

Raychem application equipment is designed and engineered specifically for installation of Raychem heat-shrinkable products. These tools provide the optimal heating temperatures, performance, and control features for maximum production efficiency.

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Note: Users should independently evaluate the suitability of the product for their application. Before ordering, check with Tyco Electronics for most current data.

AA-400 Super Heater Compressed-Air Heating Tool

Product Facts

- Automatic power cut-off switch to protect heating element if air flow is interrupted
- Pressure regulator and gauge for adjusting air flow and temperature
- Indicator light that goes on when power is applied to heating element
- Very focused heat
- Wide variety of reflectors available
- Excellent tool for small items and confined areas

Applications

Used for installing heat-shrinkable tubing in multiple applications. Excellent for installing SolderSleeve devices (wire-to-pin applications) and SolderTacts contacts.



Specifications

Utility Requirements	
Electrical	120-V model: 120 Vac, 4 A, 50–60 Hz 240-V model: 240 Vac, 2 A, 50–60 Hz
Air (oil free)	60 psig minimum, 5 cfm

Ordering Information

Model	Voltage	Description	Part No.
AA-400 Super Heater with stand, needlepoint tip, Mini SolderSleeve reflector, and input air filter	120 Vac 240 Vac (CE version)	AA-400-32 AA-400-200	582602-000 281917-000
Accessories and Replacement Parts*	Part No.	Description	NSN Stock No.
SolderSleeve reflector	979646-000	AA-400-94	4940-00-609-4993
Needlepoint tip	979647-000	AA-400-96	4940-00-148-9847
Boot and tubing tip	979691-000	AA-400-101	4940-00-148-9848
Mini SolderSleeve reflector	979663-000	AA-400-102	4940-01-043-7634
Low-flow tip	979672-000	AA-400-103	3439-01-173-8810
Heating Element replacement kit, 120 V	013750-000	AA-400-128	—
Heating Element replacement kit, 240 V (CE)	444179-000	AA-400-228	—
Stand	979649-000	AA-400-09	—
Input air filter	979673-000	AA-400-P-Y-92	—
Air hose replacement kit	156553-000	AA-400-136	—
Gun and air hose replacement kit	238231-000	AA-400-229	—

*Controller is not sold separately.

Available in:	Americas	Europe	Asia Pacific
	■	■	■

Product Facts

- AD-1319-9 comes with two lateral wire clamps as standard
- Secures wire or cable, enabling easy installation of products

Applications

Simplifies and speeds installation of Raychem SolderSleeve terminators or splices and SolderTacts shielded contacts.

Holding Fixture Tool AD-1319-9



Specifications and Dimensions

Dimensions	18 cm [7.07 in] W x 15 cm [5.91 in] L
Weight	300 g [.67 lb]

Product Range Covered

SolderSleeve splices	MiniSeal, CWT-9XXX, D-1744, D-110
Shield terminators	D-100-XX
SolderTacts contacts	D-602-XX

Ordering Information

Model	Description	Part No.
Holding fixture	AD-1319-9	993850-000
38999 size 8 SolderTacts adapter	AT-1319-22	395241-000
38999 size 16 SolderTacts adapter	AT-1319-78	413186-000
Submin SolderTacts adapter	AT-1319-12	993872-000
748 SolderTacts adapter	AT-1319-14	993877-000
723 SolderTacts adapter	AT-1319-19	993938-000
482 size 16 SolderTacts adapter	AT-1319-17	993917-000

Note: Additional tooling for SolderTacts can be found under SolderTacts contacts, see section 8.

Available in:	Americas	Europe	Asia Pacific
	■	■	■

Hand-Operated Crimp Tools AD-1377, AD-1522

AD-1377, AD-1522



AD-1377 Crimp Tool

The Raychem AD-1377 crimp tool fits all MiniSeal crimp barrels. It also meets MIL specification M22520/37-01. A calibration verification gauge, AD-1386, is also available for the AD-1377. The gauge meets MIL specification M22520/39-01



AD-1522 Crimp Tool

The Raychem AD-1522 crimp tool crimps all DuraSeal crimp products. It has a preset crimp depth that provides the optimum combination of tensile strength and insulation integrity in the finished splice.

Ordering Information

Model	Description	Part No.
AD-1377 MiniSeal crimp tool	AD-1377-CRIMP-TOOL	992008-000
AD-1386 Calibration gauge	AD-1386-CALIBRATION-GAUGE	992013-000
AD-1522 DuraSeal crimp tool	AD-1522-1-CRIMPING TOOL	047011-000

Available in:	Americas	Europe	Asia Pacific
	■	■	■

AD-3050-SEAL-TEST-EQUIP

Seal Test Equipment Splice Sealing and Connector Sealing Evaluation – Various Products

Product Facts

- Simple fixture design allows fast sealing test result assisting determination of installation conditions for splice sealing products
- Connector fixture adapter allows connector sealing verification
- Strong portable container allows use in various locations



Applications

The AD-3050-SEAL-TEST-EQUIP is a manually operated pneumatic device, intended for use as a convenient 'in-process' sampling technique for checking sealed splices. Different combinations of in-line or stub splices can be pressure tested in any of the combination of fixtures (8 in total). There is also a facility to allow leak testing of various connectors.

Tyco Electronics UK has seen good correlation between results obtained with the AD-3050 and those obtained through water immersion testing. However testing in accordance with the OEM specification is the only guaranteed way of confirming that the OEM spec is being met. The splice products are located

in clamps which deliver the test pressure. The product is immersed in water and pressure is delivered down the wire(s) to the sealed area. The test result is determined visually by looking for bubbles in the area of the sealing product.

Use of this equipment is described in Tyco Electronics UK procedure, reference No. PIP/017/95. This equipment does not check for poke through i.e. where individual wire strands poke through the installed heat-shrinkable sleeve. Poke through is eliminated by ensuring correct welding and subsequent handling conditions.

Available in:	Americas	Europe	Asia Pacific
	■	■	■

**Seal Test Equipment Splice
Sealing and Connector
Sealing Evaluation –
Various Products**

(Continued)

AD-3050-SEAL-TEST-EQUIP (Continued)

Technical Specification

Pneumatic Supply	6 bar maximum, filtered supply. 2 bar test pressure maximum. (Test pressure typically 0.5 bar)
Machine Cycle Times for seal testing:	Typically 1 minute
Total System Noise:	Negligible noise from air test
Dimensions:	550 x 350 x 215 [22 x 14 x 8 in] (Excludes packing case)
Weight:	4 Kg (8.80 lb) (Excludes packing case)
	9.6 Kg (21.20 lb) (Includes packing case)

Ordering Information

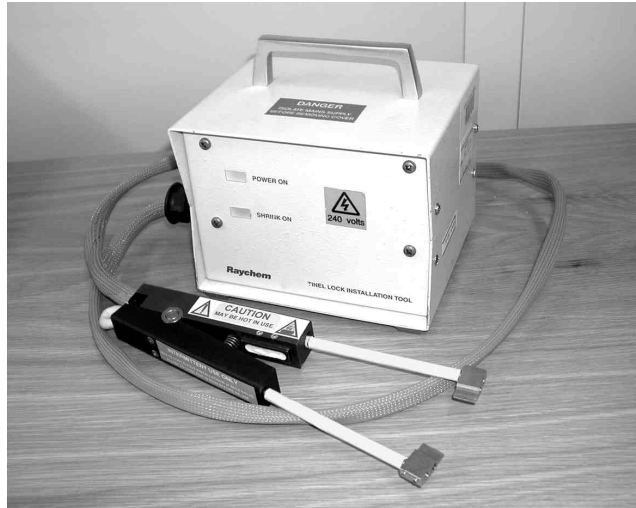
	Description	Part No.
Seal Test Equipment	AD-3050-SEAL-TEST-EQUIP	102119-000

Recommended Spares

	Description	Part No.
Tool Assembly	AD-3050-SEAL-TEST-EQUIP	102119-000
Set of 8 Seals**	AD-3050-SEAL-8-KIT	299155-000
Clamp assembly including seals	AD-3050-SEAL-CLAMP-ASSY	168927-000
Sealing tape	EPDM foam, 6 mm x 9 mm, with acrylic adhesive backing.	—

** Full set of seals

**AD-5000 and RH-396X Tinel-Lock Installation Tool
Tinel-Lock Screened Termination Products**



Applications

The AD-5000-TINEL-ASSY is a manually operated resistance heating tool designed specifically to install Raychem Tinel-Lock ring screened terminations in small batches. Recommended maximum continuous batch is 15, 6 second installations. The standard tool accommodates Tinel Rings from size TR04 to TR24 inclusive.

Various electrode (jaws) types can be used to install other Tinel-Lock ring sizes and types. The operator uses the hand-held tool to install the Tinel-Lock ring in its correct position on screened terminations. The Tinel-Lock ring has two patches of thermochromic paint on the Tinel-Lock ring.

The operator positions the Tinel-Lock ring on the terminations, with at least one of the patches of thermochromic paint visible. The Tinel-Lock ring is then clamped in the jaws to start the installation. Installation is complete when the thermochromic paint turns black.

AD-5000 available in:	Americas	Europe	Asia Pacific
	■	■	■
RH-396X available in:	Americas	Europe	Asia Pacific
	■		■

AD-5000 and RH-396X Tinel-Lock Installation Tool
Tinel-Lock Screened Termination Products (Continued)

Technical Specification

Electrical Supply	220V-240V-50Hz
Machine Cycle Times for Tinel-Lock rings used on typical range of harnesses:	5 to 15 Seconds depending on ring size and braid type on the termination.
Mains Fuse	240 V 2 Amp (Type T anti - surge)
Total System Noise	Silent Operation
Dimensions	340 x 320 x 170 mm [13.4 x 13 x 6.7 in]
Weight	4.2 Kg

Product Range

Tinel-Lock Rings	
STANDARD ELECTRODES FITTED :	Sizes TRO4 to TR24
Conduit Electrodes Fitted	Conduit systems / TR rings on double braid
Square Profile Electrodes Fitted	TC02-TC03 RINGS

Ordering Information

	Description	Part No.
Tinel installation tool (220V-240V)	AD-5000-TINEL-ASSY	411993-000
Also available in the US and Asia Pacific: Resistance heating tool: 915088-01. Use with American Beauty Transformer - #105-A12 (110V) or #105-A12-220V (220V) and foot switch #10519		
Tinel installation tool (120 VAC)	RH-3960-1-TINEL-KIT-120V	173643-000
Tinel installation tool (220 VAC)	RH-3965-1-TINEL-KIT-220V	859855-000

**Recommended Spares —
AD-5000**

Hand Tool Assembly	AD-5000-TINEL-HAND-TOOL	795257-000
Standard Electrodes (TR04 to TR24 RINGS)	AD-5000-TINEL-STD-ELECT	180245-000
Conduit Electrodes (Conduit systems or TR rings on double braid)	AD-5000-TINEL-COND-ELECT	747235-000
Square Profile Electrodes (TC02-TC03 RINGS)	AD-5000-TINEL-SQ-EXT-ELEC	065583-000

**Recommended Spares —
RH-396X**

Hand Tool Assembly	915088-01-TINI-RING-HEATR	170224-000
Foot Switch	IR-500-P-FOOT-SWITCH	993702-000
120 VAC Transformer	TRNSFMR-120V-105-A12-250W	570939-000
220 VAC Transformer	TRNSFMR-220V-105-A12-250W	574557-000

N.B. Electrodes are two per P.C.N.

**AD-5010-Tinel Bench-230V Tinel-Lock Installation Tool
Tinel-Lock Screened Termination Products**



Applications

The AD-5010-TINEL-BENCH-230V is a manually operated resistance heating tool designed specifically to install Raychem Tinel-Lock ring screened terminations in large batches, in continuous operation. The tool accommodates Tinel Rings from size TR04 to TR24 inclusive. Various electrode (jaws) types can be used to install other Tinel-Lock ring sizes and types.

The operator uses the tool to install the Tinel-Lock ring in its correct position on screened terminations. The Tinel-Lock ring has two patches of thermochromic paint to ensure consistent installation.

The operator positions the Tinel-Lock ring on the termination, with at least one of the patches of thermochromic paint visible, and operates the push-button (or footswitch if fitted).

The Tinel-Lock ring is then located in spring-loaded jaws (it is not necessary to clamp the ring manually). The push button or footswitch (if fitted) is then operated to start the cycle, the cable is held in position for the duration of the installation. This is complete when the thermochromic paint turns black. This normally takes between 3 to 12 seconds, depending on ring size, braid type etc. An

ammeter on the front panel shows installation current used. A needle file is provided for periodic cleaning of the electrodes.

Available in:	Americas	Europe	Asia Pacific
	■	■	■

AD-5010-Tinel Bench-230V Tinel-Lock Installation Tool
Tinel-Lock Screened Termination Products (Continued)

Technical Specification

Electrical Supply	230 V 50 Hz
Machine Cycle Times for Tinel-Lock rings used on typical range of harnesses:	3 to 12 Seconds depending on ring size and braid type on the termination.
Mains Fuses (2)	240 V 2 Amp (Type T anti - surge)
Total System Noise	Silent Operation
Dimensions	245 x 305 x 290 mm [10 x 12 x 11 in]
Weight	24 Kg

Product Range

	Tinel-Lock rings
STANDARD ELECTRODES FITTED :	Sizes TRO4 to TR24, conduit systems and TR rings on double braid
Square Profile Electrodes Fitted	TC02-TC03 RINGS

Accessories

	Description	Part No.
Footswitch Kit	AD-5010-BENCH-FOOTSW-KIT	072845-000

Recommended Spares

	Description	Part No.
Standard Electrodes (TR04-TR24 RINGS)	AD-5010-BENCH-STD-ELECT	222899-000
Square Profile Electrodes (TC02-TC03 RINGS)	AD-5010-BENCH-SQ-ELECT	727799-000
Mechanism Assembly (Including electrode set)	AD-5010-BENCH-MECH	924079-000

N.B Electrodes are two per P.C.N.

Ordering Information

	Description	Part No.
Tinel installation tool	AD-5000-TINEL-ASSY	411993-000

CV-1981 and CV-1983 Heavy-Duty Hot-Air Heating Tools

Product Facts

- Robust, double-insulated, heavy-duty unit
- Highest-wattage unit (1600–2260 watts)
- Integral stand that allows use as bench tool
- Safe, quiet operation
- Precisely variable temperature
- Variety of reflectors available
- Easy fixturing for dual opposing heating

Applications

Used for installing dual wall or single wall tubing up to three inches in diameter and for installing Solder Sleeve devices. Closed loop version (PID) also available.



Technical Specification

Electrical Supply	
CV-1981-MK2	120 V and 230 V
CV-1983	120 V and 230 V
CV-1981 PID	120 V and 230 V
Power Consumption	
CV-1981-MK2	1600 W
CV-1983	2260 W/3060 W
CV-1981 PID	1600 W
Total System Noise	
CV-1981-MK2	65dB
CV-1983	65dB
CV-1981 PID	>70dB
Length	
CV-1981-MK2	340 [13]
CV-1983	320 [13]
CV-1981 PID	350 [13]
Weight	
CV-1981-MK2	1.3 Kg [2.90 lb]
CV-1983	1.5 Kg [3.30 lb]
CV-1981 PID	1.4 Kg [3.10 lb]
Air Flow	
CV-1981-MK2	Max 230 l/min
CV-1983	Max 500 l/min
CV-1981 PID	230 l/min

Product Range

All dual wall, single wall and molded part products.
 Various devices products.
 For other Raychem products , contact Tyco Electronics.

Available in:	Americas	Europe	Asia Pacific
	■	■	■

Ordering Information

CV-1981 and CV-1983 Heavy-Duty Hot-Air Heating Tools (Continued)

Equipment	Description	Part No.	Voltage	Hz
CV-1981-MK2	CV-1981-120V1600W-CANMK2	A42716-000	120V	50/60 Hz
	CV-1981-120V1600W-UKMK2	E95798-000	120V	50/60 Hz
	CV-1981-230V1600WMMK2	813914-000	230V	50/60 Hz
	CV-1981-230V1600W-SEVMK2	F25836-000	230V	50/60 Hz
	CV-1981-230V1600-UKMK2	340970-000	230V	50/60 Hz
CV-1983	CV-1983-110V-2260W-UK	441753-000	120V	50/60 Hz
	CV-1983-220V-2260W	773898-000	230V	50/60 Hz
	CV-1983-220V-2260W-UK	985426-000	230V	50/60 Hz
	CV-1983-220V-3060W	538361-000	230V	50/60 Hz
	CV-1983-220V-3060W-UK	231866-000	230V	50/60 Hz
CV-1981-PID	CV-1981-120V-1600W-CANPIDF	839218-000	120V	50/60 Hz
	CV-1981-120V-1600W-UKPID	928826-000	120V	50/60 Hz
	CV-1981-230V-1600WPID	958770-000	230V	50/60 Hz
	CV-1981-230V-1600W-SEVPIDF	434366-000	230V	50/60 Hz
	CV-1981-230V-1600W-UKPIDF	385828-000	230V	50/60 Hz
CV-1983 Barrel Adapter	AD-1962	989172-000	—	—

Accessories

	Application	Part No.
PR-12 reflector	Tubing: 6.3–25.4 mm [0.25–1 in]	991973-000
PR-13 reflector	Tubing: Up to 6 mm [0.25 in]	991963-000
PR-13C reflector	Large Solder Sleeve products	991974-000
PR-21 reflector	Tubing: Up to 25.4 mm [1 in]	991984-000
PR-24 reflector	Tubing/molded parts: 25.4–34.93 mm [1–1.38 in]	991964-000
PR-24A reflector	Tubing/molded parts: 34.93–60.33 mm [1.38–2.38 in]	991989-000
PR-25 reflector	Solder Sleeve products: Up to 7 mm [0.28 in]	991965-000
PR-25D reflector	Solder Sleeve products: 6.3–12.7 mm [0.25–0.50 in]	989523-000
PR-26 reflector	Small Solder Sleeve products	991967-000
PR-33 reflector	Solder Sleeve products: 19.05–25.4 mm [0.75–1 in]	997768-000
AD-1962 adapter for larger-barrel CV-1983	—	989172-000
PR-34 reflector	Solder Sleeve products: 12.0–20.0 mm [0.47–0.79 in]	989111-000
PR-51	Special narrow reflector for molded part transitions (21.5 x 3.5 mm nozzle) [.85 x .14 in]	113069-000

*Note: A42716 supersedes and replaces 538005
340970 supersedes and replaces 923002

HL1802E and HL2005E Steinel General Purpose Hot-Air Heating Tool

Products Facts

- Light weight
- Easy, quiet operation
- Precise variable temperature
- 1500 watts
- Reflectors and stand (optional)
- Wide variety of applications
- CE approved (230 V only)

Applications

Used for installing heat-shrinkable tubings and molded parts, SolderSleeve devices, and SolderTacts contacts.



Specifications

Steinel (120 V) power requirement	120 V, 60 Hz, 12.5 A
Steinel (230 V) power requirement	230 V, 50 Hz, 8.7 A
Rated heater element power	110V - 1500 W/230V-2000W
Weight	850 g [1.9 lb]
Cord length	Approx. 3 m [approx. 8 ft]
Typical temperature output*	49°C to 593°C [120°F to 1100°F]

*The Steinel heating tool is equipped with a variable temperature control. The correct temperature setting of the tool will vary, depending on application characteristics. The recommended procedure is to experiment with scrap materials and start with the lowest temperature range.

Available in:	Americas	Europe	Asia Pacific
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Ordering Information

HL1802E and HL2005E Steinel General Purpose Hot-Air Heating Tool (Continued)

Model /Description	Part No.
HL1802E-Kit-120 V**	289759-000
HL2005E-230V-Euro	910424-000
HL2005E-230V-UK	629014-000
HL2005E-Kit-230-Euro**	849224-000

Accessories and Replacement Parts	Description	Part No.
SolderSleeve reflector	HL1802E-074616	832011-000
HL1802E-ADAPT for use with PR reflectors***	HL1802E-ADAPT-PR	444817-000
Tubing reflector	HL1802E-070519	022611-000
Bench stand	HL1802E-BENCH-STD	717083-000
9-mm-diameter reduction nozzle	HL1802E-070618	930321-000

**Complete with SolderSleeve reflector.

***Selection of PR reflectors can be found in CV-1981/CV-1983 section.

Accessories



Clip-on bench stand (P/N 717083-000) for heating tool. Must be ordered separately.



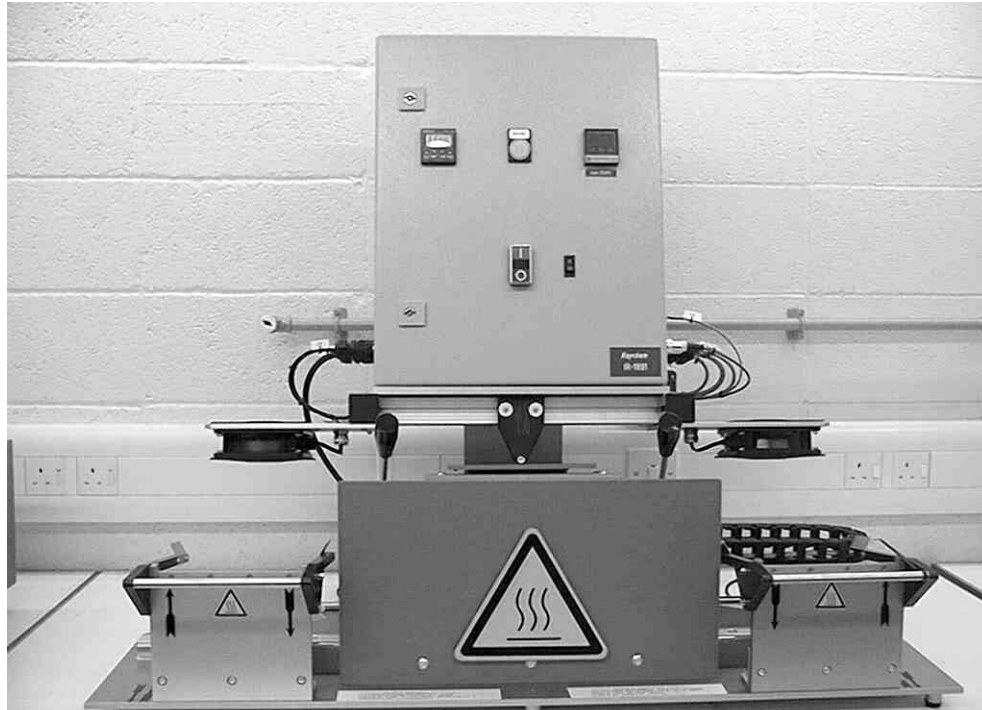
SolderSleeve reflector (P/N 832011-000) for SolderSleeve terminators, SolderTacts contacts, and small-diameter tubing. Comes standard with Steinel heating tool.

Optional tubing reflector (P/N 022611-000) for larger tubing and molded parts. Must be ordered separately.

IR-1891 Shuttle Machine — Twin Workstation Heater for Multiple Installation of Short Length Tubing Products

Product Facts

- Automatic cycle start once heater is manually positioned over product, which gives improved process control (recommended for adhesive lined heat-shrinkable tubing e.g. sealing applications)
- Automatic heating head retraction at end of cycle prevents damage to components
- Multiple product fixture assemblies give increased process rates
- Cooling fan above each fixture assembly maintains holding fixture at an acceptable temperature



Applications

The IR-1891 is suitable for the installation of a range of Raychem heat-shrinkable tubing products onto a variety of small components, e.g. ring terminals, FASTON terminals and small connectors etc. The machine is provided with two work stations and a moveable heating head.

Each workstation is provided with supports for tooling fixtures (which must be specified and ordered separately). These support the workpieces and locate the tubing products. The operator loads the workpieces into the fixtures at one of the workstations, ensures that the tubing product is correctly positioned and then slides the heat head into position before initiating the heating cycle. The operator

then continues with loading/unloading the other work station whilst the heating cycle is taking place.

The IR-1891-220V-Shuttle-Retrn is provided with closed loop temperature control and in addition the heat head is 'locked' into position by use of an electromagnet during the heating cycle.

Once the other workstation has been loaded and the first installation is complete, the heat head is moved into position over the product and the next heating cycle initiated. Heating times vary typically from 3 to 30 seconds depending on the size and type of tubing product. Process rates up to 1200 pieces/hour can be achieved depending on the heating time and the time

taken by the operator to load/unload the workpieces. The installation temperature/power can be varied according to product type/size and required cycle times.

The heating elements, which are continuously energized, are of the infra-red medium wave length type and consist of a coiled resistance wire contained in quartz glass tubes. The closed loop temperature control uses similar elements but having integral thermocouple sensors.

Available in:	Americas	Europe	Asia Pacific

IR-1891 Shuttle Machine — Twin Workstation Heater for Multiple Installation of Short Length Tubing Products (Continued)

Technical Specification

Electrical Supply	230 V Single Phase
Power Consumption	1600 W
Operating Temperature	650°C max
Process Rate	1200 / hour maximum depending on application and operator
Heating Times	3 to 20 seconds depending on application
System Noise	< 70 dB
Dimensions – 508636-000	L1100 x H650 x D500 mm [L43 x H25 x D20 in]
Dimensions – 613148-000 / 167309-000 / 289588-000	L1100 x H900 x D500 mm [L43 x H35 x D20 in]
Base Plate Dimensions 289588-000 / 167309-000	L1040 x D450 mm [L41 x D18 in]
Base Plate Dimensions 613148-000	L1040 x D397 mm [L41 x D16 in]

Product Range

Wide range of Raychem tubing products in particular LSTT, RNF-3000, RNF-100, HTAT, ATUM.
Maximum diameter 20 mm [0.8 in] and maximum length 60 mm [2.0 in]

Ordering Information

Description	Part No.
*IR-1891-220V-Shuttle-Retrn	289588-000
*IR-1891-220V-Retrn-Syl	613148-000

Note: The descriptions given here DO NOT include the supply of the necessary tooling fixtures. These are designed for each individual application.

Accessories

Description	Part No.
Auto-Return-Kit IR-1891-Heater-Return-Kit	184947-000 For use on non-preferred IR-1891-220V-shuttle-std serial nos 400 and above

Note: A range of tooling fixtures designed for previous applications are available. Please contact Tyco Electronics for details.

Infrared Heating Tool IR-550 Mark II

Product Facts

- Lightweight, portable unit with pedestal base for benchtop operation
- Foot switch, so both hands can be free to hold parts
- Commercially available tungsten-halogen lamp
- Fan-cooled housing
- Instant on/off heat
- Viewing window that allows parts to be inspected during installation
- Quiet, focused IR operation

Applications

Used for installing small and large Solder Sleeve devices and SolderTacts contacts.



Specifications

Input power	105–120 V, 50–60 Hz, 4.5 A
Normal lamp life	More than 1000 hours of intermittent use
Weight	Approximately 2.5 Kg [5.5 lb]
Duty cycle	80%, 90-second max. heating times

Ordering Information

Model	Description	Part No.
IR-550 heating tool* (120 V) with RG-2 reflector, viewing window, and foot switch	IR-550-50-MARKII-HT-TOOL	994350-000

Note: For 230V CE-approved version, contact Tyco Electronics

Accessories and Replacement Parts

IR-550 foot switch (included with tool assembly 994350)	IR-550-216	994375-000
RG-6 reflector for large-diameter Solder Sleeve terminations; aperture is 25.4 mm [1.0 in] wide	IR-550-19	994590-000
RG-11 reflector; aperture is 12.7 mm [.5 in] wide	IR-550-41	993695-000
RG-9 reflector; aperture is 9.525 mm [.375 in] wide	IR-550-39	993693-000
RG-2 reflector, included with 994350; aperture is 19.05 mm [.75 in] wide	IR-550-24	993770-000
Lamp (120 V)	IR-1000-P-N-13	993020-000
Optical filter	IR-550-237	118902-000
Viewing window (frame not included)	IR-550-238	007510-000
IR-550 upgrade kit: filter, viewing window, inner reflector, outer reflector	IR-550-240-Refurb	529600-000

Available in:	Americas	Europe	Asia Pacific
	■		■

Product Facts

- Small, lightweight, fan-cooled unit
- Small profile for installation where space is restricted
- Handheld operation
- Focused heat
- Quiet, efficient IR operation
- CE approved

Applications

Used for installing Solder Sleeve devices and SolderTacts contacts.

Infrared Heating Tool IR-1759 MiniRay



*Control box not shown

Specifications and Dimensions

Lamp	Tungsten-halogen
Fan	Nominal power 250 W, 24 Vac, 50–60 Hz
Weight	.73 kg [1.6 lb]
Cable length	2 m [6.5 ft]
Electronic Control Unit	
Main supply	110/230 Vac, 50/60 Hz, 11 A/5.5A universal
Weight	3.4 kg [7.6 lb]
Dimensions	16.3 x 12.2 x 12.2 cm [6.4 x 4.8 x 4.8 in]

Ordering Information

	Description	Part No.
Complete kit consisting of: Handtool/Reflector/Control Box (Manual control, Dual voltage)	IR1759-MK3-AT3130-EDCont	898738-000

Accessories and Replacement Parts

Handtool, standard aperture	IR-1759-MK3/A	986899-000
Handtool, large aperture	IR-3104-MK3/A	035343-000
Control box with time control-230 V	ED-7-001-MK2-230V-50HZ	869233-000
Control box with time control-110 V	ED-7-002-MK2-110V-60HZ	903553-000
Control box with manual control-110/230V	ED-7-CONT-230/110V	684886-000
Battery powered control box	ED-7-Batterybox-230/110V	448969-000
Conversion kit (AE-897) for adapting standard-aperture MiniRay heating tool to wide-aperture MiniRay tool (includes reflector)	AT-313/AE-897	934630-000
Inner reflector (standard aperture)	AE-424	547918-000
Inner reflector (wide aperture)	AE-153	988285-000
Lamp (250 W, 24 V)	NAE-143-3	988208-000
Filter (standard aperture) US	AES-IR1759-100	431468-000 (US only)
Filter (standard aperture) UK	NAE-144-2	988128-000
Filter (wide aperture)	NAE-144-3	988293-000

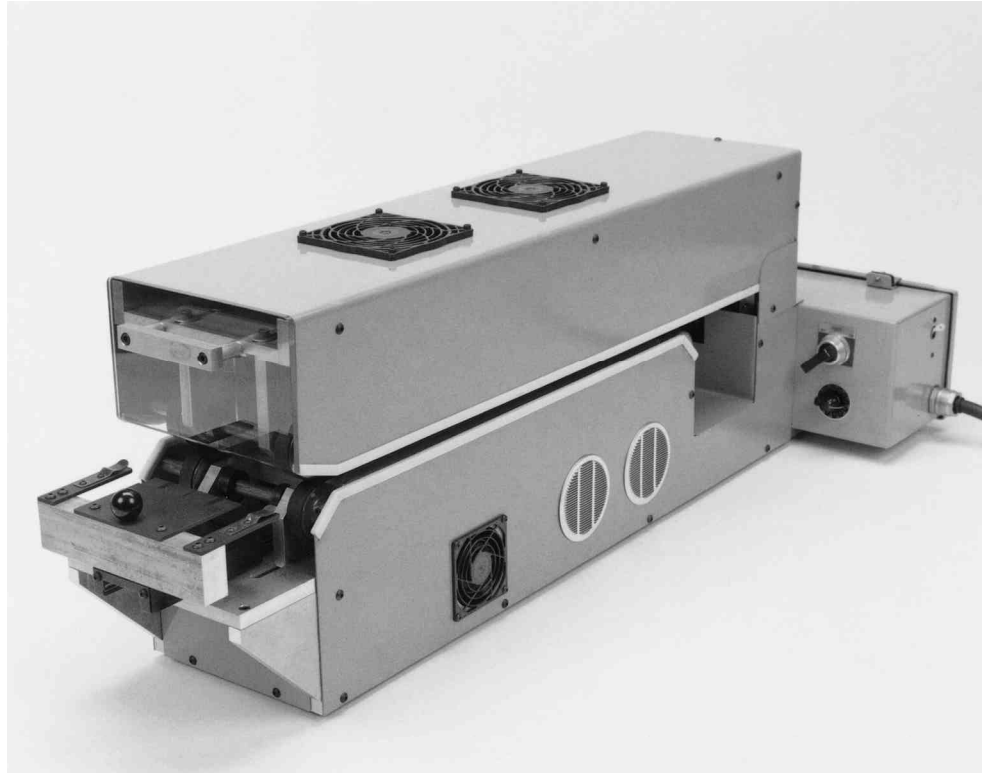
*IR tools are not recommended for use with black wire or cable insulations.

Available in:	Americas	Europe	Asia Pacific
	■	■	■

Model 16B Belt Heater

Product Facts

- **Controlled heating for installation of Raychem heat-shrinkable tubing at rates required for mass production**
- **Controlled repeatable heating: time and temperature settings can be fixed to maintain repeatable installation parameters**
- **Part positioning that is clearly defined and easy to maintain**
- **Operation that requires only minimal skill**
- **Efficient and economical operation, which greatly reduces labor costs. In most cases the throughput rate is limited only by the rate at which an operator can load parts into the heater**



Applications

Designed for processing a broad range of heat-shrinkable tubing products up to 19 [75] in diameter and 101 [4.0] long. Suitable for either single-wall or adhesive-lined tubing. Heating-element temperature is adjustable up to 600°C [1112°F] and the belt speed is adjustable to 2.28 [7.5] per minute. Operator simply positions the heat-shrink tubing over the assembly and feeds it into the process chamber. Heating and cooling take place automatically with the cables or wires securely fixed.

Available in:	Americas	Europe	Asia Pacific
	■		■

Model 16B Belt Heater (Continued)**Specifications and Dimensions**

Electrical	Part No. 827429-000	Part No. 047143-000	Part No. 584313-000
Power requirements	120 Vac, 1 Ø, 50/60 Hz, 20 A	220 Vac, 1 Ø, 50/60 Hz, 15 A, 3-wire	120 Vac, 1 Ø, 50/60 Hz, 15 A, 4-wire
Heating elements	875 W (upper and lower)	875 W (upper and lower)	875 W (upper and lower)

Mechanical

Conveyor belt system	Two sets of pinch belts right and left, four belts total		
Machine dimensions	48 cm [19 in] W x 110 cm [43 in] L x 33 cm [13 in] H		
Shipping dimensions	61 cm [24 in] W x 111 cm [44 in] L x 56 cm [42 in] H		
Machine weight without crate	55 Kg [120 lb]		
Shipping weight with crate	91 Kg [200 lb]		

Tubing Sizes

Inside diameter before recovery	Up to 19 mm [0.75 in]
Length	Up to 101mm [4.0 in]

Optional Attachment

Ring terminal kit	Part No. 060053-000
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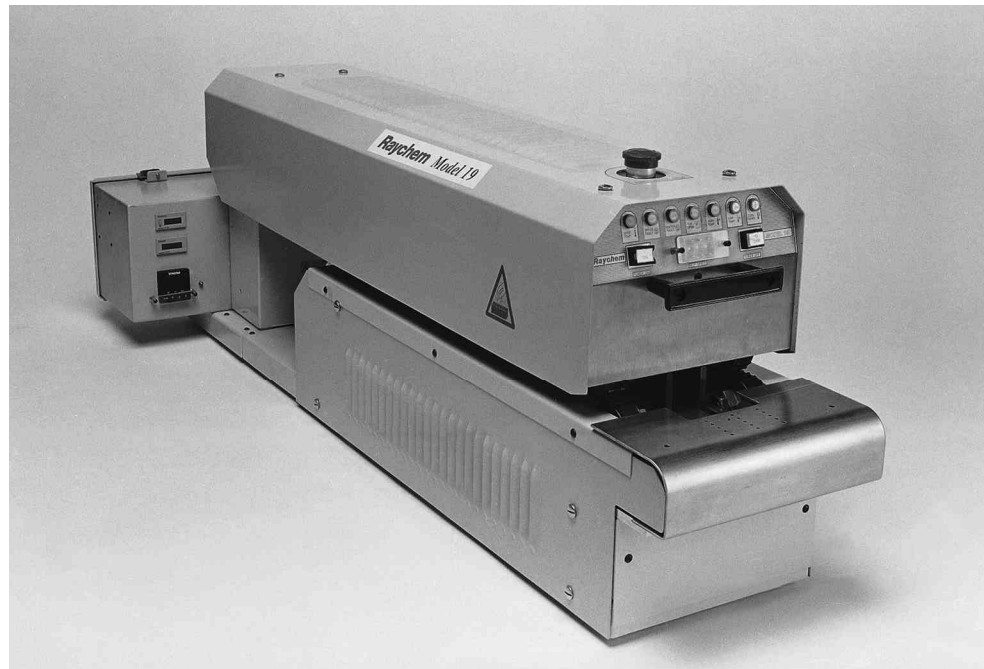
Product Facts

- Closed-loop speed and temperature control
- CE approved for worldwide use
- Adaptable for different applications
- Continuous controlled process

Available in:

- | | |
|--------------|---|
| Americas | ■ |
| Europe | ■ |
| Asia Pacific | ■ |

Model 19 Conveyor Heater for Processing Raychem Heat-Shrinkable Tubing and Termination Devices



Applications

The Model 19 conveyor heater is the latest generation of reliable and versatile process heaters for a wide variety of heat-shrinkable products.

Two sets of timing belts grip the individual assemblies and carry them through a closed-loop infrared heating zone, then through a cooling zone, and deposit the completed assemblies in a collection bin.

The processor was designed to meet the requirements of the European Safety Directives and is CE approved, allowing for worldwide use.

The processor is designed to operate on the following line voltages: 210 to 240 Vac, 20 A, 1 Ø, 50/60 Hz.

Options for this processor include:

- Powered or unpowered extension tables to support long or heavy harnesses.

- Kit for processing ring terminals and end terminations.
- Floor stand with wheels.
- Wider heating elements for tubing up to 178 [7.0] long.
- Narrow heating elements for SolderSleeve devices up to 10 [0.4] diameter and 45 [1.8] long or short length tubing less than 50 mm [2.0].

Product Features
Controlled Heating Zone

The Model 19 has two etched-foil heating elements mounted under a quartz face. Consistent heating chamber temperatures are obtained with a closed-loop temperature controller. There is a lockout on the controller to prevent unauthorized changes.

Speed Control

Consistent speed is obtained with a closed-loop speed controller. The speed is adjusted using a 3-digit thumbwheel on the front control panel. There is

a lockout on the thumbwheel to prevent unauthorized changes.

Minimal Skill Requirements

There are clearly marked guides for aligning the assembly as well as the tubing or device being processed. The operator only has to center the assembly; the grippers carry it through the heating and cooling zone and deposit it into the unloading bin.

Economical Production

The throughput rate is determined by the rate at which an operator can load the processor.

Versatility

The tool description CLTEQ-M19-Belt-htr part number 714529-000 will handle tubing up to 25 [1.0] diameter and 102 [4.0] long. Tubing up to 178 [7.0] long can be handled with the use of tool description CLTEQ-M19-Belt-Htr-6in part number 075131-000. The tool description CLTEQ-M19-Beltheater-SS

part number D43037-000 will handle SolderSleeve devices up to 10 [0.4] diameter and 45 [1.8] long, or short length tubing (less than 50 [2.0]), where applications require a narrow heat width.

Self-Diagnostic Circuitry

There are several "self-diagnostic" circuits that alert the operator if any major component fails or if an unsafe processing condition occurs. A light will turn on and a lockout gate will lift in the entry zone, preventing the operator from loading assemblies until the situation has been corrected.

Other Features Include:

- Emergency stop.
- Automatic cool-down circuit to extend the life of components.
- Lockout on temperature and speed controllers to prevent unauthorized changes.

Model 19 Conveyor Heater for Processing Raychem Heat-Shrinkable Tubing and Termination Devices (Continued)**Specifications and Dimensions****Electrical**

Power requirements	210–240 Vac, 20 A, 1 Ø, 50/60 Hz
Heating elements	Std = 3160 W/Wide = 3320 W/Narrow = 1760 W

Mechanical

Conveyor belt system	Double-sided timing belts, pitch - 9.5 [0.375]
Belt speed	Up to 152 cm/min [5.0/min]
Processor dimensions	53 cm [21 in] W, 135 cm [53 in] L, 45 cm [18 in] H
Shipping dimensions	66 cm [26 in] W, 147 cm [58 in] L, 58 cm [23 in] H
Shipping weight with crate	86 Kg [190 lb]

Tubing sizes

Tubing diameter (max)	25 mm [1.0 in]
Tubing length (max)	102 mm [4.0 in]
	178 mm [7.0 in] wide heating element tool
	50 mm [2.0 in] narrow heating element tool
Work-piece length (min)	240 mm [9.5 in]

Version**Part No.**

Model 19 Standard	714529-000
Model 19 Wide	075131-000
Model 19 Narrow	D43037-000

Model 81CE Discrete Heater

Product Facts

- Closed-loop temperature control for a precise and repeatable thermal process
- Oven dwell time precisely set by a 3-digit thumb wheel digital timer
- Heat output can be controlled to accommodate a wide variety of applications
- Operation requires only minimal skill
- Contains numerous safety features
- Meets the requirements of CE, OSHA and the NEC



Applications

The Model 81CE is a discrete heater that can process large, complex assemblies or other suitable substrates using a wide variety of heat-shrinkable tubing products up to 25 mm [1.0] in diameter and 127 mm [5.0] in length. It is suitable for use with both single wall and adhesive-lined tubing. Two jaws grip the assembly or substrate, carry it into an infrared heating chamber for a user-selectable predetermined period of time, then return the completed assembly back to the start position for removal.

Available in:	Americas	Europe	Asia Pacific
	■	■	■

Specifications and Dimensions

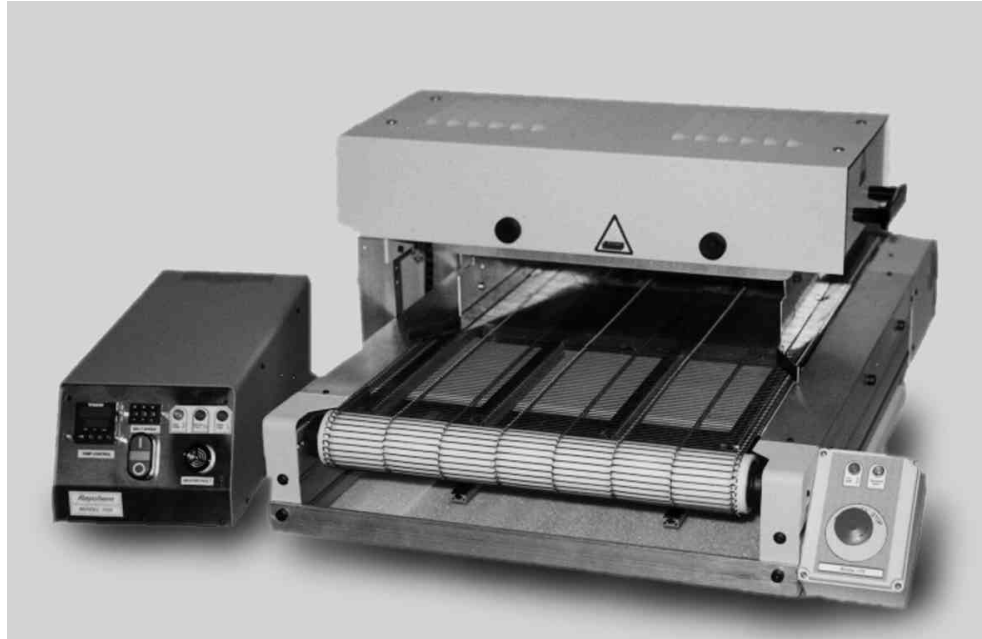
Model 81CE Discrete Heater (Continued)

Electrical	Part No. 071965-000	Part No. 704393-000
Power requirements	120 VAC, 1Ø, 50/60 Hz, 15 A	220 VAC, 1Ø, 50/60 Hz, 15 A
Heating elements	Two 400 watt infrared stamped foil with infrared heating elements, one top and bottom.	Two 400 watt infrared stamped foil with infrared heating elements, one top and bottom.
Timing system	Eagle digital timer, 1 to 999 seconds	Eagle digital timer, 1 to 999 seconds
Pneumatic		
Requirements for jaw traverse	30-40 psi clean shop air	30-40 psi clean shop air
Dimensions		
Control box dimensions:		
Length	432 mm [17 in]	432 mm [17 in]
Width	216 mm [9 in]	216 mm [9 in]
Height	165 mm [7 in]	165 mm [7 in]
Control box weight	7.7 Kg [17 lb.]	7.7 kg [17 lb.]
Heating chamber dimensions:		
Length	380 mm [15 in]	380 mm [15 in]
Width	240 mm [10 in]	240 mm [10 in]
Height	343 mm [14 in]	343 mm [14 in]
Heating chamber weight	18 Kg [40 lb.]	18 kg [40 lb.]
Shipping Dimensions		
Length	610 mm [24 in]	610 mm [24 in]
Width	610 mm [24 in]	610 mm [24 in]
Height	530 mm [21 in]	530 mm [21 in]
Shipping weight	41 Kg [90 lb.]	41 kg [90 lb.]
Tubing Sizes		
Inside diameter before heat	Up to 25.4 mm [1 in]	Up to 25.4 mm [1 in]
Length	Up to 127 mm [5 in]	Up to 127 mm [5 in]

Model 105 Tunnel Oven

Product Facts

- Closed-loop temperature control for a precise and repeatable thermal process
- Conveyor speed precisely set by a 3-digit potentiometer
- Operation requires only minimal skill
- Contains numerous safety features
- Custom length conveyors for longer entry and/or exit sections available
- Optional accessories to customize the tunnel oven



Applications

Table conveyor heater that provides a controlled process system suitable for installing a wide variety of heat-shrinkable tubing products up to 76 mm [3.0] diameter and unlimited in length. Ideally suited for efficient processing of fiber and fabric HFT and both single wall and dual wall tubing. Designed as an integrated modular unit. Assemblies are placed on the entry section of a mesh belt, transported through a heating chamber, across a bank of cooling fans then discharged from the rear of the conveyor.

Available in:	Americas	Europe	Asia Pacific
	■	■	■

Specifications and Dimensions

Model 105 Tunnel Oven (Continued)

Electrical		Part number 955018-000
Power requirements	208/240 VAC, 1Ø, 50/60 Hz, 15 A	
Heating elements	Two 1500 watt infrared stamped foil with black quartz face, one top and bottom	
Operating temperature	Ambient to 650°C [1202°F]	
Effective heating width	356 mm [14 in]	
Dimensions		
Control box dimensions		
Length	515 mm [20 in]	
Width	210 mm [8 in]	
Height	178 mm [7 in]	
Control box weight	7.7 Kg [17 lb]	
Heating conveyor dimensions		
Length	990 mm [39 in]	
Width	685 mm [27 in]	
Height	417 mm [17 in]	
Heating conveyor weight	68 Kg [150 lb]	
Shipping Dimensions		
Length	1346 mm [53 in]	
Width	1168 mm [46 in]	
Height	635 mm [25 in]	
Shipping weight	146 Kg [320 lb]	
Tubing sizes		
Inside diameter before heat	Up to 76.2 mm [3 in]	
Length		
Perpendicular to belt travel	356 mm [14 in]	
Parallel to belt travel	Unlimited	

Installation of Splice Sealing Products Adjacent to Ultrasonic Welder

Product Facts

- Optimized heating element life
- Installation times, temperatures and product size information storage (individual selection)
- Sequenced installations
- Operator key lock/password protection levels
- Automatic heater retraction on mains failure
- Automatic calibration
- RS232 interface allows time, temperature and product sizes for the next installation to be transferred from a remote machine (e.g. an ultrasonic welding tool)
- Machine hours and installation cycle counters
- Software upgradeable to support special applications

RBK-ILS-Processor MkII



Applications

The RBK-ILS-Processor MkII is a semi-automatic unit designed specifically to install splice sealing products onto ultrasonically welded or crimped splice joints used in automotive harnesses.

The tool can operate in several modes:

- Stand-alone — operator sets time and temperature.
- Sequenced — preset times and temperatures can be sequenced automatically (and can also be randomly selected from sequence stored.)

- Automatic — communication with upstream ultrasonic welder can allow time and temperature to be automatically set without operator intervention.

The wire assembly is automatically ejected, with the splice sealing product installed and the joint area sealed, insulated and strain relieved. In-line or stub-type splices can be installed.

The operator is able to efficiently load both machines and so minimize 'dead time'. Installing Raychem splice sealing products immediately after welding gives reduced installation time and earliest possible mechanical protection for the welded joint. The operator positions the splice sealing product centrally over the splice joint and then locates the assembly into the gripper mechanism.

Available in:	Americas	Europe	Asia Pacific

Installation of Splice Sealing Products Adjacent to Ultrasonic Welder

(Continued)

RBK-ILS-Processor MkII (Continued)**Technical Specification**

Electrical Supply	220V-240V-50Hz
Power Consumption	1.7 Amps (Max)
Operating Temperature	550°C [1022°F] (Max) (500°C [932°F] recommended)
Machine Cycle Times for splice sealing products used on typical range of automotive splices	6 to 20 seconds depending on wire size and the number of wires used
Total System Noise	<80dB
Dimensions	390 x 365 x 225 mm [15 x 14 x 9 in.]
Weight	18 Kg [40 lb]

Product Range

RBK-ILS-125 Products	Sizes 1 to 3A
RBK-ILS-85 Products	Sizes 6/1 to 12/3
For Other Raychem Products (eg. RBK-VWS, RBK-ESS....)	Contact Tyco Electronics

Ordering Information

	Description	Part No.
Equipment	RBK-Proc-Mk2-Processor	740331-000
Accessories	Stub splice fixture - RBK-ILS-Proc-Stub-Sp-Fix	981721-000
	Air cooled stub splice fixture - RBK-ILS-Proc-Air-Cool-Kit	843800-000
	8 mm ring terminal fixture - RBK-ILS-Proc-Termfix-08mm	049857-000

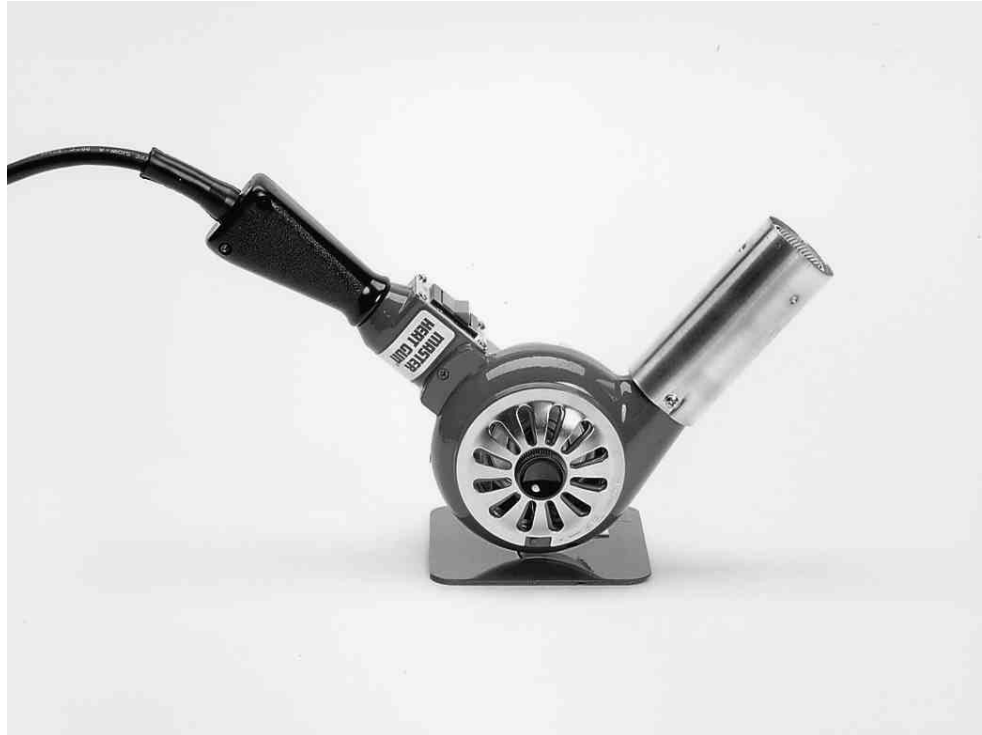
ThermoGun HG Hot-Air Heating Tool

Product Facts

- Stand-mounted or handheld, rugged unit for heavy-duty use
- Built-in stand and turbo-fan-driven blower
- Adjustable side vents
- Adjustable temperature
- 1680 to 2160 watts
- Large reflector size
- High heat output for fast installation

Applications

Used for installing molded parts onto adapters or harnesses and installing a broad range of heat-shrinkable products, including boots and tubing up to three inches in diameter..



Specifications

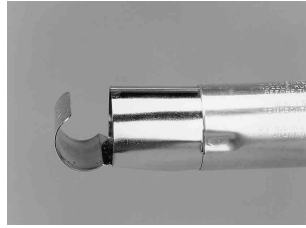
Model	Power Requirements	Input Watts	Temperature Range	CFM*	RPM**
HG-501A	120 V, 60 Hz, 14 A	1680	260°C–399°C [500°F–750°F]	23	1700
HG-502A	230 V, 50/60 Hz, 7 A	1680	260°C–399°C [500°F–750°F]	23	1700
HG-751A-C	120 V, 60 Hz, 18 A	2160	399°C–538°C [750°F–1000°F]	23	1700
HG-752A	230 V, 50/60 Hz, 9 A	1740	399°C–538°C [750°F–1000°F]	23	1700

*CFM = Cubic feet per minute.
 **RPM = Revolutions per minute.

Available in:	Americas	Europe	Asia Pacific
	■		■

Accessories

ThermoGun HG Hot-Air Heating Tool (Continued)



A-160-HG reflector (P/N 991017) for short lengths of tubing up to 19.05 [75] in diameter. Must be ordered separately.



A-170-HG reflector (P/N 991018) for short lengths of tubing 19.05–50.8 [.75–2] in diameter. Must be ordered separately.



TG-23 reflector (P/N 991026) for boots up to 44.45 [1.75] in diameter. Must be ordered separately.

Ordering Information

Model*	Housing Color	Part No.
HG-501A	Red	462047-000
HG-502A	Red	389363-000
HG-751A-C	Red	926935-000
HG-752A	Red	026239-000

Accessories	Tubing Application	Part No.
A-160-HG standard reflector	Diameters up to 19.05 mm [0.75 in]	991017-000
A-170-HG large tubing reflector	Diameters of 19.05–50.8 mm [0.75–2 in]	991018-000
TG-23 small boot reflector	Diameters up to 44.5 mm [1.75 in]	991026-000
TG-24 large boot reflector	—	991027-000

*Complete with bench stand.