



# DELTA

220/240/260  
crimper

**komax**

# DELTA

220/240/260

Benchtop crimpers are used when a fully automatic machine is not an option for one of the following reasons:

- a) Processing of multi-conductor cables
- b) Reworking of wire harnesses in production
- c) Small batch sizes or test series

The Delta 220, 240 and 260 programmable crimping machines are designed for applications with high demands in terms of processing quality and quality verification. They enable efficient and precise seal placement, stripping and crimping in a single process, with integrated CFA and CFA+ crimp force monitoring. Crimping machines are used for processing small batch sizes and special orders, multi-conductor cables and pre-assembled wires with connectors, and components that are not suitable for automatic wire draw-in.

The Delta 220 can be equipped with a programmable stripping unit, bad crimp cutter and suction. The crimp height is adjusted manually. The Delta 240 and 260 offer automatic crimp height adjustment; the latter also has a seal module.

### Focus on precision and quality

- Crimp force monitoring with CFA+ or CFA
- Bad contact cutter on request
- High repeat accuracy thanks to precise mechanics
- Reproducible settings (stored), incl. crimp height on Delta 240 and 260

### High productivity

- Fast set-up/changeover of crimping tool, contacts and seals thanks to stored parameters
- Stripping, crimping and seal placement in one cycle (depending on configuration), short cycle time
- Triggering with sensor (stripping unit) or foot pedal

### Wide range of applications

- Crimping 0.03 – 6.6mm<sup>2</sup> / AWG 32 – 9
- Stripping 0.03 – 4 mm<sup>2</sup> / AWG 32 – 11
- For numerous mini-style crimping tools (AMP), with side and end-feed terminals
- Short dismantling length for multi-conductor cables on request
- For most open contacts
- Approx. 300 seal variants

### Intuitive operation with HMI Delta

- New Komax HMI Delta user interface
- High-resolution display for detailed graphics
- Language is adjustable
- With context-sensitive help
- Perfectly illuminated working area
- Wire is not moved during process

### Networkable

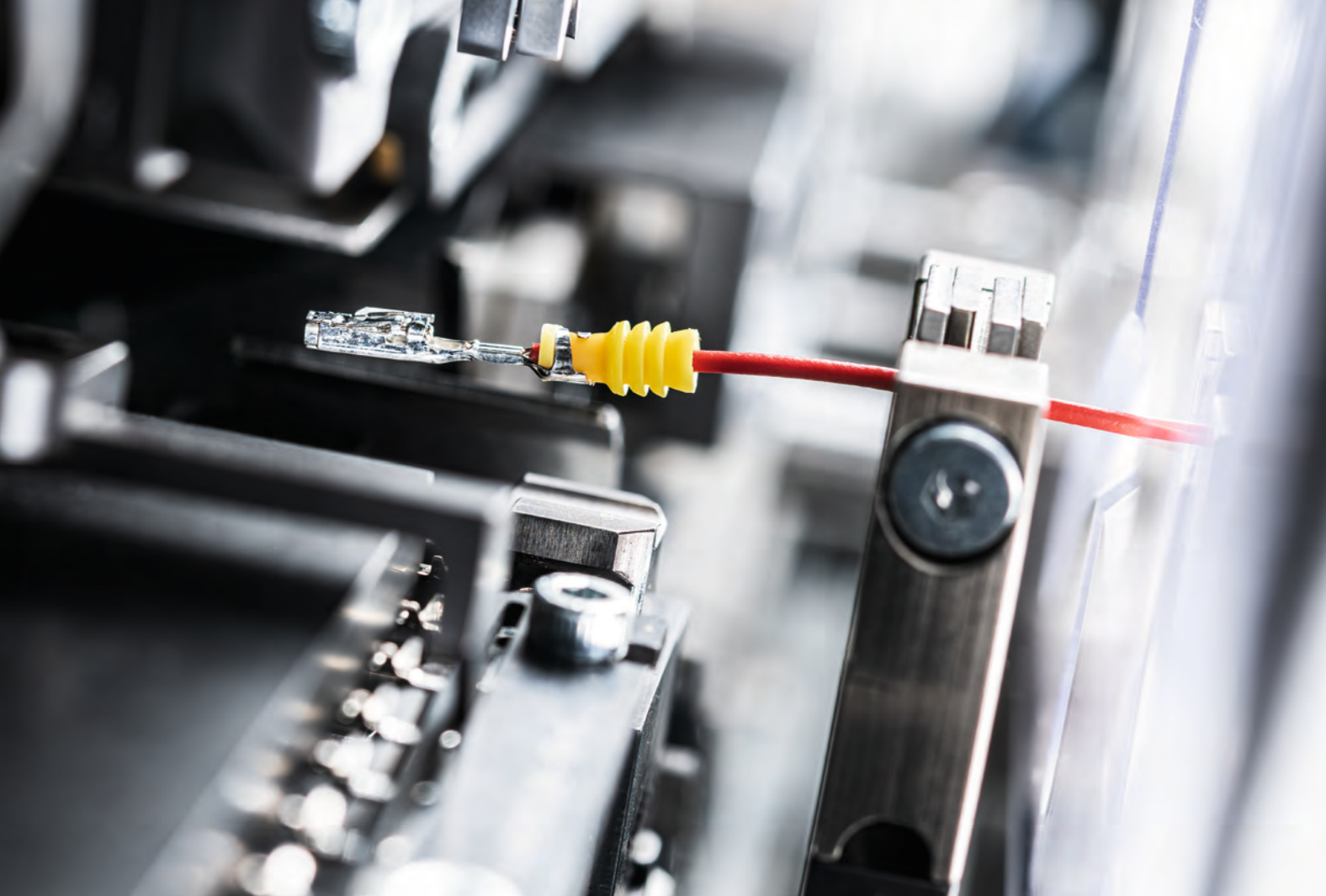
- Connection to central measuring station with QCenter
- Measurement reports with Komax Print
- MIKO interface for system connection



## THREE VERSIONS THE RIGHT ONE FOR EVERY NEED

	Delta 220	Delta 240	Delta 260
Crimping	●	●	●
Crimp Force Analyzer (CFA/CFA+)	●	●	●
Bad crimp cutter (BCC)	○	○	○
Stripping unit (DS)	○	●	●
Seal placement	-	-	●
Crimp height adjustment	manual	auto	auto
Process sequence	-	●	●

- standard
- option
- not available



## DIRECT INTERACTION WITH HMI DELTA



### Focus on precision and quality

Quality is a top priority for the Deltas. Crimp height and pull-out force are checked and learned before each order; on request at the central measuring station (QCenter).

The crimp force is evaluated in each cycle to eliminate errors (see CFA box). The bad crimp cutter prevents faulty parts from being processed further and any subsequent costs from being incurred. All settings can be accessed from the memory; only the crimp height is set manually on the Delta 220. The precise and robust mechanics also contribute to the high quality. CFA values can be stored at a central measuring station (QCenter). The KomaxPrint software can be used to print reports with the CFA results.

### High productivity

The linking of the stripping, crimping and, in the case of Delta 260, the seal insertion processes in a single work step helps to increase efficiency.

The quick-change system for the applicator and the programmed settings enable the shortest possible changeover times to be achieved.

Stripping and terminal strip remnants are collected in waste containers. If desired, a suction unit can be used to transport the waste into an external container.

### One processing position for everything

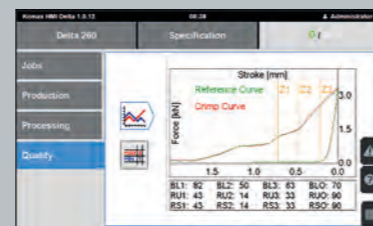
The Delta series has a fixed processing position, i.e. the wire is not moved, which is particularly advantageous for pre-assembled wires with connectors, sensors or other components.

### CFA

The crimp force can be monitored using both Komax CFA and Komax CFA+. The parameters are identical to those for the crimp modules on fully automatic machines.

CFA and CFA + are important elements of quality assurance. The areas of the crimp force curve are specifically evaluated in adjustable zones so that the following errors can be detected:

- Missing strands
- Incorrect conductor cross-sections
- Insulation in the conductor crimp



### Brilliant color display with optimized interaction

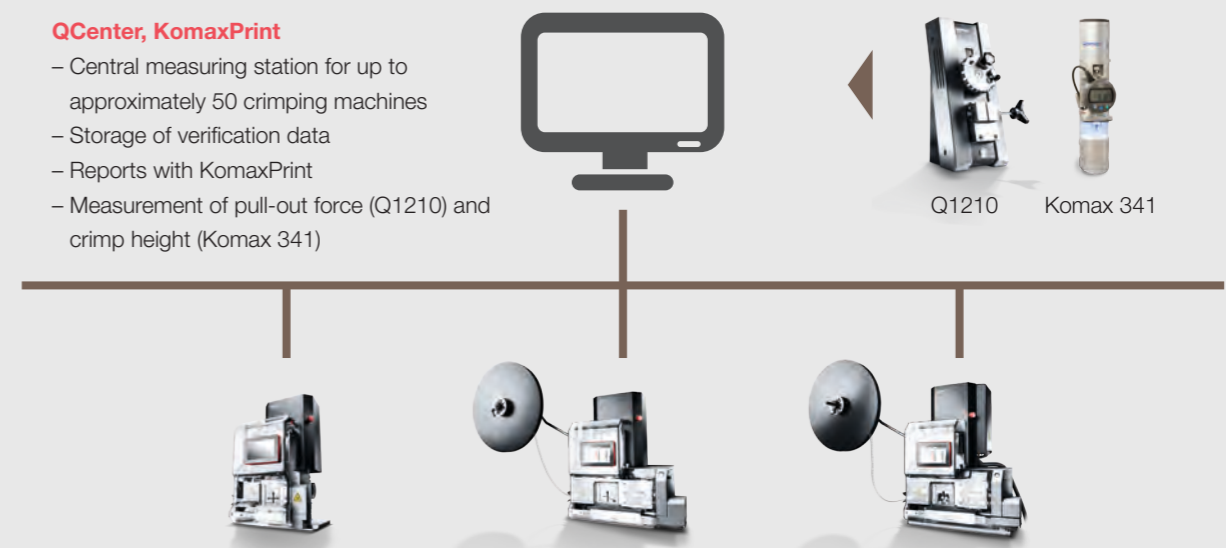
The new Komax HMI Delta user interface impresses with its clear graphics, enhanced user guidance, language selection and context-sensitive help function.

### Exchange of quality data with central measuring station (QCenter)

The Komax REST-based standard protocol MIKO provides the basis for connecting to a control system or for implementing special solutions such as color detection or material verification.

### QCenter, KomaxPrint

- Central measuring station for up to approximately 50 crimping machines
- Storage of verification data
- Reports with KomaxPrint
- Measurement of pull-out force (Q1210) and crimp height (Komax 341)



## Processing examples

Full stripping		Seal placement	
Partial stripping		Multi-conductor cable processing	
Cutting pulled strands		Sequence processing	
Zero cut		Good/bad separation/ Bad part cutting	
Crimping		Crimp Force Analyzer (CFA/CFA+)	
Double crimping		Integrated crimp height measurement	
Split cycle for closed terminals		Integrated pull-off force measurement	

### Options

- Programmable stripping unit
- Suction unit
- Bad crimp cutter
- Terminal strip chopper
- Paper winder
- Short dismantling length
- Pneumatic terminal feeder (air feed set)
- Mains voltage 115 V
- Sequence processing
- MIKO network interface

### Accessories

- Press table with tool drawer
- Seal cleaning
- Komax 341 crimp height measurement device
- Q1210, Komax 332 or MicroPull 10 pull-out force measurement devices
- Radius blade, V-shaped blade
- Measuring station software with QCenter
- Print reports with Komax Print



Optional suction unit for stripping remnants

## Technical data

Touch control interface	Delta 220	Delta 240	Delta 260
Touch panel	7" color display, wide VGA 800 x 480, scratch-resistant glass		
User interface	Graphical multilingual user interface HMI-Delta, context sensitive help		
Functions	Sequential processing		
Storage	5000 articles, 1000 wires, 500 terminals	+ 500 seals	
Ethernet data interface	for SW updates, Manufacturing Interface Komax (MIKO), connection to QCenter software, control system connection, color recognition or material verification possible (special application)		

## Crimping

Cross-section range	0.03 – 6.6 mm <sup>2</sup> (AWG 32 – 9)	
Max. crimp force	20 kN/4500 lbf	
Stroke (programmable)	10 – 40 mm (0.394 – 1.575 in.)	
Shut height	standard 135.8 mm (5.346 in.), on request 118.3 – 174.8 mm (4.657 – 6.882 in.)	
Stroke repeat accuracy	Delta 220 = 0.012 mm ( 0.00047 in.) Delta 240, Delta 260 = 0.006 mm ( 0.00024 in.)	
Crimp height adjustment	Applicator	automatic, programmable + 0.2 mm ... -0.8 mm (0.008 ... - 0.031 in.)
Split cycle for closed terminals	1 – 20 mm (0.04 - 0.787 in.)	
Applicators	Mini-applicator with T-tool fixture	

## Crimp force monitoring

Crimp force monitoring	Integrated, evaluation according to Komax CFA+ or CFA
Central measuring station	With QCenter SW (optional)

## Stripping unit (DS)

Conductor cross-section <sup>1)</sup>	0.03 <sup>1)</sup> – 4 mm <sup>2</sup> (AWG 32 – 11)
Strip length	0.1 – 13 mm (0.004 – 0.51 in.)
Min. dismantling length <sup>1)</sup>	33 mm (1.30 in.), with optional short dismantling length 23 mm (0.91 in.)
Conductor cutting <sup>1)</sup>	Zero cut, cutting of protruding strands, cutting if CFA error
Functions	Full and half stripping, zero cutting, cutting of pulled strands, pre-pull-off before seal placing

## Bad crimp cutter (BCC)

Cutting of terminals and conductors	Terminal 2.5 mm <sup>2</sup> (AWG 13); conductor 6.6 mm <sup>2</sup> (AWG 9)
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## Seal insertion (Delta 260 only)

Maximum size/number of seal sets	Diameter 10 mm (0.39 in.), length 8 mm (0.32 in.) / approx. 300 sets
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## General

Cycle time	crimp < 0.8 s, strip + crimp < 1.8 s	seal < 2.7 s
Electrical connection	1 x 230 VAC, 50/60 Hz, 180 – 260 V, 1 x 115 VAC, 60 Hz, 92-130 V, 2000 VA	
Compressed air connection	4 – 6 bar (58 – 87 psi)	5 – 6 bar (75 – 87 psi)
Dimensions (WxHxD)	700 x 750 x 500 mm (27.56 x 29.53 x 19.69 in.)	820 x 830 x 920 mm (32.38 x 32.68 x 36.22 in.)
Weight of basic machine	ca. 110 kg (243 lb.)	ca. 200 kg (441 lb.)

## Approvals and standards

CE conformity	Conforms to the relevant CE directives on machine safety and electromagnetic compatibility.
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<sup>1)</sup> Sampling is recommended for leads near the specification limit or leads and contacts that are difficult to process.

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## Komax – leading the field now and in the future

As a pioneer and market leader in automated wire processing, Komax provides its customers with innovative solutions. Komax manufactures series and customer-specific machinery, catering to every degree of automation and customization. Its range of quality tools, test systems, and intelligent software and networking solutions complete the portfolio, and ensure safe, flexible, and efficient production.

Komax is a globally active Swiss company with highly qualified employees and development and production facilities on several continents. It provides local support to customers worldwide through its unique sales and service network and offers services that help them get the most out of their investments.

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