

3M Unitek

Forsus™ Nitinol Flat Spring



3M

**3M Unitek
Orthodontic Products**

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Bypass Installation



Forsus™ Nitinol Flat Spring

Product Description

The Forsus™ Nitinol Flat Spring is an inter-arch spring designed to produce a mesial mandibular force while inducing an equal and opposite distal maxillary force.

Composition Information:

Nickel-Titanium
Stainless Steel
Polymeric Sheath

Note

- **Never compress the springs more than 7mm**, otherwise permanent deformation of the spring may result which could reduce effectiveness.

Disinfection Information

Please refer to literature 011-650, "Reprocessing Instructions for Use".

Introduction

In order to reduce breakage, it is important that all bypasses are installed according to the directions. There are four different methods of installing the Forsus™ Nitinol Flat Spring depending on the type of buccal attachment used on the lower first molar band. Due to the wide variation in first molar appliance use, 3M Unitek has designed three lower bypass wires to accommodate your current appliance system. Please refer to the appropriate section for installation instructions.



Lip Bumper Bypass



Auxiliary Tube Bypass



Single Tube Bypass

Step 1: Installation With Bypass Wire

Auxiliary Tube Bypass Set-Up



Option A: Auxiliary Tube Bypass Sizing the Bypass

- Place the bypass pin (see Figure A-1) completely into the auxiliary tube (mesial to distal) (see Figures A-2 & A-3).
- Adjust the mesial end of the bypass until the mesial loop is between the cuspid and first bicuspid bracket (see Figure A-4). When positioned correctly, the bypass will not touch either the cuspid or bicuspid bracket (see Figures A-5 & A-6). **Do not crimp at this time.**
- Bend distal end of the bypass pin around the auxiliary tube (see Figure A-7) and clip any excess length using a safety distal end cutter (see Figures A-8 & A-9).

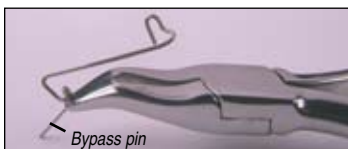


Figure A-1



Figure A-2



Figure A-3



Figure A-4 Adjust here



Figure A-5



Figure A-6



Figure A-7



Figure A-8



Figure A-9

Step 1: Installation With Bypass Wire

Lip Bumper Tube Bypass Set-Up



Option B: Lip Bumper Tube Bypass Sizing the Bypass

- Place the lip bumper tube bypass completely into the lip bumper tube (see Figure B-1).
- Adjust the mesial end of the bypass until the mesial loop is between the cuspid and first bicuspid bracket (see Figure B-2). When positioned correctly, the bypass will not touch either the cuspid or bicuspid bracket (see Figures B-3 & B-4). **Do not crimp at this time.**
- Bend distal end of the bypass around the lip bumper tube, clip any excess bypass wire that extends mesially of the lip bumper tube (see Figure B-5).



Figure B-1



Figure B-2 Adjust here



Figure B-3



Figure B-4



Figure B-5

Step 1: Installation With Bypass Wire

Single Tube Bypass Set-Up



Option C: Single Tube Bypass Sizing the Bypass

- Place the distal end of the single bypass (small loop) onto the archwire, distal to the 1st molar tube (see Figure C-1).
- Adjust the mesial end of the bypass until the mesial loop is between the cuspid and first bicuspid bracket (see Figure C-2). When positioned correctly, the bypass will not touch either the cuspid or bicuspid bracket (see Figures C-3 & C-4). **Do not crimp at this time.**
- Close the distal loop of the bypass around the archwire (see Figure C-5).
- Use a stainless steel ligature to attach the bypass to the 1st molar tube (see Figure C-6) and tuck excess ligature.



Figure C-1



Figure C-2 Adjust here



Figure C-3



Figure C-4



Figure C-5



Figure C-6

Choosing the Correct Spring Size and Installation

Step 2: Choosing the Correct Spring Size

Measure the distance from the distal of the headgear tube to the mesial end of the bypass wire. The mouth should be closed and the teeth fully occluded. If using a millimeter ruler, use the following equation: **measured length + 10mm = spring length size.**

Either use a millimeter ruler (see Figure 2-1) or Forsus™ Nitinol Flat Spring measuring gauge (see Figures 2-2 & 2-3). The spring should be compressed approximately 5mm for correct activation.



Figure 2-1

OR



Figure 2-2



Figure 2-3

Step 3: Installing the Spring on the Bypass Wire

Slide the spring on the bypass according to Figure 3-1. Note: Threading the spring on backwards will cause breakage.



Figure 3-1

Step 4: Attaching Distal End of Spring to Headgear Tube

- Pull Link 'n' Loop pin (see Figure 4-1) through headgear tube (from distal to mesial, see Figure 4-2).
- Bend Link 'n' Loop pin around headgear tube (see Figure 4-3). Clip off any excess pin length. Make sure the loop is horizontal and the pin is bent underneath the tube (see Figure 4-4).
- Attach mesial end of bypass to archwire by closing the loop with pliers (see Figure 4-5).



Figure 4-1

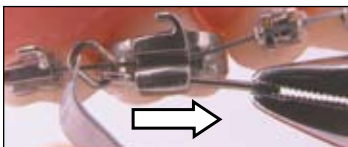


Figure 4-2



Figure 4-3



Figure 4-4



Figure 4-5

Step 5: Activation/Reactivation of Corrector Spring

- Make sure the spring is activated approximately 5mm by adding crimpable stops on the bypass wire, mesial of the spring as needed (see Figure 5-1).
- Reactivate the spring by adding crimpable stops (see Figure 5-2).
- Congratulations, installation is complete.



Figure 5-1



Figure 5-2



Complete Installation

Installation Without Bypass Wire

- Remove brackets from the lower first and second bicuspid (see Figure 1).
- Determine where to place the proper bayonet bends in the archwire. It should be placed distal to the canines (see Figures 2 & 3).
- Measure from the distal of the headgear tube to the bayonet bend to determine the proper size spring to select (see Figure 4).
- Pull Link 'n' Loop pin (see Figure 5) through headgear tube (from distal to mesial, see Figure 6).
- Bend Link 'n' Loop pin around headgear tube (see Figure 7). Clip off any excess pin length. Make sure the loop is horizontal and the pin is bent underneath the tube (see Figure 8).

- Install the stainless steel beads on the archwire. Slide the archwire through the mesial hole of the springs and then slide the archwire into the buccal tube of the molars (see Figure 9).
- Bend distal ends of archwire gingivally (see Figure 10).
- Reactivate by placing crimpable stop distal to the stainless steel bead (see Figures 11 & 12).



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5

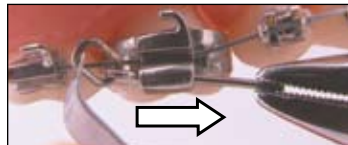


Figure 6



Figure 7



Figure 8



Figure 9

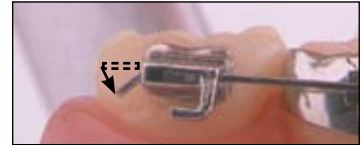


Figure 10



Figure 11



Figure 12