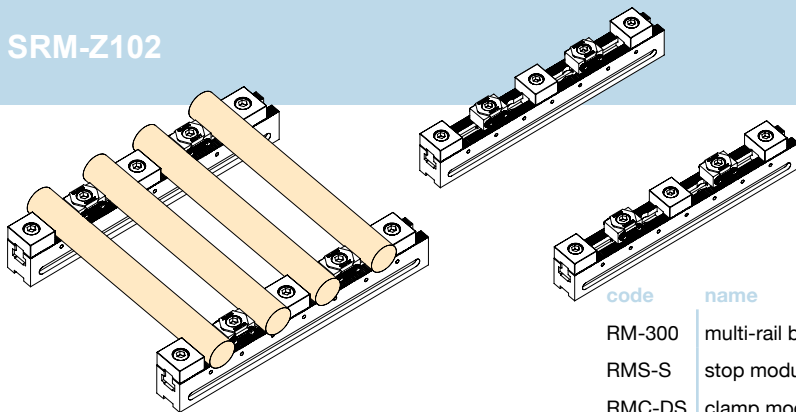
2 Workpieces

3 Workpieces

4 Workpieces



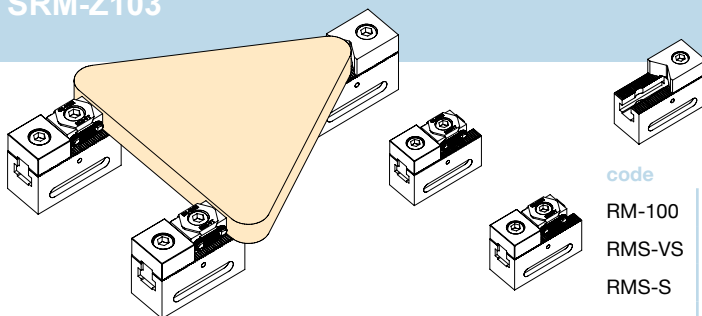
SRM-Z102



code	name	pcs
RM-300	multi-rail base	2
RMS-S	stop module smooth	6
RMC-DS	clamp module D smooth	4



SRM-Z103



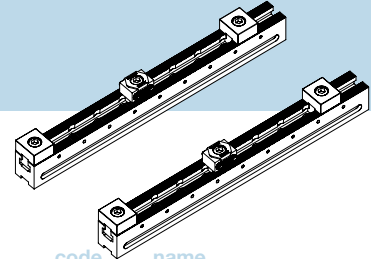
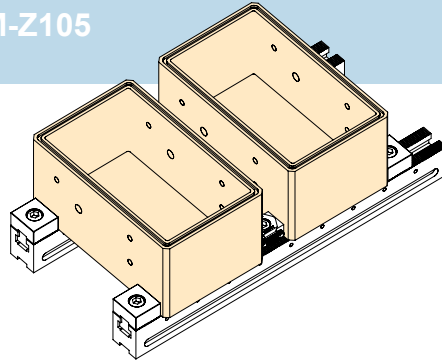
code	name	pcs
RM-100	multi-rail base	3
RMS-VS	stop module combo V/S	1
RMS-S	stop module smooth	2
RMS-DS	clamp module D smooth	2



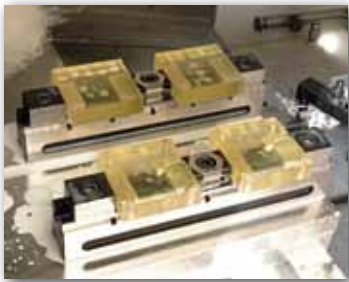
MULTI-RAIL RM SYSTEM APPLICATIONS



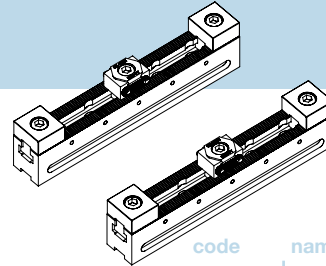
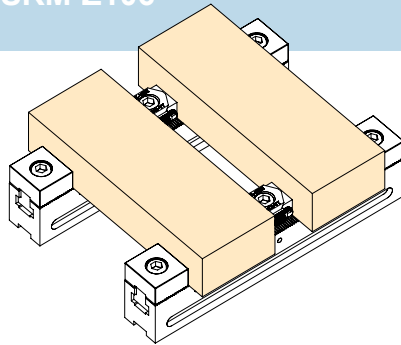
SRM-Z105



code	name	pcs
RM-500	multi-rail base	2
RMS-S	stop module smooth	4
RMC-DS	clamp module smooth	2



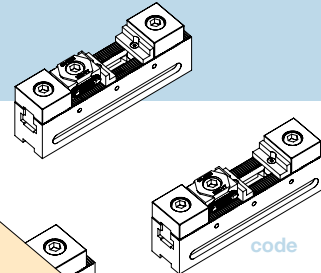
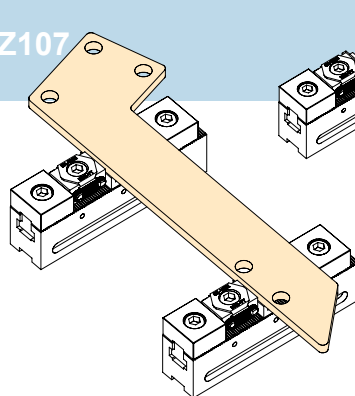
SRM-Z106



code	name	pcs
RM-300	multi-rail base	2
RMS-S	stop module smooth	4
RMC-DS	clamp module smooth	2



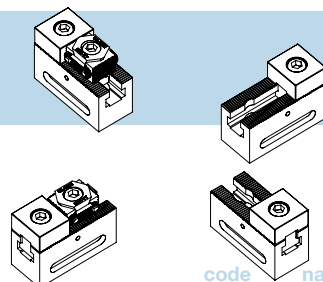
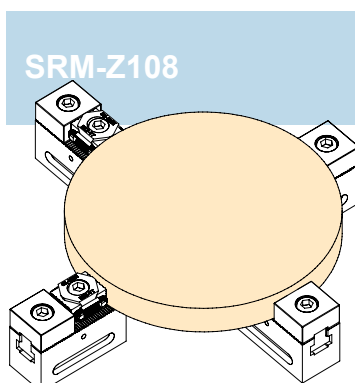
SRM-Z107



code	name	pcs
RM-200	multi-rail base	2
RMS-S	stop module smooth	4
RMC-DS	clamp module smooth	2
RMP-1	parallel block	4

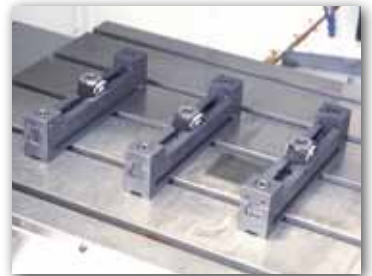


SRM-Z108



code	name	pcs
RM-100	multi-rail base	4
RMS-S	stop module smooth	4
RMC-DS	clamp module smooth	2

MULTI-RAIL RM SYSTEM APPLICATIONS



SRM-Z109

code	name	pcs
RM-300	multi-rail base	2
RMS-S	stop module smooth	4
RMC-DS	clamp module D smooth	1
RMC-DTS	clamp module D-T smooth	1
ADM	additional piece	1
RMP-1	parallel block	4

SRM-Z110

code	name	pcs
RM-100	multi-rail base	3
RM-300	multi-rail base	3
RMS-S	stop module smooth	6
RMC-DS	clamp module D smooth	3
RMP-1	parallel block	6



OPTIONS

We also offer installation sets for the most common platforms like T-slot tables and grid systems.



Spigot installations to all leading zero-point systems – including OK-LOCK System – are available.



More info: ok-vise.com/multi-rail-system/



OK-VISE MULTI-RAIL RH SYSTEM

Multi-Rail RH is the new generic-purpose fixturing system from OK-VISE. Multi-Rail RH is optimal when the clamping force is over 4 tons and also when the workpieces are rather big.

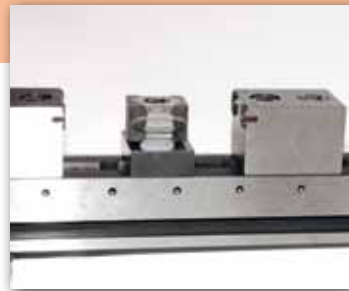


FIXTURE SETS

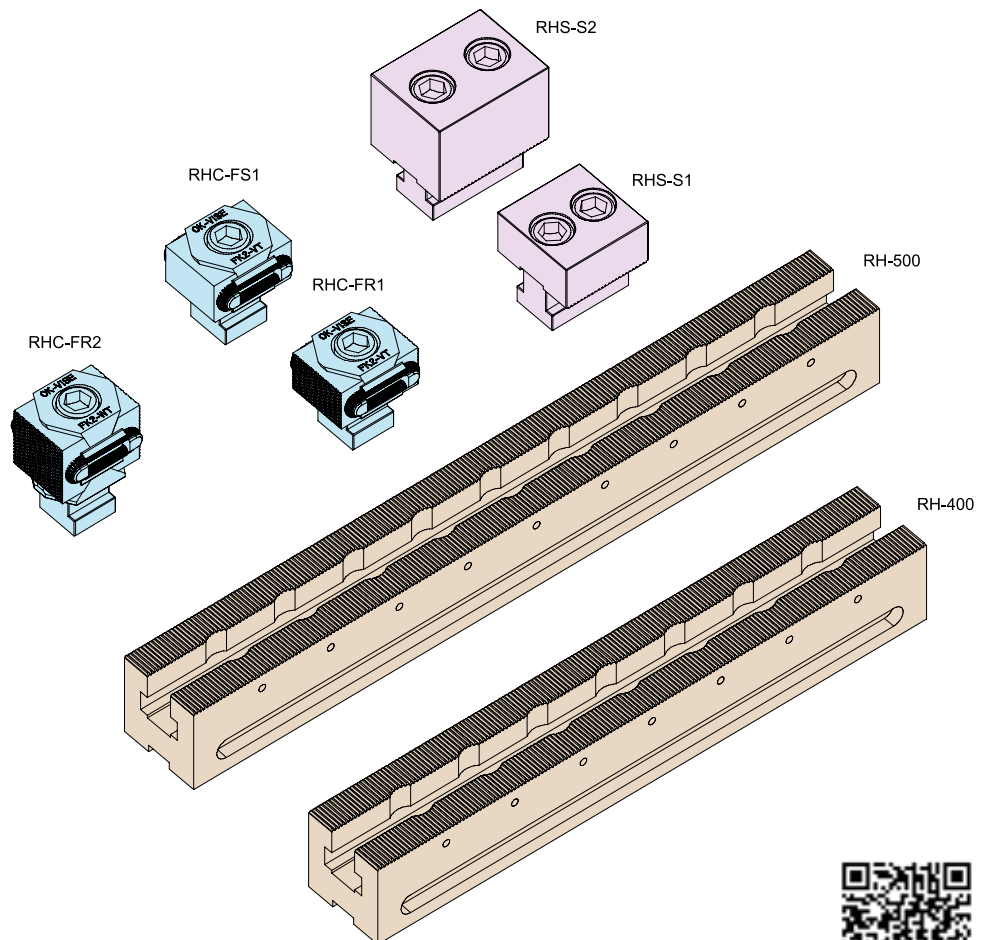
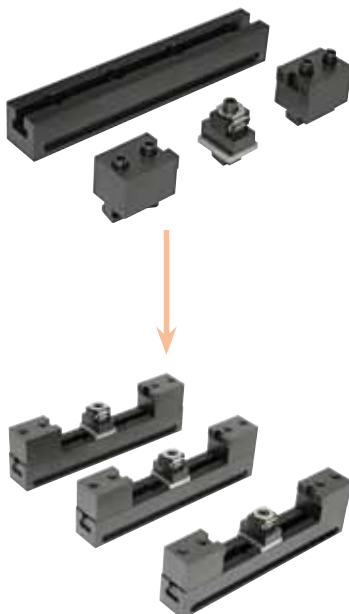
To make selection of the components easier, the OK-VISE team has created some basic sets to enable an easy start with the Multi-Rail system.

Compared to a traditional machine vise, the Multi-Rail RH system offers the following benefits:

- Using the components of the system, even the most challenging workpiece types can be machined.
- All sides of a workpiece can be machined with two setups.
- Multiple workpieces can be clamped on the same area.
- The workpiece is safely fixtured under all conditions.
- It is also possible to fasten very large work pieces.



MULTI-RAIL RH SYSTEM COMPONENTS

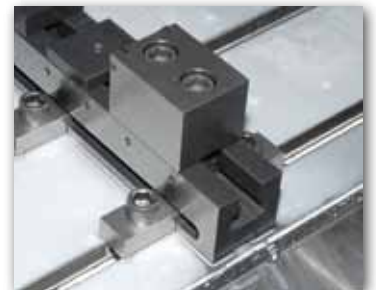
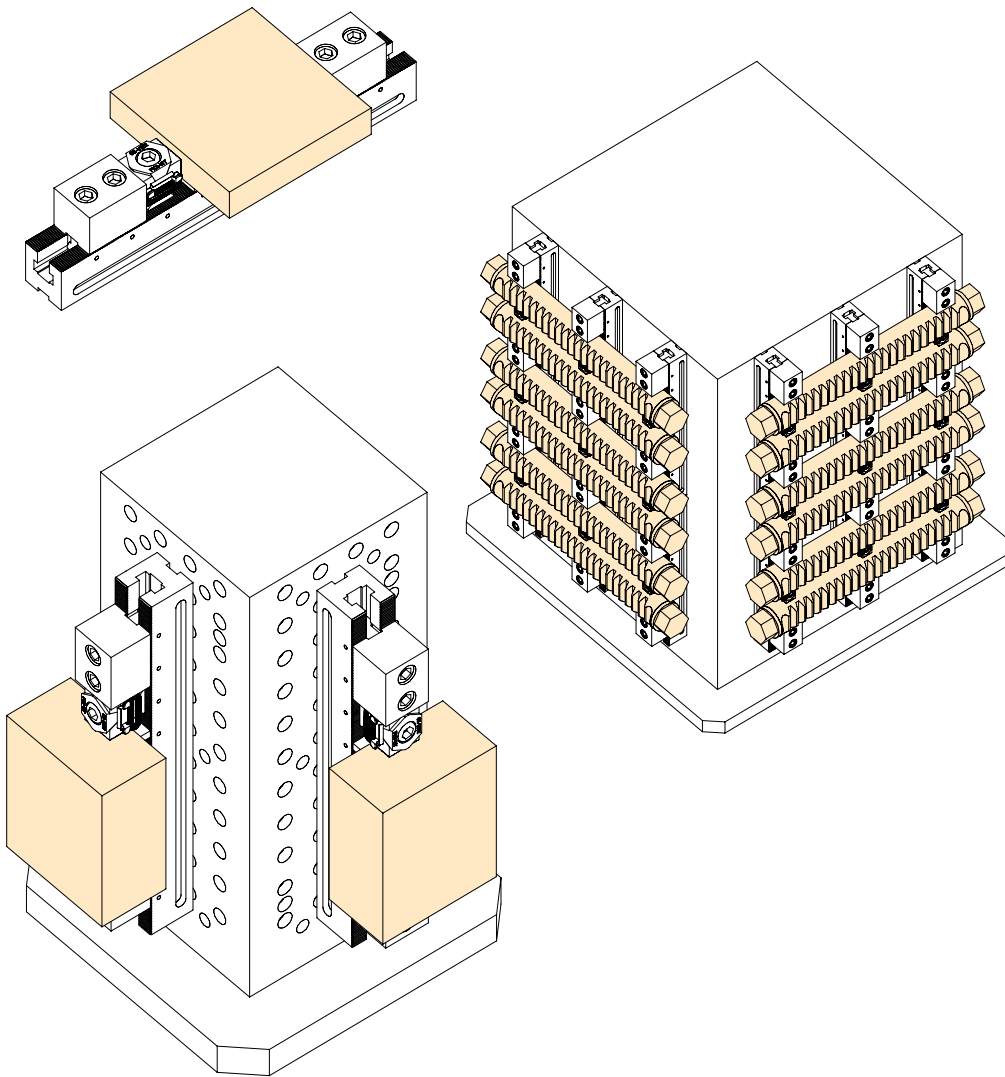


More info: ok-vise.com/multi-rail-system/rh/

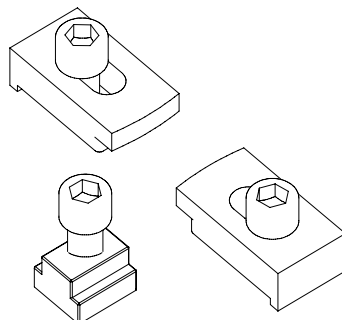


MULTI-RAIL RH SYSTEM APPLICATIONS

In a modular system all the functions of a fixture are separated divided into individual modules. This means that when workpiece material, form or size changes, the modules of the fixture can be changed independently of each other. Using a well-chosen collection of basic modules – a set – a huge variety of workpieces can be clamped simply using the same modules.



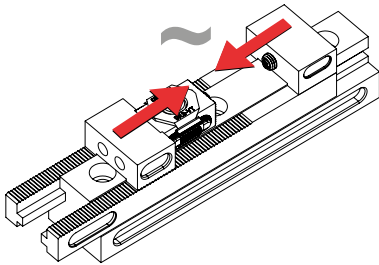
We also offer installation sets for the most typical platforms like T-slot tables and grid systems.



OK-VISE COMBO-RAIL

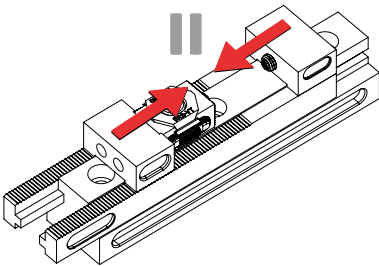
OK-VISE Combo-Rail is a unique patent-pending design from us.

There are several operating modes available:



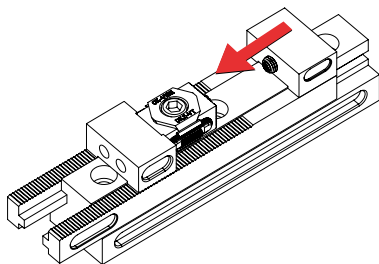
Floating mode

- This is the most fascinating operating mode of the Combo-Rail. Here the fixture adjusts to the place of the workpiece.
- This is often needed while clamping inaccurate workpieces like castings, forgings or flame cut work pieces.
- Therefore floating mode installation normally needs positioning with some other means, like two Multi-Rail units, positioning pins, positioning by a robot etc.



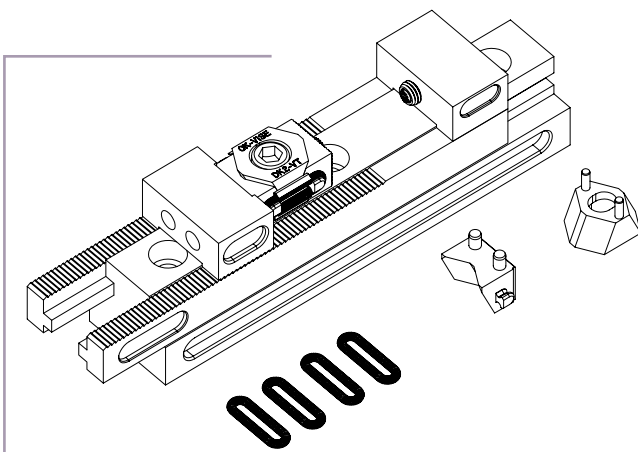
Centralising mode

- The jaws move synchronously. The centre line of a casting or similar workpiece remains in the same place even if the outer dimensions of the workpiece changes.



Machine vise mode

- In this mode the other jaw is fixed to the base. Compared to traditional Vises, in this method the ergonomics are radically improved in vertical machining centres.



CRH-K250

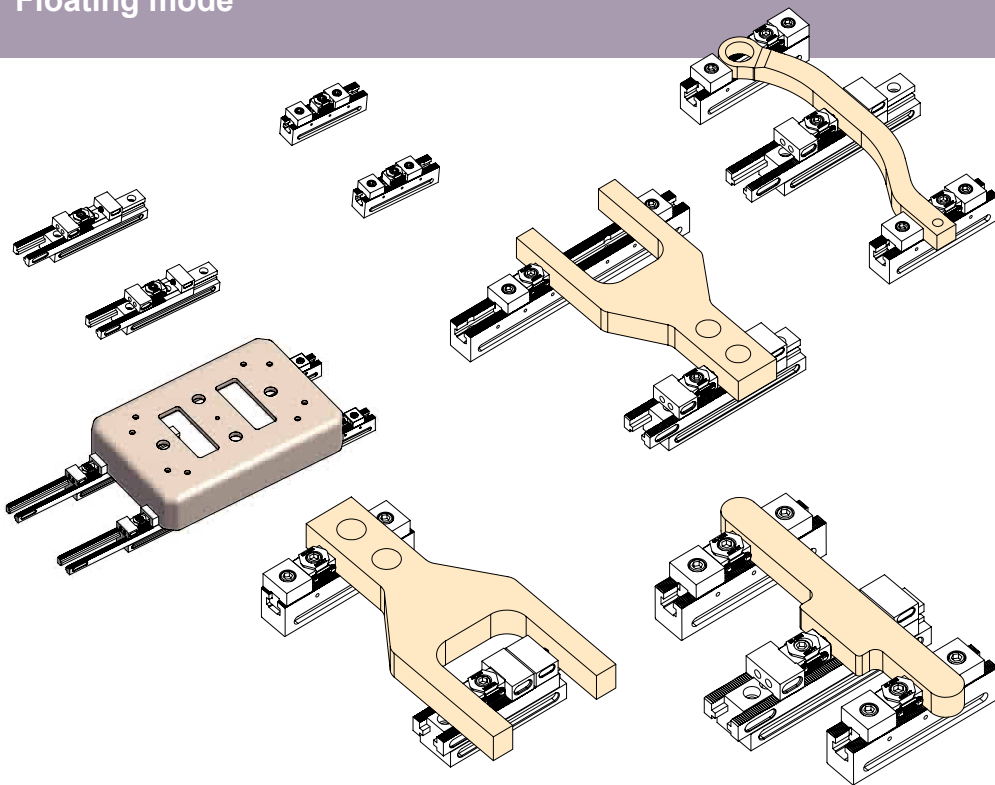
CRH-K250 is a Combo-Rail unit that can be set in all three modes as mentioned before, operating modes by changing the jaw or wedge components (all included). All workpieces from 0 to 120 mm size can be clamped. The base height is 50 mm and total length is 250 mm.



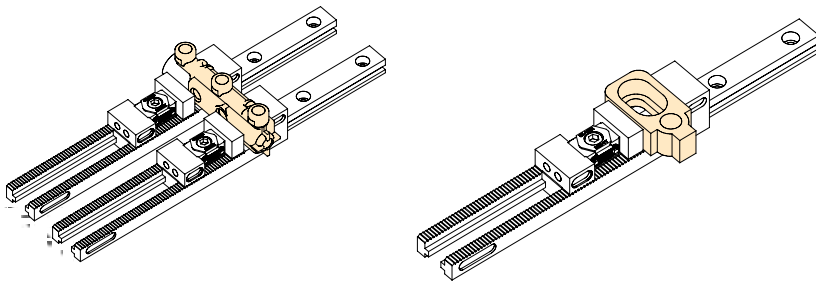
COMBO-RAIL APPLICATIONS

The Combo-Rail units can be combined with most of OK-VISE Fixturing Concept components. Especially combining Combo-Rail units with OK-VISE Multi-Rail has been proven to be a brilliant combination. Special versions are also available, please do not hesitate to ask for price and delivery time from our local dealer.

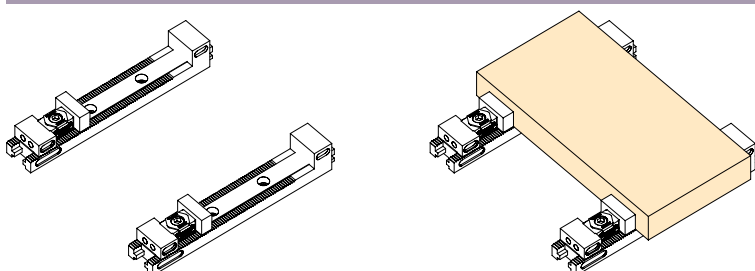
Floating mode



Centralising mode



Machine vise mode



There are several adapter sets available for various platforms.



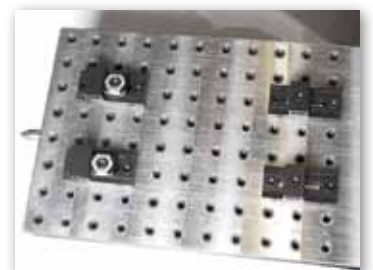
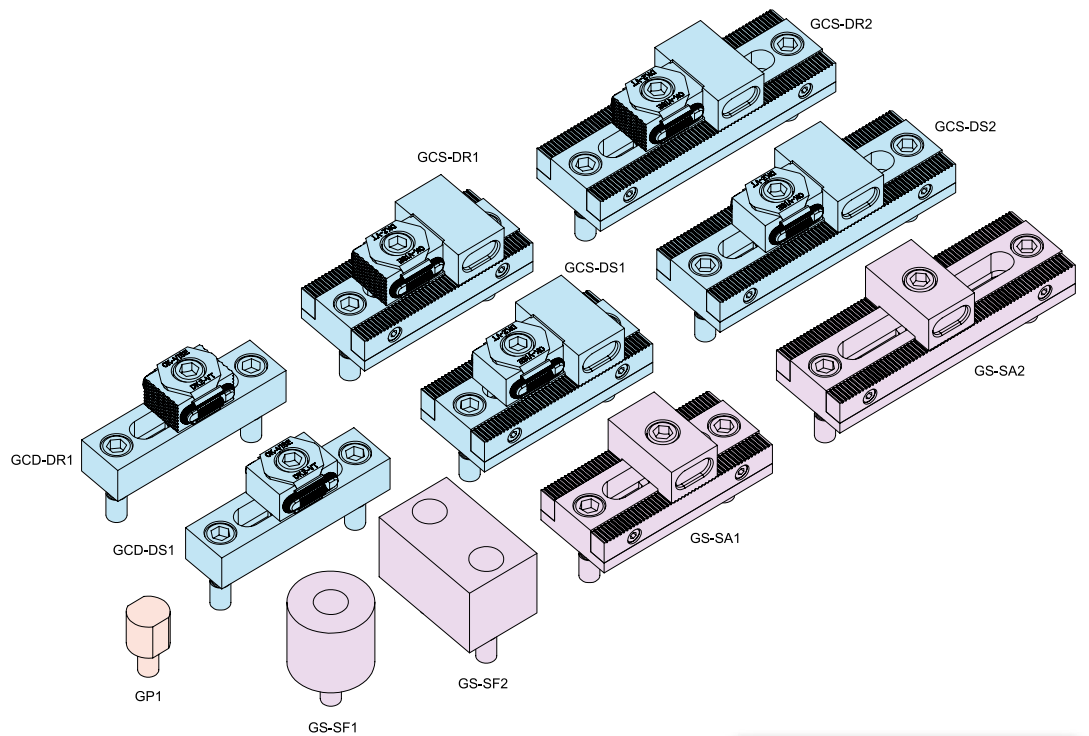
GRID FIXTURING SYSTEM

Grid Fixturing System is the new generic-purpose fixturing system from OK-VISE.

It can be adapted to the grid platforms of leading workholding suppliers. With the OK-VISE Grid Fixturing System even very complex forms of workpieces can be clamped.

On a grid platform you can also combine OK-VISE modules with the components of other suppliers.

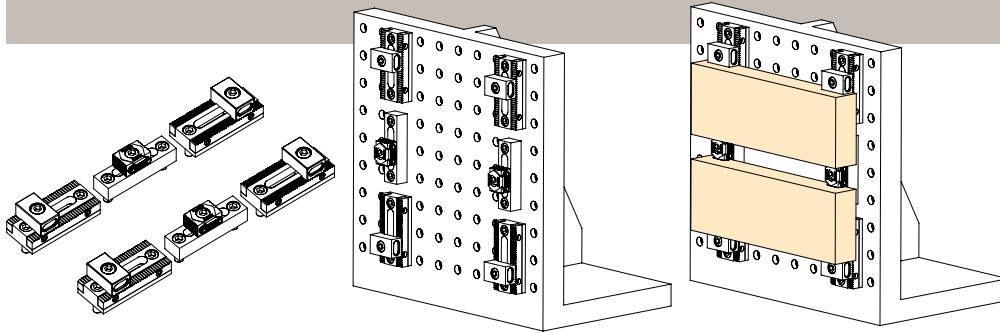
GRID SYSTEM COMPONENTS



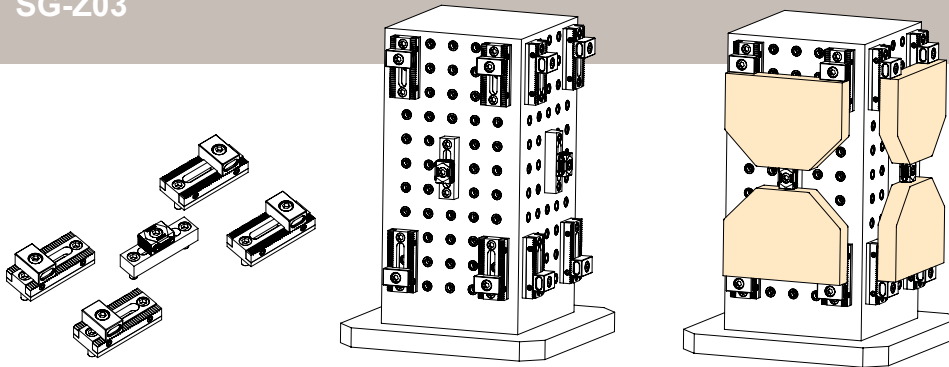
GRID FIXTURING SYSTEM APPLICATIONS

To make selection of the components easier, the OK-VISE team has selected some basic sets to enable an easy start with the Grid system. In the pictures below you can see the solutions done with each set. We recommend platforms of leading suppliers. Grid plate is normally not included in the set.

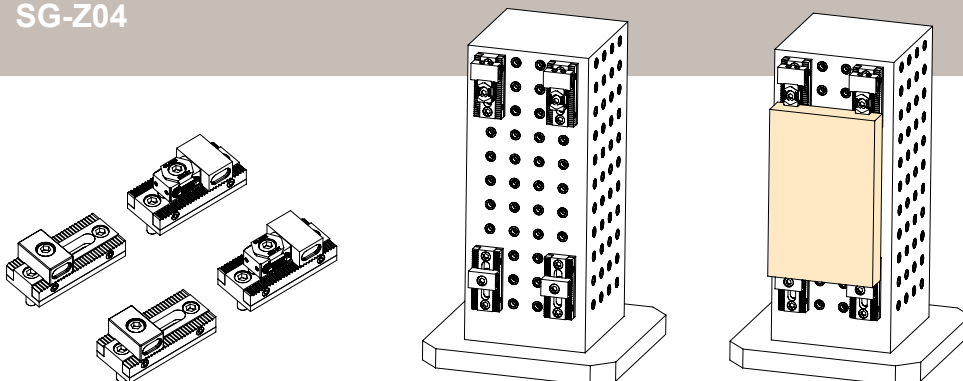
SG-Z02



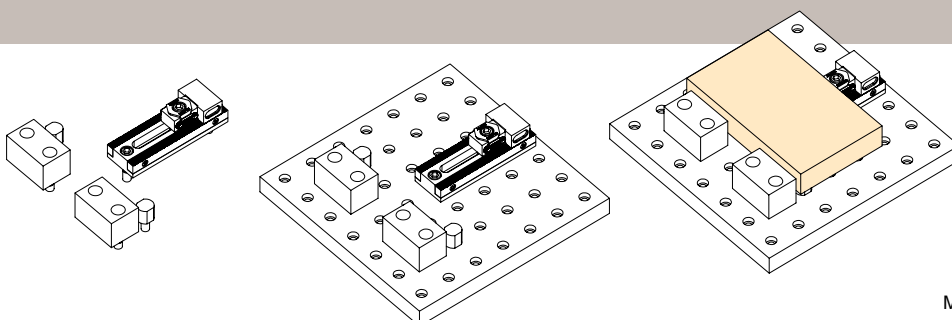
SG-Z03



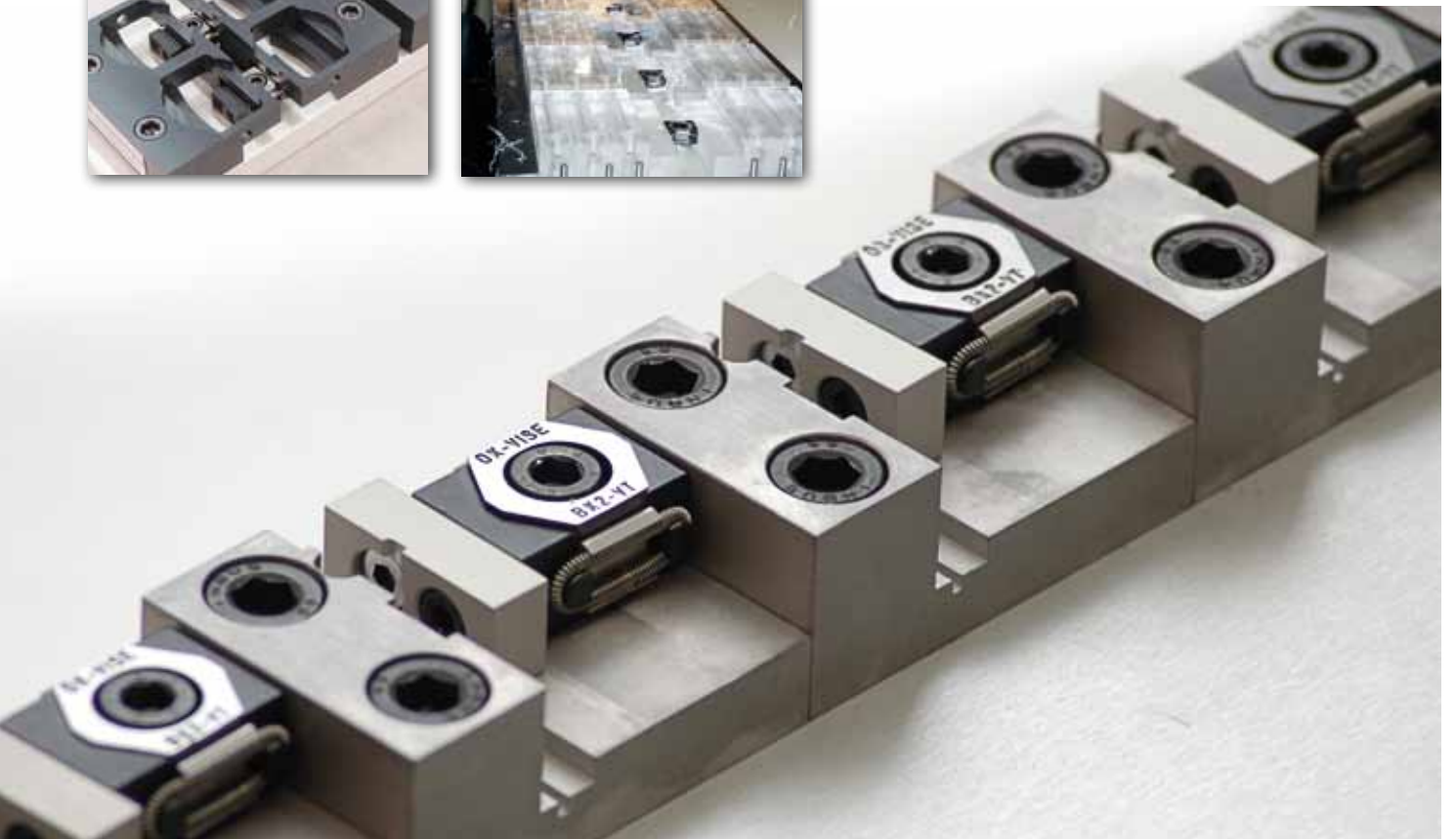
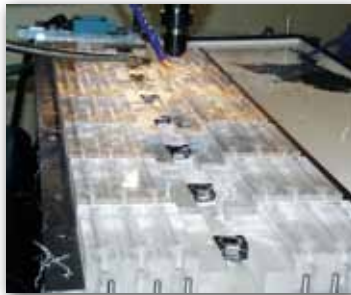
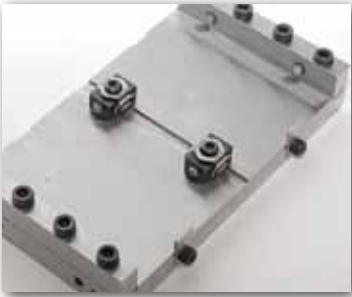
SG-Z04



SG-Z06



DEDICATED FIXTURES



OK-VISE BLANK FIXTURING SYSTEM

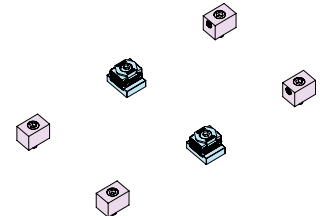
The OK-VISE Blank Fixturing System is designed for cases when dedicated (product-specific) fixtures are needed. This is typical in high-volume production. Blank plates are used as a platform on which to build the fixture – aluminium and steel blanks are recommended.

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.

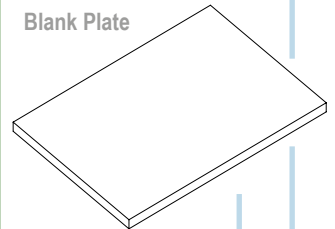
When sensitive contact with the workpiece is a must, then smooth, diamond-surface or contour-machined jaws are optimal.



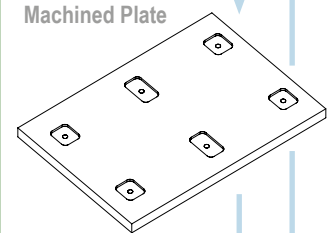
Blank Fixture Set



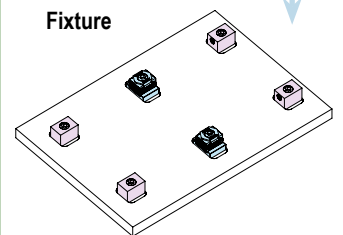
Blank Plate



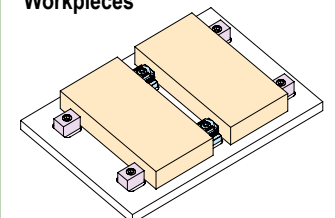
Machined Plate



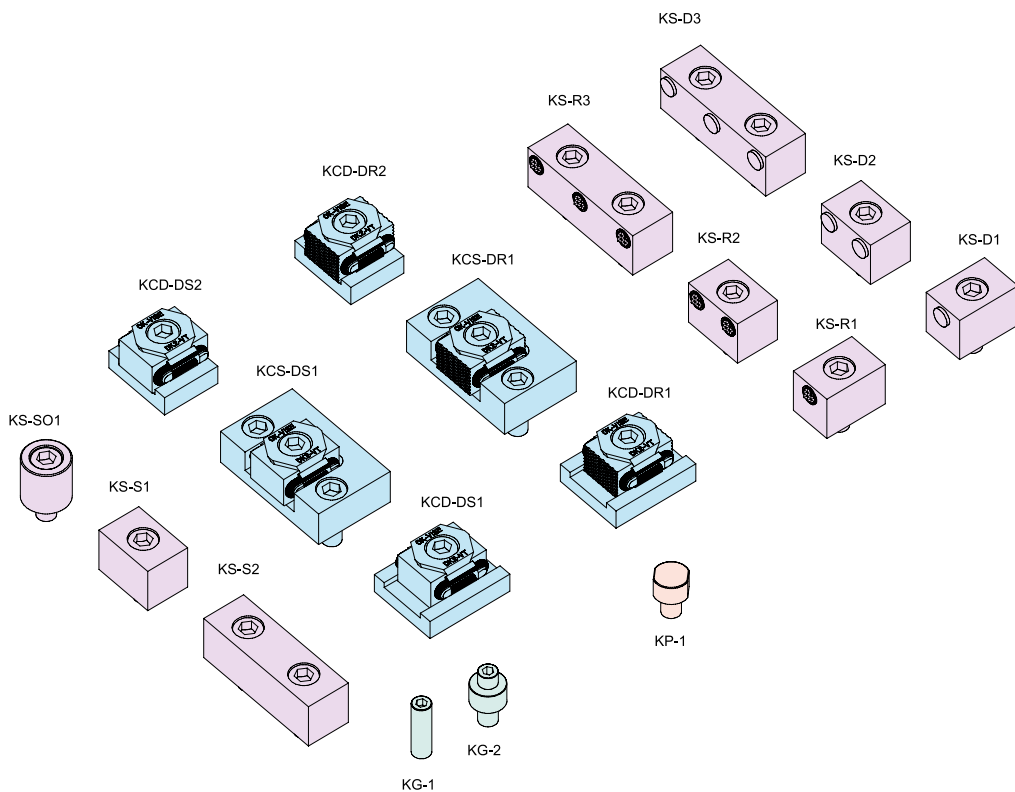
Fixture



Fixture with Workpieces



BLANK SYSTEM COMPONENTS



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

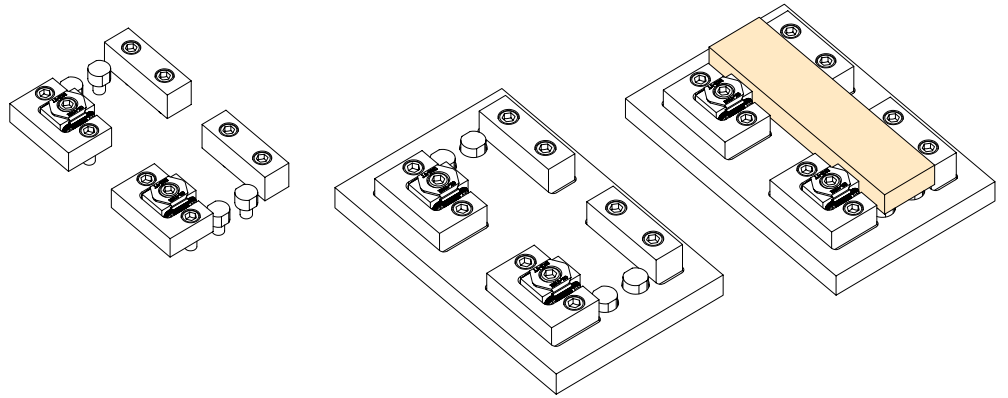


BLANK SYSTEM FIXTURE SETS

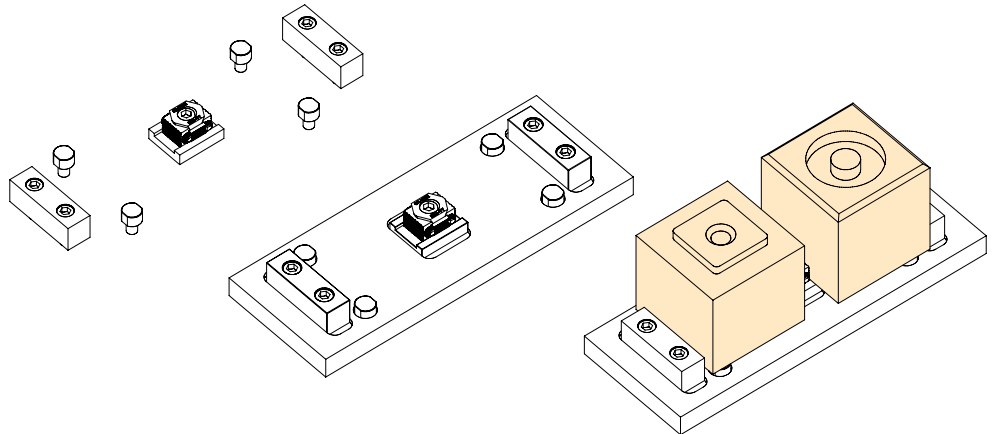
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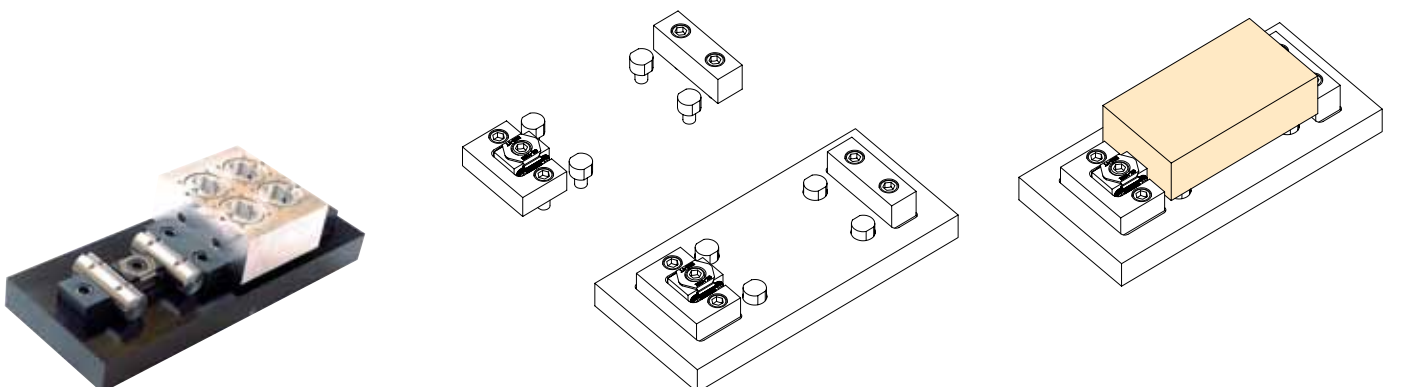
SK-Z7



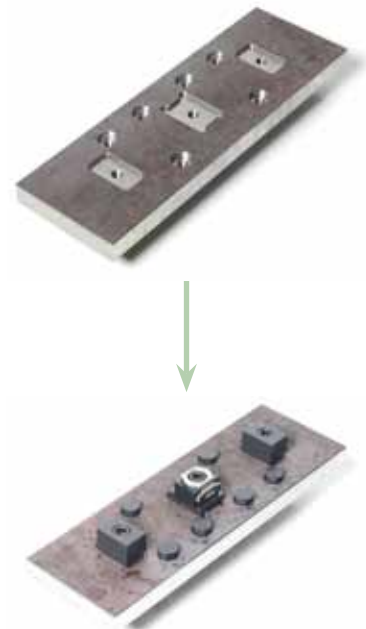
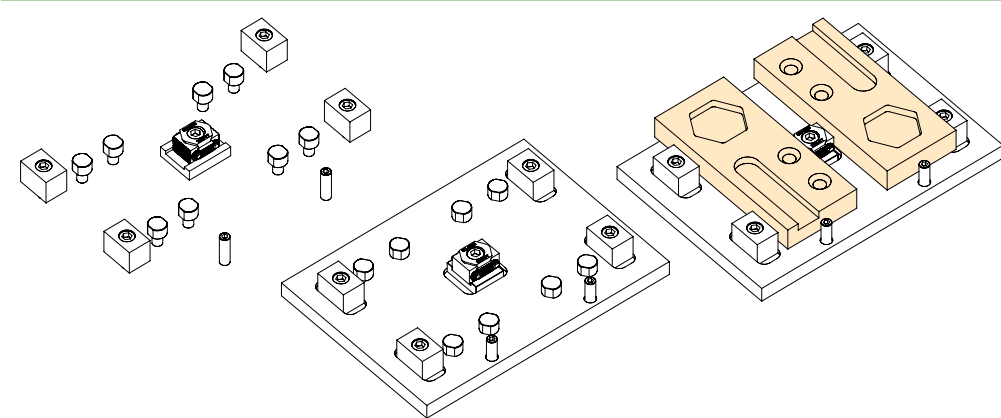
SK-Z2



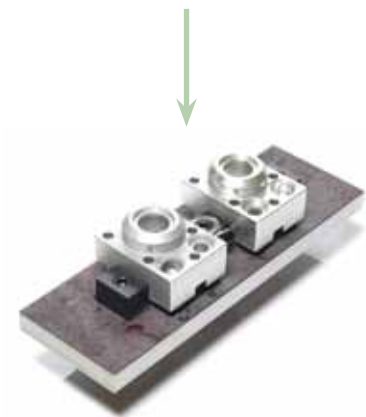
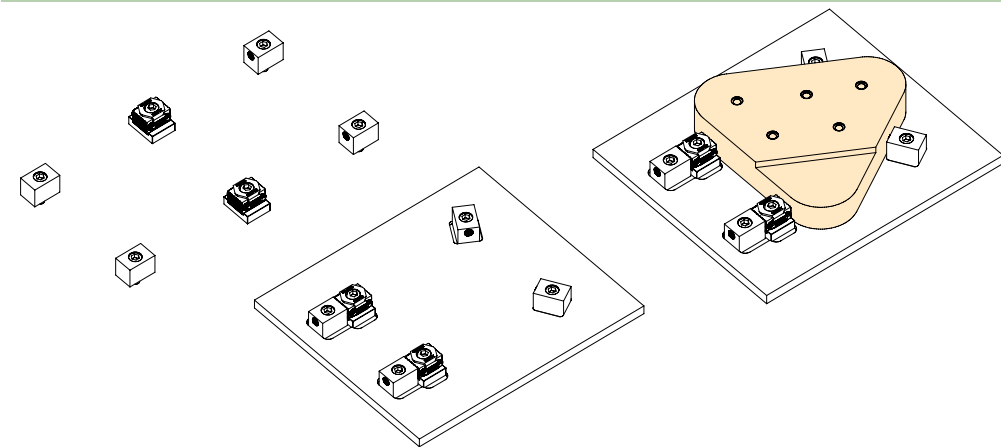
SK-Z8



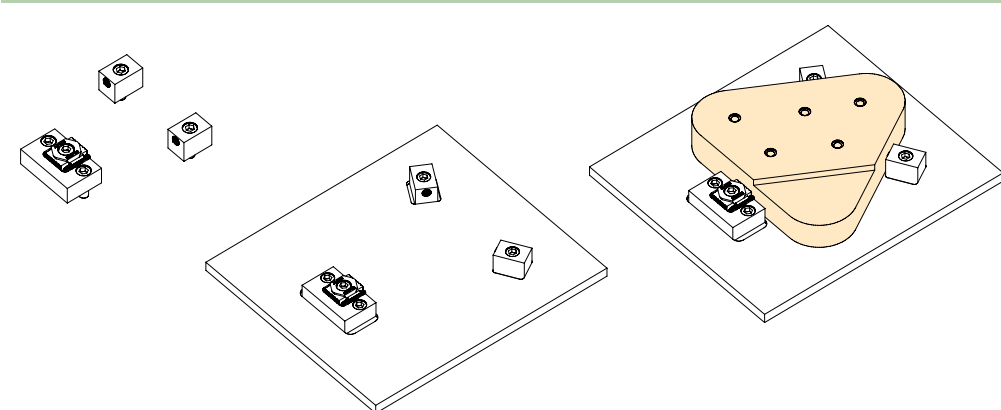
SK-Z4



SK-Z5



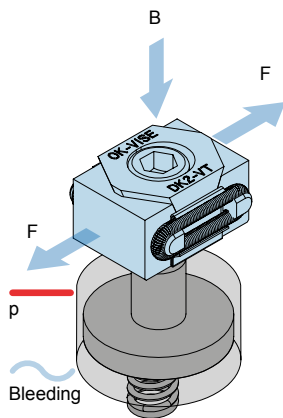
SK-Z6



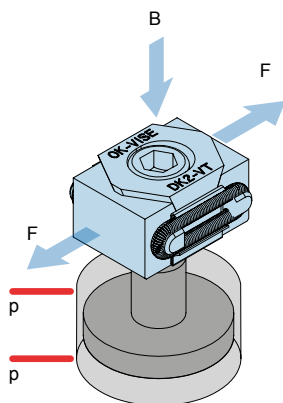
OK-VISE HYDRAULIC ACTUATOR

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 now introduced new 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.

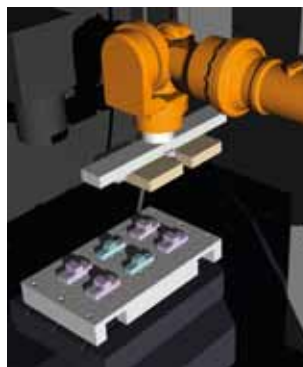
Hydraulic clamping can be used in combination with

- 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.

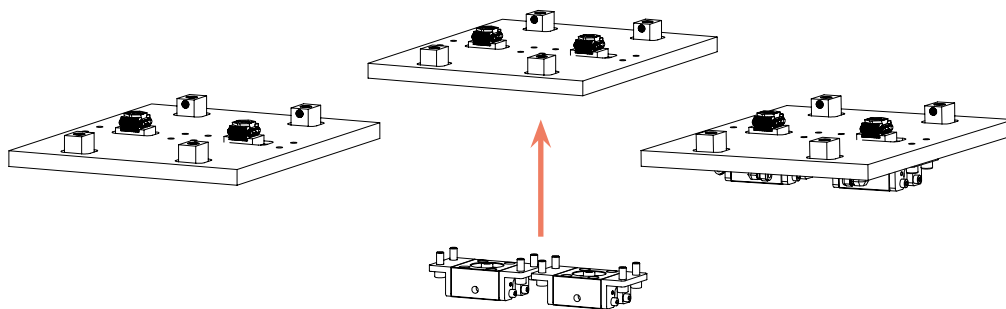


Grid System + hydraulics. Continuous hydraulic connection with vertical machining center.



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!

BENEFITS OF HYDRAULIC CLAMPING

Compared to manual clamping, a system using hydraulic clamping has a consistent clamping force on the workpiece, clamping is faster and enables automated (“robotic”) loading of workpieces.

Compared to other hydraulic systems on the market, the OK-VISE module

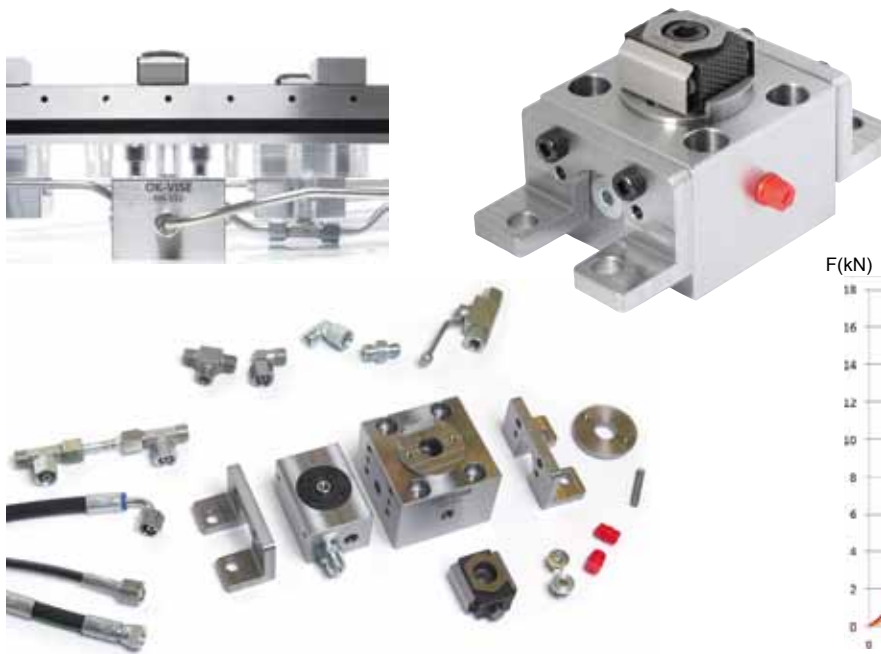
- Based on the world renown wedge clamp
- Wedge design prevents compression of hydraulic oil preventing vibration
- Creates clamping force with a pull stroke
- Return stroke is performed by spring or hydraulics
- Uses HA-Series actuator designed for 350 bar pressure, which results in compact size



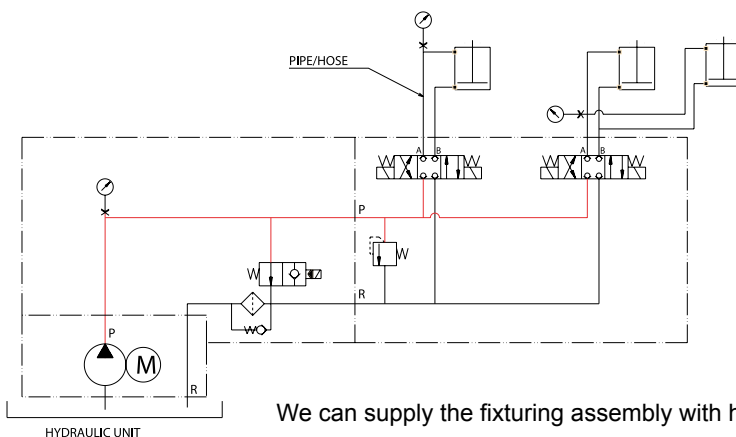
HA-2S1
56x80 mm
H=46 mm

HA-1S1
90x90 mm
H=50–69 mm

SOME BASIC COMPONENTS



INSTALLATION



We can supply the fixturing assembly with hydraulic actuators. Our partners worldwide take care of hydraulic installations. Some sample connection diagrams are available from support@ok-vise.com

More info: ok-vise.com/hydraulic-clamping/



SUB-PLATES

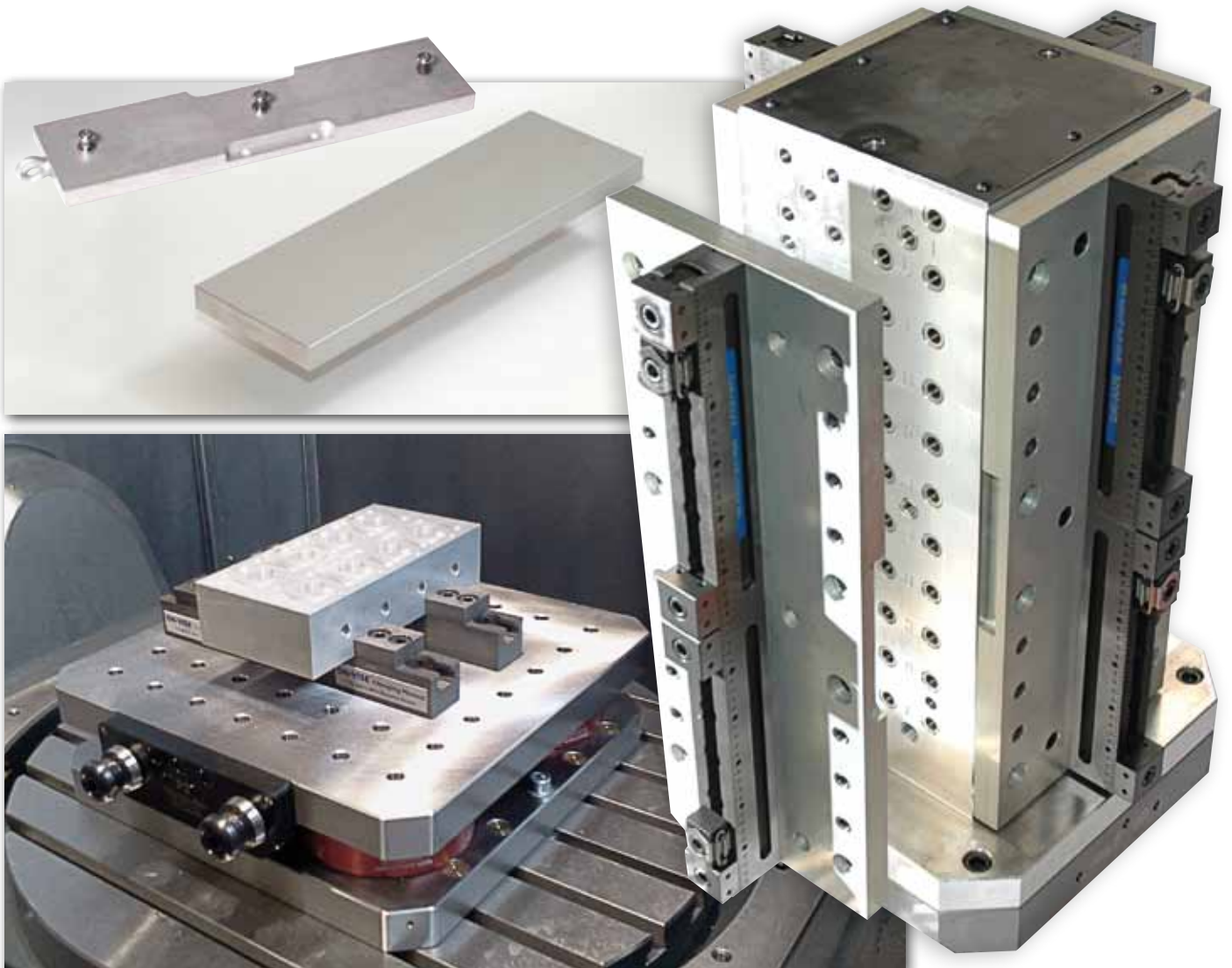
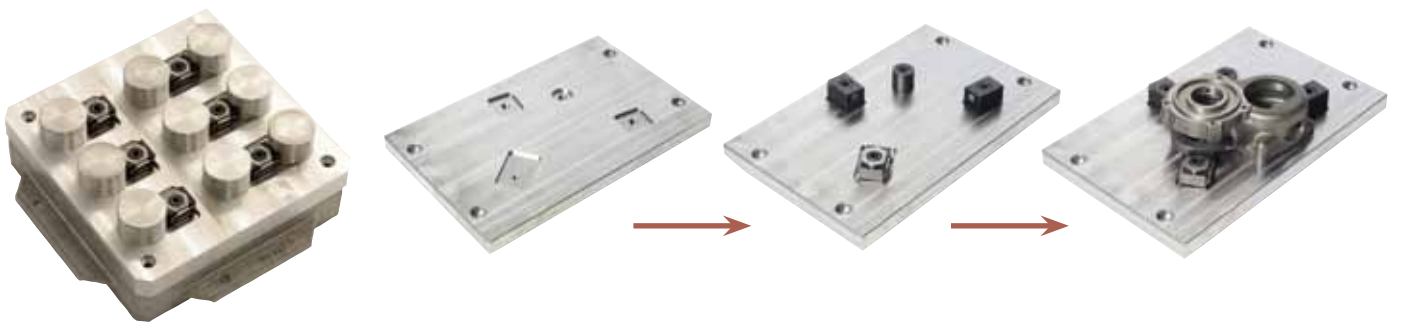
The sub-plate concept can be used to build fixtures with all machine types and platforms.

When a fixture is built on a plate as a single unit, changing the fixtures set up is faster than in the case of installing fixture components on a machine table.

In most cases it makes better sense to clamp the workpieces to the fixture outside the machine “off-line” and then transfer the fixture with the workpieces to the machine. In this way the output of the machine can be easily maximized.

Tooling blocks and the Rotary Pallet System (RPS) from OK-VISE are examples of systems where the sub-plate concept has been successfully used.

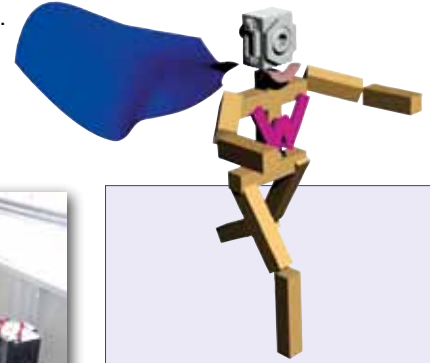
Sub-plates can be used to carry dedicated or generic-purpose fixtures.



PLATFORMS

In addition to fixturing components, we offer workholding platforms such as tooling blocks, zero-point positioning systems (OK-LOCK) and trunnion units (RPS).

Our fixturing components fit all platforms, but the most common platforms are based on T-slots, grid patterns or a simple blank surface that will be machined to produce a fixture.

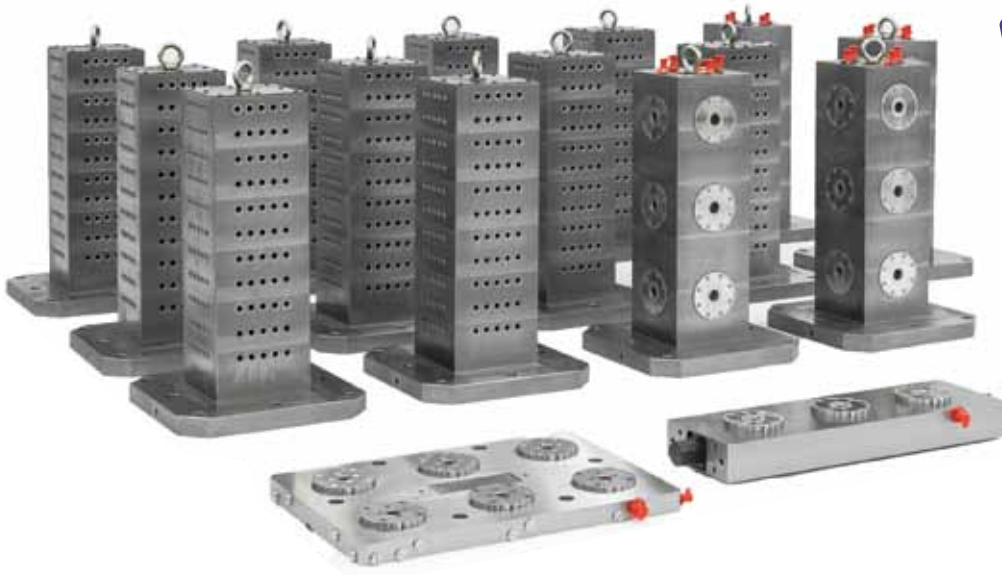


WEDGEMAN SELECTION TOOL

OK-VISE has designed an easy selection tool to help customers select the most suitable fixturing system for their needs.

First, choose a workpiece design from the examples given.

Next choose the platform you are using, and the most suitable component sets are shown. To compare the sets and to obtain more detailed information, follow the links to the OK-VISE product webpages.



OK-VISE FIXTURING CONCEPT

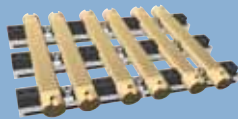
All platforms, All workpieces

GENERIC FIXTURING CONCEPTS

Multi-Rail RM System



Multi-Rail RH System



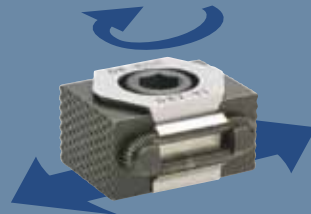
Grid Fixturing System



Combo-Rail



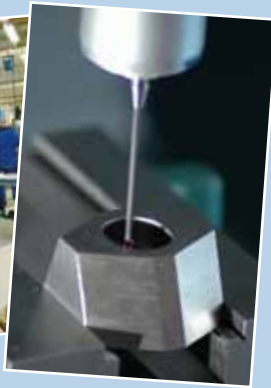
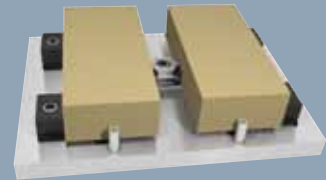
LOW-PROFILE CLAMPS



OK-VISE®
Clamping Method

COMPONENTS FOR DEDICATED FIXTURING

Blank Fixturing System



The original OK-VISE low-profile clamps are known worldwide as a core component of any modern workholding system. In the machining industry, the OK-VISE name means quality.

The mother company of OK-VISE OY is Kytola Instruments. The company is known for manufacturing precision instruments.

www.kytola.com

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