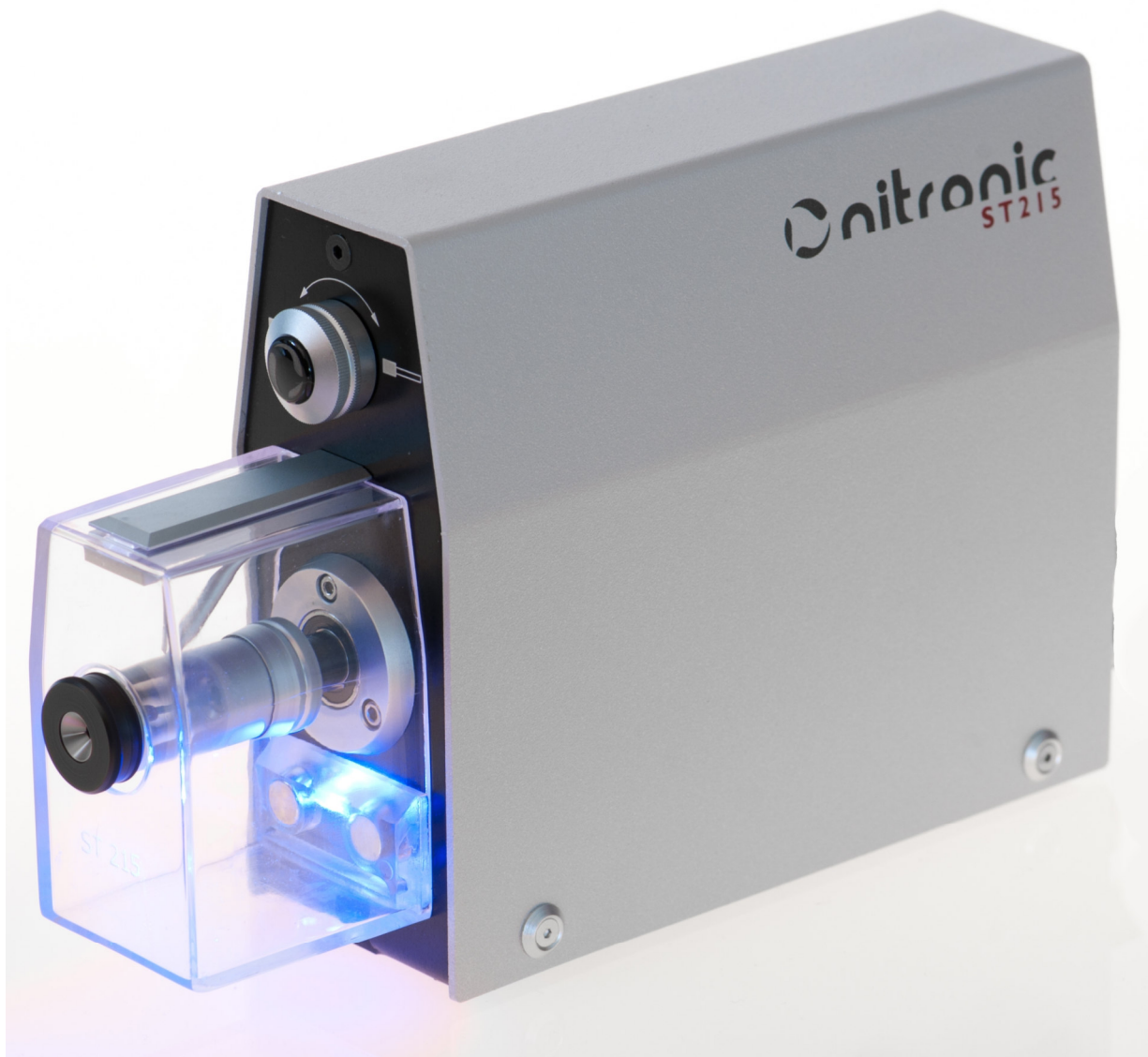


# Operating instructions

## High precision stripping machine

### **ST215 / ST215W / Polystrip**



V3.0 (based on V3.0 German)

Please read through these operating instructions carefully before starting work.

## General

**We thank you for your trust and for choosing our high precision stripping machine!**


In order to achieve optimum performance, please read the operating instructions carefully. Damage caused by not following the instructions will invalidate the warranty. We accept no liability for consequential damage.


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## Symbols

The following symbols draw attention to the different danger levels in the individual chapters:

 Please follow the work and procedures marked with this pictogram exactly. Failure to do so may result in damage to the machine or the cable.

 This pictogram refers to working and operating procedures that must be followed, as well as important information on the functioning of the system.

## Product description

In this document the designation ST215 refers to all machine types **ST215 / ST215W** and **Polystrip!**


The ST215 is a high-precision stripping and twisting machine especially designed for stripping small diameter cables. The high processing quality paired with high-quality materials make the ST215 a robust production machine.

The ST215 is a real all-rounder; it masters stripping of standard cables in short cycle times as well as micro-coaxial cables with highest precision. The absence of grippers allows the ST215 to process shortest cable ends, crushes on the outer jacket are excluded. The patented 4 blade system enables an absolutely precise and repeatable stripping of cable ends.

The jacket is removed by a rotary incision with subsequent pulling-off in a single operation. The ST215 can be infinitely adjusted to another diameter or length in seconds using a scale.

System overview:

- Rotary incision
- Stripping head with a 4 blade system in one plane
- Knife changing performed without tools
- Stepless adjustment of diameter and length via a scale

 The ST215 is suitable exclusively for stripping copper conductors. Make sure that no metallic objects (e.g. screwdrivers, tweezers) come into the vicinity of the blades, otherwise the blades will be damaged.

## Centering unit (ST215 and ST215W)


The infinitely adjustable centering unit ensures that the cable is precisely aligned with the center of the blades. If your ST215 was delivered without centering device, you can easily retrofit it.

The advantages of the centering unit are as follows:


- Influencing of the stripping quality by the user is practically ruled out.
- The stripping diameter can be set very close to the conductor, enabling very thin walled insulations to be stripped without problem.

## Connecting the machine

- Connect the machine with the supplied power supply unit to the mains supply and to the "24V DC" connection. If the power plug is not compatible with your power outlet, please contact your Nitronic partner or contact us directly.
- Connect the machine to your compressed air installation. The supplied compressed air hose is provided with a coupling on the machine side, the other side is free. On the free side you must fit a coupling that is compatible with your compressed air installation. The outer hose diameter is 6 mm.

 The machine is internally equipped with a pressure regulator, but the inlet pressure must be between 5 and 8 bar. Under no circumstances must the pressure exceed 8 bar!

- Connect the foot pedal switch (optional) to the connection „**Foot Pedal**“.

 With the foot pedal connected, the activation sensor is inactive! The machine can only be activated with the foot pedal!

## Control Elements

- 4. Diameter
- 5. Stripping head with length scale clockwise
- 2. Length
- 17. Centering (ST215 and ST215W)

- 31. Rotation time / diameter feed rate
- 30. Counterclockwise / no rotation /
- 32. Wayback (ST215W only)

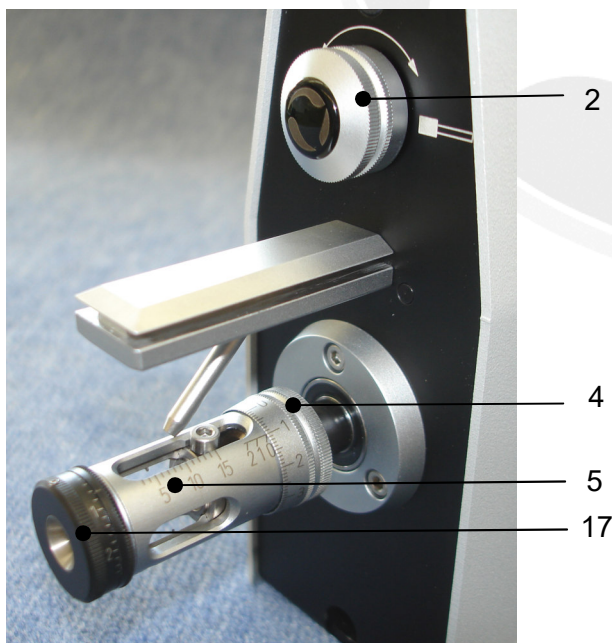


Fig. 1

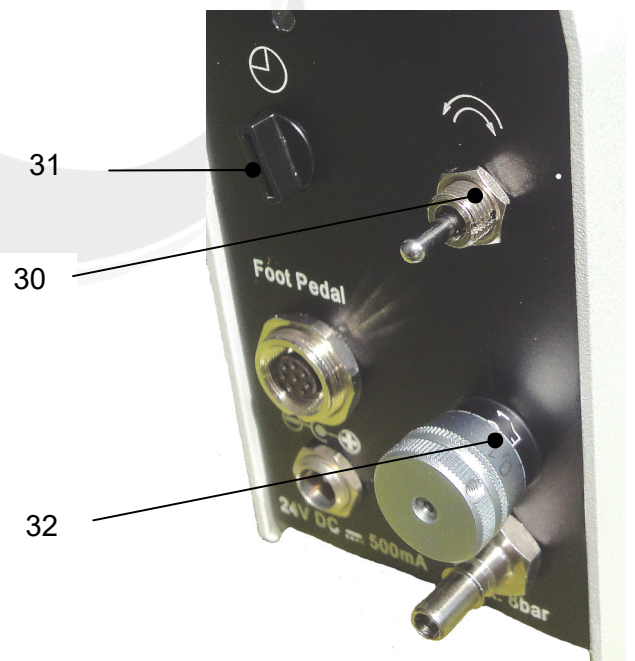




Fig. 2

## Placing in operation

 The sequence of the settings should be observed, since changes to the stripping diameter, due to the design, require adjustments to the stripping length!


For adjustments on the stripping head, i.e. the centering unit or the stripping diameter, the protective cover must be removed. It can be removed or reinstalled by simply pulling it out or pushing it in. The protective cover must be pushed up to the front panel, remove any cable residues between protective cover and front panel.


 For safety reasons the machine cannot be started without the protective cover in place!

The blue LED flashes 3 times if an attempt is made to start the machine without the protective cover.

## Setting the centering unit


- Measure the external diameter, e.g. with the slide gauge or centering device open; introduce the cable and close the centering device.
- The cable must in no event be clamped but should be movable in the centering device without play.


 Special regulations (e.g. military) require a blocking of the centering unit. This can be done with the light-coloured Allen screw, use the supplied Allen key.

 Do not confuse the light-coloured Allen screw with the black one. If you loosen the black Allen screw, the centering device will be displaced and must be recalibrated.

## Setting the Diameter

- Evaluate the cable conductor diameter, e.g. with the sliding gauge.
- Check that the Wayback is set to 0 (ST215W only).
- Then set a slightly larger value on the diameter scale (**about + 0.1mm or 0.01 Inch**). The division of the diameter scale is **0.01mm (0.001 Inch)**.

 When setting the diameter, always turn from a larger diameter to the desired value. For example, if 0.95mm is set and 1.00mm is to be set, then first open to approx. 1.50mm and then turn to 1.00mm

 If the stripping diameter is set too small, the blades cut into the conductor and the insulation can only be removed with high tensile force. This can damage the blades.

- If desired, the diameter adjustment can be blocked with the supplied stud bolt. Remove the existing stud screw on the side of the diameter adjustment with the supplied Allen key and carefully screw in the longer stud screw until it stops.

### Setting the Wayback (ST215W only)

The Wayback is an opening of the blades before pulling off the jacket. This allows a slightly deeper cut without touching the conductor or shield during the pull-off.

**i** The Wayback is only active when pulling off without rotation. The Switch 30 must be in the middle position.

- Set the Wayback to 0.00mm firstly
- Raise the Wayback until the desired stripping results are reached.
- The Wayback scale is graduated in **0.01mm (0.0005 Inch)**. That means that with a full turn the Wayback will be 0.2mm (0.008 Inch) in diameter.

### Setting the Length

- Set the desired stripping length with the length setting knob and read off the length at the length scale.

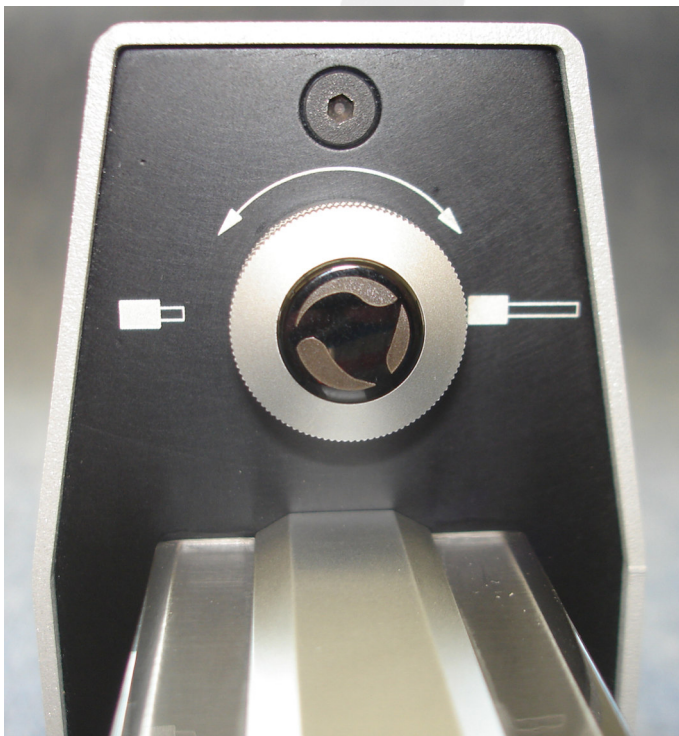



Fig. 3

### **Setting the rotation duration / incision rate**

The rotation duration and the incision rate are selected with the same switch. The longer the setting of the rotation duration, the shorter the incision rate. At step 0, i.e. the shortest rotation duration, the blades close very quickly. At step 9, the longest rotation duration, the blades close very slowly.

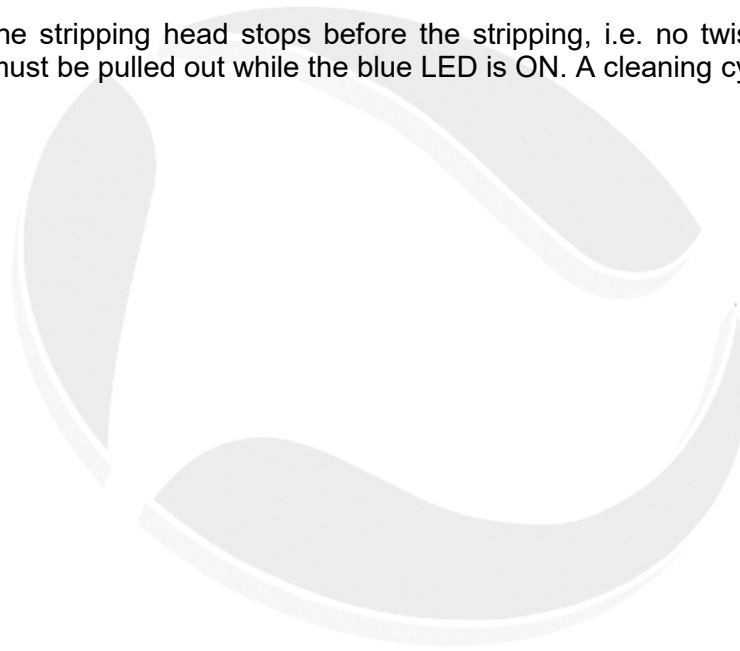
 The stripping head may not be externally braked whilst running. Otherwise there is no guarantee that the blades will close to the set diameter, particularly with step 9.

### **Counterclockwise or clockwise rotation / no rotation**

The desired rotation direction can be set with the changeover switch. This is especially important for the twisting of stranded wires. The correct choice of rotation direction can also positively influence stripping quality when stripping micro-coaxial cables.

ST215W only:

In the middle position the stripping head stops before the stripping, i.e. no twisting of the stranded wire takes place. The cable must be pulled out while the blue LED is ON. A cleaning cycle follows.



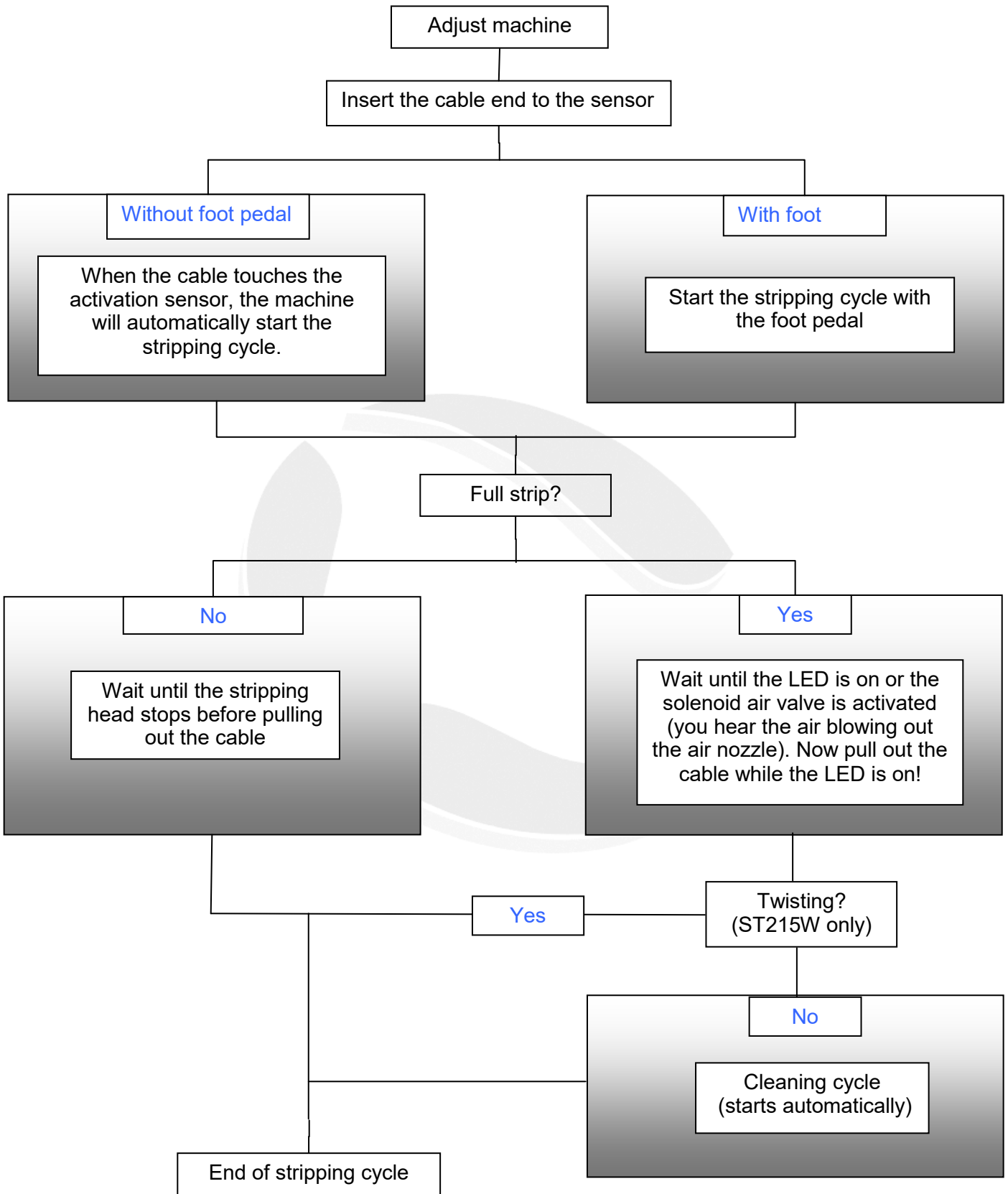



Fig. 4



## Maintenance

Maintenance is limited to cleaning the stripping head.

### Lubrication

 The ST215 is designed so that no grease or oiling is required. In order to ensure good function and a long service life, no greasy or oily substances may get into the device!


### Cleaning

The stripping residues should be automatically removed from the stripping head by the compressed air jet after each stripping operation. If this is not the case, start the machine again without the cable using the foot pedal. If there is no foot pedal, insert the next cable. This is often sufficient to push stripping residues away.

- Clean the surface of the stripping head using a dry, clean brush only.
- Dirt on the housing, the protective hood and the stripping head can be removed with a cloth lightly moistened with benzine.

 Do not use solvents such as nitro thinner!

### Changing the stripping blades

 The stripping blades may only be checked and replaced by appropriately trained persons.

- Remove the power cord, foot pedal and compressed air.
- To facilitate the handling with the machine, arrange the machine with aid of the bench clamp. See

Fig. 5.

- Set the diameter setting to 0.2mm (0.008 Inch).
- Set the length setting to the hindmost position.

Fig. 5



- Insert the position retainer into the stripping head as shown in
- Fig. 6 by pushing the large Allen screw at the longitudinal scale to the rear. This makes it easier to insert the new blades.
- If the centering unit is blocked, loose the bright and small Allen screw.
- Loose the black and small Allen screw of the centering unit.
- Loose the entire centering unit and pull it out Fig. 7.

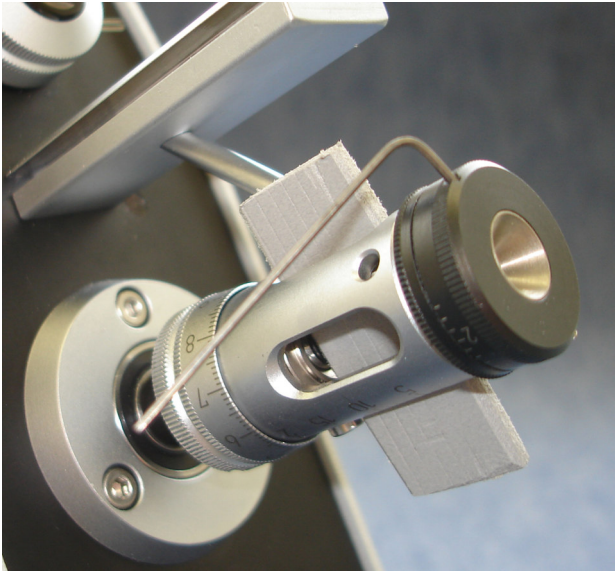




Fig. 6



Fig. 7

Now you can see the four stripping blades Fig. 8

-  In order to avoid losing the very small stripping blades, we recommend that you put down a dark-colored, smooth mat and use a pair of tweezers.
-  All four stripping blades must be changed at the same time in order to maintain a consistent stripping quality.

- Remove each stripping blade (8) individually from the guide plate (9).
- If necessary, carefully clean the guide plate (9) with a dry brush
- Insert new stripping blades (8) individually. As far as possible, align the stripping blades accurately with the track so that the blades do not subsequently jam.
- Insert the centering unit carefully, but **do not yet tighten it**.
- Remove the position retainer.
- Set the diameter scale to 0.0mm (0.0 Inch).



Fig. 8

- Slowly push the big Allen screw **(6)** back and forth. This will cause the four stripping blades to automatically fit into the tracks on the guide plate Fig. 9.
- Only now tighten the centering unit.

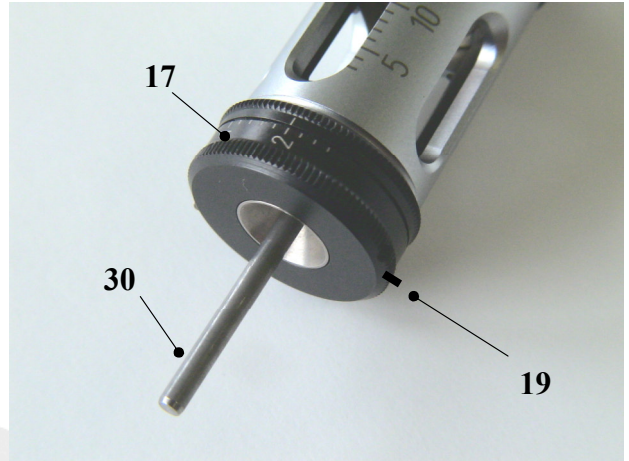
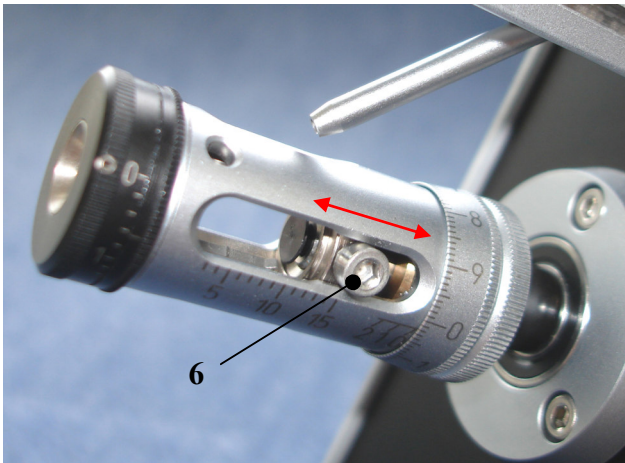


Fig. 9

Fig. 10

- Tighten a bit the screw **(19) (black)**
- By rotating the centering scale **(17)**, fully open the centering jaws **(25)** and insert the calibrating pin **(30)**. Then by rotating the centering scale **(17)** close the centering jaws as far as the calibrating pin **(30)** Fig. 10.
- Loosen screw **(19) (black)** and turn the centering scale **(17)** clockwise to diameter **2.0 mm**. Retighten screw **(19) (black)** and remove calibrating pin **(30)**.

The ST215 is now ready for use.

### **Dismantling the centering unit**

- Loosen screw **(19) (black)** and remove centering scale **(17)** with a slight turning movement Fig. 11.
- Lift off the O-ring **(20)** and take it out Fig. 12.

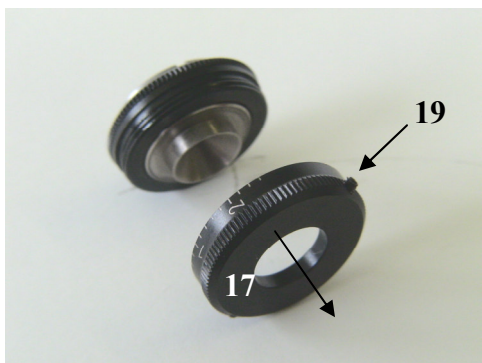


Fig. 11

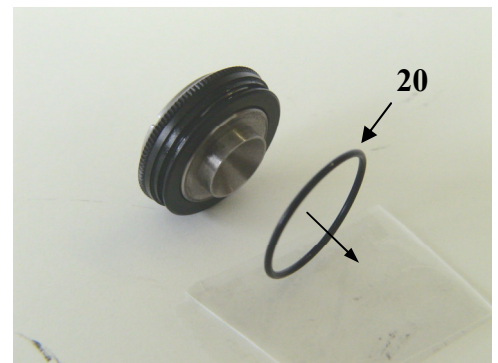


Fig. 12

Push the two keys **(22)** out of the guides with a pair of tweezers and remove them Fig. 13.

- The guide plate **(23)**, the centering jaws **(25)** and the helixes **(26)** can now be removed together Fig. 14.

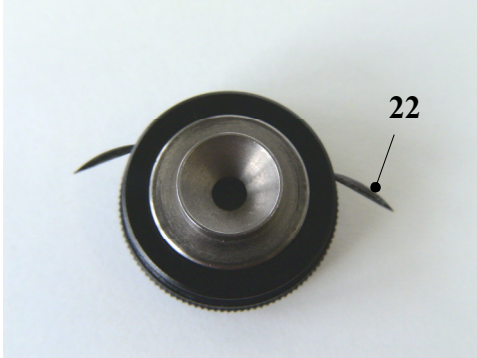


Fig. 13

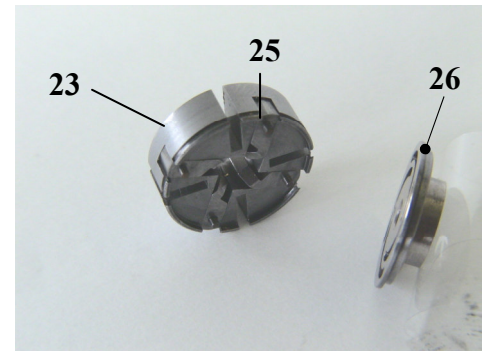


Fig. 14

### Assembling the centering device

- Reinstall guide plate **(23)** and insert the centering jaws **(25)** individually Fig. 15.
- Push all four centering jaws **(25)** outwards to the stop on the stripping head and carefully put the helixes **(26)** in place Fig. 16.

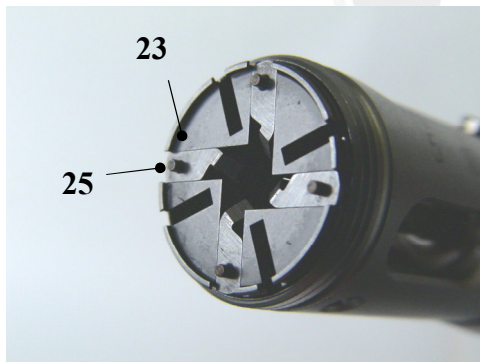


Fig. 15

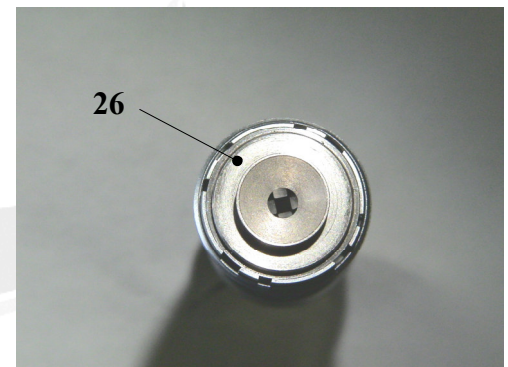


Fig. 16

- By rotating the helixes **(26)** check that the centering jaws can close smoothly and simultaneously. If necessary repeat the procedure.

- Screw on nut **(18)** and tighten up Fig. 17.

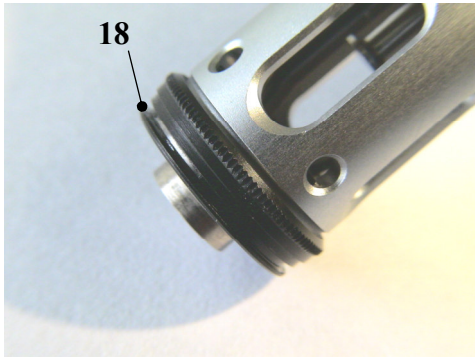


Fig. 17

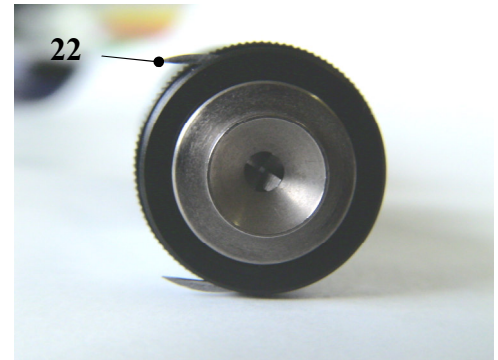


Fig. 18

- Insert the two keys **(22)** and install the previously-greased O-ring **(20)** Fig. 18.

 The two keys **(22)** must be inserted flush with the inside diameter of the slot.

- Push centering scale **(17)** with a slight turning movement to the stop but do not yet tighten screw **(19)** (black) Fig. 19.

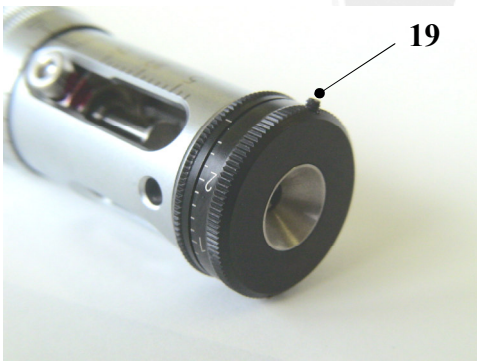



Fig. 19

 If the centering scale **(17)** cannot be pushed over the O-ring the two keys **(22)** are not properly.

The centering device must now be calibrated in the next operating step.

### Fit the stripping blades and calibrating the centering unit

- Loosen the centering unit so that it is not tightened.
- Set the diameter scale to 0.0mm (0.0 Inch).
- Slowly push the big Allen screw **(6)** back and forth. This will cause the four stripping blades to automatically fit into the tracks on the guide plate Fig. 20.
- Now tighten the centering unit.

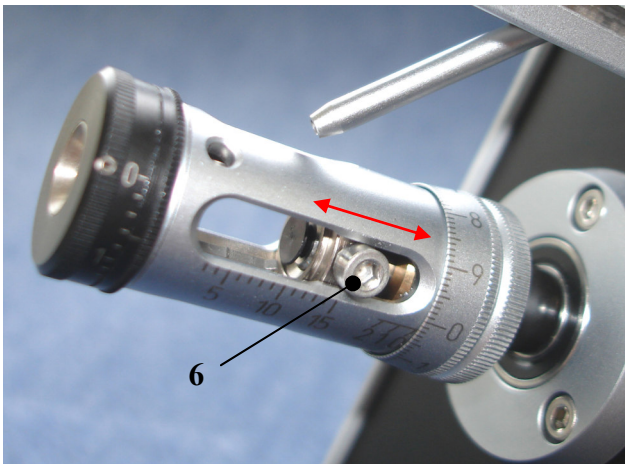


Fig. 20

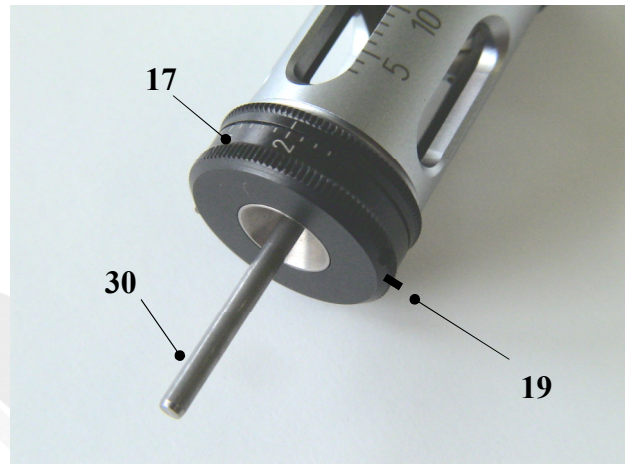


Fig. 21

- Tighten a bit the screw **(19) (black)**
- By rotating the centering scale **(17)**, fully open the centering jaws **(25)** and insert the calibrating pin **(30)**. Then by rotating the centering scale **(17)** close the centering jaws as far as the calibrating pin **(30)** Fig. 21.
- Loosen screw **(19) (black)** and turn the centering scale **(17)** clockwise to diameter **2.0 mm**. Retighten carefully screw **(19) (black)** and remove calibrating pin **(30)**.

The ST215 is now ready for use.

## Error sources

### Faults on cable

Fault	Diagnosis	Fault rectification
Inside conductor, screen or dielectric cut into	Cable is very eccentric	Reduce centering diameter in steps
Jacket cannot be stripped off	Very small difference in diameter between Jacket and conductor.	Reduce centering diameter in small steps

### Faults on machine

Fault	Diagnosis	Fault rectification
Can not insert the cable	Cable rests in the stripping head	Clean, with starting the stripping cycle several times.
Bad stripping quality	Stripping blades are broken or used	Change the stripping blades
The blue LED is blinking 3 times	The safety shield is not mounted	Insert the safety shield

## Basic Equipment, Spare Parts, Options

### Basic Equipment ST215

Qty.	Description	Article Number
1	Stripping machine ST215 / ST215 Inch	010083 / 010307
1	Stripping machine ST215W / ST215W Inch	010305 / 010314
1	Stripping machine Polystrip / Polystrip Inch	010520 / 010535
1	Bench clamp	010177
1	Power supply with Adapter Set	010113
1	Coupler for air hose	010151
1	Allen key for diameter blocking	EN-7411
1	Stud screw for diameter blocking BN-617 M2x8	010569
1	Position retainer	ST-0900
1	Operating Instructions <b>English</b> or Operating Instructions <b>German</b>	EN-7120E EN-7120D
1	Allen key for centering unit (ST215 / ST215W only)	EN-7412
1	Calibrating mandrel (ST215 / ST215W only)	BN-1208
1 Set (3pcs)	Set of Centering Insets, diameter 1.0 / 0.5 / 0.2mm (Polystrip only)	010591

### Spare Parts

Qty.	Description	Article Number
1 Set (4pcs)	Stripping blades HSS (ST215 / ST215W only)	010075
1 Set (4pcs)	Stripping blades Titanium coated carbide (Standard for ST215 / ST215W)	010079
1 Set (4pcs)	Stripping blades carbide Polystrip (Polystrip only)	010520
1 Set (4pcs)	Input connectors for power supply ( EU, USA, UK, SAA )	010115
1	Cover	010322
1	Length button	010404
1	Guide plate	010225
1	Solenoid air valve	010149
1	Stud screw, centering blocking M1.4 x 2.5 chrome	010566
1	Stud screw, centering M1.4 x 4 black	010567
1	Stud screw for diameter blocking BN-617 M2x8	010569
1	Sealing Cap with Nitronic Logo	010216



### Options

Qty.	Description	Article Number
1	Foot pedal	010084
1	Micro Filter	010346
2	Port for Micro Filter straight	010347

### Technical Data

Wire size range	0.08 mm (0.003") to 2.00 mm (0.08") (12 – 40 AWG)
Outer cable diameter max.	2.5 mm (0.1")
Stripping length	up to 13mm
Cycle time	0.3 sec. up to 6.2 sec. (stripping cycle), 10 different steps
Rotation / Twisting	Clockwise / Counter clockwise
Diameter Scale	0.01 mm (0.001 Inch)
Wayback Scale (ST215W only)	0.01 mm (0.0005 Inch)
Length scale	1.0 mm (.06 Inch)
Dimensions	LxWxH 210 x 54 x 126 mm (10 x 2.2 x 5 Inches)
Weight	850g
Stripping blades	4 pcs. Carbide, Titanium coated
Power supply (Primary)	100-230 VAC, < 0.6A RMS, 47-63 Hz
Power supply ST215 (Secondary)	24 VDC
Compressed air	5 to max.8 Bar
Outer hose diameter	6mm (0.24")

**We reserve the right to make technical changes at any time!**