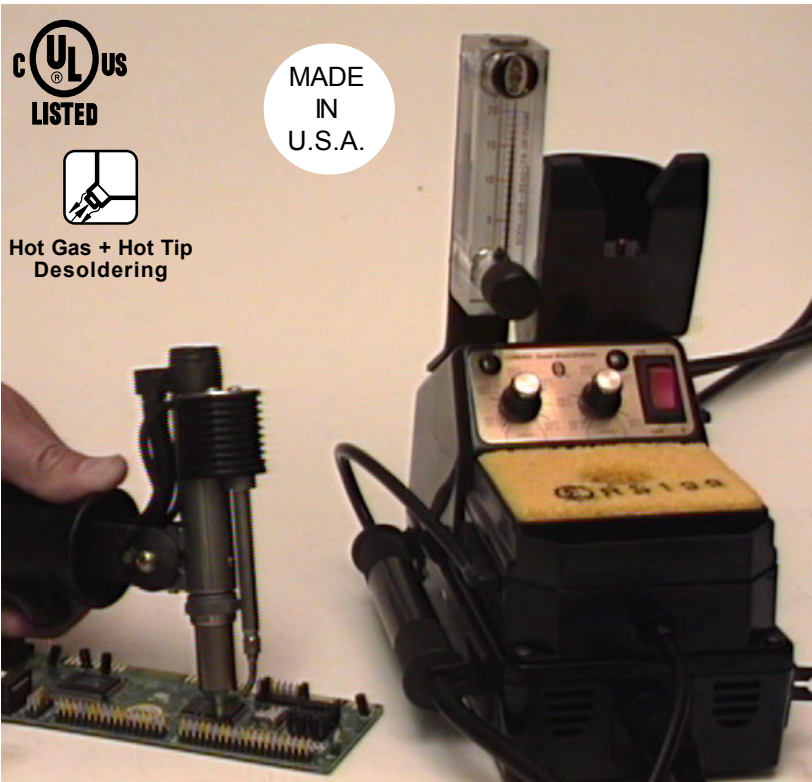


# EDSYN<sup>INC</sup>®

# TSX70 *SOLDAVAC*® SMT Reflow Vacuum Workstation

ï COMPLIES WITH MIL-S-45743E, MIL-STD-2000, DOD-STD-2000-1B,  
WS6536E AND ESD SPEC, DOD-STD-1686, DOD-HDBK-263



instruction manual

# **TSX70**

## ***SOLDAVAC***®



Static Safe

**Solder-Handling Station**  
*(Hot Gas & Hot Tip Desoldering)*

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- 5. Connection & Hook-up
- 6. Operation
- 7. Hand Tool Adjustments
- 7. Tip Replacement
- 8. Cleaning & Maintenance
- 9. Calibration
- 10. Spare Parts Hand Tool
- 12. Spare Parts Power Supply

# EDSYN<sup>INC</sup>®

# TSX70

# *SOLDAVAC*®

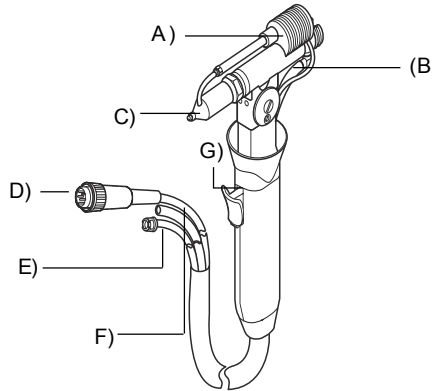
**Solder-Handling Station**  
*(Hot Gas & Hot Tip Desoldering)*

## SPECIFICATIONS

- 120V, 60 Hz, 39W - 330W
- Weight; **Power Supply:** 6.2 lbs. (2.8 kg)  
**Hand Tool:** 13.5 ozs. (383 g)
- Temperature range of 400 °F to 800 °F (205 °C-425 °C).
- Flow is 22 SCFH (11 Li/min) @ 80 psi, 19 SCFH (9 Li/min) @ 65 psi.
- Voltage leakage from tip to ground, less than 2 MV.
- Tip to ground resistance, less than 2 ohms.
- COMPLIES WITH MIL-S-45743E, MIL-STD-2000, DOD-STD-2000-1B WS-6536E and ESD SPEC, DOD-STD-1686, DOD-HDBK-263.

# Hand Tool FEATURES

- A) Gas Heater.
- B) Desoldering Head Housing.
- C) Desoldering Tip.
- D) 24V Power Input, turn clockwise to engage.
- E) Gas Connector, turn clockwise to engage.
- F) Vacuum Line, connect to AFX73.
- G) Trigger, activates vacuum.
- H) Cleaning Tool.

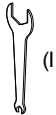
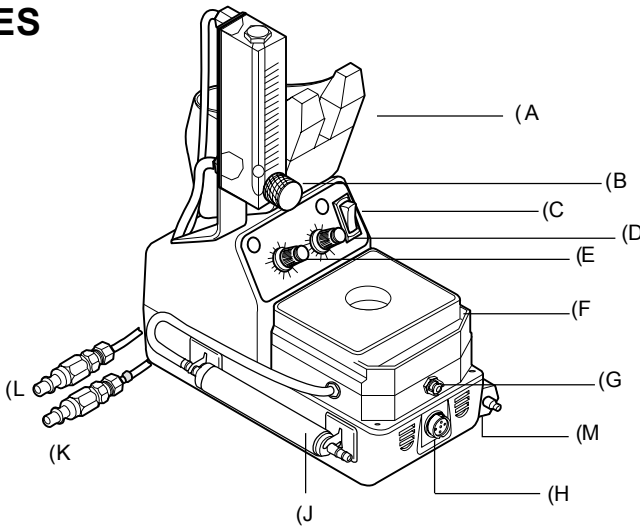


**DAMAGED CORD SHOULD ONLY BE REPLACED BY AN EDSYN-CERTIFIED TECHNICIAN**

*Tool should be placed in Holder when not in use.*

*Hot Gas flow will stop if Tool is placed in the Holder.*

# Power Supply FEATURES



- A) Tool Pod, equipped with micro-switch to activate gas & vacuum.
- B) Gas Flow Control in standard cubic feet per hour delivered to Desoldering Tip.
- C) Power Switch, to activate WorkStation.
- D) Temp. Control Knob, Heater for Desoldering.
- E) Temp. Control Knob, Heater for Gas.
- F) **SH232** Sponge Holder, with cleaning sponge.
- G) Gas Output, controlled flow.
- H) Power output, 24V, controlled
- I) **WT623** Tip Wrench
- J) **AFX73** Filter, NOTE VACUUM FLOW DIRECTION.
- K) Gas Input, color coded sleeve.
- L) Shop air input.
- M) **CSX70** Cleaning Tool

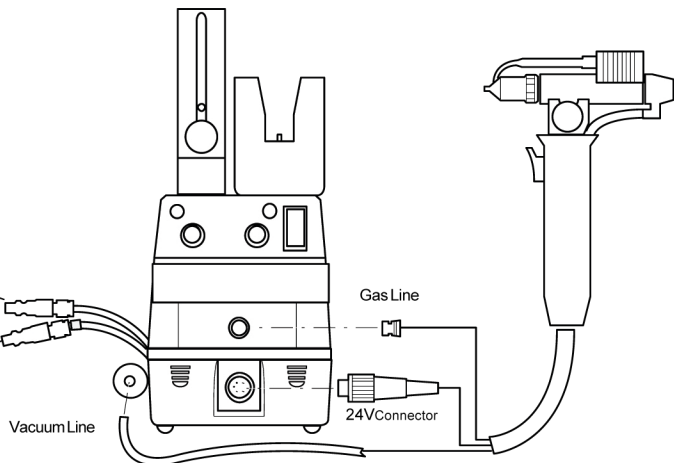


# CONNECTION & HOOK-UP

Hand Tool Connectors must be turned clockwise to engage.

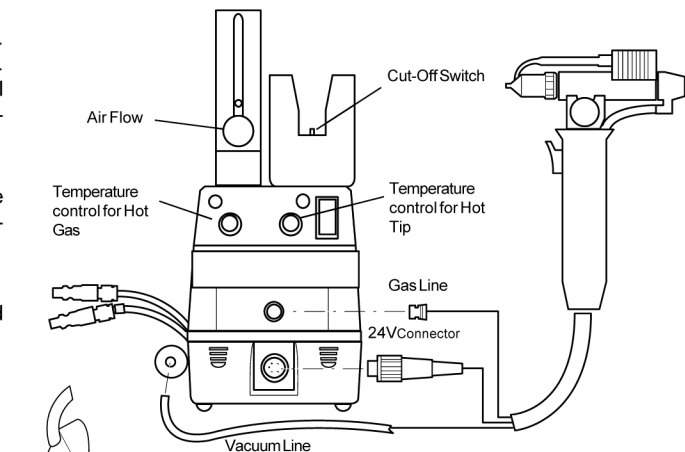
Ideal air pressure input:  
**60 to 90 psi**  
**413.7 - 620.5 KPA**  
**4.1 - 6.2 bar**

Inert Gas Input  
*(color-coded sleeve):* **13**  
**psi max.**  
**5 SCFH**  
**2.4 Li/min.**



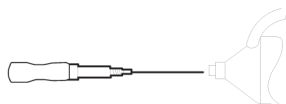
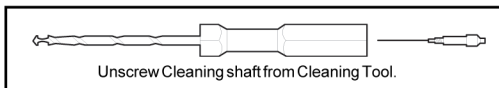
# OPERATION

1. Turn on Power Switch. Heater indicator lights up. Hot Gas & Vacuum will activate if Tool is removed from the Holder.
2. Set both temperature controls to desired temperature. i.e. 600°F (315°C).
3. Adjust air flow to desired setting (3 to 5 SCFH).
4. Place Tip close to working area.
5. When solder reflows, press Trigger to desolder.



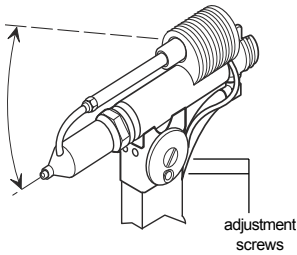
## POINTERS:

- ÿ USE CLEANING SHAFT TO REMOVE ANY OBSTRUCTION IN THE TIP.
- ÿ ACTIVATE VACUUM IN PULSES RATHER THAN CONTINUOUS SUCTION.

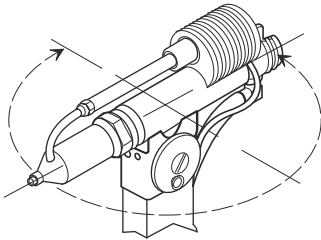


# ADJUSTMENT

Should be done while the tool is cool.



To tilt the Head Assembly, loosen (2) Adjustment Screws. Tilt the Head Assembly to desired position and retighten screws.



While Tool is in the Pod, push handle down and twist.



Twist until it locks into 1 of it's 4 positions. Twisting counter-clockwise will permit a 180° turn. Twisting clockwise will permit a 90° turn.

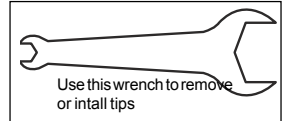
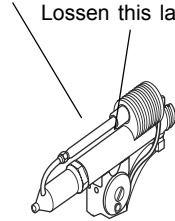
**Note:** Head Assembly does not make a full 360° turn

# CHANGING TIP

## REMOVING:

Loosen this first

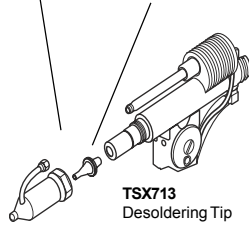
Loosen this last



## INSTALLING:

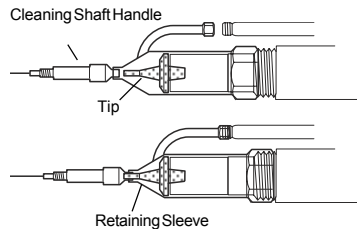
Tighten this last

Tighten this first



## Before tightening the Retaining Sleeve

Check tip alignment by inserting the end of the Cleaning Shaft handle inside the tip, then tighten Retaining Sleeve

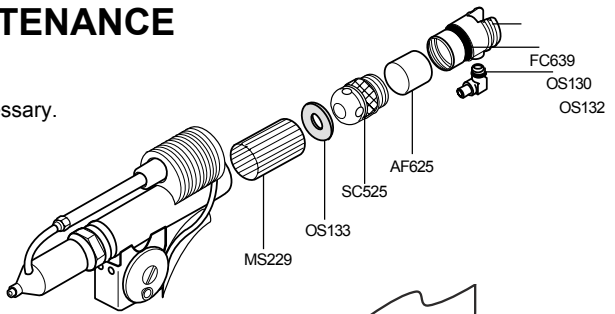


IT IS RECOMMENDED FOR THE OPERATOR TO REMOVE AND INSPECT THE TIP DAILY. REPLACE TIP THERE IS ANY SIGN OF CORROSION. DOING THIS WILL ALSO PREVENT THE TIP FROM SEIZING ON TO THE HEATER.

# CLEANING & MAINTENANCE

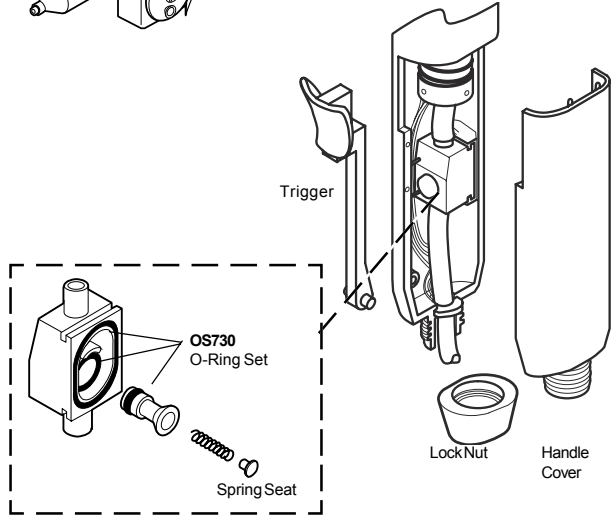
1. Replace AF625 Filter.
2. Clean SC525.
3. Clean or replace OS133 if necessary.
4. Replace MS229.
5. Replace worn-out Tip.

INSPECT OVER-ALL TIP  
CONDITION REGULARLY.



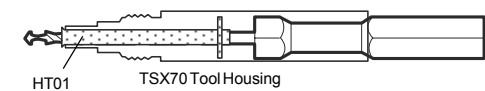
## O-Rings Replacement inside Valve Assembly

- a) Unscrew Lock Nut at the end of the Tool Handle.
- b) Remove Handle Cover.
- c) Slide out Valve Assembly while placing your finger over the Spring Seat. **BE CAREFUL NOT TO LET THE SPRING AND THE SPRING SEAT SHOOT OUT FROM THE HOUSING**
- d) Clean all parts with **alcohol only**.
- e) Replace **OS730** O-Ring Set (set of 3).
- f) Lube new O-Rings with **OL111** O-Ring Lube.

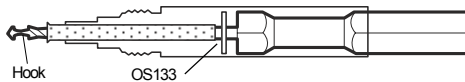


**Make sure wires and hoses are not pinched or kinked.**

## HT01 & OS133 Replacement Cleaning the Desoldering Head Housing



To clean wall of Housing, Remove Mica Sheet.  
Rotate Cleaner while pushing in.

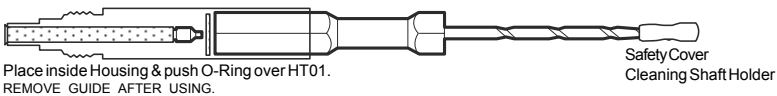


Push Cleaner all the way to remove HT01 Tube.



Remove O-Ring by using the Hook.

Place Cleaning Shaft & Tip/O-Ring Guide in HT01 Tube.

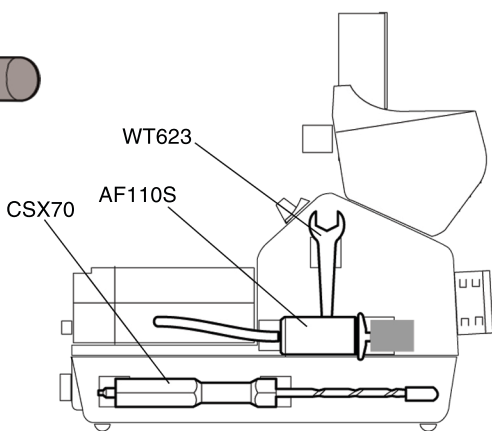
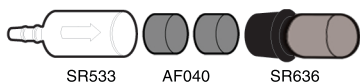


Place inside Housing & push O-Ring over HT01.  
REMOVE GUIDE AFTER USING.

# CLEANING & MAINTENANCE

## AF110S Silencer

Install as shown

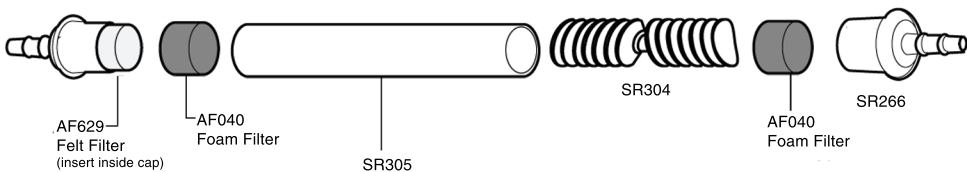


## AFX73 Maintenance

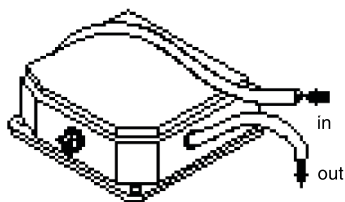
Replace dirty Filter Element.  
Clean SR304 and SR305 with alcohol.



Tip Wrench can be used to remove SR266 filter cap.



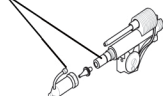
If flux gets in the venturi, disconnect the AFX73 and AF110S. Flush the venturi with alcohol. You may need to pump the alcohol through the venturi.



# CALIBRATION

NOTE: The TI680 has only one input jack. Calibrate each heater separately.

Remove these then install thermocouple probes.



## For heater A:

1. Using option 1, turn on power and set **left** Temperature Control Knob to 400°F (205°C). Allow heater **A** to warm up.

2. Adjust **LO**-Temp. Calibration Pot on the left side of the station so the TI680 Meter will read 500°F (260°C).

*If you are using option 2, adjust pot so meter will read 640°F (338°C)*

3. Set Temperature Control Knob to 800°F (427°C).

4. Adjust **HI**-Temp. Calibration Pot so the Meter will read 900°F (482°C).

*If you are using option 2, adjust pot so meter will read 1120°F (604°C)*



## For heater B:

1. Using option 1, set **right** Temperature Control Knob to 400°F (205°C). Allow heater **B** to warm up.

2. Adjust **LO**-Temp. Calibration Pot on the right side of the station so the TI680 Meter will read 500°F (260°C).

*If you are using option 2, adjust pot so meter will read 490°F (254°C)*

3. Set Temperature Control Knob to 800°F (427°C).

4. Adjust **HI**-Temp. Calibration Pot so the Meter will read 900°F (482°C).

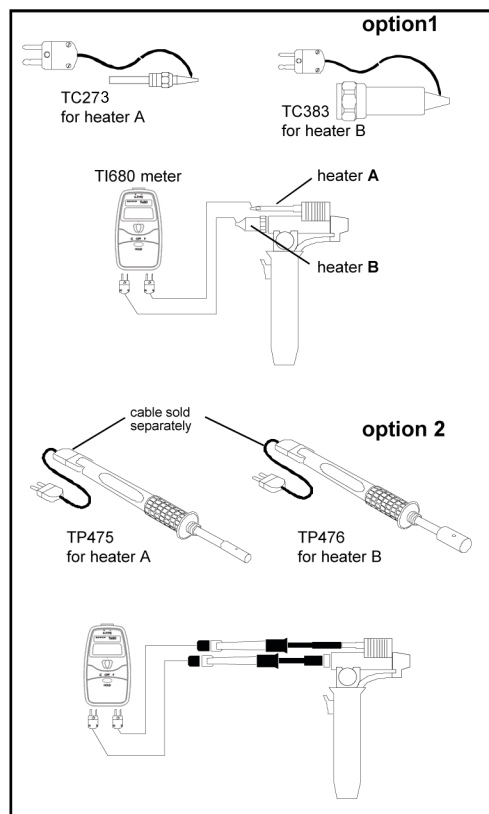
*If you are using option 2, adjust pot so meter will read 980°F (527°C)*



## IMPORTANT:

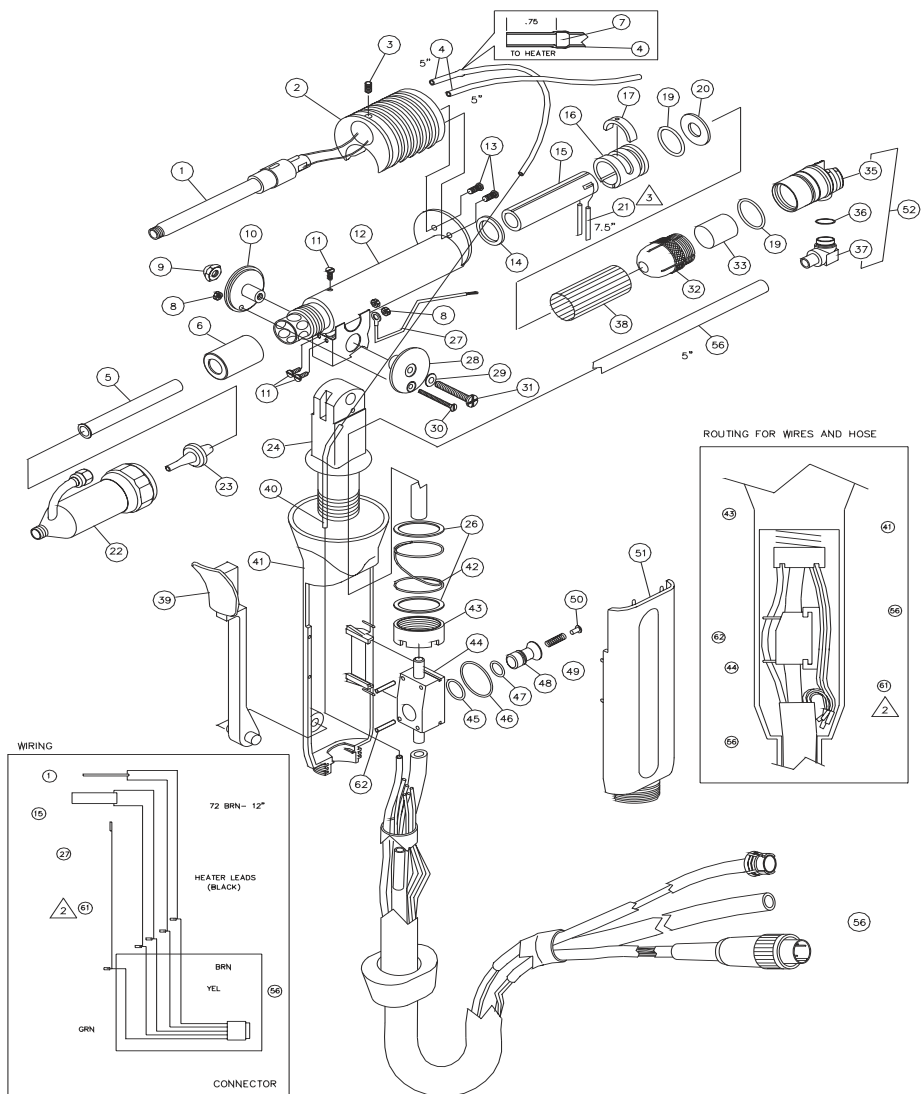
User must understand the principle of wire probe (option 2). See Form.800. Procedure may yield different temperatures than noted above.

## THERMOCOUPLE PROBES



## SOLDERING TIPS

	Hole Dia.	Length
<b>TSX715</b> Focus Nozzle	.09 (2.3 mm)	.55 (14.0 mm)
<b>TSX713</b> Small	.05 (1.3 mm)	.43 (10.9 mm)
<b>TSX716</b> Round Needle	.02 (.5 mm)	.80 (20.3 mm)
<b>TSX717</b> Small Oval Needle	.01 (.3 mm)	.63 (16.0 mm)
<b>TSX718</b> Medium Oval Needle	.02 (.5 mm)	.80 (20.3 mm)

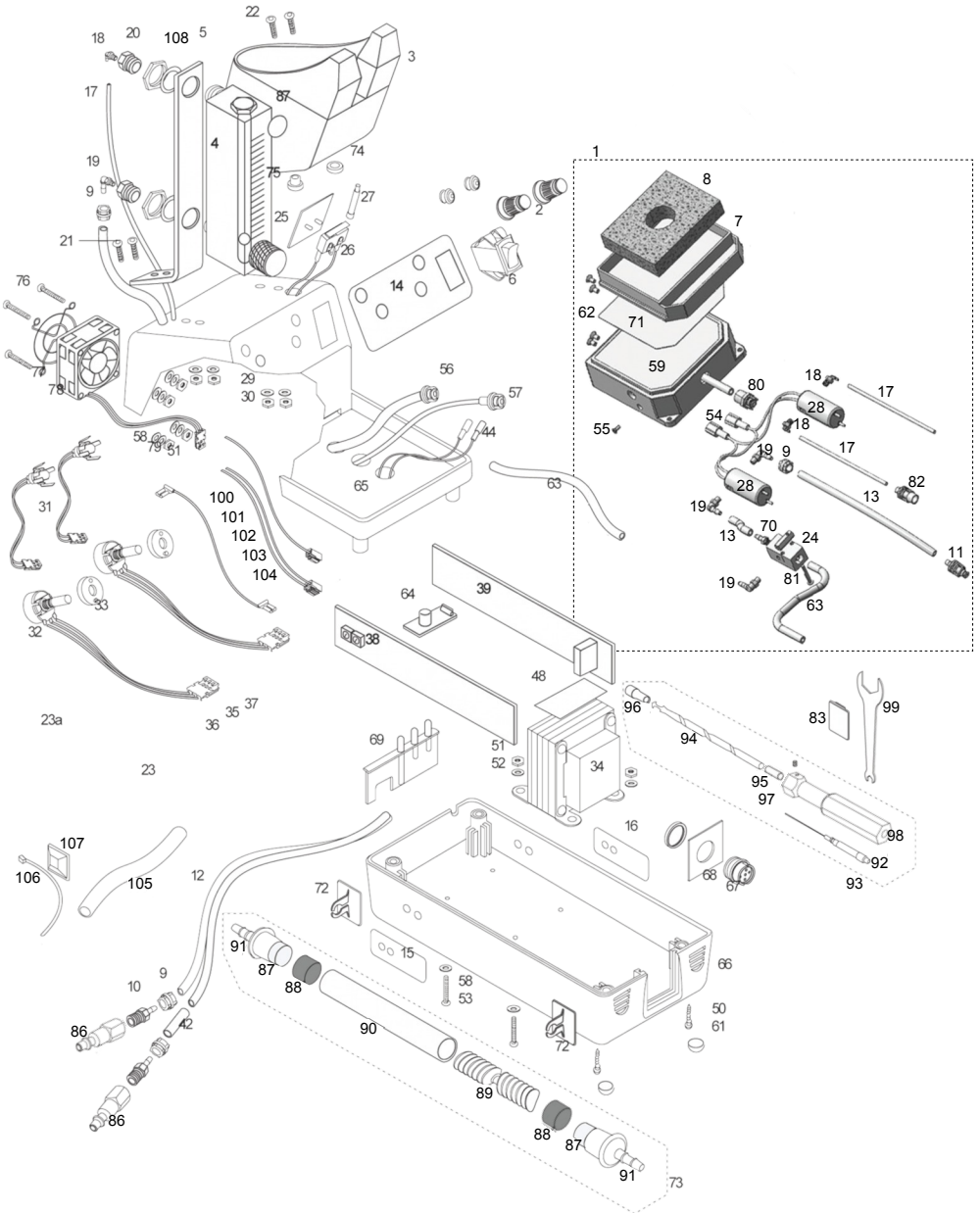


### TSX70-1 *SOLDAVAC*<sup>®/E</sup> SOLDER HANDLING TOOL SPARE PARTS LIST

ITEM NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	SR341	Heater Assy. 24V, Hollow Threaded	1
2	SR342	Housing, Hot Gas Heater	1
3	SR343	Set Screw	1
4	HS304	Low Static Silicone Hose, 3/32 i.d.	2
5	HT01	Hot Tube	1
6	AC737	Accumulator Bushing	1
8	SR007	Nut, Hex, 2-56	3
9	SR170	Nut, Hex, Cap, 8-32	1

ITEM NO.	PART NO.	DESCRIPTION	QTY REQ'D
10	<b>SR006</b>	Index Flange (nut side)	1
11	<b>SR122</b>	Screw, Pan Hd, Slotted, 2-56 x 1/8	3
12	<b>SR440</b>	Housing, Desold Head Assy.	1
13	<b>SR345</b>	Screw, Pan Hd, Phillips, 4-40 x 3/8	2
14	<b>SR119</b>	Teflon Spacer	1
15	<b>SR120</b>	Heater Element, 24V, 70W	1
16	<b>SR117</b>	Teflon Bushing	1
17	<b>SR118</b>	Heater Restrainer	1
19	<b>OS731</b>	O-Ring for Heater Bushing and End Cap	2
20	<b>OS133</b>	Silicone Washer	1
21	<b>SR145</b>	Teflon Braided Fiberglass	2
22	<b>RSX72</b>	Retaining Sleeve for Heater Assy.	1
23	<b>TSX713</b>	Desoldering Tip	1
24	<b>SR629</b>	Head Shaft	1
26	<b>SR126</b>	Washer, Nylon	2
27	<b>SR121</b>	Grounding Wire	1
28	<b>SR005</b>	Index Flange (screw side)	1
29	<b>SR169</b>	Washer, Flat, .32 O.D. x .17 I.D	1
30	<b>SR008</b>	Screw, Flat Head, Slotted, 2-56 x 1	2
31	<b>SR168</b>	Screw, Pan Head, Phillips, 8-32 x 1	1
32	<b>SC525</b>	Solder Cone	1
33	<b>AF625</b>	Felt Filter (set of 10)	1
35	<b>SR148</b>	Housing for End Cap	1
36	<b>OS132</b>	O-Ring for Elbow Connector of End Cap	1
37	<b>SR147</b>	Elbow Connector of End Cap	1
38	<b>MS229</b>	Mica Sheet	3
39	<b>SR128</b>	Trigger	1
40	<b>SR348</b>	Gas Tube	1
41	<b>SR349</b>	Handle Base	1
42	<b>SR125</b>	Spring for Head Shaft	1
43	<b>SR127</b>	Retaining Nut for Head Shaft	1
44	<b>SR129</b>	Valve Housing	1
46	<b>OS730</b>	O-Ring Set for Valve Assy. (3 O-Rings)	1 set
48	<b>SR130</b>	Poppet (O-Ring included)	1
49	<b>SR131</b>	Spring	1
50	<b>SR132</b>	Seat for Spring	1
51	<b>SR350</b>	Handle Cover	1
52	<b>FC639</b>	End Cap Assy.	1
55	<b>SR352</b>	Fitting, Quick Disconnect, Female	1
56	<b>HL603</b>	Hose, Low Static Silicone, 3/16 i.d.	5"
57	<b>SR353</b>	Plug, Male Cable Connector	1
60	<b>SR393</b>	Retaining Nut for Handle	1
62	<b>SR143</b>	Wire Guide, 3/8 Length, Nylon	2
68	<b>SR335</b>	Valve Assy.	1
69	<b>SR356</b>	Hose and Wiring Assy.	1

# TSX70-2 SOLDAVAC®Æ SOLDER HANDLING TOOL SPARE PARTS LIST





ITEM NO.	PART NO.	DESCRIPTION	QTY REQ'D
1	<b>SR408</b>	Solenoid and Vacuum Ejector Assembly	1
2	<b>SR068</b>	Temperature Control Knob for Dual Station	2
3	<b>SR376</b>	Tool Pod Holder for Hot Gas Tool	1
4	<b>SR375</b>	Flow Meter	1
5	<b>SR443</b>	Mounting Bracket for Flow Meter	1
6	<b>SR065</b>	Power Switch	1
7	<b>SH232</b>	Low Profile Sponge Holder Tray	1
8	<b>RS199</b>	Replacement Sponge	1
9	<b>LC363</b>	Locking Collar for 1/4 in. Hose (set of 5)	4
10	<b>HB357</b>	Threaded Hose Barb Fitting	2
11	<b>SR428</b>	Male Coupling Quick-Disconnect for 1/8 in. Hose	1
12	<b>SR378</b>	Black Twin Tubing Polyurethane Hose ID: 1/8in. (sold per foot)	72 in.
13	<b>SR283</b>	Black Polyurethane Hose ID: 1/8 in. (sold per foot)	6.96 in.
14	<b>SR380</b>	Front Control Panel Label	1
15	<b>SR310</b>	Temperature Calibration Label for Right Side	1
16	<b>SR311</b>	Temperature Calibration Label for Left Side	1
17	<b>SR351</b>	Black Polyurethane Hose ID: 1/16 in. (sold per foot)	22.92 in.
18	<b>SR381</b>	Elbow Connector ID: 1/16 in. (set of 3)	3
19	<b>SR382</b>	Elbow Connector ID: 1/8 in. (set of 3)	4
20	<b>SR383</b>	Fitting Reducer (set of 3)	2
21	<b>SR384</b>	Button Head Socket Screw	2
22	<b>SR385</b>	Button Head Socket Screw	2
23	<b>SR386</b>	Power Cord Assembly with Fuse and Connectors	1
23a	<b>SR026</b>	Power Cord Only	1
24	<b>SR418</b>	Micro-Ejector Vacuum Generator	1
25	<b>SR115</b>	Retaining Plate for Micro Switch	1
26	<b>SR113</b>	Pump Cut-Off for Micro Switch	1
27	<b>SR114</b>	Push Rod for Switch on Holder	1
28	<b>SR419</b>	4 Way Normally Close Solenoid Valve	2
29	<b>SR431</b>	Flat Washer	4
30	<b>SR388</b>	Hex Nut	4
31	<b>SR246</b>	LED Assembly Green Lens Included	2
32	<b>SR243</b>	Temperature Control Potentiometer Assembly 5K	2
33	<b>SR255</b>	Spacer for Potentiometer Pod Dia: 1 in.	2
34	<b>SR387</b>	Dual Primary Transformer	1
35	<b>SR106</b>	Fuse	1
36	<b>SR370</b>	Parallel Solderless Non-Insulated Connector	2
37	<b>SR371</b>	Clear Shrink Sleeve Dia: 1/4 in. (sold per foot)	1.92 in.
38	<b>15242W45</b>	Circuit Board Assembly for Left Hand Side	1
39	<b>15242W70H10</b>	Circuit Board Assembly for Right Hand Side	1
40	<b>SR432</b>	3 Circuit VH Housing Connector (set of 3)	2
41	<b>SR389</b>	2 Circuit VH Housing Connector (set of 3)	1
42	<b>SR390</b>	Blue Shrink Sleeve Dia: 3/64 in. (sold per foot)	.96 in.
43	<b>SR433</b>	Non-Insulated Flag Connector (set of 5)	7
44	<b>SR437</b>	Red Fully Insulated Female Connector (set of 5)	2
45	<b>SR436</b>	2 Circuit HR Receptacle Connector (set of 3)	1

ITEM NO.	PART NO.	DESCRIPTION	QTY REQ'D
46	<b>SR438</b>	3 Circuit HR Receptacle Connector (set of 5)	1
47	<b>SR435</b>	Non-Insulated Flag Connector	3
48	<b>SR434</b>	Armid Paper Insulator (sold per square foot)	1
49	<b>SR400</b>	Non-Insulated Ring Tongue Connector (set of 5)	2
50	<b>SR011</b>	Phillips Pan Head Self Tapping Screw	4
51	<b>SR017</b>	Hex Nut	8
52	<b>SR139</b>	Star Lock Washer	8
53	<b>SR144</b>	Phillips Round Head Screw	4
54	<b>SR420</b>	Red Male Connector (set of 5)	2
55	<b>SR1301</b>	Phillips Flat Head Screw	1
56	<b>SR402</b>	Female Coupling Quick Disconnect Fitting for 1/8 in. Hose	1
57	<b>SR352</b>	Male Coupling Quick Disconnect Fitting for 1/16 in. Hose	1
58	<b>SR016</b>	Flat Washer	8
59	<b>SR417</b>	Cover for Solenoid and Vacuum Ejector Assembly	1
61	<b>SR251</b>	Rubber Feet (set of 4)	4
62	<b>SR774</b>	Phillips Flat Head Screw	4
63	<b>HS307</b>	Static-Safe Silicone Black Hose ID: 1/8in. (sold per foot)	17.04 in.
64	<b>SR403</b>	Cooling Fan Circuit Board Assembly	1
65	<b>SR404</b>	Top Cover	1
66	<b>SR405</b>	Bottom Case	1
67	<b>SR406</b>	Female 5-Pin Circular Socket Connector	1
68	<b>SR430</b>	Molded Frame Plate for Connector	1
69	<b>SR241</b>	Slide-On Strain Relief for Power Supply Cord	1
70	<b>SR261</b>	Male Mini Barbed Fitting for 1/8 in. Hose	1
71	<b>SR409</b>	Cleaning Instruction Label	1
72	<b>SR439</b>	Self-Adhesive Holder Clip for Tools and Accessories (set of 2)	4
73	<b>AFX73</b>	Condenser and Filter Assembly	1
74	<b>SR410</b>	Flat Spacer for Tool Pod	1
75	<b>SR411</b>	Flat Spacer with Stem for Tool Pod	1
76	<b>SR412</b>	Round Head Slotted Screw	4
77	<b>SR413</b>	Fan Guard Grill for Cooling Fan	1
78	<b>SR414</b>	Fan Assembly with Connector	1
79	<b>SR016</b>	Flat Washer	4
80	<b>SR425</b>	Female Coupling Quick Disconnect for 1/16 in. Hose	1
81	<b>SR694</b>	Phillips Pan Head Steel Screw for Air/Vacuum Pump Assembly	1
82	<b>SR427</b>	Female Coupling Quick Disconnect for 1/16 in. Hose	1
83	<b>SR416</b>	Self-Adhesive Wrench Hanger Holder	1
84	<b>SR415</b>	Terminal Crimp for VH Connector (10 per bag)	10
85	<b>SR229</b>	Edsyn Medallion Logo	1
86	<b>HB359</b>	Quick Disconnect Fitting	2
87	<b>AF629</b>	Felt Filter for AFX73 (set of 10)	2
88	<b>AF040</b>	Replacement Muffler Filter (set of 10)	2
89	<b>SR304</b>	Flux Condenser and Cooling Fin for AFX73	1
90	<b>SR305</b>	Aluminum Barrel for AFX73	1
91	<b>SR266</b>	End Cap for Muffler	2
92	<b>CSX71</b>	Tip Cleaning Shaft and O-Ring Guide for CSX70 Dia: .05 in.	1

ITEM NO.	PART NO.	DESCRIPTION	QTY REQ'D
93	<b>CSX70</b>	Maintenance Tool with CSX71 Tip Cleaning Shaft Dia: .22 in.	1
94	<b>SR307</b>	Drill Hook for CSX70 Cleaning Tool System	1
95	<b>SR308</b>	Set Screw for Socket on CSX70 Cleaning Tool System	1
96	<b>SR309</b>	Protective Cover for Hook of CSX70 Cleaning Tool System	1
97	<b>SR444</b>	Bushing for Stainless Steel Tubing OD: 1/4 in.	1
98	<b>SR306</b>	Hex Handle for CSX70 Cleaning Tool System (includes SR308)	1
99	<b>WT623</b>	Dual Open-End Tip Wrench	1
100	<b>SR442</b>	White Wire 24 AWG (sold per foot)	7.92 in.
101	<b>SR445</b>	Black Wire 22 AWG (sold per foot)	12 in. 3@
			10.44 in. 2@
			4.44 in. 2@
			1.92 in. 3@
102	<b>SR446</b>	White Wire 22 AWG (sold per foot)	12 in. 2@
			4.44 in. 2@
			11.4 in.
			15 in.
103	<b>SR447</b>	Red Wire 22 AWG (sold per foot)	12 in.
104	<b>SR448</b>	Green Wire 18 AWG (sold per foot)	5.04 in.
105	<b>HS320</b>	Black Static-Safe Silicone Hose ID: 1/4 in. (sold per foot)	3 in.
106	<b>SR050</b>	Cable Tie (set of 5)	7
107	<b>SR051</b>	Mount for Cable Tie (set of 2)	1
108	<b>SR126</b>	Nylon Washer	2

## Connectors



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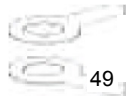
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# TSX70 instruction manual



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