Foil Cycle Device

Operating Manual

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1 Introduction

Visible markings may appear on the surface of the plastic weld part during the welding process. These result when the horn and the piece being welded touch.

To prevent this from occuring, use the foil cycle device to place a foil between the horn and the plastic part.

The foil cycle device is fastened to the base plate by two UNC 1/4 - 20 screws.

The height and width may also be adjusted using the variable mounting points, deflection lever and the pivoting drive or feed module.

The actuator is controlled using a solenoid valve. While the horn is in return motion, the foil is transported the distance of the preset feed length.

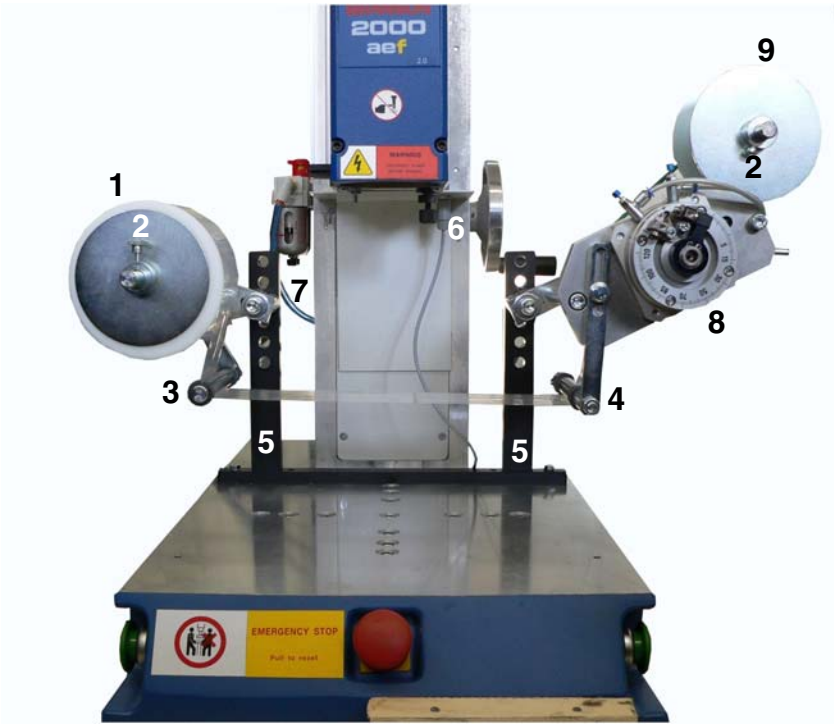
Foil rollers with a core diameter of 25 mm and an outer diameter of 115 mm may be used.

The unit comes with a foil roller with the following dimensions:
Width = 80 mm (120 mm)
Diameter = 90 mm
Thickness = 50 µm
Material = PE
Length = 120 m.

You can place an order with Branson for replacement rollers under order number 011cxx083 (80 mm) / 011cxx084 (120 mm).

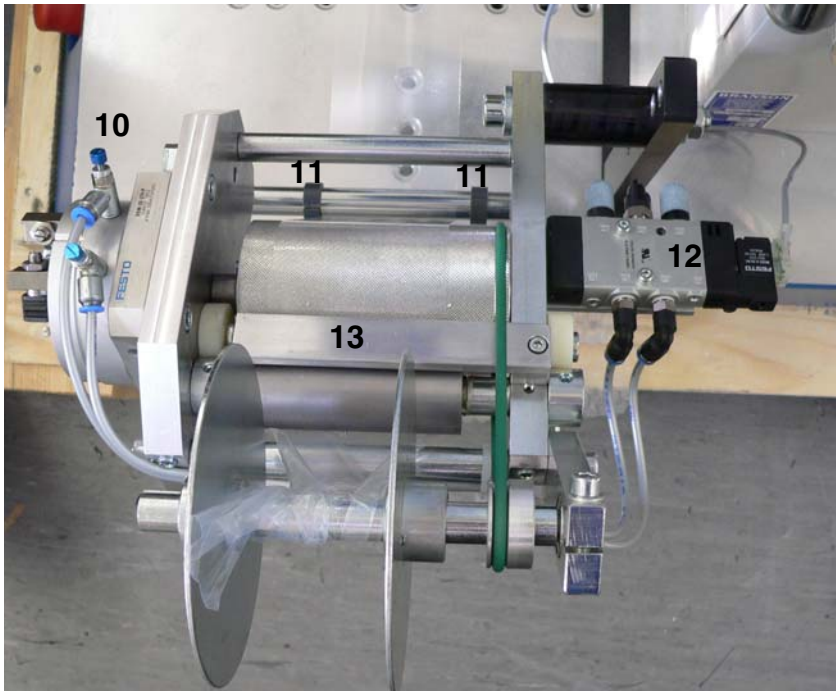
2 Component Parts of Foil Cycle Device

Fig. 2-1 Foil cycle device with series 2000 actuator



1 = Complete unwinder
2 = Set screws
3 = Deflection roller for foil guide
4 = Deflection roller for foil guide
5 = Mounting brackets with height adjustment
6 = Electric connection for solenoid valve
(only on actuators of the 2000 series)
7 = Pneumatic AnscSeries 2000
8 = Device for setting the foil forwarding length in fig. 2-1 no cover
9 = Film feed (reel)

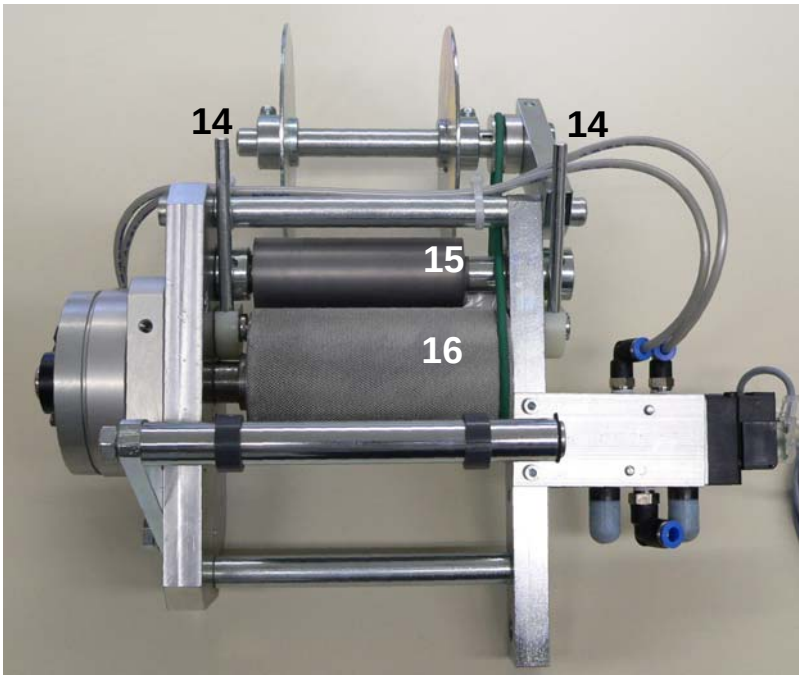
Fig. 2-2 Foil forwarder



10 = Pneumatic chock for setting feed speed
11 = Stop ring
12 = Solenoid valve
13 = Protective cover

DANGER
To prevent physical injury, you should never remove the cover!

Fig. 2-3 Release lever for foil application (view from below)



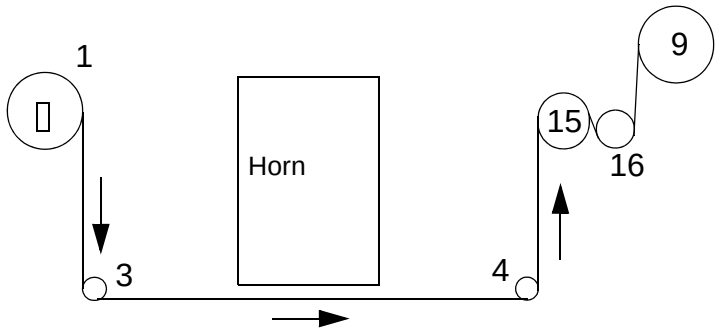
14= Release lever for foil application in closed position

15= Pin roller

16= Foil forwarder

2.1 Changing the Foil

Fig. 2-4 Diagram of foil path (numbers correspond to fig. 2-1 to fig. 2-3)



To change the foil, proceed as follows:

- Loosen the screw on the front of the unwinding device, see fig. 2-1, no. 2.
- Remove the disk.
- Take off the old foil core and put on a new reel of foil.
- Press the disk back in place and tighten it properly with the screw.
- Guide the foil around the first deflection roller, so that it passes beneath the horn, and around the second deflection roller, to the foil forwarder, see fig. 2-1.
- Loosen the roller feeder using a release lever and see fig. 2-3 and guide the foil to the film feed.
- Loosen the screw at the film feed and remove the disk.
- Push the core onto it and attach the foil.
- Press the disk back in place and tighten it properly with the screw.
- Use the release lever to reattach the deflection roller so that the pin roller presses the foil onto the roller feeder, see fig. 2-3.

2.2 Setting the Foil Transport Length

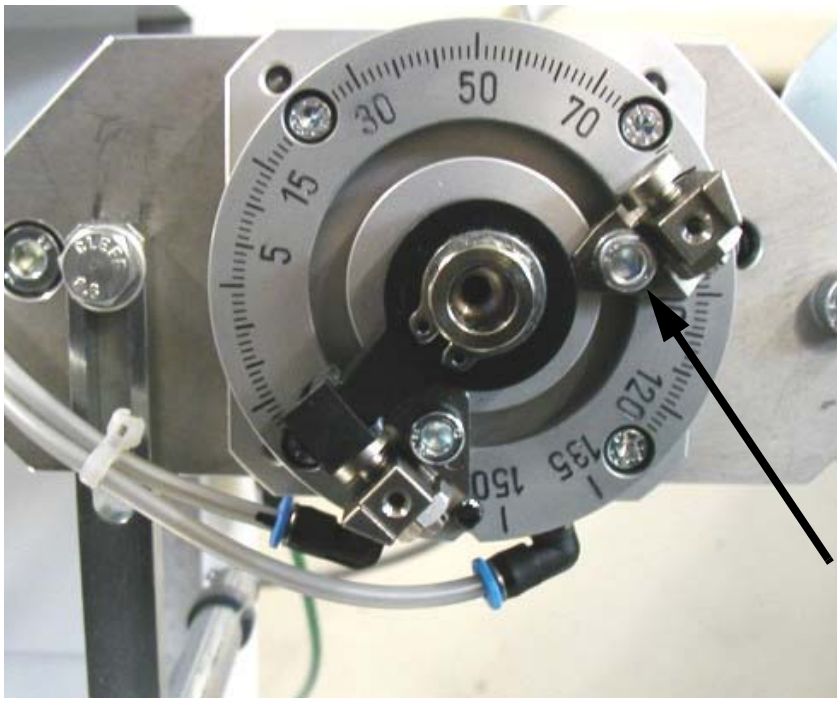
WARNING

Depressurise the actuator before you work on the foil forwarder!

The length of the foil transport depends on the size of the horn, amongst other factors. You can set the foil transport length by means of the mechanism at the foil forwarder.

- Remove the protective cap at the foil forwarder by unfastening the hexagon socket screw.
- Adjust the upper limit stop at the foil forwarder and leave the lower limit stop at zero. Test which setting is most suitable for your application. (At a degree of 72° you have a foil forwarding length of around 85 mm; this is the preset value.)

Fig. 2-5 Setting the foil forwarding length



1

1 = Device for setting the foil forwarding length

DANGER

The foil cycle device may only be operated when the black cover cap is over the foil forwarder, see fig. 2-6. This safety measure is required to prevent any injuries to the hand and fingers!

- Place the black cover cap back on after setting the length of foil forwarder as shown in the fig. 4-5.

Fig. 2-6 *Attach the cover cap to the foil forwarder (view from above)*

1 = Grub screws for attaching black cover cap

2.3 Setting the Limit Stop and the Foil Guide

The foil deflection rollers are used to adjust the height of the foil on the horn. Set the limit such that the foil is positoned parallel to the horn.

There are stop rings on the metal rods for guiding the foil, see fig. 2-2. Position the stop rings in such a way that the foil passes between the rings without any clearance on the sides.

3 Setup Instructions

3.1 Required Training for Operating Personnel: For Personnel Authorized to Work with the Unit

DANGER

Only authorised personnel may carry out installation and maintenance work on the unit!
Improper operation and maintenance of the unit may be hazardous to persons, objects, and the environment.

Personnel authorised

- Are operating personnel who have been specially instructed and trained to **operate the unit**.
- For **setup, maintenance and installation work** are the trained specialist personnel of the owner/operator and the manufacturer.
- Must all be familiar with the safety equipment and regulations and have read the relevant operating manuals.

DANGER

Please make sure that the power supply has been disconnected before starting with the setup!

You may not operate the actuator when the case cover is off.

Before working with the foil cycle device, you have to disconnect the welding system from mains power and turn off the compressed air unit.

3.2 Kits for film feed

Use the film feed EDP no. 011CXX002M80 for electric and pneumatic installation. There are two kits:

For series 2000 actuators

Installation material aex: 011CXX086

2 crimp joints
PG fitting (PG7)
1 plug connection
Farnell 381-7477 (plug)
Farnell 381-7751 (jack)

1 8/6 Festo 153038 reducing adapter
1 m air hose (6 mm)
2 cementing clips / cable straps

OSLV2 Festo 153215 screw connection

For 2000 IW/IW+

installation material IW 011CXX085

25-pin Sub D plug connection
T-distributor, part number FCK-3-PK-6-KU
1 m hose (6 mm)
2 cementing clips / cable straps

4 Assembly

Assembly includes:

- Mounting the brackets on the base plate: Fasten the mounting bracket to the base plate using the UNC 1/4 - 20 screws as supplied.
- Mounting the rollers: Fasten the winder and unwinder using the M 10 screws (supplied with unit) at the height required for the horn and the application at hand. Also see chapter 2.3.
- For instruction on how to insert the foil, see chapter 2.1.
- The electric and pneumatic connection.

4.1 The electric and pneumatic connection on series 2000 actuators

The corresponding kit is listed in chapter 3.2.

Fig. 4-1 Connection for solenoid valve located on back of actuator

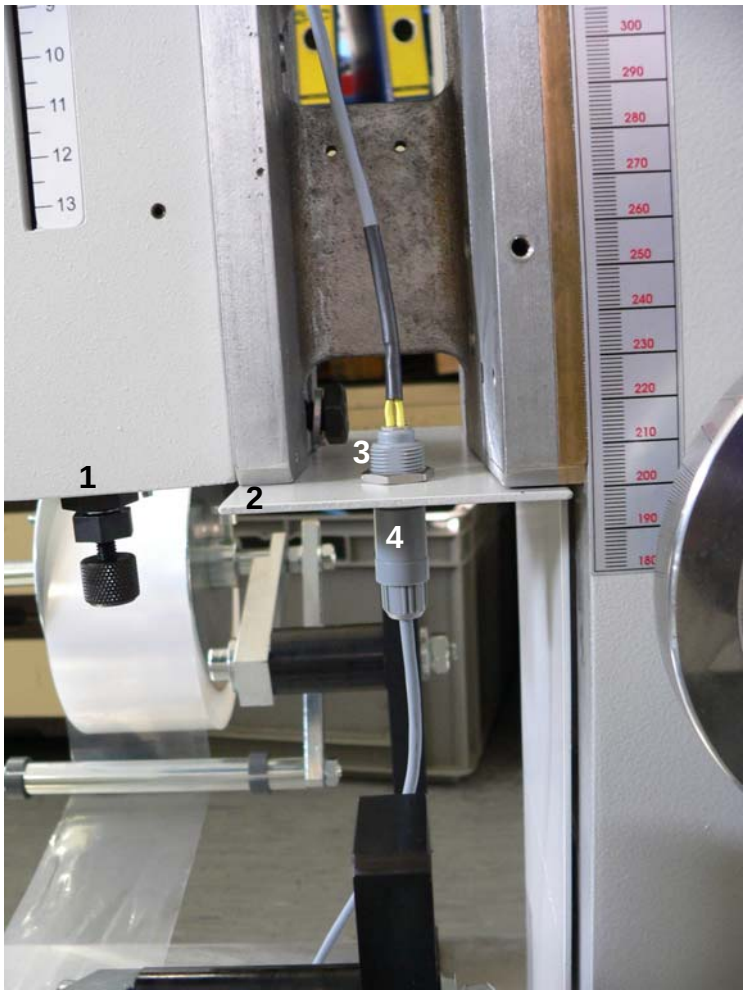
1 = connection for solenoid valve

- Remove front cover from actuator.
- Locate the position of the cable gland and circuit board. Next, find where you can drill a hole in the back of the actuator.

WARNING

Make sure not to damage the cable or drill into the circuit board from the back!

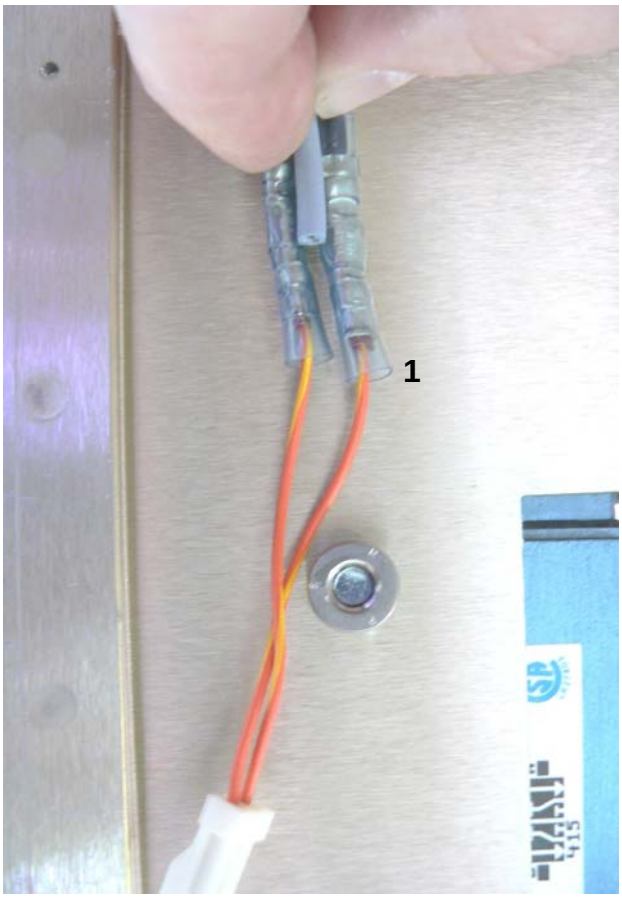
Fig. 4-2 Cable lead through - solenoid valve



1 = Actuator depth stop (for orientation)
2 = Angle plate on actuator
3 = Connector plug for solenoid valve
4 = Plug connector for solenoid valve connection

- Drill a hole in the angle plate.
- Attach the nut above the hole and beneath the screw connection.

Fig. 4-3 Connection to solenoid valve

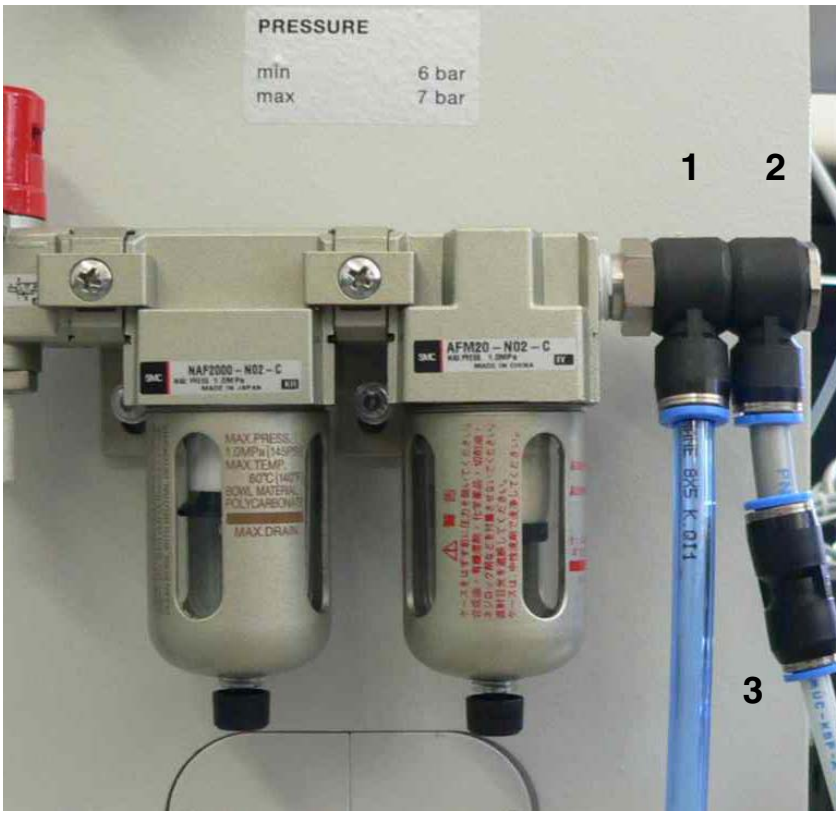


1 = crimp joint

- Remove the plug from position J62A on the circuit board.
- Cut both cables.
- Connect the cable ends using a climp joint and pliers.
- Reinsert the plug from position J62A on the circuit board.

4.2 Connecting the Pneumatic Lines of the Foil Cycle Device

Fig. 4-4 Established air connection



1 = Air connection for actuator

2 = Air connection for solenoid valve (supply air)

3 = Reducing adapter

- Remove any air connections.
- Attach air connection from kit.
- Place connector for foil cycle device on reducing adapter.

DANGER

The foil cycle device may only be operated when the black cover cap is situated above the foil forwarder, see fig. 4-5. This safety measure is required to prevent any injuries to the hand and fingers!

- Place the black cover cap back on after setting the length of foil forwarder as shown in fig. 4-5.

Fig. 4-5 Attaching the cover cap to the foil forwarder (view from above)

1 = Grub screws for attaching black cover cap

5 Technical Specifications

Order no.:	011cxx002M80	(film width: 80 mm)
	011cxx002M120	(film width: 120 mm)
Solenoid valve:	24 V DC	
Max. pressure:	10 bar	
Film:	PE / 80 mm / 120 m / 50 µm	
	PE / 120 mm / 120 m / 50 µm	

The largest possible horn dimensions are 150 x 70 mm, the largest possible foil width is 80 mm (120 mm).

If you have any problems with our product or this operating manual, please call our service hotline. We will be happy to help you.

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Dietzenbach, Friday, 21. January 2011

6 Product Monitoring

It is our obligation to monitor our products also after delivery.

Please let us know about anything that might be of interest to us, such as:

- Modified setup data.
- Experiences with the system, which might be important for other users.
- Recurring malfunctions.
- Problems with this user manual.

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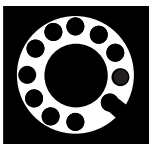

Warranty Terms

We hereby guarantee that the ultrasonic welding machine will operate flawlessly in the manner described in this operating manual, for a period of 36 months as of the delivery date given on the delivery notice. If the welding machine is operated in multiple shifts, the warranty period is reduced accordingly to either 18 or 12 months.

The warranty period begins on the date the machine is delivered to the buyer, regardless of the actual initial startup date.

The warranty is valid only for welding machines which have been installed and operated as described in this operating manual and as instructed by employees of BRANSON Ultrasonics.

Entitlement to free maintenance requires proof of adherence to the instructions in this operating manual as they apply to storage, transport, installation, start-up, and operation.

A welding machine may only be modified by the customer or a third party after having consulted with and received written consent from BRANSON Ultrasonics. Disregard of these terms annuls the warranty and BRANSON Ultrasonics will not accept responsibility for any property damage, personal injury, or other resulting damage.

Furthermore, BRANSON Ultrasonics will not accept any responsibility for device defects ensuing from damaged or malfunctioning equipment in the vicinity of the welding system or from the use of accessories not supplied by BRANSON Ultrasonics. Tools manufactured by other firms must be individually tested and approved by BRANSON Ultrasonics in order to maintain the warranty.

The BRANSON Ultrasonics General Conditions of Sale and Delivery apply.

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