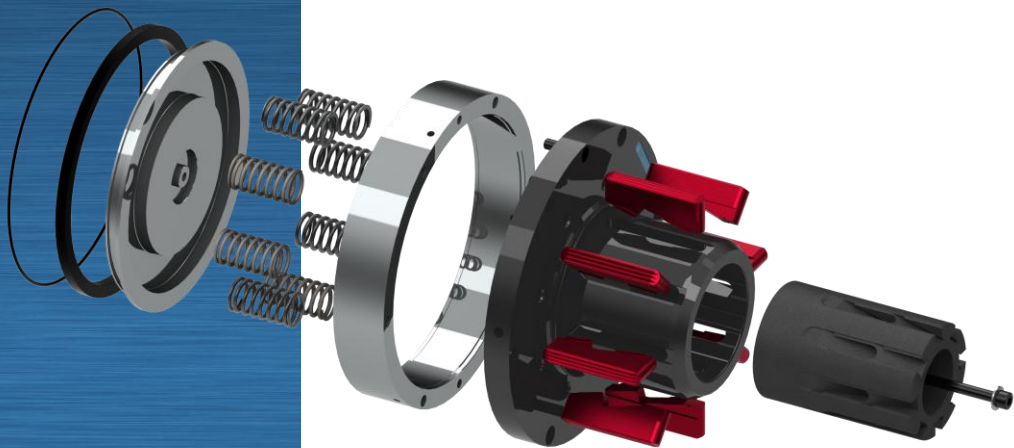




Standard assembly instructions

SDE Core Chuck



Swiss precision

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1 About this documentation

1.1 Purpose

These Assembly Instructions explain the safe and proper use of the core chuck.

All staff members working on the core chuck must have read and understood the Assembly Instructions.

1.2 Depiction in these Assembly Instructions

1.2.1 Conventions

References to other chapters are set in *italics*.

- Example: See chapter *Maintenance*.

1.2.2 Pictograms



Warning of a hazard area



Warning of suspended loads

1.2.3 Warning information

DANGER

This indicates an imminent danger which will result in death or most severe injury if not avoided.

WARNING

This indicates a possibly dangerous situation which may result in death or severe injury if not avoided.

CAUTION

This indicates a possibly dangerous situation which may result in minor injuries if not avoided.

1.2.4 Note



This indicates a useful information or a warning of material damage.

2 Safety

2.1 Product safety

The core chuck has been designed and constructed according to the state of the art and in accordance with the generally accepted safety regulations. Safe operation of the core chuck is ensured only if it is properly used.

2.2 Safety principle

The core chuck is intended for incorporation into a machine with a safety concept of higher level. It may be commissioned only if the machine meets the provisions of the Machine Directive.

2.3 Limitations of use

2.3.1 Intended use

The core chuck is only intended for gripping cores used for rewinding and unwinding web-shaped materials. The design follows customer-specific requirements. For max. loads, see the product documentation of the relevant workpiece.

2.3.2 Misuse



WARNING

Risk of injury in case of misuse.

- Strictly observe the intended use.
-

Misuse is considered to be any use of the core chuck which deviates from or goes beyond the intended use. Particularly, misuse includes:

- Operation of the core chuck without winding cores.
- Operating when it is not in excellent technical condition or without following all the instructions in the Assembly Instructions in a safety-conscious manner.

The manufacturer refuses to accept any responsibility for accidents or damages caused by misuse.

2.4 Basic safety regulations

- The core chuck must only be operated if it is in excellent condition. Faults must be removed immediately.
- The core chuck must be cleaned and maintained according to the defined maintenance intervals.
- Technical modifications to the core chuck may be made only with the express approval of the manufacturer.
- Only original spare parts may be used.
- The availability of these Assembly Instructions on the workplace must be ensured.
- All personnel working with the core chuck must receive instruction and have read and understood the chapters in these Assembly Instructions concerning their work.
- Personnel undergoing training may work on the core chuck only under permanent supervision of an experienced person.
- The operating company shall inform the manufacturer in case of recognizing dangers or risks which are not described in these Assembly Instructions.

2.5 Staff qualification

Different staff qualifications are required according to the work carried out with the core chuck.

Instructed staff

Instructed staff shall be taught and, if necessary, trained in the tasks to be performed. They are aware of the potential hazards in case of improper behavior and of the necessary protective measures.

Specialized staff

Specialized staff is capable of judging the work to be carried out and detecting potential hazards due to their professional training and experience. They also have knowledge of the relevant regulations.

2.6 Residual risks

- Risk of injury due to suspended loads during assembly.
- Risk of injury due to ejected parts in case of operating without winding cores.

The correct behavior towards residual risks is pointed out at the appropriate place.

3 Structure and function

3.1 Purpose

The core chuck is used for non-slip gripping of winding cores in a centered position.

3.2 Overall view

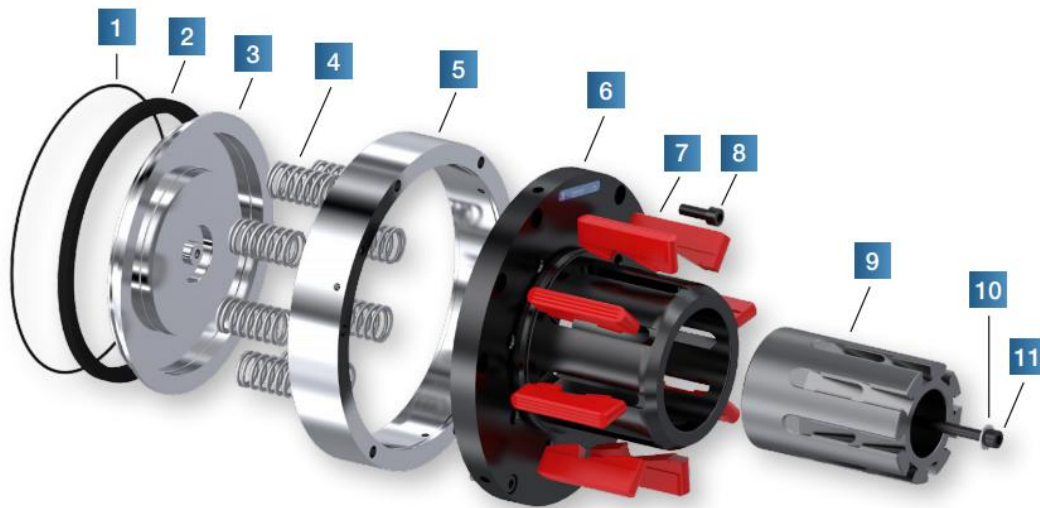


Fig. 1 Overall view

1	O-ring	7	Expansion segment
2	Grooved ring	8	Hexagon socket head screw
3	Piston	9	Guideway
4	Springs	10	Retaining washer
5	Cylinder housing	11	Hexagon socket head screw
6	Chuck body		

The core chuck is actuated by compressed air with a piston. Thus, the expansion segments are pressed outwards. This causes the winding cores to be gripped.

3.2.1 Compressed air build-up

Depending on the equipment on the core chuck and the machine, the specified pressure can be manually or automatically supplied.

- Manually: Press the compressed air gun to fill the valve until no more air flows at the set pressure, or press the compressed air gun with the pressure gauge until the required value is displayed.
- Automatically: The required pressure can be automatically built up by using a filling station or by continuous build-up during the winding process, e.g. using a rotary feedthrough.

3.3 Options

3.3.1 Adapter

Core chucks can be applied to other core diameters by means of plug-on adapters.



Fig. 2 Plug-on adapter

3.3.2 Expansion segment

Different expansion segments can be used for the different core materials. See also chapter *Technical specifications* and *Maintenance*.

4 Technical specifications

4.1 Dimensions and weights

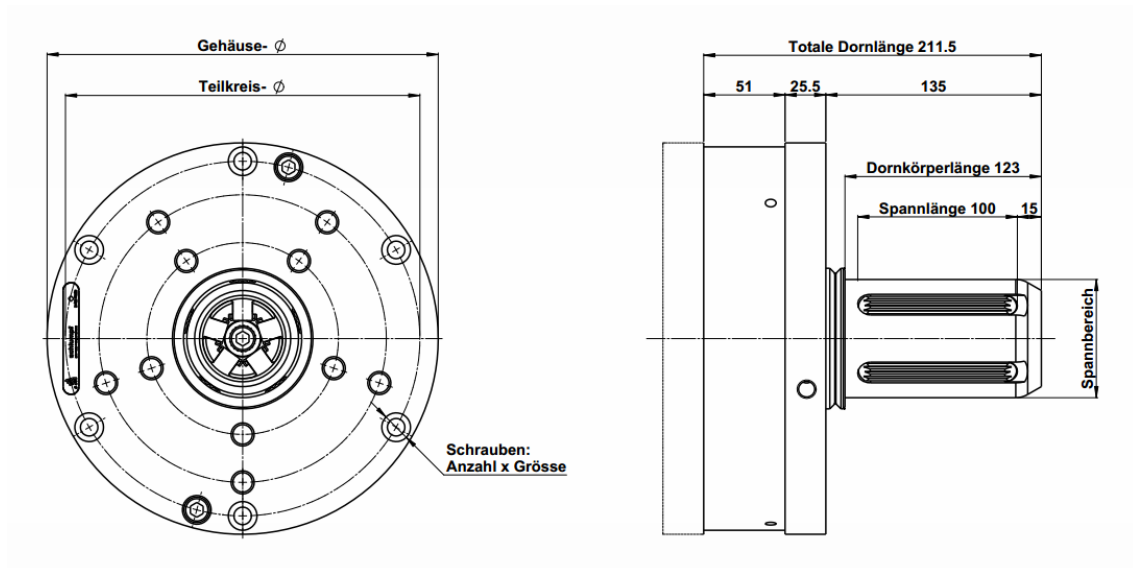


Fig. 3 Mass

4.1.1 SDE 20

Core chuck	SDE 20						Unit
Core inner ø	70		3"		6"		mm/inches
Expansion range	69-80		74-85		148-159		mm
Max. load per mandrel	12`500		20`000		20`000		N
	Article no.		Article no.		Article no.		
Torque MT	1008478	300	1005980	430	1005266	860	Nm
Torque POM	9004313	300	9004310	430	9004308	860	Nm
Torque RP	9003943	520	9004312	720	9004309	1520	Nm
Operating pressure	6		6		6		bar
Bearing case ø	245		245		245		mm
Bolt circle ø	222		222		222		mm
Screws	6 x M10		6 x M10		6 x M10		
Weight	21		22		31.5		kg

4.1.2 SDE 25

Core chuck	SDE 25						Unit
Core inner ø	70		3"		6"		mm/inches
Expansion range	69-80		74-85		148-159		mm
Max. load per mandrel	17'500		25'000		30'000		N
	Article no.		Article no.		Article no.		
Torque MT	1002409	450	1002265	600	1005923	1'360	Nm
Torque POM	9004305	450	1002296	600	9004300	1'360	Nm
Torque RP	9004307	680	9001743	1'140	9004302	2'580	Nm
Operating pressure	6		6		6		bar
Bearing case ø	295		295		295		mm
Bolt circle ø	274		274		274		mm
Screws	6 x M10		6 x M10		6 x M10		
Weight	28		29.5		40		kg

4.2 Torques

4.2.1 Load

The specified max. loads are always understood as the resulting force from the winding core weight, the web tension and the unbalance forces, adhering to the specified operating pressure of 6 bar.

4.2.2 Torque factors

The specified torques depend on the combination of expansion segments and core materials used.

The combinations described below are possible.

Spannleisten zu SDE Spanndorn							
							
Hülsenmaterial:	MT POM	MT Stahl	RP Stahl	LT Stahl	PUR Stahl	LBS POM	2K
Karton	x	x	x	x		x	
Kunststoff	x	x	x	x	x	x	x
Stahl	x	x			x		x

The calculated torques are reference values based on assumptions defined by the manufacturer. However, the quality, condition and dimensional stability of the winding cores can significantly affect the actually achievable torque transmission between the core chuck and the winding core.

The specified torques are valid for an operating pressure of 6 bar.

An operating pressure different from 6 bar is only permitted after consultation with the supplier.



Risk of damage of the winding cores.

- Always ensure an operating pressure of 6 bar and the expansion range.

5 Transport and commissioning

5.1 Scope of delivery and packaging

The core chuck is delivered according to the contract.

5.1.1 Check the scope of delivery

Procedure

1. Immediately check delivered goods for transport damages.
2. Document visible or suspected transport damages with photographs.
3. Report transport damages to the manufacturer.
4. Check delivered goods for completeness on the basis of the delivery note.

5.2 Unpacking

Packaging material

Keep the packaging material for further use or dispose of it according to local regulations.

- Wood Recycling
- PE foil Recycling
- Cardboard/paper Recycling
- Drying agent General waste

5.3 Transport after unpacking

5.3.1 Safety

Staff qualification according to chapter *Safety*: Specialized staff.

DANGER

Risk of injury due to material breakage, falling of load.



- Observe the transport weight and the transport dimensions as indicated in *Technical specifications*.
 - Use a slinging point.
 - Only use suitable, undamaged, and fully operative transport gear and slings with sufficient load-bearing capacity.
 - Lift loads slowly and transport them without jerky movements.
 - Never stand under a suspended load.
-

5.3.2 Transport by a crane

The core chuck may only be lifted on the indicated slinging point.



Fig. 4 Transport by a crane

5.4 Assemble the core chuck to the machine

5.4.1 Safety

Staff qualification according to chapter *Safety*: Specialized staff.



Improper procedure

Risk of material damage due to applying excessive force during assembly.

- Use assembly tools. NEVER use other tools (hammer).

5.4.2 Attaching the core chuck to the machine (standard)

Procedure

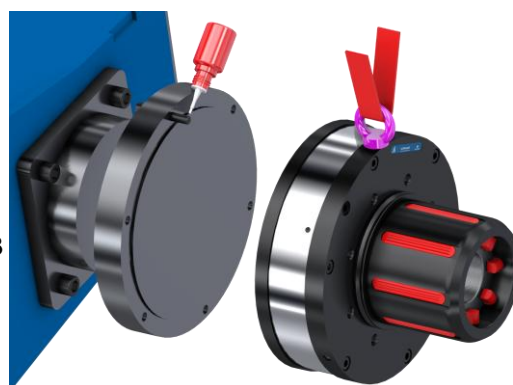
- The machine is secured against automatic start-up.
1. Clean the assembly surfaces of the machine and check for damage.



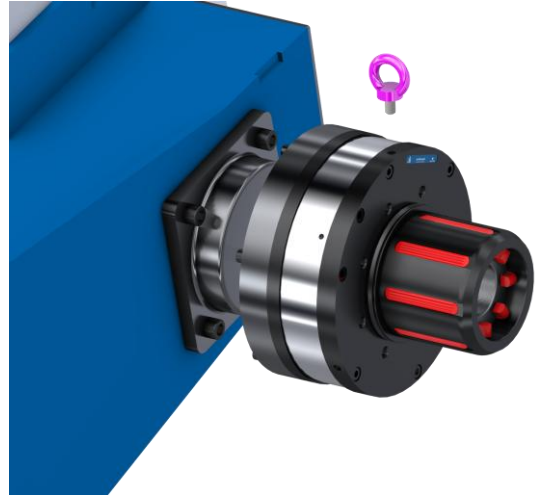
2. Fasten the eyebolt M12 radially to the core chuck.



3. Align the attachment flange to the hole patterns on the machine.
4. Screw on the hexagon socket head screws 12.9.
6. Secure the hexagon socket head screw using a screw locking agent (Loctite 243 medium).
Tightening torque 73 Nm



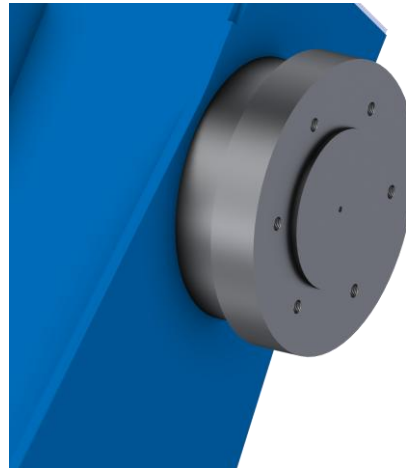
7. Remove the eyebolt.



5.4.3 Preparing the assembly surface of the machine

Procedure

- The machine is secured against automatic start-up.
1. Clean the assembly surfaces of the machine and check for damage.



2. Oil the groove for the O-ring on the assembly plate. (machine oil HP20)
3. Set the O-ring into the groove of the assembly plate.
Align the attachment flange to the hole patterns on the machine.
4. Screw on the hexagon socket head screws 12.9 with copper gasket. The copper gasket is required when assembling in the piston area.
5. Secure the hexagon socket head screw using a screw locking agent (Loctite 243 medium).
Tightening torque 73 Nm
6. If available: Screw on the valve.

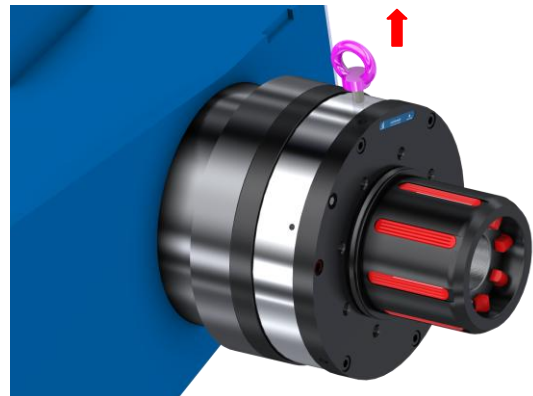
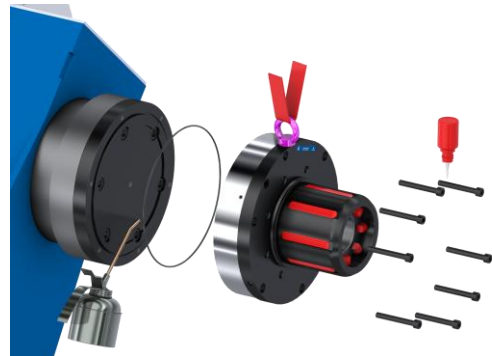


5.4.3.1 Assembling the core chuck to the machine (version with assembly in the piston area)

1. Fasten the eyebolt M12 radially to the core chuck.



2. Bring the core chuck on the eyebolt to the correct position using a crane.
3. Oil the groove for the O-ring on the assembly plate. (machine oil HP20)
4. Set the O-ring into the groove of the assembly plate.
3. Tighten the core chuck with the hexagon socket head screw using a screw locking agent (Loctite 243).
Tightening torque 73 Nm
4. Remove the eyebolt M12 from the core chuck.



5.5 Commissioning

Checks prior to commissioning

1. Check that all screws, threaded bolts and the newly assembled parts are in the correct position and are properly tightened.
2. Make sure that no projecting parts on the body of the shaft can cause injuries.
3. Slowly pressurize the core chuck. Make sure that all expansion segments expand from the body of the shaft evenly. Observe the maximum operating pressure specified in chapter *Technical specifications*.

Commissioning

1. Push the appropriate winding core over the complete length of the expansion range.
2. Pressurize the core chuck with pneumatic pressure according to chapter *Technical specifications*.
3. Leave it 6 hours under pressure.
4. Measure the remaining filling pressure: if the pressure loss is higher than 1 bar, the core chuck must not be put into service.

Causes of the pressure loss

There may be different reasons for pressure loss. Some causes are:

- Sealing elements have been damaged during assembly.
- Pressure was released accidentally due to an incorrect actuation.
- Measurement was carried out incorrectly or by using different pressure gauges.

If none of the causes apply, please inform the manufacturer.

5.6 Disassembling the core chuck from the machine

DANGER

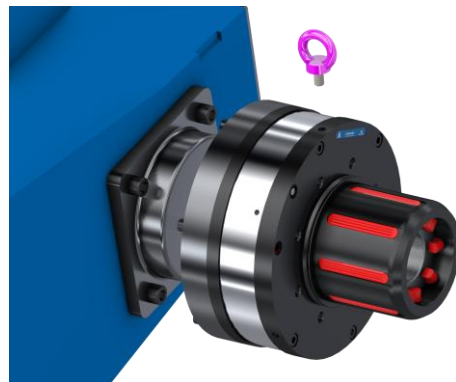
Risk of injury by loosening of connecting screws.



- When disassembling the core chuck from the machine, do not loosen the connecting screws filled with lead from the chuck body and the cylinder housing. The chuck body could fall off and cause crushing. Pre-stressed springs are mounted in the core chuck which could be ejected when loosening the connecting screws.

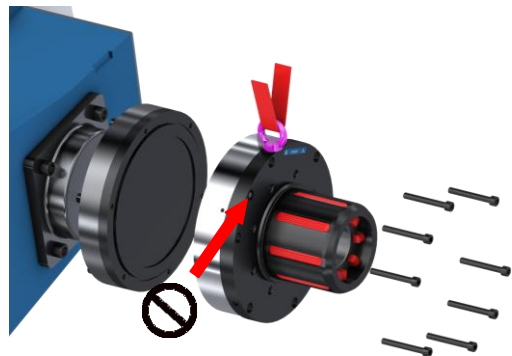
Procedure

- The machine is secured against automatic start-up.
1. Release the air pressure that acts on the core chuck.
 2. Fasten the eyebolt M12 radially to the core chuck.
 3. Secure the core chuck to the eyebolt using a crane.



DANGER: Do not loosen sealed screws.

4. Loosen and remove the hexagon socket head screws.



-
5. Remove the core chuck from the machine.



6 Operation

6.1 Safety



WARNING

Risk of injury due to ejected parts.

- Only put the core chuck into rotation when the core is fitted.
-



Risk of material damage when using winding cores that are not in perfect condition.

Only use winding cores with an internal diameter within the permitted expansion range of the core chuck.

Use only the approved winding core materials.

Use only winding cores in perfect condition: firm inner layers, free of burrs, clean, not worn out by grinding nor shrinkage, no other damages.

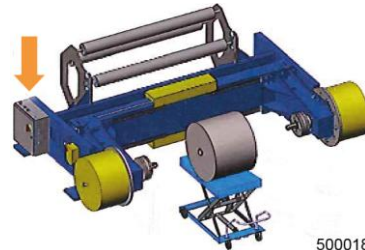
Check the shape of the winding cores: end face straightly cut, dimensionally stable.

6.2 Loading winding cores onto the core chuck

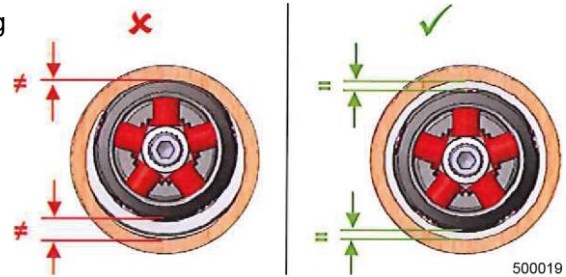
Procedure

- The machine is secured against automatic start-up.

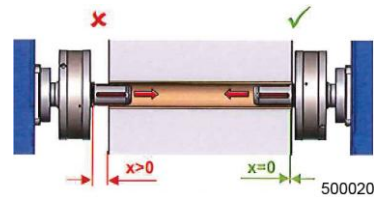
1. Put the winding core on the axis of the core chucks.



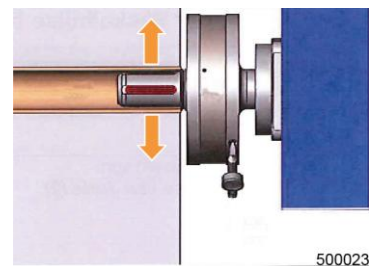
2. Align the winding core at the center using a lifting system.



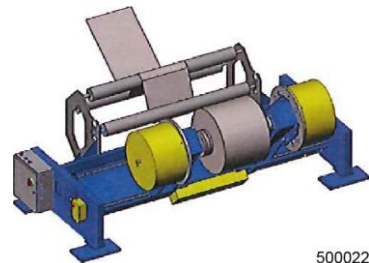
3. Move the core chucks together axially to the stop.



4. Pressurize the core chucks.
 - > The expansion segments are expanded, the winding core is fit into place with force.



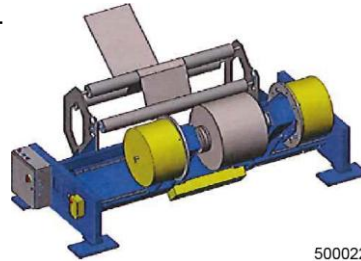
- > The machine is ready for processing.



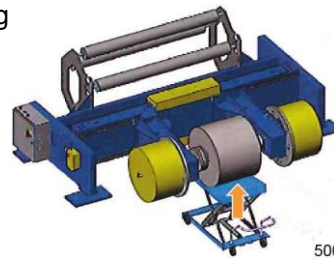
6.3 Removing the winding cores from the core chucks

Procedure

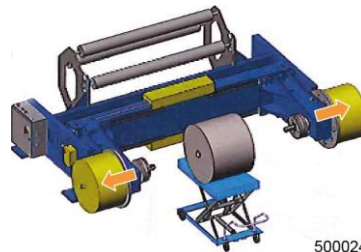
- The machine is secured against automatic start-up.
- 1. Separate the material web from the winding core.
- 2. Support the winding core by using a lifting system until the core chucks are free of load.
- 3. Depressurize the core chucks until the ambient pressure is reached.
 - > The expansion segments slide back.
- 4. Move the core chucks axially away from each other and remove the winding core.



500022



500026



500024

7 Maintenance

Maintenance work is a substantial contribution to the operational safety, reliability and conservation of value of the core chucks. Defects are recognized at an early stage and can be repaired. For this reason, it is in your own interest and in the interest of operator safety to conduct the maintenance work according to the specifications in these Assembly Instructions.

7.1 Definitions

In these Assembly Instructions, the following terms are used:

- Maintenance: umbrella term for service and repair
- Service: preventive cleaning and controls
- Repair: overhaul work and replacement of spare parts

7.2 Safety

WARNING



Operating materials (lubricants, cleaning agents) are harmful to health and environment. Operating materials may be easily ignited, form noxious vapors and lead to skin irritation and allergies.

- Handle, store and dispose of operating materials properly.
- No open fire. Do not smoke.
- Wear protective gloves and goggles when handling operating materials.

7.3 Assembly material

Designation	Value
Torque wrench for the operating area	100 Nm

7.4 Operating materials

Fuels, coolants, lubricants and cleaning agents considered "operating materials".

7.4.1 Consumables

Material	Product
Bolted connections	Loctite 243
Slot guides	Copper grease – Rocol J166
Seals	Machine oil HP 20

7.4.2 Lubricant

Supplier	Designation
Motorex	Motorex Universalspray 2000 Art. no. 9001266

7.5 Service schedule

Service work	Daily	Monthly	After 1000 operating hours	6 months	Yearly	By
Cleaning	x					I
Servicing			x			II
Lubrication work		x				
Servicing in case of multiple-shift operation				x		II
Servicing in case of single-shift operation					x	II

I Instructed staff

II Specialized staff

III Manufacturer

For a description of the service work, see the *following sections*.

7.6 Maintenance work

7.6.1 Cleaning

Procedure

- Staff qualification according to chapter *Safety*: Instructed staff.
 - The machine is secured against automatic start-up.
1. Remove material residues.
 2. Dry-clean the core chuck.

7.6.2 Servicing

Procedure

- The machine is secured against automatic start-up.
1. Visually check for external damages, such as visible wear or other defects.
 2. Check the components.
 3. Check tightness: max. permitted pressure loss 1 bar / 6 h.
 4. Check the retraction of the expansion segments.
 5. Clean the core chuck from lint, dust and other residues.

7.6.3 Lubrication work

Lubricating the guides

- The machine is secured against automatic start-up.
1. Apply Motorex Universalspray to the core chuck sliding surfaces.

7.7 Repair

7.7.1 Replacing the expansion segments

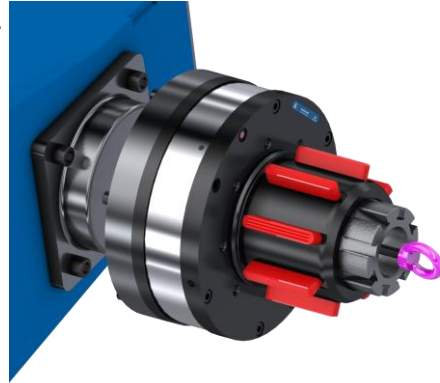
The expansion segments can be replaced directly on the machine.

Procedure

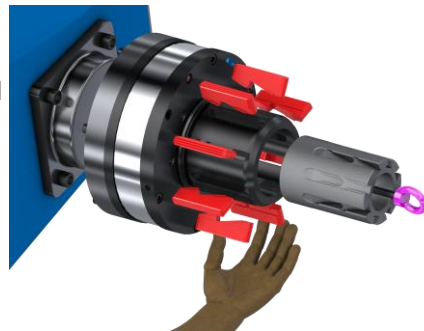
- The machine is secured against automatic start-up.
1. Apply an operating pressure of 6 bar to the core chuck.
 2. Loosen the fixing bolt and remove it together with the retaining washer.



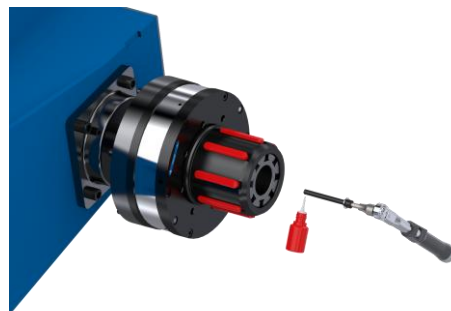
3. Screw the eyebolt M12 into the guideway.



4. Pull out the guideway on the eyebolt to the front. Pay attention not to lose the expansion segments.
 - > The expansion segments are pushed off the chuck body grooves.
5. Collect the expansion segments in a suitable container.



6. Clean the guideway and the chuck body.
Grease the guideway with copper grease Rocol J166.
7. Replace the expansion segments.
8. Insert the guideway and the expansion segments.
9. Slightly wet the fixing bolt with a screw locking agent (Loctite 243).
10. Screw the fixing bolt class 12.9 with retaining washer onto the core chuck.
 - Tightening torque: 73 Nm



8 Storage and disposal

8.1 Storage

Storage up to 1 year	Condition
Environmental conditions	Dry and protected against condensation
	Protected against direct sunlight
Storage temperature	12 to 30 °C

8.2 Disposal

Core chuck disposal

- Staff qualification according to chapter *Safety*: Specialized staff.
1. Separate materials according to the following groups and send them for recycling according to local regulations:
 - Ferrous metals
 - Non-ferrous metals
 - Plastics

9 Appendix

9.1 Abbreviations

Abbreviation	Description
max.	maximum
min.	minimum

9.2 Units

Unit	Designation	Description
"	inch	Length, 1" = 25.4 mm
°	degree	Angle
m	meter	Length, 1 m = 1,000 mm
mm	millimeter	Length
µm	micrometer	Length, 1 µm = 0.001 mm
nm	nanometer	Length, 1 nm = 10 ⁻⁹ m

min	minute	Time, 1 min = 60 sec
min ⁻¹	revolutions per minute	Angular speed
m/sec	meters per second	Speed
m/sec ²	meters per second squared	Acceleration/deceleration
sec	second	Time

kg	kilogram	Mass (weight)
t	ton	Mass, 1 t = 1,000 kg

°C	degree Celsius	Temperature
bar	bar	Pressure, 1 bar = 105 Pa
dBA	decibel	Loudness
Hz	Hertz	Frequency
Pa	Pascal	Pressure
pce.	piece(s)	

N	Newton	Force
Nm	Newton meter	Torque

9.3 Declaration of incorporation

Declaration of Incorporation for Partly Completed Machinery

Einbauerklärung.docx/November 2016

For the product specified below

Machines Pneumatic-mechanical core chuck **Type** SDE **Series no.** _____
Options Plug-on adapter

we hereby declare that it complies with the **basic requirements** which are defined by the harmonization legislation below:

DIRECTIVE 2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 May 2006 on machinery, amending Directive 95/16/EC (recast) – short: **Machinery Directive**

Specification of the relevant harmonized standards which have been applied or information on the specifications for which conformity is being declared:

Source	Date of issue	Title
Harmonized standards for the machinery directive:		
EN ISO 12100	2010	Safety of machinery - General principles for design - Risk assessment and risk reduction
EN 1550:1997+A1	2008	Machine-tools safety - Safety requirements for the design and construction of work holding chucks
Non-harmonized standards for the machinery directive: (not published in the EU official journal):		
EN 82079-1	2012-09	Preparation of instructions - Structuring, content and presentation - Part 1: General principles and detailed requirements

Authorized person as described in annex II, No. 1. B. Nr. 2, 2006/42/EC for the compilation of special technical documents for partly completed machines:

Company Schlumpf AG
Address Aahusweg 8, CH-8403 Küssnacht am Rigi
Last name, first name Schori, Jürg

Commissioning this product is forbidden until it has been established that the machine in which it is to be installed conforms to all fundamental requirements of the Machinery Directive.

The sole responsibility for issuing this Declaration of Incorporation for Partly Completed Machinery in relation to the fulfillment of the fundamental requirements and the compilation of the technical documents for partly completed machinery shall be borne by the manufacturer (or installation company):

Name Schlumpf AG
Address Aahusweg 8, CH-8403 Küssnacht am Rigi
given by:
Last name, first name, function Rupp, Mario, Managing Director

Place, date _____

Signature _____