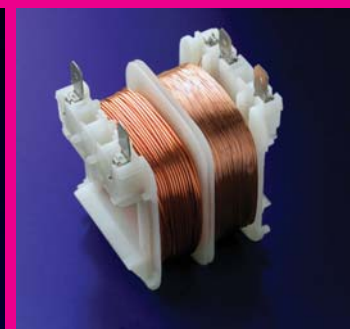
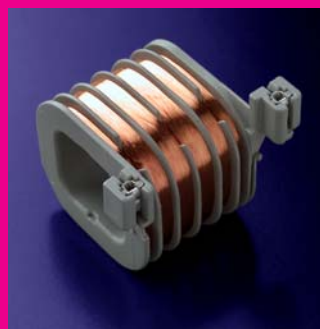
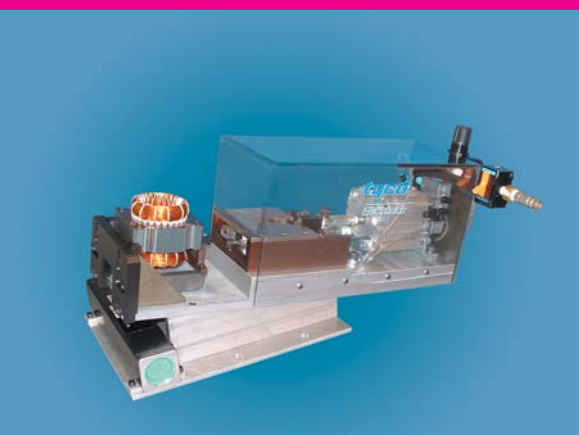


MAG-MATE & SIAMEZE Tooling and Equipment

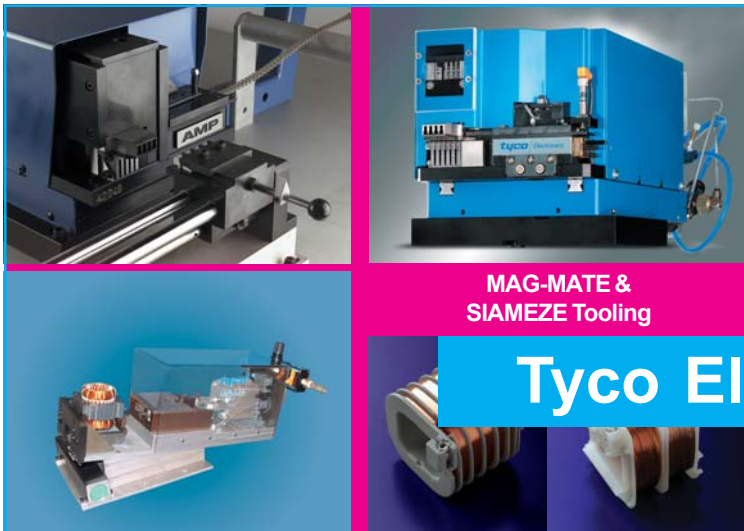


MAG-MATE & SIAMEZE Tooling and Equipment



tyco
Electronics

GATD Global Application Tooling Division



For Magnet Wire Applications Tyco Electronics offers a full selection of MAG-MATE and SIAMEZE Insulation Displacement terminals.

GATD responds to the ever increasing number of applications to process these terminals. Our close contact to the customer is a significant step towards developing and tailoring customer specific solutions.

The machines are designed to apply multiple different contacts and will be customized according to the customer or product specific requirement. They provide gastight, electrically correct connections between magnet wires and contacts using the insulation displacement technique without the prior removal of the lacquer.

Advantages of solderless MAG-MATE and SIAMEZE terminations

- No need to pre-strip the magnet wire
- No wire embrittlements due to solder
- No soldering fumes
- Compact, clean termination
- Perfect for automation
- Fast magnet wire connections:
Up to two per second with dual insertion.

Why choose equipment from Tyco Electronics ?

- Competitive price/quality ratio
- Equipment can be purchased, rented or leased
- Field Service close to the customer / short response times
- Sales Engineers close to the customer / short response times
- Single source Process and Products / system solutions
- Good delivery response
- Local spare parts availability

How are Tyco Electronics products offered ?

Purchase / Rental / Lease

- All equipment can be purchased outright
- Rental / lease terms and other payment options are available on request

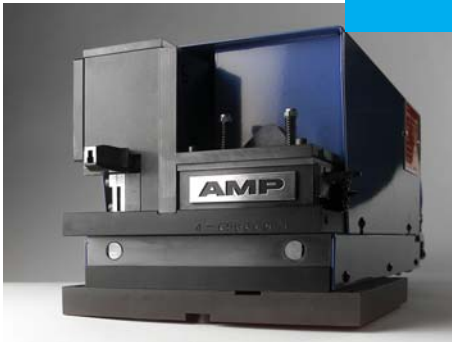
Installation, training and service

- Available at competitive rates through our extensive and experienced field service organization

Spares policy

- Customer will be expected to hold essential spare and wearable parts at their expense
- Tyco Electronics hold other parts for emergency cover and by agreement

MAG-MATE Insertion Machines



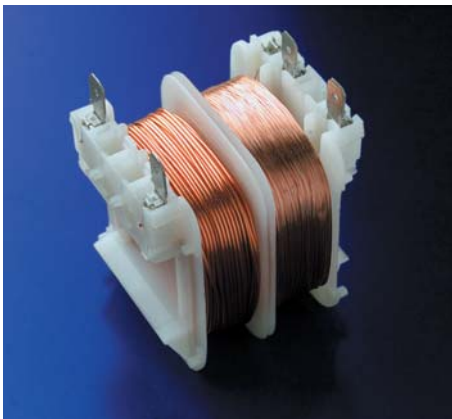
MAG-MATE
Insertion Machine



MAG-MATE Mark II
Insertion Machine

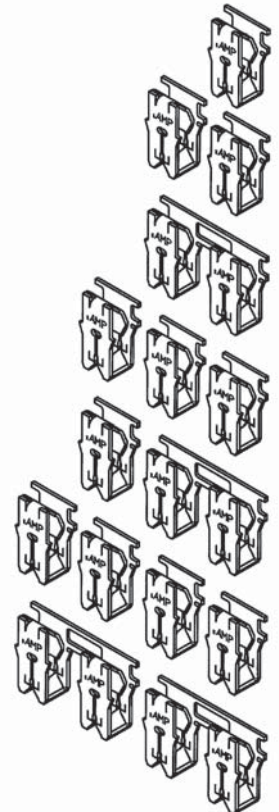
Product Facts

- Single, dual, triple and quadruple insertion
 - Module easily integrates into production lines using simple handshake signals
 - Holding fixture for bobbin can be designed and built by Tyco Electronics or the customer
 - Handles Standard and Mini MAG-MATE terminals through interchangeable insertion modules
 - Load-while-run feature increases productivity
 - Cycle time: 0.9 - 1.3 s, depends on contact type
- The machines can be used as stand alone bench machines or may be integrated in an assembly line.
- A maximum of four contacts can be applied per machine cycle.
- This also gives the opportunity to use the contacts as single contacts or in strip form (bridge function).
- The termination process comprises of the following steps:
1. Contacts are fed from the reel
 2. Contacts are separated from the carrier strip
 3. Contacts are inserted into positioned plastic cavities, which produce a stable electrical termination
 4. Excess magnet wire is trimmed
- The PLC system of the MAG-MATE Mark II Insertion Machine allows the machine to be used in flexible manner for special MAG-MATE appliances.
- The MAG-MATE Mark II Insertion Machine provides following exclusive advantages:
 - Fine adjustment mechanism for insertion depth
 - Microprocessor controlled operation
 - Batch count, total count, error messages, and ready state will be displayed
 - The display helps the operator to step through the machine sequence or manually cycle the machine for set up or easy diagnosis of problems
 - Easy and fast wear part change
 - Slot width detection, optional



Compatible Tyco Electronics Terminals

- Standard MAG-MATE terminals
- Mini MAG-MATE terminals



Possible terminal combinations

MPT-5 Machines for Magnet Wire Coil Termination



The MPT-5 machine inserts a MAG-MATE or SIAMEZE terminal into a customer designed cavity in the coil bobbin or similar magnetwire housing, terminating the wire and providing an I/O terminal or other connection.

The MAG-MATE termination system can create a termination that is very close to the coil.

Dual reel capability of the MPT-5 machine allows insertion of two different MAG-MATE or SIAMEZE terminals, with the capability to alternate between inserting one and two terminals at a time.

Two terminations per second are possible with dual insertion. Loaded with two different terminals, a single MPT-5 machine can cover a range of 8 AWGs.

The MPT-5 machine is available as a horizontal or vertical bench machine or as a discrete module for integration into automated lines. The discrete module also can be used to make a custom horizontal or vertical bench machine. A fixture to hold the coil assembly, which is required for bench operation, can be designed and built by Tyco Electronics or the customer.

The display shows the operating conditions of the machine such as the batch count, total count, error messages, and ready state. The display also lets the operator step through the machine sequence or manually cycles the machine for set up or easy diagnosis of problems.

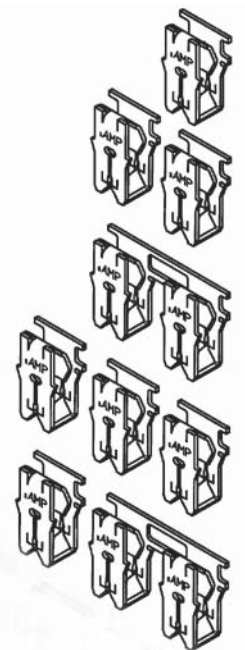
The MPT-5 modules can be mounted to the Rotary Index Table - RIT. See the special description of the RIT in this brochure.

Product Facts

- Single, dual and triple insertion
- Two-reel, two-product capability, with alternating feed capability
- Available as horizontal bench, vertical bench or independent module
- Module easily integrates into production lines using simple handshake signals
- Fine adjustment mechanism for insertion depth (.001 increments)
- Tube-type insertion tooling for standard MAG-MATE terminals
- Microprocessor controlled operation
- Holding fixture for bobbin can be designed and built by Tyco Electronics or the customer
- Options are available for creating bridged and discrete terminals

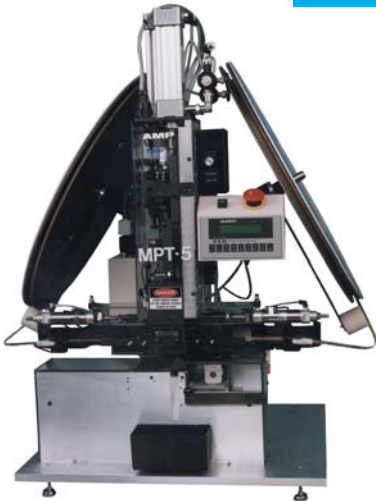
Compatible Tyco Electronics Terminals

- Standard MAG-MATE terminals
- Mini MAG-MATE terminals
- Slim Line MAG-MATE terminals
- SIAMEZE terminals



Possible terminal combinations

MPT-5 Machine for SIAMEZE Termination



Product Facts

- Single, dual and triple insertion
- Two-reel, two-product capability, with alternating feed capability
- Available as horizontal bench, vertical bench or independent module
- Module easily integrates into production lines using simple handshake signals
- Fine adjustment mechanism for insertion depth (.001 increments)
- Tube-type insertion tooling for SIAMEZE Wire-to-Wire terminals & Lead Lok terminals
- Microprocessor controlled operation
- Holding fixture for bobbin can be designed and built by Tyco Electronics or the customer

The MPT-5 S/L machine inserts a SIAMEZE terminal into a customer-designed cavity in the coil bobbin or similar magnet-wire housing, terminating the wire and providing an I/O terminal or other connection.

The MPT-5 S/L machine can insert both the SIAMEZE terminal for magnet wire termination and the Lead Lok terminal to properly align your lead wire connection.

The MPT-5 S/L machine is available as a horizontal or vertical bench machine or as a discrete module for integration into automated lines.

The MPT-5 S/L machine uses three or four air cylinders to feed terminals from one or both reels, cut terminals from the carrier strip, and insert terminals into the cavities.

The display shows the operating conditions of the machine such as the batch count, total count, error messages, and ready state.

The display also lets the operator step through the machine sequence or manually cycles the machine for set up or easy diagnosis of problems.

Compatible Tyco Electronics Terminals

- SIAMEZE Wire-to-Wire terminals
- SIAMEZE Lead Lok terminals

Rotary Index Table



Product Facts

- High-volume rates, up to 600 assemblies per hour
- Load-while-run feature increases productivity
- Fast, simple machine setup and changeover
- Versions to handle in-line, radial, and linear/angularly opposed cavities
- Easy programming through hand-held keypad/display
- Up to 30 insertion sequences stored in EEPROM memory
- Options include
 - Continuity test station
 - Bend station
 - Dual Insertion Modules
 - X- or Y-axis travel
 - Auto-change single/dual insertion modules

The Rotary Index Table is a semi-automatic machine that automatically positions fixtured coils, bobbins, and field assemblies for insertion of MAG-MATE terminals and/or SIAMEZE terminals.

The table is used with MPT-5 insertion modules, which mount vertically above the table and insert terminals fed from a reel.

Modules which are not included as part of the base machine, are available for the entire MAG-MATE termination line, including MAG-MATE terminals, and/or SIAMEZE products.

In operation, the operator places the coil/bobbin/field assembly on the worktable and cycles the machine. The table rotates 90° or 180° to position the assembly under the insertion module for processing.

As each terminal is inserted, the machine automatically indexes to the next insertion position.

While this assembly is being processed, the operator can remove the assembly processed during the previous cycle and load a new coil/bobbin/field assembly.

This load-while-run feature helps maximize productivity.

Options include a continuity test station, a bend station that bends terminals up to 90° after insertion, dual modules that insert two identical or different terminals simultaneously, and X-axis travel.

Compatible Tyco Electronics Terminals

- Standard MAG-MATE terminals
- Mini MAG-MATE terminals
- Slim Line MAG-MATE terminals
- SIAMEZE Wire-to-Wire terminals
- SIAMEZE Lead Lok terminals
- SIAMEZE Posted terminals
- SIAMEZE FASTON Tabs
- SIAMEZE Pins
- SIAMEZE Receptacles

LPT-522 Magnet Wire Termination Machine



Product Facts

- Intermediate to high volume rates, up to 600 assemblies per hour
- Flexible platform accommodates one or two insertion modules as well as secondary application modules
- Version to handle in-line, radial, and linear/angularly opposed cavities
- Programmable linear slide and rotary table
- Easy programming through keypad display
- Palletized fixture system for greater efficiency and production rates
- Microprocessor controlled
- Fine insertion depth adjustment (.001 increments)
- Two-reel, two-product capability with or without alternating feed
- Single, dual separate, and on-the-fly dual common insertion capability

The Linear Product Terminator-522 was designed for intermediate to high volume applications. It is also a very flexible platform since it can accommodate one or two insertion modules and two secondary application modules.

These can include, but are not limited to, special wrap-off post trim, continuity testing with defective coil identification, and tab bending.

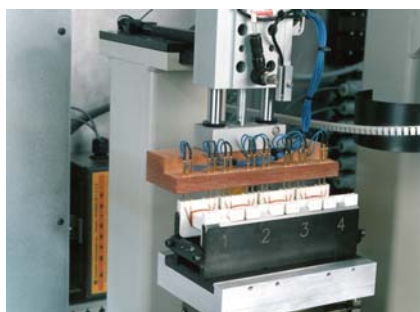
The LPT-522 features our MPT-5 insertion module as well as a programmable linear slide and rotary table system.

The flexible system can process coils that have cavity configurations in a linear pattern, axial pattern, or combination of both.

The LPT-522 machine is of a serial process design, which allows for a unique coil holding fixture. This fixture can be palletized to increase your efficiency and production rates. The palletized system allows the operator to load/unload a pallet of coils while a second pallet is processing on this machine, increasing the machine up time and decreasing non-productive labor.



Rotary Fixture



Optional Continuity Test Station

Magnet Wire Termination Machines in Comparison

Machine Attribute	Horizontal Bench Machine (HBM)	Vertical Bench Machine (VBM)	LPT-522 Insertion Machine	RIT Insertion Machine
Applications	<ul style="list-style-type: none"> • Single row bobbin • Single terminal feed • Bottom trim 	<ul style="list-style-type: none"> • Single/Dual/Axial bobbin • Single or dual feed capacity • Bottom or top trim 	<ul style="list-style-type: none"> • Same as VBM plus: <ul style="list-style-type: none"> - Multiple bobbin - Auxiliary stations • Serial Processing 	<ul style="list-style-type: none"> • Same as LPT, plus: <ul style="list-style-type: none"> - Up to 3 different terminals • Parallel processing
Machine Cost	■	■■	■■■	■■■■
Fixture Cost	■■	■■■	■	■■■■
Complexity	■	■■	■■■■	■■■■
Production Rate	■	■	■■■	■■■■
Cost / Insertion	■■■	■■■■	■■	■

■ = lowest level ■■ = mid level ■■■ = high level ■■■■ = highest level

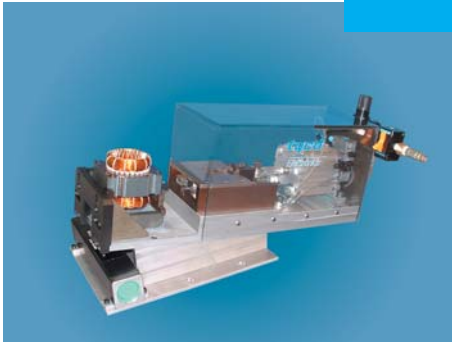
Note:

Rate / Cost Comparison will vary with specific applications.

Compatible Tyco Electronics Terminals

- Standard MAG-MATE terminals
- Mini MAG-MATE terminals
- Slim Line MAG-MATE terminals
- SIAMEZE Wire-to-Wire terminals
- SIAMEZE Lead Lok terminals
- SIAMEZE Posted terminals
- SIAMEZE FASTON Tabs
- SIAMEZE Pins
- SIAMEZE Receptacles

EMT — Loose Piece Entry Level Magnet Wire Terminator



Product Facts

- Capable of inserting loose piece SIAMEZE terminals, Lead Lok, or MAG-MATE terminals
- Quick adjust insertion depth system for easy set-up
- Small foot print
- Inserts loose piece terminals into molded cavities
- Stator accurately located in fixture
- Improved access for manually loading terminals into the tube
- Tube Style design Inserter Bottoms on top of the cavity to provide repeatable insertion depth capability
- Two Handed Actuation System for operator safety
- Fully pneumatic operation and control
- Insert up to 4 terminals simultaneously (max centerline between outside terminals is 3.5" or 88.9 mm)
- Excess wire and wrap-off post trim tooling can be incorporated into the tooling (Siameze terminals may require a secondary trim)
- Total cycle rate for stator/bobbin requiring a single insertion for a single terminal is approx. 8 sec. per cycle or 450 units per hour.

The Entry Level Magnet Wire Terminator tube design is based on the proven MPT-5 termination machine system and incorporates a fine adjust mechanism for easy set-up. The floating tube bottoms on the top of the terminal cavity to create the datum for the insertion depth of the terminal. The insertion depth can be adjusted in .002" [.05 mm] increments quickly and easily.

The EMT provides an unobstructed view of the tube bottom permitting the operator to easily load loose piece terminals.

A two-handed actuation system protects the operators from accidental injury during the insertion process. The open architecture design allows operators to easily load and unload the stators on and off the fixture.

The standard sequence of operation is as follows:

1. Operator loads the appropriate loose piece terminals into the tube.
2. Wound coil is placed in the fixture with magnet wires pulled through appropriate wire slots.
3. Operator initiates insertion cycle by depressing and holding left and right actuation buttons.
4. With actuation buttons depressed, the EMT inserts loaded terminals into the coil and trims the magnet wires if required.
5. Operator releases actuation buttons and removes the terminated coil from the fixture.

Compatible Tyco Electronics Terminals in loose piece form

- Standard MAG-MATE terminals
- Mini MAG-MATE terminals
- Slim Line MAG-MATE terminals
- SIAMEZE Wire-to-Wire terminals
- SIAMEZE Lead Lok terminals
- SIAMEZE Posted terminals
- SIAMEZE FASTON Tabs
- SIAMEZE Pins
- SIAMEZE Receptacles



Product Facts

- Inserts loose piece terminals into molded cavities
- For Wire-to-Wire contacts one tip is capable of inserting the SIAMEZE Wire-to-Wire terminal, Lead Wire and Lead Lok terminal.
- Insertion Tip bottoms on the top of the cavity to provide repeatable insertion depth capability
- Customers generally supply their own fixtures for prototyping or low volume requirements
- Tips, Arbor Presses, and CERTI-LOK Hand Tools are available quickly for prototyping application requirements

The Tooling Tips for loose piece SIAMEZE terminals are available for the CERTI-LOK Insertion Hand Tool part number 380392-1 (not shown) and Arbor Press part number 1655414-1 (shown) for prototyping and low volume applications.

The Arbor Press is suited for prototyping, qualification runs, and low volume applications.

The wound stator or bobbin is loaded into in a customer supplied fixture for proper orientation.

The loose piece SIAMEZE contact is placed in the cavity and the tooling tip is positioned over the terminal.

As the arbor press handle is rotated the contact is pushed into the cavity until the tooling tip bottoms on the top of the cavity.

Of course, the arbor press controls the perpendicular orientation of the tip to the bobbin in a more controlled manner than the CERTI-CRIMP Insertion tool.

The CERTI-LOK Insertion Hand Tool is suited for remote repair applications and is not recommended for production.

The CERTI-LOK Insertion Hand Tool contains an impact mechanism to drive the terminal into the housing until the tip bottoms on the housing.

The operator of the CERTI-CRIMP insertion tool must exercise care to assure that the tip is maintained at the proper orientation during insertion.

Compatible Tyco Electronics Terminals in loose piece form

- SIAMEZE Wire-to-Wire terminals
- SIAMEZE Lead Lok terminals

Further terminals upon request.

Magnet Wire Insertion Module



Product Facts

- Terminals can be inserted into housings with up to 6 different insertion orientations
- The insertion finger is equipped with a spring to position the terminal below the housing surface
- The motion sequence is driven by one pneumatic cylinder only
- Insertion capacity:
60 terminals per minute

The tool can be used on P100 and P200 Insertion Machines and can be integrated into fully automatic production lines.

The feed unit positions the terminal underneath the insertion finger.

The insertion finger picks up the terminal.

The terminal is separated from the carrier strip.

The waste is extracted by suction.

The tool places the terminal 5 mm lateral to the cutting plate and the cutter.

During the insertion stroke both the insertion finger and the terminal are rotated to the required angle and the terminal is inserted.

Due to the sprung loaded insertion finger the terminal can be inserted 0.10 mm below the housing surface and thus compensate for housing-tolerances.

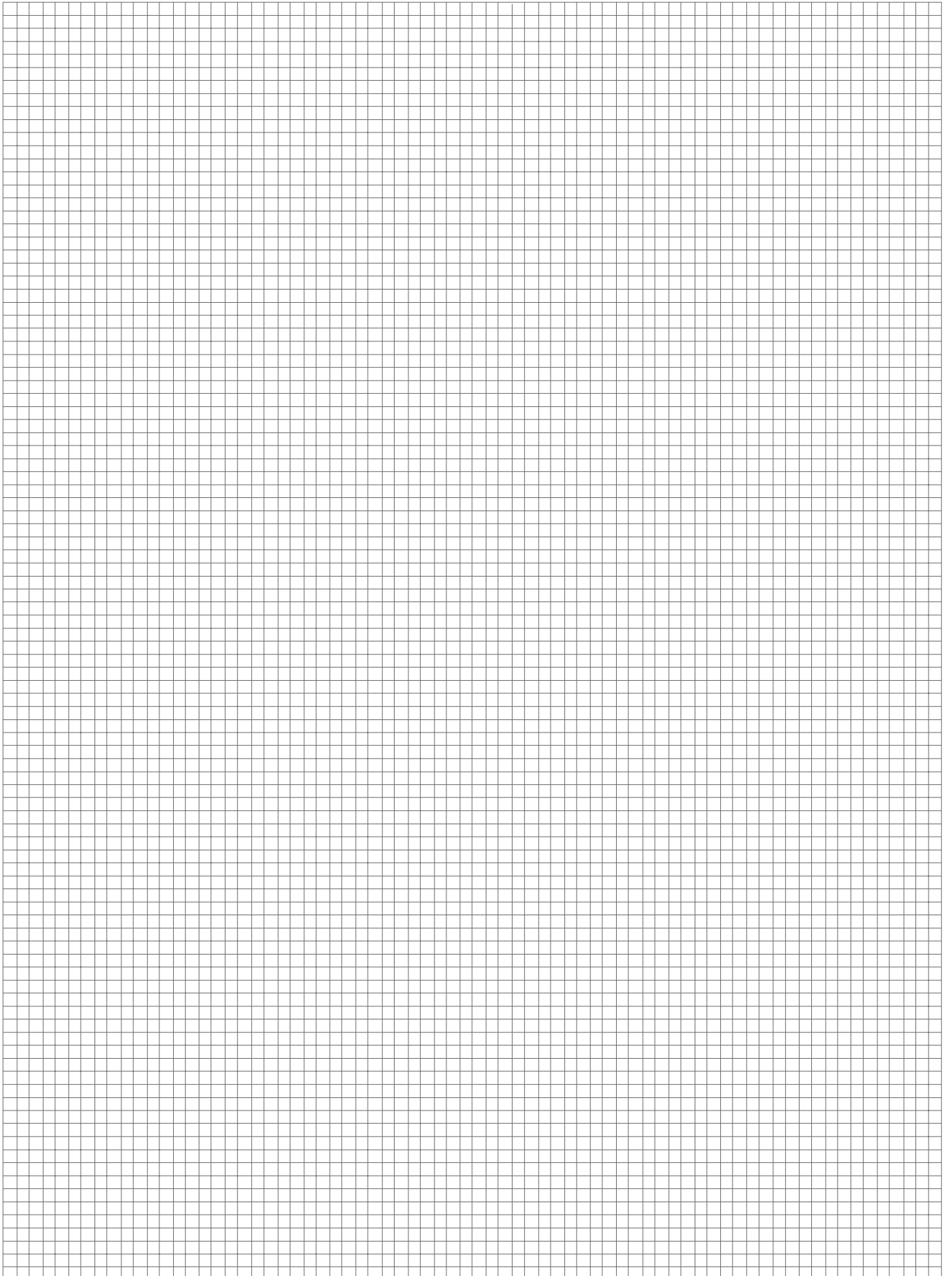
Insertion Modules, compatible to MAG-MATE terminals with different insertion orientations:

PN 1-539937-0
PN 1-539937-1

Compatible Tyco Electronics Terminals

- MAG-MATE terminals
PN 1534686 standard version
PN 1534680 mini version
- SIAMEZE terminals
PN 1601035
PN 1601046

Further terminals upon request.



Austria & EE	+43-1-90560-1235
Benelux	+31 (0)73 6246108
France	+33 (0)1 34 20 87 70 or +33 (0)1 34 20 86 56
Germany	North-East +49 (0) 4206 445652; North-West +49 (0) 4921 942843 South-East +49 (0) 9727 8760; South-West +49 (0) 241 4016813
Great Britain	+44 (0)1237 428 654
Italy	+39 011 4012 562
Scandinavia	+46 (0)850 7250 93
Spain	+34 93 291 0396
Switzerland	+41 (0) 71447 0447

Catalogue Number 1654627
Copyright 2004 by Tyco Electronics Germany

tyco / *Electronics*

GATD Global Application Tooling Division