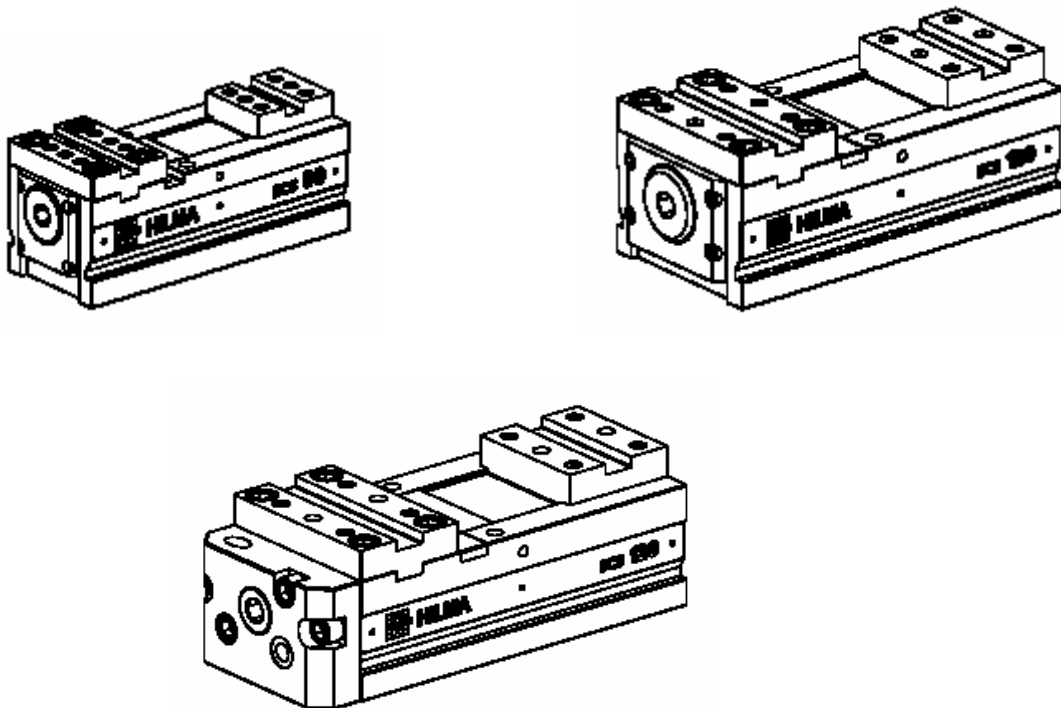


Operating Manual

Including installation and assembly instructions
For incomplete machines as per Machinery Directive 2006/42/EC

Clamping system Superkompakt SCS 80 M	Type 9.3672.
Clamping system Superkompakt SCS 80 H	Type 9.3682.
Clamping system Superkompakt SCS 120 M	Type 9.3673.
Clamping system Superkompakt SCS 120 H	Type 9.3683.



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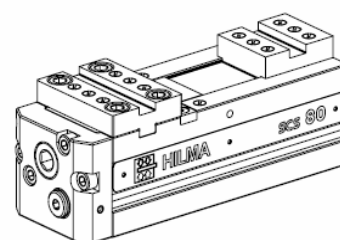
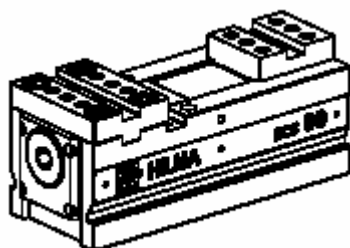
In order to ensure safe and appropriate operation, read this operating manual thoroughly prior to installation and commissioning!

1.1 Product lines

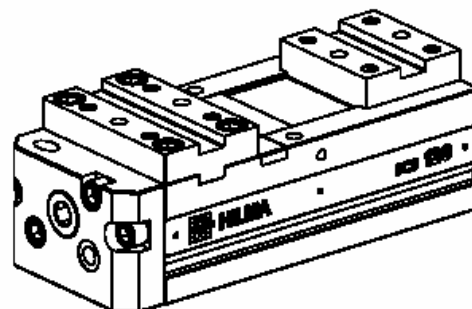
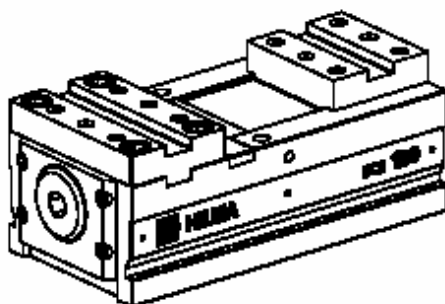
mechanical

hydraulic

SCS 80
mechanical and
hydraulic

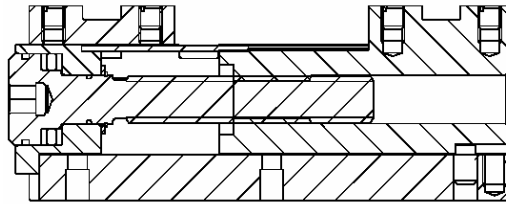


SCS 120
mechanical and
hydraulic



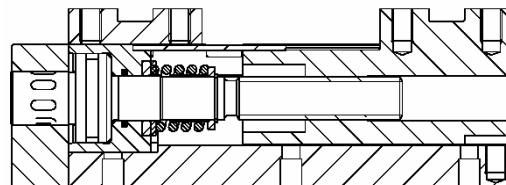
1.2 Description

Mechanical
SCS 80 + 120



- Spindle drive
- Build-up of the clamping force using a torque wrench

Hydraulic
SCS 80 + 120



- Adjusting the clamping range by means of the spindle
- Hydraulic clamping, single-acting

1.3 Safety information

- Before commissioning the system, make sure that there is no possibility of collisions taking account of the working area of the machine.
- Fasten the superkompakt clamping system firmly to the machine bed using screws.
- The workpiece clamping forces must be such as to ensure that there is no possibility of the workpiece being moved by the machining forces.
- Mechanical versions are clamped using a torque wrench. (observe max. values, see 1.5)
- In the case of hydraulic versions, only part of the hydraulic stroke must be used as the space for workpiece insertion in order to ensure safe clamping (see 2.4)
- Check the clamping force at regular intervals using a load cell.
- Remove the torque wrench after the clamping process is complete.
- Adjust the insertion gap between workpiece and clamping jaw to 4mm maximum.

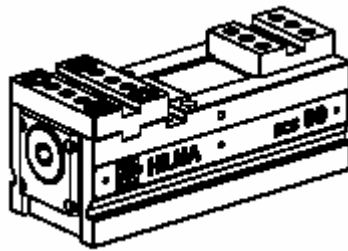
Risk of bruising!

1.4 Scope of supply

- Superkompakt clamping system SCS 80 / SCS 120 with an operating manual / spare parts list. (torque wrench and clamping jaws are not part of the supply)

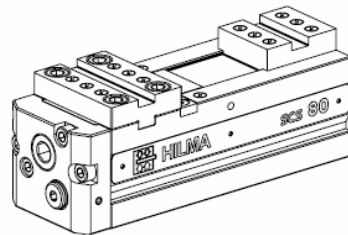
1.5 Technical data

Mechanical
SCS 80



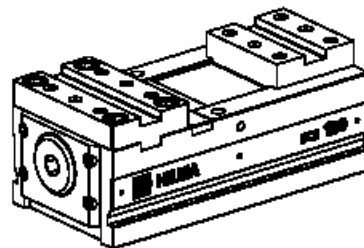
- Jaw width: 80 mm
- Max. clamping force: 25 kN
- Max. torque: 60 Nm

Hydraulic
SCS 80



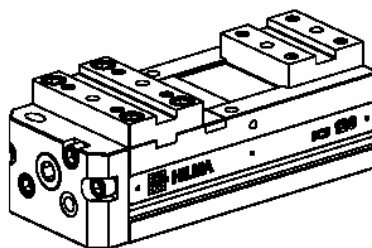
- Jaw width: 80 mm
- Max. clamping force: 20 kN
- Max. hydraulic pressure: 270 bars
- Hydraulic stroke: 4 mm

Mechanical
SCS 120



- Jaw width: 120 mm
- Max. clamping force: 40 kN
- Max. torque: 100 Nm

Hydraulic
SCS 120

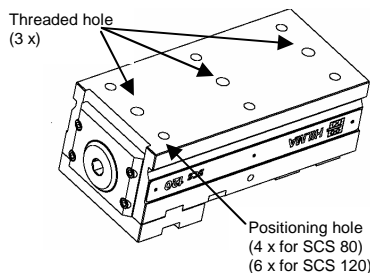
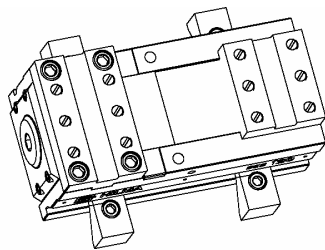


- Jaw width: 120 mm
- Max. clamping force: 40 kN
- Max. hydraulic pressure: 270 bars
- Hydraulic stroke: 4 mm

2.1 Fastening to the machine bed

The Superkompakt clamping system must be fastened in such a way that it cannot be moved by the machining forces.

- Before commissioning the system, make sure that there is no danger of collision taking account of the working area of the machine.
- Remove any unevenness and any swarf, which may be present between the locating surface and the base.



- Fastening using claws (available as accessories)
- Fastening through threaded holes
- Aligning using positioning holes in the lower base

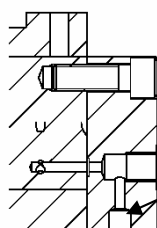
2.2 Power unit

The power unit should operate intermittently with pressure switches for automatic pressure control and for machine protection. If the pressure drops by 10% below the set value the pressure switch for automatic pressure control causes the motor to start again. If the clamping pressure drops by more than 15% the machine is stopped.

2.3 Hydraulic oil connection and bleeding

The SCS 80 + 120 H Superkompakt clamping system is connected to the power unit through an oil port G1/4" and a flanged connection Ø10H7 (for plug-in connection). The system is connected to the power unit either through the oil port or through the flange. The oil supply line up to the clamping system must be well bled.

Oil recommendation: HLP32 or HLP46 according to DIN 51524.



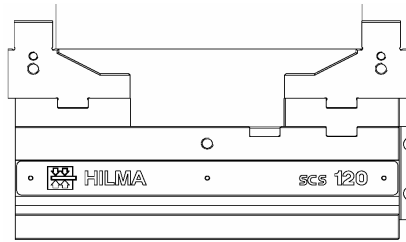
Hydraulic oil port G $\frac{1}{4}$ " on the rear

Hydraulic oil port from below

Plug-in connection part no. 8.0530.0023 required, available as accessory (connection is possible through the base plate)

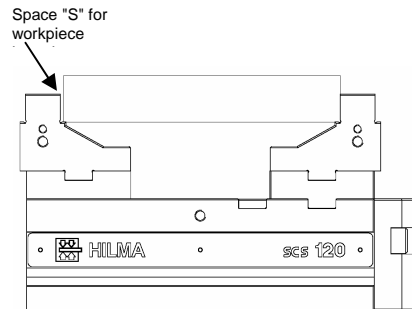
2.4 Adjusting the clamping range

Mechanical



- The clamping range is adjusted by turning the spindle. An overlap of the clamping range is obtained by turning the clamping jaws or by displacing the fixed jaw.

Hydraulic



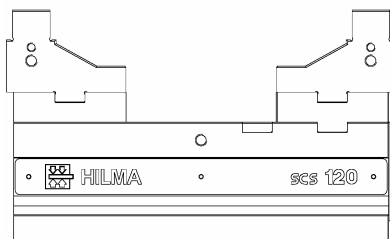
- The clamping range is adjusted by turning the spindle.
- The space "S" for workpiece insertion must be between 1 and 3 mm.

Attention:

Do not use the full power stroke as the space for inserting the workpiece. During clamping, this would cause the clamping slide to make contact with the inner stop and the workpiece will not be clamped. In the case of flexible workpieces it may be necessary to close the slide before clamping using a wrench.

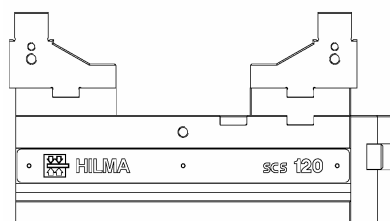
2.5 Clamping and unclamping

Mechanical



- By turning the spindle clockwise using a torque wrench, clamping force is applied to the extent of the selected torque (do not use a screwdriver).
- Observe maximum values, see technical data 1.5.
- For unclamping, turn the spindle counter-clockwise.

Hydraulic



- By switching on the power unit, the workpiece is clamped with a force proportional to the adjusted pressure, see technical data 1.5. For unclamping, a directional valve is actuated, and the integral spring resets the slide into its home position.



Attention:

After a longer standstill (e.g. during week-ends) the clamping pressure may have dropped. Please check the pressure before machining workpieces and re-clamp if necessary. After having activated the emergency switch, the workpieces must be re-clamped, as the hydraulic system is disconnected when the emergency switch is activated.

3.1 Trouble shooting, hydraulic version

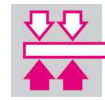
Failure	Cause	Remedial action
The workpiece is not clamped at all or not sufficiently clamped.	The slide moves against the inner stop.	Reduce the insertion space, see 2.4
	The operating pressure is too low.	Adjust to a higher pressure on the power unit
	Flexible workpiece.	Manually close the slide before clamping
When pressure is relieved, the clamping slide does not return to its home position or returns very slowly to its home position.	Too much resistance in the return line.	Increase the cross section of the line or reduce its length.
	Directional valve is dirty or defective.	Clean the directional valve or replace it if necessary.
	Hydraulic oil is too viscous.	Use hydraulic oil HLP32 or HLP46 acc. to DIN 51524.
	Return spring is defective.	Replace the return spring
	Clamping slide s jammed due to an accumulation of dirt.	Clean the machine vice. Check the guideways for surface damage, repair them if necessary.

3.2 Maintenance and care

Generally, the clamping system does not require any special maintenance beyond that which is normal for this type of clamping element. However, depending on the application, the space around the spindle and the spindle itself must be lubricated using a grease containing molybdenum.

Proceed as follows for SCS 80/120 clamping systems:

- Undo the stop screws on the housing.
- Pull the housing including the spindle off the basic body by turning the spindle to the left.
- Clean all components, grease them and reinstall them in the reverse order.
- Make sure that the spindle and the slide move smoothly.



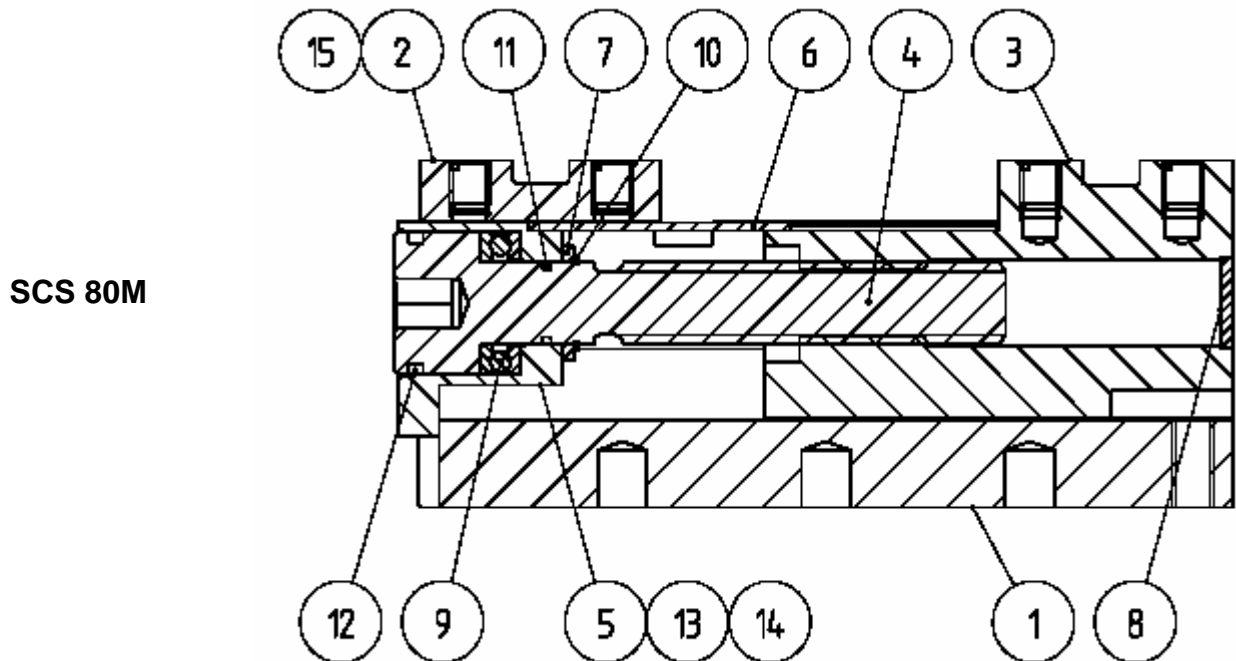
3.3 Service / Maintenance

SERVICE HOTLINE + 49 (0) 2733 - 281 150

Customers abroad

- Please contact the HILMA-RÖMHELD general importer or your local dealer.

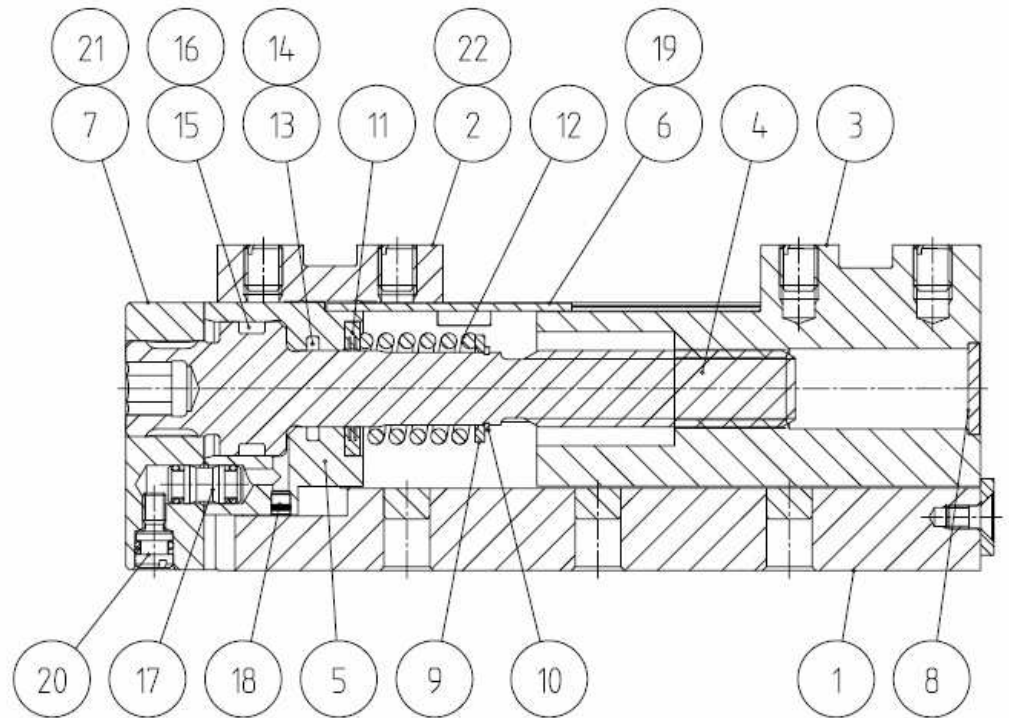
3.4 Spare parts



Item	Designation	Spare part no.	Quantity
1	Lower part	5.2051.0874	1
2	Fixed jaw	5.2052.0185	1
3	Slide	5.2040.0436	1
4	Spindle	5.2043.0215	1
5	Housing	5.1310.0425	1
6	Cover sheet	5.0485.0021	1
7	Washer	5.1022.0279	1
8	Cover	5.1215.0861	1
9	Deep groove ball thrust bearing	1.0711.0003	1
10	Circlip	1.0471.0020	1
11	O-ring	1.9503.0094	1
12	O-ring	1.9503.0030	1
13	Setscrew	1.0913.0055	2
14	Cheese head screw	1.7984.0018	4
15	Cheese head screw	1.6912.0068	4

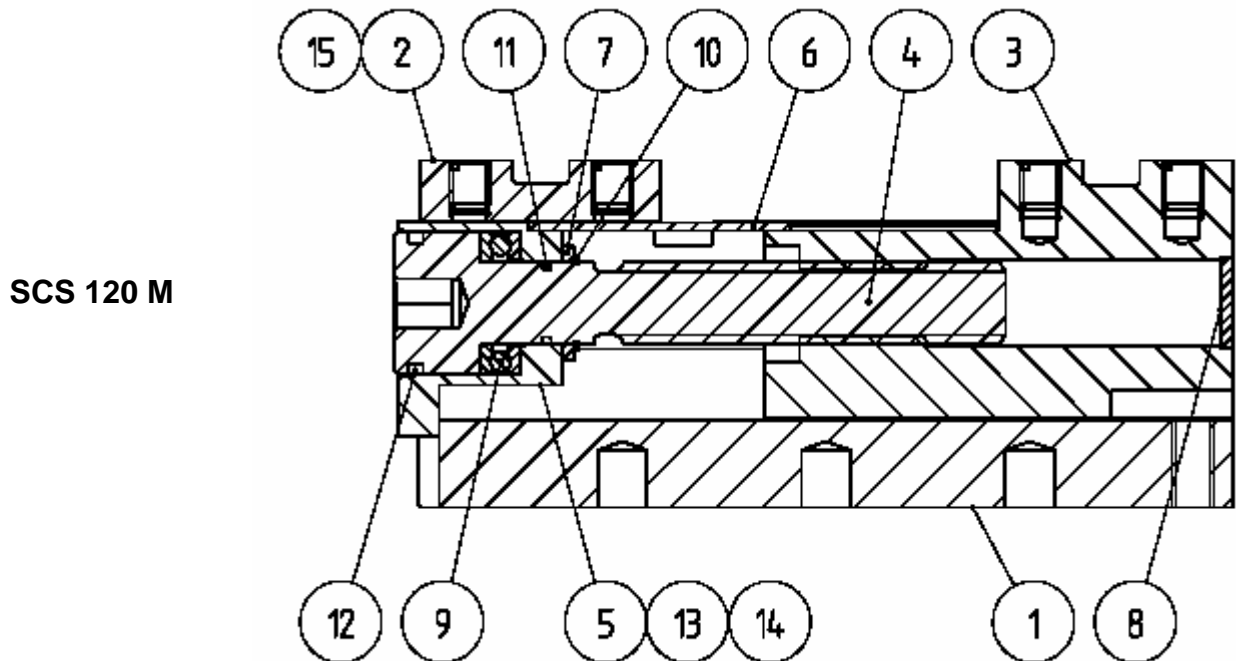
3.4 Spare parts

SCS 80 H



Item	Designation	Spare part no.	Quantity
1	Lower part	5.2051.0967	1
2	Fixed jaw	5.2052.0185	1
3	Slide	5.2040.0480	1
4	Spindle	5.2043.0236	1
5	Cylinder	5.2010.1190	1
6	Cover sheet	5.0485.0021	1
7	Bearing plate	5.2060.0094	1
8	Cover	5.1215.0861	1
9	Bushing	5.1022.0295	1
10	Circlip	1.0471.0019	1
11	Cylindrical roller thrust bearing	1.2542.0028	1
12	Pressure spring	1.2098.0276	1
13	Turc-stepseal	1.9604.0020	1
14	O-ring	1.9500.0022	1
15	Supporting ring	1.9614.0147	1
16	O-ring	1.9500.0028	1
17	Plug-in connection	8.0530.0023	1
18	Screw plug	1.0901.0005	1
19	Setscrew	1.0913.0055	2
20	Plugscrew	7.3624.0010	1
20	Cheese head screw	1.0912.2081	4
15	Cheese head screw	1.6912.0068	4

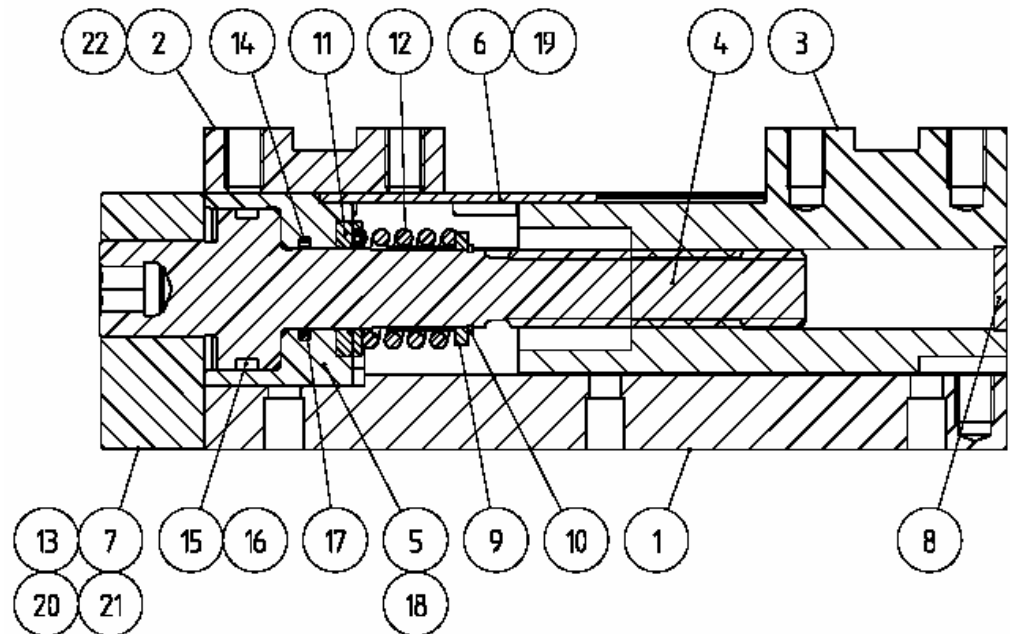
3.4 Spare parts



Item	Designation	Spare part no.	Quantity
1	Lower part	5.2051.0875	1
2	Fixed jaw	5.2052.0187	1
3	Slide	5.2040.0437	1
4	Spindle	5.2043.0216	1
5	Housing	5.1310.0426	1
6	Cover sheet	5.0485.0022	1
7	Washer	1.0988.0025	1
8	Cover	5.1215.0958	1
9	Cylindrical roller bearing	1.5412.0002	1
10	Circlip	1.0471.0025	1
11	O-ring	1.9503.0167	1
12	O-ring	1.9503.0168	1
13	Setscrew	1.0913.0055	2
14	Cheese head screw	1.0912.0107	4
15	Cheese head screw	1.6912.0085	4

3.4 Spare parts

SCS 120 H



Item	Designation	Spare part no.	Quantity
1	Lower part	5.2051.0876	1
2	Fixed jaw	5.2052.0187	1
3	Slide	5.2040.0438	1
4	Spindle	5.2043.0217	1
5	Cylinder	5.2010.1152	1
6	Cover sheet	5.0485.0022	1
7	Bearing plate	5.2060.0089	1
8	Cover	5.1215.0958	1
9	Bushing	5.1315.0343	1
10	Circlip	1.0471.2024	1
11	Cylindrical roller thrust bearing	1.2542.0027	1
12	Pressure spring	1.2098.0443	1
13	Plug-in connection	8.0530.0023	1
14	O-ring	1.9500.0029	1
15	O-ring	1.9500.0044	1
16	Supporting ring	3000775	2
17	Turc Stepseal	1.9604.0023	1
18	Screw plug	1.0901.0005	1
19	Setscrew	1.0913.0055	2
20	Plugscrew	7.3624.0010	1
20	Cheese head screw	1.6912.0085	4
15	Cheese head screw	1.6912.2126 + 1.0912.0124	2+2

Subject to modification.



Declaration of incorporation

as per

**Machinery Directive EC-RL 2006/42/EC
dated June 9, 2006.**

We, **Hilma- Römheld
Schützenstrasse 74
57271 Hilchenbach,** declare, that the incomplete machine and its variants:

Superkompakt clamping systems

type 9.3672.xxxx

type 9.3673.xxxx

type 9.3682.xxxx

type 9.3683.xxxx

as supplied by us has been specifically designed for incorporation into a machine, taking full account of DIN-EN 294. The documentation has been prepared in conformity with appendix VII B. If required, the national authority may receive the documentation as a hard copy by post or by e-mail as a PDF format file. The machine into which the parts are to be integrated must only be put into operation after the conformity of the machine with the above EC directive has been demonstrated.

The design of our products is in accordance with DIN EN 982, DIN 24346 and EN 60204-1.

Responsible for the document:
Stefan Groos
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D-57271 Hilchenbach

Hilchenbach May 05, 2008
Hans-Joachim Molka
Managing Director