ALPHA 550 G2

crimp to crimp

komax

ALPHA
550 G2

Set new standards in the large-scale production of crimp-to-crimp products with the Alpha 550 G2. It stands for robust performance that generates maximum volumes at minimal costs. The machine's proven reliability and extremely short conversion times are impressive features that ensure optimal results. In addition to the highest OEM quality, the Alpha 550 G2 offers intuitive operation and global usability thanks to 25 languages. Its modular design and customizable software make it future-proof for increased automation. The common parts concept maximizes efficiency, reduces costs and simplifies maintenance – all for optimizing your efficiency.

The first choice for large-scale automotive production
High performance, durability and extremely short conversion times ensure reliability and excellent results. Combined with our Komax Services, you have optimal performance at predictable costs.

Ready for the next stage of automated serial production
Future technologies and network solutions can be easily integrated thanks to a modular platform and modern basic software. Komax Services upgrades keep you up to date with the latest technology at all times.

Minimal conversion times for minimal downtime
The Alpha 550 G2 has an optimized setup process to keep production interruptions as short as possible.

Proven quality at superlative OEM level
Fully automated quality monitoring with minimal operator influence ensures perfect results and minimal waste. Our service experts support you in meeting the highest standards.

Easy operation and efficient use guaranteed
The intuitive HMI interface features programmable process flows and customized dashboards in over 25 languages. Operators are guided through the processes smoothly and efficiently.

HIGH PRODUCTIVITY –
UNBEATABLE COST PER UNIT

Q1250 SCALABLE
OPTICAL CRIMP MONITORING

C1370/C1360/C1340
CRIMP MODULE

S1441
SEAL MODULE

DC
DOUBLE GRIPPER MODULE

komax
Alpha 550

THE FIRST CHOICE
FOR LARGE-SCALE AUTOMOTIVE PRODUCTION

Whoever wants to combat the high cost pressure in mass production needs fully automatic machines that reliably produce the highest quantities at minimal unit costs. The Alpha 550 G2 sets new standards with its performance. Durability and extremely short conversion times ensure maximum reliability and optimal

results. Secure your competitive edge with the Alpha 550 G2. Our service experts offer advice and support to prevent work interruptions in the event of an emergency, solve problems quickly and sustainably and adapt the machine to your needs. Optimal performance at predictable costs.

Powerful, robust and reliable

The Alpha 550 G2 reliably processes conductor cross sections from 0.13 to 6 mm², and up to 10 mm² (AWG 8) as an option. Powerful servo motors position the swivel arm with unsurpassed repeatability. Thanks to flexible machine configuration and customizing, it is also easy to manufacture special and complex applications. The mechanical and electronic components are well protected against dirt and

environmental influences and are also suitable for environments with high temperatures and humidity.

Full speed ahead for the best cost per unit

Thanks to its high processing speed, the Alpha 550 G2 ensures the best cost per unit in its class. All system components are designed for maximum performance. The processes are continuously coordinated to

one another. For example, the wire feed at max. 12 m/s and the conveyor belt speed of the deposit system adapt automatically to each other to ensure constant optimum throughput and high Cpk values. This prevents any limitations on speed and guarantees maximum output.
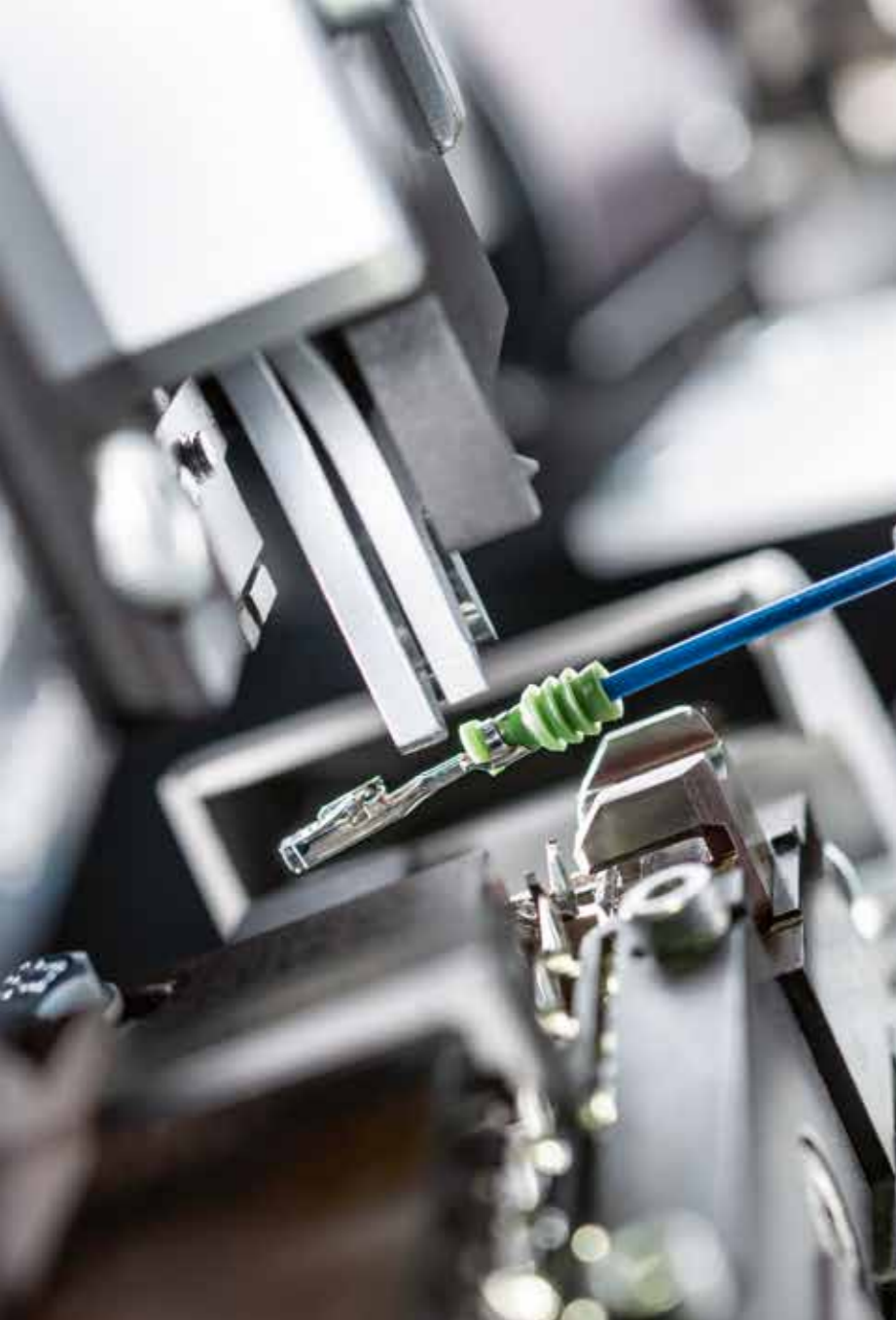
Modular platform for high flexibility

All new-generation Alpha crimp to crimp machines are based on the same platform. This is not only robust and durable, it also offers the option of equipping the machine with new functions or modules at any time. Your investment will be protected for the long term, because you will also be well equipped for future automation solutions.

Expandable software

The software is equipped with a generic module. New software for controlling a new component can be easily integrated without changing the basic software. This structure is very flexible, but can still benefit from all system updates. Customer-specific processes can be programmed on request.

High networkability

The Alpha 550 G2 can be perfectly integrated into a production control system. This network capability is a prerequisite for advanced automation solutions, because only the unhindered exchange of data enables efficient production control.

02
03

01
Unbeatable repeatability, superlative crimp quality.
02
High-level automation implemented in the Alpha 550 G2.
03
High-precision processing with double blade holder and automatic incision monitoring (ACD).

READY FOR THE NEXT LEVEL OF
AUTOMATED SERIAL PRODUCTION

With the Alpha 550 G2, you are acquiring future-oriented machine technology for the most demanding requirements. Thanks to its modular design and flexibly adaptable software, the Alpha 550 G2 provides you with a future-proof base machine for further automation and networking of your fleet. New modules can be easily integrated without having to adjust the software base. Your machine can also be equipped with state-of-the-art automation technology of the future. You can keep an eye on all important parameters and benefit from the latest developments by networking your machine and updating it regularly.

Komax Services
upgrades + enhancement
– Production optimization
– Production planning
– Upgrades & enhancements
– Komax Connect

01

Optimized setup process

The setup process of the Alpha 550 G2 has become intuitive, efficient and even safer. The drives (e.g. crimp modules) deactivate when the safety cover is open. The swivel arm is moved manually to the desired position, and the position is saved at the push of a button (manual teach-in). When the safety cover is closed, the wire position can be adjusted via one of the three control panels distributed in the base machine. Control displays and LED-illuminated work areas optimize and enhance user guidance.

High-speed conversion for maximum productivity

The Alpha 550 G2 is meticulously designed for fast conversion with short downtimes. Short strokes and ergonomic operation with adjustable touchscreen speed up processes. The intuitive operating software allows you to load the next job on the fly – as well as prepare material and tools.
Useful options, such as the linear wire quick changer, double cutting head and tool-and-terminal-reel quick-change system (STC) enable the fastest possible conversion for the next job.

SHORT CONVERSION TIMES
FOR MINIMAL DOWNTIME

Short setup times and minimal downtime are crucial in the automotive sector. They help optimize cost per unit, increase flexibility in product changeovers and improve capacity. The Alpha 550 G2 has an optimized setup process to keep production interruptions as short as possible. High production output makes you competitive and capable of best serving your customers' needs.

01 02

Komax Services keep your machine fit and efficient
– Maintenance
– Repair
– Emergency plans

01
Optimized setup process with "manual teach-in" - fast and safe adjustment by hand when the system is inactive.
02
Tool-and-terminal-reel quick-change system for two crimping tools/terminal reels (STC)

PROVEN QUALITY
AT THE HIGHEST OEM LEVEL

The Alpha 550 G2 meets the strict requirements of your OEM customers with unique quality monitoring and innovative solutions for automation and networking. Operator influence is minimized, and process monitoring is automated to support the zero-fault strategy. With the optional quality monitoring, every single wire produced is checked, and faulty parts are sorted out at lightning speed. In addition, our service experts will help you continuously improve your production and reliably implement even the highest requirements.

01
01
The motor-driven pullout-force measurement device Q1210 measures pullout forces of 20 to 1000 N at a specified pullout speed.
02
Each individual crimp is optically inspected by the Q1250 scalable module for specified quality characteristics.
03
The Komax 341 crimp-height measurement device measures a terminal pattern in the setup process and compares it with the target crimp height. If required, the crimp height is then automatically adjusted to the target crimp height.

Komax Services ensure high precision and verifiable quality
– Komax Care Optimize
– Calibration
– Production analysis
– Komax Connect
– Digital service solutions

Continuous quality – minimal waste
Integrating quality monitoring and verification as well as production traceability ensures maximum precision with outstanding Cpk results. Operator influence on quality is minimized by perfectly synchronized machine processes. Every single wire is checked and defective parts are sorted out in a flash.

Countless options for optimizing quality and minimizing waste
– Optical quality monitoring – Q1250 scalable
– Check the crimp height – Komax 341
– Checking the pull-off force – Q1210
– Microscope – Komax 345
– Barcode scanner
– Quick sample delivery – QSD

EASY TO USE –
SHORT LEARNING TIME

Thanks to the intuitive Komax HMI user interface, your new employees will be able to find their way around in no time. With over 25 languages, the Alpha 550 G2 can be used worldwide. It has programmable workflows that guide the operator through the process in a targeted manner. Individual dashboards provide a perfect overview of machine functions. Setup directly at the machine is even more efficient thanks to the optimized operating concept of the Alpha 550 G2. Training solutions support you in employee induction and further development and ensure a productive working environment during operation and maintenance.

Guided workflow and additional auxiliary functions
The intuitive user interface makes operation quick and easy to learn. New personnel can quickly find their way around thanks to the simple Komax HMI operating software and the guided setup processes. The software guides the operator through the workflow step-by-step. Additional steps such as additional samples or quality control are easy to integrate.

Customer-specific and individual
Tailor-made programming for specific processes is also possible on customer request. The optional machine dashboard offers additional functions with specific benefits, e.g. order list optimization or repetition of the production of a previous article. Customizable dashboards help increase visibility, efficiency, and productivity.

Komax Academy turns your operators into experts
– On.Site training
– On.Line training
– On.Class training

Wire deposit basic module 2 m: 3825mm (150.6 in)
Wire deposit basic module 4 m: 5770mm (227 in)

1525 mm (60 in)

Height with closed cover: 1790 mm (70.5 in)
Height with fully open cover (maximum opening): 2790 mm (110 in)

Optical crimp monitoring Q1250 scalable

The quality tool visually checks the stripping quality and automatically rejects faulty products. A seal monitoring function is also available that monitors the seal position and orientation. Thanks to the high-performance color camera, any crimp defects, such as crimped-on strands or insulation in the crimp, can be monitored. Easy to integrate into the production process. Product quality can be seamlessly tracked using statistics, image saving and network feedback.

Crimp module C1370/C1360/C1340 for maximized productivity

The efficient user guidance with wire positioning directly on the module enables the shortest possible setup and conversion times. CFA+ ensures the highest quality with the lowest possible scrap. The robust crimp module design ensures exceptional reproduction accuracy. Functions such as stroke and split cycle are easy to program. The C1360 and C1370 automatically adjust the crimp height during teach-in.

Seal module S1441 for maximum flexibility

The module automatically loads wires with industry-standard seals and mini-grommets. The precision mechanics combined with the seal-monitoring function of the Q1250 scalable guarantee high process reliability and maximum productivity. The module can be quickly and easily converted from one seal variant to the other.

Double gripper module

Two wires can be connected in a crimp with the double gripper module.
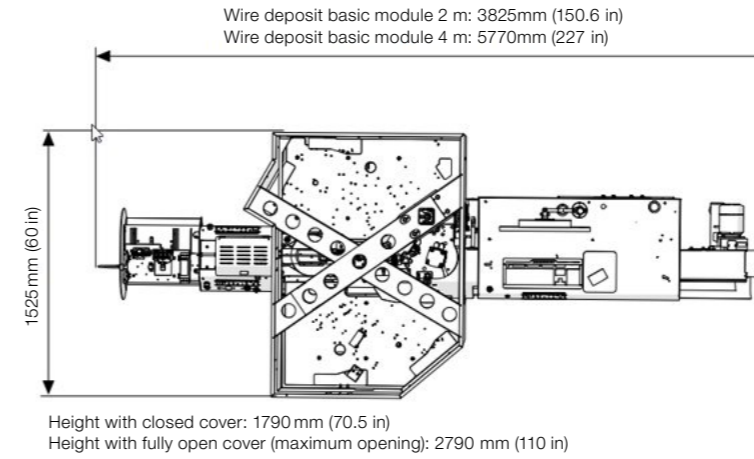
Technical data

Wire cross sections	0.13 – 6 mm² (AWG 26 – 10)* Up to 10 mm² (AWG 8) as an application on request
Wire draw-in speed	max. 12 m/s (39 ft/s)
Outer diameter of wire	max. 5.1 mm (0.20 in.)
Length range	60 – 65,000 mm (2.35 in. – 213 ft.)** optional 30 – 60 mm (1.18 – 2.36 in.)
Full stripping	0.1 – 29.5 mm (0.004 – 1.16 in.) Optional 18 mm (0.71 in)
Half stripping	max. 45 mm (1.7 in.)
Crimp force	max. 22 kN (max 4496 lbf.)
Process modules page 1 / 2	2 / 2
Noise level	< 80 dB (without crimp applicator)
Electrical connection	3 × 208 – 480 V / 50 – 60 Hz / 5.6 kVA
Compressed-air connection	5 – 8 bar (73 – 116 psi)
Crimp/crimp air consumption Crimp seal/crimp seal	< 7 m³/h (247 ft³/h) < 11 m³/h (388.5 ft³/h)
Weight (including 2 crimp modules)	1.30 t (2866 lbs.)

* Very hard or tough wires may not be processable even though within specification.
   Komax offers feasibility tests for prior testing. Processing of larger conductor cross section possible on request.
** Reproducibility ± (0.2% + 1 mm [0.04in])

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03

04

01
Quick Sample Delivery (QSD) as an option for the learing and verification process.
02
Uniform guide tube length supports optimized wire handling for the thinnest wires from 0.13 mm² to 6 mm².
03
The tools are always within reach in the handy, lockable drawer directly under the wire draw-in.
04
The efficient belt drive reliably retracts the wires at a speed of up to 12 m/s. A pneumatic or mechanical jig module is available as an option.

The Alpha 550 G2 offers a wide range of processing options.

Options and accessories

Prefeeders	F1110 • F1150 • Komax 106 • ads 119 • ads 123
Marking systems	Komax 26 hot-stamp markers • Komax inkjet marking systems • Laser labeling on request
Blade holder	Double blade line for V-blade and special blade • Single blade line for V-blade
Process modules	Crimp module C1370/C1360/C1340 • Seal module S1441 • Double gripper module Available on request: Twisting module X1582 • Tinning module X1585 • Sleeve loader • Ferrule module AEH FERRULE • MIL crimp module • Welding module • Ultrasonic compaction
Quality assurance	Integrated crimp-height measurement • Integrated pullout-force measurement • Optical monitoring of stripping, seal and crimp quality Q1250 scalable • Incision monitoring ACD • Material change detection • Material verification • Splice detection • Spark tester Q1140 • Terminal end detection
Storage systems	Base module 2 m (78.7 in) or 4 m (157.5 in) Extension module 2 m (78.7 in) or 4 m (157.5 in)
Accessories	Crimp tool quick-change system STC • Quick-change wire draw-in • Barcode scanner • Center stripping
Software	Komax HMI • Komax MES • MIKO networking interface • WPCS/MIKO converter

Processing examples

Cutting to length		Split cycle for closed terminals	
Cut pulled strands		Inserting the seal	
Full stripping		Twisting/tinning*	
Partial stripping		Sleeve insertion*	
Core processing*		Crimping wire end ferrules*	
Double-jacketed, coaxial and triaxial cables*		MIL crimp*	
Center stripping		Solidify, splice, weld wire ends*	
Crimp		Hot-stamp marking	
Double crimp		Inkjet marking	

* Available on request

KOMAX
SERVICES

Prevent work disruptions, resolve emergencies quickly and sustainably, and customize the machinery to your specific requirements. Maximum performance at predictable cost.

PRESALES
Consultancy + Configuration,
Options to Buy & Use

INSTALL
Acceptance Tests + Ramp-up Support

ADJUSTMENTS
Upgrades & Accessories,
Change Machine Setup

DIGITAL SOLUTION
Komax Connect,
Production Planning (MES/CAO)

OPTIMIZATION
Consulting, Care Optimize

TRAINING
On.Site, On.Line + On.Class Trainings

SUPPORT
MyKomax, Remote Support/Care Remote,
Feasibility Checks

MAINTENANCE
Care Maintain,
Maintenance Kits

REPAIR
Warranty Extension (up to 4 Years),
Field Service & Original Parts
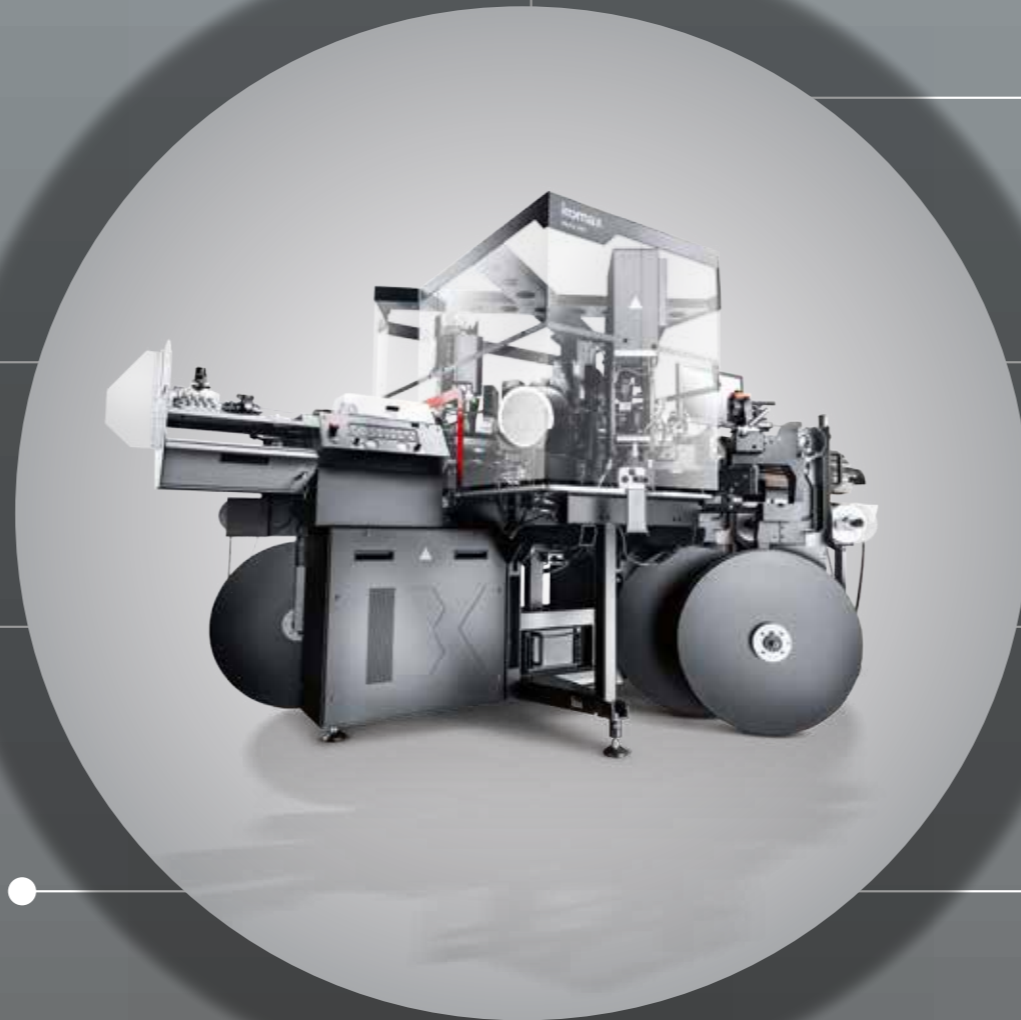
KOMAX SERVICES REDUCE
TOTAL OPERATING COSTS

By using the same or similar parts, we can offer you our high-quality machines and spare parts at an attractive price. Fewer different spare parts also mean significantly simplified spare parts handling and much higher efficiency in maintenance. Your spare parts procurement and storage will be simplified considerably. Service technicians need only familiarize themselves with a limited number of components, which definitely improves maintenance efficiency. We would be happy to conduct an OEE analysis to advise you on how to minimize further downtime and optimize machine productivity.

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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