

**1 User information**

**1.1 Purpose of document**

These instructions are an integral part of the product supplied and contain important information for the safe installation, commissioning, operation, servicing and maintenance. These instructions must be read before using the product and must be observed during operation, in particular the "General safety instructions" section.

**1.2 Illustration of safety instructions**

DANGER	
	Indicates imminent danger. If the information is ignored, death or serious injury (permanent disability) will result.
WARNING	
	Indicates a potentially dangerous situation. If the information is ignored, it is possible that death or serious injury (permanent disability) will result.
WARNING	
	Indicates a potentially dangerous situation. If the information is ignored, it is possible that material damage and light to medium injury will result.
NOTE	
	Indicates general information, useful tips for users and work recommendations which do not impact on the health and safety of operators. ... underscores useful tips and recommendations as well as information for efficient and trouble-free operation.
CAUTION	
	Indicates a potentially dangerous situation. If the information is ignored, material damage will result. ... points out a potentially dangerous situation that can lead to material damage if it is not avoided.

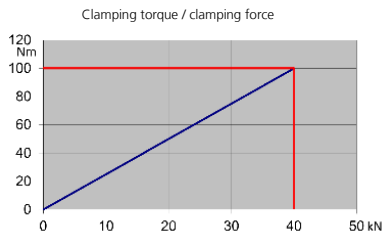
**2 General safety instructions**

**2.1 Intended use**

The clamping device may only be used in accordance with the technical data and has been designed for stationary application on milling machines in an industrial environment. Using the device in accordance with the intended purpose includes compliance with the commissioning, installation and operating instructions, and with the environmental and service conditions as provided by the manufacturer. The manufacturer accepts no liability for damage resulting from non-intended use.

**2.1.1 Technical data**

Version	max. torque	max. clamping force
KSC-5X 125-142	100 Nm	40 kN
KSC-5X 125-181	100 Nm	40 kN
KSC-5X 125-252	100 Nm	40 kN



Exceeding the max. torque results in damage to the spindle.

**Weight without system jaws**

	KSC-5X 125-142	KSC-5X 125-181	KSC-5X 125-252
Length 320 mm	26.1 kg	32.0 kg	42.6 kg
Length 400 mm	29.0 kg	35.0 kg	45.5 kg
Length 500 mm	32.5 kg	38.5 kg	49.0 kg
Length 600 mm	36.0 kg	42.0 kg	52.5 kg
Length 800 mm	43.2 kg	49.1 kg	59.7 kg

For further data, please see Homepage >> [schunk.com](http://schunk.com) <<

**2.2 Reasonably foreseeable misapplication**

Any application that is not in accordance with the "Intended use" or exceeds such intended use is considered not in accordance with the regulations, and is forbidden.

Any other use of the device is subject to confirmation from the manufacturer.

**Examples of foreseeable misapplication**

- Clamping device used on rotating systems.
- Clamping widely protruding workpieces.
- Clamping workpieces with a weight of over 5 kg in vertical position without an additional protection against the workpiece falling out as a protective measure for the operator.

**2.2.1 Alterations and modifications**

In the case of unauthorised alterations and modifications of the clamping device, the manufacturer's liability ceases and any warranty is voided.

**2.2.2 Spare and wear parts and auxiliary material**

Only use original parts or parts approved by the manufacturer. Using spare and wear parts by third party manufacturers may lead to risk.

**2.3 Residual risk**

The user is responsible for applying the correct workpiece clamping. New clampings have to be carefully checked by qualified personnel with relevant training. One always needs to allow for the risk that the workpiece may slip or be dislodged, even when the clamping device is functioning correctly. This is due to the different geometries to be clamped, contact surfaces, clamping friction values, processing force, wrong manipulation of the milling machine etc.

Protective devices are to be attached to the processing machine that will protect the operator from any tool or workpiece parts that may be ejected. It is mandatory that operators and others in the proximity of the processing machine wear protective goggles.

Do not use methods of operation that impair the function and operational safety.

**2.3.1 Jaw change**

Damage may result if system jaws are insufficiently tightened.

**2.3.2 Notes on clamping technology**

The operator is responsible for ensuring that the clamping geometry and clamping forces are suitable for the intended processing. We recommend that clamping be carried out with a torque wrench in order to achieve consistent clamping results. The clamping forces can only be achieved if the clamping device functions correctly and the workpiece is correctly held in the device. Regular servicing and cleaning in accordance with the operating instructions is mandatory in order to ensure correct function. When clamping thin-walled elastic workpieces, e.g. tubes or packages, it is possible that the clamping force is significantly reduced due to yielding of the workpiece. When clamping with a high degree of force, the clamping force is significantly reduced due to the increased frictional forces in the sliders.

**2.4 Duties of the organisation in charge**

The organisation in charge of the device undertakes to only allow operatives to work on the device:

- who are familiar with the basic health and safety regulations and regulations for the prevention of accidents.
- who have completed appropriate induction for working with the machine.
- who have read and understood these operating instructions.

The requirements of the EC Directive 2007/30/EC on the use of work machinery must be complied with.

**2.5 Operator duties**

All persons who have been instructed to work with the machine undertake to:

- observe the basic regulations for health and safety and for the prevention of accidents.
- read and understand the section on safety and the safety instructions in these operating instructions prior to working with the machine, and to observe these instructions.

**2.6 Operator qualification**

The installation, initial setup, fault analysis and periodic monitoring have to be carried out by competent personnel with the relevant qualifications.

**2.7 Personal protective equipment**

WARNING	
	Ejected hot fragments can lead to serious eye injury. The regulations for safety at work and the prevention of accidents always have to be observed when working with the machine. Personal protection equipment must be worn at all times, in particular safety boots, gloves and safety goggles.

**2.8 Warranty**

Warranty	24 months
Maximum service life	50'000 clamping cycles

The warranty period is valid from the date of delivery ex-works, provided the machine is used as intended and subject to the following conditions:

- Compliance with concurrent documents.
- Compliance with environmental and operating conditions.
- Compliance with the specified maintenance and lubrication intervals.
- Observance of the maximum service life.

Parts in contact with workpieces are not covered by the warranty.

**3 Description**

The KSC-5X has been designed for centric clamping of unprocessed and finished workpieces.

**3.1 Function**

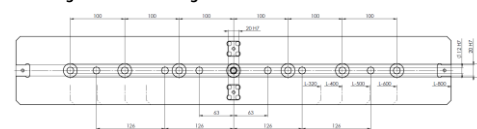
Direct clamping vice with a driven manually via a thread. The clamping force is generated mechanically and the clamping force transmission is linear across the whole clamping range.

Both carrier jaws close respectively open synchronously and are symmetrical with respect to the position holes in the base body. When opening, the jaws are slackened abruptly. The sound level of the impact depends on lubrication, fastening, and position.

A loud impact noise is possible and does not constitute a malfunction.

**4 Operation**

**4.1 Alignment / fastening**

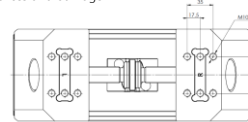


**4.2 System jaws / jaw change**

The KSC-5X, via the interface on the carrier jaws, is compatible with most system jaws from the KSCDC3 series.

- Release cylinder screws and remove the jaws.
- Clean and oil the contact surfaces, e.g. with MOTOREX Supergliss 68 K.
- Changing the jaws in the carrier jaws, tightened the cylinder screw with a torque of 60 Nm:

Failure to comply with this rule can result in insufficient workpiece clamping and hence to workpieces loss and damage.



**4.3 Clamping range**

The carrier jaws must not protrude from the base body during clamping, if the maximum adjustment range is defined by the length of the base body.

**5 Servicing, cleaning and maintenance**

Make sure that the sliding surface between the carrier jaws as well as the spindle is free of chips when adjusting the clamping range.

**Cleaning / lubrication**

Clean and oil the running surfaces, guides, spindle, and the centric bearing of the vise regularly e.g. with MOTOREX Supergliss 68 K.

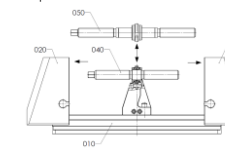
**6 Troubleshooting / fault elimination**

**Vise is hard to operate**

Disassemble the carrier jaws and clean the entire vise. If this does not result in an improvement of the function, the vise can be further dismantled in accordance with the description below.

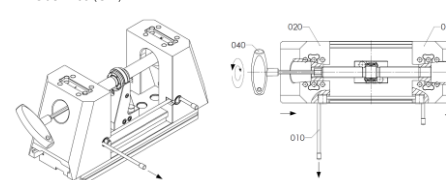
**7 Removing / spindle replacement**

By turning the spindle (CCW), unscrew the carrier jaws from the spindle and the base body. The spindle replacement is carried out from above – without tools.



**8 Installation**

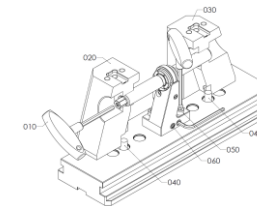
- Clean the system completely.
- Re-grease the thread of the spindle and at the carrier jaws using e.g. EP high-performance grease, such as LAGERMEISTER WHS 2002, NLGI class 1-2
- Oil the running surfaces and bearing of the vise using e.g. with MOTOREX Supergliss 68 K.
- Position the carrier jaws (pos. 20 and 30) with the spindle replacement support "clamped" (pos. 10) at the thread starts of the spindle. Using tool SW 6 (pos. 40), first feel the thread starts counterclockwise (CCW) and then engage the threads clockwise (CW).



**Important:**

Engaging the spindle threads into the carrier jaws is essential for the proper function of the centric vise. This is the only way to ensure the constant centric position of the system. If this is not the case, remove the slide again and repeat the procedure.

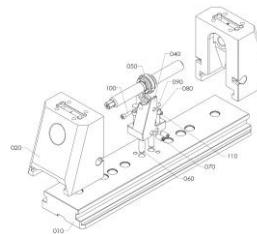
With the exception of the spindle, components of different vises must not be interchanged. This is the only way to ensure a constant centre position.



The center position of the KSC-5X is set during assembly and should not be readjusted. If the center position is no longer correct, it can be reset via the centric bearing. For this, follow the procedure described in section 8, "final step."

- Loosen the centric bearing (pos. 50 and 60) and move the inner stop surface of the carrier jaws (pos. 20, 30) against the cylindrical pins Ø12 h6x60 (pos. 40).
- Then tighten (pos. 60) until a noticeable stop is reached.
- Tighten cylinder screws M8x30 (pos. 50) to a tightening torque of 20 Nm.

**9 Assembly drawing**



**9.1 Parts list**

Position	Designation	Quantity
10	Base body	1
20	Carrier jaw, left	1
30	Carrier jaw, right	1
40	Centric bearing	1
50	Spindle	1
60	Cylinder pin m6 Ø12x36 hardened	2
70	Threadlet pin int. hex. SP M10x20	2
80	Cylinder screw int. hex. M8x30 8.8	2
90	Protective cap int. hex. M8	2
100	Cylinder screw int. hex. M6x20 12.9	1
110	Threadlet pin M8x10 PA6.6	2

**Note:**

For pos. 10 to 30, individual spare part delivery is not possible, as these components are factory-matched and fitted to each other. Repairs can only be carried out by the manufacturer or an authorized service center.

**10 Taking out of service**

The clamping device and all accessories can be disposed of as scrap metal without any risk.

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