Stent Crimping Machine
Model CX

CX Stent Crimping Machine shown with PTFE Film Autosheathing

Model CX Stent Crimper full-featured radial compression machine for stent-attachment in the assembly of balloon-expandable stent delivery catheters and other radial compression applications. At its heart is a Blockwise radial compression station selected based on application. Low-friction, high-precision compression mechanism & unique control system result in *superior crimping process control*, easily beating the competition in: precise control of diameter at any crimping force, precise control of crimping force, uniformity of temperature, and durability.

Complete Crimping Machine includes: Model CX machine base plus an **Alpha-Crimp™, J-Crimp™ or 2-Crimp™** radial compression station. Also compatible with a variety of additional Blockwise radial compression stations, chosen based on: 1) diameter range, 2) length range, 3) radial force requirement & 4) die material.

Model CX implements a closed-loop control of diameter or compression force with a unique system that compensates for the mechanism's compliance; it *achieves and displays the commanded diameter regardless of the force* required to reach that diameter.

Stepper Motor actuation integrated encoder measures opening diameter while a f**orce transducer** measures actuating force which is directly proportional to the radial compression force.

Touchscreen machine interface is very intuitive and convenient to enter "recipes" specifying sequences of process steps.

Step types: force, diameter, force verification, diameter verification, pressure setpoint, vacuum on/off, or leak test.

Calibrations & gauge checks are easy & intuitive, guided by instructions on the touch-screen interface.

Manual Mode Directly command the machine without using a recipe sequence. Engineering, maintenance, & manual functions may be password-protected.

Product Carrier on a manually-powered linear slide holds and aligns the catheter to the crimping station.

Options Available:

AutoSheath for crimping drug-eluting stents or balloons, provides a thin PTFE barrier film between the stent/balloon & metal crimping dies.

- ✓ Prevents damage to delicate coatings from high-force contact with metal crimping dies;
- ✓ Eliminates transfer of chemicals to and from the crimper die;
- ✓ Reduces the necessity to clean the crimper mechanism;
- ✓ Forward-only feed control of the film means the product is always presented with a fresh film surface.

A gently tapering funnel is formed by the film allowing easy insertion of the stent without the need to align carefully. There is no possibility that the stent will be inadvertently crimped without the film due to being inserted off-center as with competing crimpers. This saves process time and is more ergonomic for the operator who won't have to bend down to look along the crimper dies to insert the stent. Consistent die-to-die gaps give the roundest profile and leave no possibility for struts to enter between to become damaged. Use as a standard crimper by simply removing the film & disabling the Autosheathing function.

Vacuum / Pressure Supply The catheter or product is connected to the high-pressure Simpluer connector and may be evacuated before, during, or after compression per the recipe settings. The product may be pressurized **up to 20.7 bar**.

Heated Dies Cartridge heaters, temperature sensor, and over-temperature safety switch are installed in the dies. Recipes containing a heat on / off setting and a temperature setpoint that may range **from 0 to 100C**.

Integrated leak tester Allows user-defined pressure or vacuum leak checks to be performed at any point during the crimping process, without disconnecting the catheter, and with minimal added trapped-air volume.

Bar Code Recipe Selection Scan a bar code to associate it with a product. Prevents error when selecting recipes between products.
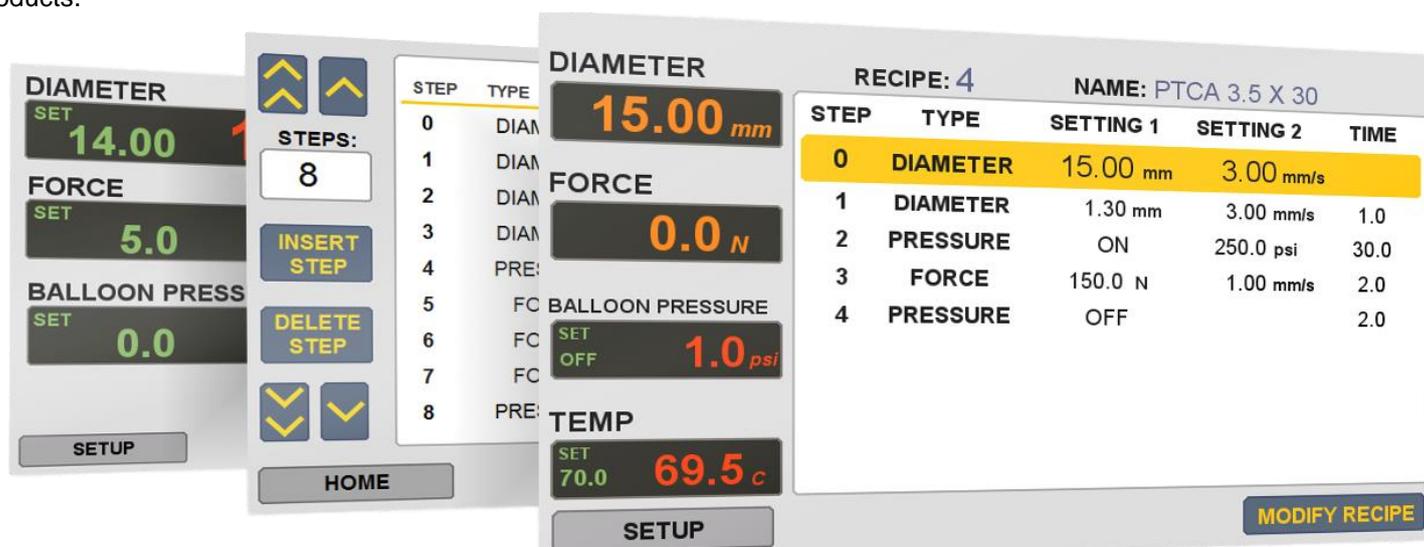
Refined Touch Screen Interface

Specifications:

Compression Station Diameter Range	0 - 8 mm (Alpha-Crimp) 0 - 16 mm (J-Crimp & 2-Crimp)
Die Lengths Available:	75 mm (Alpha-Crimp) 62 mm *or* 124 mm (J-Crimp) 180 mm (2-Crimp)
Maximum Total Radial Force Available	2670 N (Alpha-Crimp) 1350 N (J-Crimp) 8000 N (2-Crimp)
Die-to-Die Gap	10 µm (Alpha-Crimp) 50 µm (J-Crimp & 2-Crimp)
Number of Compression Dies	10 (Alpha-Crimp) 9 (J-Crimp & 2-Crimp)
Die Material	Hardened Stainless Steel
Compression Station Actuation Power	Electric (stepper motor)
Die Heating Temperature Range	Room temperature to 100 C
Balloon Inflation Pressure Range	-1 to 20.7 bar
Sequence Control	Maximum 50 crimp and/or pressure/vacuum control steps, programmed with touch-screen interface; 100 recipes
Service Connections	AC power 110/ 240 V Compressed air 5 - 7 bar for actuation) High pressure air or nitrogen 21.5 - 27 bar for balloon inflation
Machine Dimensions	61 cm width x 61 cm depth, 61cm height