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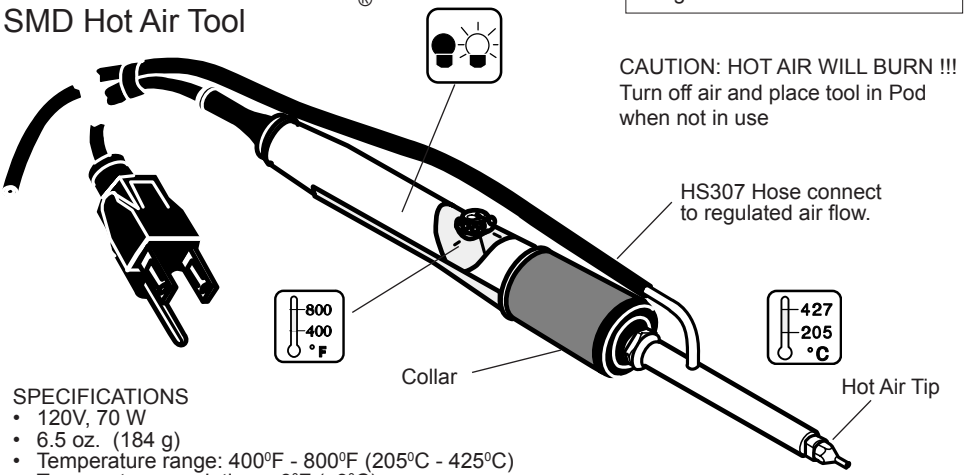
EDSYN INC®

FA069 ATMOSCOPE®

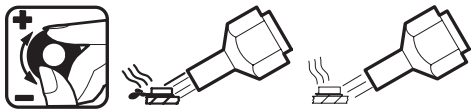
SMD Hot Air Tool

OPERATING REQUIREMENTS:
- 120V, 60 Hz
- Regulated air flow

CAUTION: HOT AIR WILL BURN !!!
Turn off air and place tool in Pod when not in use



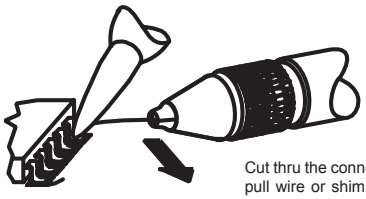
SPECIFICATIONS
- 120V, 70 W
- 6.5 oz. (184 g)
- Temperature range: 400^{0}F - 800^{0}F (205^{0}C - 425^{0}C)
- Temperature regulation: ±6^{0}F (±3^{0}C)
- Voltage leakage from tip to ground less than 2 MV
- Tip to ground resistance less than 2 ohm
- Complies with MIL-S-45743E, DOD-STD-2000-1B, MIL-STD-2000 WS6536E and ESD SPEC, DOD-STD-1686, DOD-HDBK-263.
- UL listed



OPERATION

The 3 very important factors involved when working with the ATMOSCOPE SMD Hot Air Tool are amount of air output, temperature setting and type of Tip used. The key to an effective soldering is to reflow the solder without blowing the solder across the board and thus creating bridges.

1. Have the proper Tip installed.
2. Connect Hose to regulated air source.
3. Plugged-in Tool to a power source and set desired temperature.
4. Turn on the air and adjust pressure .
5. Direct hot air towards the connection until solder melts. Using "SMD helpers" will make your job easier.

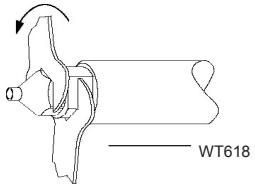


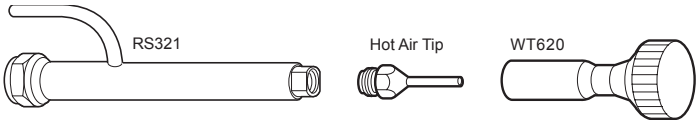
Cut thru the connection with a pull wire or shim blade while hot air melts the solder.

CHANGING TIPS

Efficiency is greatly dependent on choosing the proper tip to meet each application.

1. Turn Tip counter-clockwise by using a WT618 Tip Wrench. (set of 2, the other is to hold the RS321 Retaining Sleeve) or use a WT620.
2. Remove and replace with desired Tip.





REWORKING SMDs

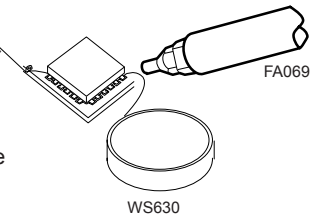
The following techniques are based on the manufacturer's point of view and should only serve as guidelines. It's effectiveness will depend on practice.

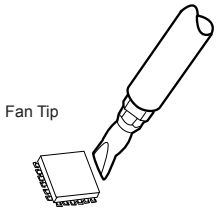
INSTRUCTIONAL VIDEOS AVAILABLE ON 30 DAY LOAN. CALL EDSYN.

METHOD 1

(RECOMMENDED FOR GULLWINGS, LEADLESS CHIP CARRIERS and QUAD I.Cs.)

1. Install the proper Tip.
2. Adjust air output to 3-4 psi.
3. Set temperature to 700°F.
4. Using a WS630 SMD Pull Wire, thread the pullwire under the leads of one side of the SMD and again thread the wire under the leads of the opposite side.
5. Anchor one end of the Pull Wire to an unused hole of the circuit board or maybe tape it securely to the board.
6. While directing hot air to the leads of the first side, pull the wire so that it will cut thru the solder connection.
7. After removing the two opposing side follow the same procedure to desolder the remaining sides.



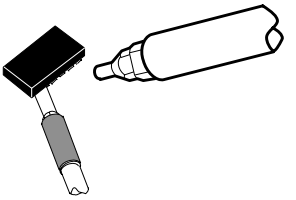


8. To resolder, use a tweezer to hold SMD in place and align the leads with the pads.
9. Use a Fan Tip whose width is as close to the size of the SMD leads as possible.
10. Direct hot air on the leads and allow solder to reflow. Release SMD when solder solidifies.

METHOD 2

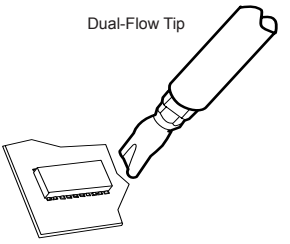
(RECOMMENDED FOR LEADLESS CHIP CARRIERS)

1. Have the proper Tip installed.
2. Adjust air output to about 3-4 psi.
3. Set temperature to 700°F.
4. Heat up one corner of the SMD.
5. When the solder melts, insert the shimblade of SMD helper under the heated area of the chip as if cutting thru the solder connection.
6. While directing hot air ahead of the shim at all times, cut thru the sides of the SMD and lift it up from the board.
7. To resolder, use a Quadra-Flow Tip.



METHOD 3

1. Use a Dual Flow Tip whose width comes closes to the width of the SMD component leads.
2. Adjust temperature to about 750°F.
3. Adjust air output at around 3-5 psi.
4. Position Tool on top of the SMD (air is directed on both sides of the connection) and move back and forth, until solder melts.
5. Lift SMD off the board by using a pair of tweezers.
6. To resolder, use a tweezer to hold SMD in place and align leads with the pad.
7. Direct hot air to the leads and reflow the solder. Release SMD when solder solidifies.



SMD Hot Air Quadra-Flow Tips

ALWAYS USE PD529 or PD529A TOOL PODS

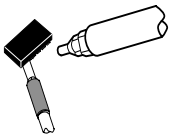
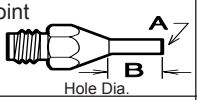
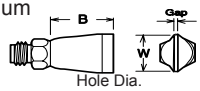
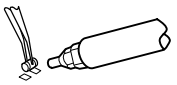
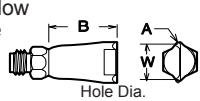
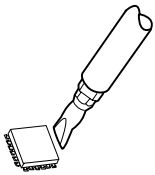
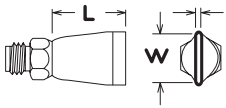
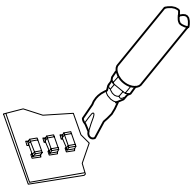
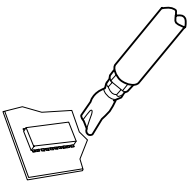
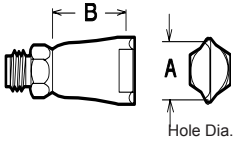
Fractional dimensions are approx.

PART NO.	A x B (in.)	A x B (mm)	FITS PACKAGE (for reference only)
LT494	.45 x 1.05 29/64 x 13/64	11.4 x 26.7	SOJ-40
LT482	.47 x .58 15/32 x 37/64	11.9 x 14.6	LCCC-32R
LT472S	.48 x .48 31/64 x 31/64	12.2 x 12.2	
LT472	.49 x .49 1/2 x 1/2	12.4 x 12.4	LCCC-28
LT456	.50 x .50 1/2 x 1/2	12.7 x 12.7	PLCC-28
LT485	.52 x .64 33/64 x 44/64	13.2 x 16.2	
LT463	.60 x .60 39/64 x 39/64	15.2 x 15.2	
LT468**	.66 x .90 21/32 x 29/32	16.8 x 22.9	QFP-100
LT458**	.70 x .70 45/64 x 45/64	17.8 x 17.8	PLCC44 LCCC-44
LT491**	.71 x .94 23/32 x 15/16	18.0 x 23.9	
LT477**	.75 x 1.00 1/4 x 1	19.0 x 25.4	LCCC-84
LT459**	.80 x .80 51/64 x 51/64	20.3 x 20.3	PLCC-52
LT459-1	Slotted Corners (slot size: 0.125 x 200 depth)		
LT492**	.85 x .85 55/64 x 55/64	21.6 x 21.6	
§ LT460**	1.0 x 1.0 1 x 1	25.4 x 25.4	PLCC-68
§ LT460-1	Slotted Corners		
§ LT488**	1.17 x 1.17 111/64 x 111/64	29.7 x 29.7	QFP-144

*RN432 not required in Application set up
**Comes w/ RN433
§ May need to preheat PCB with hot plates.

See Catalog for SMD Helpers, Pull Wires and other tools used in aiding SMD removal and placing.

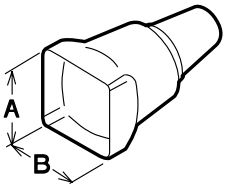
SMD Hot Air Tips

Application	Description	Part No.	Hole Dia.	L	W
	Jet Tip for pin point air flow. 	LT427	.02 in. 1/64 in. (0.6 mm)	.38 in. 3/8 in (9.5 mm)	———
	Short Jet Tip for medium air 	LT432	.04 in. 3/64 in. (0.9 mm)	.06 in. 1/16 in. (1.5 mm)	———
	Turbo Flow for large air flow. 	LT428	.06 in. 1/16 in. (1.5 mm)	.25 in. 1/4 in. (6.4 mm)	———
	Fan Tips use a wide air flow enough to cover one whole side of the SMD. .020 in (.5 mm) 	LT426	———	.30 in. 5/16 in. (7.6mm)	.17 in. 3/16 in. (4.3 mm)
		LT434	———	.46 in. 15/32 in. (11.7 mm)	.23 in. 15/64 in. (5.7 mm)
		LT435	———	.59 in. 19/32 in. (14.9 mm)	.35 in. 3/8 in. (8.9 mm)
		LT436	———	.65 in. 21/32 in. (16.5 mm)	.43 in. 7/16 in. (10.8 mm)
 	Dual Flow Tips blow hot air on both sides of the SMD, not on the SMD. 	LT526	.03 in. 1/32 in. (0.8 mm)	.30 in. 5/16 in. (7.6 mm)	.12 in. 1/8 in. (3.2 mm)
		LT534	.05 in. 3/64 in. (1.2 mm)	.46 in. 15/32 in. (11.7 mm)	.20 in. 13/64 in. (5.1 mm)
		LT535		.59 in. 19/32 in. (14.9 mm)	.28 in. 17/64 in. (7.0 mm)
		LT536		.65 in. 21/32 in. (16 .5 mm)	.35 in. 23/64 in. (8.9 mm)

Apply AN112 or AN122
ANTI-SEIZE COMPOUND
To Heater and Area of Tip Contact.
AN122 comes in syringe dispenser.

SMD Hot Air Quadra-Flow Tips

ALWAYS USE PD529 or PD529A TOOL PODS



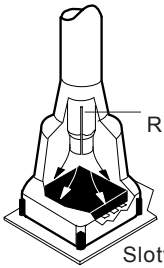


Fractional dimensions are approx.

PART NO.	A x B (in.)	A x B (mm)	FITS PACKAGE (for reference only)
LT448*	.21 x .35 7/32 x 11/32	5.3 x 8.9	SO-14
LT483*	.25 x .43 1/4 x 7/16	6.4 x 10.9	Ceramic DIP 16
LT489	.25 x .78 1/4 x 25/32	6.4 x 19.8	
LT449	.26 x .41 1/4 x 13/32	6.6 x 10.4	SO-16
LT480	.31 x .52 5/16 x 33/64	7.9 x 13.2	LCCC-22R
LT478	.32 x .45 5/16 x 29/64	8.0 x 11.4	LCCC-18R
LT462	.34 x .55 11/32 x 35/64	8.7 x 13.9	PLCC-18
LT470*	.36 x .36 23/64 x 23/64	9.2 x 9.2	LCCC-20
LT487	.36 x .60 23/64 x 39/64	9.1 x 15.2	
LT452	.38 x .52 3/8 x 33/64	9.5 x 13.2	SO-20L
LT481	.38 x .58 3/8 x 37/64	9.5 x 14.6	LCCC-28R
LT455	.40 x .40 13/32 x 13/32	10.2 x 10.2	PLCC-20
LT486	.40 x .60 13/32 x 13/64	10.2 x 15.3	
LT484	.40 x .79 13/32 x 51/64	10.2 x 10.2	SOJ-20
LT450	.42 X .43 7/16 X 7/16	10.7 X 10.9	SO-16L
LT454	.43 x .73 7/16 x 18.6	10.9 x 18.6	SO-28L
LT451	.44 X .48 7/16 X 31/64	11.2 X12.2	SO-18L
LT493	.45 x .85 29/64 x 55/64	11.3 x 21.6	SOJ-32

*RN432 not required in Application set up
**Comes w/ RN433

Quadra-Flow Tips create an "oven-like" condition around the SMD.Increase air output as you increase the size of the Tip.



Slotted corners (LT459-1)

Use WT620 Tip Wrench to install Tips with RN432 or RN433

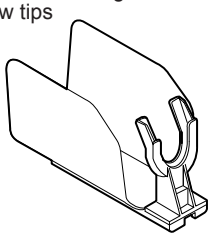


RN432



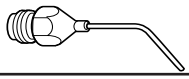
RN433

Use a PD529 to hold Hot Air Tool with large Quadra-Flow tips

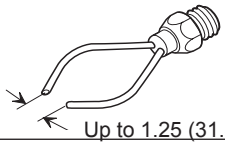


LONER® Hot Air Curl Tips

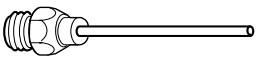
Fractional dimensions are approx.

DESCRIPTION		PART NO.	NOZZLE INSIDE DIA.
HOT AIR CURL TIP For soldering & desoldering SMDs using a curve air flow for hard to reach places. 	JET	LT510	.023 in. 1/32 (0.6 mm)
	SMALL TURBO	LT511	.062 in. 1/16 (1.6mm)
	MEDIUM TURBO	LT512	.073 in. 5/64 (1.9 mm)
	LARGE TURBO	LT513	.101 in. 7/64 (2.6 mm)

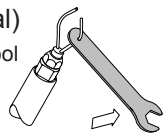
LT572
"DUAL-FLOW ADJUSTABLE"
Hot Air Tip
Hole Dia.= .04 (1.0 mm)

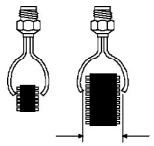


LT571
"LONG-FLOW BENDABLE"
Hot Air Tip
Hole Dia.= .04 (1.0 mm)
Nozzle Length= 1.10 (27.9 mm)



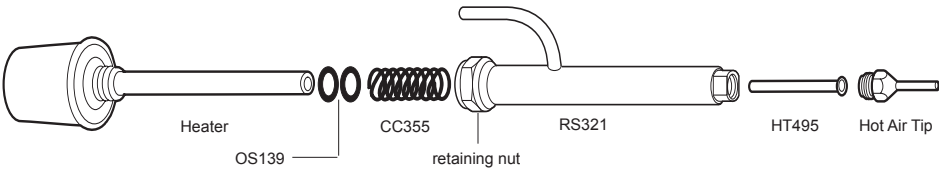
WT622(optional)
With a Bending Tool the Nozzles of Dual Flow Adjustable & Long Flow Bendable Tips can be adjusted to direct hot air to accomodate most SMD sizes.





TOOL MAINTENANCE

- Replace cracked Hose.
- Make sure HT495 Hot Tube is not clogged.
- Replace worn-out OS139 O-rings.



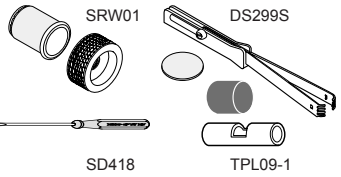
TROUBLESHOOTING

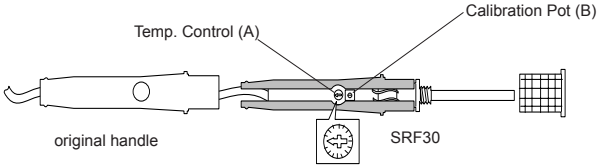
Symptom	Cause	Remedy
Tool does not heat up.	a) Open Heater element.	a) Send to Factory.
Weak or no air output.	a) Leak along the air lines and O-rings inside Heater assembly. b) Clogged RS321 or clogged Tip. c) Dirty CC355 Chamber Coil.	a) Make sure all connections are properly installed. Replace cracked hoses and O-rings. b) Clean Air passages in the RS321 and Tip. c) Clean CC355.

TEMPERATURE CALIBRATION

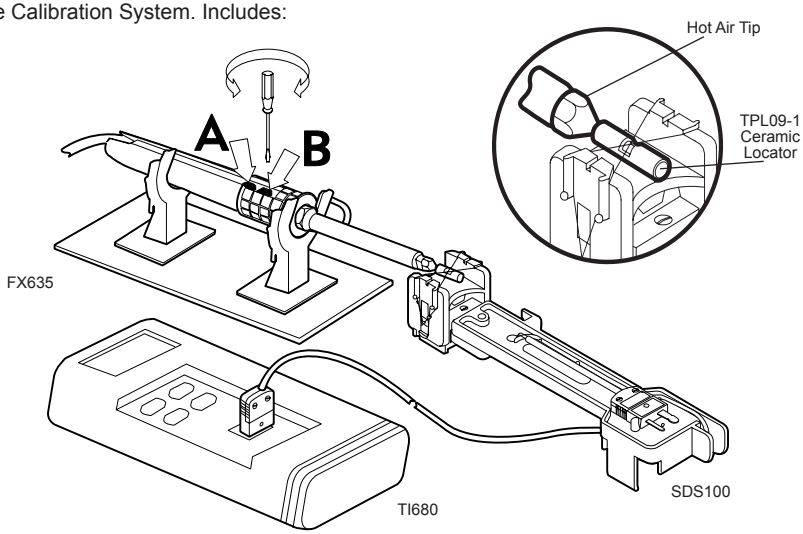
1. Use the DS299S to remove the temperature control knob. Remove RS321 sleeve. Turn temp. control (A) so arrow points to cord.
2. Use the SRW01 to pull out heater assembly, PCB & power cord from handle. Leave enough power cord slack to install SRF30.
3. Place heater assembly, PCB & power cord inside SRF30. Install RS321 and connect to air source.

Items Needed
- SRW01
- DS299S
- SRF30
- MS412
- TPL09-1
- SD418





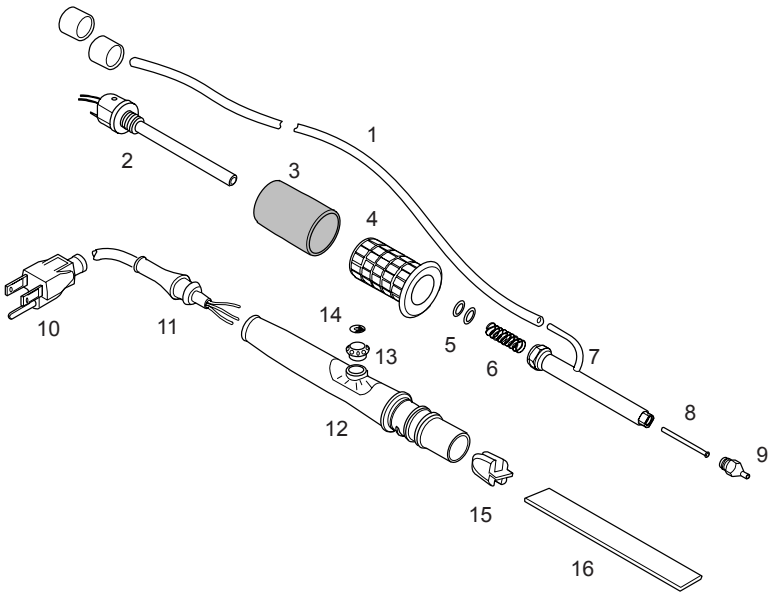
4. Follow set-up shown using of the MS412 Temperature Calibration System. Includes:
   - •TI680
   - •SDS100
   - •FX635



5. Insert the hot air tip inside the TPL09-1, place the center of the thermocouple wire of the SDS100 inside the slot of TPL09-1 locator. Use only CLEAN thermocouple wires.
6. Turn on air, adjust to 5 scfh airflow.
7. Turn temp. control (A) fully clockwise. Adjust calibration pot (B) until reading stabilizes at 850°F.
8. Assemble unit in original handle.

FA069 ATMOSCOPE® SMD HOT AIR TOOL
SPARE PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	HS307	Hose, Low Static Silicone (Sold Per Foot)	5 ft.
2	SR102	120 V Hollow Heater Assembly for FA069	1
3	SR081	Vinyl Finger Grip	1
4	RC349	Threaded Retaining Collar	1
5	OS139	O-Ring, Silicone, for FA069 (Set of 2)	1 set
6	CC355	Chamber Coil for FA069 Hot Air Tool	1
7	RS321	Retaining Sleeve for FA069 Hot Air Tool	1
8	HT495	Hot Tube for FA069 Hot Air Tool	1
9	LT428	LONER® S.M.D. Hot Air Turbo Flow Tip	1
10	SR028	Power Cord, 3-Prong, 120 VAC	1
11	SR029	Boot for Power Cord	1
12	SR030	Clear Handle for Model 930	1
13	SR031	Knob, Temperature Control for Clear Handle	1
14	SR111	Logo, 3/8" Dia. Aluminum, Self Adhesive	1
15	SR032	Cord Strain Relief	1
16	SR033	Circuit Board, Model 930	1



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