ARTOS
ENGINEERING COMPANY

A PARADIGM SHIFT

INTRODUCING INDUSTRY'S *FIRST* HIGHLY AUTOMATED, PROGRAMMABLE CRIMPING MACHINE ...

THE TU-10

If you've ever had to make die changes manually on an "automated" crimping machine, you know how time consuming the process can be.

First you have to find the right die for the application. Make the setting adjustments. Test a few pieces to see if the terminal is on properly. Adjust the settings. Test a few more pieces. And so on.

You can see the problems inherent in this process. Wire and terminal ends get wasted in test runs. Crimping quality can vary noticeably depending on operator skill. Set-up time and testing makes short runs cost-prohibitive. And, in general, operating costs can be relatively high versus output and production.

Thankfully, an all-new technology has been developed to address those production issues: A crimping machine so automated, yet so simple in concept that you find yourself wondering, "Why didn't they make this years ago?"

We're speaking, of course, of the new TU-10 programmable crimping machine from Artos Engineering Company.

With this patented new technology, operating parameters such as ram opening stroke, ram speed, ram acceleration and crimping height can all be programmed and instantly recalled. Manual set up and multiple die changes are virtually eliminated.

Bottom line, Artos' revolutionary TU-10 automates the entire terminating process to speed up production, improve crimp quality and reduce waste and costs.

Want to know how this innovation works and how we've made it possible to share "standardized" crimping data from machine to machine? *Read on.*

YOU GET ...
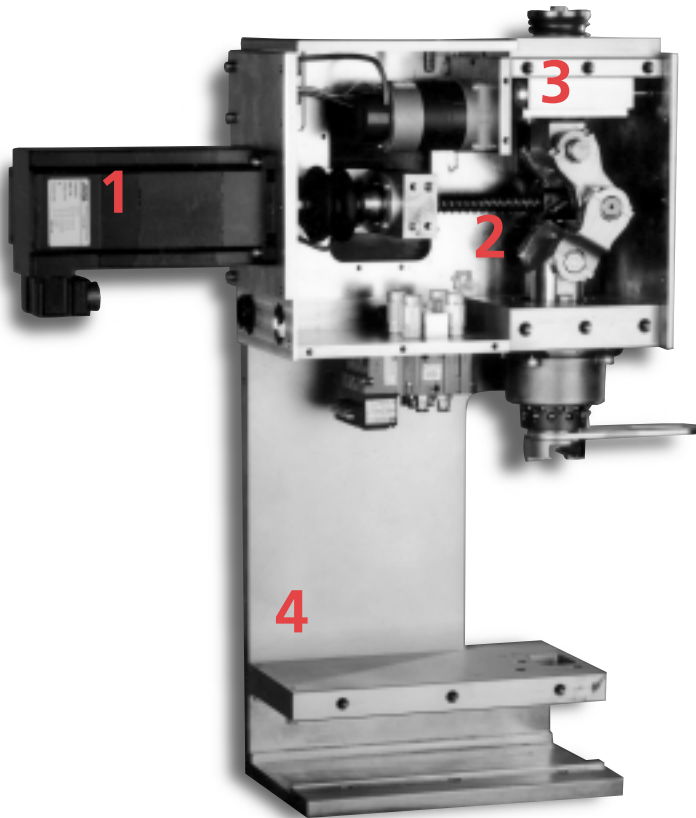
- Single Minute Exchange of Die (SMED)
- The ability to run smaller lot sizes
- Improved crimping quality
- Faster operation, higher productivity and lower costs

INSIDE ....

HOW THE TU-10 WORKS

Artos' new TU-10 programmable crimping machine represents the innovative application of a number of proven technologies:

Closed-loop servo motors provide "infinitely variable" control over the speed and acceleration of the crimping ram – a capability that improves output and eliminates die misfeeds. Our brushless servo motor design, running off of 110/220 single-phase power, provides the highest torque: speed ratio possible, yet requires the least amount of maintenance. A separate, reliable servo motor is also used to control crimp height adjustment (within increments of .001mm).

A highly efficient ball screw ram drive (compared to traditional worm gear designs) optimizes motor power, thus reducing thermal heating and energy consumption. This design controls opening stroke adjustments, programmable from 0 to 40mm. Cycle times of less than 200 miliseconds are also possible allowing for increased productivity.

An optional crimp force monitor, fully integrated into the control of the TU-10, stores and recalls set-up parameters (up to 96 force curves per machine), eliminating the need to perform multiple test runs to verify crimping specifications. In addition, because the TU-10 allows for calibration of crimp force monitors, data can be shared between TU-10 machines. In effect, only one crimp force monitor needs to "learn" your data, which can be shared in a network configuration, saving you time and ensuring crimping accuracy.

A rigid steel frame, featuring keyed vertical fastening, helps reduce deflection and improves crimping accuracy. Competitive machines are constructed of either steel or aluminum, feature horizontal fastening and are not keyed. As a result, crimping stability can be adversely affected. The Artos frame is robust, through and through.

All of these main features add up to provide a drastically improved crimping machine – but those are just the basics. Take a closer look at how the TU-10 stacks up against "traditional" units, feature by feature.

FEATURE	TU-10 with CFM	Traditional Unit with CFM
Ram Drive Design	Ball Screw	Worm Gear
Frame Design	Steel construction with keyed vertical fastening	Steel or aluminum with horizontal fastening (not keyed)
Motor Design	Closed Loop Brushless Servo Motor	Standard Motor
Crimp Height Adjustment	Programmable & Recallable	Fixed
Crimp Height Resolution	Programmable to .001mm	Die Unit Dependent
Opening Stroke Adjustment	Programmable 0 to 40mm	Fixed
Crimp Force Monitor	Fully integrated with the TU-10 control	Self-contained, independent control
CFM Data Storage & Recall	Complete database management Standardized calibration possible	Limited or no storage No calibration
CFM Load Cell Design	Set in a non-moving location ... Full load through cell	Most often located in the moving ram ... Without full load
Thermo-growth compensation	Optional circuit available*	NA
Additional programmable control features	Pneumatic terminal feed, chop-off device, gathering device, and blow-off device	No programmable features

Compatible with most machines. The TU-10 programmable crimping machine features a narrow profile so that it can easily be mounted on a variety of wire processing machines. It accepts most standard mechanical and pneumatic dies and is also available as a stand-alone benchtop model.

Options include: PC interface, additional hand-held operator controls (one control can operate two machines), terminal reel brackets, a terminal scrap chop-off option, gathering fingers for conveyors and a calibration gauge.
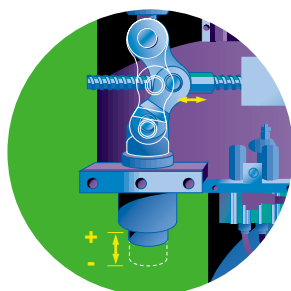
Opening stroke adjustment

Our unique ball screw design provides for drastically improved control over the ram's opening stroke adjustment. Terminal feeding miscues and jams can virtually be eliminated because you can program stroke adjustments for the idiosyncrasies of different mechanical and pneumatic dies.

Programmable and recallable crimp height adjustment allows you to automate the crimp height process. Set-up time is reduced and crimp quality is greatly enhanced.

Programmable
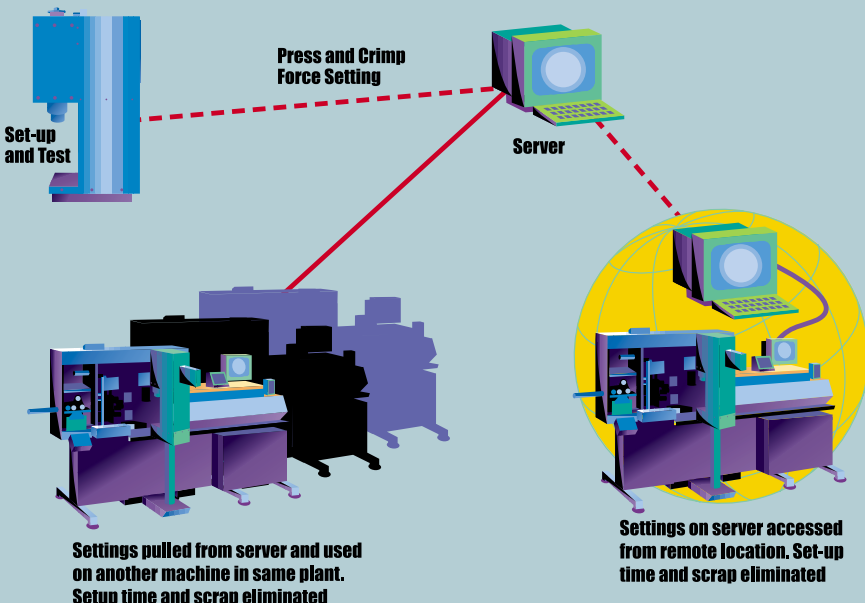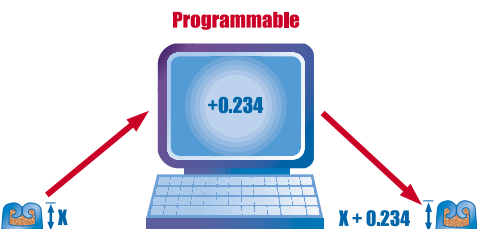
+0.234

X   X + 0.234

HOW THE TU-10 CAN WORK IN A NETWORK

The TU-10 is truly a machine made for 21st century users. Because TU-10 machines are calibrated and standardized, crimp profiles can be shared from machine to machine in a network configuration.

Whether you are sharing this data within one plant or transferring this information to wire processors in remote locations, the TU-10 provides you with the ability to speed production like no other crimping machine on the market.

Press and Crimp Force Setting

Set-up and Test

Server

Settings pulled from server and used on another machine in same plant. Setup time and scrap eliminated

Settings on server accessed from remote location. Set-up time and scrap eliminated

An automatic temperature compensation option is available for networking configurations. Compensation tables can be developed for each die type to adjust for thermogrowth due to changes in ambient temperature.

Recallable

X + 0.234

Job 123   X + 0.234

40 c
30 c
20 c

Crimp Height

CORRECTION in mm	DEGREE CELCIU
.013	0-1.9
.012	2-3.9
.011	4-5.9
.010	6-7.9
.009	8-9.9
.008	10-11.9
.007	12-13.9
.006	14-15.9
.005	16-17.9
.004	18-19.9
.003	20-21.9
.002	22-23.9
.001	24-25.9
.000	26-27.9
-.001	28-29.9
-.002	30-31.9
-.003	32-33.9
-.004	34-35.9
-.005	36-37.9
-.006	38-40.0