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OMEGA 740 750

Komax has developed the Omega 740 and Omega 750 fully automated block loader machines for wire harness production requiring housing insertion. These highly flexible systems enable operator-independent production of double-sided block loading with the highest quality and complexity and without the need for interim storage of individual wires. It is the economical solution to recurring trends in connector and housing miniaturization with increasingly smaller production batches. The Omega series makes it possible to manufacture a wide range of different wire harnesses while simultaneously reducing production time. The tried and tested EtherCAT platform improves overall system performance and significantly increases throughput.

Shorter run – less storage requirement

- Shortest lead times significantly reduced production time
- Minimized stock level of semi-finished products
- Optimized production process

Automated quality from start to finish

- Continuous quality, independent of the operator
- Reliable loading of miniaturized components
- Force monitoring of the entire insertion process
- Optional ACD incision monitoring

High flexibility

- Standard machine quick and individual changeover
- Unlimited number of applications

The optical terminal measuring system enables the insertion of a wide range of terminals.

QUANTUM LEAP IN FULLY AUTOMATIC WIRE HARNESS PRODUCTION

PRECISION AND FLEXIBILITY FOR AUTOMATIC BLOCK LOADING

Highly flexible block loading

The new Omegas feature a 40 percent larger pallet to accommodate many different housings. This makes it possible to mount more types of housings on a single pallet and manufacture different wire harness configurations simultaneously, thus significantly increasing flexibility. The pallets are loaded and unloaded as the machine is running, while another wire harness is produced on the second pallet with the newly developed, rapid hybrid gripper.

Shorter lead times – less storage requirement – optimized process

Decisive savings in time and logistics and a corresponding growth in productivity can be achieved thanks to the absence of manual steps, interim storage and transport. Cutting, crimping and insertion of the terminals all take place on the same machine and the time-consuming storage of individual wires is eliminated. Stock levels of semi-finished products can also be reduced, resulting in faster responses to design changes and reducing the amount of work in process.



High flexibility and simple operation

The new fully automatic blockloaders with enlarged mounting pallets ensure even greater flexibility for specific manufacturing across a wide range of applications. They process wire harnesses in a single process step from A to Z and open up new possibilities for the required wire sets. Already created wire harnesses can be loaded again in seconds and re-produced. Thanks to individual configurations – the Omega 740 with five process modules and the Omega 750 with eight – changeovers and interruptions are reduced to a minimum.



Wide variety with up to 36 wire types

The different wire types for versatile wire harness production are available on the Omegas without the need for changeovers. The automatic wire changer supports up to 36 different wires over the entire cross-section range. Two automated inkjet printers mark the wires in black and one additional color within the same sequence.

New possibilities thanks to the optional OBMS

The optional OBMS optical measuring system makes the application even more flexible. It measures the individual block chambers precisely using a camera system and enables the automatic loading of components that could only be processed manually until now.

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Up to 36 different cables from the entire cross section range are available in the wire selector.

Individual block chambers can be measured precisely with the OBMS optical measuring system.

Guaranteed quality of the end products

The quality of the end product is continually guaranteed, independent of the machine operator. A high-precision force sensor monitors the entire insertion process and correct latching of the terminal parts in the housing. The individual default values are synchronized. As a result, the insertion of small components, which can hardly be inserted by hand, is carried out in an absolutely reliable manner - supported by a precise and fast spindle drive. With direct production of wire harnesses and by removing interim storage, the danger of terminals being damaged through the storage process or from mistakes and incorrect loading is also eliminated.

The optional automatic conductor detector (ACD) reduces operator influence and ensures quality monitoring even for the smallest wire diameters. The ACD detects the slightest contact between the blades and conductor strands during stripping.

Continuous data flow and traceability

Production data can be sent directly to the machine via a network. The quality data from the production process is saved for each wire harness and traceability is guaranteed at all times.

Comprehensive advice for functional implementation

Komax brings the corresponding expert knowledge for the automation of wire harness production with Omega. Specialists evaluate the design of the wire harnesses and components with regard to automated processing. They present design proposals and assist companies in the optimal integration into their production process.

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The insertion gripper monitors insertion force throughout production and checks for correct terminal latching.





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Three pairs of blades with optional automatic conductor detector (ACD) cover the entire cross-section range.

02 With the help of the wire storage system, double-sided wire harnesses with a high degree of complexity can easily be produced.

Technical data Omega 740/750

Piece output, one-ended and two-en- ded loading*	1.8s per insertion
Shortest wire length	one-sided loading: 240 mm (9.45 in.)
	jumper connections at both ends: 300 – 560 mm** (11.81 – 22.05 in.**)
	complex loading: 300 – 780 mm** (11.81 – 30.71 in.**)
Stripping lengths	Up to 25 mm (0.98 in.)
Wire cross sections***	0.13 – 2.5 mm² (AWG26–14)
Outside diameter of wire	Max. 4 mm (0.16 in.)
Usable transfer lengths Omega 740	1880 mm (74 in.), up to 5 C1370 crimp modules
Usable transfer lengths Omega 750	2880 mm (113.4 in.), up to 8 C1370 crimp modules
Usable transfer lengths extension	1720 mm (67.7 in.) up to 5 additional C1370 crimp modules
Wire selector	Max. 36 cables (in increments of six cables)
Wire-end storage	Rotary storage unit with a maximum of 30 memory slots
Process monitoring (integrated)	Collision monitoring (block cavities) Monitoring of insertion force Monitoring of terminal interlocking
Block feed	Carousel with pallets (customer-specific solution on request)
Pallet system, Loading field (W×H)	280 × 200 mm (11.02 × 7.87 in.)
Electrical connection	3×208 – 480V, 50/60 Hz/10kVA
Compressed-air connection	6 bar (87 psi)
Air consumption	12 m ³ /h (424 ft ³ /h)

The output rate depends on the wire length and housing/terminal combinations.
Depends on wire harness structure.
Certain extremely hard, tough wires may not be able to be processed even if they are within the indicated cross section range. In case of doubt, we are happy to produce samples of your wires.





Machine height with safety cover closed 2060 mm (81.1 in.) Machine height with safety cover open 2870 mm (113 in.)

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The automatic marking system for two different inkjets marks the cables in an optimum manner.

Processing examples

Cutting to length		Wire feed	88
Cutting pulled strands	· · · · · · · · · · · · · · · · · · ·	Wire deposit system/binding	
Full stripping		Seal monitoring	
Half stripping		Crimp force analyzer	CFA
Double sheath cable		Integrated crimp height measurement	
Crimping	= 3 =()=(-	Integrated pull-out force measurement	
Double crimping		Wire length correction	¥
Seal insertion	-3-6	Splice detection	
Twisting / tinning		Good/bad separation / Bad part cutting	
Sleeve insertion		Sequence processing	
Split cycle for closed barrels		Batch separation	
Ferrule crimping		Networking (Manufacturing execution system, WPCS, MIKO)	
MIL crimping		Material change detection / Material verification	
Wire end solidifying, splicing, welding		Wire changer	
Inkjet marking	îÎ	Programmable crimp height	
Block loading			<u>.</u>



Options and accessories

Marking systems	Komax IMS inkjet marking systems • Automatic inkjet head changer
Wire feed	Expandable wire selector
Process modules	C1370 crimping module (with programmable crimp height) • S1441 seal module • MIL crimp • Ferrule module • Ultrasonic compaction
Quality control	Integrated crimp height measurement • Integrated pull-out force measurement • CFA/CFA+ crimp force analysis • Splice detection • ACD automatic conductor detector • Material change detection • Material verification • Q1240 strip monitoring
Accessories	Uninterruptible power supply
Software	WPCS networking interface • TopConvert data conversion • Komax MES



The untwisting module is used to neutralize twists in the wire.

Komax - leading the field now and in the future

As a pioneer and market leader in the field of automated wire processing, Komax provides its customers with innovative and sustainable solutions for any situation that calls for precise contact connections. Komax manufactures series and customer-specific machinery for various industries, catering for every degree of automation and customization. Its range of quality tools, test systems, and intelligent networking solutions complete the portfolio, and ensure safe and efficient production. Komax is a globally active Swiss company with development and production facilities on several continents. Komax uses its extensive distribution and service network, which includes local companies and their employees, to support customers across the world on site, thus ensuring the availability and value of their investments after equipment commissioning through standardized service processes.









Market segments

Komax offers outstanding competence and solutions for various areas of application and draws on them to generate the desired value-added for the entire process and optimize economic efficiency in line with customer requirements. The main markets of Komax are as follows: automotive, aerospace, industrial and telecom & datacom. With this breadth of experience, customers obtain expert knowledge for process optimization and access to the latest technologies.

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